

AD-120ES / ADG-120DR

Installation Manual

Extended Side Panels/Phase 7/Phase 5/Dual Timer



WARNING:

FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in serious injury, death or property damage.

- 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 appliances.
 - 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:

RISQUE D'INCENDIE OU D'EXPLOSION

Le non-respect des avertissements de sécurité pourrait entraîner des blessures graves, la mort ou des dommages matériels.

- N'entreposer pas et n'utilisez pas d'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre appareil.
- **QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ**
 - Ne tentez pas d'allumer d'appareil.
 - Ne touchez à aucun interrupteur. Ne vous servez pas des téléphones se trouvant dans le bâtiment où vous vous trouvez.
 - Évacuez la pièce, le bâtiment ou la zone.
 - Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
 - Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.
- L'installation et l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz.



American Dryer Corporation

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Retain This Manual in a Safe Place for Future Reference

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

Only qualified technicians should service this equipment.

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

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

FOR YOUR SAFETY

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

POUR VOTRE SÉCURITÉ

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

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

IMPORTANT

For your convenience, log the following information:

DATE OF PURCHASE _____ MODEL NO. _____

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 +1 (508) 678-9447 or telephone your order directly to the ADC Parts Department at +1 (269) 923-3000. Please specify the dryer model number and serial number in addition to the description and part number, so that your order is processed accurately and promptly.

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

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

GB United Kingdom
IE Ireland

“IMPORTANT NOTE TO PURCHASER”

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

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 standards. Please observe all safety precautions displayed on the equipment and/or specified in the installation manual included with the dryer. Before installation, check that the local distribution conditions, nature of gas and pressure, and adjustment of the appliances are compatible.

CAUTION

Dryer(s) should never be left unattended while in operation.

When discarding or storing your old clothes dryer, remove the door.

Lorsque vous entreposez ou mettez votre sècheuse au rebut, enlevez-en la porte.

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.

WARNING

Children should not be allowed to play on or near the dryer(s). Children should be supervised if near dryers in operation.

Under no circumstances should the dryer door switch(es), lint door/drawer switch(es), or heat safety circuit(s) ever be disabled.

DO NOT MODIFY THIS APPLIANCE.

The dryer must never be operated with any of the back guards, outer tops, or service panels removed. Personal injury or fire could result.

The dryer must never be operated without the lint filter/screen in place, even if an external lint collection system is used.

Do not operate this appliance before reading the instruction booklet.

Do not place articles on or against this appliance.

If the hi-limit switch trips, a service call is required to investigate the reason and resolve the issue.

FOR YOUR SAFETY

Do not dry mop heads in the dryer. Do not use dryer in the presence of dry cleaning fumes.

The dryers 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.

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

- Installations and repairs must be performed by a qualified or licensed contractor, plumber, or gas fitter qualified or licensed by the State of Massachusetts.
- Acceptable Shut-off Devices: Gas Cocks and Ball Valves installed for use shall be listed.
- A flexible gas connector, when used, must not exceed 4 feet (121.9 cm).

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List of Acronyms

DSI	Direct Spark Ignition
HVAC	Heating, Ventilating, and Air-Conditioning
in WC	Inches of Water Column
L.E.D.	Light Emitting Diode
OSHA	Occupational Safety and Health Administration
R.M.A.	Return Material Authorization
UL	Underwriters Laboratory

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.

The dryer must never be operated with any of the back guards, outer tops, or service panels removed. Personal injury or fire could result.

Failure to properly install, maintain, and/or operate dryer according to this manual and operator's manuals included with dryer may result in conditions, which can cause serious injury, death and/or property damage.

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

Do not spray aerosols in the vicinity of this appliance while it is in operation.

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.

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 gas supplier.

Dryer(s) must be exhausted to the outdoors.

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

WARNING

Dry only water washed fabrics. Do not dry articles spotted or washed in dry cleaning solvents, a combustible detergent, industrial chemicals, or "all purpose" cleaner. Explosion could result.

Do not dry rags or articles coated or contaminated with gasoline, kerosene, oil, paint, or wax. Explosion could result.

Items that have been spotted or soaked with vegetable or cooking oil constitute a fire hazard and should not be placed in a tumble dryer.

Do not dry mop heads. Contamination by wax or flammable solvents will create a fire hazard.

Do not use heat for drying articles that contain plastic, foam, sponge rubber, or similarly textured rubber materials. Drying in a heated tumbler may damage plastics or rubber and may be a fire hazard.

The possible presence of residual quantities of aggressive or decomposed chemicals in the load may produce damage to the machine and harmful fumes.

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.

For personal safety, the dryer must be electrically grounded in accordance with local codes and/or National Electric Code ANSI/NFPA 70, or in Canada, Canadian Electric Code CSA C22.1.

NOTE: *Failure to electrically ground the dryer properly will void the warranty.*

Under no circumstances should the dryer door switch, lint drawer switch, heat safety circuits ever be disabled.

WARNING

Personal injury or fire could result should the dryer door switch, lint door/drawer, or heat safety circuit ever be disabled.

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

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.

Do not operate steam dryers with more than 125 psi (8.62 bar, 862 kPa) steam pressure. Excessive steam pressure can damage steam coil and/or harm personnel.

Replace leaking flexible hoses or other steam fixtures immediately. Do not operate the dryer with leaking flexible hoses. Personal injury may result.

Read and follow all caution and direction labels attached to the dryer.

For safety, proper operation, and optimum performance, the dryer must not be operated with a load less than sixty-six percent, 79 lb (35.4 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 standards.

AD-120ES Specifications

MAXIMUM CAPACITY (DRY WEIGHT)				120 lb		54.43 kg	
TUMBLER DIAMETER				44-5/8"		113.35 cm	
TUMBLER DEPTH				42-1/8"		107.00 cm	
TUMBLER VOLUME				38.10 cu ft		1,078.87 L	
TUMBLER / DRIVE MOTOR				3/4 hp		0.56 kW	
BLOWER / FAN MOTOR				3 hp		2.24 kW	
DOOR OPENING (DIAMETER)				31-3/8"		79.69 cm	
DOOR SILL HEIGHT				25-7/8"		65.72 cm	
WATER CONNECTION				3/4"-11.5 NH (North America)			
				3/4" B.S.P.T. (Outside North America)			
DRYERS PER 20'/40' CONTAINER				3 / 7			
DRYERS PER 48'/53' TRUCK				9 / 10			
GAS	VOLTAGE AVAILABLE			208-575V		3ø	3,4w 50/60 Hz
	APPROXIMATE NET WEIGHT			1,440 lb		653.17 kg	
	APPROXIMATE SHIPPING WEIGHT			1,500 lb		680.4 kg	
	AIRFLOW 60 Hz 50 Hz			2,150 cfm		60.88 cmm	
				1,791 cfm		50.71 cmm	
	HEAT INPUT			375,000 Btu/hr		94,498 kcal/hr	
	EXHAUST CONNECTION (DIAMETER)			14"		35.56 cm	
	COMPRESSED AIR CONNECTION			N / A			
	COMPRESSED AIR VOLUME			N / A			
	INLET PIPE CONNECTION			1" F.N.P.T.			
			1" F.B.S.P.T. (CE and Australia Only)				
ELECTRIC	VOLTAGE AVAILABLE			208-575V		3ø	3,4w 50/60 Hz
	APPROXIMATE NET WEIGHT			1,500 lb		680.4 kg	
	APPROXIMATE SHIPPING WEIGHT			1,555 lb		705.3 kg	
	AIRFLOW 60 Hz 50 Hz			2,150 cfm		60.88 cmm	
				1,791 cfm		50.71 cmm	
	EXHAUST CONNECTION (DIAMETER)			14"		35.56 cm	
	COMPRESSED AIR CONNECTION			N / A			
	COMPRESSED AIR VOLUME			N / A			
	OVEN SIZE						
	kW	Btu/hr	kcal/hr				
	72	245,700	61,900				
	75.6	258,000	65,000				
STEAM*	VOLTAGE AVAILABLE			208-575V		3ø	3,4w 50/60 Hz
	APPROXIMATE NET WEIGHT			1,421 lb		644.55 kg	
	APPROXIMATE SHIPPING WEIGHT			1,561 lb		708.06 kg	
	AIRFLOW 60 Hz 50 Hz			2,150 cfm		60.88 cmm	
				1,791 cfm		50.71 cmm	
	STEAM CONSUMPTION			365 lb/hr		166 kg/hr	
	OPERATING STEAM PRESSURE			125 psi max		8.62 bar, 862 kPa	
	EXHAUST CONNECTION (DIAMETER)			14"		35.56 cm	
	COMPRESSED AIR CONNECTION**			1/8" N.P.T.			
	COMPRESSED AIR VOLUME**			0.75 cfh		0.02 cmh	
	BOILER HP (NORMAL LOAD)			13 Bhp			
	SUPPLY CONNECTION			(1) 1-1/4" N.P.T. (Female)			
	RETURN CONNECTION			(1) 1-1/4" N.P.T. (Female)			

Shaded areas are stated in metric equivalents

1/6/15

* Air-operated steam damper system requires a clean, dry and regulated 80 psi +/- 10 psi (5.51 bar +/- 0.69 bar) air supply.

** Compressed air is not required with optional steam solenoid valve.

Refer to **page 23**, for optional steam pressure, consumption and boiler horsepower.

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

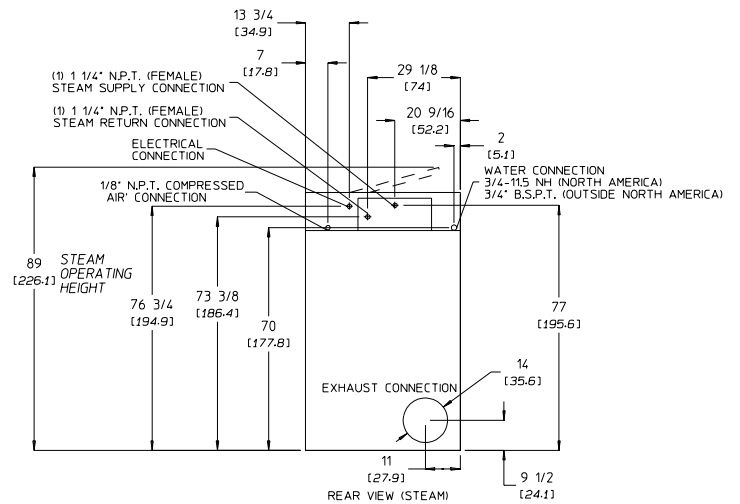
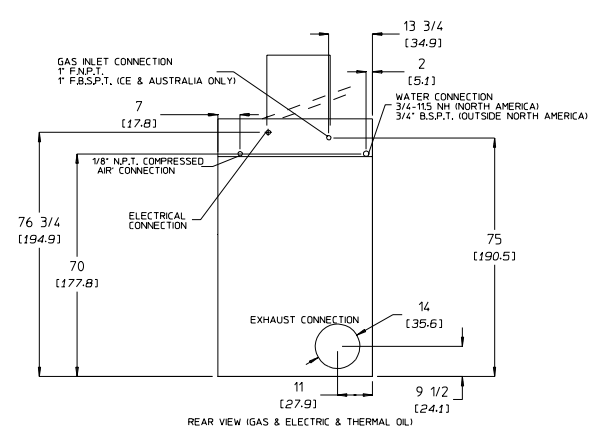
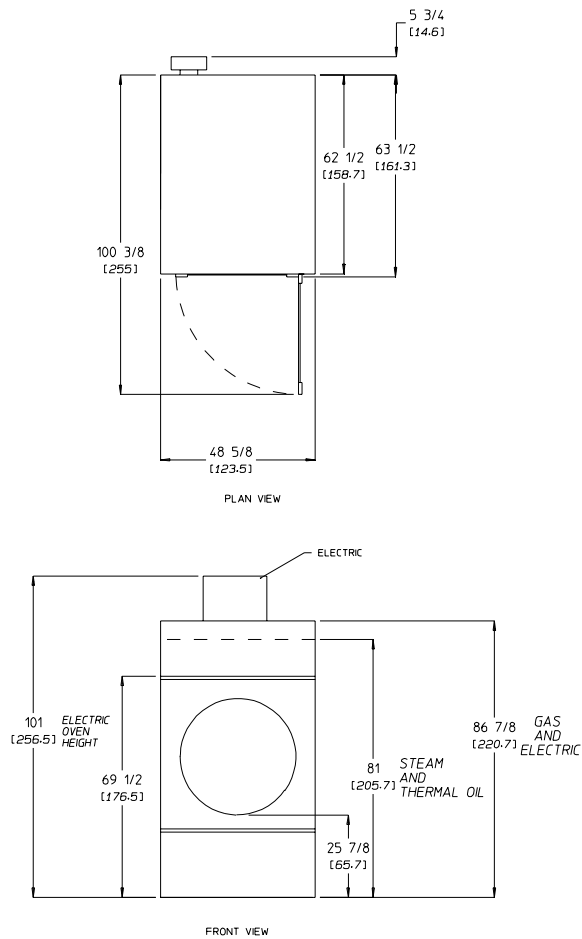
AD-120ES Specifications

DRYER NOTES:

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

STEAM DRYER NOTES:

- ° SIZE OF PIPING TO DRYER VARIES WITH INSTALLATION CONDITIONS. CONTACT FACTORY FOR ASSISTANCE.
- ° AIR OPERATED STEAM DAMPER SYSTEM REQUIRES A CLEAN, DRY, REGULATED 80 PSI $\pm$ 10 PSI (5.5 BAR $\pm$ 0.69 BAR) AIR SUPPLY.



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

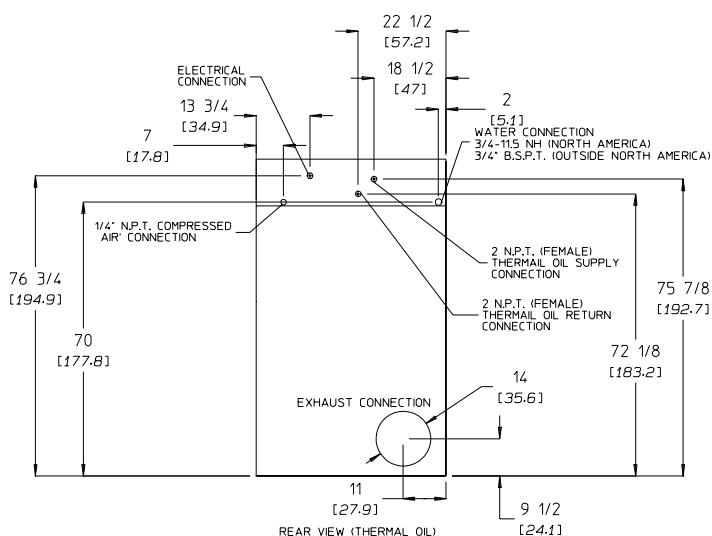
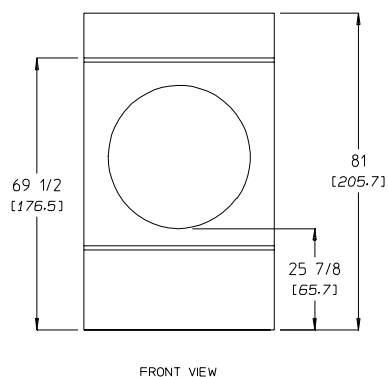
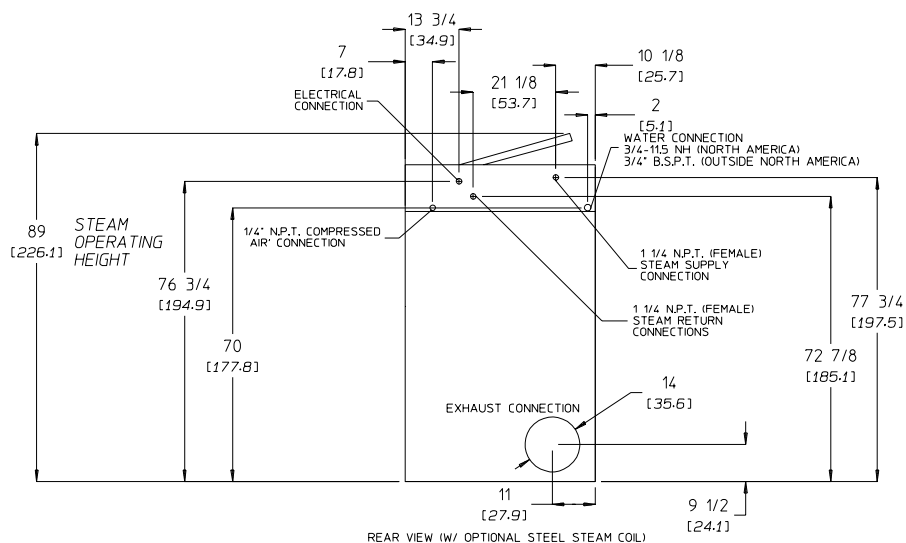
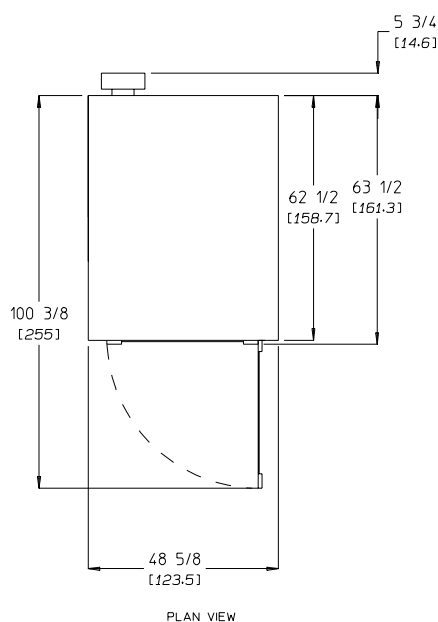
WITH OPTIONAL STEEL STEAM COIL OR OPTIONAL THERMAL OIL

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.

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- ° AIR OPERATED STEAM DAMPER SYSTEM REQUIRES A CLEAN, DRY, REGULATED 80 PSI $\pm$ 10 PSI (5.5 BAR $\pm$ 0.69 BAR) AIR SUPPLY.



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

ADG-120DR Specifications

MAXIMUM CAPACITY (DRY WEIGHT)		120 lb	54.43 kg
TUMBLER DIAMETER		44-1/2"	113.03 cm
TUMBLER DEPTH		42-1/2"	107.95 cm
TUMBLER VOLUME		38.20 cu ft	1081.704 L
TUMBLER/DRIVE MOTOR		3/4 hp	0.56 kW
BLOWER/FAN MOTOR		3 hp	2.24 kW
DOOR OPENING (DIAMETER)		31-3/8"	79.71 cm
DOOR SILL HEIGHT		25-7/8"	65.72 cm
WATER CONNECTION		3/4"-11.5 NH	
DRYERS PER 20'/40' CONTAINER		3 / 7	
DRYERS PER 48'/53' TRUCK		9 / 10	
GAS	VOLTAGE AVAILABLE	208-575v 3ø 3,4w 60 Hz	
	APPROX. NET WEIGHT	1,440 lb	653.2 kg
	APPROX. SHIPPING WEIGHT	1,500 lb	680.4 kg
	AIRFLOW	1,750 cfm	49.55 cmm
	HEAT INPUT	300,000 Btu/hr	75,599 kcal/hr
	EXHAUST CONNECTION (DIAMETER)	12"	30.48 cm
	COMPRESSED AIR CONNECTION	N / A	
	COMPRESSED AIR VOLUME	N / A	
	INLET PIPE CONNECTION	3/4" M.N.P.T.	
ELECTRIC	VOLTAGE AVAILABLE	N / A	
	APPROX. NET WEIGHT		
	APPROX. SHIPPING WEIGHT		
	AIRFLOW		
	EXHAUST CONNECTION (DIAMETER)		
	COMPRESSED AIR CONNECTION		
	COMPRESSED AIR VOLUME		
	OVEN SIZE		
	kW Btu/hr kcal/hr		
STEAM	VOLTAGE AVAILABLE	N / A	
	APPROX. NET WEIGHT		
	APPROX. SHIPPING WEIGHT		
	AIRFLOW		
	STEAM CONSUMPTION		
	OPERATING STEAM PRESSURE		
	EXHAUST CONNECTION (DIAMETER)		
	COMPRESSED AIR CONNECTION		
	COMPRESSED AIR VOLUME		
	BOILER HP (NORMAL LOAD)		
	SUPPLY CONNECTION		
	RETURN CONNECTION		

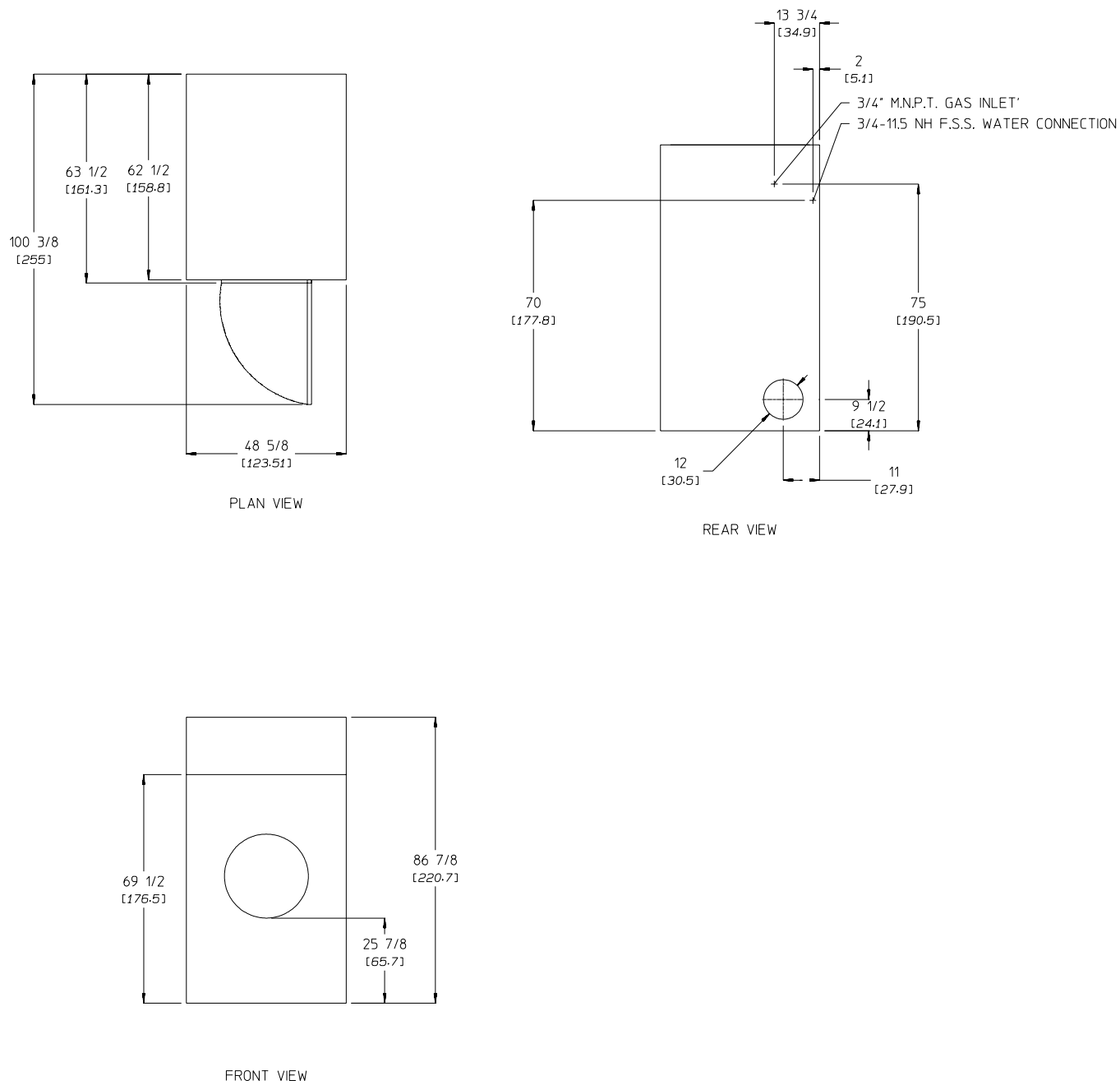
Shaded areas are stated in metric equivalents

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

ADG-120DR Specifications

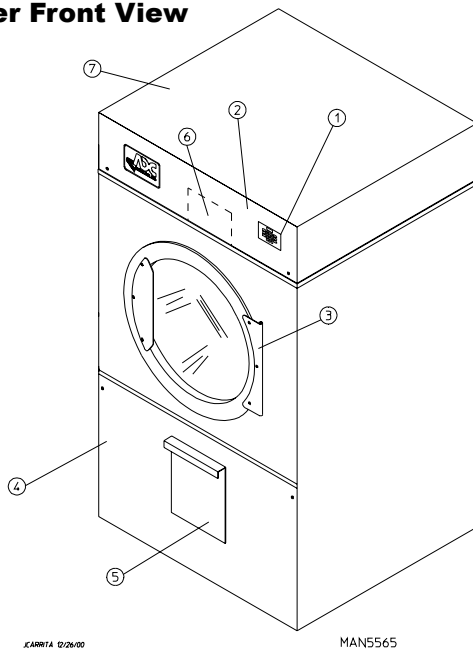
- DRYER NOTES:
- ° DUCTWORK SIZE VARIES WITH INSTALLATION CONDITIONS.
 - ° EXHAUST STATIC PRESSURE MUST BE NO LESS THAN 0 AND MUST NOT EXCEED 0.6" (1.48 mB) WATER COLUMN



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

Component Identification

Dryer Front View

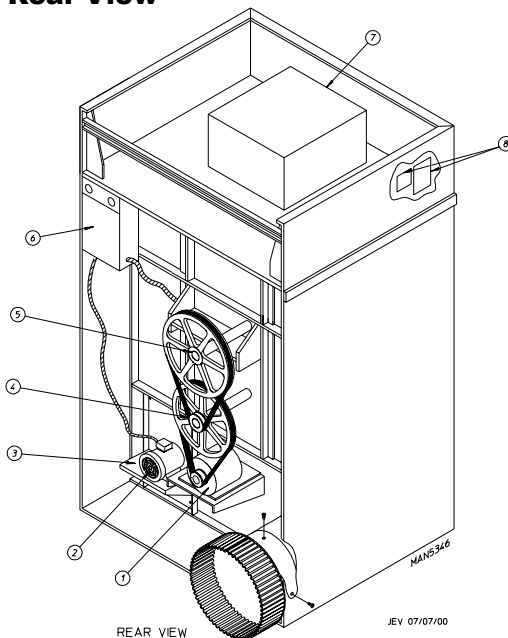


KARNTA 01/26/00

MAN5565

Illus. No.	Description
1	Microprocessor Control/Keypad Panel Assembly (controls)
2	Control (top access) Door Assembly
3	Main Door Assembly
4	Lint Door Assembly
5	Lint Drawer
6	Wire Diagram (located behind control door)
7	Top Console (module) Assembly

Dryer Rear View



REAR VIEW

JEV 07/07/00

Illus. No.	Description
1	Tumbler Drive Motor Assembly
2	Blower Motor Mount Assembly
3	Blower Motor (impellor/fan) Assembly
4	Idler Bearing Mount Assembly
5	Tumbler Bearing Mount Assembly
6*	Electric Service Relay Box
7	Heating Unit
8	Data Label and Installation Label

* Electric service connections are made in this box.

Installation Procedures

Installation should be performed by competent professional in accordance with local, state, and country codes. In the absence of these codes, the installation must conform to applicable American National Standards: National Fuel Gas Code ANSI Z223.1/NFPA 54 and National Electric Code ANSI/NFPA 70, or in Canada, the installation must conform to applicable Canadian Standards: Natural Gas and Propane Installation Code CSA B149.1 and Canadian Electric Code CSA C22.1.

Location Requirements

Before installing the dryer, ensure the location conforms to local codes and ordinances. In the absence of such codes or ordinances the location must conform with National Fuel Gas Code ANSI Z223.1/NFPA 54, or in Canada, the installation must conform to applicable Canadian Standards: Natural Gas and Propane Installation Code CSA B149.1.

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

IMPORTANT: "The dryer must be installed on noncombustible floors only."

The dryer must not be installed or stored in an area where it will be exposed to water and/or weather.

The dryer is for use in noncombustible locations.

Provisions for adequate air supply must be provided as noted in this manual (refer to Fresh Air Supply Requirements section).

Clearance provisions must be made from combustible construction as noted in this manual (refer to Dryer Enclosure Requirements section).

Provisions must be made for adequate clearances for servicing and for operation as noted in this manual (refer to Dryer Enclosure Requirements section).

The dryer must be installed with a proper exhaust duct connection to the outside as noted in this manual (refer to Exhaust Requirements section).

Dryer must be located in an area where correct exhaust venting can be achieved as noted in this manual (refer to Exhaust Requirements section).

IMPORTANT: The dryer should be located where a minimum amount of exhaust duct will be necessary.

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

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

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

Unpacking / Setting Up

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

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

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

Leveling Dryer

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

If more headroom is needed when moving dryer into position, the top console (module) may be removed. Use the following instructions to remove the top console (module).

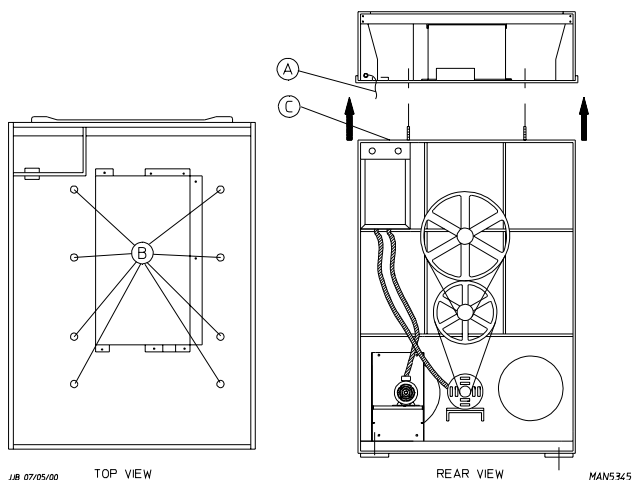
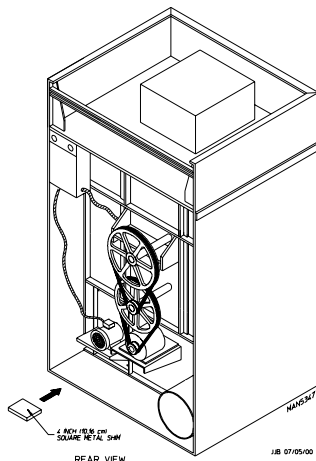
Disconnect the ground wire (A) at the rear upper left hand corner of dryer.

Remove the eight sets of nuts and washers (B) holding the console (module) to base.

Open the control door/control panel and disconnect the white 15-pin plug connector (C) (refer to the illustration below) located in the base of the control box.

Disconnect white plug connector located outside back side of the control box (provides power to heat circuit).

Lift the console (module) off the dryer base.



Exhaust Transition Piece (For Models Other Than ADG-120DR)

WARNING

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

THIS EXHAUST DUCT TRANSITION PIECE MUST BE INSTALLED FIRST!

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

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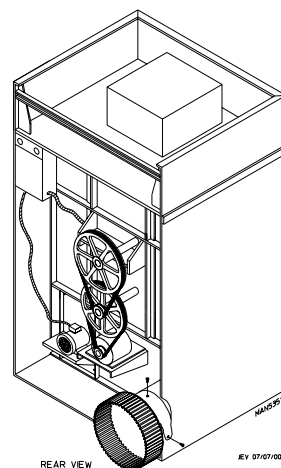
P/N: 114092

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

Remove the exhaust transition piece from the tumbler and place it on the exhaust outlet.

Using the screws provided, secure the exhaust transition piece to the dryer.

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

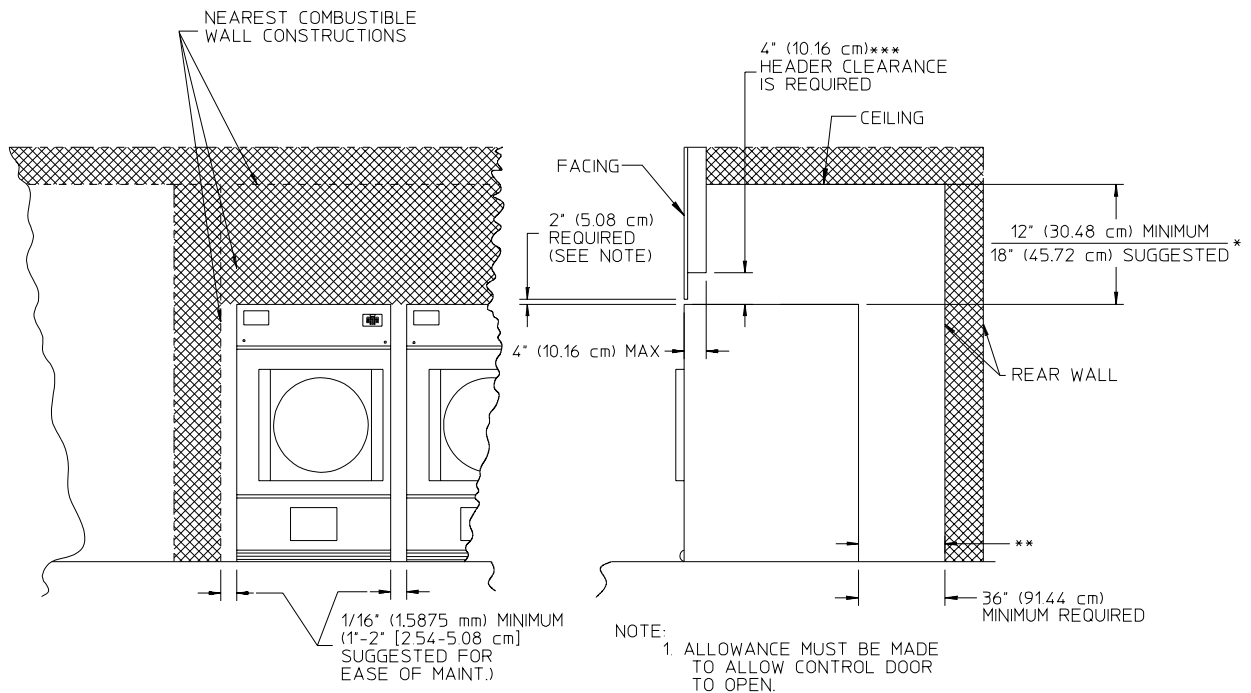


Dryer Enclosure Requirements

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 (0.60 meters) from the nearest obstruction (i.e., wall) for ease of installation, maintenance, and service. Bulkheads and partitions should be made from noncombustible materials. The clearance between the bulkhead header and the dryer must be a minimum of 4-inches (10.16 cm) and must not extend more than 4-inches (10.16 cm) to the rear of the dryer front. The bulkhead facing must not be closed in all the way to the top of the dryer. A 2-inch (5.08 cm) clearance is required.

NOTE: Bulkhead facing should not be installed until after dryer is in place. Ceiling area must be located a minimum of 12-inches (30.48 cm) above the top of the dryer. Even though a minimum of only 12-inches (30.48 cm) is required, 18-inches (45.72 cm) or more is suggested, for steam dryers and especially in cases where sprinkler heads are over the dryers.

When fire sprinkler systems are located above the dryers, a minimum of 18-inches (45.72 cm) above the dryer console (module) is suggested. Dryers may be positioned sidewall to sidewall however, 1- or 2-inches (2.54 cm or 5.08 cm) is suggested between dryers (or wall) for ease of installation and maintenance. Allowances must be made for the opening and closing of the control and lint doors.



* 12" (30.48 cm) OR MORE (18" [45.72 cm] OR MORE FOR STEAM) CLEARANCE IS SUGGESTED, ESPECIALLY IN CASES WHERE SPRINKLER HEADS ARE OVER THE DRYERS.

** 24" (60.96 cm) MINIMUM PERMITTED FOR DRYERS VENTING HORIZONTALLY.

*** FOR ELECTRICALLY HEATED DRYERS. THIS MEASUREMENT IS TAKEN FROM THE TOP OF THE ELECTRIC OVEN

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INSTALLATION: DRYER CLEARANCE TO ADJACENT WALL STRUCTURES.

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

NOTE: Component failure due to dry cleaning solvent fumes will void the warranty.

Fresh Air Supply Requirements

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

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

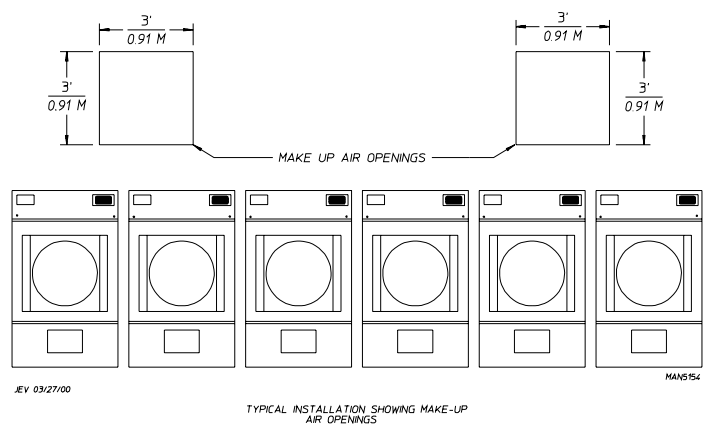
Air supply (make-up air) must be given careful consideration to ensure proper performance of each dryer. An unrestricted source of air is necessary for each dryer. An airflow of 2,150 cfm (cubic feet per minute) (60.88 cmm [cubic meters per minutes]) must be supplied to each dryer. As a general rule, an unrestricted air entrance from the outdoors (atmosphere) of a minimum of 3 square feet (0.28 square meters) is required for each dryer.

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

It is not necessary to have a separate make-up air opening for each dryer. Common make-up air openings are acceptable. However, they must be set up in such a manner that the make-up air is distributed equally to all the dryers. The dryer must be installed with provisions for adequate combustion and make-up air supply.

EXAMPLE: For a bank of six gas dryers, two openings measuring 3 feet by 3 feet (0.91 meters by 0.91 meters) are acceptable.

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



Exhaust Requirements

General Exhaust Ductwork Information

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 tumbler hi-heat thermostats. The dryer must be installed with a proper exhaust duct connection to the outside.

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

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

Improperly sized or installed exhaust ductwork can create a potential fire hazard.

NOTE: This dryer is manufactured with a back draft damper.

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. Single or independent dryer venting is recommended. When single dryer venting is used, the ductwork from the dryer to the outside exhaust outlet must not exceed 20 feet (6.09 meters). In the case of multiple (common) dryer venting, the distance from the last dryer to the outside exhaust outlet must not exceed 20 feet (6.09 meters). The shape of the ductwork is not critical as long as the minimum cross section area is provided. It is suggested that the use of 90° turns in ducting be avoided; use 30° and/or 45° angles instead. The radius of the elbows should preferably be 1-1/2 times the diameter of the duct. Excluding tumbler dryer elbow connections or elbows used for outside protection from the weather, no more than two elbows should be used in the exhaust duct run. If more than two elbows are used, the cross section area of the ductwork must be increased in proportion to number of elbows added.

IMPORTANT: Exhaust back pressure measured by a manometer/magnehelic in the exhaust duct must be no less than 0 and must not exceed 0.3 in WC (0.75 mb, 75 Pa).

NOTE: It is recommended that exhaust or booster fans not be used in the exhaust ductwork system except where necessary to maintain exhaust back pressure (in the exhaust duct) between zero and 0.3 in WC. Where employed, booster fans must not activate the dryer airflow proving switch (sail switch) when the dryer is not in operation.

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

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

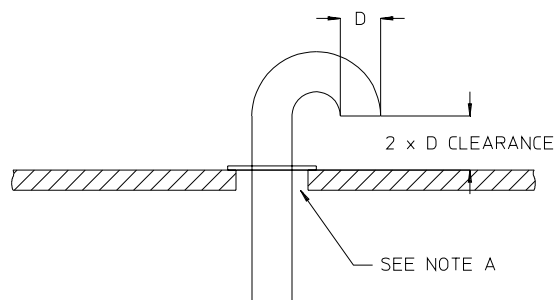
To protect the outside end of the horizontal ductwork from the weather, a 90° elbow bent downward should be installed where the exhaust exits the building. If the ductwork travels vertically up through the roof, it should be protected from the weather by using a 180° turn to point the opening downward.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

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 the nearest obstruction.

IMPORTANT: Do not use screens, louvers, or caps on the outside opening of the exhaust ductwork.

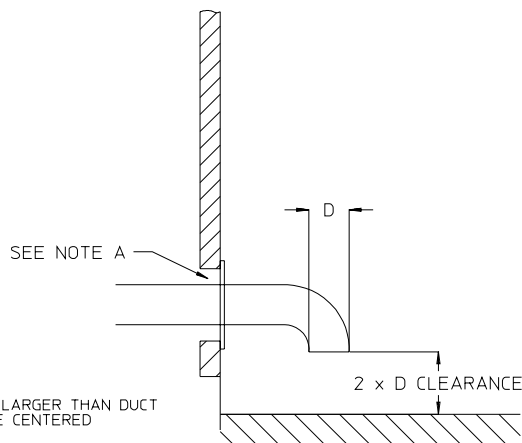
VERTICAL DUCTING



MAN4589

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

HORIZONTAL DUCTING



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.

ADG-120DR Single Dryer Venting

When possible, it is suggested to provide a separate exhaust duct for each dryer. The exhaust duct should be laid out in such a way that the 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° and/or 45° angles instead. The shape of the exhaust ductwork is not critical as long as the minimum cross section area is provided.

IMPORTANT: Minimum duct size for model ADG-120DR dryer with not more than three elbows (including dryer connection and outside outlets) is 12-inches (30.48 cm) for a round duct or 10-3/4" by 10-3/4" (27.30 cm by 27.30 cm) for a square duct. Duct size must not be reduced anywhere downstream of dryer.

Exhaust back pressure measured by a manometer/magnehelic in the exhaust duct must be no less than 0 and must not exceed 0.3 in WC (0.75 mb, 75 Pa).

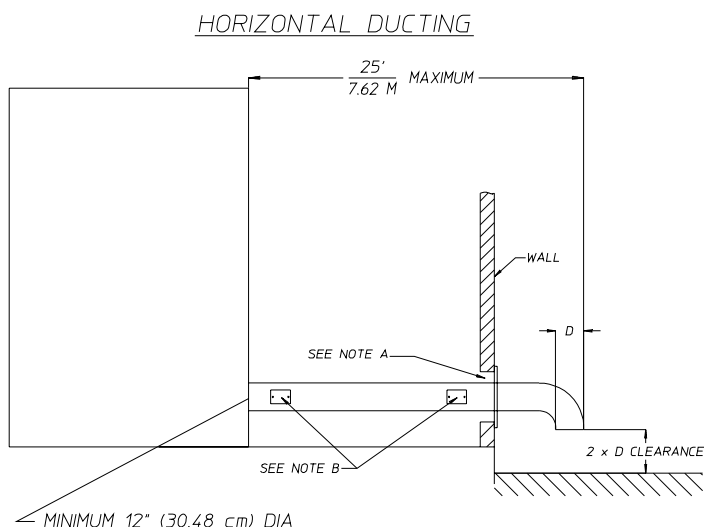
NOTE: It is recommended that exhaust or booster fans not be used in the exhaust ductwork system except where necessary to maintain exhaust back pressure (in the exhaust duct) between zero and 0.3 in WC. Where employed, booster fans must not activate the dryer airflow proving switch (sail switch) when the dryer is not in operation.

It is suggested that the ductwork from each dryer (minimum 12-inches [30.48 cm]) not exceed the lengths and number of elbows shown below. If the ductwork exceeds the lengths and number of elbows shown below, the cross section area of the ductwork must be increased in proportion to the length and number of elbows in it. In calculating duct size, the cross section area of a square or rectangular duct must be increased by twenty percent for each additional 15 feet (4.57 meters). The diameter of a round exhaust duct should be increased ten percent for each additional 15 feet (4.57 meters). Each 12-inch (30.48 cm) 90° elbow is equivalent to 25 feet (7.62 meters).

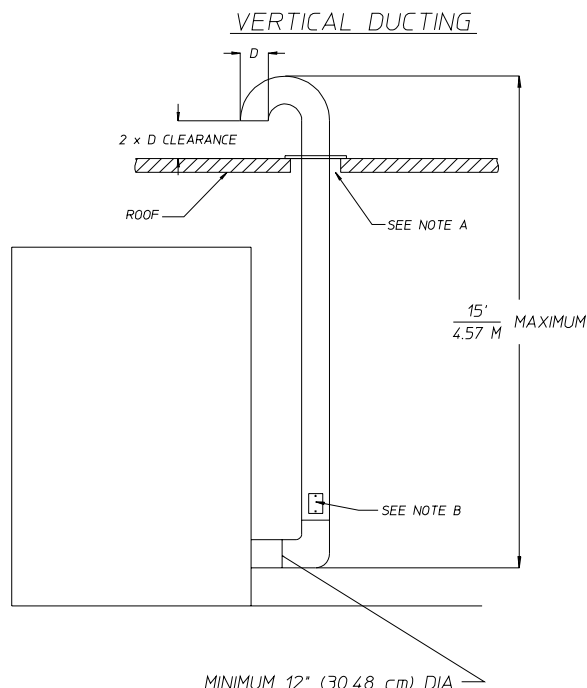
IMPORTANT: For extended ductwork runs, the cross section area of the duct can only be increased to an extent. Maximum proportional ductwork runs cannot exceed 20 feet (6.09 meters) more than the original limitations of 20 feet (6.09 meters) with two elbows. When the ductwork approaches the maximum limits as noted in this manual, a professional HVAC firm should be consulted for proper venting information.

All 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. Inspection doors should be installed at strategic points in the exhaust ductwork for periodic inspection and cleaning of lint from the ductwork.

SINGLE DRYER VENTING



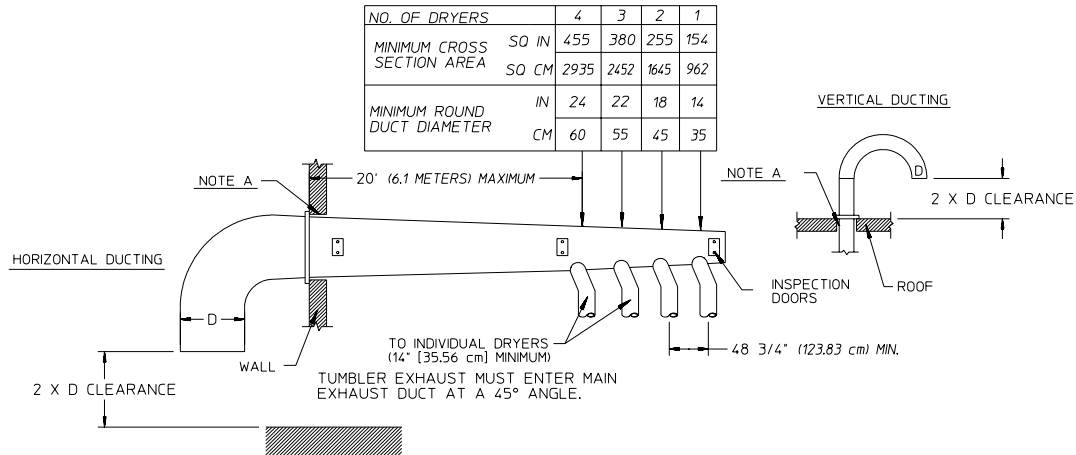
NOTE: "A"- OPENING MUST BE TWO (2) INCHES (5.08 cm) LARGER THAN DUCT (ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING.
 "B"- INSPECTION DOORS SHOULD BE INSTALLED AT STRATEGIC POINTS FOR PERIODIC INSPECTION AND CLEANING



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JJB 03/06/00

AD-120ES MULTIPLE DRYER VENTING
14-INCHES (35.56 CM) DIAMETER, 2,150 CFM (60.88 CMM) EXHAUST CONNECTION AT COMMON DUCT
(GAS, ELECTRIC, AND STEAM MODELS)



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

MAN7094B

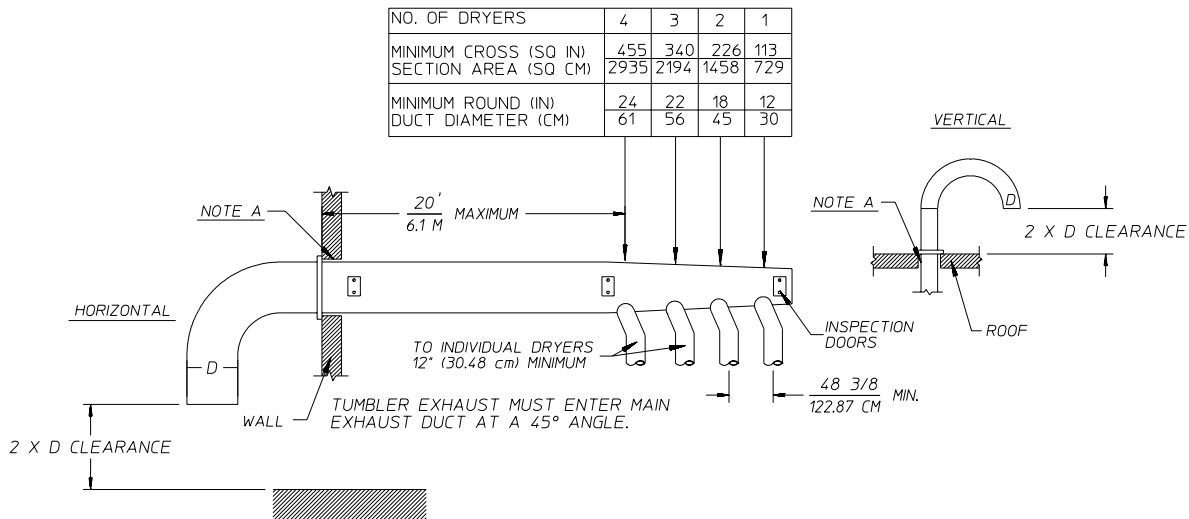
FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA

CROSS SECTIONAL AREA OF A ROUND DUCT = $0.785 \times D^2$ WHERE D = DIAMETER OF THE DUCT IN INCHES OR CENTIMETERS

CROSS SECTIONAL AREA OF A RECTANGULAR DUCT = $W \times H$ WHERE W = WIDTH H = HEIGHT IN INCHES OR CENTIMETERS

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

ADG-120DR MULTIPLE DRYER VENTING
ADG-120DR 12-INCHES (30.48 CM) DIAMETER (1,750 CFM [49.6 CMM]) EXHAUST CONNECTIONS AT COMMON DUCT



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

MAN5094A

FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA

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

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

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

Electrical Information

Electrical Requirements

All electrical connections must be made by a properly licensed and competent electrician. This is to ensure that the electrical installation is adequate and conforms to local, state, and national regulations or codes of the country of destination. In the absence of such codes, all electrical connections, materials, and workmanship must conform to the applicable requirements of National Electric Code ANSI/NFPA 70, or in Canada, Canadian Electric Code CSA C22.1.

For personal safety, the dryer must be electrically grounded in accordance with local codes and/or National Electric Code ANSI/NFPA 70, or in Canada, Canadian Electric Code CSA C22.1.

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

NOTE: Component failure due to improper installation will void the warranty.

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

NOTE: The use of aluminum wire will void the warranty.

Wiring diagrams are affixed to the left side panel area behind the top control (access) door.

IMPORTANT: The dryer must be connected to the electric supply shown on the data label. In the case of 208 VAC or 230/240 VAC, the supply voltage must match the electric service specifications of the data label exactly.

WARNING

208 VAC and 230/240 VAC are not the same. Any damage done to dryer components due to improper voltage connections will automatically void the warranty.

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

Electrical Service Specifications

Gas and Steam – Reversing

ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)

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

- NOTES:**
- A. When fuses are used they must be dual element, time delay, current limiting, class RK1 or RK5 ONLY. Calculate/determine correct fuse value, by applying either local and/or National Electrical Codes to listed appliance amp draw data.
 - B. Circuit breakers are thermal-magnetic (industrial) motor curve type ONLY. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used.
 - C. Circuit breakers for 3-phase (3Ø) dryers must be 3-pole type.

SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		CIRCUIT BREAKER
			60 Hz	50 Hz	
208 / 230	3Ø	3	15	—	20
220	3Ø	3	14	—	20
220	3Ø	3	—	18	25
230 / 240	3Ø	3	—	18	25
240	3Ø	3	15	—	20
380 / 400	3Ø	3	9	—	15
380 / 400	3Ø	4*	—	9	15
416	3Ø	4*	—	10	15
440	3Ø	3	9	9	15
460 / 480	3Ø	3	8	—	15
575	3Ø	3	7	—	15

* 3-Wire is available. Contact the factory for information.

4/1/19

Electric – Reversing

ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)

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

- NOTES:**
- A. When fuses are used they must be dual element, time delay, current limiting, class RK1 or RK5 ONLY. Calculate/determine correct fuse value, by applying either local and/or National Electrical Codes to listed appliance amp draw data.
 - B. Circuit breakers are thermal-magnetic (industrial) type ONLY. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used.
 - C. Circuit breakers for 3-phase (3Ø) dryers must be 3-pole type.

SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		CIRCUIT BREAKER
			60 Hz	50 Hz	
60 kW					
480	3ø	3	80	—	100
60.5 kW					
220	3ø	3	173	—	225
380	3ø	3	101	—	150
380	3ø	4 *	—	101	150
66 kW					
460	3ø	3	91	—	125
230	3ø	3	—	184	250
400	3ø	4 *	—	104	150
72 kW					
208	3ø	3	215	—	300
240	3ø	3	188	—	250
480	3ø	3	95	—	125
575	3ø	3	79	—	100
416	3ø	4 *	—	109	150
75.6 kW					
220	3ø	3	214	—	300
440	3ø	3	108	—	150
78.6 kW					
600	3ø	3	81	—	125
82.7 kW					
460	3ø	3	112	—	150
90 kW					
480	3ø	3	117	—	150

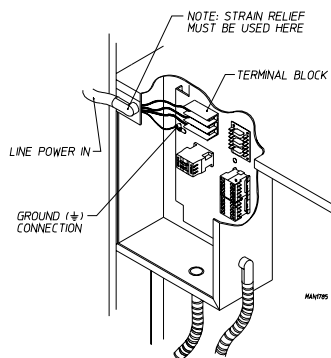
* 3-Wire is available. Contact the factory for information.

10/18/16

Electrical Connections

NOTE: A wiring diagram is included with each dryer and is affixed to the rear upper right guard/panel of the dryer.

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



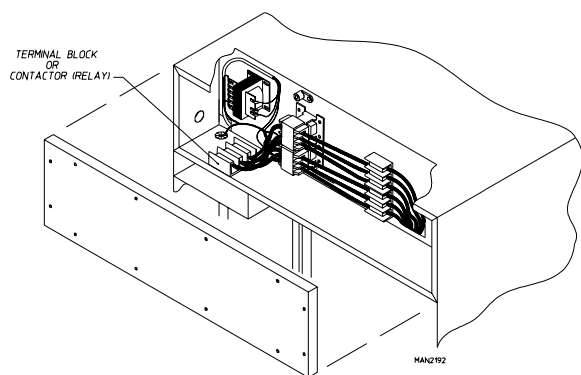
Gas Model and Steam Model Dryers

These electrical connections are made at the terminal block located in the electric service/relay box at the rear, upper left hand corner of the dryer. To gain access into this service box, the service cover (upper back guard) must be removed.

Electric Model Dryers

For electric model dryers made to operate at 208 VAC or 230/240 VAC, the electrical input connection is made into the terminal block located at the upper rear of the dryer (refer to the illustration below). For electric model dryers made to operate at 380 VAC, 416 VAC, 440 VAC, or 480 VAC, the electrical input connection is made to the oven relay located at the upper rear of the dryer (refer to the illustration below). Input connection wiring must be sized properly to handle the dryer's current draw. This information is printed on the dryer's data label.

NOTE: A circuit servicing each dryer must be provided.



Grounding

A ground (earth) connection must be provided and installed in accordance with local, state, and national regulations or codes of the country of destination. In the absence of these codes, grounding must conform to applicable requirements of National Electric Code ANSI/NFPA 70, or in Canada, the installation must conform to applicable Canada Standards: Canadian Electric Code CSA C22.1. The ground connection may be to a proven earth ground at the location service panel.

NOTE: A grounding connection (terminal lug) is provided in the dryer's electrical service/relay box at the rear.

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 or hot water pipe. The grounded cold water pipe must have metal to metal connections all the way to electrical ground. If there are any nonmetallic interruptions, such as a meter, pump, plastic, rubber, or other insulating connectors, they must be jumped out with no. 4 copper wire and securely clamped to bare metal at both ends.

IMPORTANT: For personal safety and proper operation, the dryer must be grounded. For proper operation of the microprocessor controller (computer), an earth (zero) ground is required.

NOTE: Grounding via metallic electrical conduit (pipe) is not recommended.

Gas Information

It is your responsibility to have all plumbing connections, materials, and workmanship conform to local and state regulations or codes of the country of destination. In the absence of such codes, all plumbing connections, materials, and workmanship must conform to the applicable local requirements. In the USA this is National Fuel Gas Code ANSI Z223.1/NFPA 54, or in Canada, Natural Gas and Propane Installation Code CSA B149.1.

In Australia, the fuel gas code is AS/NZS5601, local authority, gas, electricity, and any other relevant statutory regulations.

It is important that gas pressure regulators meet applicable pressure requirements, and that gas meters be rated for the total amount of all the appliance Btu being supplied.

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

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

IMPORTANT: Failure to isolate or disconnect the dryer from supply as noted can cause irreparable damage to the gas valve voiding the warranty.

⚠ WARNING

Fire or explosion could result.

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 (Propane Gas) or LATEST EDITION, as well as local codes and ordinances and must be done by a qualified professional.

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

The dryer must be connected to the type of heat/gas indicated on the dryer data label. If this information does not agree with the type of gas available, do not operate the dryer. Contact the reseller who sold the dryer or contact the manufacturer.

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 manufacturer.

IMPORTANT: This gas dryer is not provided with an internal gas supply shutoff and an external gas supply shutoff must be provided.

Technical Gas Data

For Australia, refer to data plate (back panel).

AD-120ES Gas Specifications

Rating	375,000 BTU/hr 94,500 kCal/hr 395.6 MJ/hr	Manifold Pressure*			In-Line Pressure			Orifice		
		Inches W.C.	mbar	kPa	Inches W.C.	mbar	kPa	Qty.	DMS	mm
Gas Type	Natural Gas	3.5	8.7	0.87	6.0-12.0	14.92-29.9	1.49-2.99	3	#4	5.309
	Natural Gas (AU / NZ)									
	Propane Gas**	10.5	26.2	2.62	10.5-11.0	26.1-27.4	2.61-2.74	3	#30	3.264
	Propane Gas (AU / NZ)***	8.8	22.0	2.20						

ADG-120DR Gas Specifications

Rating	300,000 BTU/hr 75,649 kCal/hr 316.5 MJ/hr	Manifold Pressure*			In-Line Pressure			Orifice		
		Inches W.C.	mbar	kPa	Inches W.C.	mbar	kPa	Qty.	DMS	mm
Gas Type	Natural Gas	3.5	8.7	0.87	6.0-12.0	14.92-29.9	1.49-2.99	3	#12	4.801
	Propane Gas**	10.5	26.2	2.62	10.5-11.0	26.1-27.4	2.61-2.74	3	#33	2.870

Shaded areas are stated in metric equivalents
Abbreviations: AU (Australia) and NZ (New Zealand).

* Manifold pressure is measured at the pressure tap on the outlet side of the gas valve when the valve is on.

** Unregulated propane kit installed. Gas valve's internal regulator (governor) is disabled.

*** Regulated propane installed. Gas valve's internal regulator (governor) is adjustable.

AD-120ES Gas Connections

Inlet connection 1" N.P.T.
(1" B.S.P.T. for CE and AGA dryers)
Gas Pipe supply size ... 1-1/4" Diameter Pipe (minimum)
Heat input 375,000 Btu/hr (94,500 kcal/hr)

ADG-120DR Gas Connections

Inlet connection 3/4" M.N.P.T.
Gas Pipe supply size ... 1" Diameter Pipe (minimum)
Heat input 300,000 Btu/hr (75,649 kcal/hr)

Natural Gas

Regulation is controlled by the dryer's gas valve's internal regulator. Incoming supply pressure must be consistent between a minimum of 7.0 in WC (17.4 mb, 1.74 kPa) and a maximum of 13.0 in WC (32.4 mb, 3.24 kPa) pressure. Burner manifold pressure should be 3.5 in WC (8.7 mbar, 0.87 kPa); adjust if necessary.

Propane Gas (Unregulated)

Dryers made for use with unregulated propane 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 in WC (26.1 mb, 2.61 kPa). There is no regulator or regulation provided in a propane dryer. The water column pressure must be regulated at the source (propane tank) or an external regulator must be added to each dryer.

Propane Gas (Regulated)

Regulation is controlled by the dryer's gas valve's internal regulator. Incoming supply pressure must be consistent at 11.0 in WC (27 mbar, 2.7 kPa). Burner manifold pressure should be 8.8 in WC (22 mbar, 2.2 kPa); adjust if necessary.

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 (Propane Gas) or LATEST EDITION (for General Installation and Gas Plumbing), as well as local codes and ordinances and must be done by a qualified professional. It is important that gas pressure regulators meet applicable pressure requirements, and that gas meters be rated for the total amount of all the appliance Btu being supplied.

Installer within Australia – refer to AS/NZS5601.1 for guidance on gas supply pipe sizing required for this appliance installation.

The dryer is provided with a 1" N.P.T. (1" B.S.P.T. for CE and AGA dryers) inlet pipe connection extending out the back area of the burner box. The minimum pipe size connection (supply line) to the dryer is 1-1/4" diameter. For ease of servicing, the gas supply line of each dryer must have its own shutoff valve.

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

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

Consistent gas pressure is essential at all gas connections. It is recommended that a 1-inch (2.54 cm) pipe gas loop be installed in the supply line servicing a bank of dryers. An in-line pressure regulator must be installed in the gas supply line (header) if the (natural) gas pressure exceeds 13.0 in WC (32.4 mb, 3.24 kPa) pressure.

IMPORTANT: A water column pressure of 3.5 in WC (8.7 mb, 0.87 kPa) for natural gas and 10.5 in WC (26.1 mb, 2.61 kPa) for unregulated propane dryers, and 8.8 in WC (22 mb, 2.2 kPa) for regulated propane dryers is required at the gas valve pressure tap of each dryer for proper and safe operation.

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

IMPORTANT: Pipe joint compounds that resist the action of natural and propane gases must be used.

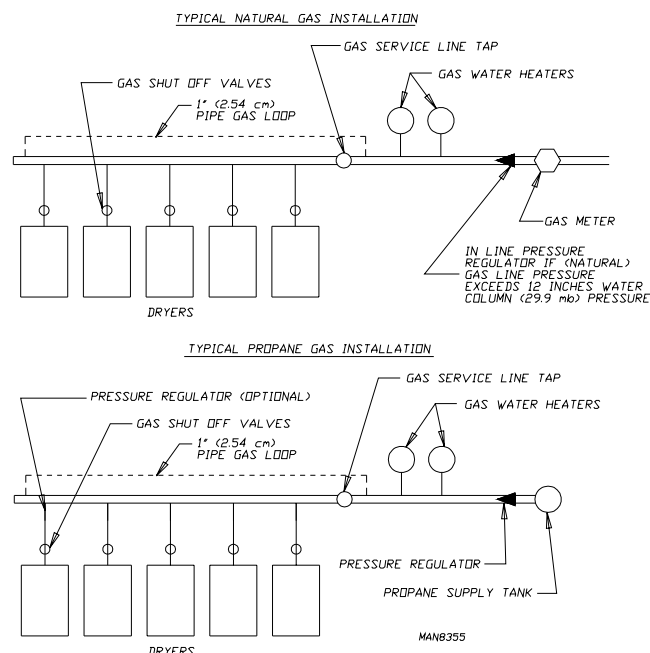
Test all connections for leaks by brushing on a soapy water solution (liquid detergent works well).

⚠ WARNING

Never test for leaks with a flame!!!

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

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



Steam Information

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

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

NOTE: In standard format this dryer is manufactured with a pneumatic (piston) damper system, which requires an external supply of air (80 psi +/- 10 psi [5.51 bar +/- 0.68 bar]). This dryer may be provided with an optional steam solenoid valve, in which case, no pneumatic steam damper system is provided.

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.

Steam Requirements, High Pressure

Inlet – 1-1/4" N.P.T. Supply Line Connection – qty. one (1) at top manifold.

Return – 1-1/4" N.P.T. Return Line Connection – qty. one (1) at bottom manifold.

OPERATING STEAM PRESSURE

Maximum*		Heat Input (Normal Load)	Consumption (Approx.) @ Maximum Pressure	
125 psig	862 kPa	13 Bhp	365 lb/hr	166 kg/hr
174 psig**	1,200 kPa**	14.5 Bhp**	420 lb/hr**	191 kg/hr**

Shaded areas are stated in metric equivalents

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

** 174 psig (1,200 kPa [12 bar]) with optional steel steam coil only.

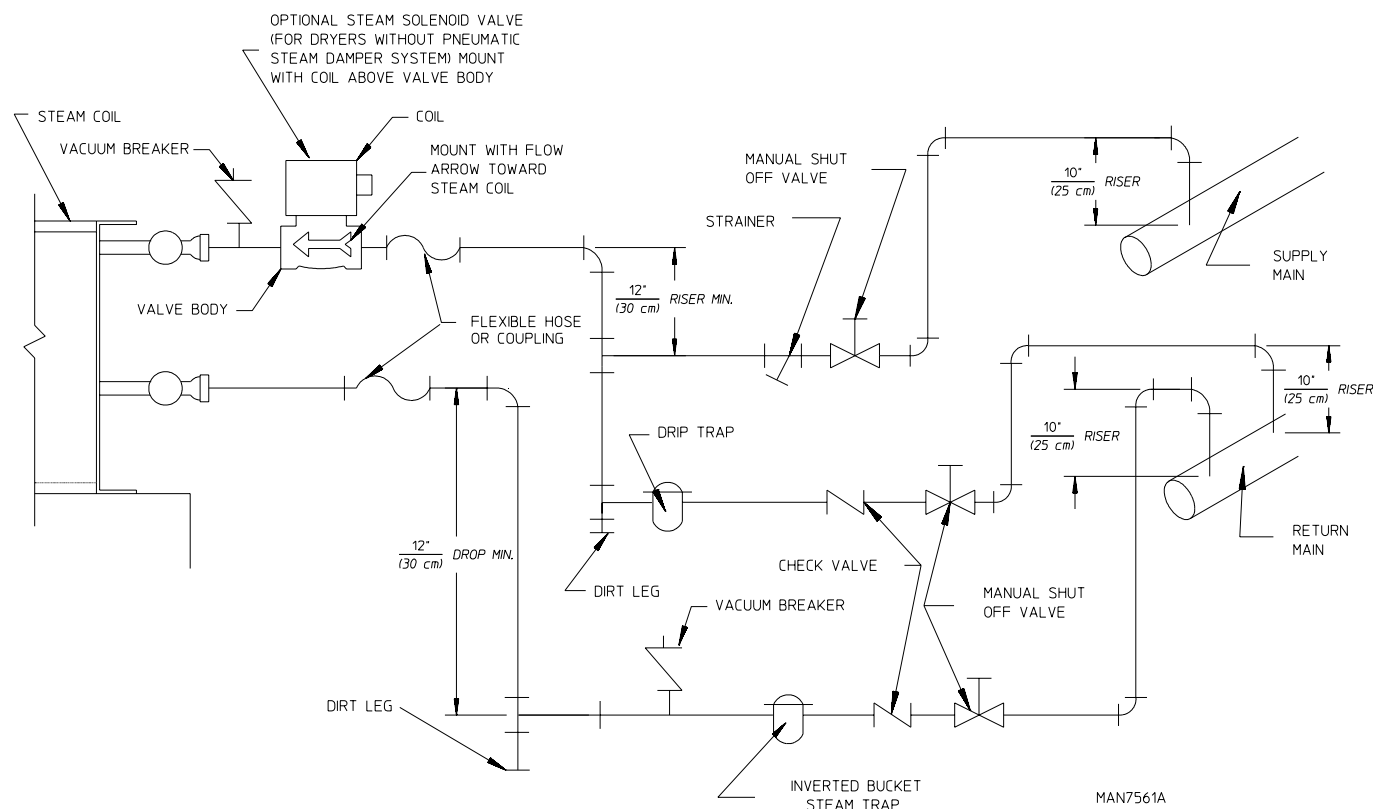
Installation Instructions

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

IMPORTANT: Steam coil failure due to water hammer by wet steam will void the warranty.

The presence of condensate in the steam supply line will cause water hammer and subsequent heat exchanger (steam coil) failure. The steam supply connection into the main supply line must be made within a minimum 12-inch (30.48 cm) riser. This will prevent any condensate from draining towards the dryer.

Piping Diagram for Steam Coil



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 return manifold as close to the coil as possible.

A trap with a capacity of 730 lb (332 kg) of condensate per hour at 125 psi (8.62 bar), is needed for each unit. Refer to illustration on [previous page](#).

NOTE: With optional one-stage steel steam coil, an inverted bucket steam trap with a capacity of 840 (382 kg) of condensate per hour at operating pressure is required for each dryer. Refer to illustration on [previous page](#).

A 3/4-inch (19.05 mm) vacuum breaker should be installed for each unit in the piping. This will prevent the condensing steam from causing a vacuum inside the coil and possibly damaging the coil.

Dryers with Optional Steam Solenoid Valve: Mount steam solenoid valve in orientation shown, with coil up. The supply line should be supported to prevent damage to the steam coil due to the overhung weight of the steam solenoid valve.

The supply and return lines should be insulated. This will save energy and provide safety for the operator and maintenance personnel.

Water pockets in the supply line, caused by low points, will provide wet steam to the coil possibly causing coil damage. All horizontal runs of steam supply piping should be pitched 1/4-inch (6.35 mm) for every 1 foot (0.31 meters) back towards the steam supply header causing any condensate in the line to drain to the header. Install a bypass trap in any low point to eliminate wet steam.

IMPORTANT: Flexible hoses/couplings must be used. Coil failure due to hard plumbing connections will void the warranty.

Steam Damper Air System Connections

In standard format, this dryer is manufactured with a pneumatic (piston) damper system, which requires an external supply of compressed air of 4.25 cfh (0.12 cmh) (refer to [page 30](#) for further compressed air requirements). (Note: This dryer may be provided with an optional steam solenoid valve in which case, no steam damper system is provided.) The air connection is made to the steam damper solenoid valve, which is located at the rear inner top area of the dryer just above the electric service relay box (refer to the bottom illustration on the right).

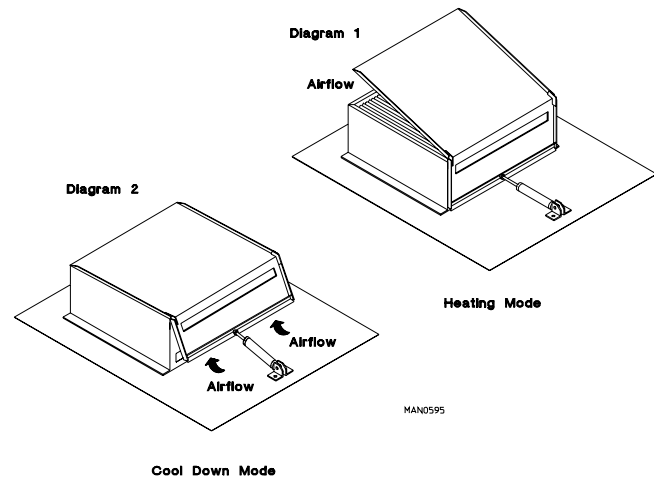
Steam Damper System Operation

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

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

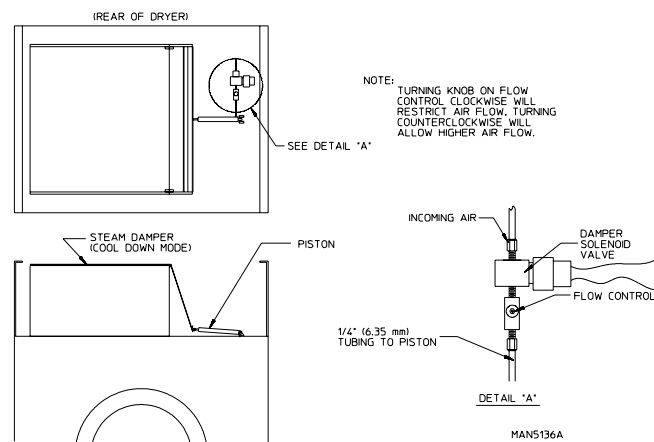
Diagram 2 – shows the damper in the cool down (closed) mode, pulling ambient air directly into the tumbler without passing through the coils.

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



Steam Damper Air Piston (Flow Control) Operation Adjustment System

Although the damper operation was tested and adjusted prior to shipping at 80 psi (5.51 bar, 551 kPa), steam damper operation must be checked before the dryer is put into operation. If damper air adjustment is necessary, locate flow control valve and make necessary adjustments as noted below.



Water Information

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.

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

Installation Requirements

The fire suppression system must be supplied with a minimum water pipe size of 1/2" and be provided with 40 psi +/- 20 psi (2.75 bar, 275 kPa +/- 1.37 bar, 137 kPa) of pressure. For use of optional manual bypass, a second source with the same piping and pressure requirements is required.

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

IMPORTANT: Flexible supply line/coupling must be used. Solenoid valve failure due to hard plumbing connections will void warranty.

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

⚠ WARNING

If the water in the supply line or water solenoid valve freezes, the fire suppression system will be inoperative!!

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

Water Connections

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

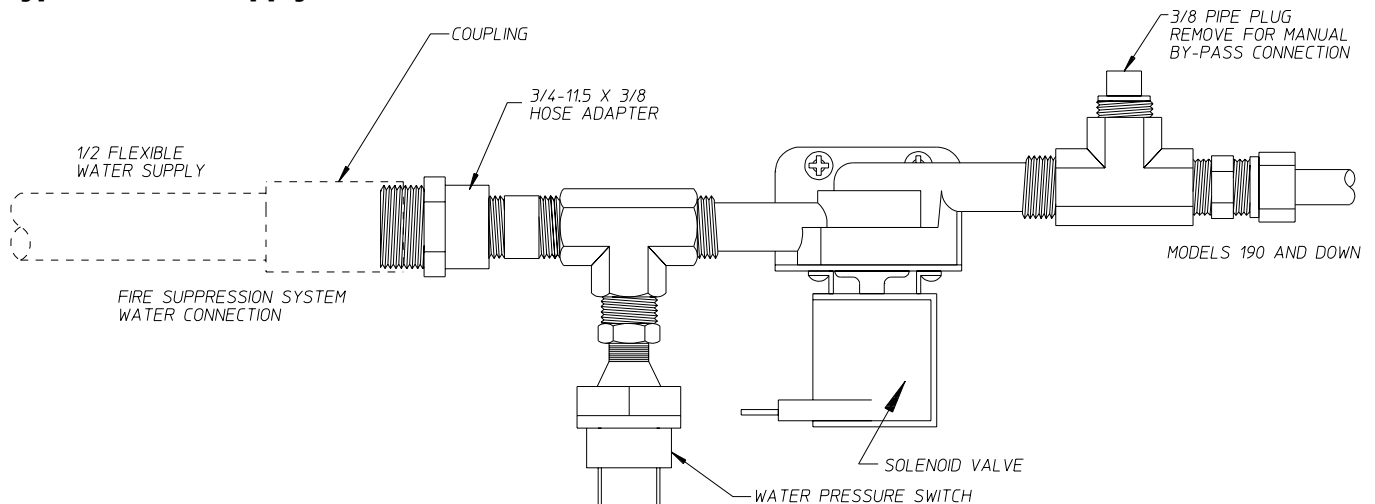


The water solenoid valve has a 3/8" M.P.T. connection supplied with a 3/4"-11.5 NH hose adaptor to provide the minimum 1/2-inch supply (feed) line. Flexible supply line/coupling must be used in an effort to avoid damaging the electric water solenoid valve.

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

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

Typical Water Supply



MG 12/3/03

MAN7032

Optional Manual Bypass

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

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

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

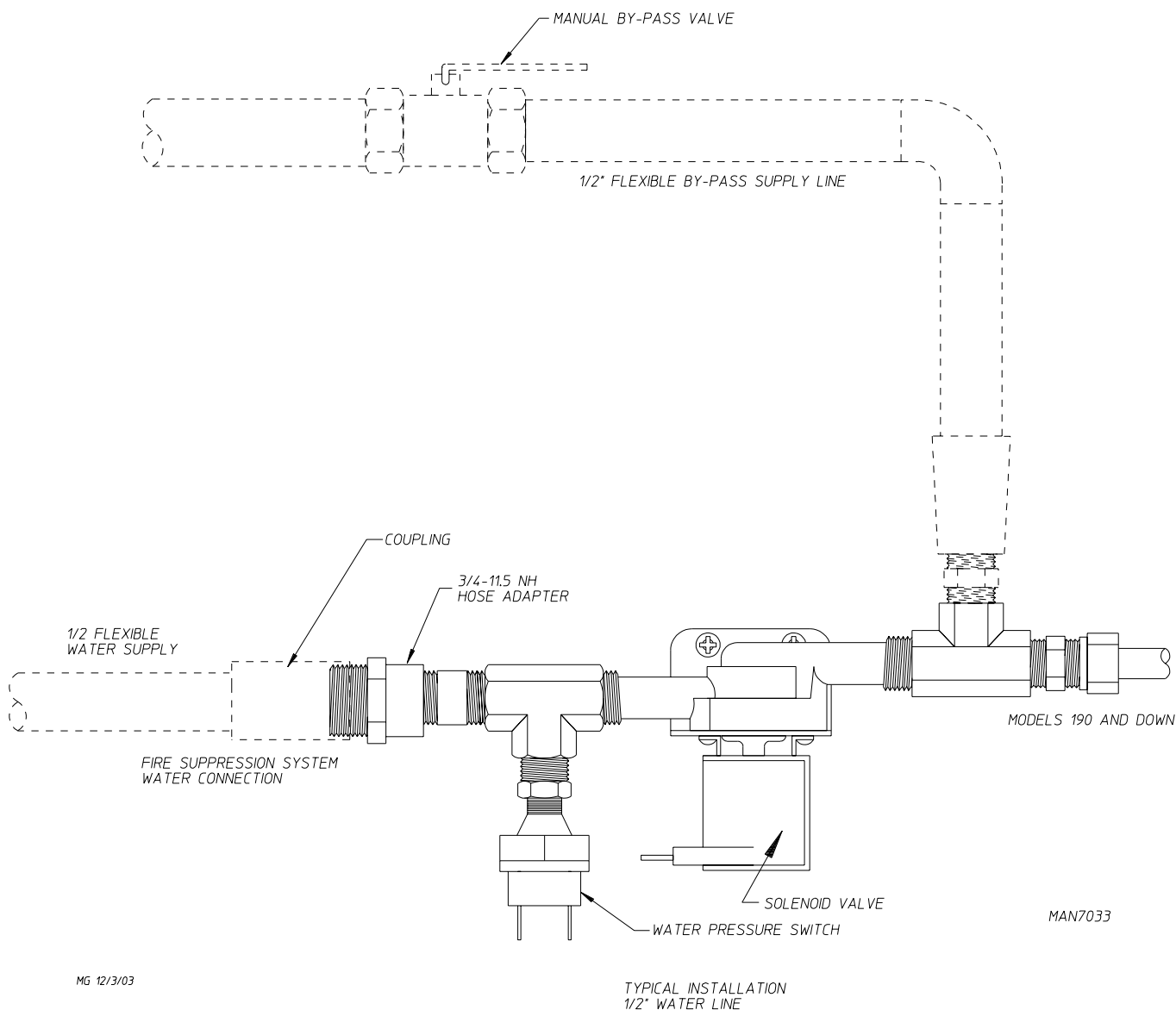
! WARNING

If the water in the supply line or water solenoid valve freezes, the fire suppression system will be inoperative!!

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

Electrical Requirements

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



MG 12/3/03

WARNING

Electrical power must be provided to the dryer at all times. If the main electrical power supply to the dryer is disconnected, the fire suppression system is inoperative!!

WARNING

ELECTRICAL SHOCK HAZARD

Electrical shock hazard can result in serious injury.

If the water dispensing system is activated do not attempt to operate the dryer.

If the water dispensing system is activated have the dryer inspected by a qualified agency before operating the dryer.

Preparation for Operation / Start-Up

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

Read all "CAUTION," "WARNING," and "DIRECTION" labels attached to the dryer.

Check incoming supply voltage to be sure that it is the same as indicated on the dryer data label. In case of 208 VAC or 230/240 VAC, the supply voltage must match the electric service exactly.

GAS MODELS – check to ensure that the dryer is connected to the type of heat/gas indicated on the dryer data label.

GAS MODELS – the sail switch damper assembly was installed and adjusted at the factory prior to shipping. However, each sail switch adjustment must be checked to ensure that this important safety control is functioning.

GAS MODELS – be sure that all gas shutoff valves are in the open position.

Be sure all back panels (guards) and electric box covers have been replaced.

Check all service doors to ensure that they are closed and secured in place.

Be sure lint drawer is securely in place.

NOTE: Lint drawer must be all the way in place to activate safety switch otherwise the dryer will not start.

Rotate the tumbler by hand to be sure it moves freely.

Check bolts, nuts, screws, terminals, and fittings for security.

STEAM MODELS – check to ensure air supply (80 psi [5.51 bar, 551 kPa]) is on all dryers equipped with standard pneumatic steam damper system.

STEAM MODELS – check to ensure all steam shutoff valves are open.

STEAM MODELS with Standard Pneumatic Damper – check steam damper operation.

STEAM MODELS with Optional Steam Solenoid Valve –
Check steam solenoid valve connections.

Check tumbler bearing setscrews to ensure they are all tight.

NOTES

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Preoperational Test

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

Turn on electric power to the dryer.

Make sure the main door is closed and the lint drawer is securely in place.

Refer to the Operating Instructions for starting your particular model dryer.

Check to ensure that the tumbler starts in the clockwise direction. Additionally, check the direction of the blower motor (impellor/fan) to ensure that the blower motor (impellor/fan) rotates in the clockwise direction as viewed from the front. If it is, the phasing is correct. If the phasing is incorrect, reverse two of the leads at L1, L2, or L3 of the power supply connections made to the dryer.

IMPORTANT: Dryer blower motor/pulley that drives the impellor/fan when viewed from the back of the dryer must turn in the counterclockwise direction, otherwise the dryer efficiency will be drastically reduced and premature component failure can result.

Heat Circuit Operational Test

Gas Models

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

The dryer is equipped with a DSI system, which has internal diagnostics. If ignition is not established after three attempts, the heat circuit DSI module will LOCKOUT until it is manually reset. To reset the DSI system, open and close the main door and restart the dryer (press the "START" key).

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 ensure that the water column pressure is correct and consistent.

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

Natural Gas..... 3.5 in WC (8.7 mb, 0.87 kPa).

Propane Gas..... 10.5 in WC (26.1 mb, 2.61 kPa).

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

Steam Models

Check to ensure that the (standard) steam damper or (optional) steam solenoid valve is functioning properly.

The steam damper should not "slam" (open or closed) when it reaches the end of (piston) travel. Additionally, the steam damper should not bind and/or stop during travel. If either of these conditions occur, the flow control must be adjusted. Refer to the bottom illustration on [page 24](#) for air adjustment instructions.

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

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

Reversing tumbler dryers should never be operated with less than a 79 lb (35.4 kg) load (dry weight), since the load's weight affects tumbler coast time during a direction reversal command. It is important that the tumbler come to a complete stop prior to starting in opposite direction.

Microprocessor Controller (Computer) Dryer Models

Spin and dwell (stop) times are not adjustable in the Automatic Mode and have been preprogrammed into the microprocessor controller (computer) for 150-seconds spin time in the forward direction and 120-seconds in the reverse direction with a 5-second dwell (stop) time.

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

Tumbler Coating

The 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 tumbler to remove this coating.

Each dryer should be operated through one complete cycle to ensure that no further adjustments are necessary and that all components are functioning properly.

Make a complete operational check of all operating controls.

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

Preoperational Instructions

Phase 7 Dryers

The L.E.D. display reads "READY" (no cycle in progress).

Press the letter on the keypad corresponding to the cycle desired (i.e., key "D").

NOTE: "0-40" will require the "START/ENTER" key to be pressed after the number is selected in order to accept the selection and start drying.

The dryer will then start. (I.E., blower, tumbler, and heat.)

The L.E.D. display will read MANUAL DRYING CYCLE D, 00:00 MIN REMAIN.

NOTE: Press and hold the "UP ARROW" to view the tumbler temperature at any time.

The dryer can be stopped at any time by pressing the "STOP/CLEAR" key, at this time the dryer will go into a cycle pause. If the "STOP/CLEAR" key is pressed again at this point, the cycle that was in progress will be cancelled and returned to the "READY" state.

Press and hold the "DOWN ARROW" to view the tumbler RPM.

When the programmed drying time has expired, the Phase 7 non-coin microprocessor controller (computer) will proceed into the Cool Down Cycle.

Once the Cool Down Cycle begins at the end of the heat cycle, the L.E.D. display will read COOL DOWN TEMP ____/____ MINUTES REMAINING. At the end of the heat cycle, the dryer will shut off the heat and continue the fan and tumbler until the Cool Down Time or temperature is reached.

IMPORTANT: For more detailed information regarding the microprocessor controller (computer) on the dryer, refer to the microprocessor user's manual included with the dryer.

Phase 5 Dryers

Turn on electric power to the dryer.

Make sure the main door is closed and the lint drawer is securely in place.

Microprocessor controller (computer) system operational test to start dryer...

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

Press the "E" (preprogrammed) cycle key on the keypad.

L.E.D. display will quickly read: "Ld30," "Lc04," and "F180" (unless special programs requested). These codes mean that the dryer is in the timed mode and will operate with heat of 180° F (82° C) for 30 minutes drying time and have a 4 minute cool down period.

Dryer will now start and the L.E.D. display will read "Dr30" (dry mode for 30 minutes) and count down in minutes.

NOTE: The dryer can be stopped at any time by opening main door or by pressing the "CLEAR/STOP" key. To restart the dryer, press the "ENTER/START" key or preprogrammed cycle key (i.e., "E").

Pressing keypad key "A," "B," "C," "D," or "F" will also start the dryer. The six preprogrammed drying cycles "A" through "F" have been stored in the microprocessor controller's (computer's) memory. Refer to the computer programming manual supplied with this dryer for these preprogrammed cycles.

Dual Timer Dryers

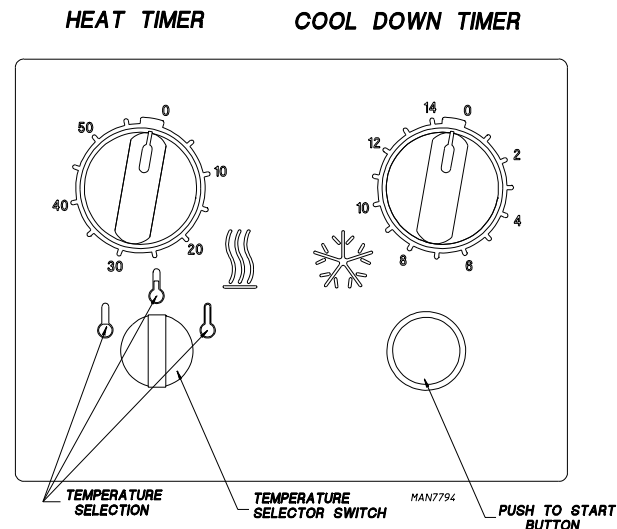
Turn drying timer knob for a time of 20 minutes.

Select "High Temp."

Push "Push to Start" button.

To stop dryer, open the main door.

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



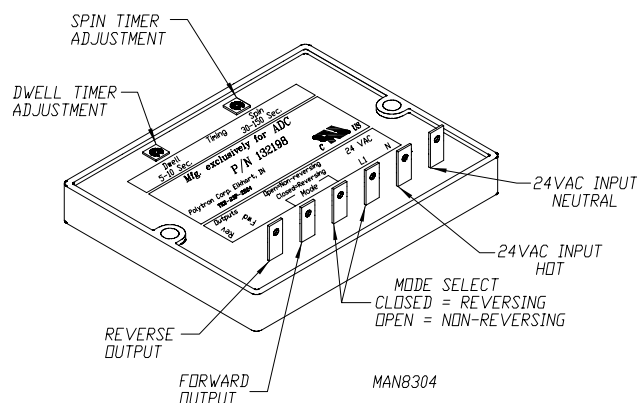
Reversing Timer Spin / Dwell Adjustments

Timer models have an electronic reversing timer in the electrical service box, which is located in the upper left rear area of the dryer.

Both the Dwell (stop) Time and the tumbler Spin Time are adjustable by mode selection switches located on the electronic timer (as noted in the illustration below).

TIMING LEGEND	
SPIN TIME	
Adjustment Position Number	Counterclockwise - Clockwise
Time in Seconds*	30 - 150
DWELL (STOP) TIME	
Adjustment Position Number	Counterclockwise - Clockwise
Time in Seconds*	5 - 10

* Values shown are +/- 1-second.



Compressed Air Requirements

Steam dryers require an external supply of compressed air, with a volume of 4.25 cfm @ 80 psi (0.12 cmh @ 5.51 bar, 551 kPa). Compressed air is necessary for the standard air operated steam damper. Compressed air is not required with optional steam solenoid valve.

Air Requirements

Compressed Air Supply	Air Pressure		
Normal	80 psi	5.51 bar	551 kPa
Minimum Supply	70 psi	4.82 bar	482 kPa
Maximum Supply	90 psi	6.21 bar	621 kPa

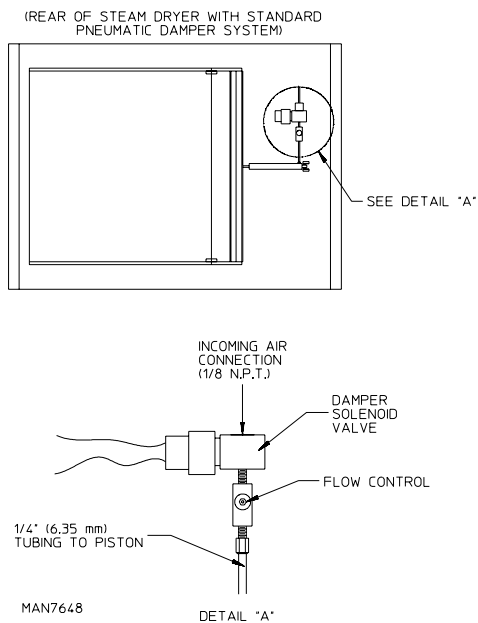
Shaded areas are stated in metric equivalents

Air Regulation

No air regulation or air filtration is provided with the dryer. External regulation/filtration of 80 psi (5.51 bar, 551 kPa) must be provided. It is suggested that a regulator/filter gauge arrangement be added to the compressed air line just before the dryer connection. This is necessary to ensure that correct and clean air pressure is achieved.

Air Connection

Air connection to this system is a 1/8" N.P.T.



Shutdown Instructions

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

Discontinue power to the dryer either at the external disconnect switch or the circuit breaker.

Discontinue the heat supply:

GAS MODELS – discontinue the gas supply and shut off external gas supply shutoff valve.

STEAM MODELS – discontinue the steam supply and shut off external (location furnished) shutoff valve.

Service / Parts Information

Service

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

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

Parts

Replacement parts should be purchased from the reseller from whom the equipment was purchased. If the reseller cannot be contacted or is unknown, contact the Parts Department for a reseller in your area. Parts may also be purchased directly from the factory by calling the Parts Department at +1 (269) 923-3000 or you may FAX in your order at +1 (508) 678-9447.

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

Warranty Information

Returning Warranty Cards

Before any dryer leaves the 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.

If a warranty card did not come with your dryer, contact the Warranty Department or the Service Department at +1 (269) 923-3000.

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).

Warranty

For a copy of the commercial warranty covering your particular dryer(s), contact the 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 Warranty Department at +1 (269) 923-3000.

NOTE: Whenever contacting the 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.

Returning Warranty Parts

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

No parts are to be returned without prior written authorization (R.M.A.) from the factory.

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

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.

Each part must be tagged with the following information:

Model number and serial number of the dryer from which part was removed.

Nature of failure (be specific).

Date of dryer installation.

Date of part failure.

Specify whether the part(s) being returned is for a credit, replacement, 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.

Warranty tags (Part No. 450064) are available at "no charge" from ADC upon request.

The company returning the part(s) must clearly note the complete company name and address on the outside of the package.

All returns must be properly packaged to ensure 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.

All returns should be shipped to the factory in such a manner that they are insured and a proof of delivery can be obtained by the sender.

Shipping charges are not the responsibility of ADC. All returns should be "prepaid" to the factory. Any "C.O.D." or "COLLECT" returns will not be accepted.

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

Routine Maintenance

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, the 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.

Keep dryer area clear and free from combustible materials, gasoline, and other flammable vapors and liquids.

NOTE: Remove power from the dryer before performing any maintenance in the dryer (cleaning the lint drawers and both steam coil lint screens are the only exceptions).

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

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

Clean lint from lint drawer/screen every third or fourth load.

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

Weekly

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

Steam Dryers

⚠ WARNING

To avoid hazard of electrical shock, discontinue electrical power supply to the dryer.

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

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

90 Days

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

Impellor/fan (blower) shaft bearings should be lubricated using Shell Alvania #2 grease or its equivalent. Generically, this grease would be described as an NLGI grade 2 multipurpose industrial grease with a lithium thickener and mineral base oil.

Check to make sure that the setscrews on the impellor/fan shaft bearings are tight.

NOTE: To prevent damage, avoid cleaning and/or touching the Direct Spark Ignitor.

Remove lint accumulation from inside.

6 Months

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

NOTE: The accumulation of lint in the exhaust ductwork can create a potential fire hazard.

Do not obstruct the flow of combustion and ventilation air. Check customer furnished back draft dampers in the exhaust ductwork. Inspect and remove any lint accumulation, which can cause the damper to bind or stick.

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

If the hi-limit trips due to a high temperature occurrence, you must disconnect power before resetting. To reset, press and release the reset button, which is located on the left side of the burner box, looking at the burner from the back of the dryer.

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

Check all V-belts for tightness and wear. Retighten, realign, or replace if required.

NOTE: V-belts should be replaced in matched sets (pairs).

Adjustments

7 Days After Installation and Every 6 Months Thereafter

Inspect bolts, nuts, screws, setscrews, grounding connections, and nonpermanent gas connections (unions, shutoff valves, and orifices). Impellor/fan V-belts, along with the motor and drive belts should be examined and replaced if necessary. Tighten loose V-belts when necessary. Complete operational check of controls and valves. Complete operational check of all safety devices (door switches, lint drawer switch, sail switch, burner, and hi-limit thermostats).

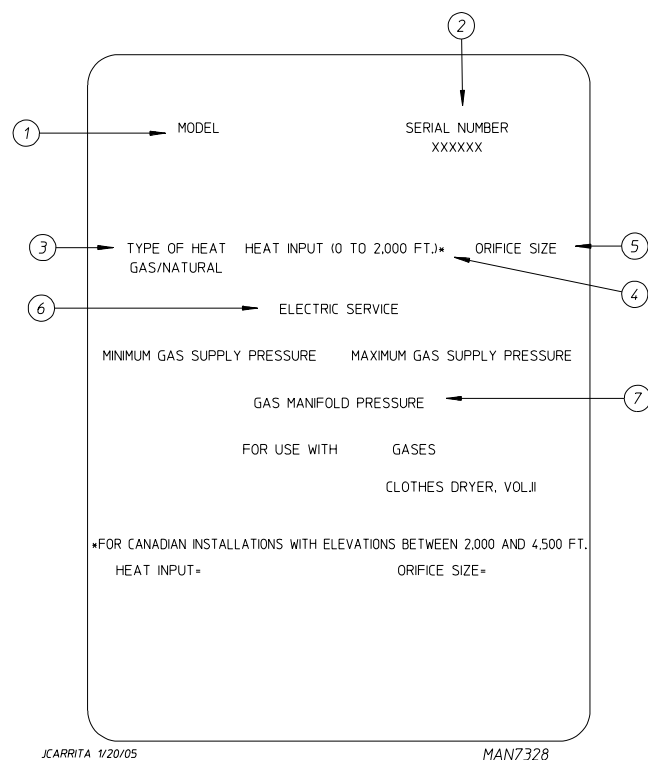
NOTE: The impellor/fan on the blower motor must be inspected and cleaned every 6 months.

Lubrication

All the tumbler drive shaft and idler shaft bearings must be lubricated every 3 months. Use Shell Alvania #2 grease or its equivalent. Lubrication is necessary or premature bearing failure will be the result.

The motor bearings are permanently lubricated and do not require service.

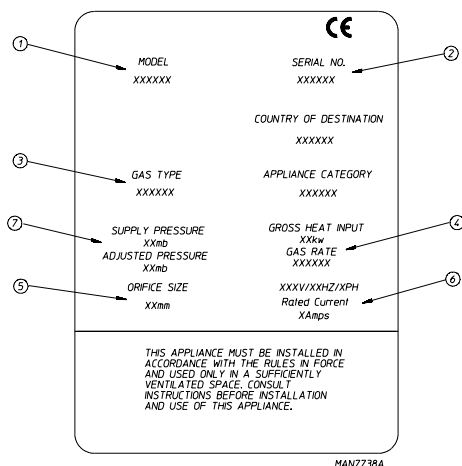
Data Label Information



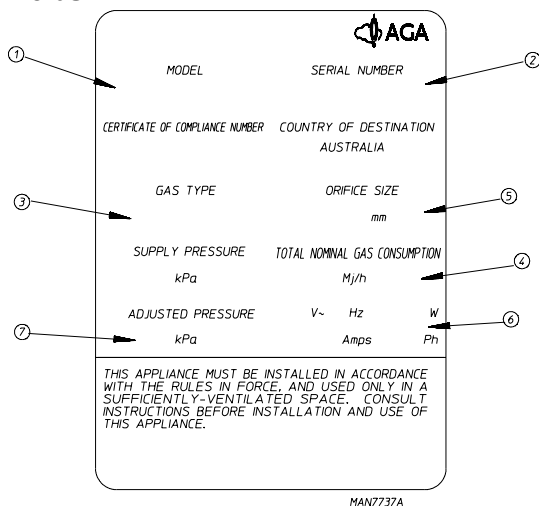
When contacting American Dryer Corporation, certain information is required to ensure proper service/parts information from ADC. This information is on the data label that is affixed to the left side panel/wall area behind the control door. When contacting ADC, please have the model number and serial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

1. Model Number – Describes the size of the dryer and the type of heat (gas, electric, or steam).
2. Serial Number – Allows the manufacturer to gather information on your particular dryer.
3. Type of Heat – This describes the type of heat for your particular dryer, gas (either natural gas or propane gas), electric, or steam.
4. Heat Input (For Gas Dryers) – This describes the heat input in British thermal units per hour (Btu/hr).
5. Orifice Size (For Gas Dryers) – Gives the number drill size used.
6. Electric Service – This describes the electric service for your particular model.
7. Gas Manifold Pressure (For Gas Dryers) – This describes the manifold pressure taken at the gas valve tap.

CE Label



AGA Label

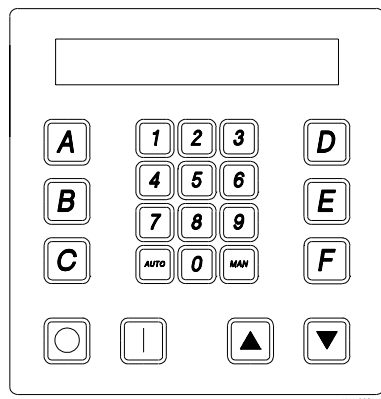


Procedure for Functional Check of Replacement Components

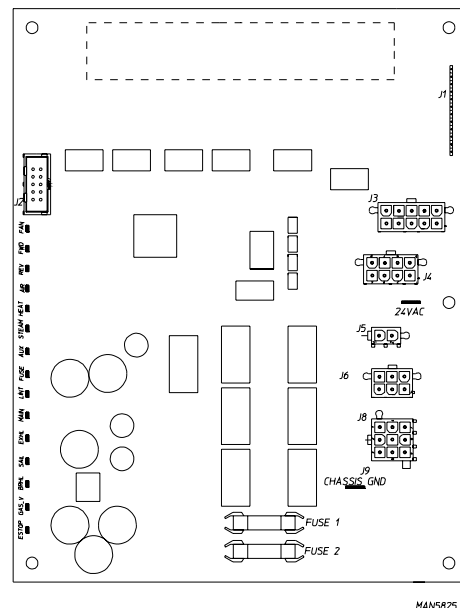
Phase 7 Microprocessor Controller (Computer) Board

Upon completing installation of the replacement microprocessor controller (computer) board, reestablish power to the dryer.

Start the drying cycle by pressing any of the preset cycles in letters A-F.



Verify that the applicable indicator lights on the microprocessor controller (computer) board are lit. (Refer to the illustration below.)

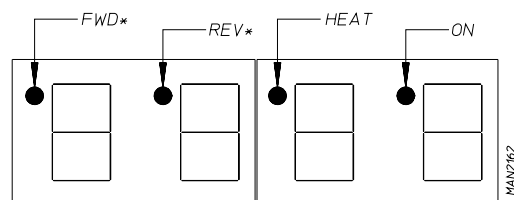


Phase 5 Microprocessor Controller (Computer) Board

Upon completing installation of the replacement microprocessor controller (computer) board, reestablish power to the dryer.

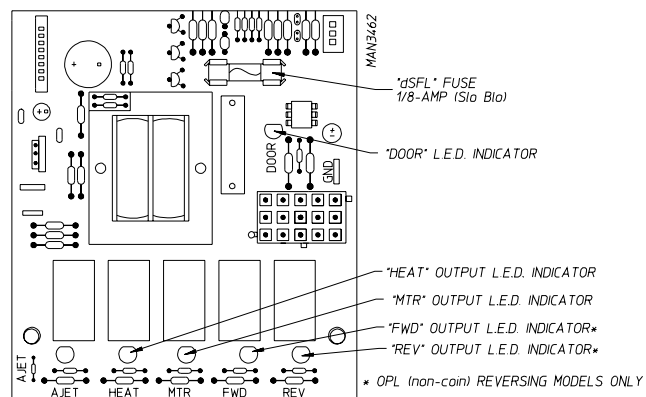
Start the drying cycle.

Verify that the motor(s) and the heat indicator dots, in the microprocessor controller (computer) L.E.D. display are on. (Refer to the illustration below.)

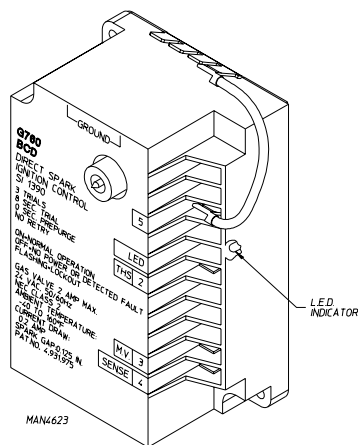


*OPL (NON-COIN) REVERSING MODELS ONLY.

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



For Models with DSI Module (Type I)

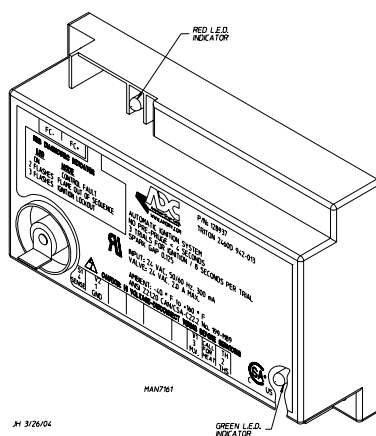


Theory of Operation: Start the drying cycle. When the gas burner ignites within the chosen trial for ignition time (6-seconds), the flame sensor detects gas burner flame and signals the DSI module to keep the gas valve open as long as there is a call for heat. The DSI module will “LOCKOUT” if the gas burner flame is not sensed at the end of the trial for ignition period. The trial for ignition period will be repeated for a total of three retries/trials (the initial try and two 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” (L.E.D. diagnostic indicator flashes).

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

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

For Models with DSI Module (Type II)



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

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

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

Manual Reset Burner Hi-Limit Instructions

Phase 7

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

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

Dual Timer / Phase 5

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

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

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

WARNING

Discontinue power to dryer before attempting to reset hi-limit.

IMPORTANT IMPORTANT IMPORTANTE

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

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

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

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

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

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

ADC P/N: 114076

Non-Coin Programming

PHASE 7.2.2 OPL PROGRAMMING LOCATIONS (MAX TEMP 200°F)

TO ENTER PROGRAMMING MODE PRESS [C] & [A] KEYS TOGETHER.

TO EXIT PROGRAMMING MODE PRESS [C] MULTIPLE TIMES
UNTIL DISPLAY RETURNS TO "READY".

- 0: SELECT LANGUAGE
- 1: SELECT SYSTEM PARAMETERS
 - 0: DRYER SETUP
 - 0: SELECT MODEL
 - 1: SYSTEM TEMP
 - 2: ENTER LINT CLEANING FREQUENCY 1 TO 10 HOURS
 - 3: ENTER AUDIO ALERT ON TIMES 0 TO 10
 - 4: ROTATION SENSOR
 - 5: BOARD ADDRESS 00 TO ZZ
 - 6: AUTO CYCLE TIME OUT 0 TO 99 MINUTES
 - 1: REVERSING SETUP
 - 0: ENTER SPIN TIME 30 TO 120 SECONDS
 - 1: ENTER STOP TIME 5 TO 10 SECONDS
 - 2: WRINKLE GUARD SETUP
 - 0: WRINKLE GUARD AUDIO ALERT
 - 3: STEAM INJECTION SETUP
- 2: PROGRAM A - F CYCLES
 - SELECT A - F KEY
 - SELECT CYCLE TYPE
 - AUTO
 - 0: REVERSE MODE
 - 1: ENTER DRY TEMP 160°F (71°C) TO 200°F (94°C)
 - 2: ENTER DRYNESS LEVEL
 - 3: ENTER CYCLE ADJUSTMENT VALUE 0 TO 99
 - 4: CONTROLLED COOL DOWN
 - 5: ENTER COOL DOWN TIME 0 TO 99 MINUTES
 - 6: ENTER COOL DOWN TEMP 70°F (21°C) TO 100°F (38°C)
 - MANUAL
 - 0: REVERSE MODE
 - 1: ENTER DRY TIME 0 TO 99 MINUTES
 - 2: ENTER DRY TEMP 100°F (38°C) TO 200°F (94°C)
 - 3: CONTROLLED COOL DOWN
 - 4: ENTER COOL DOWN TIME 0 TO 99 MINUTES
 - 5: ENTER COOL DOWN TEMP 70°F (21°C) TO 100°F (38°C)
 - 6: STEAM INJECTION
- 3: PROGRAM 0 - 40 CYCLES
 - ENTER 0 - 40
 - SELECT CYCLE TYPE
 - AUTO
 - 0: REVERSE MODE
 - 1: ENTER DRY TEMP 160°F (71°C) TO 200°F (94°C)
 - 2: ENTER DRYNESS LEVEL
 - 3: ENTER CYCLE ADJUSTMENT VALUE 0 TO 99
 - 4: CONTROLLED COOL DOWN
 - 5: ENTER COOL DOWN TIME 0 TO 99 MINUTES
 - 6: ENTER COOL DOWN TEMP 70°F (21°C) TO 100°F (38°C)
 - MANUAL
 - 0: REVERSE MODE
 - 1: ENTER DRY TIME 0 TO 99 MINUTES
 - 2: ENTER DRY TEMP 100°F (38°C) TO 200°F (94°C)
 - 3: CONTROLLED COOL DOWN
 - 4: ENTER COOL DOWN TIME 0 TO 99 MINUTES
 - 5: ENTER COOL DOWN TEMP 70°F (21°C) TO 100°F (38°C)
 - 6: STEAM INJECTION
- 4: DEFAULT SETTINGS
 - ENTER PASSWORD
 - (PRESS '1' '2' '3')
 - CONFIRM DEFAULTS

P/N:114043

Phase 7.2 Non-Coin Diagnostic Codes

MAIN DOOR OPENED – A main door or door circuit is open.

EXHAUST HIGH TEMP FAULT – Tumbler is above 220° F (104° C).

LINT ACCESS OPEN – Lint drawer or lint door circuit is open.

EXHAUST HIGH LIMIT FAULT – Temp. disk under tumbler is open.

SAIL SWITCH CLOSED FAULT – Sail switch is closed – should be open at the start of a cycle.

SAIL SWITCH OPEN FAULT – Sail switch remained open after the cycle started. Should have closed.

BURNER HIGH LIMIT FAULT – Burner temp. disk has opened.

BURNER IGNITION CONTROL – No signal to gas valve from (DSI) module during trial for ignition time. DSI module is bad.

IGNITION FAULT – Gas valve did not remain open after trial for ignition. Indicates that no flame was detected.

FLAME FAULT – Flame was detected during trial for ignition but failed later.

ROTATION FAULT – Indicates the tumbler is not rotating.

OPEN EXHAUST TEMPERATURE PROBE – Indicates the exhaust temperature probe is open or shorted.

OPEN FIRE SUPPRESSION SYSTEM (F.S.S.) PROBE FAULT – Indicates the temperature probe for the F.S.S. is open or shorted.

LOW VOLTAGE FAULT – Volt dropped below the operating value.

EE PROM FAULT ### – Error in memory location. Fault correction: First cycle power to get the display to read "ENTER PASSWORD". Next press the keys FAA, then press the ENTER key. Press the UP ARROW then "YES" will be displayed. Now press the ENTER key and the display should return to ready.

Inputs (Red L.E.D.)

All indications are with L.E.D. lit

ESTOP – Indicates E-STOP has been pressed.

GAS_V – Indicates the gas valve is open (ON).

BRHL – Indicates the burner high limit disk is closed (temperature below 330° F [166° C]).

SAIL – Indicates the sail switch is closed.

EXHL – Indicates the exhaust high limit disk is closed (temperature below 225° F [107° C]).

MAIN – Indicates the status of main door is closed.

LINT – Indicates the lint drawer is closed.

FUSE – Indicates the status of the control voltage after POWER ON button has been pressed.

Outputs (Green L.E.D.)

All indications are with L.E.D. lit

AUX – This is for a spare output to be programmed.

STEAM – Indicates the status of the steam injection output.

_HEAT – Indicates the status of the heat output.

AIR – Indicates the status of the air jet output.

REV – Indicates the status of the tumbler reverse direction output.

If the request to tumble the drum in the reverse direction is made, then the L.E.D. is ON.

FWD – This L.E.D. will indicate the status of the tumbler forward direction output.

FAN – This L.E.D. will indicate the status of the fan output.

