

AD-330/AD-320

Dual Microprocessor Controller (DMC) Gas - Electric - Steam Phase 7

Installation Manual

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

— Do not store or use gasoline or other flammable 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.



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

American Dryer Corporation

88 Currant Road

Fall River MA 02720-4781

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

e-mail: techsupport@amdry.com

www.amdry.com

Retain This Manual In A Safe Place For Future Reference

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

ONLY qualified technicians should service this equipment.

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

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

FOR YOUR SAFETY

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

POUR VOTRE SÉCURITÉ

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

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

Important

For your convenience, log the following information:

DATE OF PURCHASE _____ **MODEL NO.** _____

RESELLER'S NAME _____

Serial Number(s) _____

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

“IMPORTANT NOTE TO PURCHASER”

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

IMPORTANT

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

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

«Attention: 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 DRYERS.
CHILDREN SHOULD BE SUPERVISED IF NEAR DRYERS IN OPERATION.**

FOR YOUR SAFETY

DO NOT DRY MOP HEADS IN THE DRYER.

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

WARNING

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

WARNING

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 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.

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SECTION I

IMPORTANT INFORMATION

A. RECEIVING AND HANDLING

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

Dryers damaged in shipment:

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

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

B. SAFETY PRECAUTIONS

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

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

1. **DO NOT** store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
2. Purchaser/user should consult the local gas supplier for proper instructions to be followed in the event the user smells gas. The instructions **should be** posted in a prominent location.
3. WHAT TO DO IF YOU SMELL GAS...
 - a. **DO NOT** try to light any appliance.
 - b. **DO NOT** touch any electrical switch.
 - c. **DO NOT** use any phone in your building.
 - d. Clear the room, building, or area of **ALL** occupants.
 - e. Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - f. If you **cannot** reach your gas supplier, call the fire department.
4. Installation and service **must be** performed by a qualified installer, service agency, or gas supplier.
5. Dryer(s) **must be** exhausted to the outdoors.
6. Although **ADC** produces a very versatile 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 rubberlike 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 do so will VOID THE WARRANTY.

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

WARNING: PERSONAL INJURY OR FIRE COULD RESULT.

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 steam coil and/or harm personnel.
13. Replace leaking flexible hoses or other steam fixtures immediately. **DO NOT** operate the dryer with leaking flexible hoses. Personal injury may result.
14. **READ AND FOLLOW ALL CAUTION AND DIRECTION LABELS ATTACHED TO THE DRYER.**
15. For safety, proper operation, and optimum performance, the dryer **must not be** operated with a load less than sixty-six percent (66%), 20 lbs (9 kg) of its rated capacity.

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

SECTION II

SPECIFICATIONS

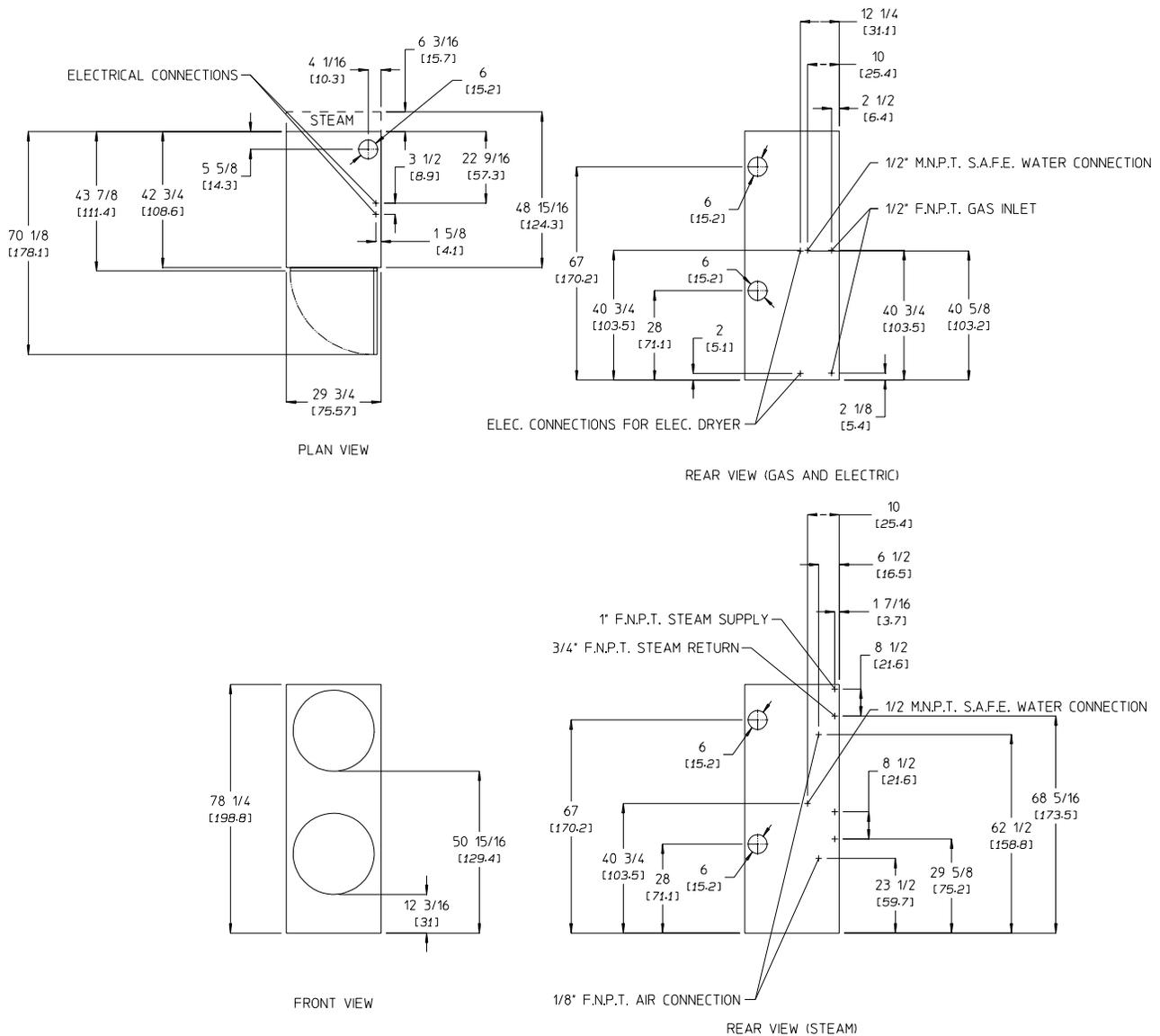
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DRYER NOTES:

- 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.
- UPPER POCKET OPTIONAL TOP OR REAR EXHAUST.

STEAM DRYER NOTES:

- OPERATING HEIGHT OF STEAM DRYER IS 77" (195.6 CM).
- 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.
- REAR EXHAUST STANDARD.



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

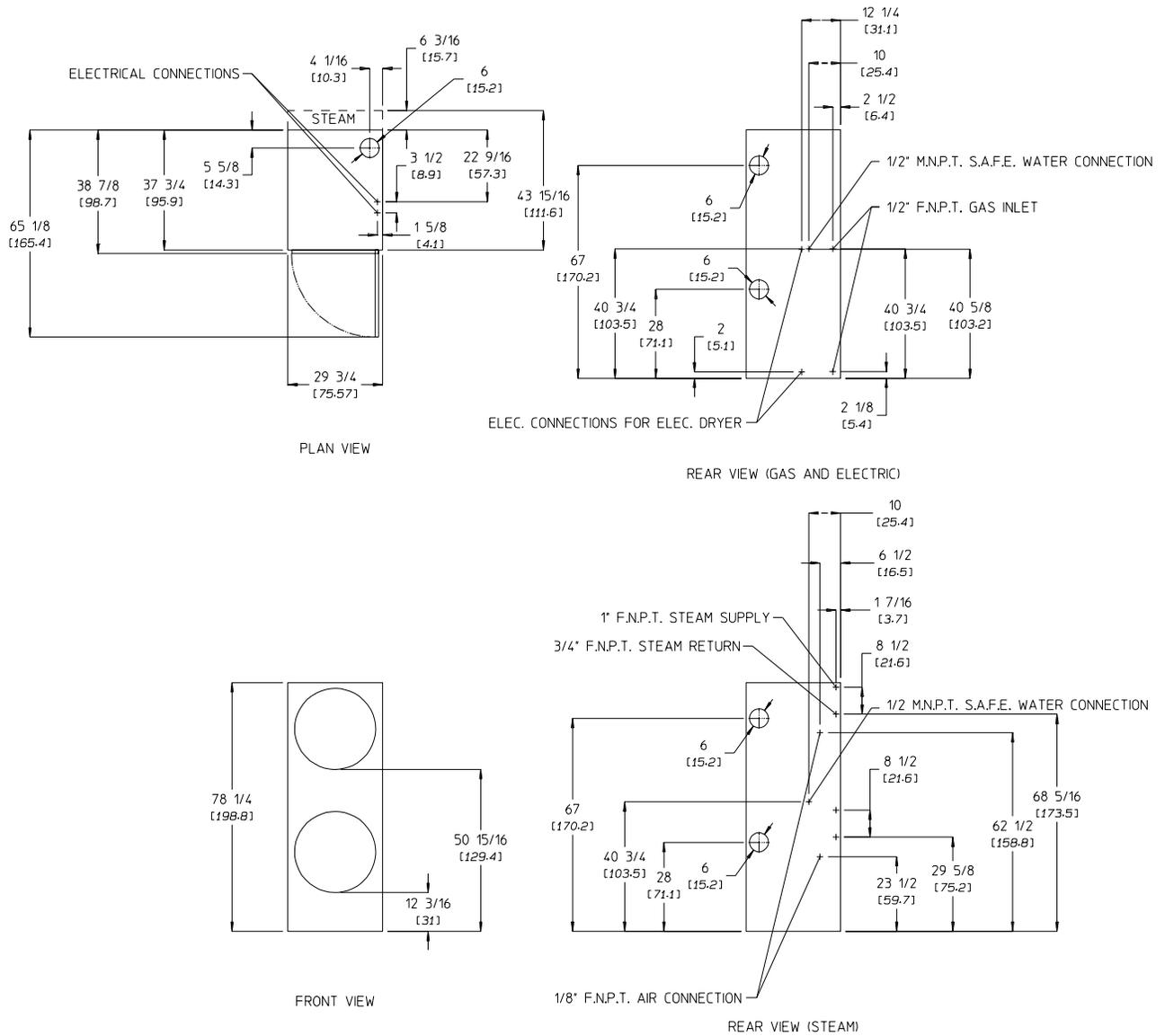
AD-320

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.
- UPPER POCKET OPTIONAL TOP OR REAR EXHAUST.

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- OPERATING HEIGHT OF STEAM DRYER IS 77" (195.6 CM).
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- STEAM DRYERS MUST BE PROVIDED WITH CLEAN, DRY, REGULATED 80 PSI ± 10 PSI (5.5 BAR ± 0.69 BAR) AIR SUPPLY.
- REAR EXHAUST STANDARD.



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| AD-330 | | | | |
|--------------------------------------|-------------------------------------|--------------|-------------------------|--|
| MAXIMUM CAPACITY (TOTAL DRY WEIGHT) | | 60 lbs** | 27.2 kg | |
| BASKET (TUMBLER) DIAMETER | | 27-1/4" | 69.22 cm | |
| BASKET (TUMBLER) DEPTH | | 30" | 76.2 cm | |
| BASKET (TUMBLER) VOLUME (PER BASKET) | | 10.1 cu. ft. | 0.286 cu.m. | |
| BASKET (TUMBLER) MOTOR (2 PLACES) | | 1/3 HP | 0.279 kw | |
| DOOR OPENING - DIAMETER (2 PLACES) | | 21-1/2" | 54.61 cm | |
| Gas | VOLTAGE AVAILABLE | | 120-240v 1ø 50/60 Hz | |
| | APPROX. WEIGHT (UNCRATED) | | 793 lbs | |
| | APPROX. WEIGHT (CRATED) | | 860 lbs | |
| | HEAT INPUT (TOTAL FOR BOTH BASKETS) | | 136,000 btu/hr | |
| | AIRFLOW (PER BASKET/TUMBLER) | | 400 cfm | |
| | GAS INLET SIZE (2 PLACES)*** | | 1/2" F.P.T. | |
| Electric | VOLTAGE AVAILABLE | | 208-416v 1ø-3ø 50/60 Hz | |
| | OVEN SIZE | | | |
| | | kw | btu/hr | |
| | | 15 | 51,195 | |
| Steam* | VOLTAGE AVAILABLE | | 120-240v 1ø 50/60 Hz | |
| | APPROX. WEIGHT (UNCRATED) | | 873 lbs | |
| | APPROX. WEIGHT (CRATED) | | 949 lbs | |
| | HEAT INPUT (TOTAL FOR BOTH BASKETS) | | 2.9 Bhp | |
| | AIRFLOW (PER BASKET/TUMBLER) | | 400 cfm | |
| | APPROXIMATE STEAM CONSUMPTION | | 101 lbs/hr | |
| | OPERATING STEAM PRESSURE | | 125 PSI (MAX) | |
| | STEAM SUPPLY (INLET)*** | | 1" F.P.T. | |
| | STEAM SUPPLY (OUTLET)*** | | 3/4" F.P.T. | |

Shaded areas are stated in metric equivalents

- * Dryer **must be** provided with a clean, dry, regulated 80 PSI +/- 10 PSI (5.51 bar +/- 0.68 bar) air supply.
- ** 30 lbs each pocket/basket (tumbler).
- ***Size of piping to dryer (2 places) varies with installation conditions.

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

| AD-320 | | | |
|--------------------------------------|-------------------------------------|--------------|-------------------------|
| MAXIMUM CAPACITY (TOTAL DRY WEIGHT) | | 40 lbs** | 18.14 kg |
| BASKET (TUMBLER) DIAMETER | | 27-1/4" | 69.22 cm |
| BASKET (TUMBLER) DEPTH | | 25" | 63.5 cm |
| BASKET (TUMBLER) VOLUME (PER BASKET) | | 8.43 cu. ft. | 0.239 cu.m. |
| BASKET (TUMBLER) MOTOR (2 PLACES) | | 1/3 HP | 0.249 kw |
| DOOR OPENING - DIAMETER (2 PLACES) | | 21-1/2" | 54.61 cm |
| EXHAUST DUCT OUTLET (2 PLACES) | | 6" | 15.24 cm |
| Gas | VOLTAGE AVAILABLE | | 120-240v 1ø 50/60 Hz |
| | APPROX. WEIGHT (UNCRATED) | | 760 lbs |
| | APPROX. WEIGHT (CRATED) | | 795 lbs |
| | HEAT INPUT (TOTAL FOR BOTH BASKETS) | | 120,000 btu/hr |
| | AIRFLOW (PER BASKET/TUMBLER) | | 400 cfm |
| | GAS INLET SIZE (2 PLACES)*** | | 1/2" F.P.T. |
| Electric | VOLTAGE AVAILABLE | | 208-416v 1ø-3ø 50/60 Hz |
| | OVEN SIZE | | |
| | | kw | btu/hr |
| | | 15 | 51,195 |
| Steam* | VOLTAGE AVAILABLE | | 120-240v 1ø 50/60 Hz |
| | APPROX. WEIGHT (UNCRATED) | | 837 lbs |
| | APPROX. WEIGHT (CRATED) | | 884 lbs |
| | HEAT INPUT (TOTAL FOR BOTH BASKETS) | | 2.9 Bhp |
| | AIRFLOW (PER BASKET/TUMBLER) | | 400 cfm |
| | APPROXIMATE STEAM CONSUMPTION | | 101 lbs/hr |
| | OPERATING STEAM PRESSURE | | 125 PSI (MAX) |
| | STEAM SUPPLY (INLET)*** | | 1" F.P.T. |
| | STEAM SUPPLY (OUTLET)*** | | 3/4" F.P.T. |

Shaded areas are stated in metric equivalents

* Dryer **must be** provided with a clean, dry, regulated 80 PSI +/- 10 PSI (5.51 bar +/- 0.68 bar) air supply.

** 20 lbs each pocket/basket (tumbler).

***Size of piping to dryer varies with installation conditions.

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

SECTION III

INSTALLATION PROCEDURES

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

A. UNPACKING/SETTING UP

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

NOTE: The access keys for the service doors are included in the information packet shipped in the basket (tumbler). These keys **should be** removed and put in a safe place yet made accessible because some **will be** needed throughout various phases in the installation of the dryer.

Dryers are shipped with a coin box and coin box faceplate ONLY. The coin box lock is not included and **must be** purchased elsewhere or the lock can be ordered as a parts order from the **ADC** factory.

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

With the skid removed, to make it easier to slide the dryer into its final position, slightly lower **ALL** four (4) leveling legs, so that the dryer will slide on the legs instead of the base frame. The dryer is equipped with four (4) leveling legs, one (1) at each corner of the dryer base. The hex head adjustment bolts for the two (2) front leveling legs are located directly behind the lower access door, and the rear two (2) adjustments are directly behind the lower rear back (guard) panel.

For more effective automatic door closure and better tumbling action (and improved efficiency), the dryer **should be** tilted slightly to the rear.

B. LOCATION OF THE DRYER

Before installing the dryer, be sure the location conforms to local codes and ordinances. In the absence of such codes or ordinances the location **must conform** with the National Fuel Gas Code ANSI.Z223.1 LATEST EDITION, or in Canada, the installation **must conform** to applicable Canadian Standards: CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (L.P. Gas) or LATEST EDITION (for General Installation and Gas Plumbing).

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.”

Even though a 12-inch (30.48 cm) clearance is acceptable, it is recommended that the rear of the dryer be positioned approximately 2 feet (0.61 meters) away from the nearest obstruction, i.e., wall, for ease of installation, maintenance, and service.

The dryer **must be** installed with a proper exhaust duct connection to the outside.

The dryer **must be** installed with provisions for adequate combustion and make-up air supply.

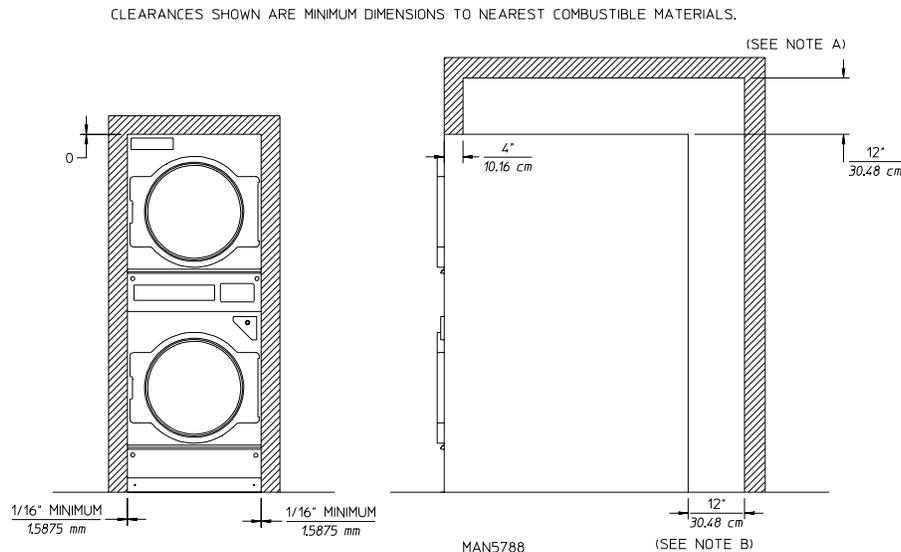
CAUTION: This dryer produces combustible lint and *must be* exhausted to the outdoors. Every 6 months, inspect the exhaust ducting and remove any lint build up.

C. DRYER ENCLOSURE REQUIREMENTS

Bulkheads and partitions **should be** made of noncombustible materials and **must be** located a minimum of 12-inches (30.48 cm) above the dryer outer top, except along the front of the dryer, which may be closed in if desired.

NOTE: Even though a minimum of 12-inches (30.48 cm) above the dryer outer top is acceptable, a clearance of 18-inches (45.72 cm) or more is suggested for ease of installation and service (power electrical connections).

NOTE: When fire sprinkler systems are located above the dryers, a minimum of 12-inches (30.48 cm) above the dryer outer top is required.



NOTES:

A. MINIMUM OF 12" (30.48 cm) CLEARANCE IS ACCEPTABLE FOR EASE OF INSTALLATION AND SERVICE (POWER CONNECTIONS). AT LEAST 18" (45.72 cm) IS RECOMMENDED.

B. MINIMUM OF 12" (30.48 cm) CLEARANCE IS ACCEPTABLE FOR EASE OF INSTALLATION, MAINTENANCE AND SERVICE. AT LEAST 24" (60.96 cm) IS RECOMMENDED.

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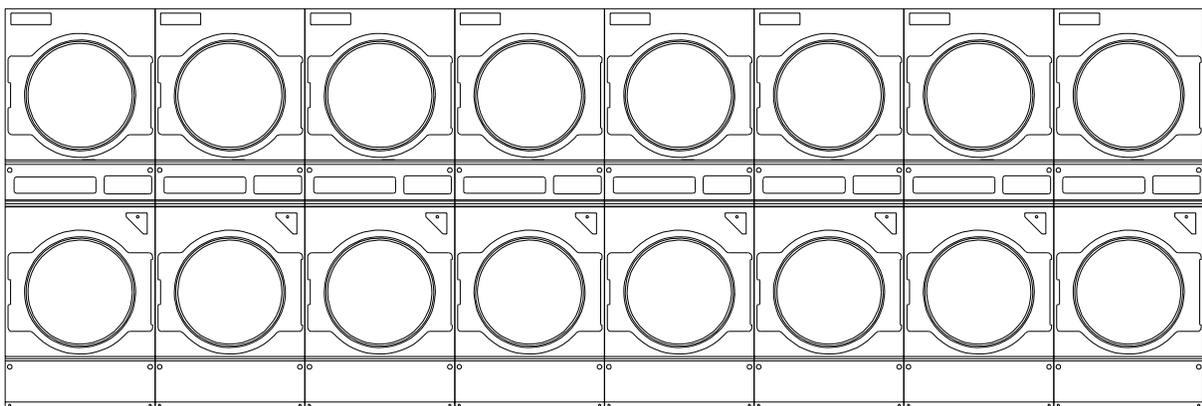
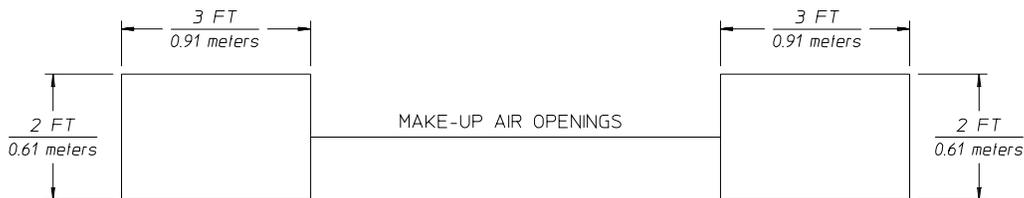
D. FRESH AIR SUPPLY REQUIREMENTS

Air supply (make-up air) **must be** given careful consideration to assure proper performance of each dryer. An unrestricted source of 800 cfm (22.65 cmm) is necessary for each dryer. An unrestricted air entrance from the outdoors (atmosphere) of a minimum of 1-1/2 square feet (0.14 square meters) is required for each dryer. This area **must be** enlarged if louvers or registers cover the opening. It is not necessary to have a separate make-up air opening for each dryer. Common make-up air openings are acceptable. However, they **must be** set up in such a manner that the make-up air is distributed equally to the dryers. For example, for a bank of eight (8) dryers, a total make-up air opening of 12 square feet (1.15 square meters) is required. Two (2) openings measuring 2 feet by 3 feet (0.61 meters by 0.91 meters) 6 square feet (0.56 square meters) are acceptable. The dryer **must be** installed with provisions for adequate combustion and make-up air supply.

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

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

IMPORTANT: Make-up air openings **should not be** located near ductwork exhaust outlets. If make-up air openings are too close to the exhaust outlet, lint and fumes may be drawn back into the dryer area through these openings.



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TYPICAL INSTALLATION SHOWING MAKE-UP AIR OPENINGS

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

E. EXHAUST REQUIREMENTS

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

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

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

The exhaust 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. When single dryer 10-inches (25.4 cm) vertical venting is used, the ductwork from the dryer to the outside exhaust outlet **must not exceed** 35 feet (10.67 meters) or for 10-inches (25.4 cm) horizontal 10 feet (3.05 meters). In the case of multiple (common) dryer venting, the distance from the last dryer to the outside exhaust outlet **must not exceed** 15 feet (4.57 meters). The shape of the exhaust ductwork is not critical so long as the minimum cross-sectional area is provided.

It is suggested that the use of 90° turns in ducting be avoided; use 30° or 45° angles instead. Excluding basket (tumbler)/dryer elbow connections or elbows used for outside protection from the weather, no more than two (2) elbows **should be** used in the exhaust duct run. If more than two (2) elbows are used the cross section area of the ductwork **must be** increased in proportion to the number of elbows added.

1. Exhaust Connections of Top and Bottom Baskets (Tumblers)

There is no common venting connection provided with the dryer. Each basket (tumbler) exhaust duct is provided with its own back draft damper. Each basket (tumbler) can be exhausted directly outdoors independently or connected to a common duct. Both single or common ductwork can be rigid ducting or flexible ducting. For common connections, a kit (ADC Part No. 882035) is available from the factory and includes the necessary flex ducting, elbows, and “Y” assembly, etc., to join the top and bottom exhausts together.

NOTE: THE FLEXIBLE EXHAUST DUCT KIT IS NOT RECOMMENDED FOR STEAM DRYERS.

ALL ductwork joints **must be** taped to prevent moisture and lint from escaping into the building.

IMPORTANT: Exhaust back pressure measured by a manometer at each basket (tumbler) exhaust duct area *must be* no less than 0 and *must not exceed* 0.3 inches (0.74 mb) water column (W.C.) when both baskets (tumblers) are operating.

NOTE: Common exhaust connections of top and bottom baskets (tumblers) *should be* installed in such a manner that the back guards can be removed easily for servicing.

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

2. Single Dryer Venting

When possible, it is suggested to provide a separate exhaust duct for each dryer. The exhaust 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. It is suggested that the use of 90° turns in ducting be avoided; use 30° or 45° angles instead. The shape of the exhaust ductwork is not critical so long as the minimum cross-sectional area is provided.

NOTE: Exhaust back pressure measured by a manometer at the dryer exhaust duct area **must be** no less than 0 and **must not exceed** 0.3 inches (0.74 mb) water column (W.C.).

It is suggested that the ductwork from each dryer not exceed the limitations noted in this manual. If the ductwork exceeds these limitations or has numerous elbows, the cross-sectional area of the ductwork **must be** increased in proportion to length or number of elbows in it.

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, venting, and air conditioning (HVAC) firm **should be** consulted for proper venting information.

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

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.

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 exhaust 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 nearest obstruction.

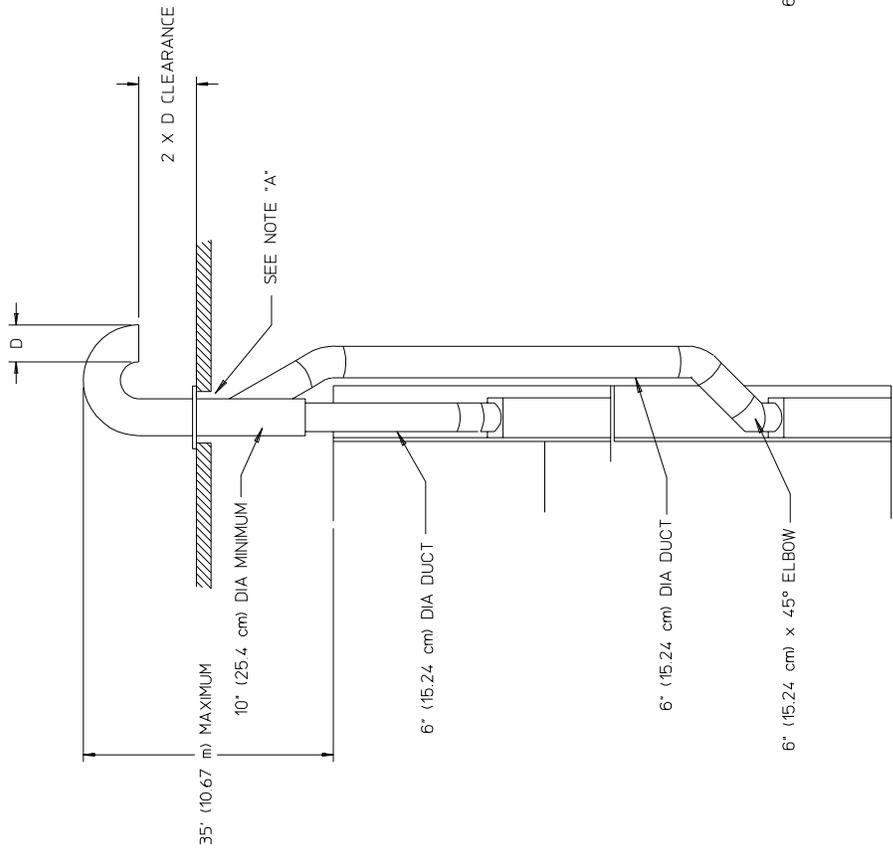
IMPORTANT: **DO NOT** use screens, louvers, or caps on the outside opening of the exhaust ductwork.

NOTE: Refer to the **illustrations** on **page 15 through page 17** for examples of single dryer venting.

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

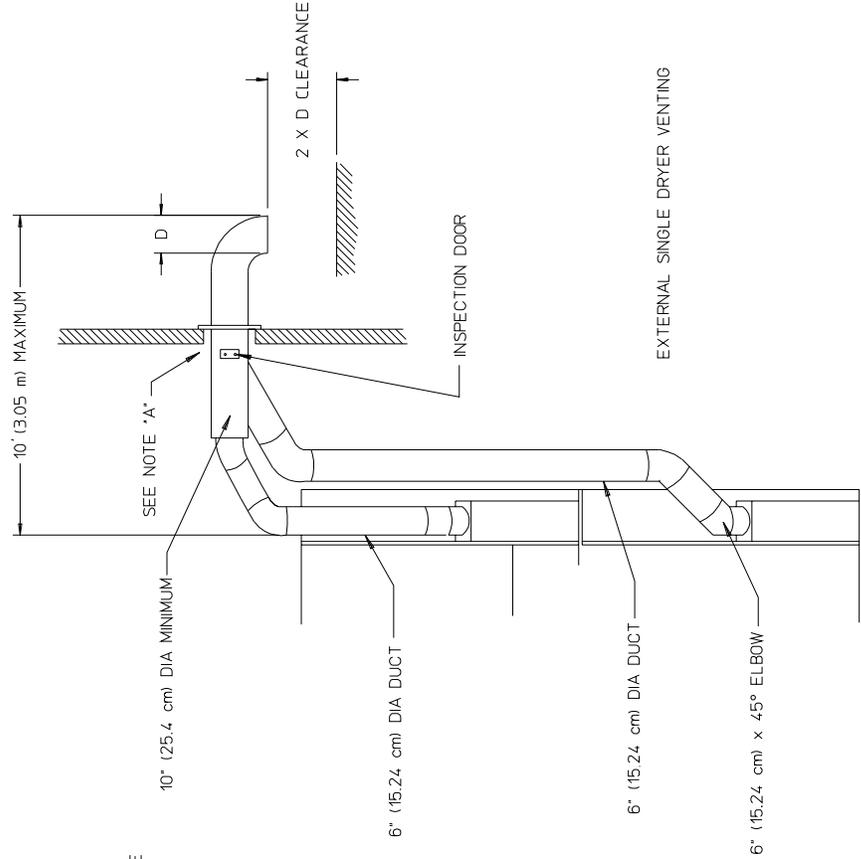
EXTERNAL SINGLE DRYER VENTING CONNECTIONS
 (WITH DRYER COMMON EXHAUST)

VERTICAL DUCTING



SIDE VIEW OF DRYER
 (SECTION VIEW)

HORIZONTAL DUCTING



EXTERNAL SINGLE DRYER VENTING

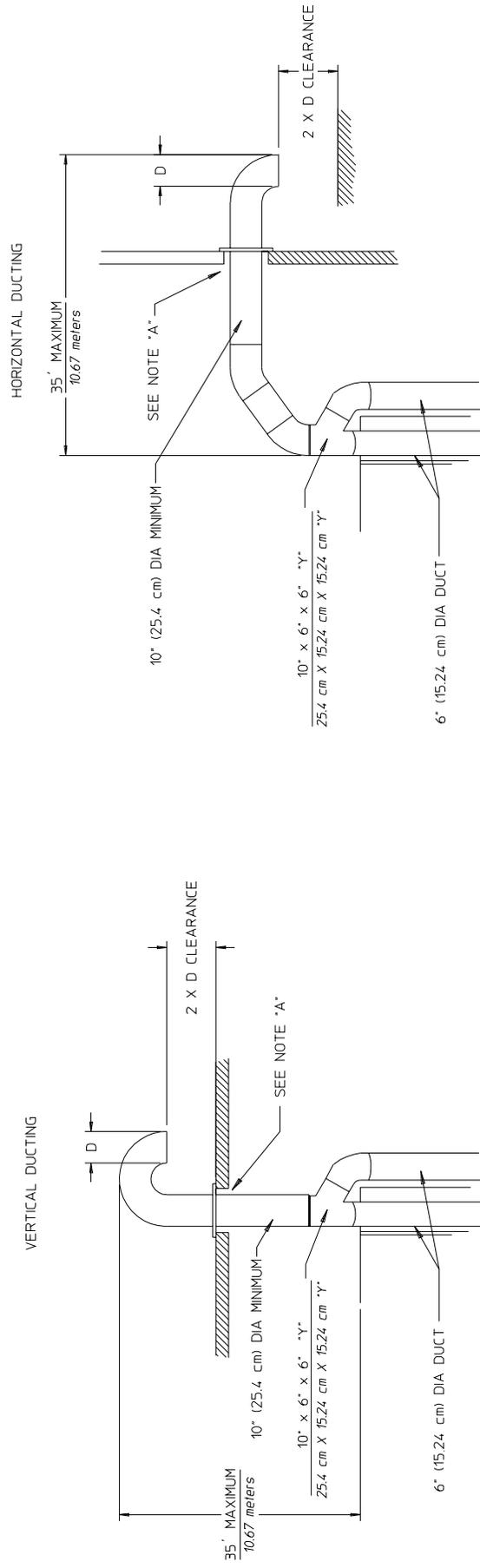
SIDE VIEW OF DRYER
 (SECTION VIEW)

MAN5295

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

TCOSTA 05/24/00

EXTERNAL SINGLE DRYER VENTING CONNECTIONS
(WITH DRYER COMMON EXHAUST)



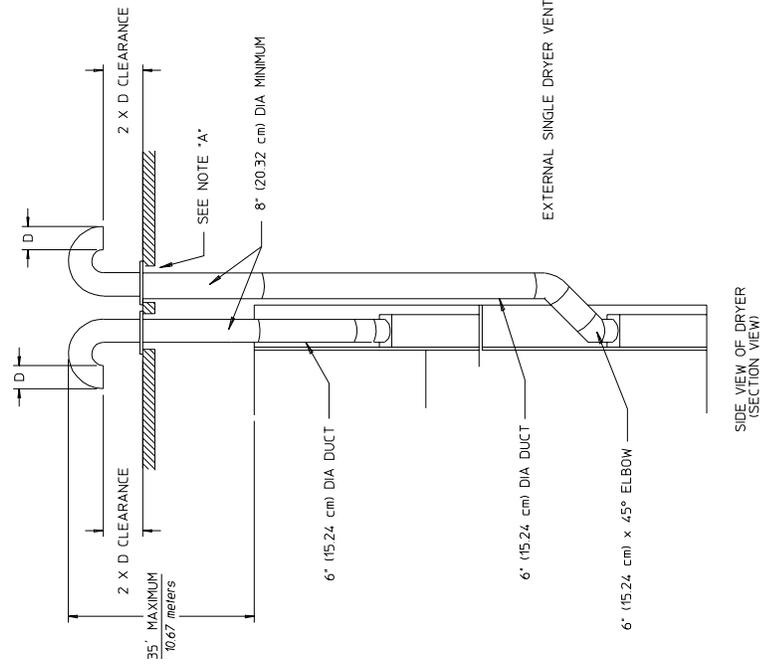
MAN5302

TCOSTA 05/23/00

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

EXTERNAL SINGLE DRYER VENTING CONNECTIONS
(WITH DRYER INDEPENDENT EXHAUST)

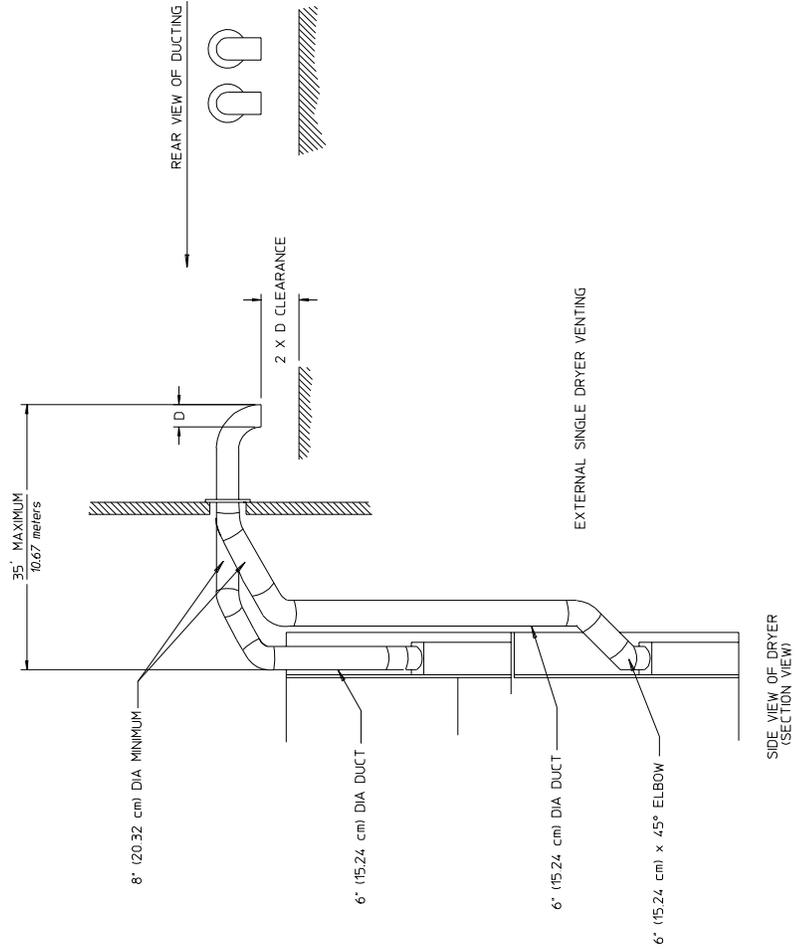
VERTICAL DUCTING



MAN6303

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

HORIZONTAL DUCTING



TCOSTA 05/23/00

3. Multiple Dryer (Common) Venting

If it is not feasible to provide separate exhaust ducts for each dryer, ducts from individual dryers may be channeled into a “common main duct.” The individual ducts should enter the bottom or side of the main duct at an angle not more than 45° in the direction of airflow. The main duct **should be** tapered, with the diameter increasing before each individual 10-inch (25.4 cm) duct (when dryer common exhaust is used) is added. If single 6-inch (15.24 cm) basket (tumbler) exhaust ducts are used, the diameter **should be** increased after every second 6-inch (15.24 cm) duct.

IMPORTANT: No more than four (4) dryers or eight (8) baskets (tumblers) total **should be** connected to one (1) main common duct.

NOTE: Refer to the **illustrations** on **page 20** for examples of multiple dryer (common) venting.

The main duct may be any shape or cross-sectional area so long as the minimum cross-sectional area is provided. The **illustrations** on **page 20** show the minimum cross-sectional area for multiple dryer venting. These figures **must be** increased in proportion if the main duct run from the last dryer to where it exhausts to the outdoors is unusually long (over 15 feet [4.57 meters]) or has numerous elbows (more than one [1]) in it. In calculating ductwork size, the cross-sectional area of a square or rectangular duct **must be** increased twenty percent (20%) for each additional 15 feet (4.57 meters). The diameter of a round exhaust **must be** increased ten percent (10%) for each additional 15 feet (4.57 meters).

IMPORTANT: For extended ductwork runs, the cross-sectional area of the ductwork can only be increased to an extent. Maximum proportional ductwork run **cannot** exceed 15 feet (4.57 meters) more than the original limitations of 15 feet (4.57 meters) with two (2) elbows. When the ductwork approaches the maximum limits as noted in this manual, a professional heating, venting, and air conditioning (HVAC) firm **should be** consulted for proper venting information.

IMPORTANT: Exhaust back pressure measured by a manometer at each basket (tumbler) exhaust duct area **must be** no less than 0 and **must not exceed** 0.3 inches (0.74 mb) water column (W.C.).

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

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

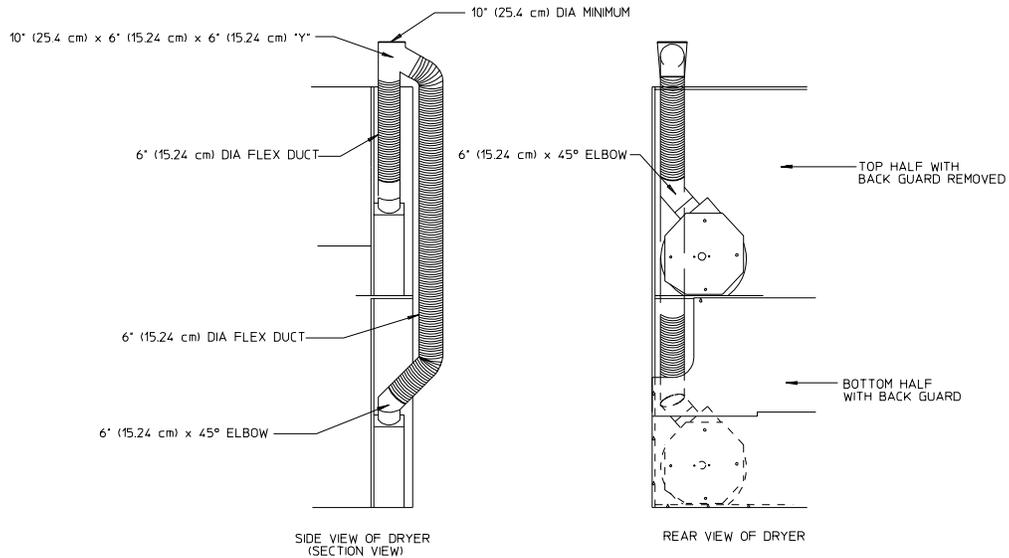
IMPORTANT: **It is recommended** that exhaust or booster fans not be used in the exhaust ductwork system.

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 exhaust 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 nearest obstruction.

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

NOTE: Refer to the **illustrations** on **page 20** for examples of multiple dryer (common) venting.

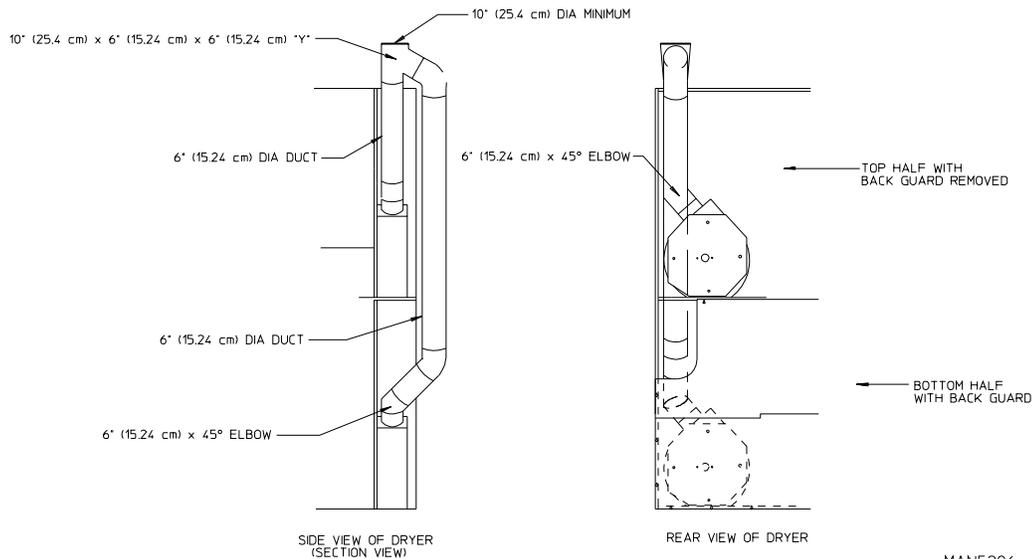
DRYER COMMON EXHAUST CONNECTIONS USING FLEX DUCT WORK



NOTE: USE DUCT TAPE AT ALL CONNECTIONS.

REFERENCE: OPTIONAL EXHAUST DUCT KIT P/N 882035

DRYER COMMON EXHAUST CONNECTIONS USING RIGID DUCT WORK

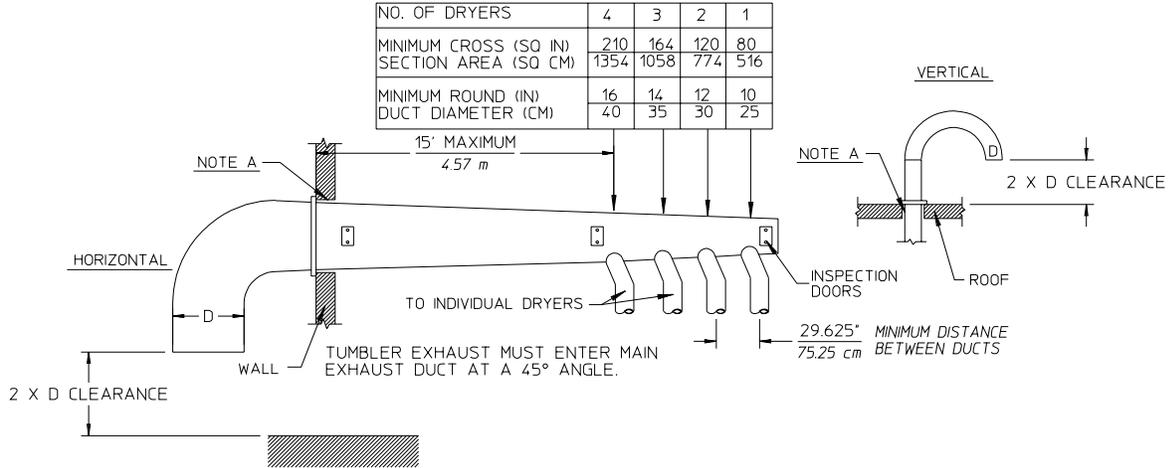


NOTE: USE DUCT TAPE AT ALL CONNECTIONS.

TCOSTA 05/24/00

MAN5296

MULTIPLE DRYER VENTING
WITH 10" (25.4 cm) DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



IMPORTANT: NO MORE THAN 4 DRYERS (8 TUMBLERS) CAN BE CONNECTED TO ONE COMMON DUCT (VENT).

TCOSTA 05/24/00

MAN5309

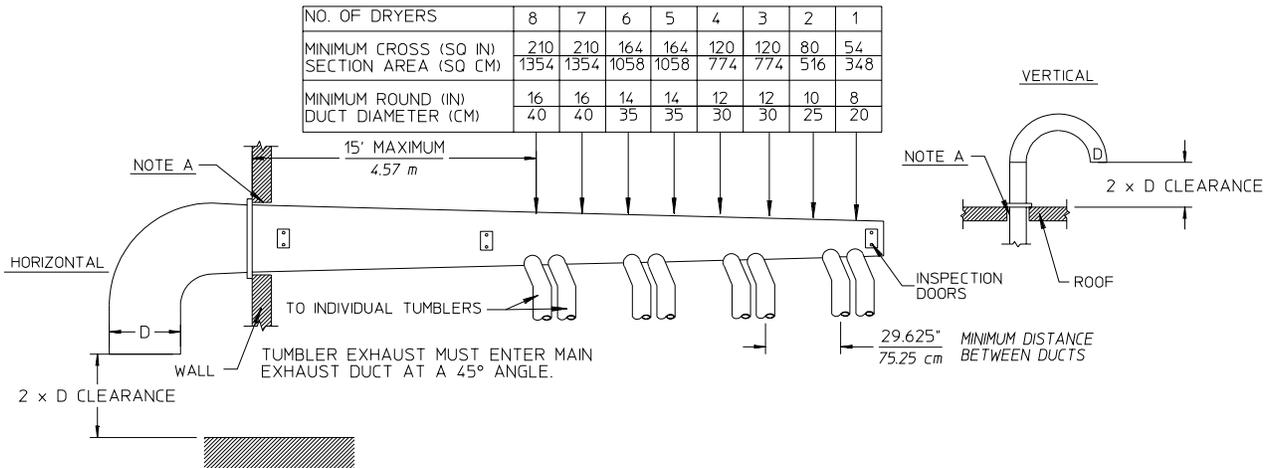
FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA

CROSS SECTIONAL AREA OF A ROUND DUCT = $.785 (19.939 \text{ mm}) \times D^2$ WHERE D = DIAMETER OF THE DUCT.

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

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

MULTIPLE DRYER VENTING
WITH 6" (15.24 cm) DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



IMPORTANT: NO MORE THAN 4 DRYERS (8 TUMBLERS) CAN BE CONNECTED TO ONE COMMON DUCT (VENT).

TCOSTA 05/24/00

MAN5310

FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA

CROSS SECTIONAL AREA OF A ROUND DUCT = $.785 (19.939 \text{ mm}) \times D^2$ WHERE D = DIAMETER OF THE DUCT.

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

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

F. ELECTRICAL INFORMATION

1. Electrical Requirements

It is your responsibility to have **ALL** electrical connections made by a properly licensed and competent electrician to assure that the electrical installation is adequate and conforms 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.

It is recommended that a separate circuit servicing each basket (tumbler) be provided. The dryer **must be** connected to copper wire **ONLY**. **DO NOT** use aluminum wire, which could cause a fire hazard.

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

2. Electrical Connections

A wiring diagram is included with each dryer showing the wiring connection sequence. The electrical connections are made in a box located at the top of the dryer. The dryer is shipped with three (3) connection points (L1, L2/Neutral, and Ground) for each basket (tumbler).

If local codes permit, power to the dryer can be made by 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.

| Electrical Connections Leads | | |
|-------------------------------------|-----------------------|---------------------|
| Black + Positive | White - Neutral | Green Ground |
| (L1) | (L2) | (GND) |

NOTE: It is recommended that a circuit servicing each basket (tumbler/drum) be provided.

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 (sized 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 connections **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 no. 4 wire and securely clamped to bare metal at both ends.

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

4. Electrical Service Specifications (per pocket)

IMPORTANT: The dryer **must be** connected to the electrical supply shown on the data label located on the inside of the middle access control door.

WARNING: Any damage done to dryer components due to improper voltage application or connections will automatically **VOID THE WARRANTY.**

ADG-330, 1Ø MOTOR ADS-330, 1Ø MOTOR

ELECTRICAL SERVICE SPECIFICATIONS (PER POCKET)

| SERVICE VOLTAGE | PHASE | WIRE SERVICE | APPROX. AMP DRAW | MINIMUM WIRE SIZE | FUSING | CIRCUIT BREAKER |
|------------------------|--------------|---------------------|-------------------------|--------------------------|-------------------------|------------------------|
| | | | | | Dual Element Time Delay | |
| 120 | 1Ø | 2 | 7 | * | 15 | 15 |
| 208 | 1Ø | 2 | 4.3 | * | 15 | 15 |
| 240 | 1Ø | 2 | 4.3 | * | 15 | 15 |

* AWG Stranded Wire Type ... size wire as per National Electrical Code or local codes.

NOTE: Contact factory for electrical information not listed.

| ADE-330, 1Ø MOTOR | | | | | | | |
|--|-----------------|-------|--------------|------------------|-------------------|-------------------------|-----------------|
| ELECTRICAL SERVICE SPECIFICATIONS (PER POCKET) | | | | | | | |
| OVEN SIZE (Kw) | SERVICE VOLTAGE | PHASE | WIRE SERVICE | APPROX. AMP DRAW | MINIMUM WIRE SIZE | FUSING | CIRCUIT BREAKER |
| | | | | | | Dual Element Time Delay | |
| 15 | 208 | 1Ø | 2 | 76 | * | 90 | 90 |
| 15 | 240 | 1Ø | 2 | 67 | * | 80 | 80 |
| 15 | 208 | 3Ø | 3/4 | 46 | * | 60 | 60 |
| 15 | 240 | 3Ø | 3 | 40 | * | 50 | 50 |
| 15 | 380 | 3Ø | 4 | 27 | * | 40 | 40 |
| 15 | 416 | 3Ø | 4 | 25 | * | 40 | 40 |

* AWG Stranded Wire Type...size wire as per National Electrical Code or local codes.

| ADG-320, 1Ø MOTOR | | | | | | |
|--|-------|--------------|------------------|-------------------|-------------------------|-----------------|
| ADS-320, 1Ø MOTOR | | | | | | |
| ELECTRICAL SERVICE SPECIFICATIONS (PER POCKET) | | | | | | |
| SERVICE VOLTAGE | PHASE | WIRE SERVICE | APPROX. AMP DRAW | MINIMUM WIRE SIZE | FUSING | CIRCUIT BREAKER |
| | | | | | Dual Element Time Delay | |
| 120 | 1Ø | 2 | 7 | * | 15 | 15 |
| 208 | 1Ø | 2 | 4.3 | * | 15 | 15 |
| 240 | 1Ø | 2 | 4.3 | * | 15 | 15 |

* AWG Stranded Wire Type...size wire as per National Electrical Code or local codes.

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

NOTES: 1. Fuse ratings are dual element time delay current limiting, class RK1 or RK5 ONLY.
 2. Circuit breakers are thermal-magnetic (industrial) motor curve type **ONLY**. For others, calculate/verify correct breaker size according to appliance amp draw and type of breaker used.
 3. Circuit breakers for 3-phase (3Ø) dryers **must be** 3-pole type.

NOTE: Contact factory for electrical information not listed.

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

G. GAS INFORMATION

It is your responsibility to have **ALL** plumbing connections made by a qualified professional to assure that the gas plumbing installation is adequate and conforms 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 valve **must be** disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa).

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

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

WARNING: FIRE OR EXPLOSION COULD RESULT.

1. Gas Supply

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

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

The dryer **must be** connected to the type of heat/gas indicated on the dryer data label located on the inside of the middle access (control) door. If this information does not agree with the type of gas available, contact the reseller who sold the dryer or contact the **ADC** factory.

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

The input ratings shown on the dryer data label are for elevations up to 2,000 feet (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 reseller who sold the dryer or contact the **ADC** factory.

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

2. Technical Gas Data

a. Gas Specifications

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

Shaded areas are stated in metric equivalents

* Measured at gas valve pressure tap when gas valve is on.
W.C. = Water column in inches.

| ADG-330D | | |
|--|-------------|----------------|
| Gas Inlet Size (each basket/tumbler) | 1/2" N.P.T. | |
| Btu/hr Input (each basket/tumbler) | 68,000 | 17,136 kcal/hr |
| Btu/hr Input (total for both baskets/tumblers) | 136,000 | 34,272 kcal/hr |

N.P.T. = National Pipe Thread

| ADG-320D | | |
|--|-------------|----------------|
| Gas Inlet Size (each basket/tumbler) | 1/2" N.P.T. | |
| Btu/hr Input (each basket/tumbler) | 60,000 | 15,120 kcal/hr |
| Btu/hr Input (total for both baskets/tumblers) | 120,000 | 30,240 kcal/hr |

N.P.T. = National Pipe Thread

b. Natural Gas

Regulation is controlled by each 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 pressure.

c. Liquid Propane (L.P.) Gas

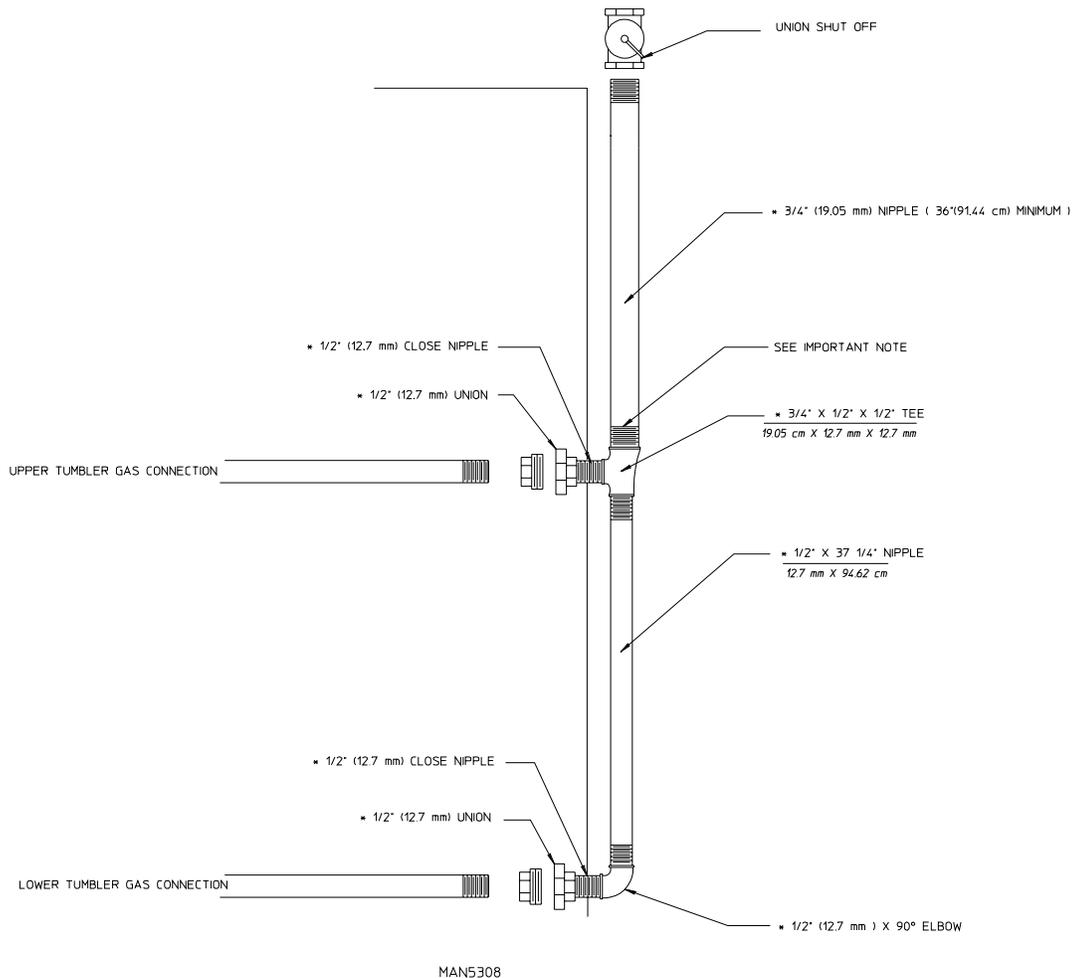
Dryers made for use with L.P. gas have the gas valve's internal pressure regulator blocked open so that the gas pressure **must be** regulated upstream of the dryer. The pressure measured at each gas valve pressure tap **must be** a consistent 10.5 inches (26.1 mb) water column. There is no regulator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

3. Piping/Connections

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

The dryer is provided with two (2) 1/2" N.P.T. inlet pipe connections (one for each basket [tumbler]) at the rear of the dryer. If a separate feed is provided for each basket (tumbler) from the main supply line (header), then a 1/2" (12.7 mm) line connection is sufficient. However, if the top and bottom basket (tumbler) connections are connected together, the supply from the header **must be** increased to 3/4-inch (19.05 mm). An optional piping kit is available from the factory as illustrated below and on **page 44**. It is recommended that a gas shutoff valve be provided to the gas supply line of each dryer for ease in servicing.

TYPICAL GAS CONNECTIONS



• INCLUDED IN OPTIONAL GAS PIPING KIT P/N 880128

TCOSTA 05/24/00

IMPORTANT: When plumbing upper and lower baskets (tumblers) together, as illustrated above, supply connection **must be** a minimum of 3/4" (19.05 mm).

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 liquid propane [L.P.] gas, the supply tank), the number of tees, other gas-operated appliances on the 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 3/4" (19.05 mm) pipe loop be installed in the supply line servicing the bank of dryers. An in-line pressure regulator **must be** installed in the gas supply line (header) if (natural) gas line pressure exceeds 12.0 inches (29.9 mb) water column (W.C.) pressure. Refer to the **illustration** on **page 28** for details.

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

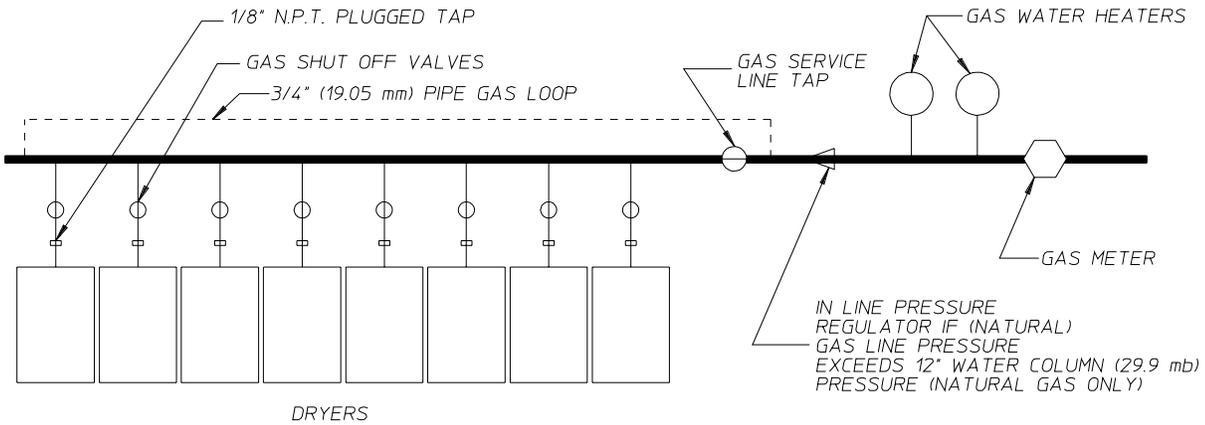
A 1/8" N.P.T. plugged tap, accessible for a test gauge connection, **must be** installed in the main gas supply line immediately upstream of each dryer.

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

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

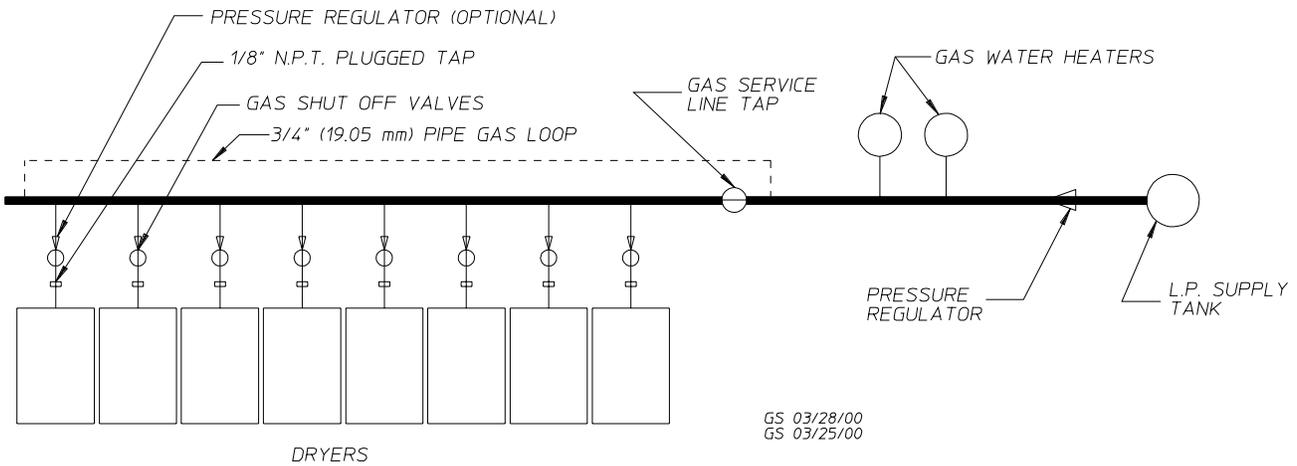
IMPORTANT: THIS GAS DRYER **IS NOT** PROVIDED WITH AN INTERNAL GAS SUPPLY SHUTOFF AND AN EXTERNAL GAS SUPPLY SHUTOFF **MUST BE** PROVIDED.

TYPICAL NATURAL GAS INSTALLATION



MAN5155

TYPICAL L.P. GAS INSTALLATION



GS 03/28/00
GS 03/25/00

H. STEAM PIPING HOOKUP

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

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

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

The presence of condensate in the steam will cause water hammer and subsequent heat exchanger failure. The steam supply connection **must be** taken from the top of a well dripped steam main. If the supply run out to the dryer exceeds 20 feet (6.1 meters), it **should be** dripped just before the control valve with a proper trap and dirt pocket.

Low-Pressure (up to 15 PSI [1.03 bar]) or High-Pressure (16-125 PSI [1.10 -8.62 bar]) Damper Models

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

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

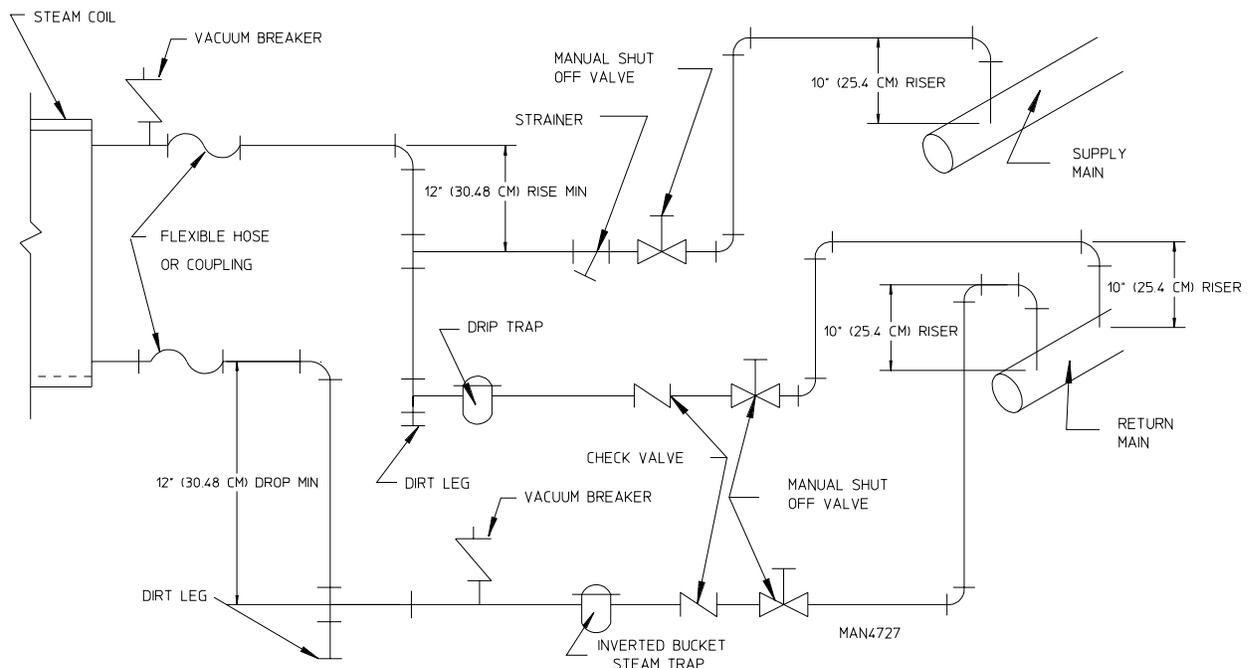
The pressure of condensate in the steam supply will cause water hammer and subsequent heat exchanger failure. The steam supply connection into the main supply line **must be** made with a minimum 10-inch (25.4 cm) riser. This will prevent any condensate from draining towards the dryer.

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. 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.

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

Install an inverted bucket steam trap and check valve at least 12-inches (30.48 cm) below the steam coil as near to the coil as possible. A vacuum breaker **should be** installed in the piping. This will prevent the condensing steam from causing a vacuum inside the coil possibly damaging the coil. The supply and return lines **should be** insulated. This will save energy and provide for the safety of the operator and maintenance personnel.

Water pockets in the supply line, caused by low points, will provide wet steam to the coil possibly causing coil damage. **ALL** horizontal runs of steam supply piping **should be** pitched 1/4" (6.35 mm) every foot (0.30 meter) back towards the steam supply header causing any condensate in the line to drain to the header. Install a bypass trap in any low point to eliminate wet steam.



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

1. Steam Coil PH Level

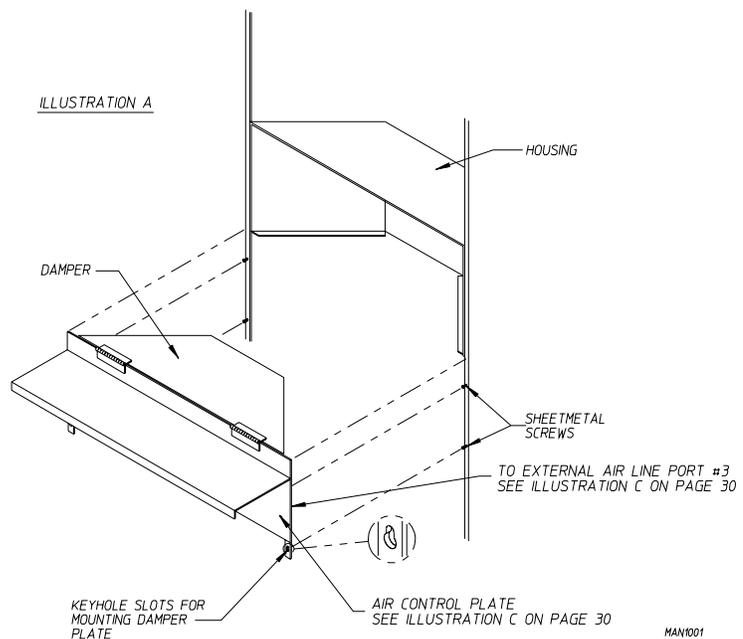
The normal PH level for copper type steam coils **must be** maintained between a value of 8.5 to 9.5. For steel type steam coils the PH level **must be** maintained between a value of 9.5 to 10.5. These limits are set to limit the acid attack of the steam coils.

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

a. Instructions for Steam Damper/Piston and Steam Coil Installation (for STEAM MODELS ONLY)

For shipping purposes, the steam damper/piston assemblies (two [2] each) and steam coils (two [2] each) are not assembled to the dryer and **must be** installed at the time of dryer installation. The steam damper/piston assemblies are independently packaged and are shipped in the rear section of the dryer. The steam coils are shipped in a separate container (one [1] box/crate which includes both coils) included with the dryer but not in the dryer.

- 1) Prior to installing steam damper plate, locate air supply Port No. 3 on the solenoid valve (refer to **Illustration C** on page 31).
- 2) Install steam damper as shown in **Illustration A** on this page.
- 3) Make sure the steam damper rests on the side flanges of the housing and is free to move up and down.
- 4) Tighten **ALL** four (4) sheet metal screws to secure steam damper plate to the dryer.
- 5) Locate the steam coil slides on side of housing as shown in **Illustration B** on page 31.



- 6) Slide steam coils down from top, making sure the rear flanges of the steam coil are behind coil slides and the steam coil rests on the damper plate.
- 7) Piping on coil **should be** located on right hand side when facing the rear of the dryer.

- 8) The air supply line can now be connected to the solenoid valve in Port No. 3 using a 1/8" N.P.T. pipe fitting (refer to **Illustration C** on **this page**).
- 9) Plug the electrical connector from the dryer to the mating electrical connector on the air control plate as shown in **Illustration C** on **this page**.

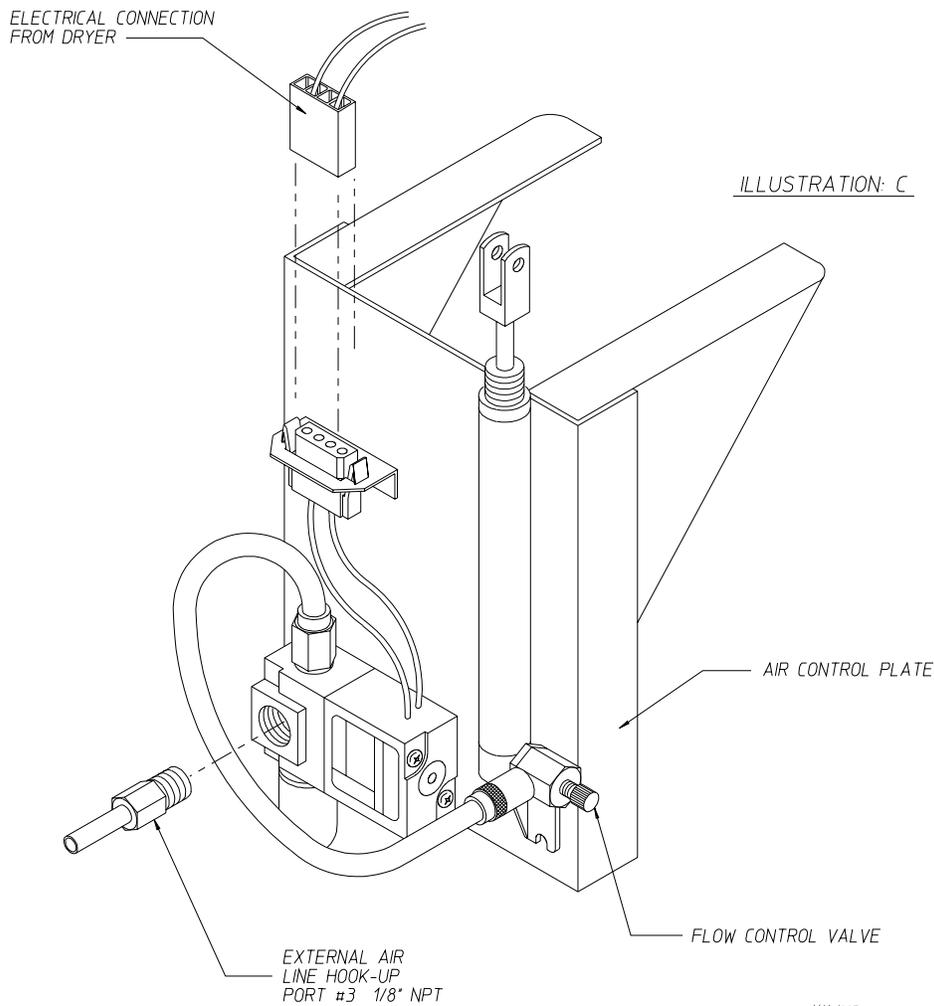
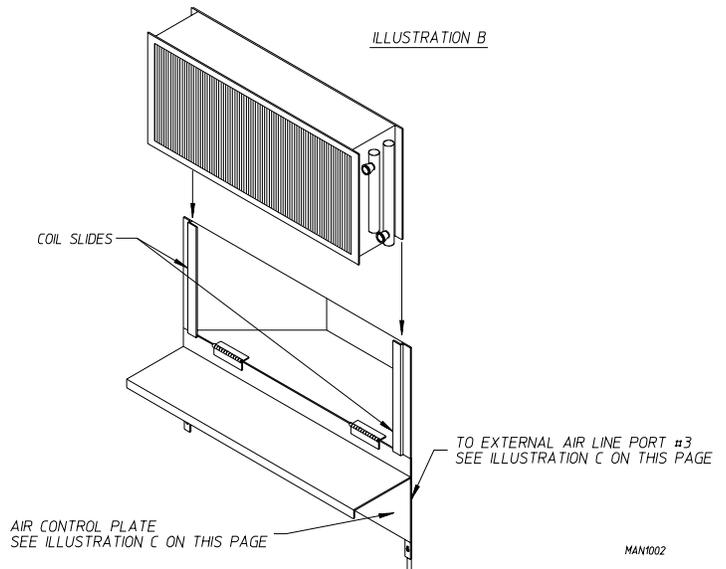


ILLUSTRATION C

NOTE: Turning knob on flow control valve clockwise (CW) will restrict airflow. Turning knob on flow control valve counterclockwise (CCW) will increase airflow.

b. Steam Damper Air System Connections

The pneumatic (piston) damper system requires an external supply of compressed air. The air connection is made to the system solenoid valve, which is located at the rear inner top area of the dryer.

1) Air Requirements

| Compressed Air Supply | Air Pressure | |
|------------------------------|---------------------|-----------------|
| Normal | 80 PSI | 5.51 bar |
| Minimum Supply | 70 PSI | 4.82 bar |
| Maximum Supply | 90 PSI | 6.20 bar |

Shaded areas are stated in metric equivalents

2) Air Connection

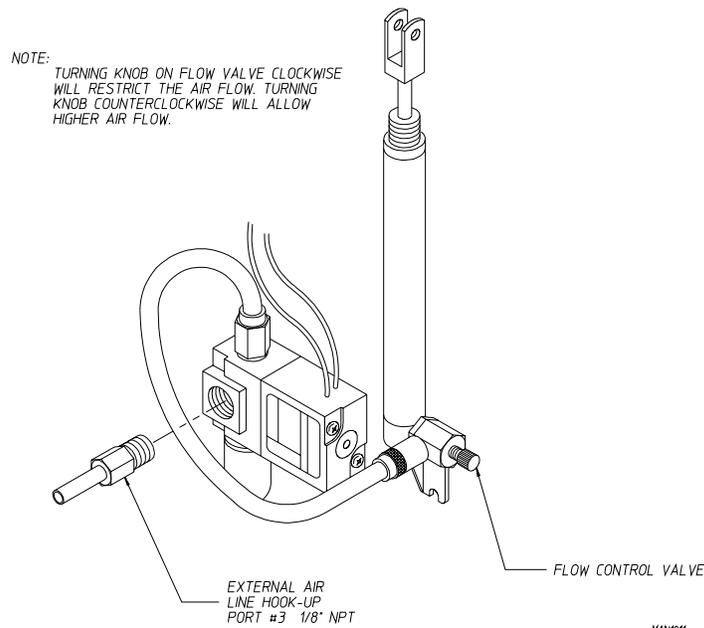
Air connection to system --- 1/8" N.P.T.

3) Air Regulation

NO AIR REGULATION IS PROVIDED WITH THE DRYER. External regulation 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 insure that correct and clean air pressure is achieved.

4) Steam Operation

Steam operation was tested and adjusted prior to shipping at 80 PSI (5.51 bar). If damper air adjustment is necessary, locate the flow control knob (as shown in the **illustration** below) and make necessary adjustments as noted below.



I. PREPARATION FOR OPERATION

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

1. Read **ALL** “CAUTION,” “WARNING,” and “DIRECTION” labels attached to the dryer.
2. Check incoming supply voltage to be sure that it is the same as indicated on the dryer data label located on the inside of the middle access (control) door.
3. **GAS MODELS** - check to assure that the dryer is connected to the type of heat/gas indicated on the dryer data label.
4. **GAS AND ELECTRIC MODELS** - the sail switch damper assembly was installed and adjusted at the factory prior to shipping. However, each sail switch adjustment **must be** checked to assure that this important safety control is functioning.
5. Check bolts, nuts, screws, terminals, and fittings for tightness.
6. **GAS MODELS** - be sure that **ALL** gas shutoff valves are in the open position.
7. Be sure **ALL** back guard panels and service box covers have been replaced.
8. Check the lint door to assure that it is closed and secured in place.
9. Rotate the basket (tumbler) by hand to be sure they move freely.
10. **STEAM MODELS** - check to insure that the air supply (80 PSI [5.51 bar]) is on the dryer.
11. For more effective automatic door closure and better tumbling action (and improved efficiency), the dryer **should be** tilted slightly to the rear.

J. PREOPERATIONAL TESTS

ALL dryers are thoroughly tested and inspected before leaving the factory. However, a preoperational test **should be** performed before the dryer is publicly used. It is possible that adjustments have changed in transit.

1. Turn on electric power to the dryer.
 - a. Open **ALL** gas or steam shutoff valves (for GAS and STEAM MODELS ONLY).
2. Computer System Operational Test
 - a. Coin Models Only
 - 1) The liquid crystal display (L.C.D.) screen reads “Ready,” insert amount to start (i.e. 25¢).
 - 2) Insert coin(s). Once the correct amount has been inserted, the display for the appropriate pocket will display “SELECT TEMP TO START.”
 - 3) Start temperature by pressing “HIGH,” “MEDIUM,” or “LOW” for the dryer pocket you wish to start the cycle in. The cycle/dryer will start, and the liquid crystal display (L.C.D.) will read the drying cycle selected, and the remaining time.

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

NOTE: The dryer can be stopped at any time by opening the main loading door. To restart the dryer, press appropriate temperature selection key.

- 5) Upon completion of the drying and cooling cycles, the buzzer will sound, and the dryer will go into the Anti-Wrinkle mode for 99 minutes, or until the main door is opened.

IMPORTANT: For complete operation details for the computer system, refer to the user's manual included with the dryer.

b. FREE Dry Mode

- 1) The L.C.D. screen reads "Ready."
- 2) Select temperature by pressing "HIGH," "MEDIUM," or "LOW." The cycle/dryer will start and the display will read cycle time.
- 3) The dryer will continue through the drying and cooling cycles until the drying time and cooling time has expired.

NOTE: The dryer can be stopped at any time by opening the main loading door. To restart the dryer, press appropriate temperature selection key.

- 4) Upon completion of the drying and cooling cycles, the buzzer will sound, and the dryer will go into the Anti-Wrinkle mode for 99 minutes, or until the main door is opened.

IMPORTANT: For complete operation details for the computer system, refer to the user's manual included with the dryer.

3. Heat Circuit Operational Test

a. Gas Models

When a gas dryer is first started (during initial start-up), it has a tendency not to ignite on the first ignition attempt. This is because the gas supply piping is filled with air, so it may take a few minutes for the air to be purged from the lines.

Gas model dryers are equipped with an ignition system, which has internal diagnostics. If ignition is not established after one (1) time, the heat circuit in the ignition module will attempt two (2) more ignitions (total of three [3] ignition attempts). If there is no flame after the third ignition attempt, the module will lockout until it is manually reset. To reset the ignition system, open and close the main door and restart the dryer.

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

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

NOTE: Water column pressure requirements (measured at the 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. Electric Models

Check to insure that the heating units (electric ovens) are functioning properly.

c. Steam Models

Check to insure that the steam dampers open and close properly. If steam dampers open and/or close too fast, make the necessary adjustments at the steam damper/piston flow control valve. Refer to the **illustration** on **page 32**.

4. Make a complete operational check of **ALL** safety related circuits (i.e., lint basket switches and sail switches).
5. Each basket (tumbler) **should be** operated through one (1) complete cycle to assure that no further adjustments are necessary and that **ALL** components are functioning properly.

NOTE: The sail switch (GAS and ELECTRIC MODELS ONLY) can be checked for proper operation by opening the control door while the dryer is running and the heating unit (burner) active (on). The heating unit(s) should shut off within a few seconds. If not, make the necessary adjustments.

BASKET (TUMBLER) COATING

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

6. Computer Programs/Selections...

Each Dual Microprocessor Controller (DMC) computer has been preprogrammed by the factory with the most commonly used program (parameter) selections. If microprocessor controller (computer) program changes are required, refer to the **Dual Microprocessor Controller (DMC) Programming Manual**, which was shipped with the dryer.

K. SHUTDOWN INSTRUCTIONS

In the case where 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 (both baskets [tumblers]) either at the external disconnect switch or the circuit breaker.
2. Discontinue the gas supply:
 - a. **SHUT OFF external gas supply shutoff valve** (for both the top basket [tumbler] and the bottom basket [tumbler] where the independent supply line for each basket [tumbler] is used).

SECTION IV

OPERATING INSTRUCTIONS

A. COIN MODE

1. When at least one (1) of the dryer pockets is in the ready state and no cycle is in progress, the liquid crystal display (L.C.D.) screen will read “Ready, Insert \$1.00 to Start.” If both pockets are idle both sections of the L.C.D. screen will read “Ready, Insert \$1.00 to Start.”
2. Insert coin(s). Once the correct “Amount to Start” has been inserted, the pocket will now display “SELECT TEMP TO START.” If the other pocket was already in a cycle that pocket will display “SELECT TEMP TO ADD TIME.” If both pockets were idle, both pockets will display “SELECT TEMP TO START.”
3. Select temperature by pressing “HIGH,” “MEDIUM,” or “LOW” on the dryer pocket you wish to start the cycle in. The cycle will start, and the L.C.D. will display the Dry Cycle selected and the remaining time.
4. The dryer will continue through the drying and cooling cycles until the vended time has expired.
5. Upon completion of drying and cooling cycles the buzzer will sound, and the dryer will go into Anti-Wrinkle mode for 99 minutes or until the door has been opened.
6. HOT KEYS - When the control is in coin mode, the HOT KEYS are disabled. The HOT KEYS can be enabled only if the dryer is in a dry cycle. The HOT KEYS cannot be enabled if the dryer is in “READY, INSERT 25¢ TO START” mode. To enable the HOT KEYS when the controller is in a dry cycle, toggle the program switch to the “UP” position. Once the program switch is in the “UP” position, the HOT KEYS are enabled. The HOT KEYS are as follows:

Pressing and holding the “HIGH” key will show the remaining credit available.

Pressing and holding the “MEDIUM” key will show the temperature readings of the exhaust temperature transducer and the Sensor Activated Fire Extinguishing (S.A.F.E.) system temperature probe. The exhaust temperature reading is displayed on the left, and the S.A.F.E. system temperature reading is on the right. If the dryer is an axial model, the temperature reading of the axial temperature transducer will also be displayed; this will be the middle temperature reading.

Pressing and holding the “LOW” key will show the RPMs of the basket (tumbler).

The “PAUSE” key will pause the dryer. If the dryer is paused, pressing the “HIGH,” “MEDIUM,” or “LOW” key will restart the dryer into the appropriate drying cycle. Once the dry cycle has started again, the HOT KEYS will be enabled again.

B. FREE MODE

1. When the controller is in the ready state and no cycle is in progress, the L.C.D. screen will display “SELECT TEMP.”
2. Select temperature by pressing “HIGH,” “MEDIUM,” or “LOW.” The cycle will start and the controller will display the Dry Cycle selected and the remaining time.
3. The dryer will continue through the drying and cooling cycles, until the drying time has expired.

4. Upon completion of the drying and cooling cycles, the buzzer will sound, and the dryer will go into Anti-Wrinkle mode for 99 minutes or until the door has been opened.
5. HOT KEYS - In free mode, the HOT KEYS are always enabled. The HOT KEYS are as follows:

Pressing and holding the “HIGH” key will show the remaining dry time available.

Pressing and holding the “MEDIUM” key will show the temperature readings of the exhaust temperature transducer and the Sensor Activated Fire Extinguishing (S.A.F.E.) system temperature probe. The exhaust temperature reading is displayed on the left and the S.A.F.E. system temperature reading is on the right. If the dryer is an axial model, the temperature reading of the axial temperature transducer will also be displayed, this will be the middle temperature reading.

Pressing and holding the “LOW” key will show the RPMs of the basket (tumbler).

The “PAUSE” key will pause the dryer. If the dryer is paused, pressing the “HIGH,” “MEDIUM,” or “LOW” key will restart the dryer into the appropriate drying cycle. Once the dry cycle has started again, the HOT KEYS will be enabled again.

C. PAUSE MODE

If the “PAUSE” key is pressed and the door is not opened, the dryer will restart in 20-seconds. If the dryer door is opened and left open, the dryer will wait for the pause time defined in PL13 to expire. Once the pause time expires, the controller will begin to count down the dry time.

D. RPM

The phase 7 dual coin microprocessor controller also displays the basket (tumbler) RPM by pressing and holding the “LOW” key while the basket (tumbler) is rotating (the basket [tumbler] **must be** rotating for approximately 30-seconds before getting a true RPM reading). In coin mode, the program switch **must be** in the “UP” position.

E. CLEARING CREDIT

Credit can be cleared from either dryer pocket by using the following key combination. With the program switch down, press and hold the “PAUSE” key while entering the following key combination: “HIGH-HIGH-HIGH-LOW-LOW-MEDIUM.” The combination is the “HIGH” key three (3) times followed by the “LOW” key two (2) times and then the “MEDIUM” key one (1) time. Wait 1-second for the control to prompt the user with “CLEAR CREDIT?” If you want to proceed, simultaneously press the “PAUSE” button and one of the remaining keys. This will clear the credit.

F. ACCESSING COIN VAULT

The coin vault can be accessed by placing the program switch into the “UP” position. Once the program switch is in the “UP” position, press the “HIGH” key. The phase 7 dual coin microprocessor controller will now display the amount of money in the coin vault. Press the “HIGH” key again and the controller will ask to “CLEAR COIN VAULT TOTAL?” Press “PAUSE” for “NO” and press “MEDIUM” for “YES.”

SECTION V

SERVICE/PARTS INFORMATION

A. SERVICE

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

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

B. PARTS

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

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

SECTION VI

WARRANTY INFORMATION

A. RETURNING WARRANTY CARDS

1. Before any dryer leaves the **ADC** factory test area, a warranty card is placed on the back side of the main door glass. These warranty cards are intended to serve the customer where we record the individual installation date and warranty information to better serve you should you file a warranty claim.
 - a. If a warranty card did not come with your dryer, contact the **ADC** Warranty Department or the **ADC** Service Department at (508) 678-9000.

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

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

B. WARRANTY

For a copy of the **ADC** commercial warranty covering your particular dryer(s), contact the **ADC** reseller from whom you purchased the equipment and request a dryer warranty form. If the reseller **cannot** be contacted or is unknown, warranty information can be obtained from the factory by contacting the **ADC** Warranty Department at (508) 678-9000.

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

C. RETURNING WARRANTY PARTS

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

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

NOTE: An R.M.A. is valid for only thirty (30) days from date of issue.

- a. The R.M.A. issued by the factory, as well as any other correspondence pertaining to the returned part(s), **must be** included inside the package with the failed merchandise.

2. Each part **must be** tagged with the following information:
 - a. **Model number** and **serial number** of the dryer from which part was removed.
 - b. Nature of failure (be specific).
 - c. Date of dryer installation.
 - d. Date of part failure.
 - e. Specify whether the part(s) being returned is for a replacement, a credit, or a refund.

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

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

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

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

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

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

SECTION VII

ROUTINE MAINTENANCE

A. CLEANING

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

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

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

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

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

SUGGESTED CLEANING SCHEDULE

DAILY (beginning of each work shift)

Clean lint from lint drawer/screen.

Inspect lint screen and replace if torn.

WEEKLY

Clean lint accumulation from around microprocessor temperature sensor probes and sensor bracket assemblies.

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

STEAM DRYERS

Clean steam coil fins. Suggest using compressed air and vacuum cleaner with brush attachment.

90 DAYS

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

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

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

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

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

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

B. ADJUSTMENTS

7 DAYS AFTER INSTALLATION AND EVERY 6 MONTHS THEREAFTER

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

C. LUBRICATION

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

SECTION VIII

PROCEDURE FOR FUNCTIONAL CHECK OF REPLACEMENT COMPONENTS

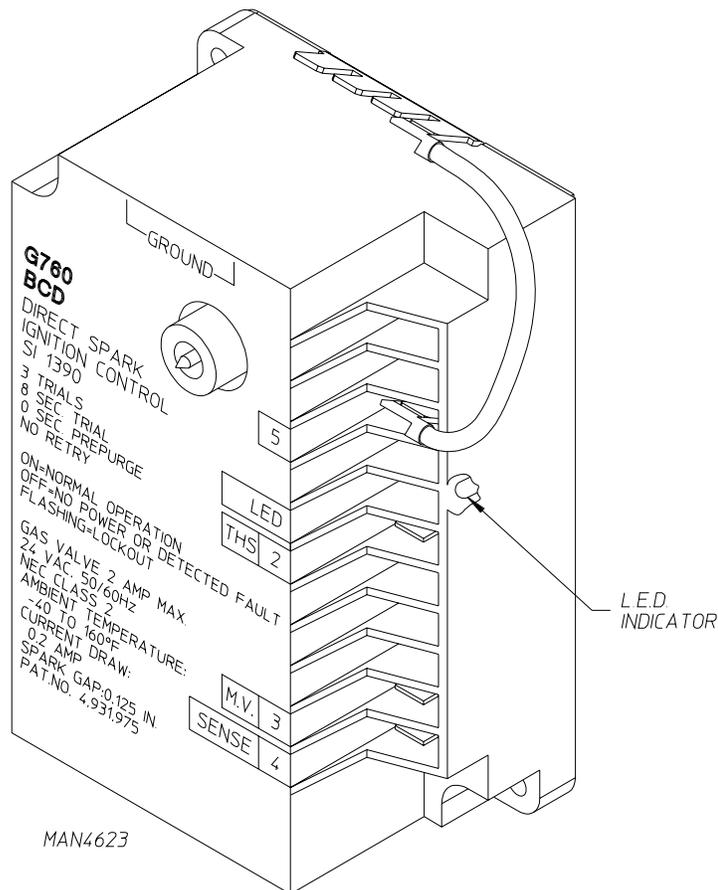
1. For Models With Johnson Controls Direct Spark Ignition (DSI) Module (G760)

Theory Of Operation:

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

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

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



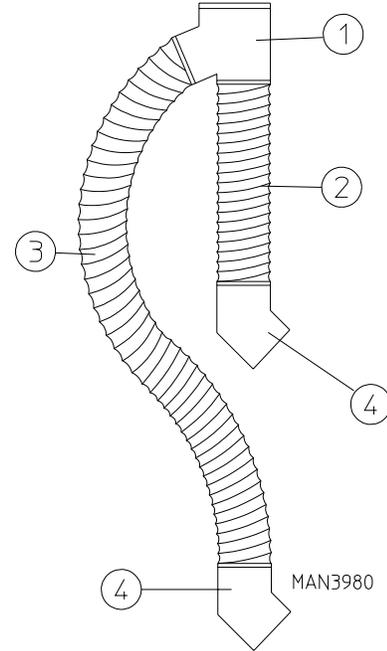
SECTION IX

OPTIONAL VENTING KITS

Optional Exhaust Duct Kit (ADG-330, ADG-320)

ADC Part No. 882035

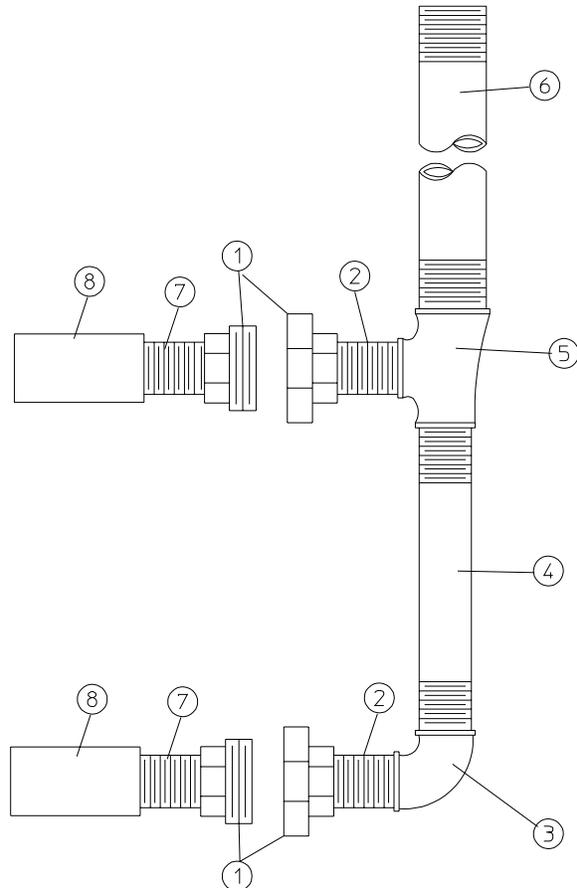
| ITEM# | QTY | P/N | DESCRIPTION |
|-----------------|-----|--------|--------------------------------|
| 1 | 1 | 143600 | 10" X 6" X 6", Y DUCT |
| 2 | 1 | 143519 | FLEX DUCT 6" x 4' LONG |
| 3 | 1 | 143509 | FLEX DUCT 6" x 8' LONG |
| 4 | 2 | 143536 | 45° ELBOW 6" |
| 5 | 12 | 150300 | #10 x 1/2" SELF DRILLING SCREW |
| NOT ILLUSTRATED | 12' | 117505 | ALUMINUM DUCT TAPE |



Optional Gas Piping Kit (ADG-330, ADG-320)

ADC Part No. 880128

| ITEM # | QTY | P/N | DESCRIPTION |
|--------|-----|--------|------------------------|
| 1 | 2 | 142600 | 1/2" UNION |
| 2 | 2 | 142700 | 1/2" CLOSE NIPPLE |
| 3 | 1 | 142500 | 1/2" x 90° ELBOW |
| 4 | 1 | 142824 | 1/2" x 37 1/4" NIPPLE |
| 5 | 1 | 142505 | 3/4" x 1/2" x 1/2" TEE |
| 6 | 1 | 142821 | 3/4" x 36" NIPPLE |
| 7 | 2 | 142814 | 1/2" x 2 1/2" NIPPLE |
| 8 | 2 | 143001 | 1/2" COUPLING |



MAN5710

CALBERT 03/14/01

SECTION X

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

S.A.F.E. System In Action



The exclusive Sensor Activated Fire Extinguishing (S.A.F.E.) 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 will trigger the S.A.F.E. system water jet(s) to quickly extinguish the flames. 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. The microprocessor will display that the system was activated and will continue to display until the dryer is attended to.

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

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 installation or owners responsibility to see that the necessary or required water, water pressure, pipe size, or connections are provided. Manufacturer assumes no responsibility if the sensor activated fire extinguishing (S.A.F.E.) system **is not** connected, installed, or maintained properly.

INSTALLATION

1. Requirements

The inlet water connection to the dryer is a 1/2" M.P.T., the S.A.F.E. system **must be** supplied with a minimum water pipe size of 1/2-inch 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 S.A.F.E. system will be INOPERATIVE!!

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

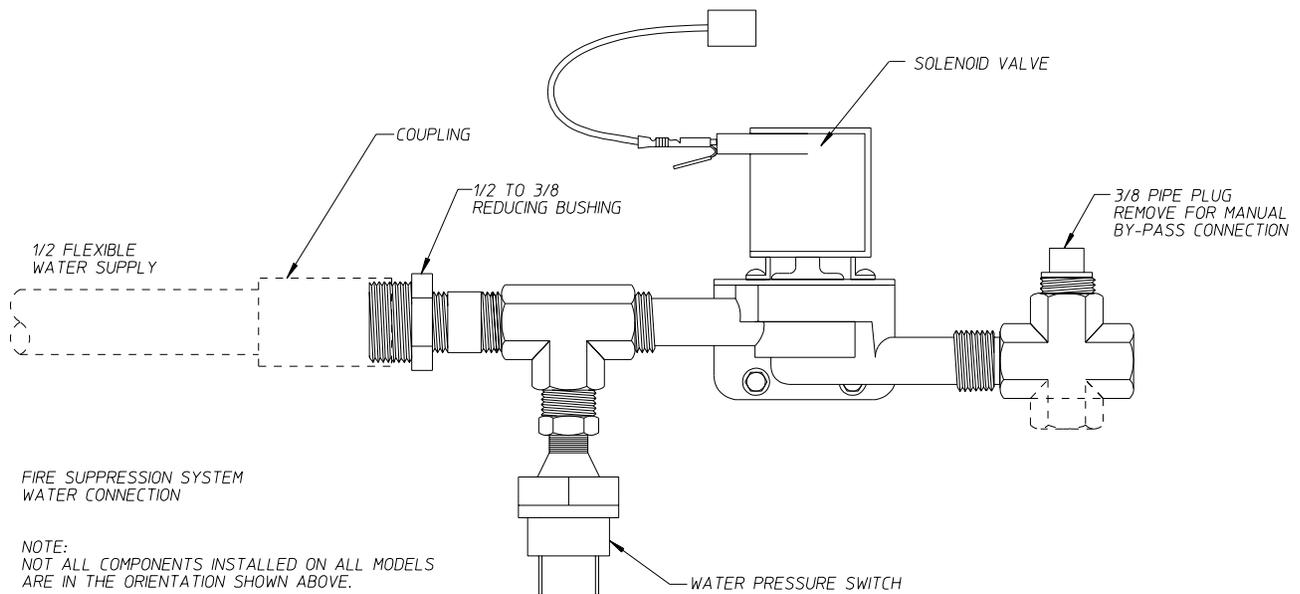
2. Water Connections:

The water connection is made to the 1/2" M.P.T. bushing of the electric water solenoid valve located either at the rear upper left area of the dryer or the rear middle right area on 320/330 models (see photo). The water solenoid valve has a 3/8" M.P.T. connection and a 1/2" bushing is supplied 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.



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...



EL 8/12/02

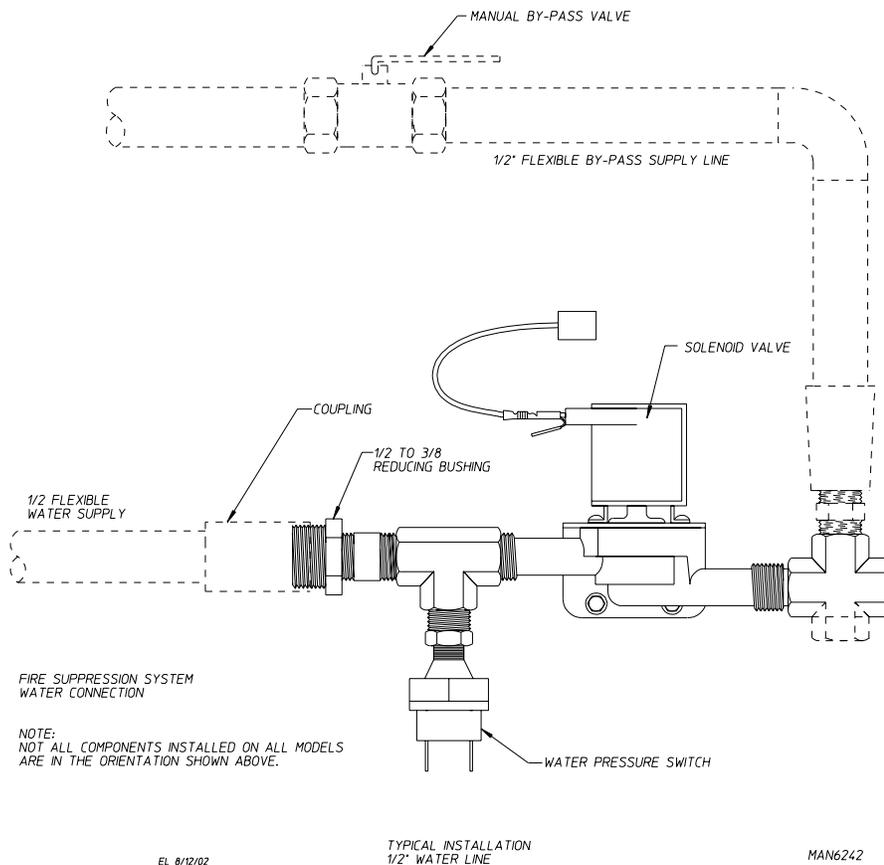
MAN6241

OPTIONAL MANUAL BYPASS

Provisions are made in the dryer sensor activated fire extinguishing (S.A.F.E.) 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 “cross” fitting located in the outlet 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 “cross” fitting which has a 3/8” F.P.T. and a coupling **must be** used to provide the minimum 1/2-inch 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 S.A.F.E. 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 S.A.F.E. system is supplied internally from the dryer control.

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

Sensor Activated Fire Extinguishing (S.A.F.E.) System

Theory of Operation

While the dryer is in an idle state or 20-seconds after the heat turns off, the Phase 7 control monitors the S.A.F.E. system probe located in the top of the basket (tumbler) chamber and records the minimum temperature. If the minimum recorded S.A.F.E. system probe temperature is greater than 120° F (48° C) and the control detects a 50° rise in temperature, this will be the trip point and the S.A.F.E. system routine will activate.

While a drying cycle is in process and the heat has turned on at least once, the Phase 7 control monitors the exhaust temperature transducer. If the drying cycle temperature set point is set greater than 160° F (71° C) and the control detects an exhaust temperature rise 25° F greater than set point, this will be the trip point and the S.A.F.E. system routine will activate. If set point is below 160° F (71° C) the trip point will be 185° F (85° C).

Once the S.A.F.E. system routine is activated, the control will display “S.A.F.E. System Activated” and water will be injected into the basket (tumbler) chamber. Anytime 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 2 minutes has elapsed, the control will check if the temperature remained above trip point, if so water will remain on. The control will continue to check if 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 control will display “S.A.F.E. Was Activated.” If the temperature has dropped below trip point, the control will turn off the water prior to 10 minutes.

Disabled Sensor Activated Fire Extinguishing (S.A.F.E.) System

In the event that the S.A.F.E. system is not installed properly or if there is a malfunction in the system the Phase 7 coin control will notify the user by displaying the message “S.A.F.E. DISABLED...” If the “PAUSE” and “LO” keys are simultaneously pressed, the control will display one of the following diagnostic messages indicating the fault with the system. If there is more than one issue with the S.A.F.E. system, the control will display one message at a time.

S.A.F.E. Diagnostic Messages

Open S.A.F.E. Probe Fault: This message indicates that the S.A.F.E. probe is either not connected or is damaged.

Shorted S.A.F.E. Probe Fault: This message indicated that the S.A.F.E. probe is damaged or the wiring is shorted.

Open S.A.F.E. Valve Fault: This indicates that the water valve is open or that it is not connected to the control.

Shorted S.A.F.E. Valve Fault: This indicates the water valve is shorted or the wiring to the valve is shorted.

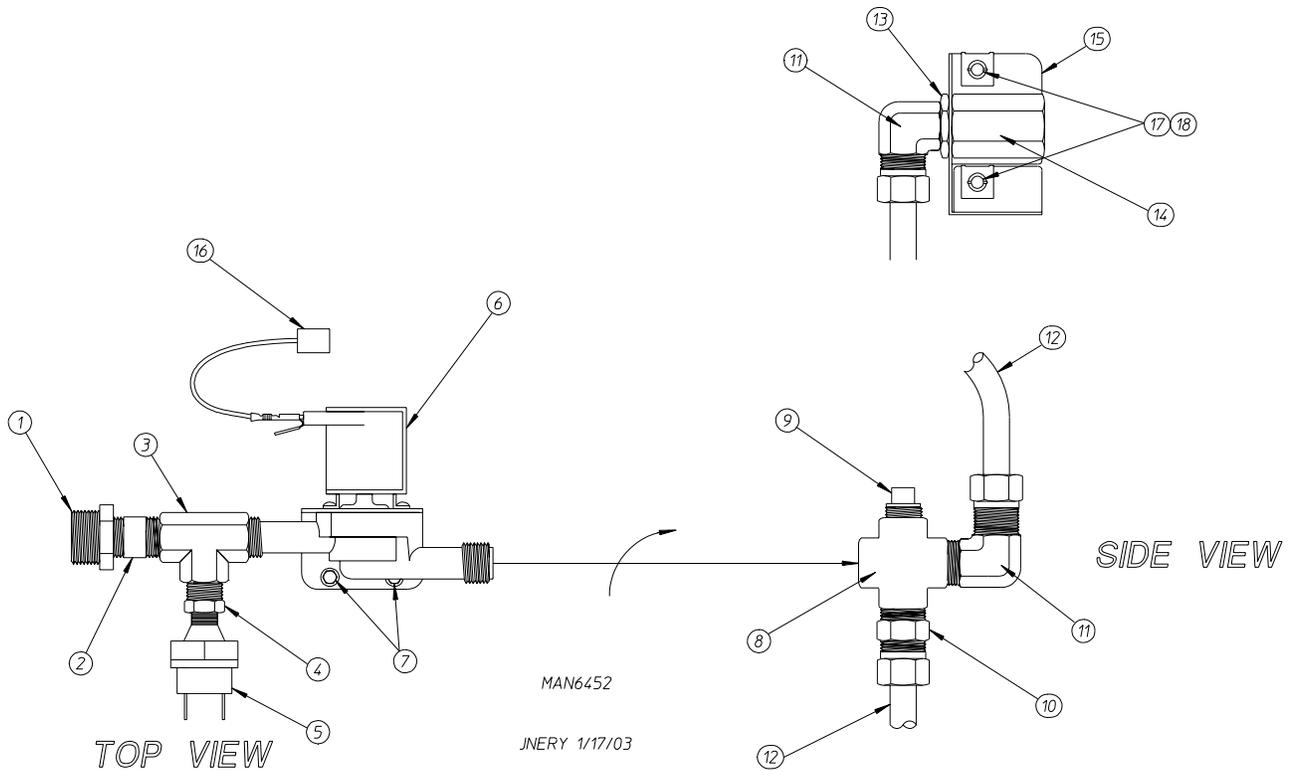
Water Not Connected: This indicates that there is no water pressure at the water valve. This will occur if water is not connected to dryer or if there is low water pressure in the water line coming to the dryer. This could also be a defective pressure switch or wiring to the pressure switch.

SYSTEM RESET

To reset the microprocessor once the control displays “S.A.F.E. Was Activated,” press and hold the “PAUSE” key for 3-seconds.

S.A.F.E. Parts Break Down

AD-320 and 330 Stack Dryers

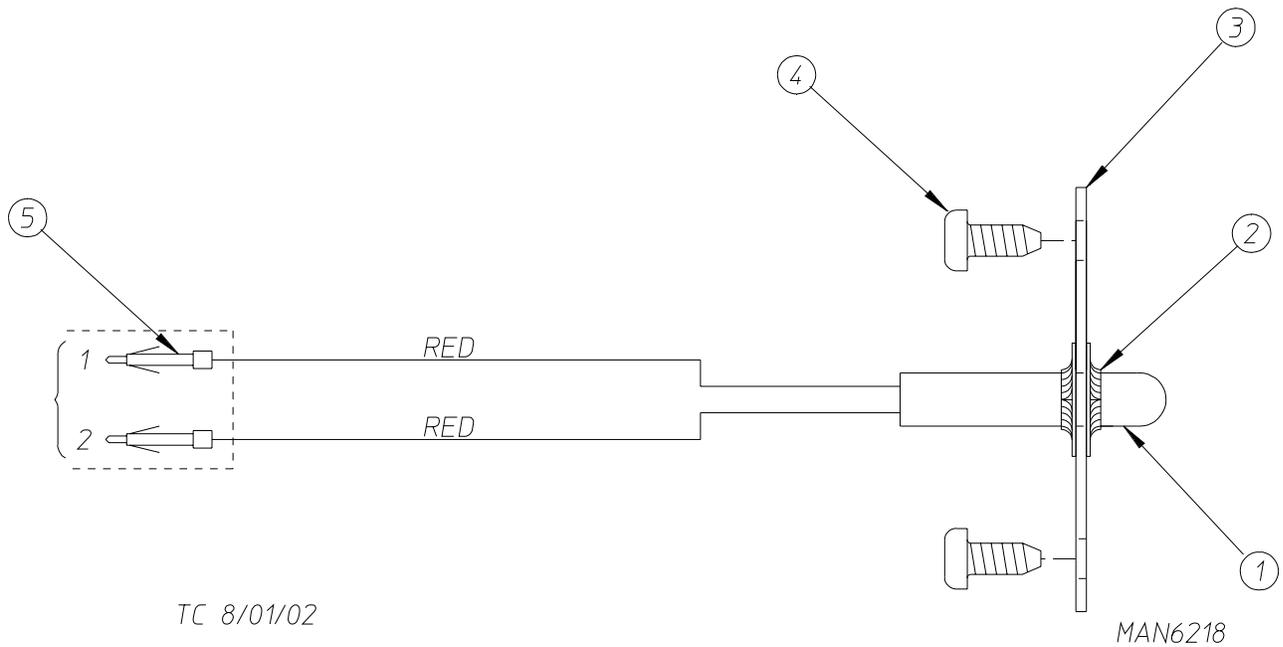


| <u>Illus. No.</u> | <u>Part No.</u> | <u>Qty.</u> | <u>Description</u> |
|-------------------|-----------------|-------------|---|
| 1 | 142888 | 1 | 1/2" M.P.T. x 3/8" F.P.T. Hex Bushing |
| 2 | 143241 | 1 | 3/8" Close Bracket Nipple |
| 3 | 143220 | 1 | 3/8" F.P.T. Brass Tee |
| 4 | 143315 | 1 | 3/8" M.P.T. x 1/8" F.P.T. Brass Bushing |
| 5 | 136987 | 1 | Water Jet Pressure Switch |
| 6 | 165114 | 1 | Sensor Activated Fire Extinguishing (S.A.F.E.) System Solenoid Valve 24V 50/60 Hz |
| 7 | 150309 | 2 | #10-16 x 1/2" Hex Head TEK Crimptite Screw |
| 8 | 143236 | 1 | 3/8" Brass Cross |
| 9 | 143251 | 1 | 3/8" M.P.T. Brass Plug |
| 10 | 143208 | 1 | 3/8" Comp x 3/8" M.P.T. Brass Connect |
| 11 | 143320 | 3 | 3/8" Comp x 3/8" M.P.T. Brass Elbow |
| 12 | 143099* | 4' | 3/8" OD x 0.03 Wall Copper Tubing |
| 13 | 143303 | 2 | 3/8" N.P.T. Brass Lock Nut |
| 14 | 143585 | 2 | 3 GPM 3/8" F.P.T. 60 D.E.G. Spray Nozzle |
| 15 | 311591 | 2 | Sprinkler Head Mounting Bracket |
| 16 | 824081 | 1 | R.C. Network Assembly |
| 17 | 154001 | 4 | #10-24 Speed Nut |
| 18 | 150207 | 4 | #10-24 x 1/2" Phillips Pan Head Machine Screw |

* Sold by the foot.

S.A.F.E. Sensor Probe Assembly - All Models

(2 required for 2-pocket stack dryers)



| <u>Illus. No.</u> | <u>Part No.</u> | <u>Qty.</u> | <u>Description</u> |
|-------------------|-----------------|-------------|--|
| 1 | 822752 | 1 | Sensor Activated Fire Extinguishing (S.A.F.E.) System Temperature Probe Assembly (includes illus. nos. 1 through 5) |
| 2 | 154007 | 2 | Push On Fastener |
| 3 | 390390 | 1 | Sensor Bracket ONLY |
| 4 | 150301 | 2 | #8-18 x 7/16" Phillips Pan Head TEK Screw |
| 5 | 122647 | 1 | Connector ONLY (does not include terminals) |

