

Tumble Dryers

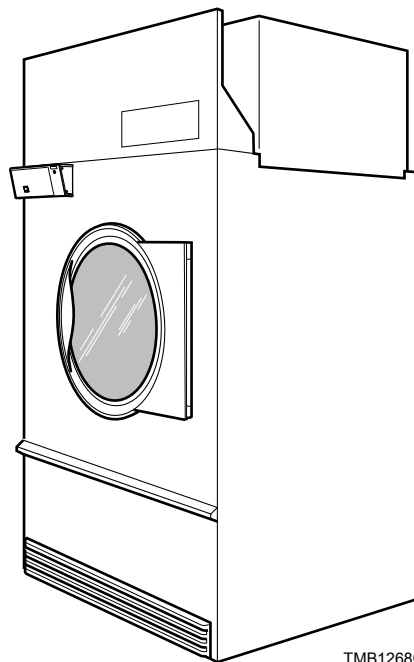
120 Pound Capacity

170 Pound Capacity

200 Pound Capacity

Starting Serial No. 0907003062

Refer to Page 5 for Model Identification



Keep These Instructions for Future Reference.

(If this machine changes ownership, this manual must accompany machine.)



Installation must conform with local codes or, in the absence of local codes, with:

In the U.S.A., installation must conform to the latest edition of the American National Standard Z223.1/ NFPA 54 “National Fuel Gas Code” and Standard ANSI/NFPA 70 “National Electric Code.”

In Canada, installation must comply with Standards CAN/CSA-B149.1 or Natural Gas and Propane Installation Code and CSA C22.1, latest edition, Canadian Electric Code, Part I.

In Australia and New Zealand, installation must comply with the Gas Installations Standard AS/NZS 5601 Part 1: General Installations.



WARNING

FOR YOUR SAFETY, the information in this manual must be followed to minimize the risk of fire or explosion or to prevent property damage, personal injury or death.

W033

- 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.

W052

IMPORTANT: Information must be obtained from a local gas supplier on instructions to be followed if the user smells gas. These instructions must be posted in a prominent location. Step-by-step instructions of the above safety information must be posted in a prominent location near the tumble dryer for customer use.



WARNING

- Installation of unit must be performed by a qualified installer.
- Install tumble dryer according to manufacturer's instructions and local codes.
- **DO NOT** install a tumble dryer with flexible plastic venting materials. If flexible metal (foil type) duct is installed, it must be of a specific type identified by the appliance manufacturer as suitable for use with tumble dryer. Refer to section on connecting exhaust system. Flexible venting materials are known to collapse, be easily crushed, and trap lint. These conditions will obstruct tumble dryer airflow and increase the risk of fire.

W752R1

FOR YOUR SAFETY

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

W053

The following information applies to the state of Massachusetts, USA.

- This appliance can only be installed by a Massachusetts licensed plumber or gas fitter.
- This appliance must be installed with a 36 inch (91 cm) long flexible gas connector.
- A "T-Handle" type gas shut-off valve must be installed in the gas supply line to this appliance.
- This appliance must not be installed in a bedroom or bathroom.

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Introduction

Model Identification

Information in this manual is applicable to these models.

	Gas			Steam/Thermal Oil		Electric
120 Pound	DR120G2-BA120L	HA120N	UA120L	DR120S2-BT120S	ST120S	DR120E2-BT120E
	DR120G2-BA120N	HT120L	UA120N	DR120S2-BT120T	ST120T	CT120E
	DR120G2-BT120L	HT120N	UT120L	CT120S	UT120S	HT120E
	DR120G2-BT120N	IT120L	UT120N	CT120T	UT120T	IT120E
	CA120L	IT120N	XT120L	HT120S	XT120S	ST120E
	CA120N	SA120L	XT120N	HT120T	XT120T	UT120E
	CT120L	SA120N	YT120L	IT120S	YT120S	YT120E
	CT120N	ST120L	YT120N	IT120T	YT120T	
	HA120L	ST120N				
170 Pound	DR170G2-BA170L	HA170N	UA170L	DR170S2-BT170S	ST170S	Not Applicable
	DR170G2-BA170N	HT170L	UA170N	DR170S2-BT170T	ST170T	
	DR170G2-BT170L	HT170N	UT170L	CT170S	UT170S	
	DR170G2-BT170N	IT170L	UT170N	CT170T	UT170T	
	CA170L	IT170N	XT170L	HT170S	XT170S	
	CA170N	SA170L	XT170N	HT170T	XT170T	
	CT170L	SA170N	YT170L	IT170S	YT170S	
	CT170N	ST170L	YT170N	IT170T	YT170T	
	HA170L	ST170N				
200 Pound	DR200G2-BA200L	HA200L	ST200L	DR200S2-BT200S	IT200S	Not Applicable
	DR200G2-BA200N	HA200N	ST200N	DR200S2-BT200T	IT200T	
	DR200G2-BT200L	HT200L	UA200L	CT200S	ST200S	
	DR200G2-BT200N	HT200N	UA200N	CT200T	ST200T	
	CA200L	IT200L	UT200L	HT200S	UT200S	
	CA200N	IT200N	UT200N	HT200T	UT200T	
	CT200L	SA200L				
	CT200N	SA200N				

Includes models with the following control suffixes:

R3 – reversing DX4 OPL

RE – reversing OPL Micro

RQ – reversing dual digital timer

RD – reversing DMP OPL

RM – reversing OPL Micro

RU – reversing UniLinc OPL

Customer Service

If literature or replacement parts are required, contact the source from which the machine was purchased or contact Alliance Laundry Systems at (920) 748-3950 for the name and address of the nearest authorized parts distributor.

For technical assistance, call (920) 748-3121.

Wiring Diagram Location

The wiring diagram is located in the junction or contactor box.

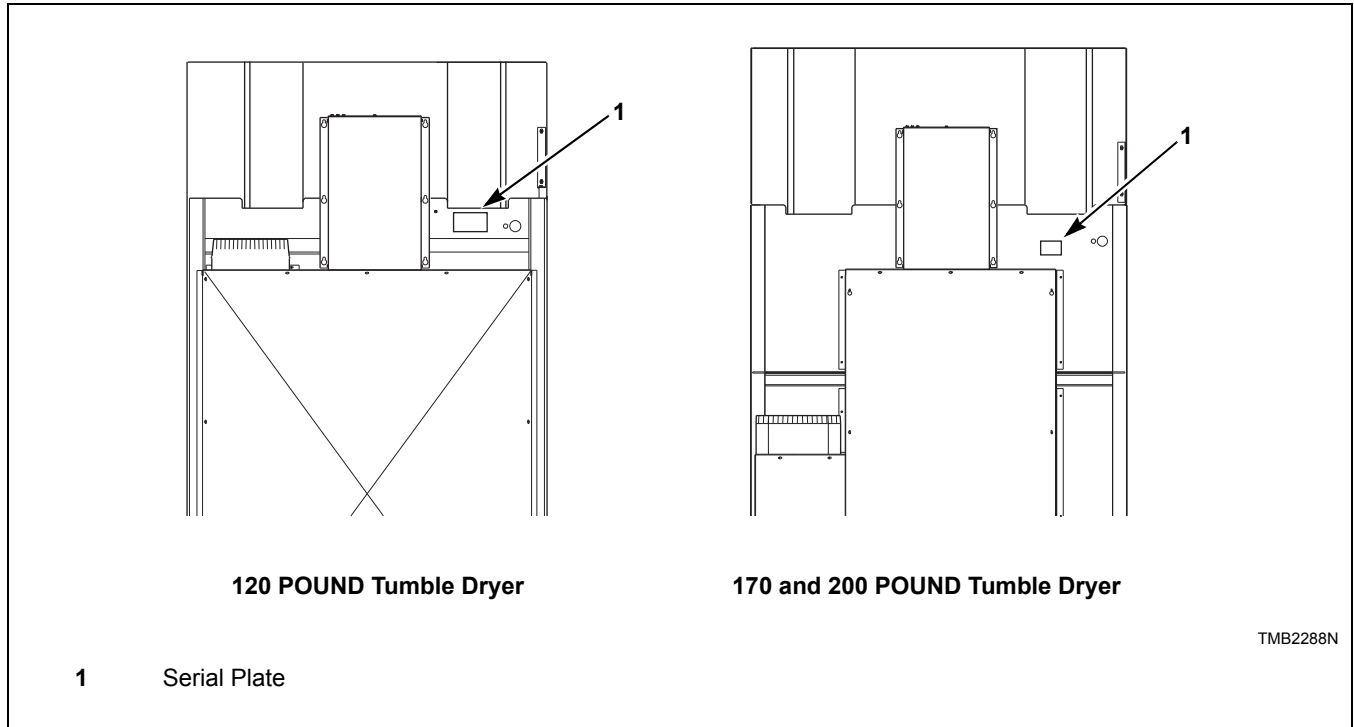
The wiring diagram part number is in the lower portion of the electrical data on the serial plate.

Introduction

Serial Plate Location

When calling or writing for information about your product, be sure to mention model and serial numbers.


Model and serial numbers are located on the serial plate as shown.





Conversion Table						
Multiply	By	To Obtain		Multiply	By	To Obtain
Btu	0.252	kCal		Pounds/sq. inch	0.06895	Bars
Btu	1055	Joules		Pounds/sq. inch	0.070	kg/sq. cm
Inch	25.4	Millimeters		Pounds (lbs.)	0.454	Kilograms
Inches W.C.	0.036	Pounds/sq. inch		Boiler Horsepower	33,479	Btu/hr.
Inches W.C.	0.249	kPa		Boiler Horsepower	34.5	lbs. steam/hr.
lb./inch ² (psi)	6.895	kPa		CFM	0.471	liters/second
ft. ³	28.32	Liters		kW	3414	Btu/hr.

Safety Information

Precautionary statements (“DANGER,” “WARNING,” and “CAUTION”), followed by specific instructions, are found in this manual and on machine decals. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.

	DANGER
DANGER – Indicates an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.	


	WARNING
WARNING – Indicates a hazardous situation that, if not avoided, could cause severe personal injury or death.	

	CAUTION
CAUTION – Indicates a hazardous situation that, if not avoided, may cause minor or moderate personal injury or property damage.	

Additional precautionary statements (“IMPORTANT” and “NOTE”) are followed by specific instructions.

IMPORTANT: The word “IMPORTANT” is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

NOTE: The word “NOTE” is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.


	WARNING
Failure to install, maintain, and/or operate this machine according to manufacturer’s instructions may result in conditions which can produce serious injury, death and/or property damage.	
W051R1	

NOTE: The **WARNINGS** and **IMPORTANT** instructions appearing in this manual are not meant to cover all possible conditions and situations that may occur. It must be understood that common sense, caution and carefulness are factors which **CANNOT** be built into this tumble dryer. These factors **MUST BE** supplied by the person(s) installing, maintaining or operating the tumble dryer.

Always contact your dealer, distributor, service agent or the manufacturer on any problems or conditions you do not understand.

Save These Instructions

Important Safety Instructions

	WARNING
<p>Hazardous Voltage. Can cause shock, burn or cause death. Allow machine power to remain off for two minutes prior to working in and around AC inverter drive.</p>	
W359	

1. Read all instructions before using the tumble dryer.
2. Refer to the *Grounding Instructions* for the proper grounding of the tumble dryer.
3. Do not dry articles that have been previously cleaned in, washed in, soaked in, or spotted with gasoline, dry cleaning solvents, other flammable or explosive substances as they give off vapors that could ignite or explode.
4. Do not allow children on or in the tumble dryer. This appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.
5. Before the tumble dryer is removed from service or discarded, remove the door to the drying compartment and the door to the lint compartment.
6. Do not reach into the tumble dryer if the cylinder is revolving.
7. Do not install or store the tumble dryer where it will be exposed to water and/or weather.
8. Do not tamper with the controls.
9. Do not repair or replace any part of the tumble dryer, or attempt any servicing unless specifically recommended in the user-maintenance instructions or in published user-repair instructions that you understand and have the skills to carry out.
10. Do not use fabric softeners or products to eliminate static unless recommended by the manufacturer of the fabric softener or product.
11. To reduce the risk of fire, **DO NOT DRY** plastics or articles containing foam rubber or similarly textured rubberlike materials.
12. Always clean the lint filter daily.
13. Keep area around the exhaust opening and adjacent surrounding area free from the accumulation of lint, dust and dirt.
14. The interior of the tumble dryer and the exhaust duct should be cleaned periodically by qualified service personnel.
15. If not installed, operated and maintained in accordance with the manufacturer's instructions or if there is damage to or mishandling of this product's components, use of this product could expose you to substances in the fuel or from fuel combustion which can cause death or serious illness and which are known to the State of California to cause cancer, birth defects or other reproductive harm.
16. Tumble dryer will not operate with the loading door open. **DO NOT** bypass the door safety switch to permit the tumble dryer to operate with the door open. The cylinder will stop rotating when the door is opened. Do not use the tumble dryer if the cylinder does not stop rotating when the door is opened or starts rotating without pressing or turning the START mechanism. Remove the tumble dryer from use and call for service.
17. Tumble dryer will not operate with lint panel open. **DO NOT** bypass lint panel safety switch to permit tumble dryer to operate with the lint panel open.
18. Do not put articles soiled with vegetable or cooking oil in the tumble dryer, as these oils may not be removed during washing. Due to the remaining oil, the fabric may catch on fire by itself.
19. To reduce the risk of fire, **DO NOT** put clothes which have traces of any flammable substances such as machine oil, flammable chemicals, thinner, etc. or anything containing wax or chemicals such as in mops and cleaning cloths, or anything dry-cleaned at home with dry-cleaning solvent in the tumble dryer.
20. Use the tumble dryer only for its intended purpose, drying fabrics.
21. **ALWAYS** disconnect the electrical power to the tumble dryer before servicing. Disconnect power by shutting off appropriate breaker or fuse.

Safety Information

22. Install this tumble dryer according to this ***Installation Manual***. All connections for electrical power, grounding and gas supply must comply with local codes and be made by licensed personnel when required.
23. Remove laundry immediately after tumble dryer stops.
24. Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed all warnings or precautions. To reduce the risk of poisoning or chemical burns, keep them out of reach of children at all times (preferably in a locked cabinet).
25. Do not tumble fiberglass curtains and draperies unless the label says it can be done. If they are dried, wipe out the cylinder with a damp cloth to remove particles of fiberglass.
26. Always follow the fabric care instructions supplied by the garment manufacturer.
27. Never operate the tumble dryer with any guards and/or panels removed.
28. **DO NOT** operate the tumble dryer if it is smoking, grinding, has missing or broken parts.
29. **DO NOT** bypass any safety devices.
30. Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.
31. Solvent vapors from dry-cleaning machines create acids when drawn through the heater of the unit. These acids are corrosive to the tumble dryer as well as to the laundry load being dried. Be sure make-up air is free of solvent vapors.



WARNING

To reduce the risk of serious injury, install lockable door(s) to prevent public access to rear of tumble dryers.

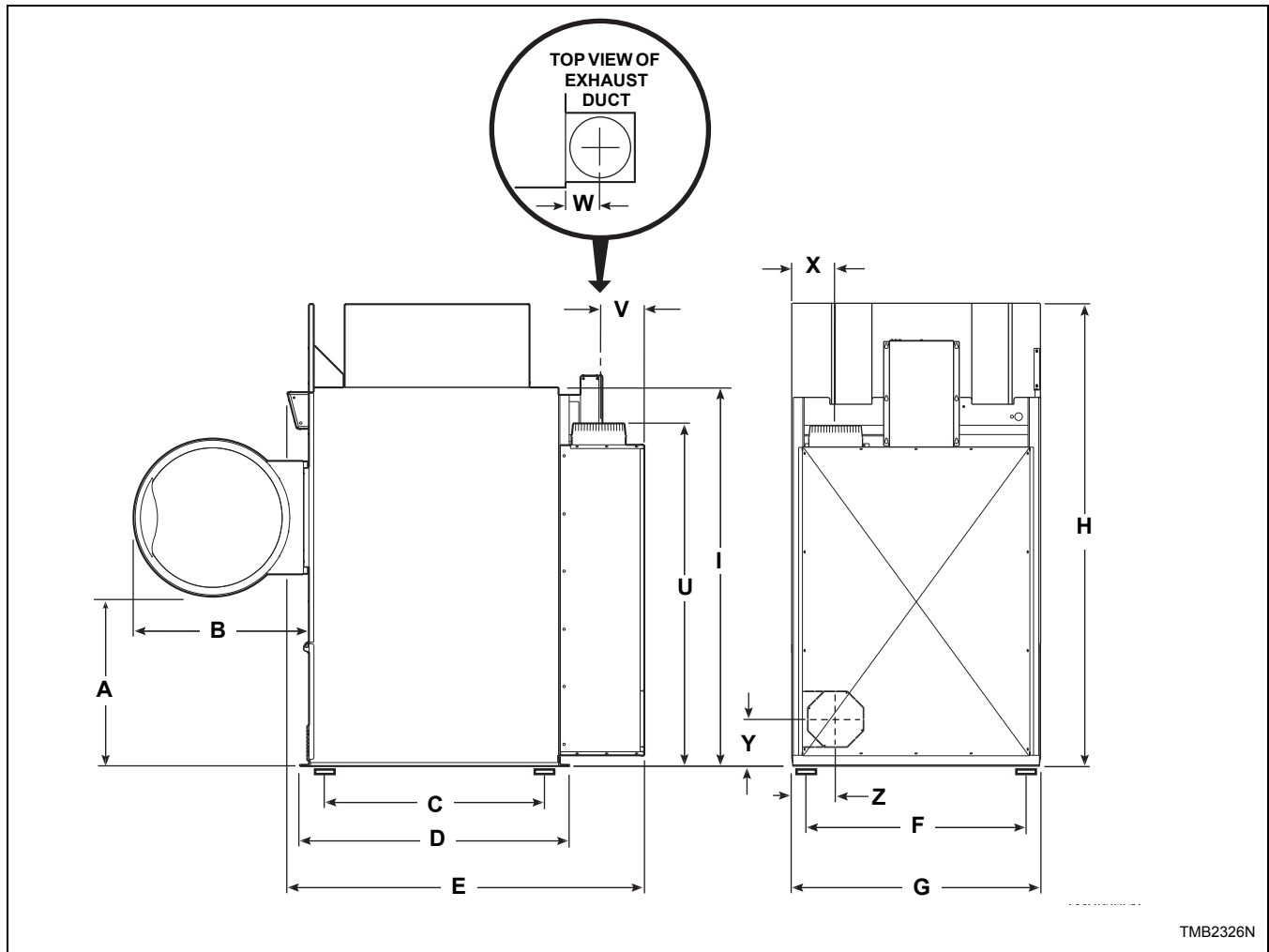
W055R1

Specifications and Dimensions

Specifications		120 Pound	170 Pound	200 Pound
Noise level measured during operation at operator position of 3.3 feet (1 meter) in front of machine and 5.2 feet (1.6 meters) from floor.		66 dBA	66 dBA	66 dBA
Cylinder Size: Inches (mm)		44 x 41 (1118 x 1041)	50.75 x 42.5 (1289 x 1080)	50.75 x 50 (1289 x 1270)
Cylinder Capacity dry weight: Pounds (kg)		120 (54.4)	170 (77.1)	200 (90.7)
Standard Packaging Weight: Pounds (kg)	Gas and Electric	1338 (607)	1667 (756)	1718 (779)
	Steam	1446 (656)	1776 (806)	1818 (825)
Standard Packaging Shipping Dimensions: Inch (mm)		48.5 x 72 x 90 (1232 x 1829 x 2286)	58 x 74.5 x 99 (1473 x 1892 x 2515)	56 x 80 x 99 (1422 x 2032 x 2515)
Slat Crate Packaging Weight: Pounds (kg)	Gas and Electric	1447 (656)	1791 (812)	1868 (848)
	Steam	1547 (702)	1891 (858)	1968 (893)
Slat Crate Shipping Dimensions: Inch (mm)		51.5 x 74 x 90.75 (1308 x 1880 x 2305)	61 x 76.5 x 99.75 (1549 x 1943 x 2534)	61 x 83 x 101 (1549 x 2108 x 2565)
Cylinder Motor Horsepower		0.75	0.75	0.75
Fan Motor Horsepower		1	3	3
Air Outlet Diameter: Inches (mm)		10 (254)	12 (300)	12 (300)
Maximum Static Back Pressure: W.C.I. (mbar)		0.3 (0.8)	0.3 (0.8)	0.3 (0.8)
Maximum Airflow: C.F.M (L/sec.)		1600 (755)	2450 (1156)	2450 (1156)
Gas Models				
Net Weight (approximate): Pounds (kg)		1275 (580)	1575 (716)	1707 (774)
Gas Connection		3/4 in. NPT	1 in. NPT	1 in. NPT
Gas Burner Rating: Btu/hr. (Mj/hr.)		270,000 (285)	395,000 (421)	425,000 (448)
Steam Models				
Net Weight (approximate): Pounds (kg)		1375 (625)	1675 (761)	1807 (820)
Steam Connection Port (minimum feed line size of 1 in.)		3/4 in. NPT inlet 3/4 in. NPT outlet	3/4 in. NPT inlet 1 in. NPT outlet	3/4 in. NPT inlet 1 in. NPT outlet
Steam Coil Rating at 100 psig: Boiler Horsepower (Btu/hr.) (recommended operating pressure 80-100 psig)		11.7 (405,000)	18.8 (648,000)	18.8 (648,000)
Electric Models				
Heating Element Rating: Kilowatts (kW)		60 kW	N/A	N/A

N/A = Not Applicable

120 Pound Tumble Dryer Dimensions and Exhaust Outlet Locations



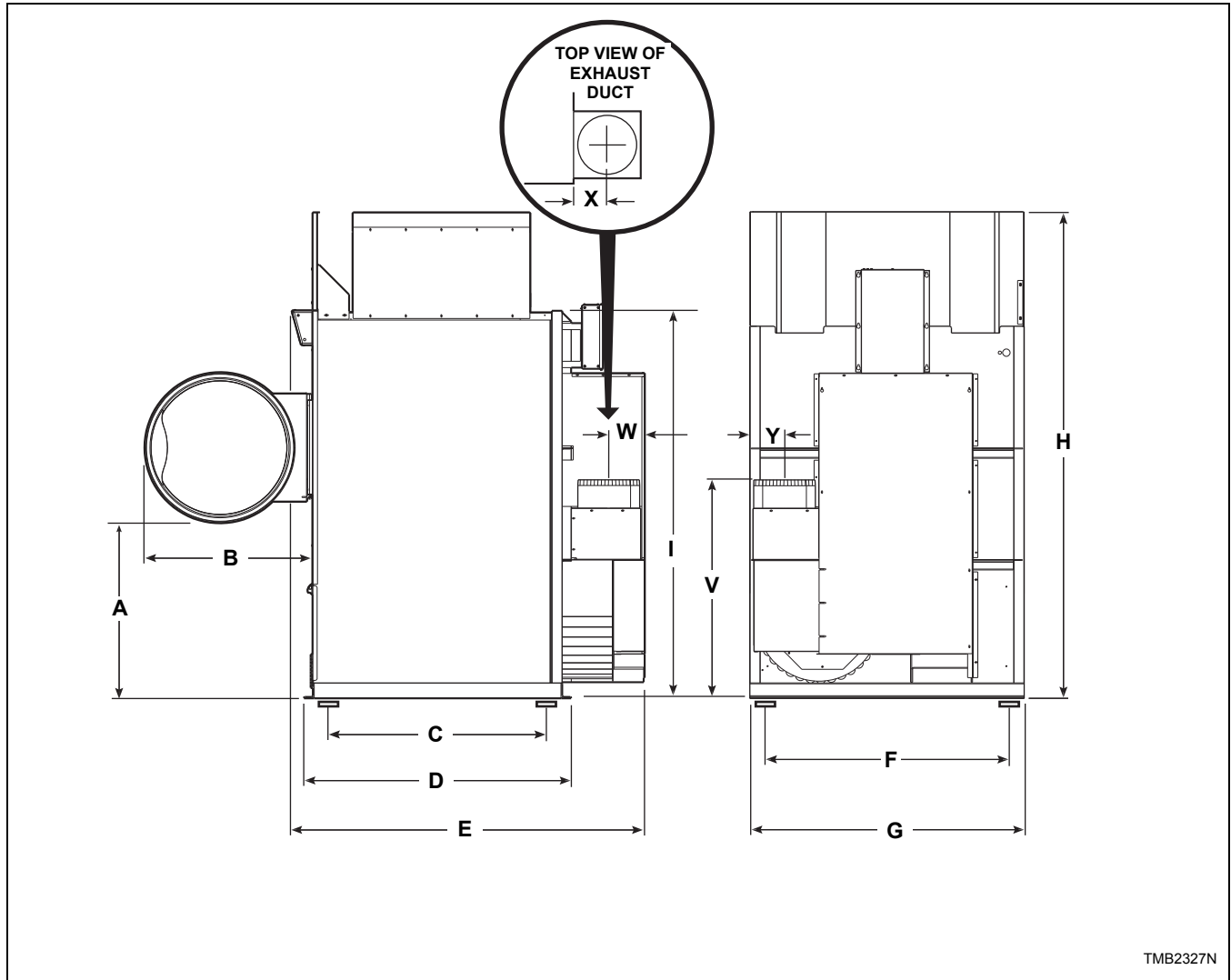
Cabinet Dimensions									
Models	A	B	C	D	E	F	G	H	I
120L/N/E	31.38 in. (797 mm)	32.5 in. (826 mm)	48.91 in. (1242 mm)	49.91 in. (1268 mm)	67.92 in. (1725 mm)	45.38 in. (1153 mm)	46.38 in. (1178 mm)	85.7 in. (2177 mm)	70 in. (1778 mm)
120S	31.38 in. (797 mm)	32.5 in. (826 mm)	48.91 in. (1242 mm)	49.91 in. (1268 mm)	67.92 in. (1725 mm)	45.38 in. (1153 mm)	46.38 in. (1178 mm)	83.5 in. (2121 mm)	70 in. (1778 mm)

Refer to *Position and Level the Tumble Dryer* to temporarily reduce the heights of these models.

Exhaust Outlet Dimensions and Locations						
Models	U	V	W	X	Y	Z
120L/N/E	63.45 in. (1612 mm)	8.44 in. (214 mm)	5 in. (127 mm)	8.18 in. (208 mm)	6.82 in. (173 mm)	8.18 in. (208 mm)
120S	60.7 in. (1542 mm)	8.44 in. (214 mm)	5 in. (127 mm)	8.18 in. (208 mm)	6.82 in. (173 mm)	8.18 in. (208 mm)

Specifications and Dimensions

**170 Pound Tumble Dryer
Dimensions and Exhaust Outlet
Locations**



TMB2327N

Cabinet Dimensions

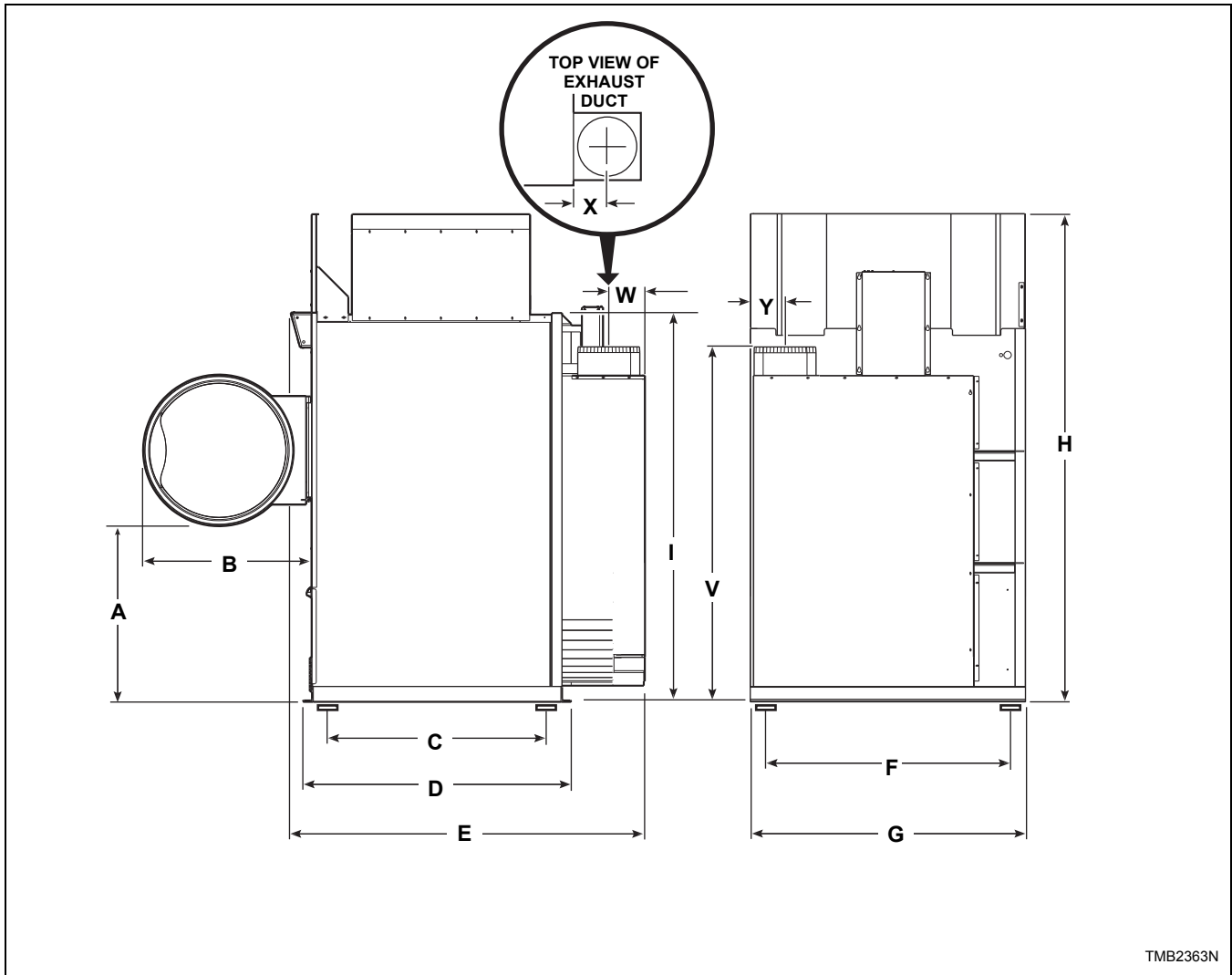
Models	A	B	C	D	E	F	G	H	I
170L/N/S	33.86 in. (860 mm)	32.5 in. (826 mm)	50.75 in. (1289 mm)	51.75 in. (1314 mm)	68.85 in. (1749 mm)	52.12 in. (1324 mm)	53.12 in. (1349 mm)	94 in. (2388 mm)	75.12 in. (1908 mm)

Refer to *Position and Level the Tumble Dryer* to temporarily reduce the heights of these models.

Exhaust Outlet Dimensions and Locations

Models	V	W	X	Y
170L/N/S	42.38 in. (1076 mm)	6.75 in. (171 mm)	6 in. (152 mm)	7 in. (178 mm)

200 Pound Tumble Dryer Dimensions and Exhaust Outlet Locations



TMB2363N

Cabinet Dimensions

Models	A	B	C	D	E	F	G	H	I
200L/N/S	32.1 in. (815 mm)	35.6 in. (904 mm)	58 in. (1473 mm)	59.25 in. (1505 mm)	76.68 in. (1948 mm)	52.12 in. (1324 mm)	53.12 in. (1349 mm)	94 in. (2388 mm)	75.12 in. (1908 mm)

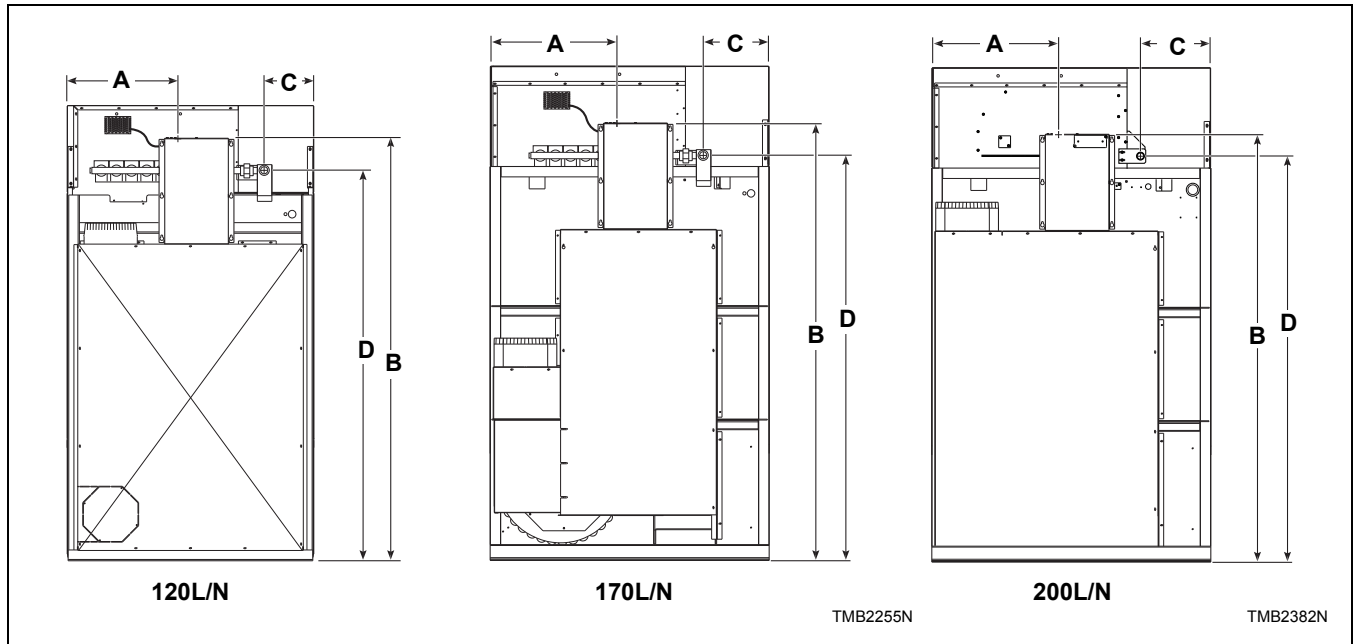
Refer to *Position and Level the Tumble Dryer* to temporarily reduce the heights of these models.

Exhaust Outlet Dimensions and Locations

Models	V	W	X	Y
200L/N/S	67.19 in. (1707 mm)	7.03 in. (179 mm)	9 in. (229 mm)	7 in. (178 mm)

Specifications and Dimensions

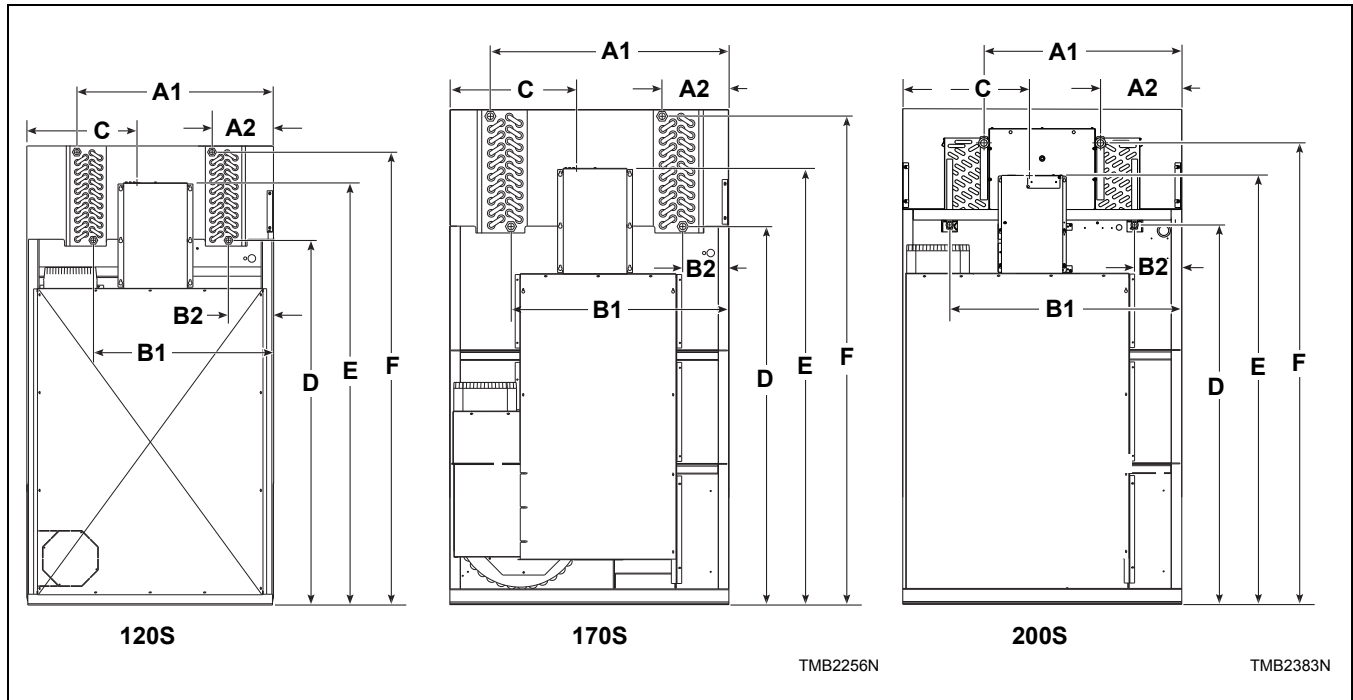
Electric and Gas Connection Locations for Gas Models



Models	Electrical Connection		Gas Connection		
	A	B	C	D	Diameter
120L/N	18.34 in. (466 mm)	77.84 in. (1977 mm)	12.5 in. (318 mm)	70.5 in. (1791 mm)	3/4 in. NPT
170L/N	21 in. (533 mm)	81 in. (2057 mm)	14.85 in. (377 mm)	77.4 in. (1966 mm)	1 in. NPT
200L/N	21 in. (533 mm)	81 in. (2057 mm)	13.7 in. (348 mm)	77.4 in. (1966 mm)	1 in. NPT

NOTE: These figures are approximate dimensions only.

Electric and Steam Connection Locations for Steam Models



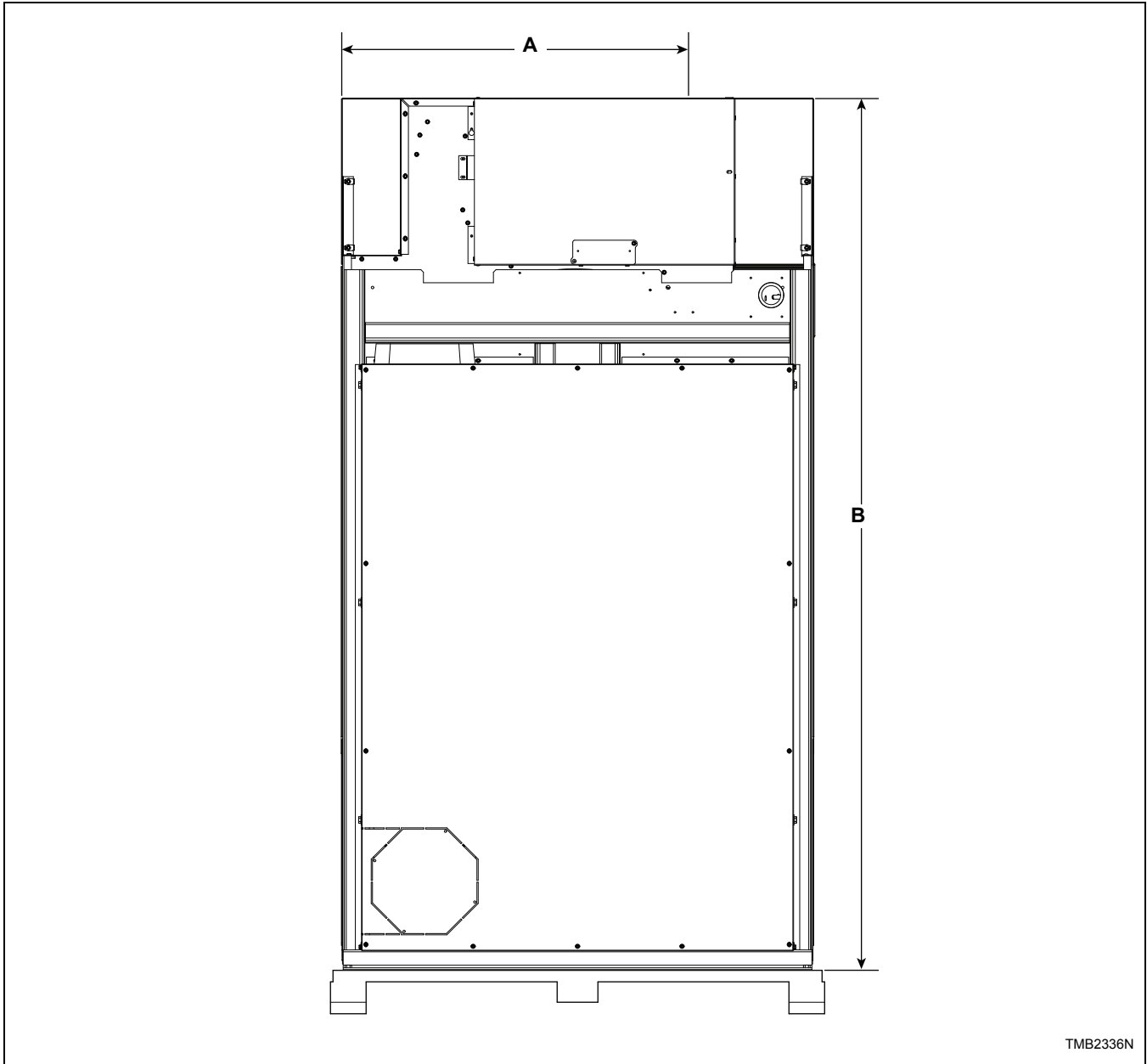
Models	Steam Inlet			
	Diameter	A1	A2	F
120S	3/4 in. NPT	35.875 in. (911 mm)	13.375 in. (340 mm)	82.75 in. (2102 mm)
170S	3/4 in. NPT	37.625 in. (956 mm)	15.25 in. (387 mm)	88 in. (2235 mm)
200S	3/4 in. NPT	37.625 in. (956 mm)	15.25 in. (387 mm)	88 in. (2235 mm)

Models	Steam Outlet			
	Diameter	B1	B2	D
120S	3/4 in. NPT	34.625 in. (879 mm)	13.125 in. (333 mm)	68.5 in. (1740 mm)
170S	1 in. NPT	44.625 in. (1133 mm)	8.75 in. (222 mm)	71.75 in. (1822 mm)
200S	1 in. NPT	44.625 in. (1133 mm)	8.75 in. (222 mm)	71.75 in. (1822 mm)

Models	Electrical Connection	
	C	E
120S	18.34 in. (466 mm)	77.84 in. (1977 mm)
170S	21 in. (533 mm)	81 in. (2057 mm)
200S	21 in. (533 mm)	81 in. (2057 mm)

Specifications and Dimensions

Electric Connection Location for Electric Models



Models	A	B
120E	35.81 in. (910 mm)	85.64 in. (2175 mm)

Installation

Pre-Installation Inspection

Upon delivery, visually inspect the crate, carton and parts for any visible shipping damage. If the crate, carton or cover is damaged or signs of possible damage are evident, have the carrier note the condition on the shipping papers before the shipping receipt is signed, or advise the carrier of the condition as soon as it is discovered.

Remove the crate and protective cover as soon as possible and check the items listed on the packing list. Advise the carrier of any damaged or missing articles as soon as possible. A written claim should be filed with the carrier immediately if articles are damaged or missing.

IMPORTANT: Warranty is void unless tumble dryer is installed according to instructions in this manual. Installation should comply with minimum specifications and requirements detailed in this manual and applicable local gas fitting regulations, municipal building codes, water supply regulations, electrical wiring regulations, and any other relevant statutory regulations. Due to varied requirements, applicable local codes should be thoroughly understood and all pre-installation work arranged for accordingly.

Materials Required (Obtain locally)	
All Models	One Single Pole fused disconnect switch or circuit breaker on 1 Phase models. Circuit breaker on 3 Phase models.
Gas Models	One gas shut-off valve for gas service line to each tumble dryer.
Steam Models	One steam shut-off valve for steam service line to be connected upstream of solenoid steam valve. Two steam shut-off valves for each condensate return line. Flexible steam hoses with a 125 psig (pounds per square inch gauge) (8.79 kg/sq. cm) working pressure for connecting steam coils. Refer to <i>Figure 11</i> and <i>Figure 12</i> or sizing and connection configurations. Three steam traps for steam coil outlet to condensate return line. Optional – Three vacuum breakers for condensate return lines.

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

Location Requirements

The tumble dryer must be installed on a level floor. Floor covering materials such as carpeting or tile must be removed.

To assure compliance, consult local building code requirements. The tumble dryer must not be installed or stored in area where it will be exposed to water and/or weather.

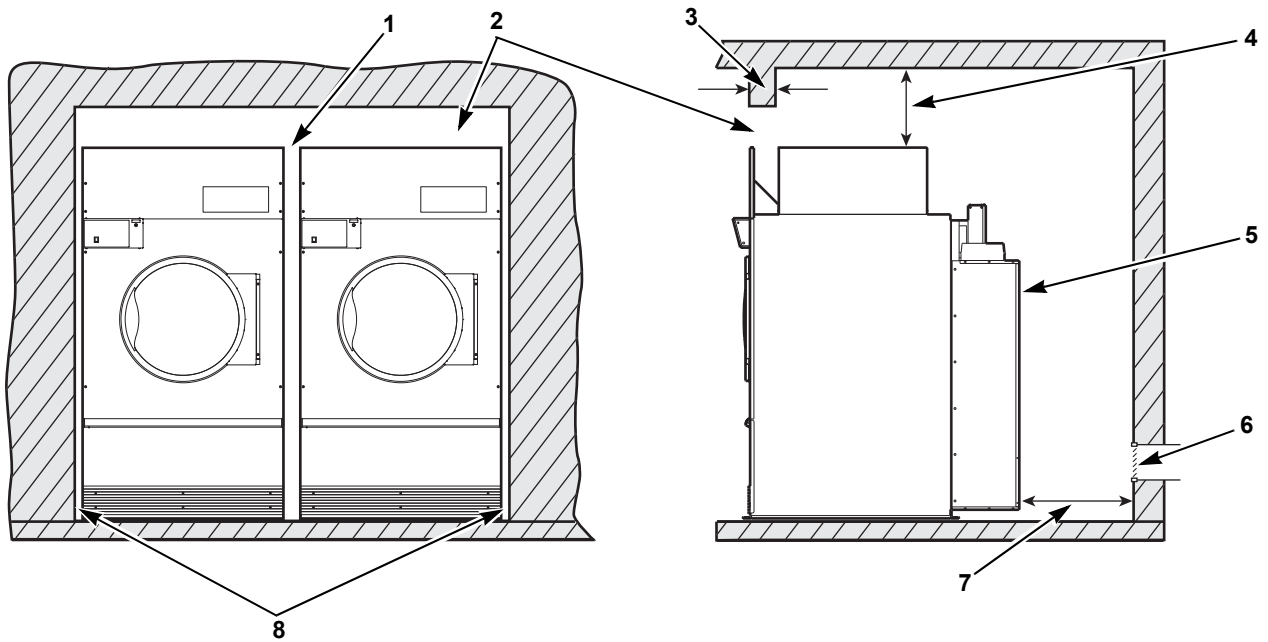
IMPORTANT: DO NOT block the airflow at the rear of the tumble dryer with laundry or other articles. Doing so would prevent adequate air supply to the combustion chamber of the tumble dryer.

A typical tumble dryer enclosure is shown in *Figure 1*. Note the minimum and maximum dimensions. Local codes and ordinances must be complied with.

	WARNING
<p>To reduce the risk of serious injury, install lockable door(s) to prevent public access to rear of tumble dryers.</p>	
W055R1	

IMPORTANT: Install tumble dryers with sufficient clearance for servicing and operation. Refer to *Figure 1*.

	WARNING
<p>To reduce the risk of severe injury, clearance of tumble dryer cabinet from combustible construction must conform to the minimum clearances.</p>	
W056R1	



TMB2020N

NOTE: Shaded areas indicate adjacent structure.

- 1 0.5 in. (13 mm) recommended between machines for removal or installation.
- 2 Allow 2-4 in. (51-102 mm) opening at top of machine to aid in removal or installation. A removable trim piece may be used to conceal the opening; zero clearance allowed for trim.
- 3 4 in. (102 mm) maximum header thickness
- 4 Minimum clearance permitted for remainder: Gas 4 in. (102 mm), Steam 12 in. (305 mm)
- 5 Guard
- 6 Provision for Make-Up Air
- 7 24 in. (610 mm) minimum, 36 in. (914 mm) recommended for maintenance purposes
- 8 0.25 in. (6 mm) recommended for removal or installation purposes, zero clearance allowed

Figure 1

Position and Level the Tumble Dryer

The tumble dryer may be moved with or without the skid. To remove the skid, unscrew the four shipping bolts, and discard them.

To fit a 170 or 200 pound tumble dryer (with shipping skid) through an 8 foot (2.43 meters) high door, you must remove the front access panel. The upper 3 inches (76 mm) of the stove must also be removed on 170 pound gas tumble dryers. Removing the entire gas or steam heater assembly and the shipping skid, will reduce the height of the 120 pound tumble dryer to 70 inches (1778 mm), and the 170 and 200 pound tumble dryer to 75 inches (1905 mm).

Level the tumble dryer to within 0.125 inch (3 mm) from front-to-rear (level on cylinder rib), and side-to-side (level on top panel). Shim under corners to level and stabilize unit. Tumble dryer must not rock.

Before Placing Tumble Dryer into Service

1. Remove or open all panels and check accessible bolts, nuts, screws, terminals and fittings for tightness.
2. Check V-belt tension and adjust if necessary. Refer to appropriate paragraphs in *Adjustments* Section.
3. Replace all panels and guards.
4. Turn on electrical supply to tumble dryer.
5. Open supply valve for gas or steam heated tumble dryers.
6. After performing the previous checks, start the tumble dryer by pressing START (hold for approximately 3 seconds). Release the start button and open the loading door. The cylinder should stop rotating within 7 seconds after the door is opened.
7. **Gas tumble dryers:** Start the tumble dryer and check the burner flame. Adjust the gas inlet shutter as required. Refer to *Adjustments* section.


IMPORTANT: The Electronic Ignition system will attempt to light the gas by sparking for the “trial for ignition” period. If gas does not ignite within this period, the ignition control will go into a safety lockout and the valve will no longer open until the control is reset. Refer to *Table 1*. It may be necessary to restart several times to bleed air out of gas lines. To reset, open and close loading door, then start.

Location	Prepurge Time (seconds)	Trial for Ignition (seconds)	Reset Lockout Condition By:
Australia	18	10	Press and hold reset button on junction box until light goes out.
All others	1-3	10	Open loading door.

Table 1

If lockout condition persists, check that the manual gas shut-off valve is in the open position and that the gas service is properly connected. If condition still persists, remove tumble dryer from service.


8. Load the cylinder with a full load of clean rags and run to remove oil or dirt from cylinder.

	WARNING
The tumble dryer must not be operated if the airflow switch does not operate properly. Faulty airflow switch operation may cause an explosive gas mixture to collect in the tumble dryer.	
<small>W072R1</small>	

9. Check the airflow switch operation by opening the lint panel; be sure to remove shipping tape from airflow switch prior to operation. Temporarily tape down the lint panel safety switch located behind the upper left corner of the lint panel. The heating systems should shut off when the lint panel is opened a maximum of 6 inches (152.4 mm). The airflow switch operation may be affected by lack of make-up air or an obstruction in the exhaust duct. These should be checked; if there is a problem, contact an authorized service person.
10. Wipe out the cylinder using an all-purpose cleaner or detergent and water solution.

If tumble dryer does not meet any of the listed requirements, remove tumble dryer from service. Refer to *Removing Tumble Dryer from Service* section.

Exhaust Requirements

	WARNING
<p>A drying tumble dryer produces combustible lint. To reduce the risk of fire, the tumble dryer must be exhausted to the outdoors.</p> <p style="text-align: right;">W057R1</p> <p>To reduce the risk of fire and accumulation of combustible gases, DO NOT exhaust tumbler air into a window well, gas vent, chimney or enclosed, unventilated area such as an attic, ceiling, crawl space under a building, or concealed space of a building.</p> <p style="text-align: right;">W506</p>	

Layout

Wherever possible, install tumble dryers along an outside wall, where duct length can be kept to a minimum and makeup air can be easily accessed. Construction must not block the airflow at the top rear of the tumble dryer. Doing so would prevent adequate air supply to the tumble dryer combustion chamber.

Make-Up Air

A tumble dryer is forced air exhausted and requires provisions for make-up air to replace air exhausted by tumble dryer. Refer to *Table 2*.

IMPORTANT: Do not obstruct flow of combustion and ventilation air.


Required Make-Up Air Opening (to the outside) for Each Tumble Dryer	
Models	Opening
120 Pound	360 in. ² (2323 cm ²) <i>free air</i>
170 Pound	525 in. ² (3710 cm ²) <i>free air</i>
200 Pound	525 in. ² (3710 cm ²) <i>free air</i>

Table 2

Make-up air openings with louvers will restrict air flow. The opening must be increased to compensate for area taken up by louvers.

Make-up air openings in rooms containing tumble dryer(s) and/or gas fired hot water heater or other gravity vented appliances must be increased sufficiently to prevent downdrafts in any of the vents when all tumble dryers are in operation. Do not locate gravity vented appliances between tumble dryer(s) and make-up air openings. If it is necessary to duct make-up air to tumble dryer(s), increase area of duct work by 25% to compensate for any restriction in air movement.

Venting


	WARNING
<p>To reduce the risk of fire due to increased static pressure, we do not recommend installation of in-line secondary lint filters or lint collectors. If secondary systems are mandated, frequently clean the system to assure safe operation.</p> <p style="text-align: right;">W749</p>	

IMPORTANT: Installing in-line filters or lint collectors will cause increased static pressure. Failure to maintain the secondary lint system will decrease tumble dryer efficiency and may void machine warranty.

For maximum efficiency and minimum lint accumulation, tumble dryer must be exhausted to the outdoors by the shortest possible route.

Proper sized exhaust ducts are essential for proper operation. All elbows should be sweep type. Exhaust ducts must be assembled so the interior surfaces are smooth, so the joints do not permit the accumulation of lint. DO NOT use plastic, thin foil or Type B flexible ducts – rigid metal ducts are recommended. Use exhaust ducts made of sheet metal or other noncombustible material. Use of duct tape or pop-rivets on all seams and joints is recommended, if allowed by local codes.

Verify that old ducts are thoroughly cleaned before installing new tumble dryer(s).

	<h2>WARNING</h2>
<p>Improperly sized or assembled ductwork causes excess back pressure which results in slow drying, lint collecting in the duct, lint blowing back into the room, and increased fire hazard.</p>	
<small>W355</small>	

NOTE: Exhaust ducts must be constructed of sheet metal or other noncombustible material. Such ducts must be equivalent in strength and corrosion resistance to ducts made of galvanized sheet steel not less than 0.0195 inch (0.495 mm) thick.

Where the exhaust duct pierces a combustible wall or ceiling, the opening must be sized per local codes. The space around the duct shall be sealed with noncombustible material.

NOTE: For best performance, provide an individual exhaust duct for each tumble dryer. Do not install a hot water heater in a room containing tumble dryers. It is better to have the water heater in a separate room with a separate air inlet.

Alternate Venting for 120 Pound tumble dryers

The 120 pound tumble dryer is equipped from the factory to exhaust from the top; however, it may be converted to exhaust out the rear by doing the following (refer to *Specifications and Dimensions* section):

1. Remove belt guard cover.
2. Remove 10 inch (254 mm) diameter elbow and vertical duct.
3. Cut out shape from belt guard cover. Refer to *Figure 2*.
4. Screw octagonal piece over 10 inch (254 mm) diameter opening in top of belt guard.
5. Attach new exhaust duct to exhaust thimble on rear panel, following all requirements in this section.
6. Replace belt guard cover.

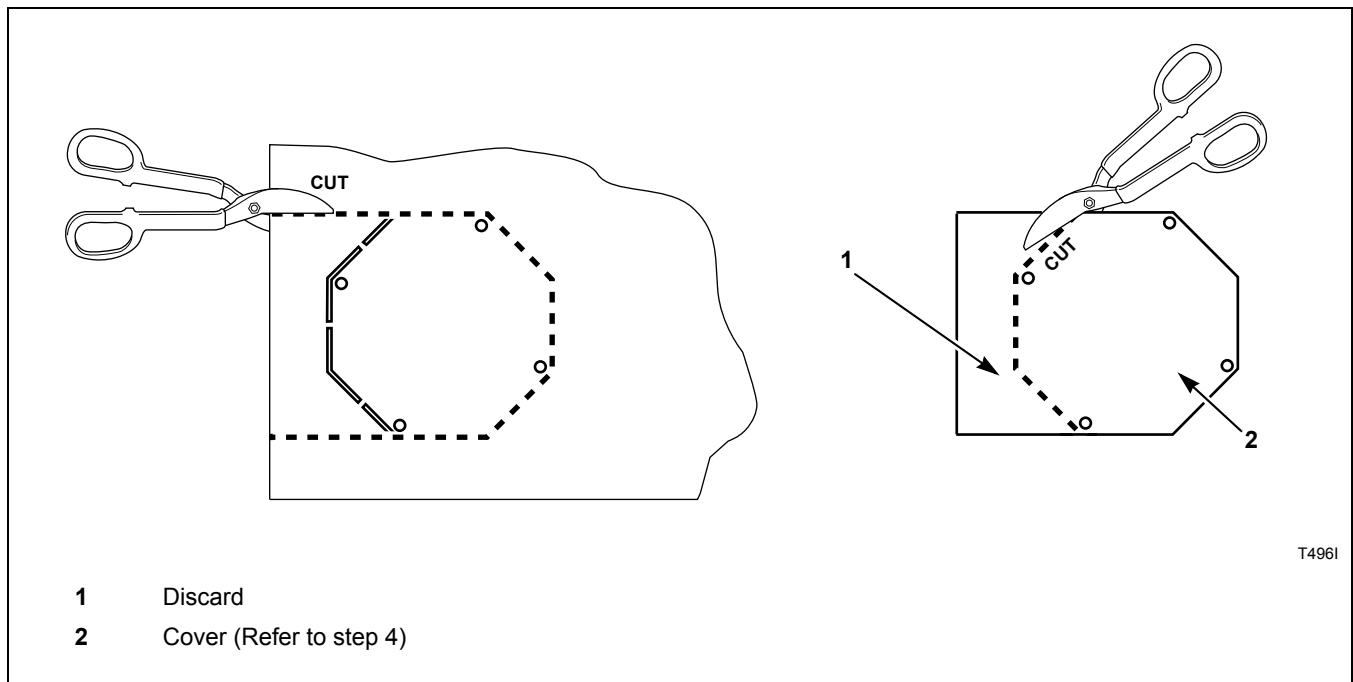


Figure 2

Exhaust Requirements

Individual Venting

For maximum efficiency and performance, it is preferred to exhaust tumble dryer(s) individually to the outdoors.

IMPORTANT: At no point may the cross sectional area of installed venting be less than the cross sectional area of the exhaust outlet of the tumble dryer.

The exhaust duct must be designed so the static back pressure measured 12 inches (305 mm) from the exhaust outlet does not exceed the maximum allowable pressure specified on the installation sticker on the rear of the tumble dryer.

NOTE: Static back pressure must be measured with the tumble dryer running.

The maximum allowable length of venting of the same diameter as the exhaust thimble is 14 feet (4.3 meters) and two 90° elbows or equivalent. If the equivalent length of a duct required for an installation exceeds the maximum allowable equivalent length, the diameter of a round duct must be increased by 10% for each additional 20 feet (6.1 meters). Cross section area of a rectangular duct must be increased by 20% for each additional 20 feet (6.1 meters). Refer to *Table 3* to determine equivalent venting:

Duct Diameter	Equivalent Length of Rigid Straight Duct
10 in. (254 mm)	One 90° elbow = 11.6 ft. (3.5 m)
12 in. (305 mm)	One 90° elbow = 14 ft. (4.3 m)
14 in. (356 mm)	One 90° elbow = 16 ft. (4.9 m)
16 in. (406 mm)	One 90° elbow = 18.7 ft. (5.7 m)
18 in. (457 mm)	One 90° elbow = 21 ft. (6.4 m)
Equivalent Length (ft.) = 1.17 x Duct Diameter (in.)	

Table 3

Example: A 12 inch (305 mm) diameter duct's equivalent length of 14 feet (4.3 meters) of duct and two 90° elbows is:

Equivalent Length: = 14 ft. (4.3 m) + (2) 90° elbows
 = 14 ft. (4.3 m) + 14 ft. (4.3 m)
 + 14 ft. (4.3 m)
 = 42 ft. (12.8 m)

With the tumble dryer in operation, airflow at any point in the duct should be at least 1200 feet per minute (366 meters per minute) to ensure that lint remains airborne. If 1200 feet per minute (366 meters per minute) cannot be maintained, schedule monthly inspections and cleaning of the ductwork.

NOTE: The maximum length of a flexible metal duct must not exceed 7.87 ft. (2.4 m) as required to meet UL2158, clause 7.3.2A.

Manifold Venting

While it is preferable to exhaust tumble dryers individually to the outdoors, a main collector duct may be used if it is sized according to *Figure 5*. This illustration indicates minimum diameters, and should be increased if collector length exceeds 20 feet (6.1 meters). Manifold duct may be rectangular in cross section, as long as area is not reduced. Provisions should be made for lint removal and cleaning of duct.

Manifold duct must be tapered, as shown in *Figure 3*. Individual tumble dryer ducts must enter manifold duct at a 45° angle in the direction of airflow.

NOTE: Never connect a tumble dryer duct at a 90° angle to a collector duct. Refer to *Figure 3*. Doing so will cause excessive back pressure, resulting in poor performance. Never connect two tumble dryer exhaust ducts directly across from each other at the point of entry to manifold duct.

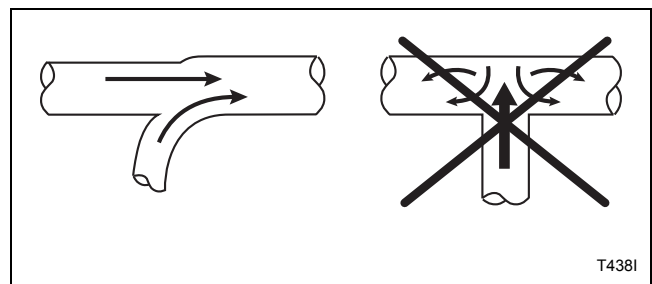


Figure 3

Exhaust system must be designed so static back pressure measured 12 inches (305 mm) from exhaust thimble does not exceed maximum allowable pressure specified on installation sticker on rear of tumble dryer. This must be measured with all tumble dryers running that are vented into collector.

With the tumble dryer in operation, airflow at any point in the duct should be at least 1200 feet per minute (366 meters per minute) to ensure that lint remains airborne. If 1200 feet per minute (366 meters per minute) cannot be maintained, schedule monthly inspections and cleaning of the ductwork.

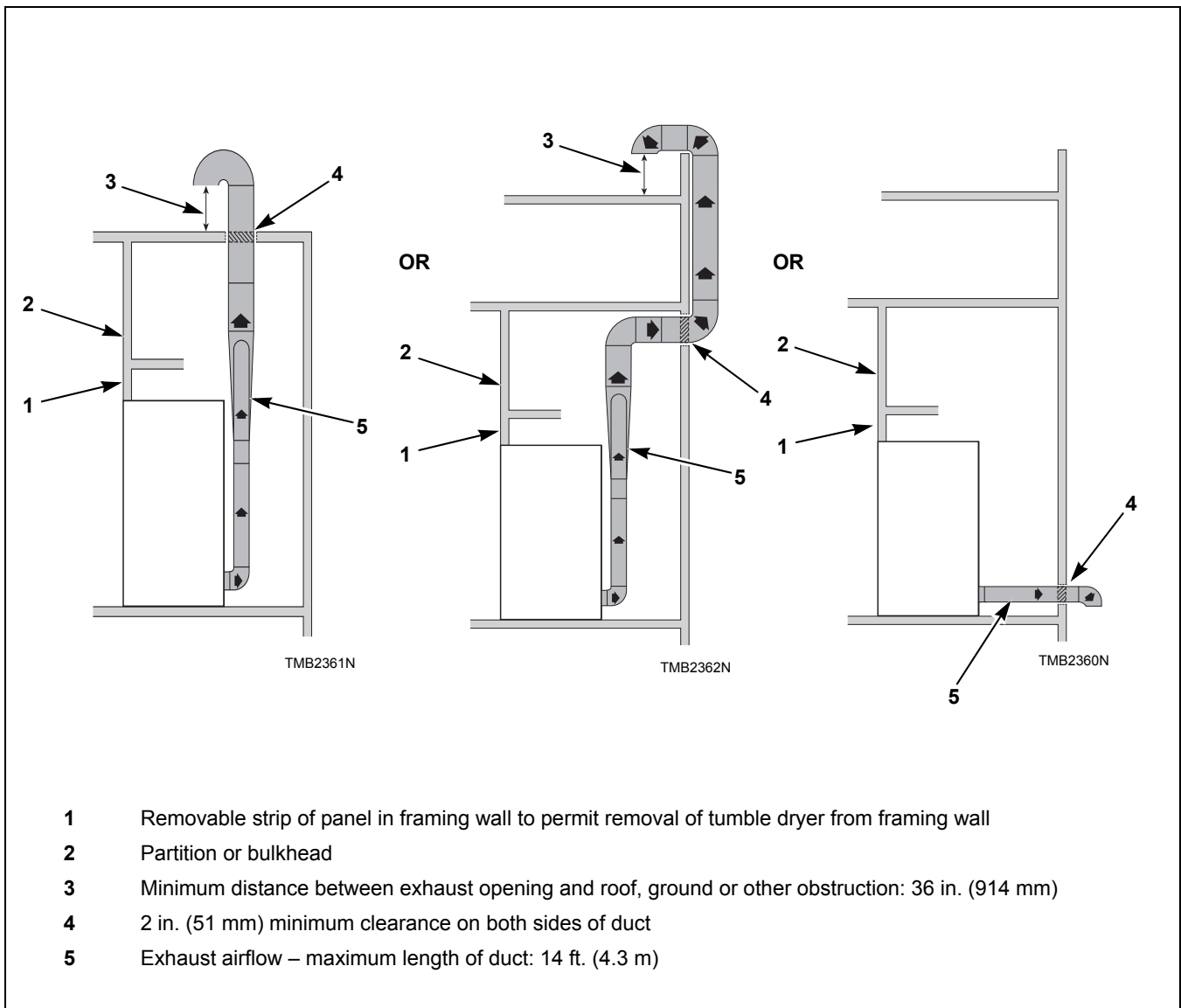


Figure 4

NOTE: Do not install wire mesh or screen in exhaust duct opening to avoid lint build-up or impacting proper discharge of air from tumble dryers.

NOTE: Where exhaust duct pierces a combustible wall or ceiling, the opening must be sized per local codes.

NOTE: Inside of duct must be smooth. Do not use sheet metal screws to join sections.

Consult your local building code for regulations which may also apply.

Exhaust Requirements

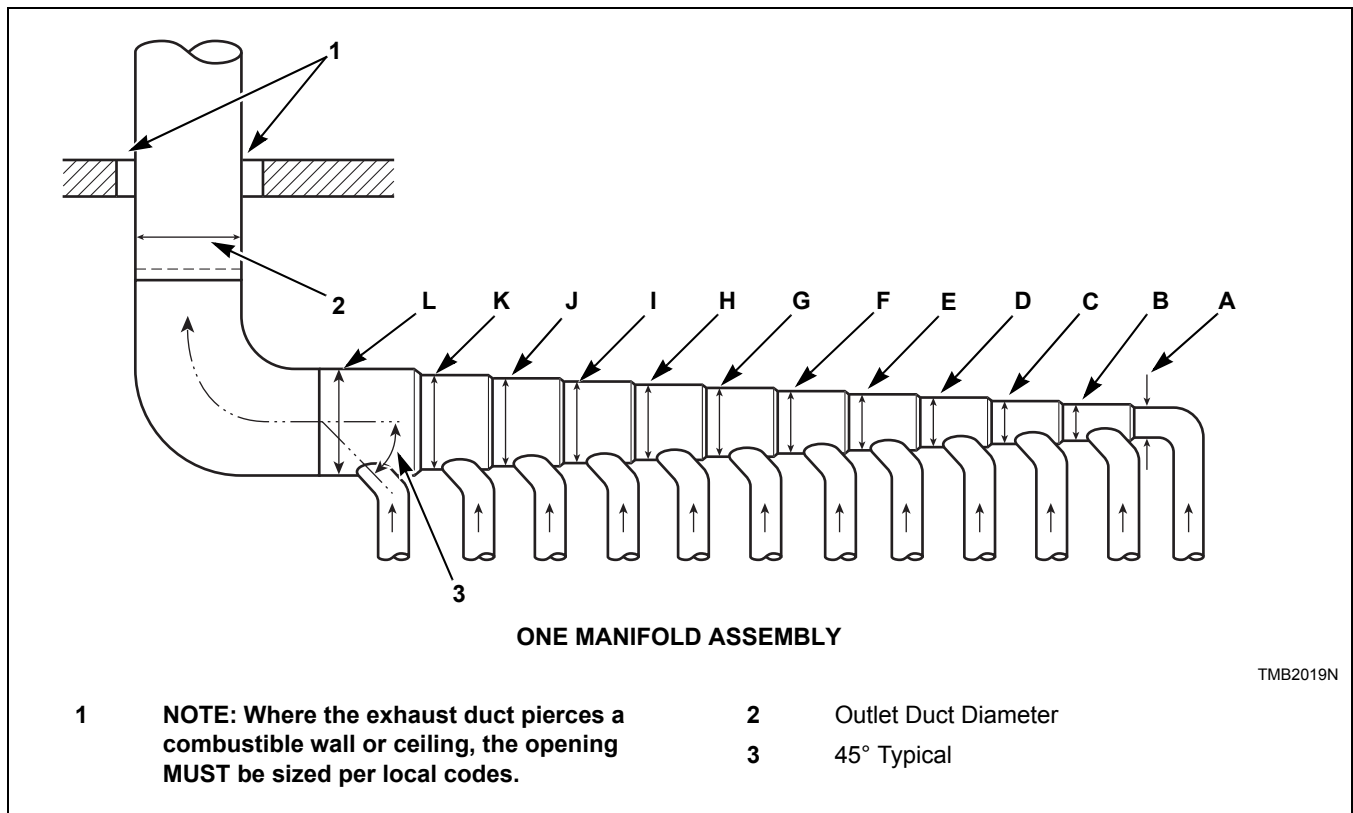


Figure 5

Duct Stations	120 Pound	170 Pound	200 Pound
	10 in. (254 mm) Duct	12 in. (305 mm) Duct	12 in. (305 mm) Duct
A	10 in. (254 mm)	12 in. (305 mm)	12 in. (305 mm)
B	15 in. (381 mm)	17 in. (432 mm)	17 in. (432 mm)
C	18 in. (457 mm)	21 in. (533 mm)	21 in. (533 mm)
D	21 in. (533 mm)	24 in. (610 mm)	24 in. (610 mm)
E	24 in. (610 mm)	27 in. (686 mm)	27 in. (686 mm)
F	26 in. (660 mm)	30 in. (762 mm)	30 in. (762 mm)
G	28 in. (711 mm)	32 in. (813 mm)	32 in. (813 mm)
H	30 in. (762 mm)	34 in. (864 mm)	34 in. (864 mm)
I	32 in. (813 mm)	36 in. (914 mm)	36 in. (914 mm)
J	33 in. (838 mm)	38 in. (965 mm)	38 in. (965 mm)
K	35 in. (889 mm)	40 in. (1016 mm)	40 in. (1016 mm)
L	36 in. (914 mm)	42 in. (1067 mm)	42 in. (1067 mm)

Table 4

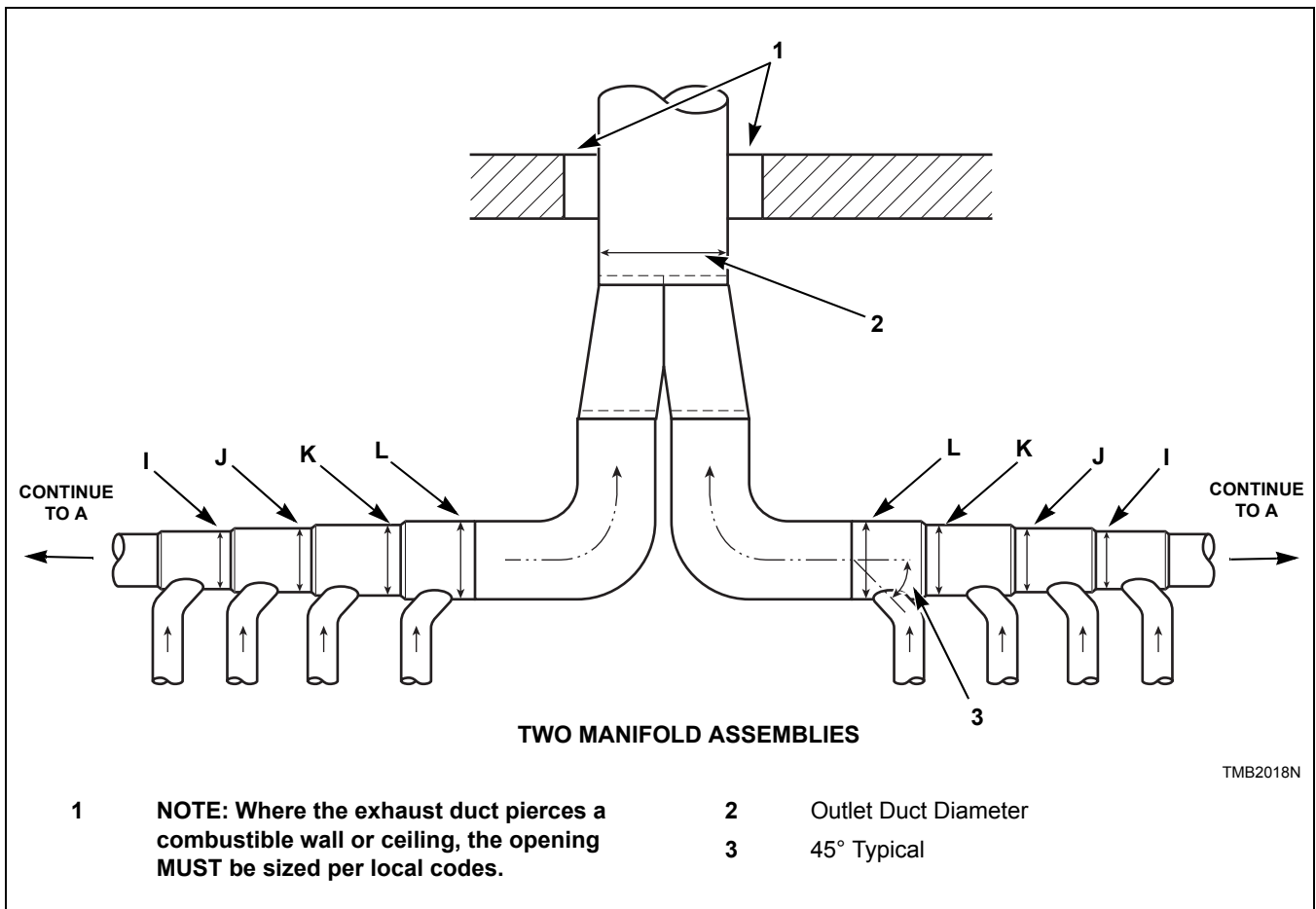



Figure 6


Duct Stations	120 Pound	170 Pound	200 Pound
	10 in. (254 mm) Duct	12 in. (305 mm) Duct	12 in. (305 mm) Duct
A	15 in. (381 mm)	17 in. (432 mm)	17 in. (432 mm)
B	21 in. (533 mm)	24 in. (610 mm)	24 in. (610 mm)
C	26 in. (660 mm)	30 in. (762 mm)	30 in. (762 mm)
D	30 in. (762 mm)	34 in. (864 mm)	34 in. (864 mm)
E	33 in. (838 mm)	38 in. (965 mm)	38 in. (965 mm)
F	36 in. (914 mm)	42 in. (1067 mm)	42 in. (1067 mm)
G	39 in. (991 mm)	45 in. (1143 mm)	45 in. (1143 mm)
H	42 in. (1067 mm)	45 in. (1143 mm)	45 in. (1143 mm)
I	45 in. (1143 mm)	52 in. (1321 mm)	52 in. (1321 mm)
J	47 in. (1194 mm)	54 in. (1372 mm)	54 in. (1372 mm)
K	49 in. (1245 mm)	57 in. (1448 mm)	57 in. (1448 mm)
L	51 in. (1295 mm)	60 in. (1524 mm)	60 in. (1524 mm)

Table 5

Gas Requirements

	WARNING
<p>To reduce the risk of fire or explosion, DO NOT CONNECT THE GAS LINE TO THE TUMBLE DRYER IF THE GAS SERVICE IS NOT THE SAME AS THAT SPECIFIED ON THE TUMBLE DRYER SERIAL PLATE! It will first be necessary to convert the gas burner orifice and gas valve. Appropriate conversion kits are available.</p>	
W060R1	

IMPORTANT: Any product revisions or conversions must be made by the Manufacturer's Authorized Dealers, Distributors or local service personnel.

	WARNING
<p>The tumbler and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 0.5 psig (3.45 kPa).</p> <p>The tumbler must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressure equal to or less than 0.5 psig (3.45 kPa).</p>	
W061R2	

IMPORTANT: The installation must comply with local codes or, in the absence of local codes:


- with the latest edition of the "National Fuel Gas Code," ANSI Z223.1/NFPA 54 in the U.S.A.
- with CAN/CSA-B149.1 Natural Gas and Propane Installation Code in Canada
- and Gas Installations Standard AS/NZS 5601 Part 1: General Installations in Australia and New Zealand

Obtain specific gas service pipe size from the gas supplier. Refer to *Table 6* for general pipe size.

The following must be furnished and installed by the customer for the gas service line to each tumble dryer. Refer to *Figure 7*.

- Sediment traps
- Shut-off valves
- Supply pressure taps

It is important that equal pressure be maintained at all tumble dryer gas connections. This can be done by installing a one inch (25 mm) pipe gas loop. Refer to *Figure 8*.

	WARNING
<p>To reduce the risk of fire or explosion, if the tumble dryer is to be connected to Liquefied Petroleum (L.P.) gas, a vent to the outdoors must be provided in the room where the tumble dryer is installed.</p>	
W062R1	

NATURAL GAS pressures with all gas appliances running (tumble dryers, water heaters, space heaters, furnace, etc.):

Maximum gas pressure – 10.5 water column inches (2.61 kPa)
 Recommended gas pressure – 6.5 water column inches (1.62 kPa)
 Minimum gas pressure – 5 water column inches (1.24 kPa)

An in-line pressure regulator may be required if the line pressure exceeds 10.5 water column inches (2.61 kPa) with all gas appliances running.

LIQUID PETROLEUM GAS (L.P.) pressures with all gas appliances running (tumble dryers, water heaters, space heaters, furnace, etc.):

Maximum gas pressure – 13 water column inches (3.23 kPa)
 Recommended gas pressure – 11 water column inches (2.74 kPa)
 Minimum gas pressure – 10 water column inches (2.49 kPa)

For converting models from Natural Gas to L.P. Gas:
 120 Pound Models - M4973P3
 170 Pound Models - M4974P3
 200 Pound Models - M4975P3

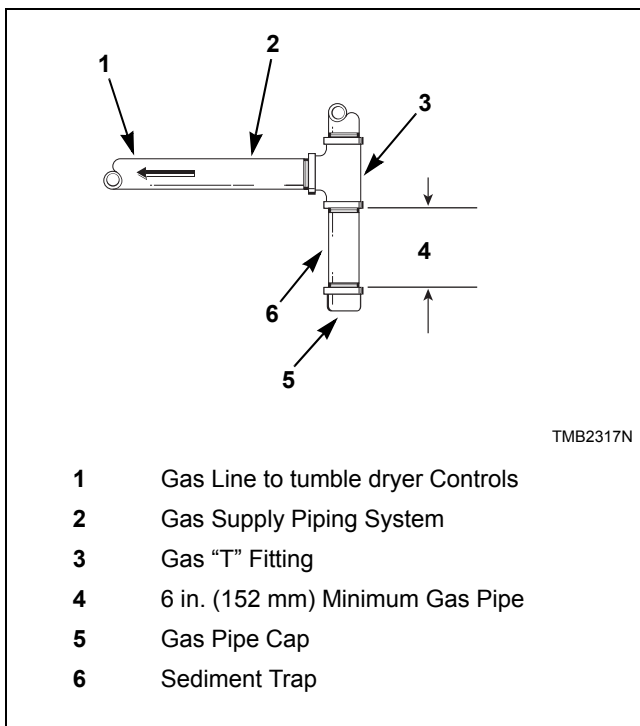


Figure 7

Turn on gas and check all pipe connections (internal and external) for gas leaks with a non-corrosive leak detection fluid. Purge air in gas service line by operating the tumble dryer in the drying mode. If burner does not light and unit goes into lockout, open and close the door and restart. Repeat these steps until burner ignites. **Use pipe compound, resistant to actions of L.P. Gas, on all pipe threads.**



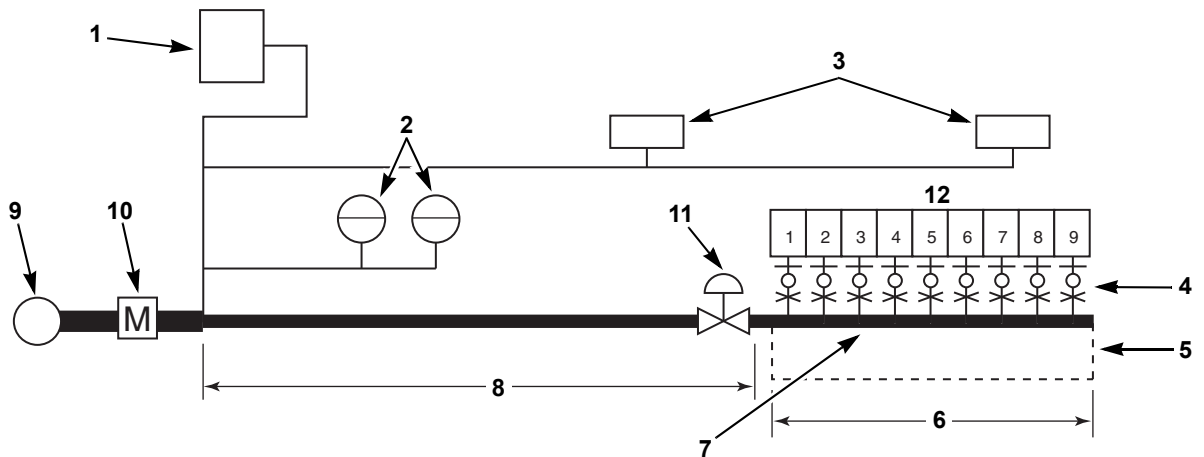
WARNING

Check all pipe connections, internal and external, for gas leaks using a non-corrosive leak detection fluid. To reduce the risk of explosion or fire, **DO NOT USE AN OPEN FLAME TO CHECK FOR GAS LEAKS!** Gas connections should be checked twice a year for leakage.

W635

Gas Requirements

Gas Supply Pipe Sizing and Looping



TMB2126N

- | | | | |
|---|--|----|--|
| 1 | Gas Furnace (120,000 Btu/hr.) | 8 | 25 ft. (7.6 m) |
| 2 | Gas Water Heaters (400,000 Btu/hr. each) | 9 | Main Regulator |
| 3 | Gas Space Heaters (70,000 Btu/hr. each) | 10 | Gas Meter |
| 4 | Sediment Traps, Supply Pressure Taps and Shut-Off Valves. Refer to Figure 7. | 11 | Pressure Regulator (If required) |
| 5 | 1 in. (25.4 mm) Gas Pipe Loop | 12 | 120 Pound tumble dryers (270,000 Btu/hr. each)
170 Pound tumble dryers (395,000 Btu/hr. each)
200 Pound tumble dryers (425,000 Btu/hr. each) |
| 6 | 19 ft. (5.8 m) | | |
| 7 | Minimum Pipe Size to Tumble dryer is 0.75 in. for 120 Pound Gas, 1 in. for 170 and 200 Pound Gas | | |

SAMPLE CALCULATIONS:

Equivalent length = Total length of main gas supply pipe to the far end of the tumble dryers.
 = 25 ft. + 19 ft. (7.6 m + 5.8 m) gas supply pipe
 = 44 ft. (13.4 m) total gas line

Total Btu/hr. = The sum of the Btu/hr. of all 120 pound tumble dryers being fed by the main gas supply pipe.
 = 9 x 270,000
 = 2,430,000 Btu/hr.

Using Table 6, the main supply pipe diameter should be 3 in. (76 mm).

IMPORTANT: Gas loop piping must be installed as illustrated to equalize gas pressure for all tumble dryers connected to single gas service. Other gas using appliances should be connected upstream from loop.

Figure 8

Gas Pipe Size Required for 1000 Btu Natural Gas — 0.64 Specific Gravity at 7 ± 1.5 inches (17.4 ± 4 mbar, 1.74 ± 0.37 kPa) Water Column Pressure						
Gas Appliances Total Btu/hr.	Equivalent Length					
	25 feet (7.63 m)	50 feet (15.25 m)	75 feet (22.88 m)	100 feet (30.50 m)	125 feet (38.13 m)	150 feet (45.75 m)
Based on 0.3 in. Water Column Pressure Drop for Length Given Sizes shown in inches (mm)						
300,000	1 (25.40)	1.25 (31.75)	1.25 (31.75)	1.5 (38.10)	1.5 (38.10)	1.5 (38.10)
400,000	1.25 (31.75)	1.25 (31.75)	1.5 (38.10)	1.5 (38.10)	1.5 (38.10)	2 (50.80)
500,000	1.25 (31.75)	1.5 (38.10)	1.5 (38.10)	2 (50.80)	2 (50.80)	2 (50.80)
600,000	1.5 (38.10)	1.5 (38.10)	2 (50.80)	2 (50.80)	2 (50.80)	2 (50.80)
700,000	1.5 (38.10)	2 (50.80)	2 (50.80)	2 (50.80)	2 (50.80)	2.5 (63.50)
800,000	1.5 (38.10)	2 (50.80)	2 (50.80)	2 (50.80)	2.5 (63.50)	2.5 (63.50)
900,000	2 (50.80)	2 (50.80)	2 (50.80)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)
1,000,000	2 (50.80)	2 (50.80)	2 (50.80)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)
1,100,000	2 (50.80)	2 (50.80)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)
1,200,000	2 (50.80)	2 (50.80)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)
1,300,000	2 (50.80)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)	3 (76.20)
1,400,000	2 (50.80)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)	3 (76.20)	3 (76.20)
1,500,000	2 (50.80)	2.5 (63.50)	2.5 (63.50)	2.5 (63.50)	3 (76.20)	3 (76.20)
1,600,000	2 (50.80)	2.5 (63.50)	2.5 (63.50)	3 (76.20)	3 (76.20)	3 (76.20)
1,700,000	2 (50.80)	2.5 (63.50)	2.5 (63.50)	3 (76.20)	3 (76.20)	3 (76.20)
1,800,000	2.5 (63.50)	2.5 (63.50)	3 (76.20)	3 (76.20)	3 (76.20)	3 (76.20)
1,900,000	2.5 (63.50)	2.5 (63.50)	3 (76.20)	3 (76.20)	3 (76.20)	3 (76.20)
2,000,000	2.5 (63.50)	2.5 (63.50)	3 (76.20)	3 (76.20)	3 (76.20)	3.5 (88.90)
2,200,000	2.5 (63.50)	3 (76.20)	3 (76.20)	3 (76.20)	3.5 (88.90)	3.5 (88.90)
2,400,000	2.5 (63.50)	3 (76.20)	3 (76.20)	3 (76.20)	3.5 (88.90)	3.5 (88.90)
2,600,000	2.5 (63.50)	3 (76.20)	3 (76.20)	3.5 (88.90)	3.5 (88.90)	3.5 (88.90)
2,800,000	2.5 (63.50)	3 (76.20)	3 (76.20)	3.5 (88.90)	3.5 (88.90)	3.5 (88.90)
3,000,000	2.5 (63.50)	3 (76.20)	3.5 (88.90)	3.5 (88.90)	3.5 (88.90)	4 (101.60)
3,200,000	3 (76.20)	3 (76.20)	3.5 (88.90)	3.5 (88.90)	3.5 (88.90)	4 (101.60)
3,400,000	3 (76.20)	3.5 (88.90)	3.5 (88.90)	3.5 (88.90)	4 (101.60)	4 (101.60)
3,600,000	3 (76.20)	3.5 (88.90)	3.5 (88.90)	3.5 (88.90)	4 (101.60)	4 (101.60)
3,800,000	3 (76.20)	3.5 (88.90)	3.5 (88.90)	4 (101.60)	4 (101.60)	4 (101.60)
4,000,000	3 (76.20)	3.5 (88.90)	3.5 (88.90)	4 (101.60)	4 (101.60)	4 (101.60)

For L.P. Gas, correct the total Btu/hr. by multiplying it by 0.6. The answer is the equivalent Btu on the above chart.

Table 6

Gas Requirements

High Altitude Orifice Sizing


For proper operation at altitudes above 2000 feet (610 meters), the gas orifice size must be reduced to ensure complete combustion. Refer to *Table 7*.

Model	Gas	Altitude		Orifice					New Rate (Btu/hr.)*
		feet	m	No.	inches	mm	Quantity	Part No.	
120L/N	Natural Gas	2001 – 4000	610 – 1220	16	0.1770	4.5	3	M402988	248,400
		4001 – 6000	1221 – 1830	18	0.1695	4.3		M402995	226,800
		6001 – 8000	1831 – 2440	19	0.1660	4.2		M401002	205,200
		8001 – 10,000	2441 – 3050	20	0.1610	4.1		M401020	183,600
	L.P. Gas	2001 – 4000	610 – 1220	38	0.1015	2.6		M411376	248,400
		4001 – 6000	1221 – 1830	39	0.0995	2.5		M401007	226,800
		6001 – 8000	1831 – 2440	41	0.0960	2.4		M401015	205,200
		8001 – 10,000	2441 – 3050	42	0.0935	2.4		M403017	183,600
170L/N	Natural Gas	2001 – 4000	610 – 1220	14	0.1820	4.6	4	M411371	363,400
		4001 – 6000	1221 – 1830	16	0.1770	4.5		M411373	331,800
		6001 – 8000	1831 – 2440	17	0.1730	4.4		M411374	300,200
		8001 – 10,000	2441 – 3050	19	0.1660	4.2		M402995	268,600
	L.P. Gas	2001 – 6000	610 – 1830	30	0.1285	3.3	3	M401021	363,400
		6001 – 10,000	1831 – 3050	31	0.1200	3.0		M401017	300,200
200L/N	Natural Gas	2001 – 4000	610 – 1220	19	.1660	4.2	5	M402995	391,000
		4001 – 6000	1221 – 1830	20	.1610	4.1		M401002	357,000
		6001 – 8000	1831 – 2440	22	.1570	4.0		M402996	323,000
		8001 – 10,000	2441 – 3050	24	.1520	3.9		M402980	289,000
	L.P. Gas	2001 – 4000	610 – 1220	33	.1130	2.9	4	M401022	391,000
		4001 – 6000	1221 – 1830	34	.1110	2.8		M411512	357,000
		6001 – 8000	1831 – 2440	7/64	.1094	2.8		70070902	323,000
		8001 – 10,000	2441 – 3050	37	.1040	2.6		M401024	289,000

* Btu/hr. derate of 4% per 1000 ft. (305 m) of altitude.

Table 7

Electrical Requirements


	WARNING
<p>To reduce the risk of electric shock, fire, explosion, serious injury or death:</p> <ul style="list-style-type: none">• Disconnect electric power to the tumble dryer before servicing.• Close gas shut-off valve to gas tumble dryer before servicing.• Close steam valve to steam tumble dryer before servicing.• Never start the tumble dryer with any guards/panels removed.• Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumble dryer is properly grounded. <p style="text-align: right;">W002R1</p> <p>To reduce the risk of fire and electric shock, check with a qualified serviceman for proper grounding procedures. Improper connection of the equipment grounding conductor may result in a risk of electric shock.</p> <p style="text-align: right;">W068</p> <p>To reduce the risk of fire and electric shock, if electrical supply is coming from a three phase service, DO NOT connect a “High Leg” or “Stinger Leg” to a single phase machine. On a three phase machine, if there is a “High Leg” or “Stinger Leg” it should be connected to L3.</p> <p style="text-align: right;">W069</p>	

NOTE: To ensure protection against shock, this tumble dryer **MUST** be electrically grounded in accordance with the local codes or, in the absence of local codes, with the latest edition of the National Electrical Code ANSI/NFPA No. 70. In Canada the electrical connections are to be made in accordance with CSA C22.1 latest edition Canadian Electrical Code, Part I and/or local codes. Electrical work should be done by a qualified electrician.

IMPORTANT: Electrical connections must be made by a qualified electrician using data on serial plate, installation manuals and wiring diagram provided with machine and according to local codes. Install a circuit breaker as close to the tumble dryer as possible. If more than one tumble dryer is being installed, a circuit breaker must be provided for each.

NOTE: Connect machine to an individual branch circuit not shared with lighting or other equipment.


NOTE: 3 Phase Machines Only - Do not use fuses to avoid the possibility of “single phasing” and causing premature failure of the motors.


	WARNING
<p>In case of servicing (or putting the tumble dryer out of order), disconnect the tumble dryer from the main supply by switching off the circuit breaker.</p> <p style="text-align: right;">W796</p>	

Grounding Instructions

This tumble dryer must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This tumble dryer must be connected to a grounded metal, permanent wiring system; or an equipment grounding conductor must be run with the circuit conductors and connected to the appropriate ground location.

Metal conduit and/or BX cable is not considered ground. Connecting the Neutral from the electrical service box to the tumble dryer ground screw does not constitute a ground. A dedicated ground conduit (wire) must be connected between the electrical service box ground bar and the tumble dryer ground screw.

	WARNING
<p>All electrical connections should be made by a qualified electrician.</p> <p>To reduce the risk of electrical shock, de-energize the electrical circuit being connected to the tumble dryer before making any electrical connections. Never attempt to connect a live circuit.</p> <p style="text-align: right;">W070R1</p>	

	CAUTION
<p>Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.</p> <p style="text-align: right;">W071</p>	

Electrical Requirements

Service/Ground Location

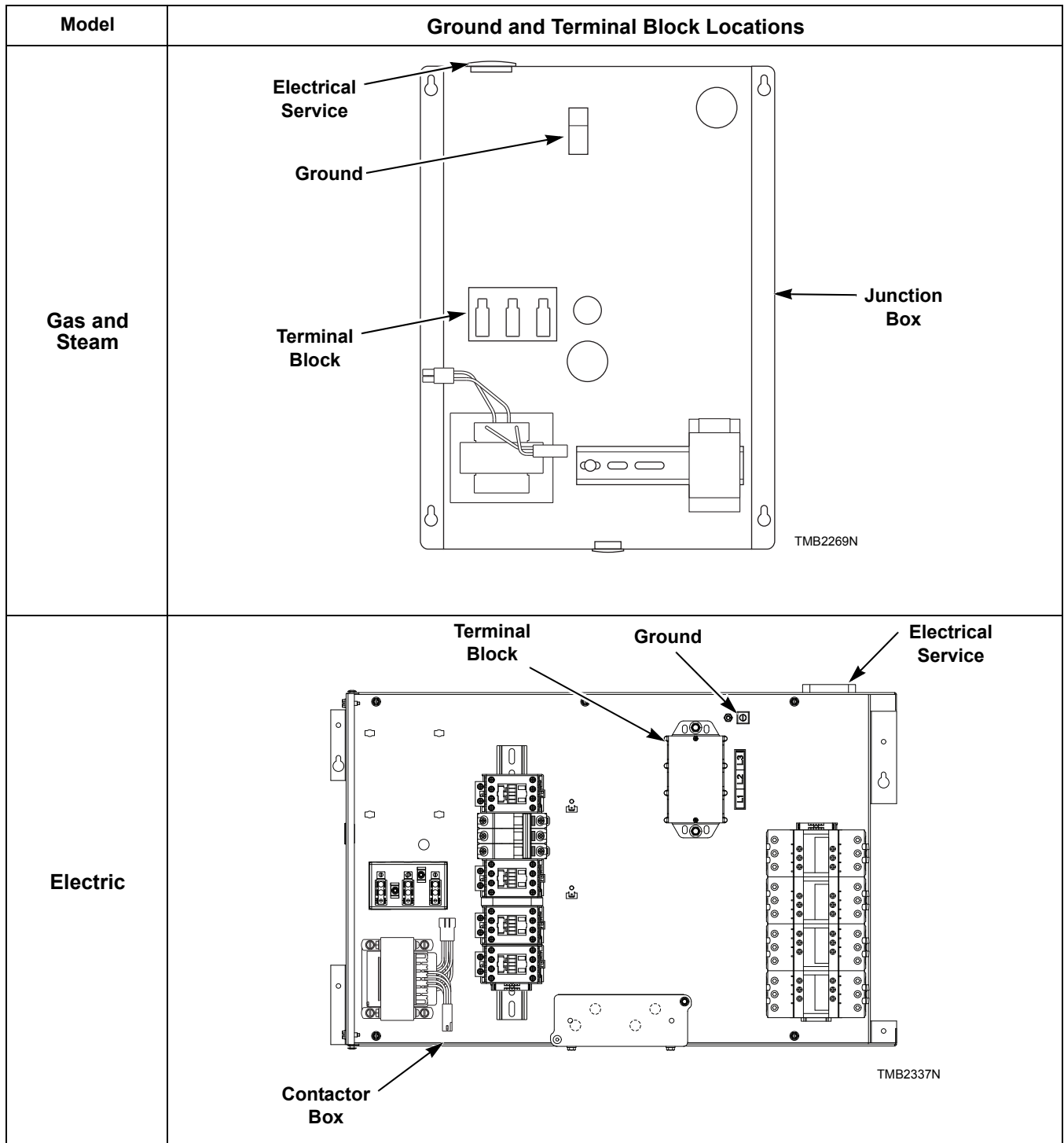


Figure 9

To Connect Electrical Service to the Tumble Dryer

NOTE: The wiring diagram is located in the junction or contactor box.

1. Install a circuit breaker as close to the tumble dryer as possible. If more than one tumble dryer is being installed, a circuit breaker should be provided for each. This will make it possible to disconnect each tumble dryer for maintenance purposes.
2. Connect conduit-encased leads to the circuit breaker. Connect wire leads to the appropriate labeled terminal on the terminal block. The ground wire must be connected to the ground connection as shown in *Figure 9*.
3. Check the electrical service phase sequence (three phase only). If one of the power leads is a “high leg,” connect it to lead L3 in the tumble dryer. The cylinder must rotate clockwise and the fan must rotate counterclockwise (as viewed from the front of the tumble dryer – with selector switch in non-reverse position). If not, interchange leads L1 and L2 in the tumble dryer connection box.

Jumper Configuration Instructions

Changing the transformer configuration jumper is required, **PRIOR TO SUPPLYING POWER TO THE MACHINE**, if any of the following apply:

IMPORTANT: Failure to install the proper configuration jumper may result in damage to sensitive electronic controls and may void warranty.

- Location Voltage 200 – 208 Volt service and are connecting a model rated for 240 Volt operation.
Replace the 240 Volt jumper with the 208 Volt jumper per the conversion label, located on the rear of the tumble dryer, sign and date conversion label to document the conversion.
- You have 400 – 415 Volt service and are connecting a model rated for 380 Volt operation.

Ferrite Ring Installation

Models with RM Control Suffix Only (Models Through 7/31/11)

The ferrite ring provided in the literature packet must be installed over the power leads during connection of electrical service. The ferrite protects the sensitive electronic controls from destructive electrical disturbances which may be present on power lines to the machine. Failure to properly install the ferrite ring may result in damage to the electronic controls and will void control warranty.

To Install:

1. Immediately after connection of power leads and before applying power to machine, locate each of the incoming service leads including ground.
2. Snap the ferrite ring closed over all the service leads inside of the contactor box as shown. It is important that the ferrite ring be installed inside the contactor box. Refer to *Figure 10*. Do not install the ferrite outside of the box or other area. Make sure that service leads are in the center of the ferrite before closing the ring so not to pinch or damage leads.

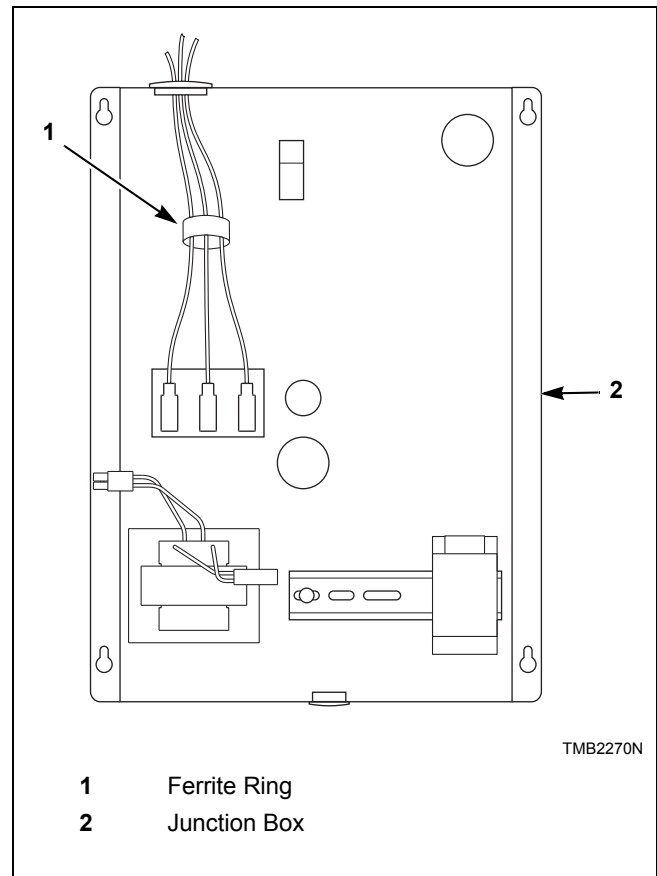


Figure 10

Electrical Requirements

Electrical Requirements

Refer to *Table 8*.

NOTE: Minimum wire sizes are obtained from Canadian Electrical Code and are intended for use as a guideline only. Electrical connections should be made only by a qualified electrical contractor in accordance with all applicable local and national requirements.

NOTE: Electrical specifications below are subject to change without notice. Always refer to product serial plate for most current specifications of product being installed.

NOTE: Use copper conductors only.

NOTE: 3 Phase Only– Each tumble dryer must be connected to its own individual branch circuit breaker, not fuses, to avoid the possibility of “single phasing” and causing premature failure of the motor(s).

For 120 Pound Gas and Steam Tumble Dryer Models

Serial Plate Rating	Terminal Block Connections Required	Rated Current* (amps)	Breaker Rating	Recommended Wire Size AWG (mm ²)
200-208V/60Hz/3ph	L1,L2,L3 and ground	7.7	15A - 3 pole	14 (2.08)
230V/50Hz/3ph	L1,L2,L3 and ground	7.3	15A - 3 pole	14 (2.08)
240V/60Hz/3ph	L1,L2,L3 and ground	7.3	15A - 3 pole	14 (2.08)
380V/50 or 60Hz/3ph	L1,L2,L3 and ground	4.1	10A - 3 pole	14 (2.08)
400-415V/50Hz/3ph	L1,L2,L3 and ground	3.8	10A - 3 pole	14 (2.08)
440V/60Hz/3ph	L1,L2,L3 and ground	3.8	10A - 3 pole	14 (2.08)
460-480V/60Hz/3ph	L1,L2,L3 and ground	3.9	10A - 3 pole	14 (2.08)

* Current ratings vary slightly depending on model; refer to serial plate.

For 120 Pound Electric Tumble Dryer Models

Serial Plate Rating	Terminal Block Connections Required	Rated Current* (amps)	Breaker Rating	Recommended Wire Size AWG (mm ²)
240V/60Hz/3ph	L1,L2,L3 and ground	152	175A - 3 pole	3/0 (85)
380V/50 or 60Hz/3ph	L1,L2,L3 and ground	94.5	125A - 3 pole	1 (42.4)
400-415V/50Hz/3ph	L1,L2,L3 and ground	87	125A - 3 pole	1 (42.4)
480V/60Hz/3ph	L1,L2,L3 and ground	76.1	100A - 3 pole	3 (26.2)

* Current ratings vary slightly depending on model; refer to serial plate.

For 170 Pound Tumble Dryer Models

Serial Plate Rating	Terminal Block Connections Required	Rated Current* (amps)	Breaker Rating	Recommended Wire Size AWG (mm ²)
200-208V/60Hz/3ph	L1,L2,L3 and ground	13.5	20A - 3 pole	12 (3.31)
240V/60Hz/3ph	L1,L2,L3 and ground	13.5	20A - 3 pole	12 (3.31)
380V/50 or 60Hz/3ph	L1,L2,L3 and ground	6.9	15A - 3 pole	14 (2.08)
400-415V/50Hz/3ph	L1,L2,L3 and ground	6.9	15A - 3 pole	14 (2.08)
440V/60Hz/3ph	L1,L2,L3 and ground	6.4	15A - 3 pole	14 (2.08)
460-480V/60Hz/3ph	L1,L2,L3 and ground	6.7	15A - 3 pole	14 (2.08)

* Current ratings vary slightly depending on model; refer to serial plate.

Table 8

For 200 Pound Tumble Dryer Models

Serial Plate Rating	Terminal Block Connections Required	Rated Current*	Breaker Rating	Recommended Wire Size
200-208V/60Hz/3ph	L1, L2, L3 and ground	14	20A - 3 pole	12 AWG (3.31 mm ²)
240V/60Hz/3ph	L1, L2, L3 and ground	14	20A - 3 pole	12 AWG (3.31 mm ²)
380V/50 or 60Hz/3ph	L1, L2, L3 and ground	8	15A - 3 pole	14 AWG (2.08 mm ²)
400-415V/50Hz/3ph	L1, L2, L3 and ground	8	15A - 3 pole	14 AWG (2.08 mm ²)
440V/60Hz/3ph	L1, L2, L3 and ground	7	15A - 3 pole	14 AWG (2.08 mm ²)
460-480V/60Hz/3ph	L1, L2, L3 and ground	7	15A - 3 pole	14 AWG (2.08 mm ²)

* Current ratings vary slightly depending on model; refer to serial plate.

Table 9

Steam Requirements

NOTE: Machines require a constant 80 to 100 psig (5.62 to 7.03 kg/sq. cm) steam service for optimum operation. The maximum allowable steam pressure for use with 60 Hertz or 50 Hertz tumble dryers is 125 psig (8.6 bar). In no case may the pressure exceed the above value. Drying performance is significantly reduced at lower steam pressures.


Obtain specific steam service pipe sizes from steam system supplier or a qualified steam fitter.

- Refer to *Figure 11* and *Figure 12* for proper steam pipe configurations.
- To prevent condensate draining from headers to tumble dryer, piping should have a minimum 12 inch (305 mm) rise above respective header. Do not make steam connection to header with a horizontal or downward facing tee or elbow.
- Whenever possible, horizontal runs of steam lines must drain, by gravity, to respective steam header. Water pockets or an improperly drained steam header will provide wet steam, causing improper operation of tumble dryer. If pockets or improper drainage cannot be eliminated, install a bypass trap to drain condensate from the low point in the steam header to the return.
- In both steam supply and steam return line, it is recommended that each have a pipe union and shut-off valve. This will enable you to disconnect the steam connections and service the tumble dryer while your laundry facility is in operation.
- Connect the steam solenoid valve to the related steam coil inlet connection with nipples, flex hoses, unions and tee.
- Strainers may require cleaning due to materials from hoses or pipes.
- Install vacuum breaker (optional), bucket trap with built-in strainer and check valve. For successful operation of tumble dryer, install trap 18 inches (457 mm) below coil and as near to the tumble dryer as possible. Inspect trap carefully for inlet and outlet markings and install according to trap manufacturer's instructions. If steam is gravity returned to boiler, omit trap but install vacuum breaker and check valve in return line near tumble dryer.
- Gravity return requires entire return plumbing be below steam coil outlets.
- Install union and shut-off valve in return line and make final pipe connections to return header.

NOTE: To prevent water hammering, route return lines below outlets of steam coils.

Piping Recommendations

- Trap each steam coil individually. Always keep the trap clean and in good working condition.
- When tumble dryer is on the end of a line of equipment, extend header at least 4 feet (1.2 meters) beyond tumble dryer. Install shut-off valve, union, check valve and bypass trap at end of line. If gravity return to boiler, omit trap.
- Insulate steam supply and return line for safety of operator and safety while servicing tumble dryer.
- Keep tumble dryer in good working condition. Repair or replace any worn or defective parts.

	WARNING
<p>All system components must have a 125 psig (8.6 bar) working pressure. Shut-off valves must be installed upstream of the steam solenoid valve and downstream of each steam trap so components can be isolated for maintenance or emergency purposes.</p> <p>All components (solenoid valve, traps) must be supported to minimize loads on the tumble dryer steam coil connections.</p>	
<small>W480R2</small>	

Installing Steam Trap and Making Condensate Return Connections

The steam trap must be installed and the coil outlet connections must be connected to the condensate return lines. The following steps outline the procedure for installing the steam trap and connecting the condensate return lines. Refer to *Figure 11* and *Figure 12* for typical installations.


1. Use flexible lines between steam inlet solenoid and steam coils, as well as outlet between steam coil and traps.
2. If necessary, install a strainer to the end of each flexible hose.
3. Install a steam trap to each strainer.

IMPORTANT: Steam trap must be installed a minimum of 18 inches (457 mm) below the steam coil outlet connections.

4. Install a shut-off valve to each steam trap.
5. Connect to the condensate return lines.
6. For steam solenoid valve wiring connections, refer to Wiring Diagram supplied with tumble dryer.

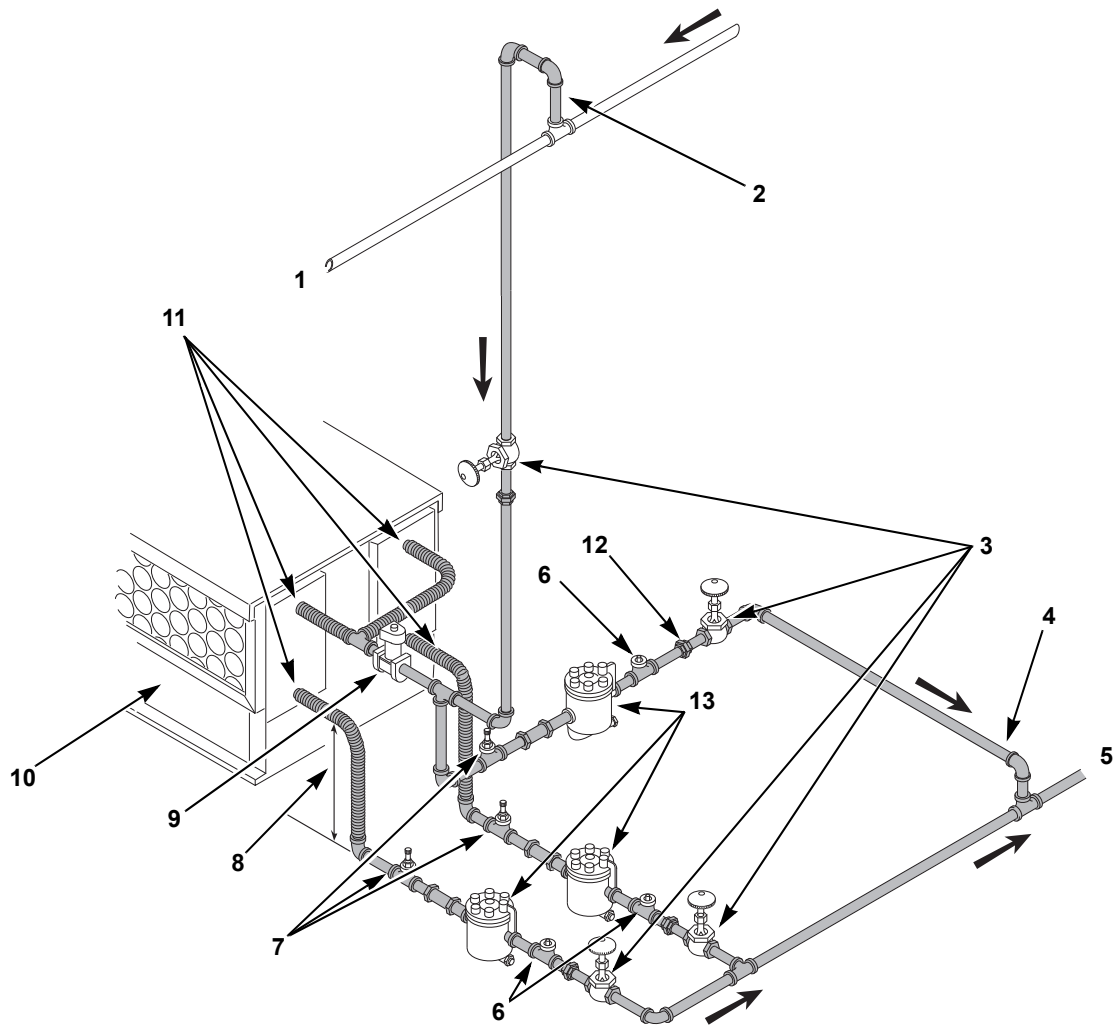
Thermal Oil Prep

It is the responsibility of the customer to install appropriate coil and heating system for thermal oil prep models. Alliance Laundry Systems, LLC. is not responsible for the performance or safety of the customer installed thermal oil system. To ensure proper operation, refer to the ***Specifications and Dimensions*** section for the BTU input of equivalent steam models. Thermal oil systems that do not deliver appropriate BTUs will dry slower. For solenoid valve wiring connections, refer to the Wiring Diagram supplied with tumble dryer.

	WARNING
<p>All system components must have a 125 psig (8.6 bar) working pressure. Shut-off valves must be installed upstream of the steam solenoid valve and downstream of each steam trap so components can be isolated for maintenance or emergency purposes.</p> <p>All components (solenoid valve, traps) must be supported to minimize loads on the tumble dryer steam coil connections.</p>	
<small>W480R2</small>	

Steam Requirements

120 Pound Tumble Dryers



TMB2014N

NOTE: Refer to Table 10 for sizing of steam lines. Piping must also be sized accordingly for length of runs and number of elbows.

- | | |
|---|--|
| 1 Supply | 8 18 in. (457 mm) Drop |
| 2 12 in. (305 mm) Riser | 9 Solenoid Valve (Supplied with machine) |
| 3 Shut-Off Valve | 10 Steam Bonnet |
| 4 Condensate Return Line from Supply Line | 11 Flexible Line |
| 5 Return | 12 Union |
| 6 Check Valve | 13 Trap with Built-In Strainer |
| 7 Vacuum Breaker (Optional) | |

Figure 11

Model	Steam Pressure PSI (bar)	Minimum Supply Pipe Diameter	Steam Trap Size * (Pounds Condensate/Hour)
120S	80-100 (5.3-6.9)	1 in. NPT	345

*Based on maximum psi.

Table 10

170 and 200 Pound Tumble Dryers

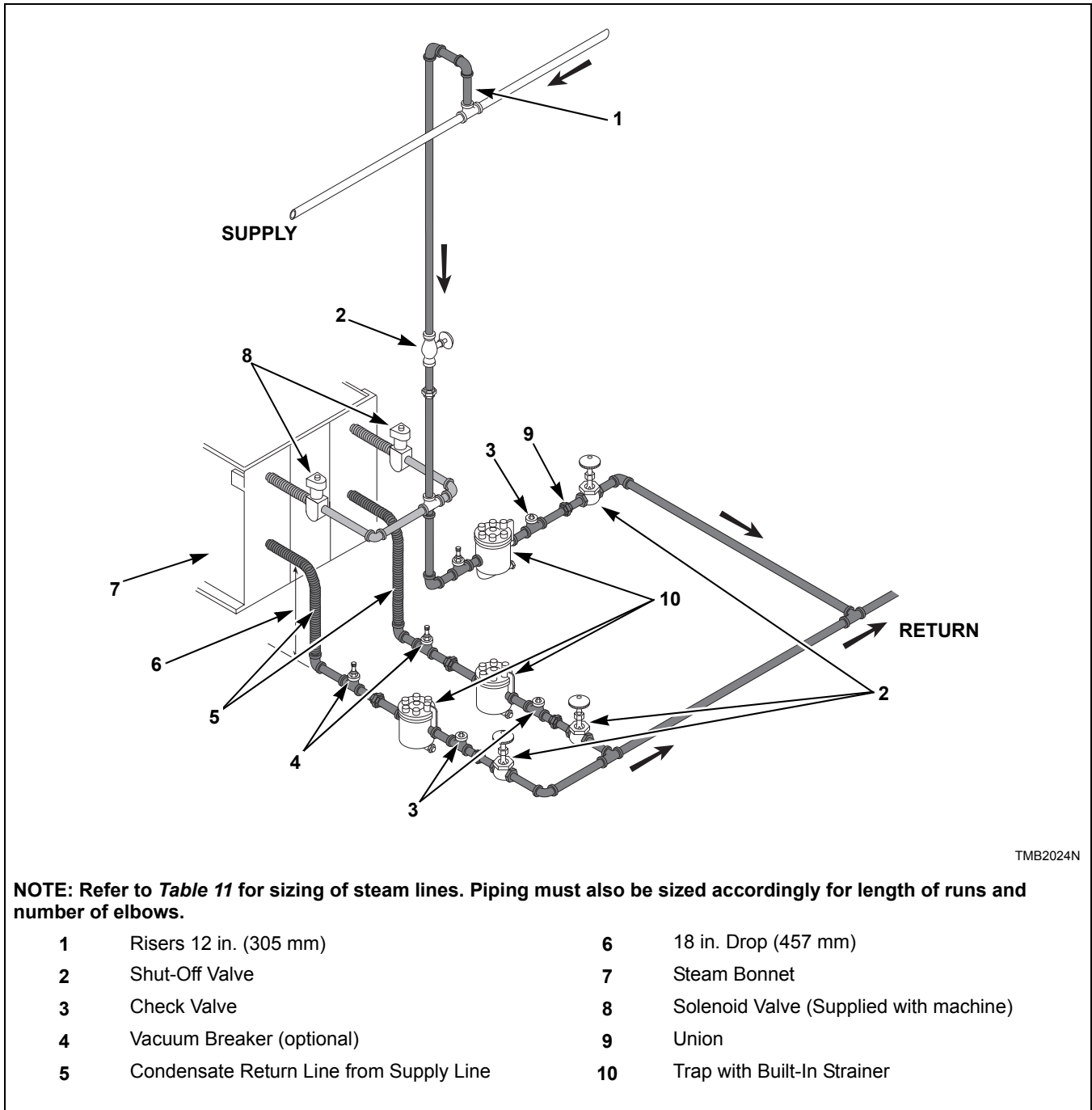



Figure 12

Model	Steam Pressure PSI (bar)	Minimum Supply Pipe Diameter	Steam Trap Size * (Pounds Condensate/Hour)
170S/200S	80-100 (5.3-6.9)	1-1/4 in. NPT	517

* Based on maximum psi.

Table 11

Adjustments

	WARNING
<p>To reduce the risk of electric shock, fire, explosion, serious injury or death:</p> <ul style="list-style-type: none">• Disconnect electric power to the tumble dryer before servicing.• Close gas shut-off valve to gas tumble dryer before servicing.• Close steam valve to steam tumble dryer before servicing.• Never start the tumble dryer with any guards/panels removed.• Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumble dryer is properly grounded.	
<small>W002R1</small>	

Gas Burner Air Shutter

NOTE: Air inlet shutters on the burner must be adjusted so sufficient air is metered into the system for proper combustion and maximum efficiency. Before adjusting the inlet shutters, be sure that all lint is removed from lint compartments and lint screen.

Air shutter adjustment will vary from location to location and will depend on the vent system, number of units installed, make-up air and line gas pressure. Opening the shutter increases the amount of primary air supplied to the burner, while closing the shutter decreases the primary air supply. Adjust air shutter as follows:

Refer to *Figure 13*.

1. Remove the upper access panel and burner inspection hole plate.
2. Start the tumble dryer and check the flame pattern. If the flame pattern is straight up, insufficient air is flowing through the tumble dryer. A flame pattern that flares to the right and left indicates no air is flowing through the tumble dryer. Correct air and gas mixture is indicated if the flame pattern is primarily blue, with small yellow tips, and bends to the left of the heater section. Too little air is indicated if the flame is yellow, lazy and smoky.
3. To adjust the air shutter, loosen air inlet shutter adjusting screw.

4. Open or close air shutter as necessary to obtain proper flame intensity.
5. After air shutter is adjusted for proper flame, tighten air shutter adjusting screw securely.

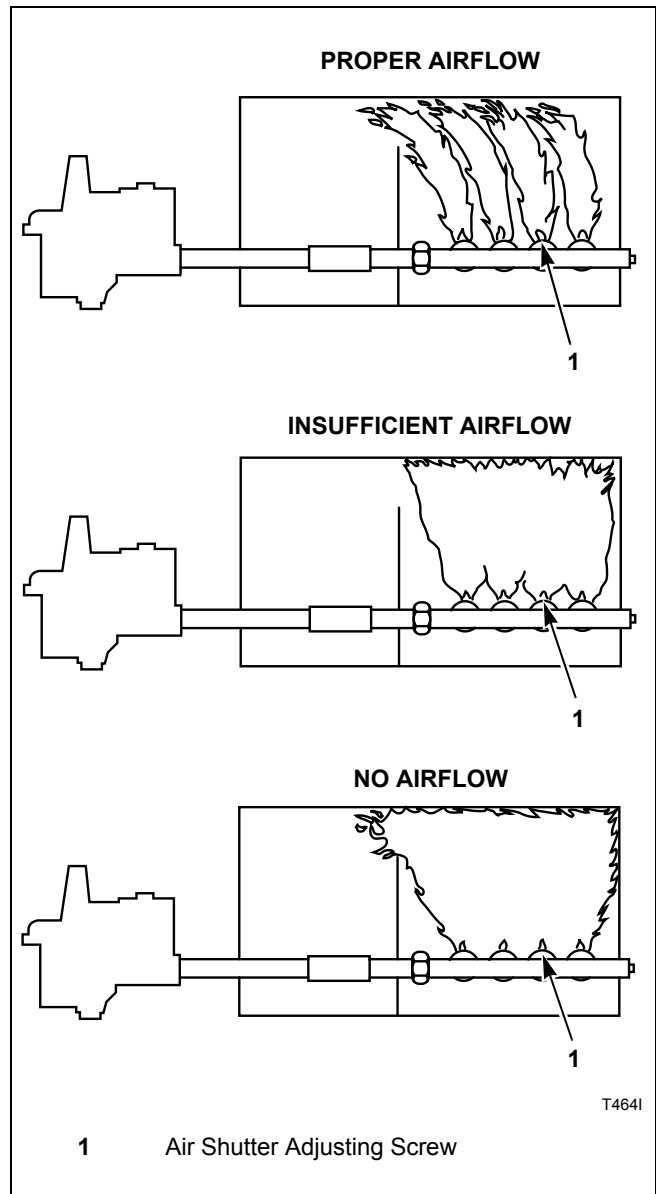



Figure 13

Airflow Switch

The airflow switch is set at the factory for proper operation. No adjustment necessary.

The airflow switch operation may be affected by shipping tape still in place, lack of make-up air, or an obstruction in the exhaust duct. These should be checked and the required corrective action taken.

	WARNING
<p>The tumble dryer must not be operated if the airflow switch does not operate properly. Faulty airflow switch operation may cause an explosive gas mixture to collect in the tumble dryer.</p>	
W072R1	

IMPORTANT: Airflow switch vane must remain closed during operation. If it opens and closes during the drying cycle, this indicates insufficient airflow through the tumble dryer. If switch remains open, or pops open and closed during the cycle, the heating system will shut off. The cylinder and fan will continue to operate even though the airflow switch is indicating insufficient airflow.

NOTE: To properly mount the airflow switch bracket, or in case of a load not drying, the airflow switch bracket may need to be checked for proper alignment. Be sure the locator pins are securely in their respective holes before tightening the bracket mounting screws. This will assure proper alignment of the airflow switch arm in the channel of the airflow switch bracket and prevent binding of the arm.

Loading Door Strike (120 and 170 Pound Models)

The loading door strike must be adjusted to have sufficient tension to hold loading door closed against force of load tumbling against it. Proper adjustment is when 8-15 pounds (35.6-66.7 N) pull is required to open door.

If adjustment is required, refer to *Figure 14* and proceed as follows:

To adjust, open door, loosen jam nut and turn door strike screw in or out as required. Retighten jam nut.

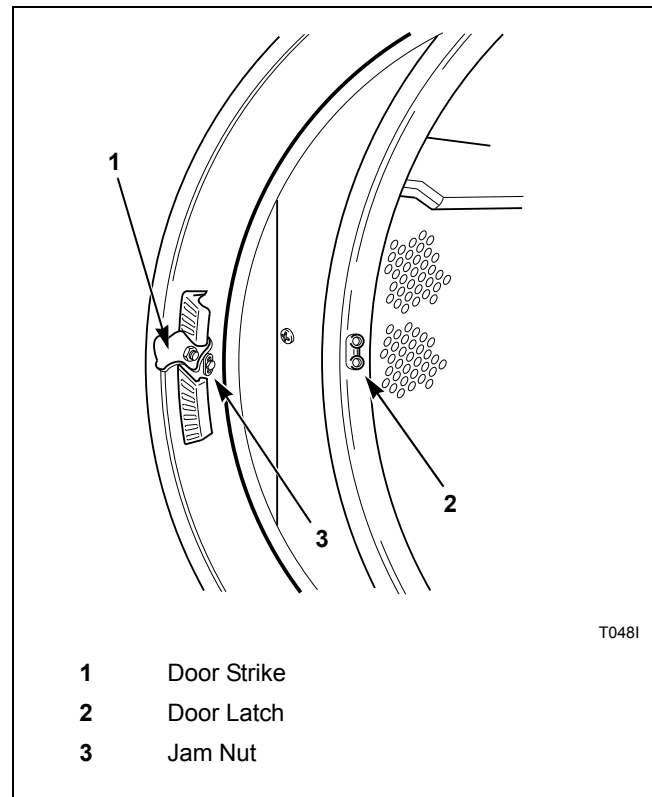


Figure 14

Adjustments

Loading Door Strike (200 Pound Models)

The loading door strike must be adjusted to have sufficient tension to hold loading door closed against force of load tumbling against it. Proper adjustment is when 8-15 pounds (35.6-66.7 N) pull is required to open door.

If adjustment is required, refer to *Figure 15* and proceed as follows:

To adjust, open door, loosen adjustment screws and position strike for desired magnet engagement. Retighten screws.

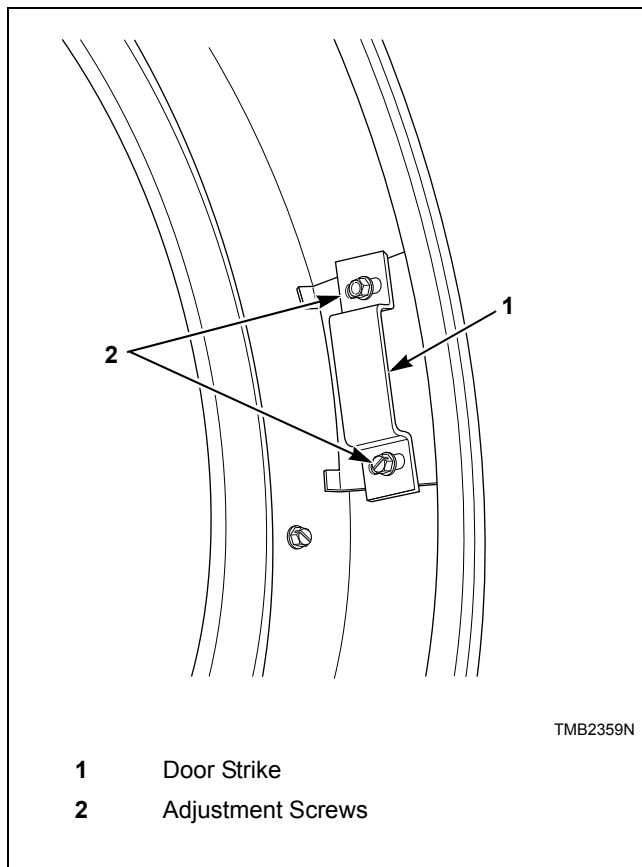


Figure 15

Loading Door Switch

Loading door switch is factory set; no field adjustment necessary.

Belt Drive

The drive assemblies consist of motors, belts, eyebolts and a step pulley.

The pulley diameters are sized to produce a cylinder speed of 37-39 RPM for 120 pound models or 29-31 RPM for 170 pound models.

The step pulley assembly is used for speed reduction as well as a means of adjusting belt tension. The pulley mounting plate is attached to the cabinet. The frame mounting plate has vertically slotted holes allowing up and down movement of the step pulley mounting plate for belt adjustment.

Adjust the belt tension as follows:

1. Disconnect electrical power to the tumble dryer before attempting any adjustments to the drive assembly.
2. Loosen pulley mounting plate bolts.
3. Loosen the upper nut on the final drive eyebolt.
4. Rotate the lower nut of the final drive eyebolt clockwise until proper belt tension is achieved.
5. Rotate upper nut clockwise against the lower nut in order to lock it into place.
6. Tighten pulley mounting plate bolts. Recheck belt tension.
7. If necessary, adjust the drive motor belt tension eyebolt using a similar procedure.
8. Adjust blower belt tension on 120 pound 50 Hertz tumble dryers and all 170 pound tumble dryers using a similar procedure.

NOTE: Proper tensions for new belts are 45-55 pounds for the motor belt, 55-65 pounds for the final drive, 60-65 pounds for 120 pound blower, 75-80 pounds for 170 pound blower and 65-70 pounds for 200 pound blower measured with a Borroughs Belt Tension Gauge. Using a Browning Belt Tension Gauge, the motor belt deflection should be 0.31 inch at five pounds pressure, and final drive belt deflection should be 0.25 inch at five pounds pressure.

Belts should not slip or make any noise when starting up under normal load.

Removing Tumble Dryer from Service

If the tumble dryer is to be removed from service, perform the following steps where applicable:

- Turn off electrical supply external to machine.
- Turn off electrical disconnect on machine.
- Turn off gas supply external to machine.
- Turn off manual gas shut-off valve on the machine.
- Turn off steam supply external to machine.
- Remove all electric, gas and steam connections.

