

# MDG-120PVV / MD-170PTVW Installation Manual

Phase 7 / Non-Coin / Dual Timer  
with S.A.F.E. System

**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 vapors and liquids in the vicinity of this or any other appliance.

— **WHAT TO DO IF YOU SMELL GAS:**

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

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

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

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

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

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

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

**MAYTAG**



**RETAIN THESE INSTRUCTIONS IN A SAFE  
PLACE FOR FUTURE REFERENCE**

# Retain This Manual In A Safe Place For Future Reference

This product embodies advanced concepts in engineering, design, and safety. If this product is properly maintained, it will provide many years of safe, efficient, and trouble free operation.

*ONLY qualified technicians should service this equipment.*

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

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

**FOR YOUR SAFETY**

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

**POUR VOTRE SÉCURITÉ**

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

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

## Important

For your convenience, log the following information:

**DATE OF PURCHASE** \_\_\_\_\_ **MODEL NO.** \_\_\_\_\_

**DEALER'S NAME** \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

For replacement parts, contact the dealer from which the dryer was purchased or contact:

**Maytag Co.**  
403 West Fourth Street North  
Newton, Iowa 50208  
(641) 787-7000

### **“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 BEFORE ANY COVERS OR GUARDS ARE REMOVED FROM THE MACHINE TO ALLOW ACCESS FOR CLEANING, ADJUSTING, INSTALLATION, OR TESTING OF ANY EQUIPMENT PER OSHA (Occupational Safety and Health Administration) STANDARDS.**

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

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

## **CAUTION**

**DRYERS SHOULD NEVER BE LEFT UNATTENDED WHILE IN OPERATION.**

## **WARNING**

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

## **FOR YOUR SAFETY**

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

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

## **WARNING**

**UNDER NO CIRCUMSTANCES should the dryer door switch, lint drawer switch, or the heat safety circuits 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 manual included with the dryer.**

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

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

### **IMPORTANT**

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

# Table of Contents

<b>SECTION I</b>	
<b>SAFETY PRECAUTIONS .....</b>	<b>4</b>
<b>SECTION II</b>	
<b>SPECIFICATIONS .....</b>	<b>6</b>
A. MDG-120 Specifications .....	6
B. MD-170 Specifications .....	8
<b>SECTION III</b>	
<b>INSTALLATION PROCEDURES .....</b>	<b>10</b>
A. Location Requirements .....	10
B. Unpacking/Setting Up .....	11
C. Dryer Enclosure Requirements .....	14
D. Fresh Air Supply Requirements .....	15
E. Exhaust Requirements .....	16
F. Electrical Information .....	19
G. Gas Information .....	22
H. Preparation for Operation .....	26
I. Preoperational Test .....	27
J. Shutdown Instructions .....	29
K. Operating Instructions .....	29
L. Compressed Air Requirements (MD-170 Only) .....	30
M. Steam Information (MD-170 Only) .....	31
<b>SECTION IV</b>	
<b>SERVICE/PARTS INFORMATION .....</b>	<b>35</b>
A. Service .....	35
B. Parts .....	35
<b>SECTION V</b>	
<b>WARRANTY INFORMATION .....</b>	<b>36</b>
A. Returning Warranty Cards .....	36
B. Warranty .....	36
<b>SECTION VI</b>	
<b>ROUTINE MAINTENANCE .....</b>	<b>37</b>
A. Cleaning .....	37
B. Adjustments .....	39
C. Lubrication .....	39
<b>SECTION VII</b>	
<b>MANUAL RESET BURNER HI-LIMIT INSTRUCTIONS .....</b>	<b>40</b>
A. Phase 7 .....	40
B. Dual Timer .....	40
<b>SECTION VIII</b>	
<b>DATA LABEL INFORMATION .....</b>	<b>41</b>
<b>SECTION IX</b>	
<b>REVERSING TIMER SPIN/DWELL ADJUSTMENTS .....</b>	<b>42</b>
<b>SECTION X</b>	
<b>PROCEDURE FOR FUNCTIONAL CHECK OF REPLACEMENT COMPONENTS .....</b>	<b>43</b>
<b>SECTION XI</b>	
<b>SENSOR ACTIVATED FIRE EXTINGUISHING (S.A.F.E.) SYSTEM .....</b>	<b>45</b>

# SECTION I

## 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 **Maytag** produces a very versatile dryer, there are some articles that, due to fabric composition or cleaning method, **should not be** dried in it.

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

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

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

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

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

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

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

**NOTE:** Failure to electrically ground the dryer properly will VOID THE WARRANTY.

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

**WARNING: PERSONAL INJURY OR FIRE COULD RESULT SHOULD THE DRYER DOOR SWITCH, LINT DRAWER SWITCH, OR THE HEAT SAFETY CIRCUITS EVER BE DISABLED.**

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

11. Remove articles from the dryer as soon as the drying cycle has been completed.

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

12. **DO NOT** operate steam dryers with more than 125 psi (8.62 bar) steam pressure. Excessive steam pressure can damage the steam coil and/or harm personnel.

13. Replace leaking flexible steam hoses or other 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.**

15. For safety, proper operation, and optimum performance, the dryer **must not be** operated with a load less than sixty-six percent (66%) of its rated capacity.

16. If the rear area of the dryer, or the water supply is located in an area where it will be exposed to cold/freezing temperatures, provisions **must be** made to protect these water lines from freezing.

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

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

# SECTION II

## SPECIFICATIONS

### A. MDG-120 SPECIFICATIONS

MAXIMUM CAPACITY (DRY WEIGHT)		120 lb	<b>54.4 kg</b>
BASKET (TUMBLER) DIAMETER		44-5/8"	<b>113.3 cm</b>
BASKET (TUMBLER) DEPTH		42-1/8"	<b>170.0 cm</b>
BASKET (TUMBLER) VOLUME		38.1 cu ft	<b>1078.87 L</b>
BASKET (TUMBLER) MOTOR		3/4 hp	<b>0.560 kW</b>
DOOR OPENING (DIAMETER)		31-3/8"	<b>79.7 cm</b>
EXHAUST CONNECTION (DIAMETER)		14"	<b>35.6 cm</b>
DRYERS PER 20'/40' CONTAINER		3/7	
DRYERS PER 48'/53' TRUCK		9/10	
WATER CONNECTION		3/4-11.5 NH	
<b>Gas</b>	VOLTAGE AVAILABLE	208-575v 3 $\emptyset$ 3, 4w 50/60 Hz	
	APPROX. NET WEIGHT	1,349 lb	<b>611.9 kg</b>
	APPROX. SHIPPING WEIGHT	1,489 lb	<b>675.4 kg</b>
	HEAT INPUT	375,000 Btu/hr	<b>94,500 kcal/hr</b>
	AIRFLOW	2,150 cfm	<b>60.88 cmm</b>
	INLET PIPE CONNECTION	1" F.N.P.T.	

Shaded areas are stated in metric equivalents

4/27/04

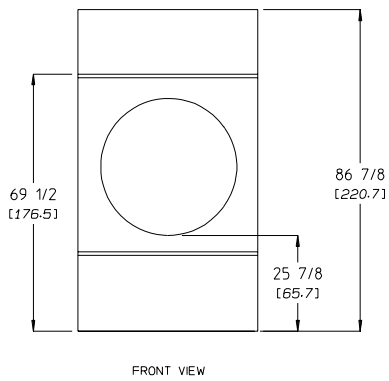
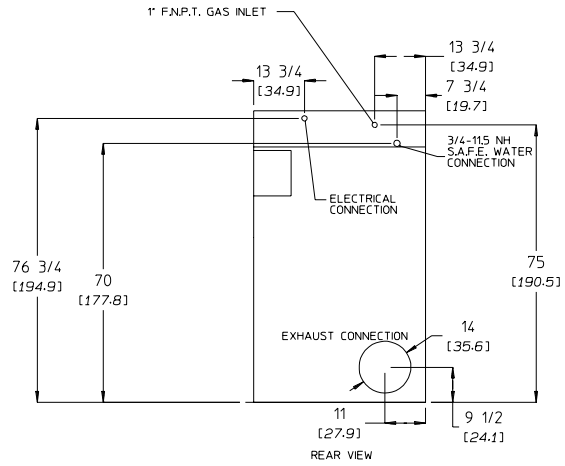
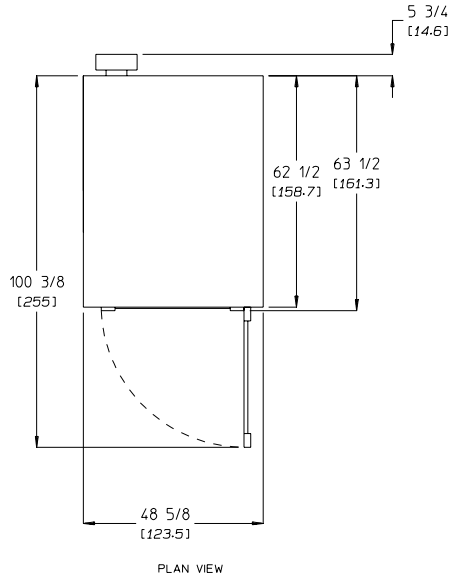
**NOTE:** The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.



# MDG-120 Specifications

**DRYER NOTES:**

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



EV 4/20/04

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

## B. MD-170 SPECIFICATIONS

MAXIMUM CAPACITY (DRY WEIGHT)		170 lb	<b>77.11 kg</b>	
TUMBLER DIAMETER		51-1/2"	<b>130.81 cm</b>	
TUMBLER DEPTH		42-1/2"	<b>107.95 cm</b>	
TUMBLER VOLUME		51.20 cu ft	<b>1,449.82 L</b>	
TUMBLER/DRIVE MOTOR		1 hp	<b>0.75 kW</b>	
BLOWER/FAN MOTOR		7-1/2 hp	<b>5.59 kW</b>	
DOOR OPENING (DIAMETER)		31-3/8"	<b>79.69 cm</b>	
DOOR SILL HEIGHT		33-3/8"	<b>84.77 cm</b>	
WATER CONNECTION		3/4"-11.5 NH (North America)		
		3/4" B.S.P.T. (Outside North America)		
DRYERS PER 20'/40' CONTAINER		3 / 7		
DRYERS PER 48'/53' TRUCK		8 / 9		
<b>Gas</b>	VOLTAGE AVAILABLE		208-575V 3 $\phi$ 3,4w 50/60 Hz	
	APPROXIMATE NET WEIGHT		2,103 lb <b>953.90 kg</b>	
	APPROXIMATE SHIPPING WEIGHT		2,269 lb <b>1,029.20 kg</b>	
	AIRFLOW	60 Hz	3,700 cfm	<b>104.77 cmm</b>
		50 Hz	3,083 cfm	<b>87.30 cmm</b>
	HEAT INPUT		550,000 Btu/hr	<b>138,598 kcal/hr</b>
	EXHAUST CONNECTION (DIAMETER)		18"	<b>45.72 cm</b>
	COMPRESSED AIR CONNECTION		1/4" Quick Connection	
	COMPRESSED AIR VOLUME		4.25 cfh	<b>0.12 cmh</b>
INLET PIPE CONNECTION		1-1/2" F.N.P.T.		
		1-1/2" B.S.P.T. (CE and Australia Only)		
<b>Electric</b>	VOLTAGE AVAILABLE		416-460V 3 $\phi$ 3,4w 50/60 Hz	
	APPROXIMATE NET WEIGHT		2,103 lb <b>953.90 kg</b>	
	APPROXIMATE SHIPPING WEIGHT		2,269 lb <b>1,029.20 kg</b>	
	AIRFLOW	60 Hz	3,700 cfm	<b>104.77 cmm</b>
		50 Hz	3,083 cfm	<b>87.30 cmm</b>
	EXHAUST CONNECTION (DIAMETER)		18"	<b>45.72 cm</b>
	COMPRESSED AIR CONNECTION		1/4" Quick Connection	
	COMPRESSED AIR VOLUME		4.25 cfh	<b>0.12 cmh</b>
	OVEN SIZE			
kW	Btu/hr	<b>kcal/hr</b>		
126	429,900	<b>108,300</b>		
<b>Steam</b>	VOLTAGE AVAILABLE		208-575V 3 $\phi$ 3,4w 50/60 Hz	
	APPROXIMATE NET WEIGHT		2,259 lb <b>1,024.67 kg</b>	
	APPROXIMATE SHIPPING WEIGHT		2,425 lb <b>1,099.96 kg</b>	
	AIRFLOW	60 Hz	4,400 cfm	<b>124.59 cmm</b>
		50 Hz	3,666 cfm	<b>103.80 cmm</b>
	STEAM CONSUMPTION		725 lb/hr	<b>328.85 kg/hr</b>
	OPERATING STEAM PRESSURE		125 psi max	<b>8.62 bar</b>
	EXHAUST CONNECTION (DIAMETER)		20"	<b>50.80 cm</b>
	COMPRESSED AIR CONNECTION		1/4" Quick Connection	
	COMPRESSED AIR VOLUME		4.25 cfh	<b>0.12 cmh</b>
	BOILER HORSEPOWER (NORMAL LOAD)		19 Bhp	
SUPPLY CONNECTION		1-1/2" F.N.P.T.		
RETURN CONNECTION		1-1/2" F.N.P.T.		

Shaded areas are stated in metric equivalents

5/26/06

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

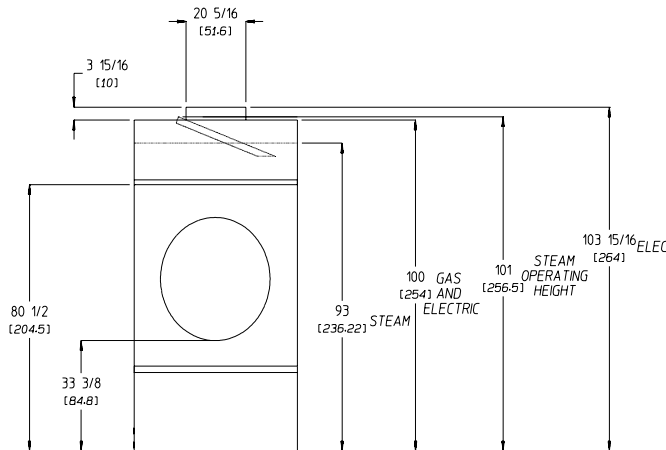
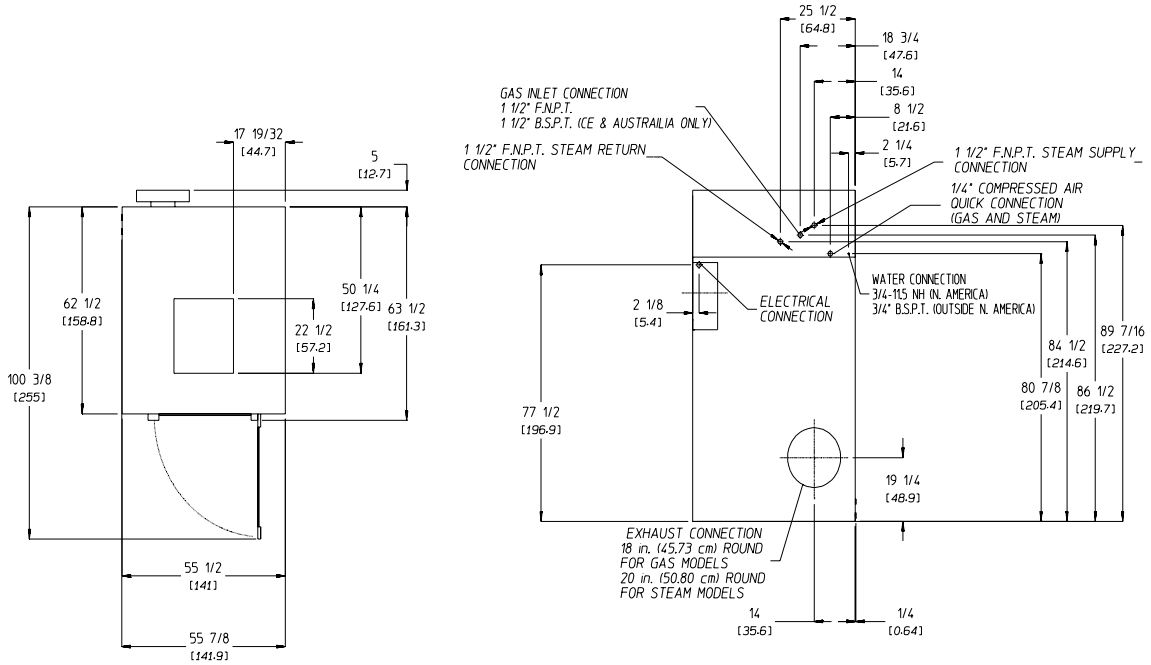
# MD-170 Specifications

**DRYER NOTES:**

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

**STEAM DRYER NOTES:**

- ° OPERATING HEIGHT OF STEAM DRYER IS 101 (256.5)
- ° SIZE OF PIPING TO DRYER VARIES WITH INSTALLATION CONDITIONS. CONTACT FACTORY FOR ASSISTANCE.
- ° STEAM DRYERS MUST BE PROVIDED WITH CLEAN, DRY, REGULATED 80 PSI ± 10 PSI (5.5 BAR ± 0.69 BAR) AIR SUPPLY.



6/14/06

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

# SECTION III

## INSTALLATION PROCEDURES

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

### A. 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 installation **must conform** to applicable Canadian Standards: CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (L.P. Gas) or LATEST EDITION (for General Installation and Gas Plumbing).

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

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

2. The dryer **must not be** installed or stored in an area where it will be exposed to water and/or weather.
3. The dryer is for use in noncombustible locations.
4. Provisions for adequate air supply **must be** provided as noted in this manual (refer to **Fresh Air Supply Requirements** in Section D).
5. Clearance provisions **must be** made from combustible construction as noted in this manual (refer to **Dryer Enclosure Requirements** in Section C).
6. Provisions **must be** made for adequate clearances for servicing and for operation as noted in this manual (refer to **Dryer Enclosure Requirements** in Section C).
7. The dryer **must be** installed with a proper exhaust duct connection to the outside as noted in this manual (refer to **Exhaust Requirements** Section E).
8. The dryer **must be** located in an area where correct exhaust venting can be achieved as noted in this manual (refer to **Exhaust Requirements** in Section E).

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

9. The dryer **must be** installed with adequate clearance for air openings into the combustion chamber.

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

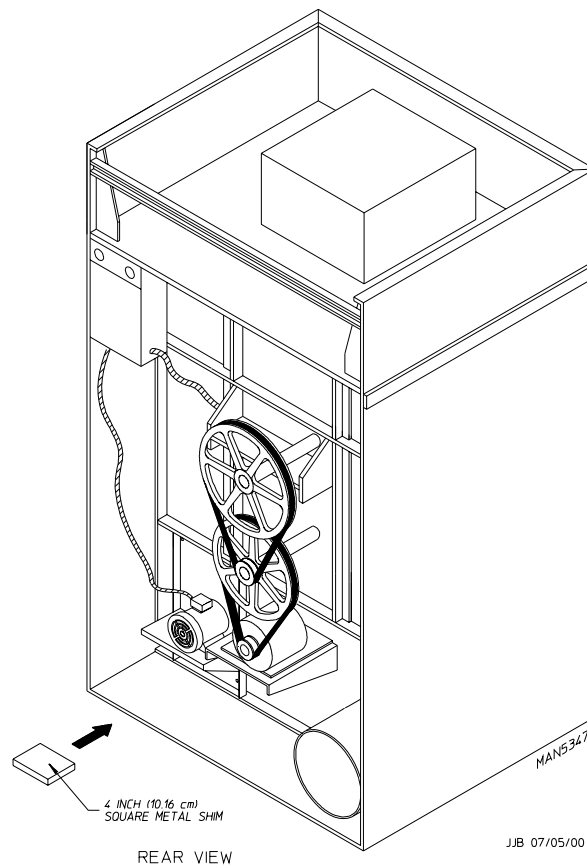
**IMPORTANT:** The dryer *must be* installed in a location/environment, which the ambient temperature remains between 40° F (4.44° C) and 130° F (54.44° C).

## B. UNPACKING/SETTING UP

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

**IMPORTANT:** The 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 remove skid from the dryer, locate and remove the four (4) lag bolts securing the base of the dryer to the wooden skid. Two (2) are located 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) lag bolts located in the lint chamber area, remove the lint drawer and the three (3) Phillips head screws securing lint door in place.



### 1. Leveling Dryer

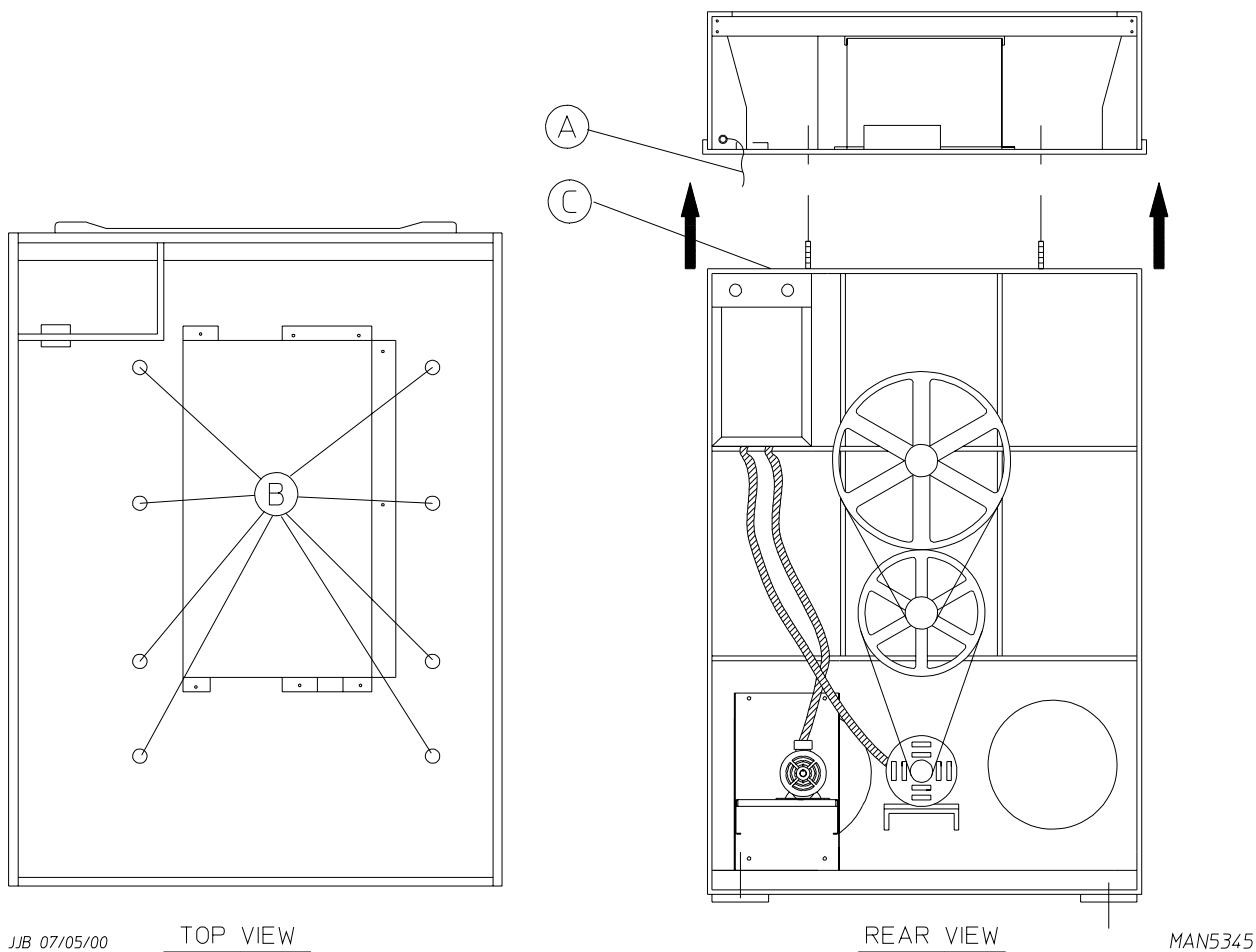
To level dryer, place 4-inch (10.16 cm) square metal shims (refer to **illustration above**) or other suitable material under the base pads. It is suggested that the dryer be tilted slightly to the rear.

2. If more headroom is needed when moving dryer into position, the top console (module) may be removed.

To Remove Top Console (Module)

- a. Disconnect the ground wire (A) at the rear upper left hand corner of dryer.
- b. Remove the eight (8) sets of nuts and washers (B) holding the console (module) to base.
- c. Open the control door/control panel and disconnect the white 15-pin plug connector (C) located in the base of the control box.
- d. Disconnect white plug connector located outside back side of the control box (provides power to heat circuit).
- e. Lift the console (module) off the dryer base.

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



### 3. Exhaust Transition Piece

## WARNING

An exhaust duct transition piece is shipped inside of the dryer's tumbler and **must be** installed on the dryer's exhaust duct, with the hardware provided, **BEFORE** location venting is connected to the dryer.

### **THIS EXHAUST DUCT TRANSITION PIECE MUST BE INSTALLED FIRST!**

Failure to observe this installation requirement may result in damage to the dryer, create a **FIRE HAZARD** and will **VOID** the manufacturer's warranty.

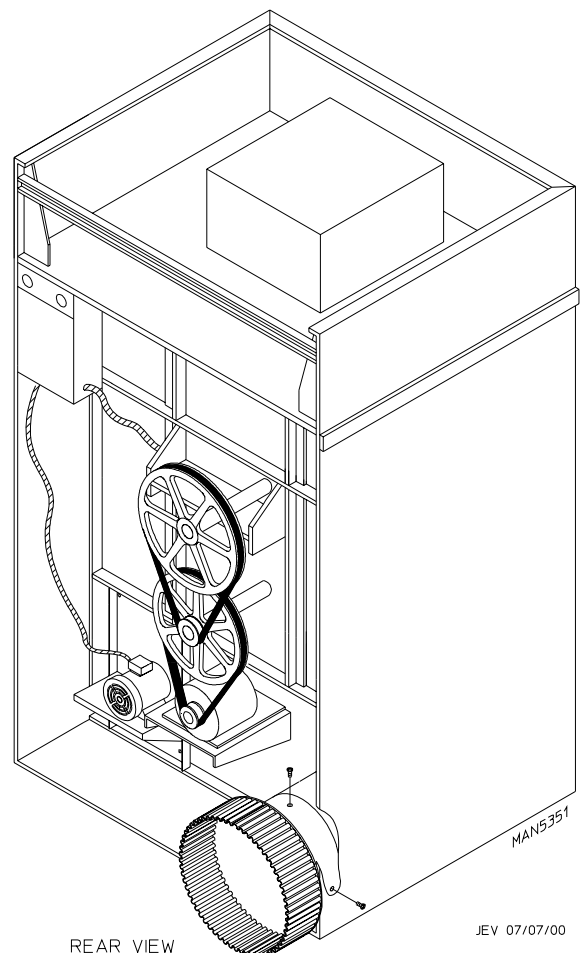
012999JEV-GS/cj

P/N: 114092

Inside the basket (tumbler) of this dryer is an exhaust transition piece that **must be** installed on the outlet of the exhaust before any further venting is connected:

- a. Remove the exhaust transition piece from the basket (tumbler) and place it on the exhaust outlet.
- b. Using the screws provided, secure the exhaust transition piece to the dryer.

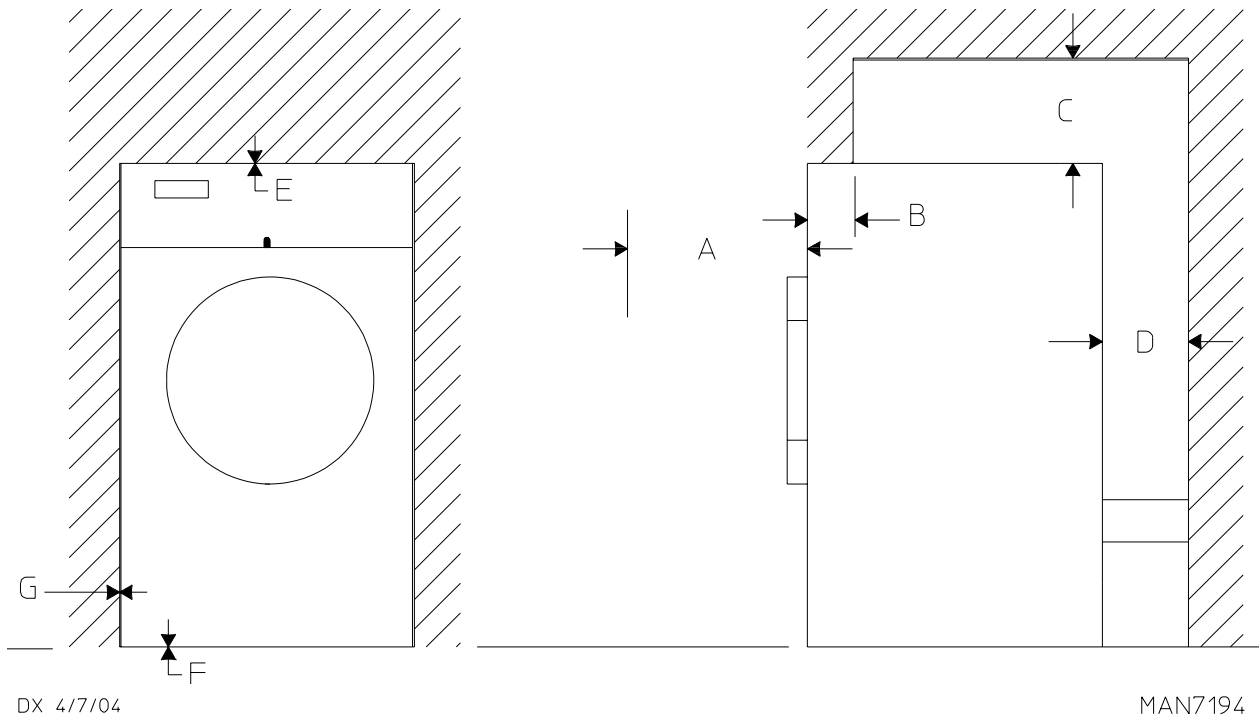
**NOTE:** **It is recommended** that this joint be taped as well as **ALL** other duct joints to prevent moisture and lint from escaping into the building.



## C. DRYER ENCLOSURE REQUIREMENTS

Bulkheads and partitions **should be** made of noncombustible material.

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



- A. 40-inches (101.6 cm) for optimum opening of load door.
- B. The maximum thickness of the bulkhead is 4-inches (10.16 cm).
- C. For gas dryers a minimum overhead clearance of 12-inches (30.48 cm) is required, providing no sprinkler is located above the dryer. For steam dryers or if a sprinkler is located above the dryer, 18-inches (45.72 cm) is required.
- D. Dryer **should be** positioned 24-inches (60.96 cm) away from the nearest obstruction and 36-inches (91.44 cm) is recommended for ease of installation, maintenance, and service.
- E. 2-inch (5.08 cm) minimum is required for opening the control door.
- F. Flooring **should be** level or below dryer cabinet for ease of removing panels during maintenance.
- G. Dryers may be positioned sidewall to sidewall, however a 1/16" (1.5875 mm) minimum allowance **must be** made for the opening and closing of the control door, along with the removal of panels during maintenance.



## D. FRESH AIR SUPPLY REQUIREMENTS

When the dryer is operating, it draws in room air, heats it, passes this air through the tumbler, and exhausts it out of the building. Therefore, the room air **must be** continually replenished from the outdoors. If the make-up air is inadequate, drying time and drying efficiency will be adversely affected. Ignition problems and sail switch “fluttering” problems may result, as well as premature motor failure from overheating. The dryer **must be** installed with provisions for adequate combustion and make-up air supply.

Air supply **must be** given careful consideration to ensure proper performance of each dryer. As a general rule, an unrestricted air entrance from the outdoors of 550 square inches (3548 cm<sup>2</sup>) is required for each MD-170, and 375 square inches (2419 cm<sup>2</sup>) for each MD-120. (Based on 1 inch<sup>2</sup> [6.5 cm<sup>2</sup>] per 1,000 Btu [252 kcal].)

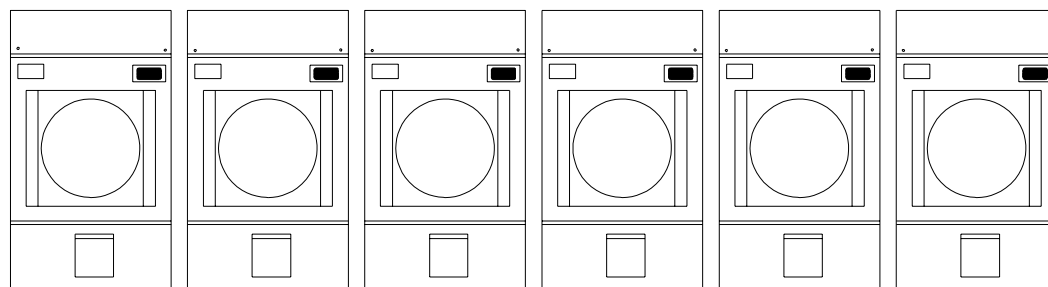
It is not necessary to have a separate make-up air opening for each dryer. Common make-up air openings are acceptable. However, they **must be** set up in such a manner that the make-up air is distributed equally to **ALL** the dryers.

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

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

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

Example: For a bank of six MD-170 dryers, two (2) openings measuring 3 feet by 4 feet (0.92 meters by 1.2 meters), which equals 24 square feet (2.23 square meters) are acceptable.



JEV 02/09/00

TYPICAL INSTALLATION SHOWING MAKE-UP AIR OPENINGS

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

## E. EXHAUST REQUIREMENTS

Exhaust ductwork **should be** designed and installed by a qualified professional. Improperly sized ductwork will create excessive back pressure, which results in slow drying, increased use of energy, and shutdown of the burner by the airflow (sail) switch, burner hi-limits, or lint chamber hi-limit protector thermostat. The dryer **must be** installed with a proper exhaust duct connection to the outside.

The dryer **shall not be** exhausted into any gas vent, chimney, wall, ceiling or concealed space of a building.

**CAUTION:** This dryer produces combustible lint and **must be** exhausted to the outdoors. Improperly sized or installed exhaust ductwork can create a potential fire hazard.

The ductwork **should be** laid out in such a way that the ductwork travels as directly as possible to the outdoors with as few turns as possible. There **should be** a minimum 6-inch (15.24 cm) clearance between the back guard and the first bend in the ductwork for ease of servicing. Single or independent dryer venting is recommended. It is suggested that the use of 90° turns be avoided; use 30° and/or 45° bends instead. The radius of the elbows **should preferably be** 1-1/2 times the diameter of the duct. **ALL** ductwork **should be** smooth inside with no projections from sheet metal screws or other obstructions, which will collect lint. When adding ducts, overlap the duct being connected. **ALL** ductwork joints **must be** taped to prevent moisture and lint from escaping into the building. Back draft dampers **must be** installed in **ALL** commonly ducted systems. Inspection doors **should be** installed at strategic points in the exhaust ductwork for periodic inspection and cleaning of lint from the ductwork.

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

**IMPORTANT:** Exhaust back pressure measured by a manometer/magnehelic in the exhaust duct **must be** no less than 0 and **must not exceed** 0.3 in WC (0.74 mb).

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

**NOTE:** As per the National Fuel Gas Code, "Exhaust ducts for type 2 clothes dryers shall be constructed of sheet metal or other noncombustible material. Such ducts shall be equivalent in strength and corrosion resistance to ducts made of galvanized sheet steel not less than 26 gauge (0.0195-inches [0.50 mm]) thick."

The ductwork for this appliance **must be** suitable for the appliance category in accordance with national installation regulations of the country of destination.

### Outside Ductwork Protection

To protect the outside end of the horizontal ductwork from the weather, a 90° elbow bent downward **should be** installed where the exhaust exits the building. If the ductwork 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 (refer to the diagram).

**IMPORTANT:** **DO NOT** use screens, louvers, or caps on the outside opening of the exhaust ductwork.

## 1. Single Dryer Venting

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

## 2. Horizontal Venting

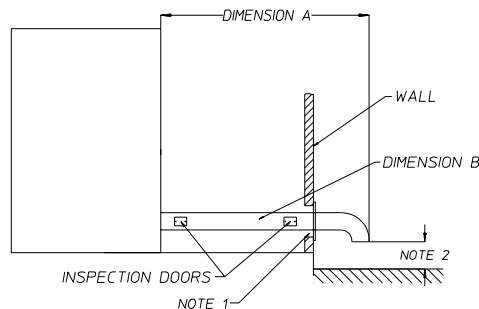
When horizontal dryer venting is used, the length of the ductwork from the dryer to the outside exhaust outlet, must not exceed 20 feet (6.10 meters). The minimum diameter of this ductwork **must be** at least 14-inches (35.56 cm) for MDG-120, 18-inches (45.72 cm) for MDG-170, and 20-inches (50.8 cm) for MDS-170. Including tumbler/dryer elbow connections or elbows used for outside protection from the weather, no more than 1 elbow **should be** used in the exhaust duct run. If more than 1 elbow is used, the cross-sectional area of the ductwork **must be** increased.

## 3. Vertical Venting

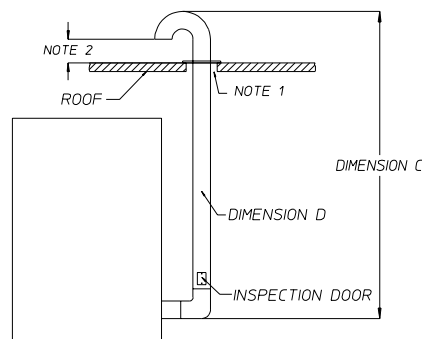
When vertical dryer venting is used, the length of the ductwork from the dryer to the outside exhaust outlet, must not exceed 15 feet (38.1 meters). The minimum diameter of this ductwork **must be** at least 14-inches (35.56 cm) for MDG-120, 18-inches (45.72 cm) for MDG-170, and 20-inches (50.8 cm) for MDS-170. Including tumbler/dryer elbow connections or elbows used for outside protection from the weather, no more than 3 elbows **should be** used in the exhaust duct run. If more than 3 elbows are used, the cross-sectional area of the ductwork **must be** increased.

HORIZONTAL DUCTING

<b>A = 20 feet (6.10 meters)</b>
<b>B = MDG-120: 14-inches (35.56 cm)</b>
<b>MDG-170: 18-inches (45.72 cm)</b>
<b>MDS-170: 20-inches (50.8 cm)</b>
<b>C = 15 feet (38.1 meters)</b>
<b>D = MDG-120: 14-inches (35.56 cm)</b>
<b>MDG-170: 18-inches (45.72 cm)</b>
<b>MDS-170: 20-inches (50.8 cm)</b>



VERTICAL DUCTING



MAN7211

JCARRITA 04/21/04

**NOTE 1** Opening from combustible materials **must be** 2-inches (5.08 cm) larger than the duct (all the way around). The duct **must be** centered within this opening.

**NOTE 2** Distance **should be** 2 times the diameter of the duct to the nearest obstruction.

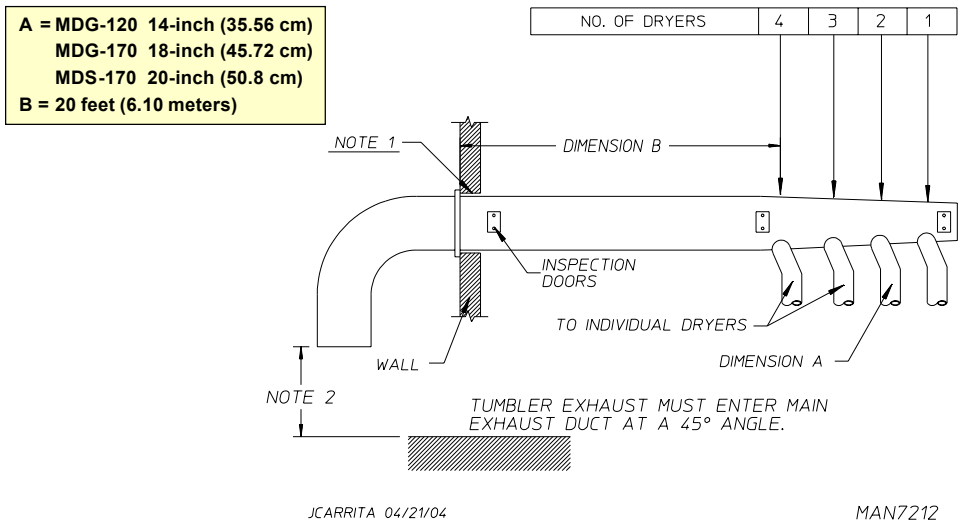
#### 4. Multiple Dryer (Common) Venting

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

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

**IMPORTANT:** No more than 4 dryers for the MDG-120 and only 3 for the MD-170 *should be* connected to 1 main common duct.

The **illustration below** shows the minimum cross-sectional area for multiple dryer round or square venting. These figures **must be** increased if the main duct run from the last dryer to where it exhausts to the outdoors is longer than 12 feet (3.656 meters) or has more than 1 elbow in it.



**NOTE 1** Opening from combustible materials **must be** 2-inches (5.08 cm) larger than the duct (all the way around). The duct **must be** centered within this opening.

**NOTE 2** Distance **should be** 2 times the diameter of the duct to the nearest obstruction.

Multiple Dryer Venting with 14-inch (35.56 cm) Diameter  
 2,150 cfm (60.88 cmm) Exhaust Connections at Common Duct

MDG-120	NUMBER OF DRYERS		4	3	2	1
	MINIMUM CROSS-SECTIONAL AREA		SQ IN	455	380	255
SQ CM			2935	2452	1645	742
MINIMUM ROUND DUCT DIAMETER		IN	24	22	18	14
		CM	60	55	45	35

Multiple Dryer Venting with 18-inch (45.72 cm) Diameter  
 3,700 cfm (104.77 cmm) Exhaust Connections at Common Duct

MDG-170	NUMBER OF DRYERS			3	2	1
	MINIMUM CROSS-SECTIONAL AREA		SQ IN	615	455	255
SQ CM			3967	2935	1645	
MINIMUM ROUND DUCT DIAMETER		IN	28	24	18	
		CM	71	61	46	

Multiple Dryer Venting with 20-inch (50.8 cm) Diameter  
 4,400 cfm (124.59 cmm) Exhaust Connections at Common Duct

MDS-170	NUMBER OF DRYERS			3	2	1
	MINIMUM CROSS-SECTIONAL AREA		SQ IN	707	531	315
SQ CM			4561	3426	2032	
MINIMUM ROUND DUCT DIAMETER		IN	30	26	20	
		CM	76	66	51	

## F. ELECTRICAL INFORMATION

### 1. Electrical Requirements

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

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

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

Each dryer **should be** connected to an independently protected branch circuit. The dryer **must be** connected with copper wire only. **DO NOT use aluminum wire, it can create a fire hazard.** The copper conductor wire/cable **must be** of proper ampacity and insulation in accordance with electric codes for making **ALL** service connections.

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

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

**NOTE:** An individual ground circuit **must be** provided to each dryer, **DO NOT** daisy chain.

**IMPORTANT:** The dryer **must be** connected to the electric supply shown on the data label. In the case of 208 VAC or 240 VAC, the supply voltage must match the electric service specifications of the data label **exactly**.

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

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

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

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

2. Electrical Service Specifications

**IMPORTANT:** Figures shown are for reversing models.

<b>MD-120 Gas</b>					
ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)					
<p><b>IMPORTANT:</b> 208 VAC AND 230/240 VAC ARE NOT THE SAME. When ordering, specify exact voltage.</p> <p><b>NOTES:</b> A. When fuses are used they must be dual element, time delay, current limiting, class RK1 or RK5 ONLY. Calculate/determine correct fuse value, by applying either local and/or National Electrical Codes to listed appliance amp draw data.                      B. Circuit breakers are thermal-magnetic (industrial) motor curve type ONLY. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used.                      C. Circuit breakers for 3-phase (3<math>\phi</math>) dryers must be 3-pole type.</p>					
SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		CIRCUIT BREAKER
			60 Hz	50 Hz	
208	3 $\phi$	3	14.5	—	20
240	3 $\phi$	3	14.6	—	20
230	3 $\phi$	3	—	17.4	25
380	3 $\phi$	3	8.5	—	15
380 / 400	3 $\phi$	4*	—	8.7	15
416	3 $\phi$	4*	—	9.0	15
440	3 $\phi$	3	8.7	—	15
460 / 480	3 $\phi$	3	7.8	—	15
575	3 $\phi$	3	5.8	—	15

\* 3-Wire is available.

4/20/07

<b>MD-170 Gas and Steam</b>					
ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)					
<p><b>IMPORTANT:</b> 208 VAC AND 230/240 VAC ARE NOT THE SAME. When ordering, specify exact voltage.</p> <p><b>NOTES:</b> A. When fuses are used they must be dual element, time delay, current limiting, class RK1 or RK5 ONLY. Calculate/determine correct fuse value, by applying either local and/or National Electrical Codes to listed appliance amp draw data.                      B. Circuit breakers are thermal-magnetic (industrial) motor curve type ONLY. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used.                      C. Circuit breakers for 3-phase (3<math>\phi</math>) dryers must be 3-pole type.</p>					
SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		CIRCUIT BREAKER
			60 Hz	50 Hz	
208	3 $\phi$	3	28.3	—	50
240	3 $\phi$	3	26.7	—	45
230	3 $\phi$	3	—	31.9	50
380	3 $\phi$	3	16.2	—	25
380 / 400	3 $\phi$	4*	—	16.1	25
416	3 $\phi$	4*	—	16.0	25
440	3 $\phi$	3	14.4	—	20
460 / 480	3 $\phi$	3	13.9	—	20
575	3 $\phi$	3	11.4	—	20

\* 3-Wire is available.

4/20/07

### 3. Grounding

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

For added personal safety, when possible, it is suggested that a separate ground wire (size per local codes) 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 nonmetallic interruptions, such as, a meter, pump, plastic, rubber, or other insulating connectors, they **must be** jumped out with a wire (size per local codes) and securely clamped to bare metal at both ends.

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

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

### 4. Electrical Connections

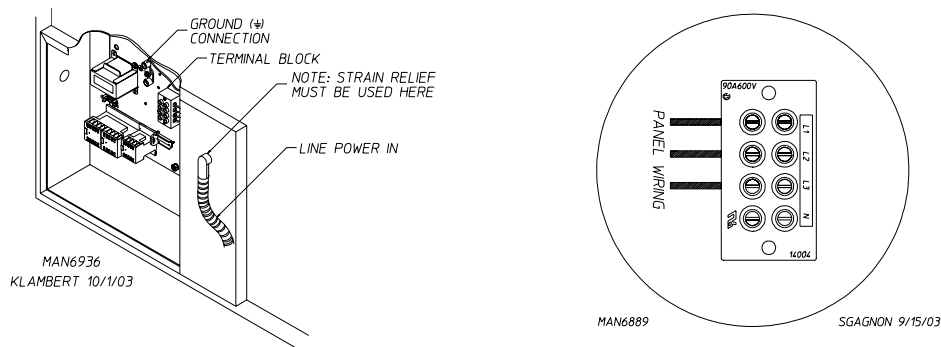
A wiring diagram is located inside the control box for connection data.

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.

#### 3-Phase (3 $\phi$ ) Wiring Connections/Hookup

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

The only electrical input connections to the dryer are the 3-phase (3 $\phi$ ) power leads (L1, L2, and L3), GROUND, and in the case of 4-wire service, the neutral. Providing local codes permit, power connections to the dryer can be made by the use of a flexible underwriters laboratory listed cord/pigtail (wire size **must conform** to rating of the dryer), or the dryer can be hard wired directly to the service breaker. In **ALL** cases, a strain relief **must be** used where the wire(s) enter the dryer electrical service (relay) box.



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

The neutral will only be used on 4-wire service. This is typical for 380-416V, 50 Hz.

## G. GAS INFORMATION

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

**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 shutoff 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 shutoff 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 VOIDING THE WARRANTY.

**WARNING: FIRE OR EXPLOSION COULD RESULT DUE TO FAILURE OF ISOLATING OR DISCONNECTING THE GAS SUPPLY AS NOTED.**

### 1. Gas Supply

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

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

The dryer **must be** connected to the type of heat/gas indicated on the dryer data label. If this information does not agree with the type of gas available, **DO NOT operate the dryer**. Contact the dealer who sold the dryer or contact the **Maytag Co.**

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

The input ratings shown on the dryer data label are for elevations up to 2,000 feet (609.6 meters), unless elevation requirements of over 2,000 feet (609.6 meters) were specified at the time the dryer order was placed with the factory. The adjustment or conversion of dryers in the field for elevations over 2,000 feet (609.6 meters) is made by changing each burner orifice. If this conversion is necessary, contact the dealer who sold the dryer or contact the **Maytag Co.**



## 2. Technical Gas Data

### a. Gas Specifications

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

Shaded areas are stated in metric equivalents

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

### b. Gas Connections

Inlet connection ----- 1" N.P.T.

Inlet supply size ----- 1" Diameter Pipe (minimum)

#### 1) Natural Gas

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

#### 2) Liquid Propane (L.P.) Gas

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

			<b>TYPE OF GAS</b>						Liquid Propane Conversion Kit Part Number
Model	Btu/hr Rating	kcal/hr Rating	Natural			Liquid Propane			
			Qty.	D.M.S.*	Part No.	Qty.	D.M.S.*	Part No.	
<b>MDG-120</b>	375,000	<b>94,500</b>	3	#4	140832	3	#30	140819	880886
<b>MDG-170</b>	550,000	<b>138,598</b>	4	#2	140839	4	#29	140820	880978

Shaded areas are stated in metric equivalents

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

Natural Gas ..... #4 = 0.2090" (5.3086 mm).  
 Liquid Propane Gas ..... #30 = 0.1285" (3.2639 mm).  
 Natural Gas ..... #2 = 0.2210" (5.6134 mm).  
 Liquid Propane Gas ..... #29 = 0.1360" (3.4544 mm).

### 3. Piping/Connections

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

The dryer is provided with a 1" N.P.T. inlet pipe connection extending out the back area of the burner box. The minimum pipe size connection (supply line) to the dryer is 1" diameter. For ease of servicing, the gas supply line of each dryer must have its own shutoff valve.

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

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

Consistent gas pressure is essential at **ALL** gas connections. It is recommended that a 1-inch (2.54 cm) pipe gas loop be installed in the supply line servicing 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 (29.9 mb) of water column pressure (W.C.).

**IMPORTANT:** A water column pressure of 3.5 inches (8.7 mb) for natural gas and 10.5 inches (26.1 mb) for L.P. dryers is required at the gas valve pressure tap of each dryer for proper and safe operation.

A 1/8" N.P.T. plugged tap, accessible for 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 and L.P. gases **must be** used.

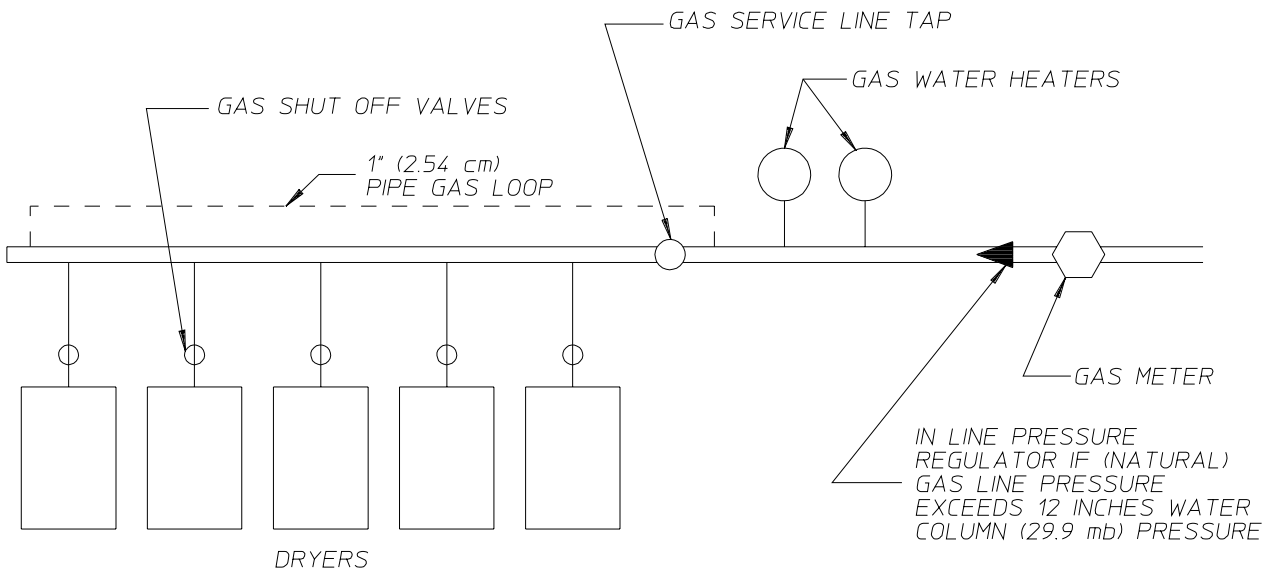
**IMPORTANT:** Test **ALL** connections for leaks by brushing on a soapy water solution (liquid detergent works well).

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

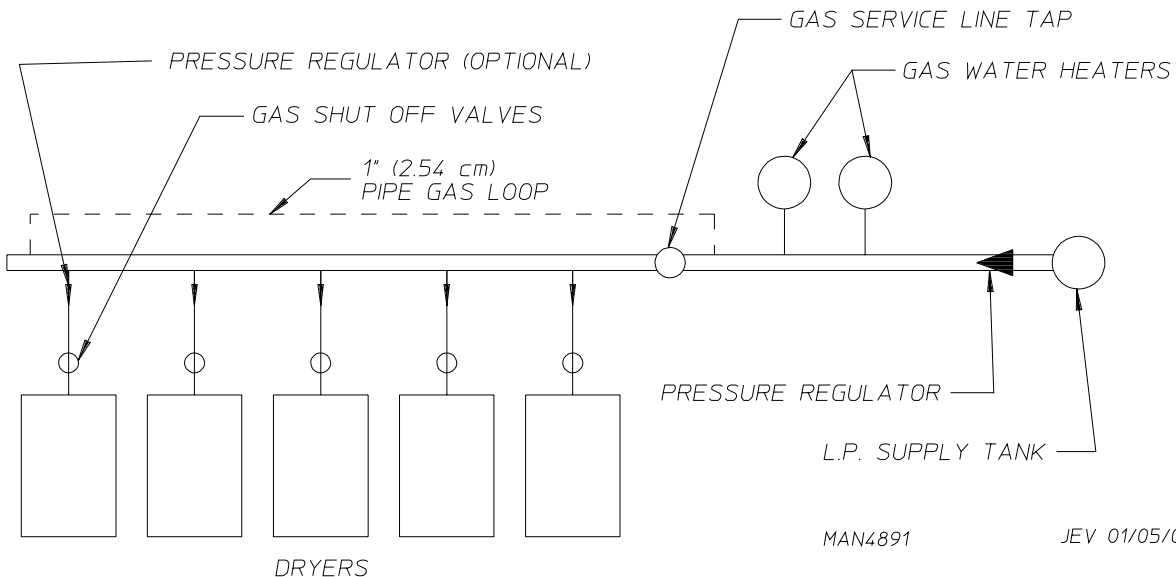
**IMPORTANT:** The dryer and its individual shutoff valve *must be* disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa).

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

TYPICAL NATURAL GAS INSTALLATION



TYPICAL L.P. GAS INSTALLATION



MAN4891

JEV 01/05/00

## H. 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. In case of 208 VAC or 230 VAC, the supply voltage must match the electric service **exactly**.
3. **GAS MODELS** – check to ensure that the dryer is connected to the type of heat/gas indicated on the dryer data label.
4. **GAS MODELS** – the sail switch damper assembly was installed and adjusted at the factory prior to shipping. However, each sail switch adjustment **must be** checked to ensure that this important safety control is functioning.
5. **GAS MODELS** – be sure that **ALL** gas shutoff valves are in the open position.
6. Be sure **ALL** back panels (guards) and electric box covers have been replaced.
7. Check **ALL** service doors to ensure that they are closed and secured in place.
8. Be sure lint drawer is securely in place.

**NOTE: LINT DRAWER *MUST BE* ALL THE WAY IN PLACE TO ACTIVATE SAFETY SWITCH OTHERWISE THE DRYER WILL NOT START.**

9. Rotate the basket (tumbler) by hand to be sure it moves freely.
10. Check bolts, nuts, screws, terminals, and fittings for security.
11. **GAS MODELS AND STEAM MODELS** – check to ensure air supply (80 psi [5.51 bar]) is connected to the dryer.
12. **STEAM MODELS** – check to ensure **ALL** steam shutoff valves are open.
13. **STEAM MODELS** – check steam damper operation.
14. Check basket (tumbler) bearing setscrews to ensure they are **ALL** tight.

## I. PREOPERATIONAL TEST

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

1. To start the dryer:
  - a. Microprocessor Controller (Computer) Dryers (refer to user's manual included with dryer)
2. Check to ensure that the basket (tumbler) starts in the clockwise (CW) direction. Additionally, check the direction of the blower motor (impellor/fan) to ensure that blower motor (impellor/fan) rotates in the clockwise (CW) direction as viewed from the front. If it is, the phasing is correct. If the phasing is incorrect, reverse two (2) of the leads at L1, L2, or L3 of the power supply connections made to the dryer.

**IMPORTANT:** Dryer blower motor (impellor/fan) as viewed from the front must turn in the clockwise (CW) direction, otherwise dryer efficiency **will be** drastically reduced and premature component failure can result.

3. Heat Circuit Operational Test
  - a. Gas Models
    - 1) When the dryer is first started (during initial start-up), the burner has a tendency not to ignite on the first attempt. This is because the gas supply piping is filled with air, so it may take a few minutes for this air to be purged.
    - 2) The dryer is equipped with a Direct Spark Ignition (DSI) system, which has internal diagnostics. If ignition is not established after the first attempt, the heat circuit DSI module will "LOCKOUT" until it is manually reset. To reset the DSI system, open and close main door and restart dryer.

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

- 3) Once ignition is established, a gas pressure test **should be** taken at the gas valve pressure tap of each dryer to ensure that the water column (W.C.) pressure is correct and consistent.

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

Natural Gas ----- 3.5 inches (8.7 mb) water column.  
Liquid Propane (L.P.) Gas ----- 10.5 inches (26.1 mb) water column.

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

### b. Steam Models

Check to ensure that the steam damper is functioning properly.

The steam damper should not “slam” (open or closed) when it reaches the end of (piston) travel. Additionally, the steam damper should not bind and/or stop during travel. If either of these conditions occur, the flow control **must be** adjusted. Refer to the **bottom illustration on page 34** for air adjustment instructions.

4. Make a complete operational check of **ALL** safety-related circuits (i.e., lint drawer switch and sail switch on gas models).

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

5. Reversing basket (tumbler) dryers should never be operated with less than a 85 lb (38 kg) load (dry weight), since the load’s weight affects basket (tumbler) coast time during a direction reversal command. It is important that the basket (tumbler) come to a complete stop prior to starting in opposite direction.

- a. Microprocessor Controller (Computer) Dryer Models

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

- b. Dual Timer Dryer Models:

Spin and dwell (stop) times are adjustable at the reversing timer.

### BASKET (TUMBLER) COATING

The basket (tumbler) is treated with a protective coating. It is suggested to dampen old garments or cloth material with a solution of water and nonflammable mild detergent and tumble them in the basket (tumbler) to remove this coating.

6. Each dryer **should be** operated through one complete cycle to ensure that no further adjustments are necessary and that **ALL** components are functioning properly.
7. Make a complete operational check of **ALL** operating controls.

- a. Microprocessor Controller (Computer) Programs and Selections:

Each microprocessor controller (computer) has been preprogrammed by the factory with the most commonly used parameter (program) selections. If computer program changes are required, refer to the computer programming manual, which was shipped with the dryer.

- b. Dual Timer Dryer Models Check:

- 1) Heating Timer
- 2) Cool Down Timer
- 3) Temperature Selection Functions

## J. SHUTDOWN INSTRUCTIONS

If the dryer is to be shutdown (taken out of service) for a period of time, the following **must be** performed:

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

## K. OPERATING INSTRUCTIONS

**NOTE:** Before attempting to start the dryer make sure that the main door is closed and the lint drawer is securely in place.

1. To start the dryer:
  - a. Microprocessor Controller (Computer) Dryers (refer to user's manual included with dryer).
  - b. Dual Timer Dryer Models:
    - 1) Select drying time and cool down time desired.
      - a) Turn heat timer clockwise (CW) to desired time (i.e., 1 minute to 60 minutes).
      - b) Turn cool down timer clockwise (CW) to desired time (i.e., 0 minutes to 15 minutes).
    - 2) Select drying temperature.
    - 3) Push "Start" button.  
  
Dryer will now start.
- 4) To stop dryer, open the main door.

## L. COMPRESSED AIR REQUIREMENTS (MD-170 Only)

The MD-170 model dryer requires an external supply of compressed air of 2.5 cfm at 80 psi (552 kPa). For steam models, compressed air is necessary for the air operated steam damper. On both the steam model as well as the gas model, compressed air is necessary/required for blower air jet operation, to clean lint from the impellor/fan (squirrel cage).

### 1. Air Requirements

Compressed Air Supply	Air Pressure	
Normal	80 psi	<b>5.51 bar</b>
Minimum Supply	70 psi	<b>4.82 bar</b>
Maximum Supply	90 psi	<b>6.21 bar</b>

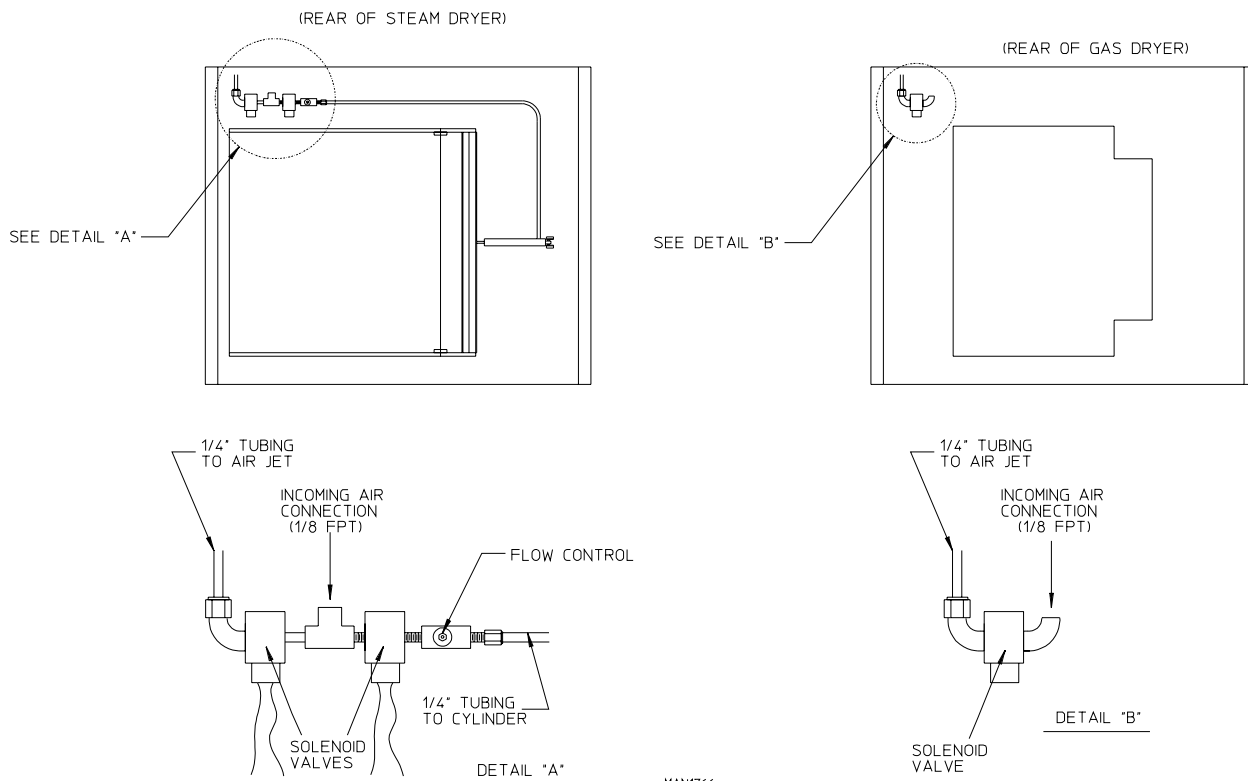
Shaded areas are stated in metric equivalents

### 2. Air Regulation

- a. No air regulation or filtration is provided with the dryer. External regulation/filtration of 80 psi (552 kPa) **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 ensure that correct and clean air pressure is achieved.

### 3. Air Connection

- a. Air connection to this system is a 1/8-inch F.P.T. (refer to the **illustration below**).





## M. STEAM INFORMATION (MD-170 Only)

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

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

**NOTE:** The dryer is manufactured with a pneumatic (piston) damper system, which requires an external supply of clean, dry, regulated air (80 psi  $\pm$  10 psi [5.51 bar  $\pm$  0.68 bar]). Refer to **Steam Damper Air System Connections, Section M, item 4**.

### 1. Steam Coil pH Level

The normal pH level for copper type steam coils **must be** maintained between a value of 8.5 to 9.5. For steel type steam coils the pH level **must be** maintained between a value of 9.5 to 10.5. These limits are set to limit the acid attack of the steam coils.

**IMPORTANT:** Coil failure due to improper pH level will VOID THE WARRANTY.

### 2. Steam Requirements – High Pressure

Inlet ----- 1-1/2" supply line connection -- qty. one (1) at top manifold.

Return --- 1-1/2" return line connection --- qty. one (1) at bottom manifold.

Operating Steam Pressure		
Maximum	125 psig*	862 kPa
Heat Input (Normal Load)	19 Bhp	
Consumption (Approximate)	725 lb/hr	328.85 kg/hr

Shaded areas are stated in metric equivalents

\* The minimum operating pressure for optimum results is 100 psig (689.47 kPa).

### 3. Installation Instructions

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

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

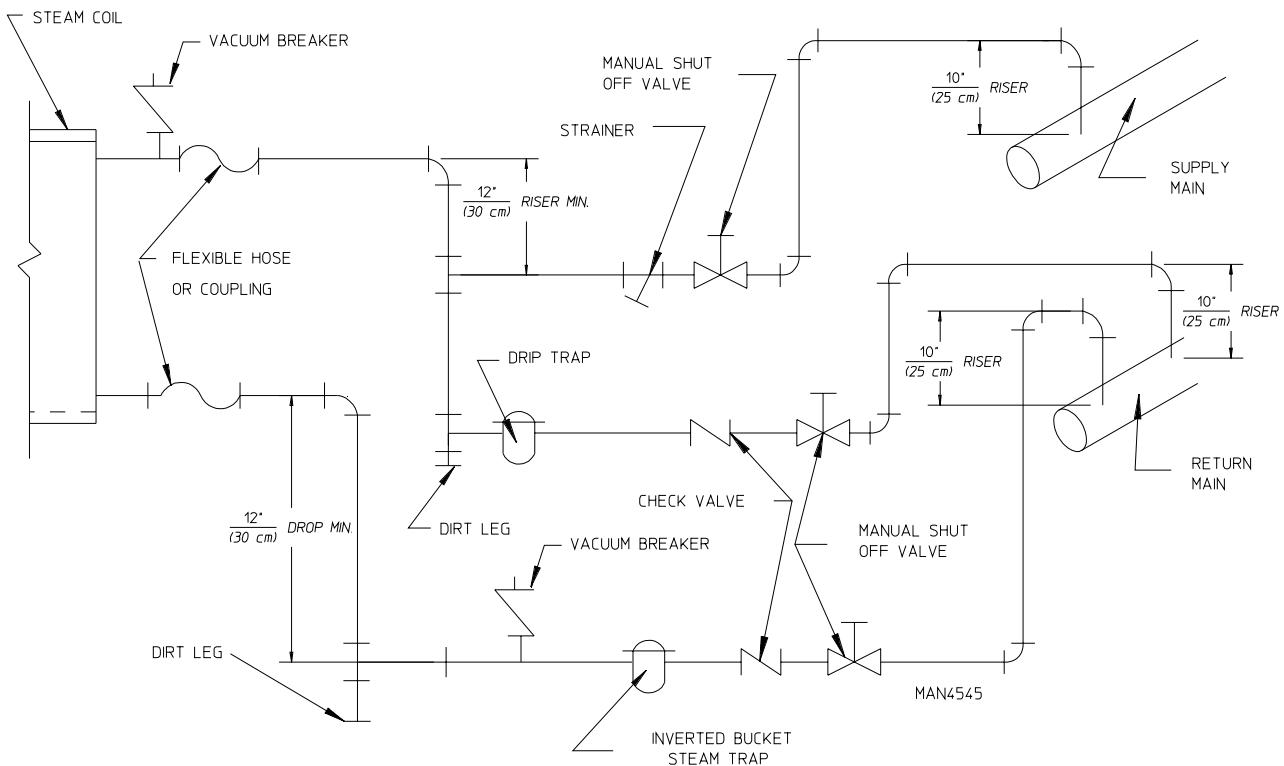
- a. The pressure of the condensate in the steam supply line will cause water hammer and subsequent heat exchanger (steam coil) failure. The steam supply connection into the main supply line **must be** made with a minimum 10-inch (25.4 cm) riser. This will prevent any condensate from draining towards the dryer.

- b. The steam supply line to the dryer must include a 12-inch (30.48 cm) riser along with a drip trap and check valve. This will prevent any condensate from entering the steam coil.
- c. Flexible hoses or couplings **must be** used. The dryer vibrates slightly when it runs and this will cause the steam coil connections to crack if they are hard piped to the supply and return mains.
- d. Shutoff valves for each dryer **should be** installed in the supply line, return line, and drip trap return line. This will allow the dryer to be isolated from the supply main and the return main if the dryer needs maintenance work.
- e. Install an inverted bucket steam trap and check valve at least 12-inches (30.48 cm) below the steam coil as close to the coil as possible.

An inverted bucket steam trap with a capacity of 2,000 lb (907.18 kg) of condensate per hour @ 125 psi (8.62 bar) is required for each dryer.

- f. A 3/4-inch (19.05 mm) vacuum breaker **should be** installed. This will save energy and provide for the safety of the operator and maintenance personnel.
- g. Water pockets in the supply line, caused by low points, will provide wet steam to the coil possibly causing steam coil damage. **ALL** horizontal runs of steam supply piping **should be** pitched 1/4-inch (6.35 mm) for every one foot (0.30 meters) back towards the steam supply header causing the condensate in the line to drain to the header. Install a bypass trap in any low point to eliminate wet steam.

## STEAM DAMPER SYSTEM



#### 4. Steam Damper Air System Connections

The dryer is manufactured with a pneumatic (piston) damper system, which requires an external supply of compressed air. The air connection is made to the steam damper solenoid valve, which is located at the rear inner top area of the dryer just in front of the electric service relay box. (Refer to the **bottom illustration** on **page 34**.)

##### a. Air Requirements

Compressed Air Supply	Air Pressure	
	Normal	80 psi
Minimum Supply	70 psi	4.82 bar
Maximum Supply	90 psi	6.21 bar

Shaded areas are stated in metric equivalents

##### b. Air Connection

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

- c. No air regulator or filtration is provided with the dryer. External regulation/filtration of 80 psi (5.51 bar) **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 ensure that correct and clean air pressure is achieved.

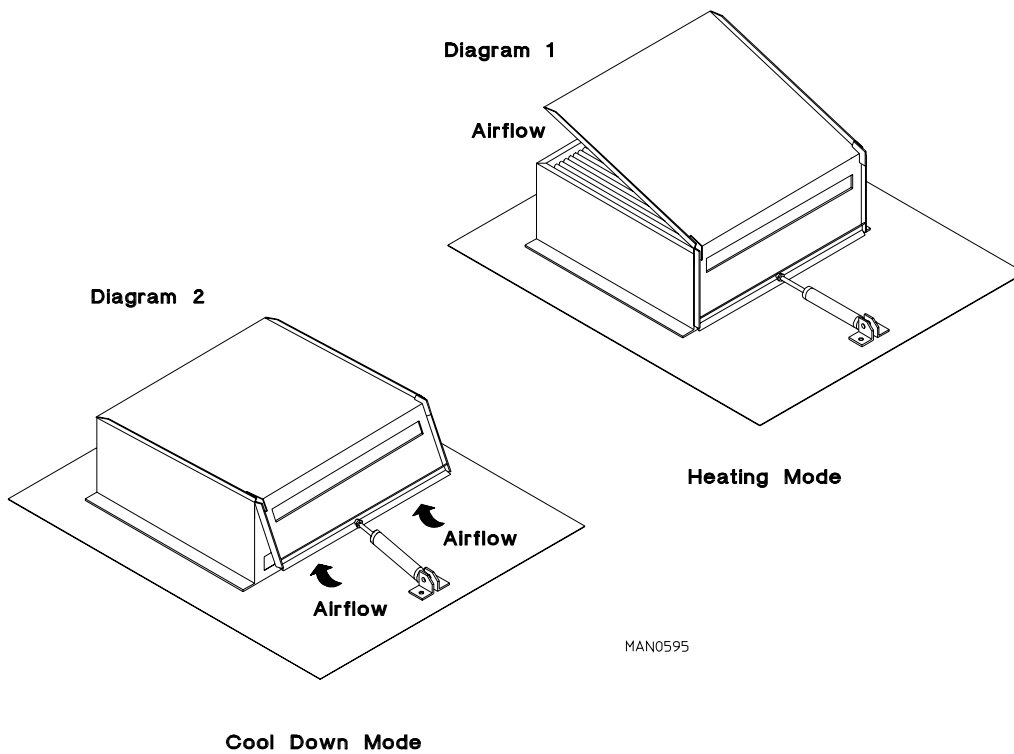
#### 5. Steam Damper System Operation

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

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

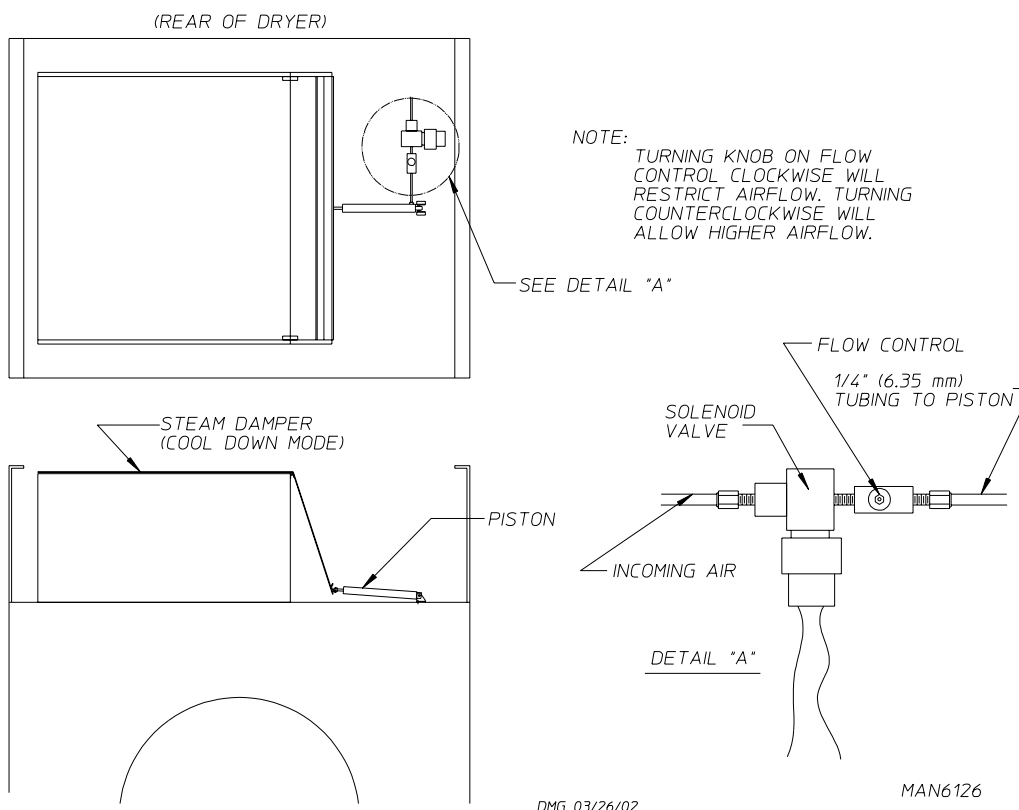
**Diagram 2** shows the damper in the cool down (closed) mode, pulling ambient air directly into the basket (tumbler) without passing through the coils.

**NOTE:** With the dryer off or with no air supply, the steam damper is in cool down mode as shown in **Diagram 2** at the top of **page 34**.



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

Although the steam damper operation was tested and adjusted prior to shipping at 80 psi (5.51 bar), steam damper operation **must be** checked before the dryer is put into operation. Refer to the **illustration above** for correct steam damper operation. If steam damper adjustment is necessary, locate the flow control valve and make the necessary adjustments as noted below.



# SECTION IV

## SERVICE/PARTS INFORMATION

### A. SERVICE

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

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

### B. PARTS

Replacement parts **should be** purchased from the dealer from whom the **Maytag** equipment was purchased. If the **Maytag** dealer **cannot** be contacted or is unknown, contact the **Maytag Co.** for a dealer in your area.

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

# SECTION V

## WARRANTY INFORMATION

### A. RETURNING WARRANTY CARDS

Before any dryer leaves the manufacturer's test area, a warranty card is placed on the back side of the main door glass. These warranty cards are intended to serve the customer where we record the individual installation date and warranty information to better serve you should you file a warranty claim.

**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 manufacturer's commercial warranty covering your particular dryer(s), contact the **Maytag** dealer from whom you purchased the equipment and request a dryer warranty form. If the dealer **cannot** be contacted or is unknown, warranty information can be obtained from the **Maytag Co.**

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

# SECTION VI

## ROUTINE MAINTENANCE

### A. CLEANING

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

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

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

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

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

***CLEAN THE LINT DRAWER/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. Suggest using compressed air and a vacuum cleaner with brush attachment.

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

## ***90 DAYS***

Remove lint from around basket (tumbler), drive motors, and surrounding areas. Remove lint from gas valve burner area with a dusting brush or vacuum cleaner attachment.

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

Remove lint accumulation from inside control box and at the rear area behind control box.

## ***6 MONTHS***

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

Blower motor (impellor/fan) belts and drive belts **should be** examined. Cracked and/or seriously frayed belts **should be** replaced. Tighten belts when necessary.

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

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

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

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



## B. ADJUSTMENTS

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

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

<p><b>NOTE:</b> Squirrel cage type fan (impellor) on the blower motor <b>must be</b> inspected and cleaned every 6 months.</p>
--

## C. LUBRICATION

The motor bearings and under normal/most conditions the basket (tumbler) and idler bearings are permanently lubricated. It is physically possible to relubricate the basket (tumbler) and idler bearings if you choose to do so even though this practice is not necessary. Use Shell Alvania #2 or its equivalent. The basket (tumbler) and idler bearings used in the dryer **DO NOT** have a grease fitting. Provisions are made in the bearing housing for the addition of a grease fitting, which can be obtained elsewhere, or from the **Maytag** dealer by ordering kit part number 882159 (basket [tumbler] ONLY), which includes two (2) fittings.

# SECTION VII

## MANUAL RESET BURNER HI-LIMIT INSTRUCTIONS

### A. PHASE 7

This dryer was manufactured with a manual reset burner hi-limit thermostat, which is monitored by the Phase 7 computer. If the burner hi-limit is open prior to the start of the drying cycle, the dryer will start momentarily and then shut down, the Phase 7 computer will display “burner HIGH LIMIT fault” with an audio indication.

If the burner hi-limit opens during a drying cycle, the Phase 7 computer will also display the same error code described above, along with an audio indication. If the drum temperature is above 100° F (38° C), the dryer will continue to run with no heat for 3 minutes or until the drum temperature has dropped below 100° F (38° C). The clear/stop button on the Phase 7 keypad **must be** pressed to clear the error condition. The open burner hi-limit **must be** reset “manually” prior to the start of the next cycle.

### B. DUAL TIMER

This dryer was manufactured with a manual reset burner hi-limit thermostat. If the burner hi-limit is open prior to the start of the drying cycle, or during the cycle, the dryer will not recognize the open state of the burner hi-limit and will start or continue through the drying cycle with no heat. Manual reset hi-limit **must be** reset manually.

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

The location of the burner hi-limit is on the right side of the burner box, looking at the burner from the back of the dryer.

**WARNING:** Discontinue power to dryer before attempting to reset hi-limit.

#### IMPORTANT IMPORTANT IMPORTANTE

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

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

L'ÉLÉMENT CHAUFFANT EST ÉQUIPÉ D'UN THERMOSTAT À LIMITE MAXIMALE QUI *DOIT ÊTRE RÉGLÉ MANUELLEMENT.*

MISE EN GARDE - COUPER LE COURANT D' ALIMENTATION DU SÈCHE-LINGE AVANT DE RÉGLER LA LIMITE MAXIMALE.

LA UNIDAD DE CALENTAMIENTO ESTÁ EQUIPADA CON UN TERMOSTATO DE LÍMITE SUPERIOR *QUE DEBE REINICIARSE MANUALMENTE.*

ADVERTENCIA - DESCONECTE LA ALIMENTACIÓN ELÉCTRICA A LA SECADORA ANTES DE REINICIAR EL LÍMITE SUPERIOR.

ADC P/N: 114076

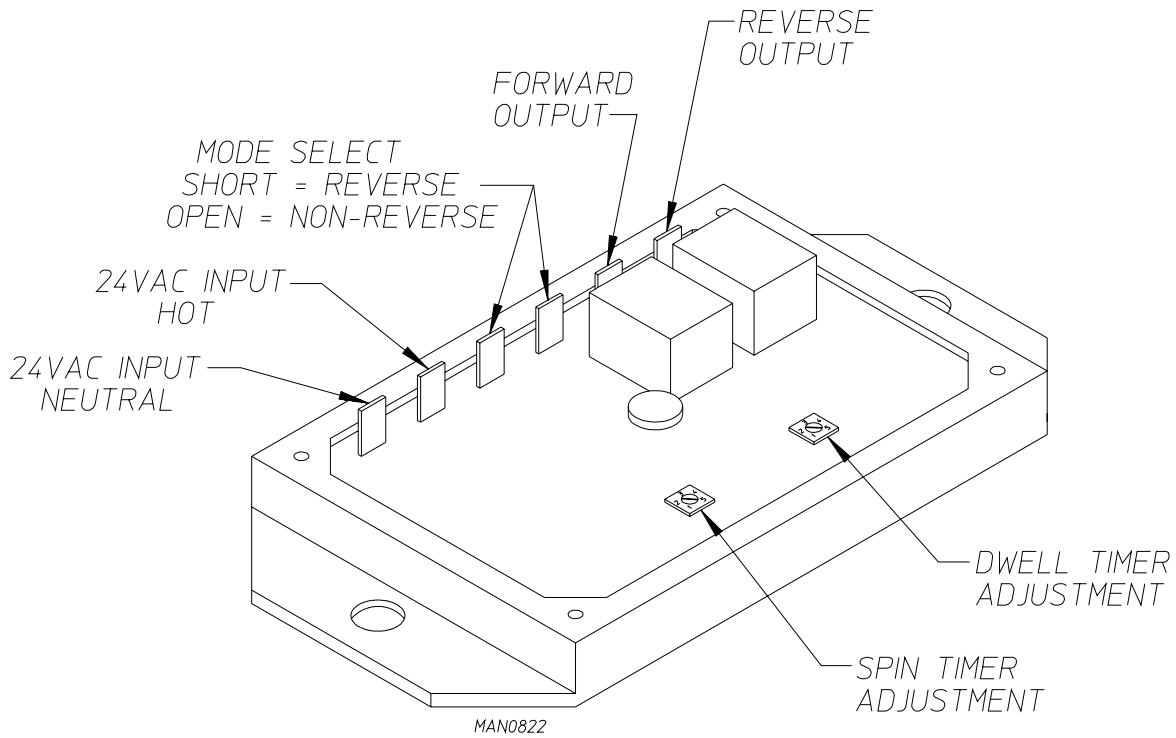


# SECTION IX

## REVERSING TIMER SPIN/DWELL ADJUSTMENTS

Timer models have an electric reversing timer in the electric service box, which is located in the upper left 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 (refer to the **illustration below**).



<b>TIMING LEGEND</b>					
<b>SPIN TIME</b>					
Adjustment Position Number	1	2	3	4	5
Time in Seconds*	30	60	90	120	150
<b>DWELL (STOP) TIME</b>					
Adjustment Position Number	1	2	3	4	5
Time in Seconds*	5	6.3	7.6	8.9	10.2
* Values shown are +/- 1-second.					

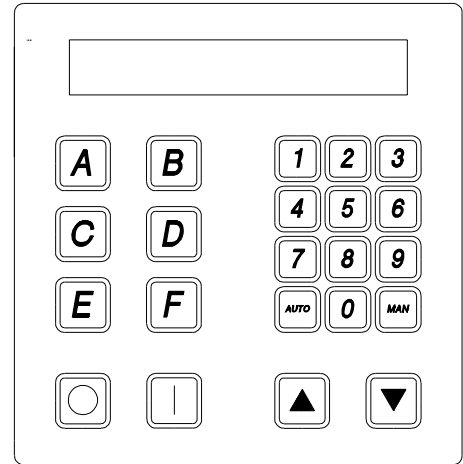
# SECTION X

## PROCEDURE FOR FUNCTIONAL CHECK OF REPLACEMENT COMPONENTS

### 1. Microprocessor Controller (Computer) Board

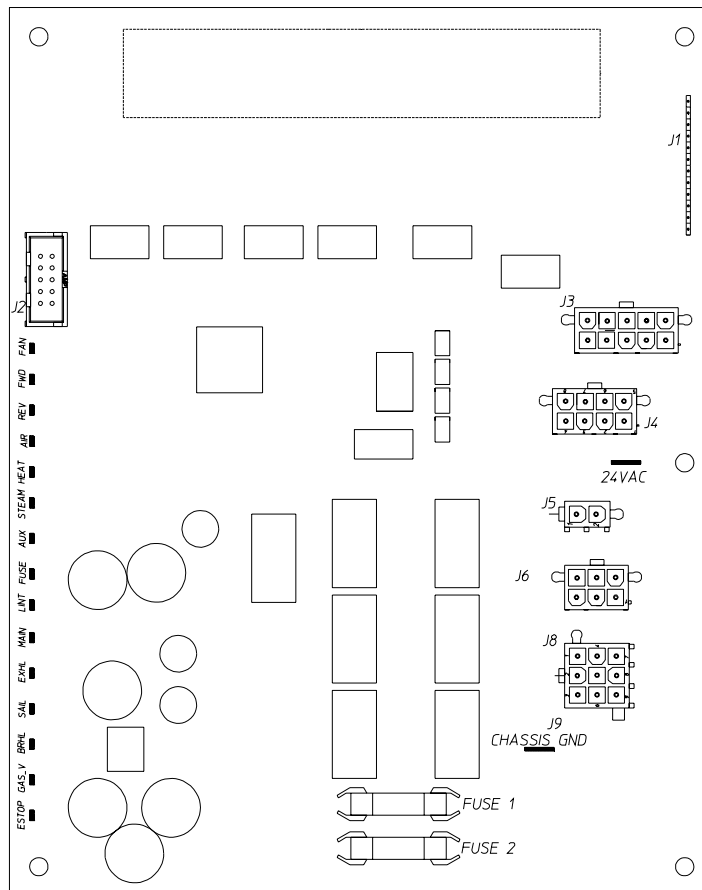
#### a. Phase 7 Non-Coin Models

- 1) Upon completing installation of the replacement microprocessor controller (computer) board, reestablish power to the dryer.
- 2) Start the drying cycle by pressing any of the preset cycles in letters A-F.
- 3) Verify that the applicable indicator lights on the microprocessor controller (computer) board are lit. (Refer to the **illustration below.**)



MC 8/02/01

MAN5846

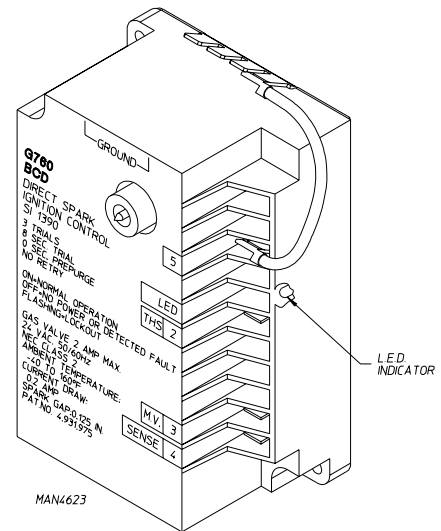


MAN5825

2. For Models with Direct Spark Ignition (DSI) Module (Type I)

Theory of Operation:

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



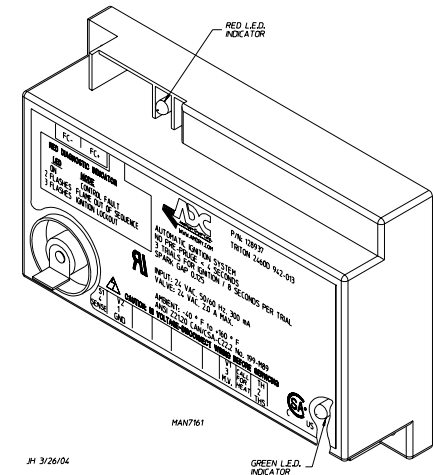
A steady L.E.D. indicator indicates normal operation.

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

3. For Models with DSI Module (Type II)

Theory of Operation:

Start the drying cycle. When the gas burner ignites within the chosen trial for ignition time (8-seconds), the flame sensor detects gas burner flame and signals the DSI module to keep the gas valve open as long as there is a call for heat. The DSI module will “LOCKOUT” if the gas burner flame is not sensed at the end of the trial for ignition period. The trial for ignition period will be repeated for a total of three (3) retries/trials (the initial try and two [2] more retries/trials). If the flame is not sensed at the end of the third retry/trial (inter-purge period of 30-seconds), the DSI module will “LOCKOUT” (a red L.E.D. diagnostic indicator will flash).



An unlit red L.E.D. diagnostic indicator indicates normal operation.

A lit green L.E.D. diagnostic indicator indicates dryer controller is calling for heat and that **ALL** interlocks have been satisfied.

# SECTION XI

## SENSOR ACTIVATED FIRE EXTINGUISHING (S.A.F.E.) SYSTEM

### (MICROPROCESSOR MODELS ONLY)

The exclusive fire suppression system will extinguish fires that may start in the drying basket (tumbler). A series of sensors positioned throughout the basket (tumbler) and interfaced with the microprocessor controller (computer) will trigger the fire suppression system water jet(s) to extinguish the flames quickly. The water jet(s) remain on for 2 minutes and will automatically activate again if a fire condition remains or reignites. While the water jet(s) are activated, the basket (tumbler) will jog to move the water throughout the load. Until the dryer is attended to, the microprocessor controller (computer) will display that the system was activated.

#### **BEFORE YOU START! CHECK LOCAL CODES AND PERMITS**

Call your local water company or the proper municipal authority for information regarding local codes.

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

**IMPORTANT:** It is the installer's or owner's responsibility to see that the necessary or required water, water pressure, pipe size, or connections are provided. The manufacturer assumes no responsibility if the fire suppression system **is not** connected, installed, or maintained properly.

### INSTALLATION

#### 1. Requirements

The fire suppression system **must be** supplied with a minimum water pipe size of 1/2" and be provided with 40 psi +/- 20 psi (2.75 bar +/- 1.37 bar) of pressure. For use of optional manual bypass, a second source with the same piping and pressure requirements is required.

Flexible 1/2 feeds **must be** provided to avoid damage to electric water solenoid valve by vibration.

**IMPORTANT:** Flexible supply line/coupling **must be** used. Solenoid valve failure due to hard plumbing connections **WILL VOID WARRANTY**.

If the rear area of the dryer or the water supply is located in an area where it will be exposed to cold/freezing temperatures, provisions **must be** made to protect these water lines from freezing.

**WARNING:** If the water in the supply line or water solenoid valve freezes, the fire suppression system **will be** INOPERATIVE!!

**IMPORTANT:** Appliance is to be connected to the water mains using a new hose set and the old hose set **should not be** reused.

## 2. Water Connections:

The water connection is made to the 3/4"-11.5 NH hose adapter of the electric water solenoid valve, located at the rear upper midsection of the dryer (refer to the photograph).

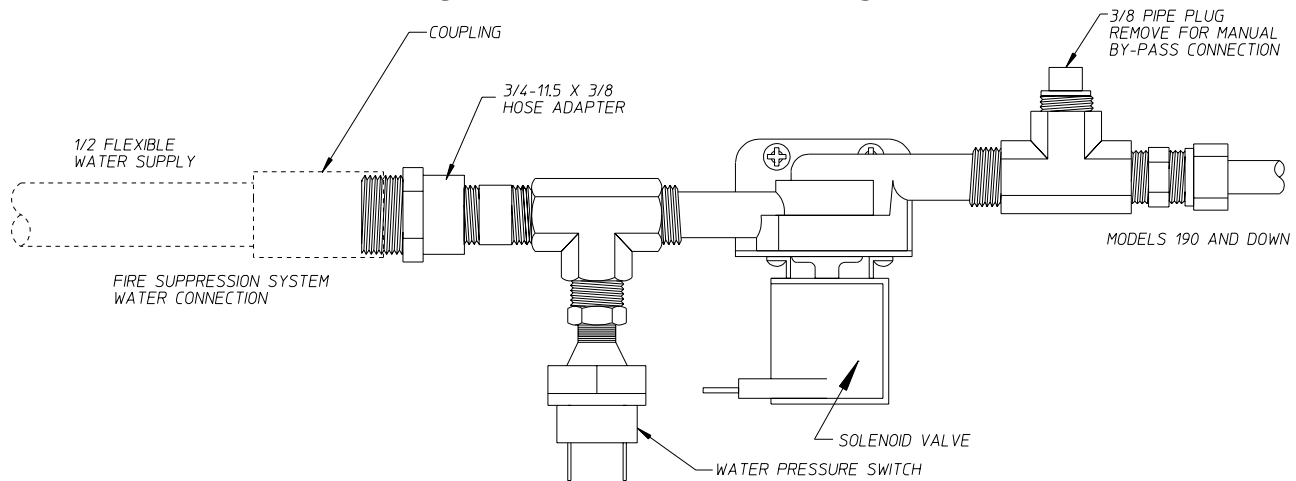
The water solenoid valve has a 3/8" M.P.T. connection supplied with a 3/4"-11.5 NH hose adapter to provide the minimum 1/2-inch supply (feed) line. Flexible supply line/coupling **must be** used in an effort to avoid damaging the electric water solenoid valve.



**NOTE:** The 3/4"-11.5 NH is a standard hose coupling screw thread. It **is not** to be confused with 3/4" N.P.T. The sealing of an NH connection is made with a washer opposed to the mating threads of an N.P.T. assembly. The two (2) thread designs **are not** compatible.

**IMPORTANT:** Flexible supply line/coupling **must be** used. Solenoid valve failure due to hard plumbing connections **WILL VOID WARRANTY**. It is **recommended** that a filter or strainer be installed in the water supply line.

## Typical Water Supply



MG 12/3/03

MAN7032

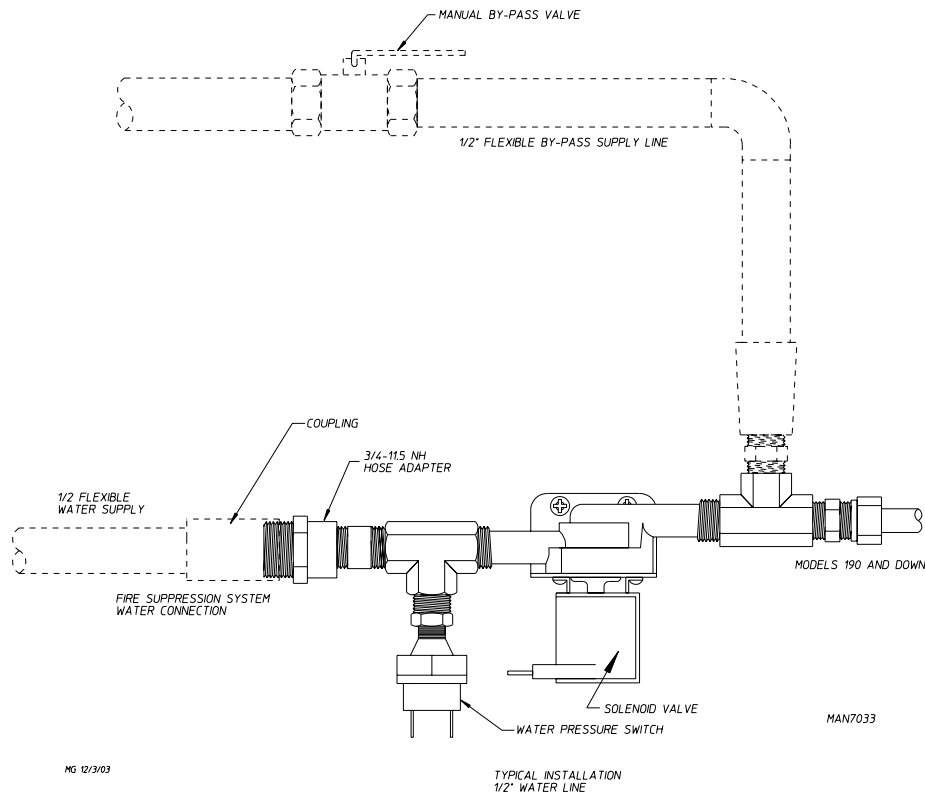
## OPTIONAL MANUAL BYPASS

Provisions are made in the dryer's fire suppression system for the installation of an optional manual bypass. Depending on the model dryer, the connections for the manual bypass are made at the "T" or "three way" fitting located in the outlet supply side of the water solenoid valve. The use and connections of this manual bypass are at the option or discretion of the owner.

The water connection for the manual bypass is made to the "T" or "three way" fitting, which has a 3/8" F.P.T. and a coupling **must be** used to provide the minimum 1/2" supply (feed) line.

If the rear area of the dryer or the water supply is located in an area where it will be exposed to cold/freezing temperatures, provisions **must be** made to protect these water lines from freezing.





**WARNING:** If the water in the supply line or water solenoid valve freezes, the fire suppression system **will be** INOPERATIVE!!

The manual ball cock shutoff valve **must be** located outside of the dryer at a distance from the dryer where it is easily accessible.

3. Electrical Requirements

No independent external power source or supply connection is necessary. The 24-volt power to operate the fire suppression system is accomplished internally in the dryer (from the dryer controls).

**WARNING:** Electrical power **must be** provided to the dryer at **ALL** times. If the main electrical power supply to the dryer is disconnected, the fire suppression system is INOPERATIVE!!

FIRE SUPPRESSION SYSTEM THEORY OF OPERATION

While the dryer is in an idle state, or 20-seconds after the heat turns off, the microprocessor controller (computer) monitors the thermistor probe, located in the top of the basket (tumbler) chamber, and records the minimum temperature. If the minimum recorded thermistor probe temperature is greater than 120° F (48° C) and the microprocessor controller (computer) detects a 50° rise in temperature, this will be the trip point and the fire suppression system routine will activate.

While a drying cycle is in process and the heat has turned on at least once, the microprocessor controller (computer) monitors the exhaust temperature transducer. If the drying cycle temperature set point is set greater than 160° F (71° C) and the microprocessor controller (computer) detects an exhaust temperature rise 25° F greater than set point, this will be the trip point and the fire suppression system routine will activate. If set point is below 160° F (71° C), the trip point will be 185° F (85° C).

Once the fire suppression system routine is activated, the microprocessor controller (computer) will display “S.A.F.E. SYSTEM ACTIVATED” and water will be injected into the basket (tumbler) chamber. Any time water is being injected into the basket (tumbler), the basket (tumbler) drive will turn the load for 1-second every 15-seconds. This process will continue for a minimum of 2 minutes. After the 2 minutes have elapsed, the microprocessor controller (computer) will check if the temperature remained above trip point; if so, the water will remain on. The microprocessor controller (computer) will continue to check if the temperature is above trip point every 30-seconds. If the water has been on for a constant 10 minutes, the water will be turned off, regardless of the temperature, and the microprocessor controller (computer) will display “S.A.F.E. SYSTEM WAS ACTIVATED”. If the temperature has dropped below trip point, the microprocessor controller (computer) will turn off the water prior to 10 minutes.

## SYSTEM RESET

After the microprocessor controller (computer) determines that the situation is under control and shuts the water being injected into the basket (tumbler) off, the microprocessor controller (computer) display will read, “S.A.F.E. SYSTEM WAS ACTIVATED”, and the horn/tone will sound until reset manually.

To reset the microprocessor controller (computer) once the microprocessor controller (computer) displays, “S.A.F.E. SYSTEM WAS ACTIVATED”, press the red “STOP/CLEAR” key on the keypad.

## FIRE SUPPRESSION SYSTEM WATER VALVE CHECK

The operation of the water solenoid valve can be tested to ensure that the water supply system and valve are functional. Before attempting a system check, be sure that ALL water supply shutoff valves to the dryer are in the OPEN position, the dryer **must be** in the “READY” Mode with no cycle loaded or in progress.

1. Press and hold the red “STOP/CLEAR” key (while in “READY” Mode and no cycle is in progress).
2. Press and hold the “A” key.
3. Water valve will open and water will be dispensed into basket (tumbler) area as long as both keys are held.

The microprocessor controller (computer) will prompt the user to perform a fire suppression system valve check at every 4000 hours to ensure proper functionality. At the 4000 hour mark, the microprocessor controller (computer) will wait for end of the cycle and then will prompt the user to “PLEASE EMPTY TUMBLER, THEN PRESS THE ‘STOP/CLEAR’ AND ‘A’ KEYS TO TEST THE WATER VALVE”. When the ‘STOP/CLEAR’ and ‘A’ keys are pressed, the microprocessor controller (computer) will activate the fire suppression system water valve for 2-seconds, at which point the microprocessor controller (computer) will prompt the user with the following message, “IF WATER DID NOT TURN ON, CALL FOR SERVICE. THANK YOU.”

**NOTE:** The microprocessor controller (computer) **will not** let the user continue until the valve test has been completed.

## FIRE SUPPRESSION SYSTEM DIAGNOSTICS

In the event that the non-coin microprocessor controller (computer) detects a fault in the fire suppression system, the non-coin microprocessor controller (computer) will display the message, “S.A.F.E. SYSTEM DISABLED...READY”. To find out why the fire suppression system is disabling, press and hold the red “STOP/CLEAR” and green “START” keys. This will cause the microprocessor controller (computer) to display a diagnostic message, as detailed in the “Fire Suppression System Diagnostics Messages” section.

## FIRE SUPPRESSION SYSTEM DIAGNOSTICS MESSAGES

**OPEN THERMISTOR PROBE** – This message indicates that the fire suppression system thermistor probe either is not connected or is damaged. If this condition is detected, the microprocessor controller (computer) will immediately enter S.A.F.E. SYSTEM DISABLED Mode.

**SHORTED THERMISTOR PROBE** – This message indicates that the fire suppression system thermistor probe is damaged or the wiring is shorted. If this condition is detected, the microprocessor controller (computer) will immediately enter S.A.F.E. SYSTEM DISABLED Mode.

**DISCONNECTED WATER VALVE** – This message indicates that the water valve is open or that it is not connected to the microprocessor controller (computer). If this condition is detected, the microprocessor controller (computer) will continue to monitor the condition for a period of 5 minutes before entering S.A.F.E. SYSTEM DISABLED Mode. Once the condition is corrected, the microprocessor controller (computer) will continue to monitor the condition for 1 minute before exiting S.A.F.E. SYSTEM DISABLED Mode.

**SHORTED WATER VALVE** – This message indicates that the water valve is shorted or that the wiring to the valve is shorted. If this condition is detected, the microprocessor controller (computer) will continue to monitor the condition for a period of 5 minutes before entering S.A.F.E. SYSTEM DISABLED Mode. Once the condition is corrected, the microprocessor controller (computer) will continue to monitor the condition for 1 minute before exiting S.A.F.E. SYSTEM DISABLED Mode.

**WATER NOT CONNECTED** – This indicates that there is no water pressure at the water valve. This will occur if water is not connected to the dryer, or if there is low water pressure in the water line coming to the dryer. This could also signify a defective pressure switch or defective wiring to the pressure switch. If this condition is detected, the microprocessor controller (computer) will continue to monitor the condition for a period of 5 minutes before entering S.A.F.E. SYSTEM DISABLED Mode. Once the condition is corrected, the microprocessor controller (computer) will continue to monitor the condition for 1 minute before exiting S.A.F.E. SYSTEM DISABLED Mode.

## STARTING A CYCLE WHEN MICROPROCESSOR CONTROLLER (COMPUTER) IS IN “S.A.F.E. SYSTEM IS DISABLED” MODE

When the fire suppression system is disabled, the user can still start a cycle. However, when a cycle is started, the non-coin microprocessor controller (computer) will display the following message, “S.A.F.E. SYSTEM IS DISABLED. PRESS ‘START’ TO CONTINUE”. This message will be displayed every time a cycle is started, until the disabling condition has been corrected.

