

ML-130 III / ML-130DR Installation Manual

Phase 7 / HSI and DSI / Dual Timer / F.S.S.

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

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

— WHAT TO DO IF YOU SMELL GAS:

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

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

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

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

— QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:

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

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



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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 (508) 678-9000. Please specify the dryer model number and serial number in addition to the description and part number, so that your order is processed accurately and promptly.

"IMPORTANT NOTE TO PURCHASER"

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

⚠ WARNING

Proposition 65

Use of this product could expose you to substances from fuel combustion that contain chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

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.

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).

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

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

CAUTION

Dryers should never be left unattended while in operation.

WARNING

Children should not be allowed to play on or near the dryer(s).

Children should be supervised if near dryers in operation.

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

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

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

FOR YOUR SAFETY

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

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

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

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List of Acronyms

D.M.S.	Drill Measurement Size
DSI	Direct Spark Ignition
F.S.S.	Fire Suppression System
HSI	Hot Surface Ignition
HVAC	Heating, Ventilating, and Air-Conditioning
in wc	Inches of Water Column
L.E.D.	Light Emitting Diode
L.P.	Liquid Propane
OSHA	Occupational Safety and Health Administration
R.M.A.	Return Material Authorization

Safety Precautions

⚠ WARNING

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

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

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.

Dryers 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

<p>Dry only water washed fabrics. Do not dry articles spotted or washed in dry cleaning solvents, a combustible detergent, or "all purpose" cleaner. Explosion could result.</p> <p>Do not dry rags or articles coated or contaminated with gasoline, kerosene, oil, paint, or wax. Explosion could result.</p> <p>Do not dry mop heads. Contamination by wax or flammable solvents will create a fire hazard.</p>

⚠ WARNING

<p>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.</p>

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

<p>The collection of lint in the burner area and exhaust ductwork can create a potential fire hazard.</p>

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

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

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

⚠ WARNING

<p>Personal injury or fire could result.</p>

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.

MAXIMUM CAPACITY (DRY WEIGHT)		120 lb	54.43 kg	
TUMBLER DIAMETER		44.63"	113.35 cm	
TUMBLER DEPTH		42-1/8"	107 cm	
TUMBLER VOLUME		38.10 cu ft	1078.872 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		
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	
	APPROX. NET WEIGHT		1,260 lb 571.53 kg	
	APPROX. SHIPPING WEIGHT		1,400 lb 635.03 kg	
	AIRFLOW	60 Hz	2,150 cfm	60.88 cmm
		50 Hz	1,792 cfm	50.73 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.		
Electric	VOLTAGE AVAILABLE		208-600v 3ø 3,4w 50/60 Hz	
	APPROX. NET WEIGHT		1,260 lb 571.53 kg	
	APPROX. SHIPPING WEIGHT		1,400 lb 635.03 kg	
	AIRFLOW	60 Hz	2,150 cfm	60.88 cmm
		50 Hz	1,792 cfm	50.73 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	245,729	61,923		
75.6	258,023	65,021		
Steam	VOLTAGE AVAILABLE		208-575v 3ø 3,4w 50/60 Hz	
	APPROX. NET WEIGHT		1,421 lb 644.55 kg	
	APPROX. SHIPPING WEIGHT		1,561 lb 708.06 kg	
	AIRFLOW	60 Hz	2,150 cfm	60.88 cmm
		50 Hz	1,792 cfm	50.73 cmm
	STEAM CONSUMPTION		450 lb/hr	204.12 kg/hr
	OPERATING STEAM PRESSURE		125 psi max	8.62 bar
	EXHAUST CONNECTION (DIAMETER)		14"	35.56 cm
	COMPRESSED AIR CONNECTION		1/4" Quick Connection	
	COMPRESSED AIR VOLUME		4.25 cfh	0.12 cmm
	BOILER HP (NORMAL LOAD)		13 Bhp	
SUPPLY CONNECTION		1-1/4" F.N.P.T.		
RETURN CONNECTION		1-1/4" F.N.P.T.		

Shaded areas are stated in metric equivalents

9/27/04

IMPORTANT: Steam dryers must be provided with a clean, dry, and regulated 80 psi +/- 10 psi (5.51 bar +/- 0.68 bar) air supply.

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

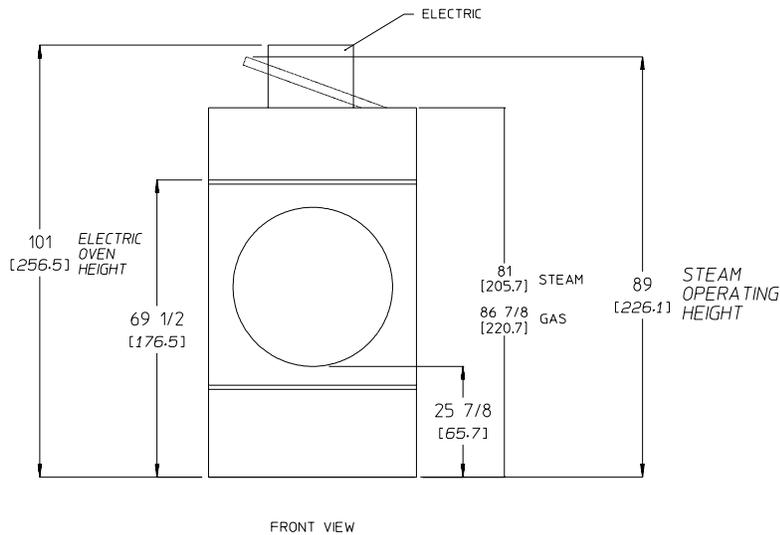
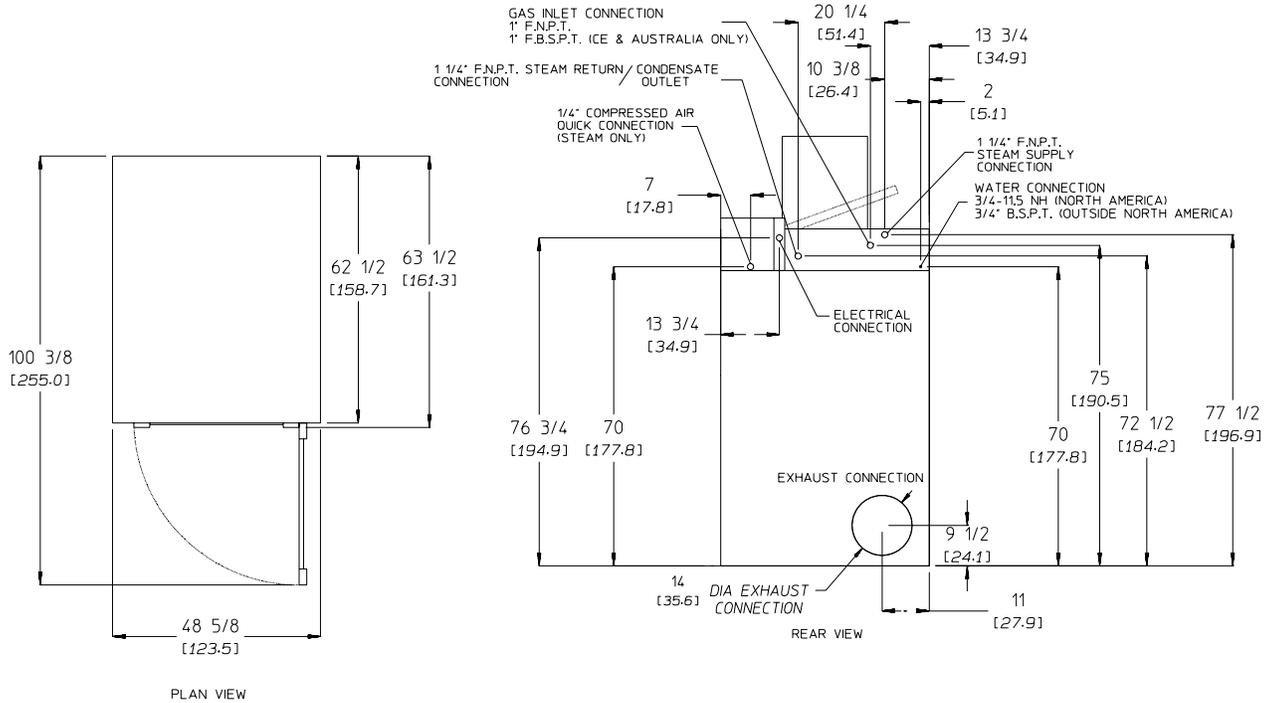
ML-130 Specifications

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.
- ° STEAM DRYERS MUST BE PROVIDED WITH CLEAN, DRY, REGULATED 80 PSI ± 10 PSI (5.5 BAR ± 0.69 BAR) AIR SUPPLY.



11/9/06

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 50/60 Hz	
	APPROX. NET WEIGHT		1,260 lb 571.53 kg	
	APPROX. SHIPPING WEIGHT		1,400 lb 635.03 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		1" F.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			

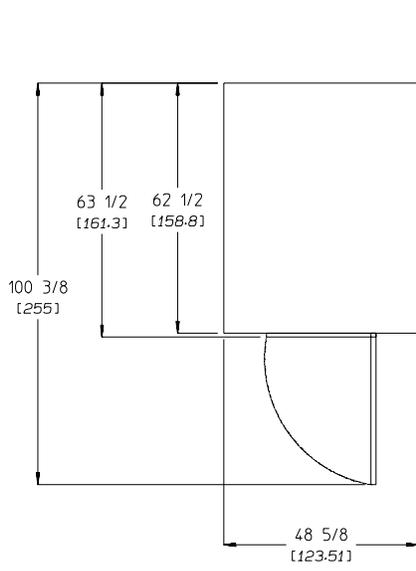
Shaded areas are stated in metric equivalents

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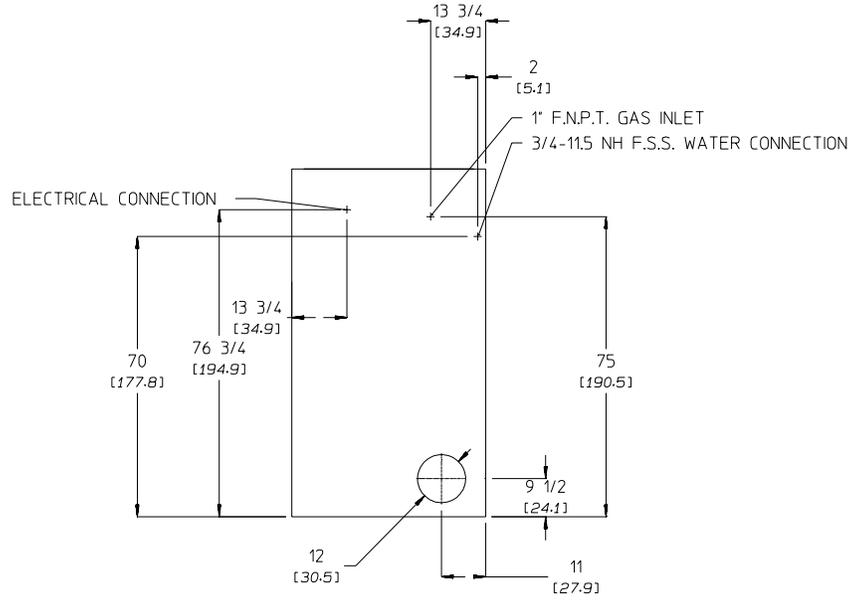
ML-130DR Specifications

DRYER NOTES:

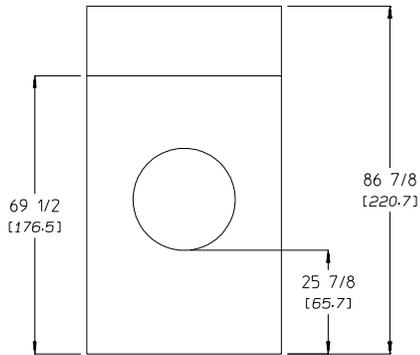
- ° DUCTWORK SIZE VARIES WITH INSTALLATION CONDITIONS.
- ° EXHAUST STATIC PRESSURE MUST BE NO LESS THAN 0 AND MUST NOT EXCEED 0.6" (1.48 mB) WATER COLUMN



PLAN VIEW



REAR VIEW (GAS AND ELECTRIC)



FRONT VIEW

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Installation Procedures

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

Location Requirements

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

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).

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

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

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

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

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.

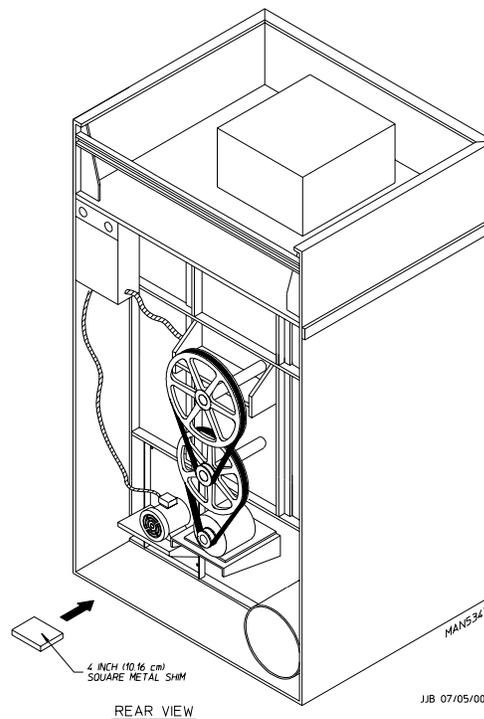
IMPORTANT: Dryer must be installed in a location/ environment, which the ambient temperature remains between 40° F (4.44° C) and 130° F (54.44° C).

Unpacking/Setting Up

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

IMPORTANT: 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 4 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 2 are located in the bottom of the lint chamber. To remove the 2 lag bolts located in the lint chamber area, remove the lint drawer and the 3 Phillips head screws securing lint door in place.



Leveling Dryer

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

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

To Remove Top Console (Module)

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

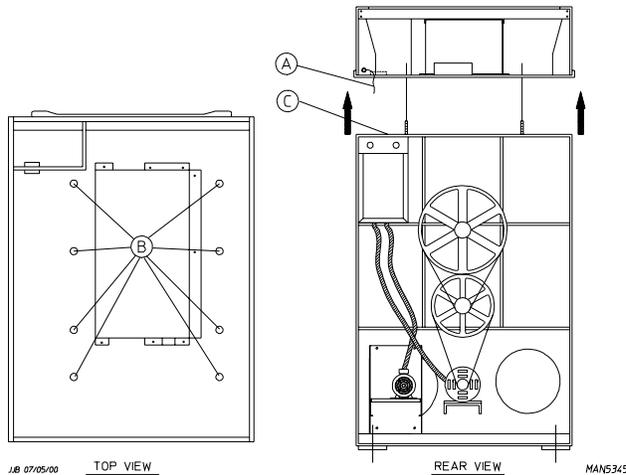
Remove the 8 sets of nuts and washers (B) holding the console (module) to base.

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

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

Lift the console (module) off the dryer base.

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



Exhaust Transition Piece (Gas and Electric Only!)

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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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.

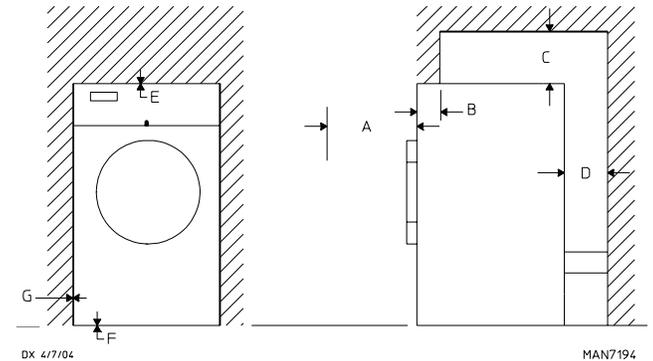
Using the screws provided, secure the exhaust transition piece to the dryer.

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

Bulkheads and partitions should be made of noncombustible material.

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



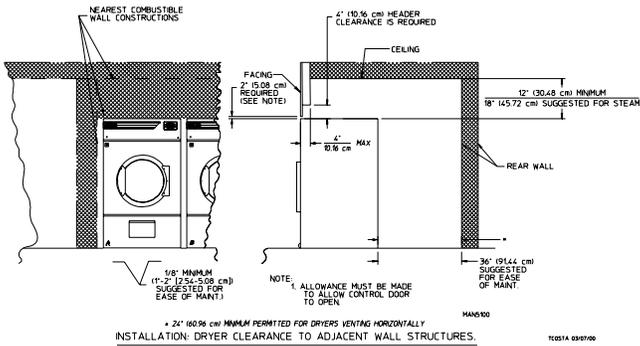
- A 40-inches (101.6 cm) for optimum opening of load door.
- B The maximum thickness of the bulkhead is 4-inches (10.16 cm). For electric dryers the maximum thickness of the bulkhead is 1-inch (2.54 cm) within 3-inches (7.62 cm) from the top of the control door.
- C For gas and electric dryers a minimum overhead clearance of 12-inches (30.48 cm) is required, providing no sprinkler is located above the dryer. For steam dryers or if a sprinkler is located above the dryer, 18-inches (45.72 cm) is required.
- D Dryer should be positioned 24-inches (60.96 cm) away from the nearest obstruction and 36-inches (91.44 cm) is recommended for ease of installation, maintenance, and service.
- E 2-inch (5.08 cm) minimum is required for opening the control door.
- F Flooring should be level or below dryer cabinet for ease of removing panels during maintenance.
- G Dryers may be positioned sidewall to sidewall, however a 1/16" (1.5875 mm) minimum allowance must be made for the opening and closing of the control door, along with the removal of panels during maintenance.

Even though a 12-inch (30.48 cm) clearance is acceptable, it is recommended that the rear of the dryer be positioned approximately 2 feet (0.61 meters) 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 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 the dryer is in place. Ceiling area must be located a minimum of 12-inches (30.48 cm) above the top of the dryer.

IMPORTANT: 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.

NOTE: 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 side wall to side wall, however, 1- or 2-inches (2.54 or 5.08 cm) is suggested for ease of installation and maintenance. Allowances must be made for the opening and closing of the control door and the lint door.



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

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) switch, burner hi-limit, or tumbler hi-heat thermostat. The dryer must be installed with a proper exhaust duct connection to the outside.

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

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

NOTE: When a dryer is exhausted separately, it is recommended that a back draft damper be installed.*

When dryers are exhausted into a multiple (common) exhaust line, each dryer must be supplied with a back draft damper.*

* Models manufactured as of September 24, 2001, have a damper in the dryer as a standard item.

IMPORTANT: Exhaust back pressure measured by a manometer at each tumbler exhaust duct area must be no less than 0 and must not exceed 0.3 in wc (0.74 mb).

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. 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. The shape of the exhaust ductwork is not critical as long as the minimum cross-sectional area is provided.

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

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

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.

IMPORTANT: Exhaust back pressure measured by a manometer at the dryer exhaust duct area must be no less than 0 and must not exceed 0.3 in wc (0.74 mb).

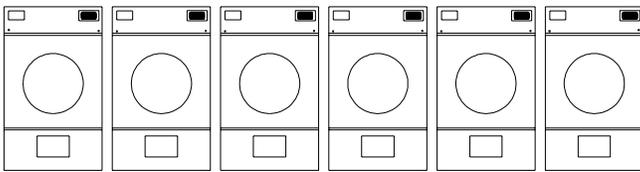
Fresh Air Supply Requirements

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

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. 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 gas, electric, and steam dryer.

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

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



EXAMPLE: For a bank of 6 gas dryers, 2 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.

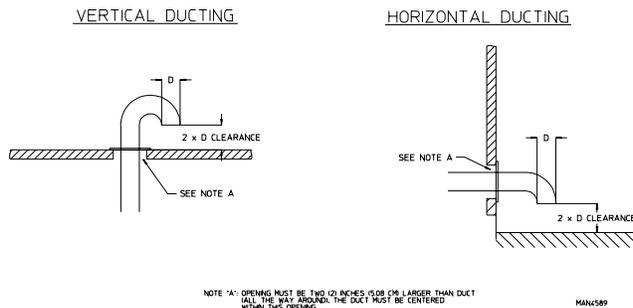
IMPORTANT: Make-up air must be provided from a source free of dry cleaning solvent fumes. Make-up air that is contaminated by dry cleaning solvent fumes will result in irreparable damage to the motors and other dryer components.

NOTE: 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.

Outside Ductwork Protection

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

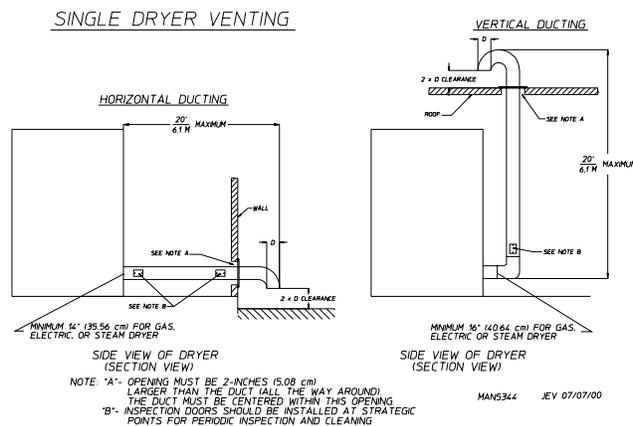
IMPORTANT: Do not use screens, louvers, or caps on the outside opening of the exhaust ductwork.



Single Dryer Venting

IMPORTANT: Minimum duct size for a gas, electric, or steam dryer with a vertical run and not more than 3 elbows (including dryer connection and outside outlets) is 16-inches (40.64 cm) for a round duct or 14-1/2" by 14-1/2" (36.83 cm by 36.83 cm) for a square duct. Duct size must not be reduced anywhere downstream of dryer.

ML-130



When venting horizontally, the ductwork from each dryer must be 14-inches (35.56 cm) and not exceed 20 feet (6.1 meters) with no more than 1 elbow (including dryer connections and outside exhaust outlets). If the ductwork exceeds 20 feet (6.1 meters) or has numerous elbows, the cross-sectional area of the ductwork must be increased in proportion to the length and number of elbows in it.

When venting vertically, the ductwork from each dryer must be a minimum of 16-inches (40.64 cm) and not exceed 20 feet (6.1 meters) with no more than 3 elbows (including dryer connections and outside exhaust outlets). If the ductwork exceeds 20 feet (6.1 meters) or has numerous elbows, the cross-sectional area of the ductwork must be increased in proportion to the length and number of elbows in it.

IMPORTANT: For extended ductwork runs, the cross section area of the duct can only be increased to an extent. When the ductwork approaches the maximum limits as noted in this manual, a professional HVAC firm should be consulted for proper venting information.

Multiple Dryer (Common) Venting

If it is not feasible to provide separate exhaust ducts for each dryer, ducts from individual dryers may be channeled into a "common main duct." The individual ducts should enter the bottom or side of the main duct at an angle not more than 45° in the direction of airflow and should be spaced at least 48-3/8 inches (122.87 cm) apart. The main duct should be tapered, with the diameter increasing before each individual 14-inch (35.56 cm) minimum duct is added.

IMPORTANT: The dryer is not provided with a back draft damper. When exhausted into a multiple (common) exhaust line, a back draft damper must be installed at each dryer duct.*

No more than 4 dryers should be connected to 1 main common duct.

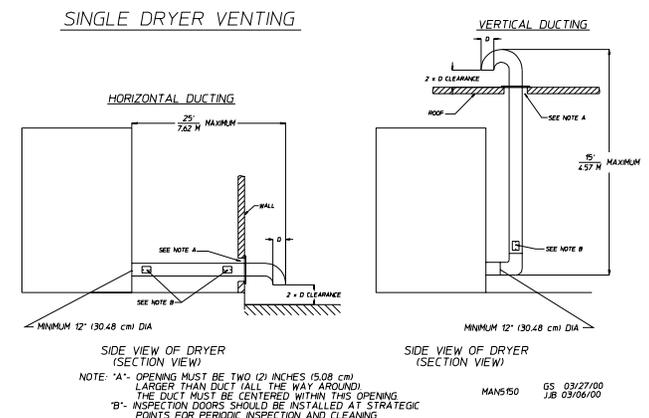
* Models manufactured as of September 24, 2001, have a damper in the dryer as a standard item.

The illustrations on the following page show the minimum cross-sectional area for multiple dryer round or square venting. These figures must be increased in proportion if the length of ducting from the last dryer to where it exhausts to the outdoors is over 20 feet (6.1 meters) or has more than 1 elbow in it.

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

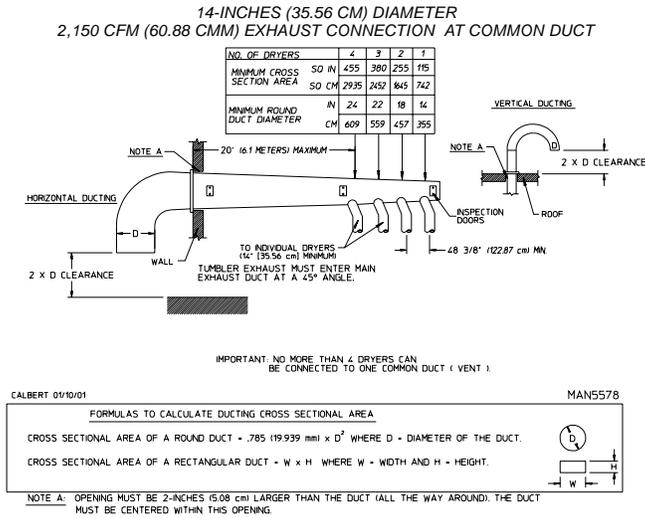
Exhaust back pressure measured by a manometer at each dryer exhaust duct area must be no less than 0 and must not exceed 0.3 in wc (0.74 mb) for the ML-130 model.

ML-130DR Single Dryer Venting

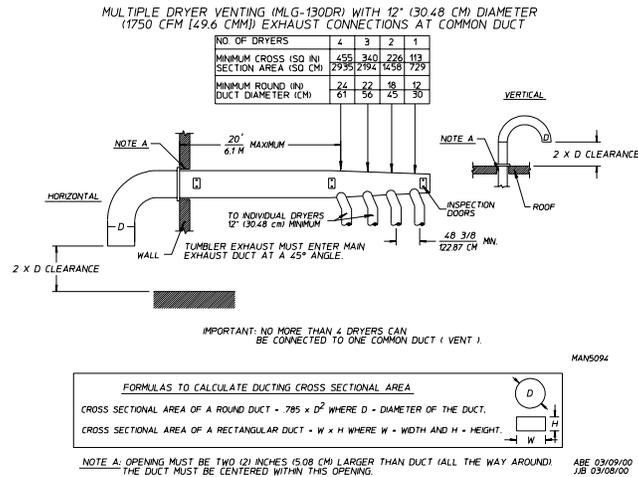


IMPORTANT: Minimum duct size for a dryer is 12-inches (30.48 cm) for a round duct and 10-3/4" x 10-3/4" (27.31 cm x 27.31 cm) for a square duct. The duct size must not be reduced anywhere down stream of the dryer.

Exhaust back pressure measured by a manometer at each tumbler exhaust duct area should not exceed 0.6" WC (1.48 mb).



ML-130DR Multiple Dryer Venting



Electrical Information

Electrical Requirements

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

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

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

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

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

Wiring diagrams are affixed to the inside at the top front control door and to the rear upper back guard/panel.

Electrical Service Specifications

GAS AND STEAM					
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	3Ø	3	14.5	—	20
240	3Ø	3	14.6	—	20
230	3Ø	3	—	17.4	25
380	3Ø	3	8.5	—	15
380	3Ø	4*	—	8.7	15
400	3Ø	4*	—	8.7	15
416	3Ø	4*	—	9.0	15
440	3Ø	3	8.7	—	15
460	3Ø	3	7.8	—	15
480	3Ø	3	7.8	—	15
575	3Ø	3	5.8	—	15

* 3-Wire is available.

7/31/08

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

ELECTRIC					
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	
72 kW					
208	3Ø	3	214	—	300
240	3Ø	3	188	—	250
230	3Ø	3	—	198	250
380	3Ø	3	118	—	150
380	3Ø	4*	—	118	150
400	3Ø	4*	—	113	150
416	3Ø	4*	—	108	150
460	3Ø	3	98	—	125
480	3Ø	3	94	—	125
575	3Ø	3	78	—	100
75.6 kW					
440	3Ø	3	106	—	150
220	3Ø	3	205	—	275

* 3-Wire is available.

7/31/08

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

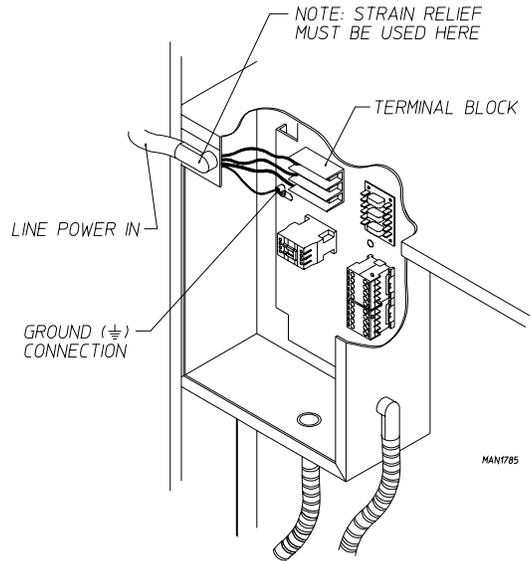
208 VAC and 230/240 VAC are not the same. Any damage done to dryer components due to improper voltage connections will automatically void the warranty.

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

Electrical Connections

NOTE: A wiring diagram is included with each dryer and is located in the front control box area.

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



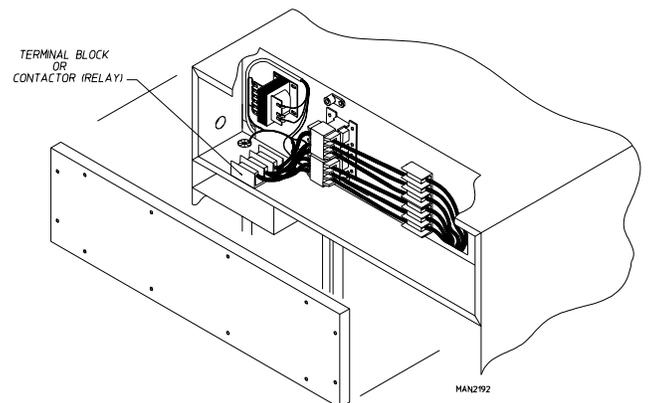
Gas Model and Steam Model Dryers

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

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

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

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

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



Gas Supply

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

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

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

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

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

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

Notes _____

Technical Gas Data Gas Specifications

Type of Gas	Manifold Pressure*	In-Line Pressure
Natural	3.5 in wc	6.0 - 12.0 in wc
	8.7 mb	14.92 - 29.9 mb
Liquid Propane	10.5 in wc	11.0 in wc
	26.1 mb	27.4 mb

Shaded areas are stated in metric equivalents

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

Gas Connections:

Inlet connection 1" N.P.T.
 Inlet supply size 1" diameter pipe (minimum)
 Btu/hr input (per dryer) 375,000 (94,500 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 6.0 in wc (14.92 mb) and a maximum of 12.0 in wc (29.9 mb) pressure.

L.P. Gas

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

ML-130		TYPE OF GAS					
Btu/hr Rating	kcal/hr Rating	Natural			Liquid Propane		
		Qty.	D.M.S.*	Part No.	Qty.	D.M.S.*	Part No.
375,000	94,500	3	#4	140832	3	#30	140819
Liquid Propane Conversion Kit Part Number 881868							

Shaded area is stated in metric equivalent

* D.M.S. equivalents are as follows:

Natural Gas #4 = 0.2090" (5.3086 mm).
 L.P. Gas #30 = 0.1285" (3.2639 mm).

ML-130DR		TYPE OF GAS					
Btu/hr Rating	kcal/hr Rating	Natural			Liquid Propane		
		Qty.	D.M.S.*	Part No.	Qty.	D.M.S.*	Part No.
300,000	75,600	3	#12	140863	3	#33	140855
Liquid Propane Conversion Kit Part Number 882626							

Shaded area is stated in metric equivalent

* D.M.S. equivalents are as follows:

Natural Gas #12 = 0.1890" (4.8006 mm).
 L.P. Gas #33 = 0.1130" (2.8702 mm).

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

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

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

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

Consistent gas pressure is essential at all gas connections. It is recommended that a 1-inch (2.54 cm) pipe gas loop be installed in the supply line servicing a bank of dryers. An in-line pressure regulator must be installed in the gas supply line (header) if the (natural) gas pressure exceeds 12.0 in wc (29.9 mb) pressure.

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

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

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

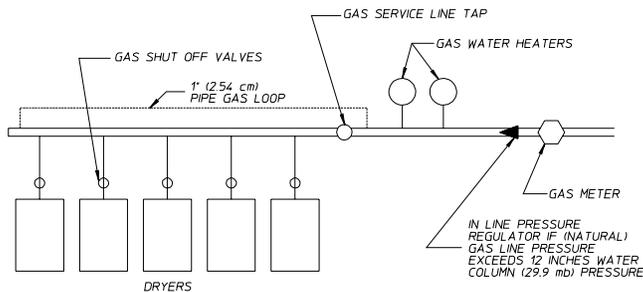
Test all connections for leaks by brushing on a soapy water solution (liquid detergent works well).



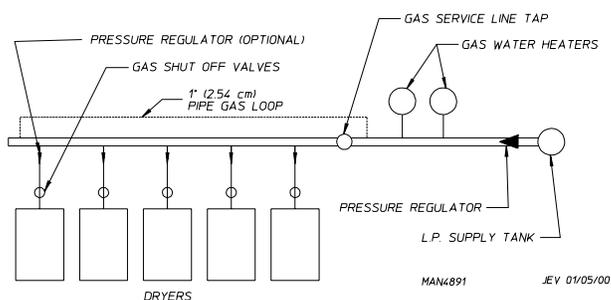
IMPORTANT: *The dryer and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa).*

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

TYPICAL NATURAL GAS INSTALLATION



TYPICAL L.P. GAS INSTALLATION



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: The dryer is manufactured with a pneumatic (piston) damper system, which requires an external supply of clean, dry, and regulated air of 0.75 cfh (0.02 cmh) @ 80 psi +/- 10 psi (5.51 bar +/- 0.68 bar). Refer to Steam Damper Air System Connections on the following page.

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" supply line connection
qty. 1 at top manifold.

Return 1-1/4" return line connection
qty. 1 at bottom manifold.

Operating Steam Pressure

Maximum	125 psig*	862.84 kPa
Heat Input (Normal Load)	13 Bhp	
Consumption (Approximate)	450 lb/hr	202.2 kg/hr

Shaded areas are stated in metric equivalents

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

Installation Instructions

To ensure that an adequate supply of steam is provided, be sure that the steam supply lines and steam return lines are sized and laid out as stipulated in this manual. Inadequate steam supply 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 pressure of the condensate in the steam supply line will cause water hammer and subsequent heat exchanger (steam coil) failure. The steam supply connection into the main supply line must be made within a minimum 12-inch (30.48 cm) riser. This will prevent any condensate from draining towards the dryer.

The steam supply line to the dryer must include a 12-inch (30.48 cm) riser along with a drip trap and check valve. This will prevent any condensate from entering the steam coil.

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

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

Install an inverted bucket steam trap and check valve for each unit at least 12-inch (30.48 cm) below steam coil as close to the coil as possible.

A trap with a capacity of 1,200 lb (544 kg) of condensate per hour at 125 psi (8.61 bar) is needed for each unit.

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.

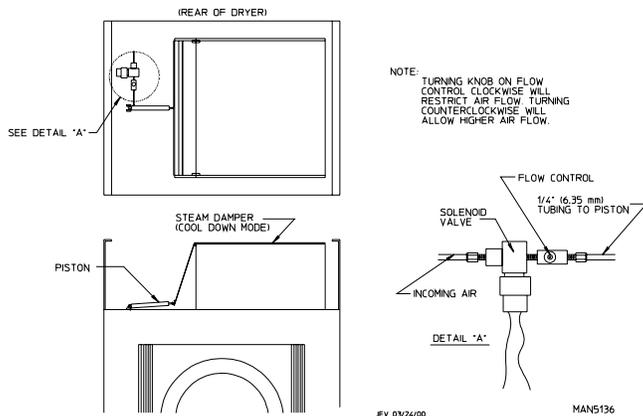
Dryers with optional solenoid valve must be mounted with coil positioned directly above the valve body.

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.

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), steam damper operation must be checked before the dryer is put into operation. Refer to the previous page for instructions to check steam damper system operation. If damper air adjustment is necessary, locate flow control valve and make necessary adjustments as noted below.



Preparation for Operation

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]) is on the dryer.

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

STEAM MODELS – check steam damper operation.

Check tumbler bearing setscrews to ensure they are all tight.

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.

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 2 of the leads at L1, L2, or L3, of the power supply connections made to the dryer.

IMPORTANT: Dryer blower motor (impellor/fan) as viewed from the front must turn in the clockwise direction, otherwise 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.

If the dryer is equipped with a DSI system, the DSI control module has internal diagnostics. If ignition is not established within 3 attempts, the heat circuit in the DSI control module will "LOCKOUT" until manually reset. To reset the DSI system, open and close the main door and restart the dryer.

If the dryer is equipped with an HSI system, the HSI control module has internal diagnostics. If ignition is not established after the first attempt, the heat circuit in the HSI control module will "LOCKOUT" until manually reset. To reset the HSI system, open and close the main door and restart the dryer.

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

Once ignition is established, a gas pressure test should be taken at the gas valve pressure tap of each dryer to 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).

L.P. Gas 10.5 in wc (26.1 mb).

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

Electric Models

Check the oven contactor(s) to ensure that the electric oven is cycling properly.

Steam Models

Check to ensure that steam damper is functioning properly.

The steam damper should not “slam” (open/closed) when it reaches the end of (piston) travel. Additionally, the steam damper should not bind or stop during travel. If either of these conditions occur, the flow control must be adjusted. (Refer to the Cool Down Mode in bottom illustration on page 19 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).

Reversing tumbler dryers should never be operated with less than an 80 lb (36.3 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 a 120-second spin time and a 5-second dwell (stop) time.

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

Dual Timer Dryer Models

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

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 1 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.

Microprocessor Controller (Computer) Programs and Selections

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

Dual Timer Dryers Check

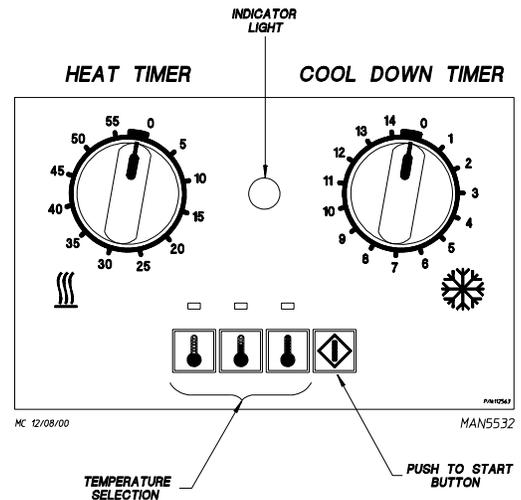
Turn drying timer knob for a time of 20 minutes.

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.



Shutdown Instructions

If the dryer is to be shutdown (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 gas or steam supply:

GAS MODELS – discontinue the gas supply.

Shut off external gas supply shutoff valve.

Shut off internal gas supply shutoff valve located in the gas valve burner area.

STEAM MODELS – discontinue the steam supply.

Shut off external (location furnished) shutoff valve.

Shut off internal steam valves in the supply lines and the return lines.

Operating Instructions

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

To Start the Dryer

Microprocessor Controller (Computer) Dryer Models

Display will read “READY” (meaning no cycle in progress).

Press the letter on the keypad corresponding to the cycle desired (i.e., “E”) and the dryer will then start (rotate).

L.E.D. display will now show the “Cycle In Progress” and “Cycle Status” meaning that the dryer is in the drying cycle (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 “STOP” key. To restart the dryer, press the “START” key or preprogrammed cycle key (i.e., “E”).

Selection (setting) changes can be made at any time during the drying cycle by pressing the “STOP” key twice. The L.E.D. display will return to “READY” at which time a new cycle selection can be made.

Dual Timer Dryer Models

Select drying time and cool down time desired.

Turn heat timer clockwise to desired time (i.e., 1 minute to 60 minutes).

Turn cool down timer clockwise to desired time (i.e., 0 minutes to 15 minutes).

Select drying temperature.

Push "Start" button and the dryer will now start.

To stop dryer, open the main door.

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 ADC equipment was purchased. If the reseller cannot be contacted or is unknown, contact the ADC Service Department for a reseller in your area.

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

Parts

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

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

Warranty Information _____

Returning Warranty Cards

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

If a warranty card did not come with your dryer, contact the ADC Warranty Department or ADC Service Department at +1 (508) 678-9000.

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

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

Warranty

For a copy of the ADC commercial warranty covering your particular dryer(s), contact the ADC reseller from whom you purchased the equipment and request a dryer warranty form. If the reseller cannot be contacted or is unknown, warranty information can be obtained from the factory by contacting the ADC Warranty Department at +1 (508) 678-9000.

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

Returning Warranty Parts

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

No parts are to be returned to ADC 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 replacement, a credit, or a refund.

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

Warranty tags (ADC 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 ADC 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 ADC 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, an ADC dryer will provide many years of efficient, trouble free, and most importantly, safe operation.

⚠ WARNING



Lint from most fabrics is highly combustible. The accumulation of lint can create a potential fire hazard.

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

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

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

NOTE: Frequency can best be determined at each location.

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

Suggested Cleaning Schedule

Daily (beginning of each work shift)

Clean lint from screen.

Inspect lint screen and replace if torn.

Weekly

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

⚠ WARNING



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

Steam Dryers

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

⚠ WARNING

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

90 Days

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

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

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

6 Months

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

Drive belts should be examined. Cracked and/or seriously frayed belts should be replaced. Tighten belts when necessary.

⚠ WARNING



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

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

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

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

Adjustments

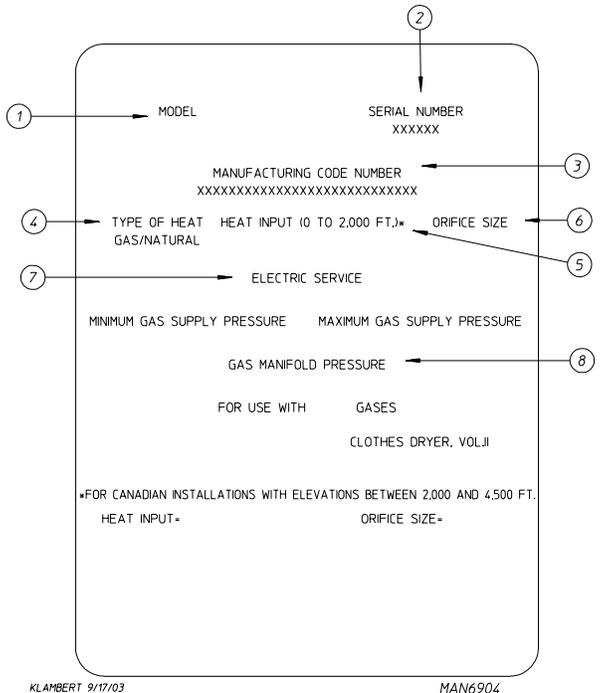
7 Days After Installation and Every 6 Months Thereafter

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

Lubrication

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

Data Label Information



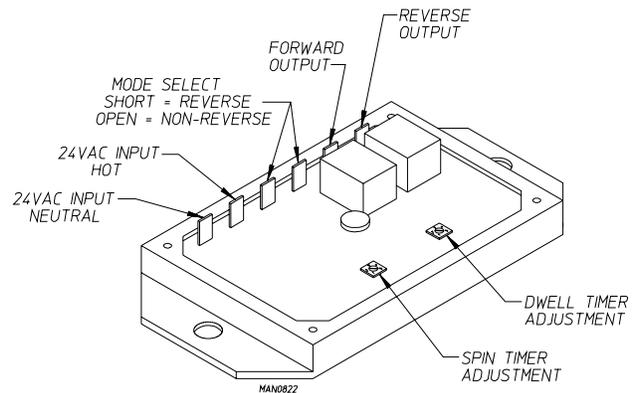
When contacting American Dryer Corporation, certain information is required to ensure proper service/parts information from ADC. This information is on the data label located on the left side panel/wall area behind the control door. When contacting ADC, please have the model number and serial number 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. Manufacturing Code Number – The number issued by the manufacturer, which describes all possible options on your particular model.
4. Type of Heat – This describes the type of heat for your particular dryer, gas (either natural gas or L.P. gas), electric, or steam.
5. Heat Input (for Gas Dryers) – This describes the heat input in British thermal units per hour (Btu/hr).
6. Orifice Size (for Gas Dryers) – Gives the number drill size used.
7. Electric Service – This describes the electric service for your particular model.
8. Gas Manifold Pressure (for Gas Dryers) – This describes the manifold pressure taken at the gas valve tap.

Reversing Timer Spin/Dwell Adjustments

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

Both the dwell (stop) time and 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	1	2	3	4	5
Time in Seconds*	30	60	90	120	150
DWELL (STOP) TIME					
Adjustment Position Number	1	2	3	4	5
Time in Seconds*	5	6.3	7.6	8.9	10.2

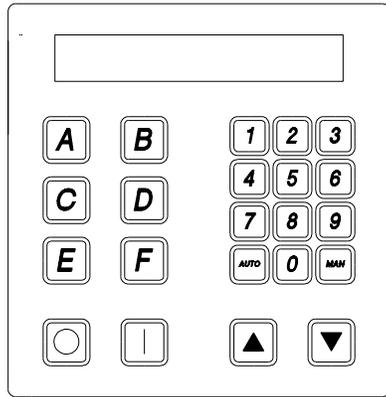
* Values shown are +/- 1-second.

Procedure for Functional Check of Replacement Components _____

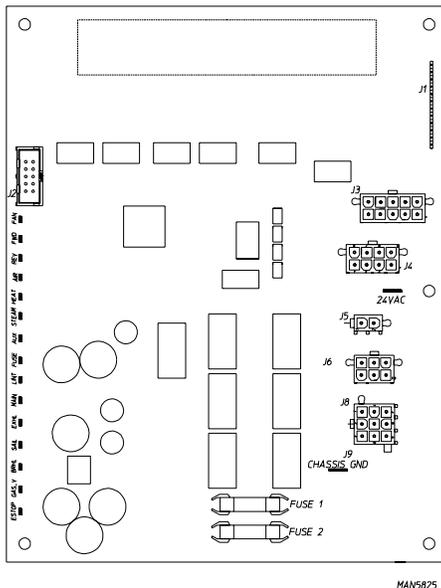
Microprocessor Controller (Computer) Board

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.)

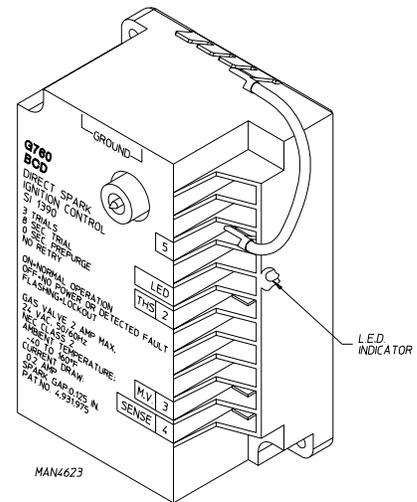


For Models with DSI Module (Type I)

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 3 retries/trials (the initial try and 2 more retries/trials). If the flame is not sensed at the end of the third retry/trial (inter-purge period of 30-seconds) the DSI module will “LOCKOUT” (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.

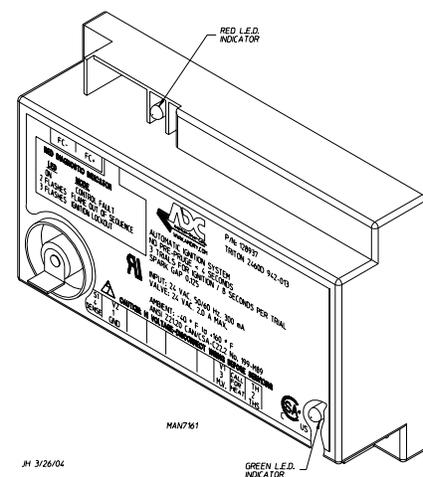


For Models with DSI Module (Type II)

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 3 retries/trials (the initial try and 2 more retries/trials). If the flame is not sensed at the end of the third retry/trial (inter-purge period of 30-seconds), the DSI module will “LOCKOUT” (a red L.E.D. diagnostic indicator will flash).

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

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



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.

Dual Timer

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

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

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

Fire Suppression System _____

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 ensure 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 F.S.S. is not connected, installed, or maintained properly.

Installation

Requirements

The connection point to the electric water solenoid valve is a 3/4-11.5 NH, the F.S.S. must be supplied with a minimum water pipe size of 1/2" and be provided with 40 psi +/- 20 psi (2.75 bar +/- 1.37 bar) of pressure. For use of optional manual bypass, a second source with the same piping and pressure requirements is required.

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

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

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

⚠ WARNING

If the water in the supply line or water solenoid valve freezes, the F.S.S. 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 Connection

The water connection is made to the 3/4-11.5 NH bushing located at the rear upper right area of the dryer. Flexible supply line/coupling must be used in effort to avoid damage to electric water solenoid valve.

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

