

Stacked Drying Tumbler

Models with Electronic Control


— Installation/Operation/Maintenance —


Keep These Instructions For Future Reference.
(If this tumbler changes ownership, be sure this manual accompanies the tumbler).



www.comlaundry.com

Part No. M412060R2
May 2006

	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 death.</p> <p style="text-align: right;">W033</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> – 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. <p style="text-align: right;">W052</p>	
<p>FOR YOUR SAFETY</p> <p>Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.</p> <p style="text-align: right;">W053</p>	

	MISE EN GARDE
<p>POUR VOTRE SÉCURITÉ, les informations de ce guide doivent être respectées afin de réduire les risques d'incendie, d'explosion ou d'éviter les dommages matériels, personnels ou blessures mortelles.</p> <p style="text-align: right;">W033Q3</p> <ul style="list-style-type: none"> • Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre appareil. • QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ : <ul style="list-style-type: none"> – Ne pas tenter d'allumer d'appareil. – Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones se trouvant dans le bâtiment où vous vous trouvez. – Évacuez la pièce, le bâtiment ou la zone. – Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur. – Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies. • L'installation et l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz. <p style="text-align: right;">W052Q</p>	
<p>POUR VOTRE SÉCURITÉ</p> <p>Ne pas entreposer ou utiliser d'essence ou toutes autres vapeurs et liquides inflammables à proximité de cette unité ou de tout autre appareil.</p> <p style="text-align: right;">W053Q2</p>	

IMPORTANT: Information must be obtained from your 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 information must be posted in a prominent location near the tumbler for customer use.

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

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

In Canada installation must comply with Standards CAN1-B149.1 or CAN1-B149.2 codes for gas burning appliances and equipment and CSA C22.1, latest edition, Canadian Electric Code, Part I. Steam models are not certified by the Canadian Gas Association. The 150 lb. models are not certified by the Canadian Gas Association.

In Australia installation must comply with the Australian Gas Association Installation Code for Gas Burning Appliances and Equipment. The 150 lb. models are not certified in Australia.



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.

W644



WARNING

To reduce the risk of fire, electrical shock, serious injury or death to persons, do not operate tumbler if it does not perform according to these instructions. Immediately disconnect electrical service, shut off gas supply, and contact an authorized service representative. Service and repairs are to be performed by authorized service representatives only.

W645

NOTE: The WARNING 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 tumbler. These factors MUST BE supplied by the person(s) installing, maintaining, or operating the tumbler.

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

Information For Handy Reference

Date Purchased _____ Model No. _____ Serial No. _____

Dealer’s Name _____

NOTICE: For your own convenience and protection, record the above information and retain your sales slip for this appliance. The model and serial numbers will be found on the serial plate located at the rear of the tumbler. Refer to page 7.

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Important Safety Instructions


(Save These Instructions)

	WARNING
To reduce the risk of fire, electric shock, serious injury or death to persons when using your tumbler, follow these basic precautions:	
W054	

1. Read all instructions before using the tumbler.
2. Refer to the **GROUNDING INSTRUCTIONS** in the **INSTALLATION** manual for the proper grounding of the tumbler.
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 to play on or in the tumbler. Close supervision of children is necessary when the tumbler is used near children. This is a safety rule for all appliances.
5. Before the tumbler is removed from service or discarded, remove the door to the drying compartment.
6. Do not reach into the tumbler if the cylinder is revolving.
7. Do not install or store the tumbler in an area 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 tumbler, 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. Keep area around the exhaust opening and adjacent surrounding area free from the accumulation of lint, dust and dirt.
13. The interior of the tumbler and the exhaust duct should be cleaned periodically by qualified service personnel.
14. 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.
15. Tumbler will not operate with the loading door open. **DO NOT** by-pass the door safety switch by permitting the tumbler to operate with the door open. The tumbler will stop tumbling when the door is opened. Do not use the tumbler if it does not stop tumbling when the door is opened or starts tumbling without pressing or turning the **START** mechanism. Remove the tumbler from use and call the serviceman.
16. Do not put articles soiled with vegetable or cooking oil in the tumbler, as these oils may not be removed during washing. Due to the remaining oil, the fabric may catch on fire by itself.
17. To reduce the risk of fire, **DO NOT** put cloths 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 tumbler.
18. Use the tumbler only for its intended purpose, drying clothes.
19. **ALWAYS** disconnect the electrical power to the tumbler before attempting service. Disconnect power by shutting off appropriate breaker or fuse.
20. Install this tumbler according to the **INSTALLATION INSTRUCTIONS**. All connections for electrical power, grounding, and gas supply must comply with local codes and be made by licensed personnel when required. Do not do it yourself unless you know how!
21. Remove laundry immediately after the tumbler stops.

Important Safety Instructions

22. 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.)
23. 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.
24. Always follow the fabric care instructions supplied by the garment manufacturer.
25. Never operate the tumbler with any guards and/or panels removed.
26. **DO NOT** operate the tumbler with missing or broken parts.
27. **DO NOT** by-pass any safety devices.
28. Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce serious injury and/or property damage.
29. Run tumbler with a load before putting tumbler into service.

	WARNING
To reduce the risk of serious injury, install lockable door(s) to prevent public access to rear of tumblers.	
<small>W055</small>	

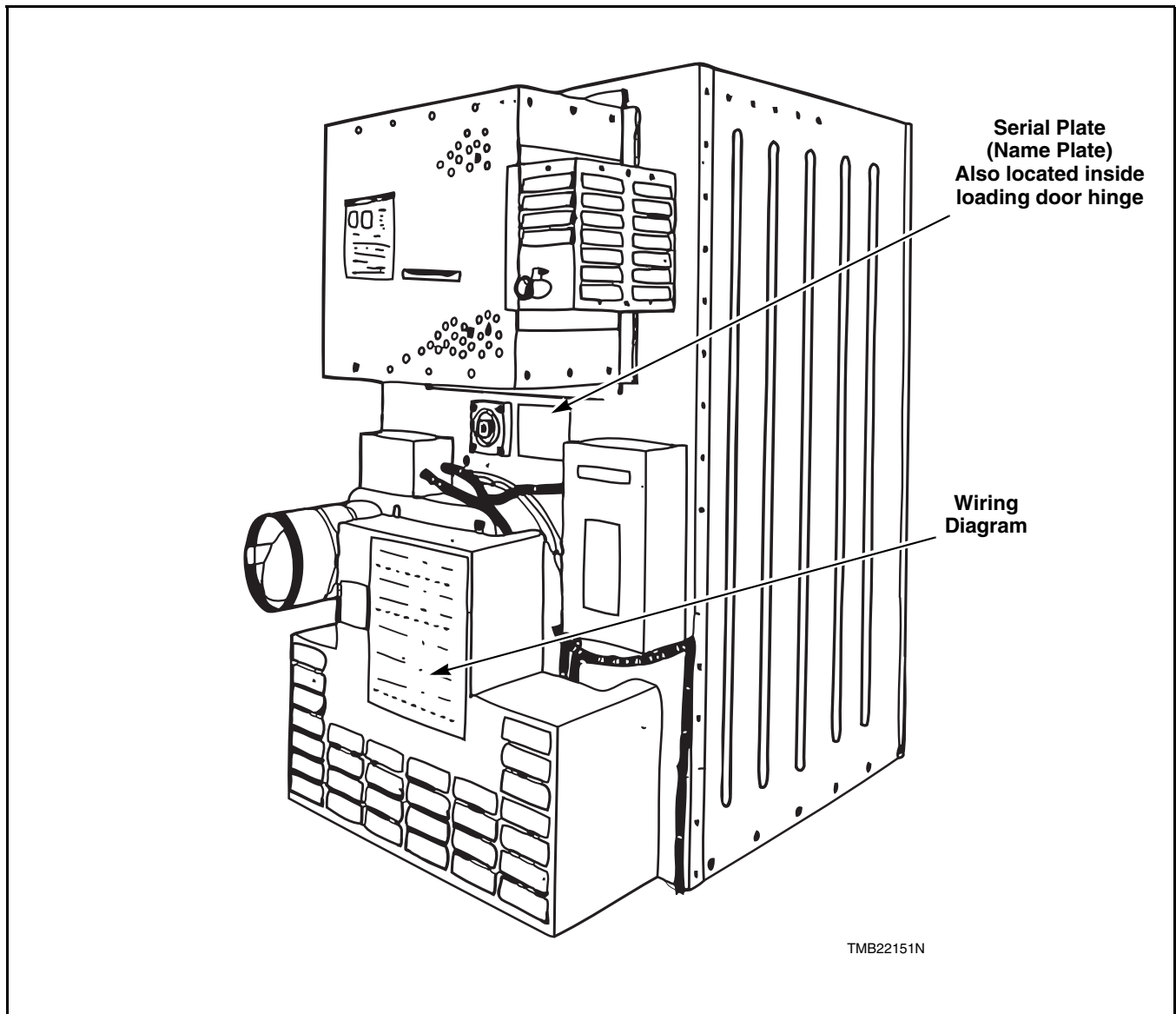
Introduction

Nameplate Information

When writing for information on any tumbler, be sure to mention model and serial numbers. The model and serial numbers will be found on the nameplate as shown.

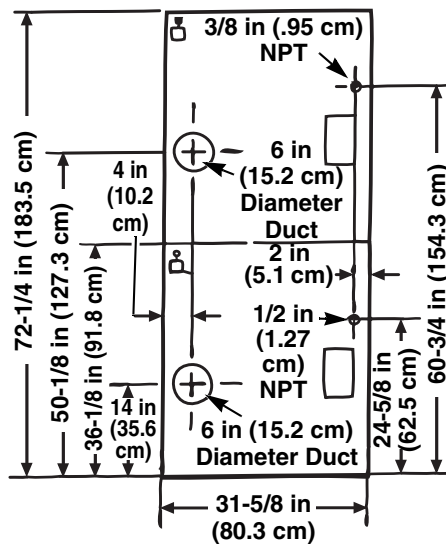
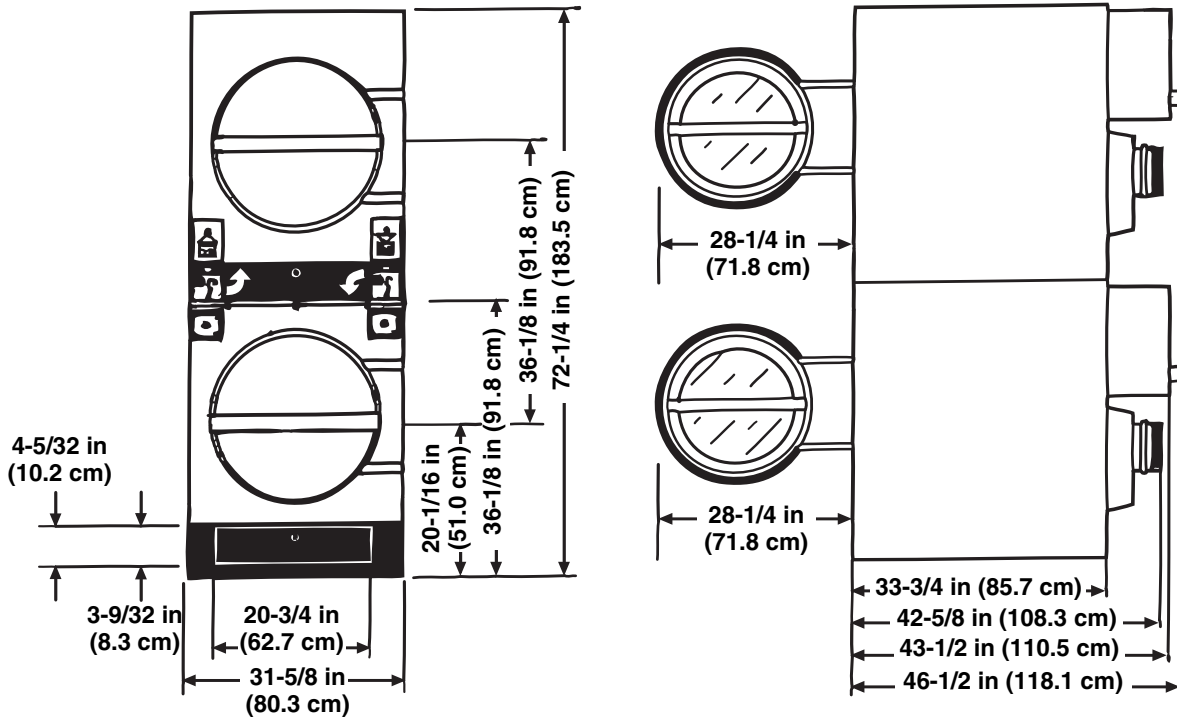
Replacement Parts Information

If replacement parts are required, contact the source from whom you purchased your tumbler or, contact the Ripon Service Parts Center, P.O. Box 990, Ripon, Wisconsin 54971-0990, for the name and address of the nearest authorized parts distributor.



Dimensions and Specifications

Cabinet Dimensions



TMB2152N

Clearances

Minimum to nearest combustible material.

Top - 12 in (30.5 cm) minimum.

0 in permitted for first 4 in (10.2 cm) along front of machine.

Back - 0 in - 24 in (0 - 61 cm) minimum recommended for service access.

Sides - 0 in (0 cm) permitted.

Dimensions and Specifications

Specifications

Cabinet Finish:	Electrostatically applied thermosetting polyester
Cylinder Size:	30 in x 25 in (76.2 x 63.5 cm) perforated galvanized steel with three baffles
Air Outlet:	6 in (15.24 cm)
Total Dry Weight Capacity:	60 lbs. (27.2 kg) both cylinders
Width	31-5/8 in (80.3 cm)
Depth	46-1/2 in (118 cm)
Height	72-1/4 in (183.5 cm)
Motor:	1/2 H.P., lifetime lubricated, internal overload protected
Electrical Specifications:	120/60/1 (17.3 Amp) 2-wire grounded system (Line 1, Neutral & Ground)
	208-240/60/1 (10 Amp) 3-wire grounded system (Line 1 & 2, Neutral & Ground)
	120/50/1 (17.3 Amp) 2-wire grounded system (Line 1, Neutral & Ground)
	240/50/1 (10 Amp) 2-wire grounded system (Line 1, Neutral & Ground)
	220/60/1 (10 Amp) 2-wire grounded system (Line 1, Neutral & Ground)
Energy Data:	63,000 BTU per hour (per pocket - 15,876 Kcal)
Types of Gas:	Factory equipped with Natural Gas (6-1/2 ± 1-1/2 inches water column line pressure); Liquefied Petroleum gas (11 ± .3 inches water column line pressure); Hong Kong Town Gas (High and Low Pressure), or Korean LNG.
Gas Connection:	1/2 in (1.27 cm) supply line reduced to a 3/8 in (.95 cm) N.P.T. connection
Air Flow:	375 C.F.M. (177 liters/sec.)
Approx. Net Weight:	722 Pounds (310.5 kg)

Conversion Table

Multiply	By	To Obtain
BTU	.252	Kcal
BTU	1055	Joules
Inch	2.54	Centimeters
Inches W.C.	.036	Pounds/sq. in
Pounds/sq. in	.06895	Bars
Pounds/sq. in	.070	kg/sq. cm.
Pounds (lbs.)	.454	Kilograms
Boiler Horsepower	33,479	BTU /lb.
Boiler Horsepower	34.5	Ibs. Steam/hr.
Inches W.C.	.249	kPa

Installation Instructions

Receiving Inspection

Upon delivery, visually inspect crate, carton and parts for any visible shipping damage. If the crate, carton or cover are damaged, or signs of possible damage are evidence, 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. A written claim should be filed as soon as possible with the carrier if items are damaged or missing.

IMPORTANT: Remove the shipping tape from the two back draft dampers located in the exhaust thimble.

Materials Required

- One disconnect switch with fuses or Fusetron(s) (acceptable for 120 Volt installations).


NOTE: For voltages higher than 120 Volts, a circuit breaker must be used.

- Two gas shut-off valves for stacked tumblers.

Facilities Required

Layout

Whenever possible, tumblers should be installed along an outside wall where duct length can be kept to a minimum, and make-up air can be easily accessed. Construction must not block the airflow at the top rear of the tumbler. Doing so would prevent adequate air supply to the tumbler's combustion chamber.

	WARNING
A tumbler produces combustible lint. To reduce the risk of fire, and the accumulation of combustion gases, the tumbler must be exhausted to the outdoors.	
W646	

The stacked drying tumbler has been specifically designed to provide twice the drying capacity utilizing the same floor space as the standard 30 lb. (31-5/8 inches wide) drying tumbler.

The only thing common between the stacked drying tumbler and the standard drying tumbler is the floor

space requirements. Twice the drying capacity means two separate heat sources, two separate cylinders/drives, and two separate controls.

Floor

The drying tumbler may be installed on any level floor capable of supporting 100 pounds per square foot (488 kg/square meter). Floor covering materials such as carpeting or tile should be removed.

Shipping Braces

To facilitate installation, the shipping braces located on the lower left and right rear corners may be removed. To remove, simply remove the four round head screws from each brace, remove and discard brace, and replace the screws in the same holes they were removed from.

NOTE: The shipping brace need not be removed if it does not interfere with installation. If you do not remove the shipping brace, you will need to add an additional 5/32 inch (4 mm) to your installation space.

Venting

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

Proper sized ducts are essential for proper installation. All elbows should be sweep type. Do not install elbows with a radius less than shown in the table below. Exhaust ducts must be assembled so the interior surfaces are smooth, and so the joints do not permit the accumulation of lint. Do not use sheet metal screws to join vent sections. 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.

NOTE: Exhaust ducts must be constructed of sheet metal or other non-combustible 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, an opening having a diameter of four inches (10.2 cm) larger than the diameter of the exhaust duct shall be provided, with the duct centered in the opening. When ducts pass through walls, ceilings, floors or partitions, the space around the duct shall be sealed with non-combustible material. Refer to *Figures 1 and 2.*

Installation Instructions

Individual Venting

For maximum efficiency and performance, it is preferred to exhaust tumbler(s) individually to the outdoors. Refer to *Figure 1* and *2*. **AT NO POINT MAY THE CROSS AREA OF INSTALLED VENTING BE LESS THAN THE CROSS AREA OF THE EXHAUST THIMBLE OF THE TUMBLER.**

THE MAXIMUM ALLOWABLE LENGTH OF VENTING IS 14 FEET (4.3 M) AND TWO 90° ELBOWS, OR EQUIVALENT. The table below shows how to determine equivalent length of venting for 90° elbows:

DUCT DIAMETER	EQUIVALENT LENGTH OF STRAIGHT DUCT
6 in (15.3 cm)	One 90° elbow = 7 ft (2.1 m)
8 in (20.3 cm)	One 90° elbow = 9.3 ft (2.8 m)
10 in (25.4 cm)	One 90° elbow = 11.6 ft (3.5 m)
12 in (30.5 cm)	One 90° elbow = 14 ft (4.3 m)
FORMULA: Equivalent Length (feet or meters) = 1.17 x Duct Diameter (inches or centimeters)	

EXAMPLE: A 6 inch diameter duct's equivalent length of 14 feet of vent and two 90° elbows is:

Equivalent Length: = 14 ft (4.3 m) + (2) 90° elbows
= 14 ft + 7 ft + 7 ft (4.3 m + 2.1 m + 2.1 m)
= 28' (8.5 m)

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 percent for each additional 20 feet. The cross area of a rectangular duct must be increased 20% for each additional 20 feet (6.1 m).

With the tumbler in operation, airflow at any point in the duct must be at least 1200 feet (366 m) per minute to ensure that the lint remains airborne.

Combined Exhaust Manifold Venting

The upper and lower units may be exhausted into a combined exhaust manifold, refer to *Figure 2*. Refer to *Figure 3* for proper manifold duct construction. **THE MAXIMUM LENGTH OF 10 INCHES (25.4 cm) DIAMETER EXHAUST DUCT BEYOND THE MANIFOLD DUCT IS 14 FEET (4.3 m) AND TWO 90° ELBOWS, OR EQUIVALENT.**

Collector Venting

While it is preferable to exhaust tumblers individually to the outdoors, a main collector duct may be used if it is sized according to *Figure 4*. These illustrations indicate minimum diameters, and should be increased if the collector length exceeds 20 feet (6.1 m). The collector duct may be rectangular in cross section, as long as the area is not reduced. Provisions should be made for lint removal and cleaning of the collector duct.

The collector duct must be tapered, as shown in *Figures 4* and *5*. The individual tumbler ducts must enter the collector duct at a 45° angle in the direction of airflow. Never connect a tumbler duct at a 90° angle to the collector duct. Doing so will cause excessive back pressure, resulting in poor performance. **Never connect two tumbler exhaust ducts directly across from each other at the point of entry to the collector duct.**

The collector system must be designed so the static back pressure measured 12 inches (30.48 cm) from the exhaust thimble does not exceed the maximum allowable pressure specified on the installation sticker on the rear of the tumbler. This must be measured with all tumblers running that are vented into the collector.

Individual Exhaust

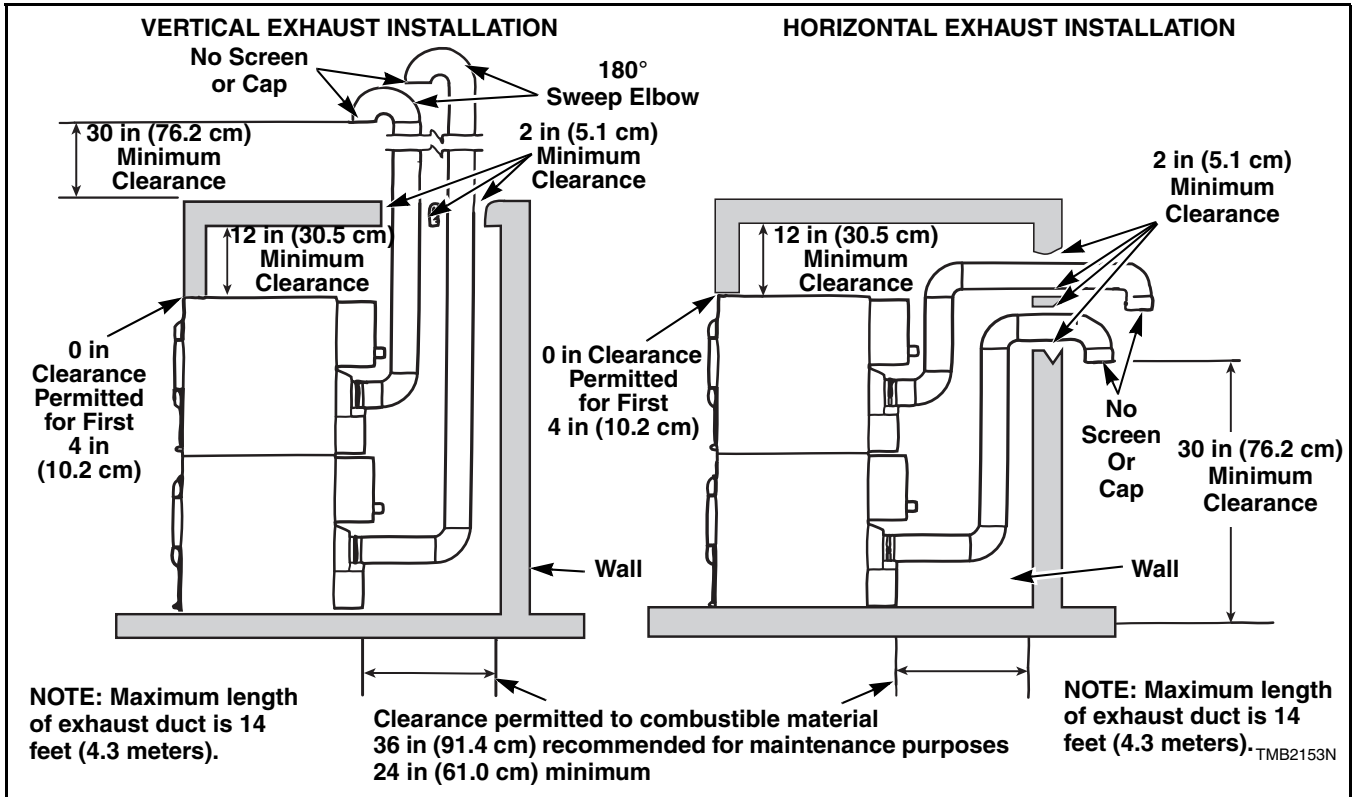


Figure 1

Collector Duct

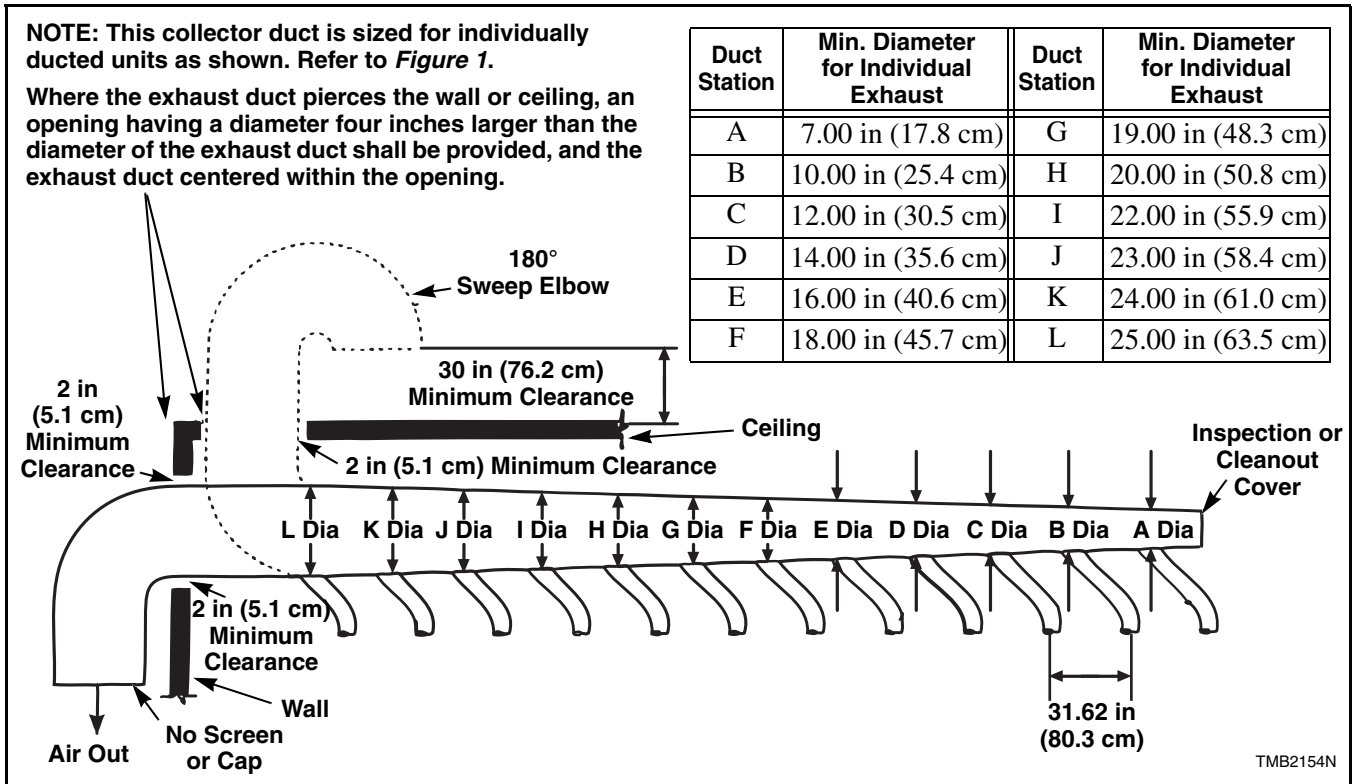


Figure 2

Manifold Construction

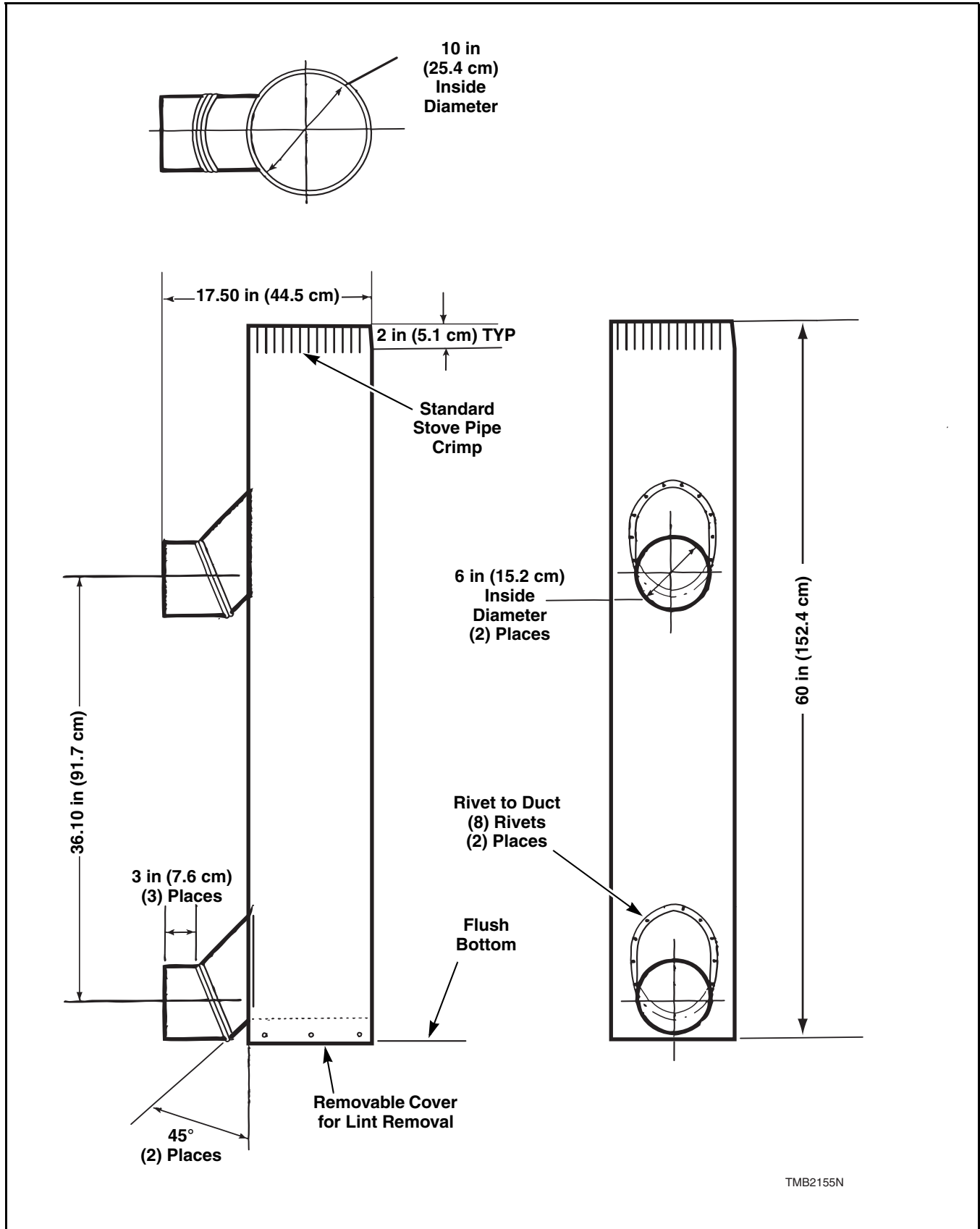


Figure 3

Combined Exhaust Manifold

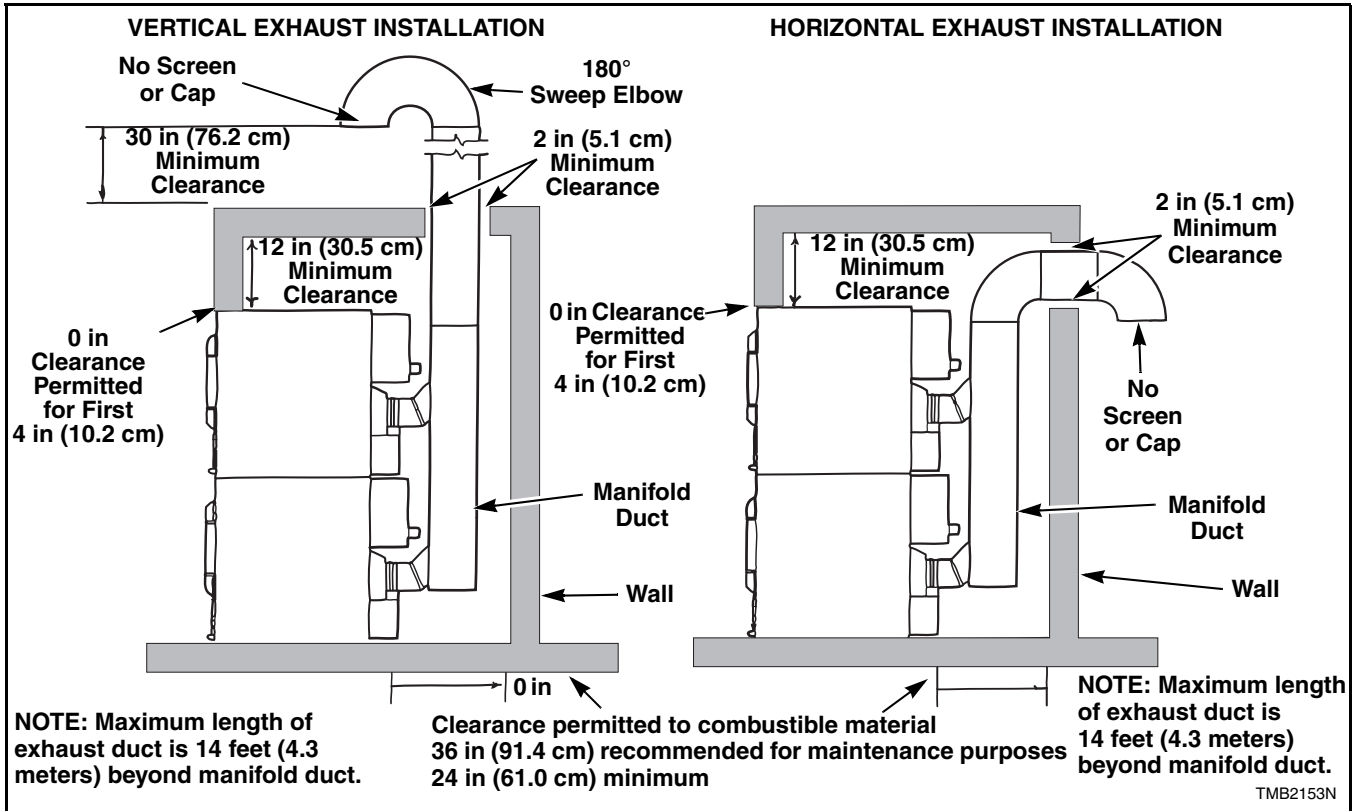


Figure 4

Installation Instructions

Make-Up Air

A tumbler is forced-air exhausted and requires provisions for make-up air to replace the air exhausted by the tumbler.

The manufacturer's recommended make up air opening for each tumbler is 144 square inches (929 sq. cm) of free area. **At a minimum, the National Fuel Gas Code requires tumblers to have at least one square inch (6.5 sq. cm) of opening for every 1000 BTU/hr. of input rating for proper combustion.**

EXAMPLE: A tumbler with a rated input of 120,000 BTU/hr. (30,240 Kcal) requires 120 square inches (774.2 sq. cm) of free opening.

Protective louvers in the opening to the outdoors can reduce air movement by approximately 40 percent. The opening must compensate for the area taken up by the louvers.

NOTE: The make-up air openings into a room containing tumblers, and a gas fired hot water heater or other gravity vented appliances must be increased sufficiently to prevent downdrafts in any of the vents when all tumblers are in operation. Do not install gravity vented appliances between tumblers and air inlet openings.

Positioning the Drying Tumbler

The tumbler may be removed from the skid before moving it to the installation location, or it may be moved while still attached to the skid. To remove tumbler from the skid, unscrew the four shipping capscrews (one at each corner) and lift the tumbler from the skid.

The leveling legs will be in a bag inside the cylinder. Screw the four leveling legs into the level adjusting fittings from the bottom.

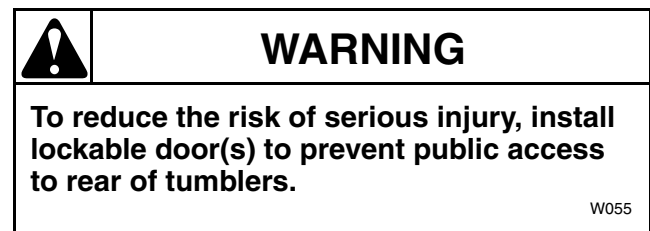
IMPORTANT: The tumbler should be slid in place using the wooden crate pad supplied on the shipping crate to prevent damage to the flooring.

Slide the tumbler to its permanent location and level. Keep the tumbler as close to the floor as possible. The tumbler must rest firmly on the floor so weight of tumbler is evenly distributed. Tumbler must not rock. Shim under the corners to level and stabilize the unit.

Drying Tumbler Enclosure Construction

IMPORTANT: DO NOT block the airflow at the top rear of the tumbler with laundry, etc. Doing so would prevent adequate air supply to the tumbler's heat chamber.

A typical enclosure is shown in *Figure 5*. Note that the enclosure does touch the tumbler top and side panels. Note, too, the minimum and maximum dimensions. Be aware that there may be local codes and ordinances which must be complied with.



IMPORTANT: Install tumblers with sufficient clearance for servicing and operation. Refer to *Figure 5*.

TO FACILITATE INSTALLATION: To ensure room for leveling, adjusting and lining up the tumblers, size the enclosure opening three inches (7.6 cm) larger than the tumbler dimensions. After the tumblers are lined up and level, close the gap with a trim board.

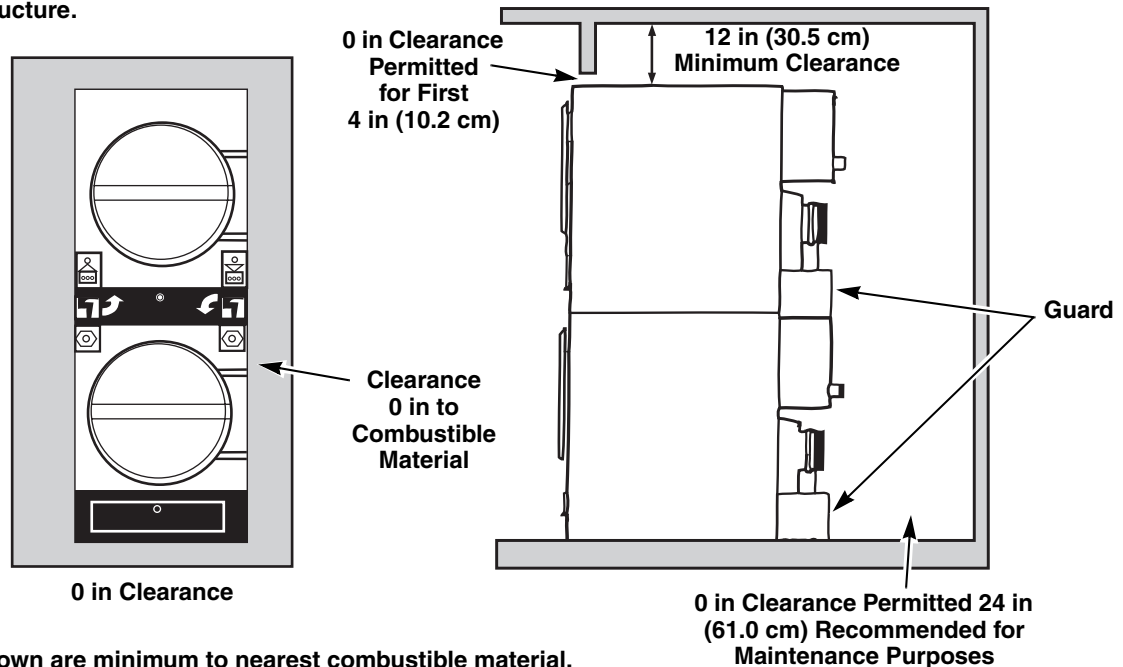


WARNING

Clearance of tumbler cabinet from combustible construction must be a minimum of 12 inches (30.5 cm) at top.

W647

NOTE: Shaded areas indicate adjacent structure.



Clearances shown are minimum to nearest combustible material.
 0 in (0 cm) Minimum clearance to combustible material.
 24 in (61.0 cm) Minimum recommended for service access.

TMB2157N

Tumbler exhaust duct must be smooth inside and be sized based on the following air flow data:
 450 CFM maximum and 350 CFM minimum at .3 W.C. (See information on VENTING in this manual for duct dimensions).

For proper combustion, supply a two square foot (.19 sq. meter) opening for outside makeup air.

Figure 5

IMPORTANT: Do not lift under the belt guard or tip the unit. Serious drive train damage will occur.


Leveling the Drying Tumbler

Each tumbler should be leveled within 1/8 inch (3 mm) from front to rear and 1/8 inch (3 mm) from side to side. Check front to rear level by rotating the clothes cylinder until one rib is at the bottom, then place a level on the rib. Check side to side level by placing a level across the center of the top panel.

IMPORTANT: An unlevelled tumbler can cause rapid bearing wear, internal misalignment, scraping, noise, and possible clothes damage.

Gas Requirements (Gas Drying Tumblers)

Before connecting the gas piping to the tumbler, make certain that gas service is the same as that specified on the serial plate.

	WARNING
<p>To reduce the risk of fire or explosion, DO NOT CONNECT THE GAS LINE TO THE TUMBLER IF THE GAS SERVICE IS NOT THE SAME AS THAT SPECIFIED ON THE TUMBLER SERIAL PLATE! It will first be necessary to convert the gas burner orifice and gas valve. Appropriate conversion kits are available.</p>	
W060	

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

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 in the U.S.A.
- with CAN1-B149.1 or CAN1-B149.2 in Canada
- and Australian Gas Association/Australian L.P. Gas Association requirements in Australia

The size of gas service pipe is dependent upon many variables (lengths, tees, etc.). Specific pipe size

information should be obtained from the gas supplier. Refer to table in *Figure 7* for general pipe size.

A dirt and water vapor pipe trap must be furnished and installed by customer. Refer to *Figure 6*.

It is important that equal pressure be maintained at all tumbler gas connections. This can best be done by installing a one inch (2.54 cm) pipe gas loop as shown in *Figures 8* and *9*.

	WARNING
<p>To reduce the risk of fire or explosion, if the tumbler is to be connected to Liquefied Petroleum (L.P.) gas, a floor level vent to the outdoors must be provided in the room where the tumbler is installed.</p>	
W098	

Before connecting the gas piping to the tumbler, make certain gas service is the same as that specified on the serial plate.

NATURAL GAS service must be supplied at 6-1/2 ± 1-1/2 inch water column pressure (1.62 ± .37 kPa).

L.P. GAS service must be supplied at 11 ±.3 inch water column pressure (2.74 ±.07 kPa).

Pressure checks can be made at the shut-off valve. Refer to *Figure 6*.

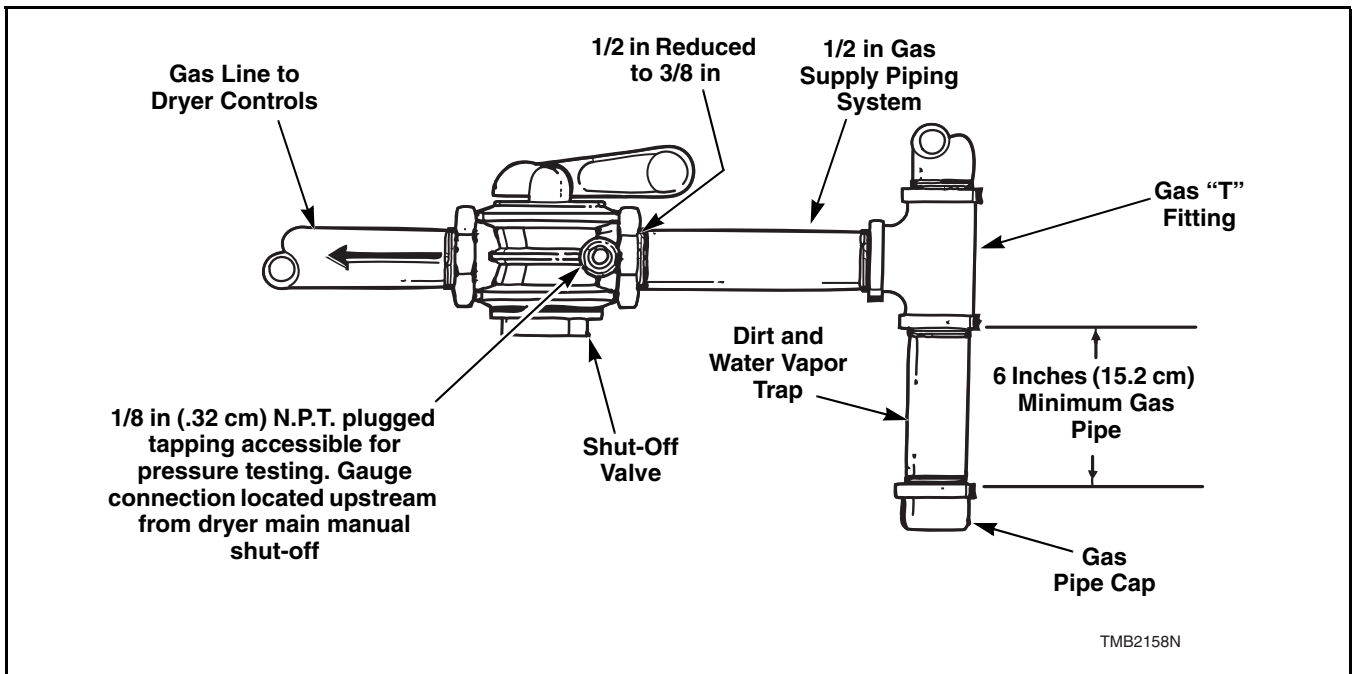




Figure 6

If the gas service is not the same as that specified, DO NOT CONNECT THE GAS LINE TO THE TUMBLER! It will first be necessary to convert the gas burner orifices.

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

Purge air and sediment from the gas service line before connecting it loosely to the tumbler. Purge remaining air until odor of gas is detected, then tighten connection. Use pipe compound, resistant to actions of L.P. gas, on all pipe threads.

	WARNING
<p>To reduce the risk of fire or explosion:</p> <ul style="list-style-type: none"> • 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 1/2 psig (3.45 kPa). • 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 1/2 psig (3.45 kPa). 	
<small>W648</small>	

	WARNING
<p>Check all pipe connections, internal and external, for gas leaks using a soapy solution. To reduce the risk of explosion or fire, DO NOT USE AN OPEN FLAME TO CHECK FOR LEAKS! Gas connections should be checked annually for leakage.</p>	
<small>W649</small>	

Installation Instructions

Gas Pipe Size Required For 1,000 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)					
100,000	0.75 (19.05)	0.75 (19.05)	1 (25.40)	1 (25.40)	1 (25.40)	1 (25.40)
120,000	0.75 (19.05)	1 (25.40)	1 (25.40)	1 (25.40)	1 (25.40)	1 (25.40)
140,000	0.75 (19.05)	1 (25.40)	1 (25.40)	1 (25.40)	1 (25.40)	1.25 (31.75)
160,000	0.75 (19.05)	1 (25.40)	1 (25.40)	1.25 (31.75)	1.25 (31.75)	1.25 (31.75)
180,000	1 (25.40)	1 (25.40)	1 (25.40)	1.25 (31.75)	1.25 (31.75)	1.25 (31.75)
200,000	1 (25.40)	1 (25.40)	1.25 (31.75)	1.25 (31.75)	1.25 (31.75)	1.5 (38.10)
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)

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.

The installation must conform 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 CSA-B149.1 or Natural Gas and Propane Installation Code in Canada,
- and Australian Gas Association/Australian L.P. Gas Association requirements in Australia.

Figure 7

Gas Requirements (continued)

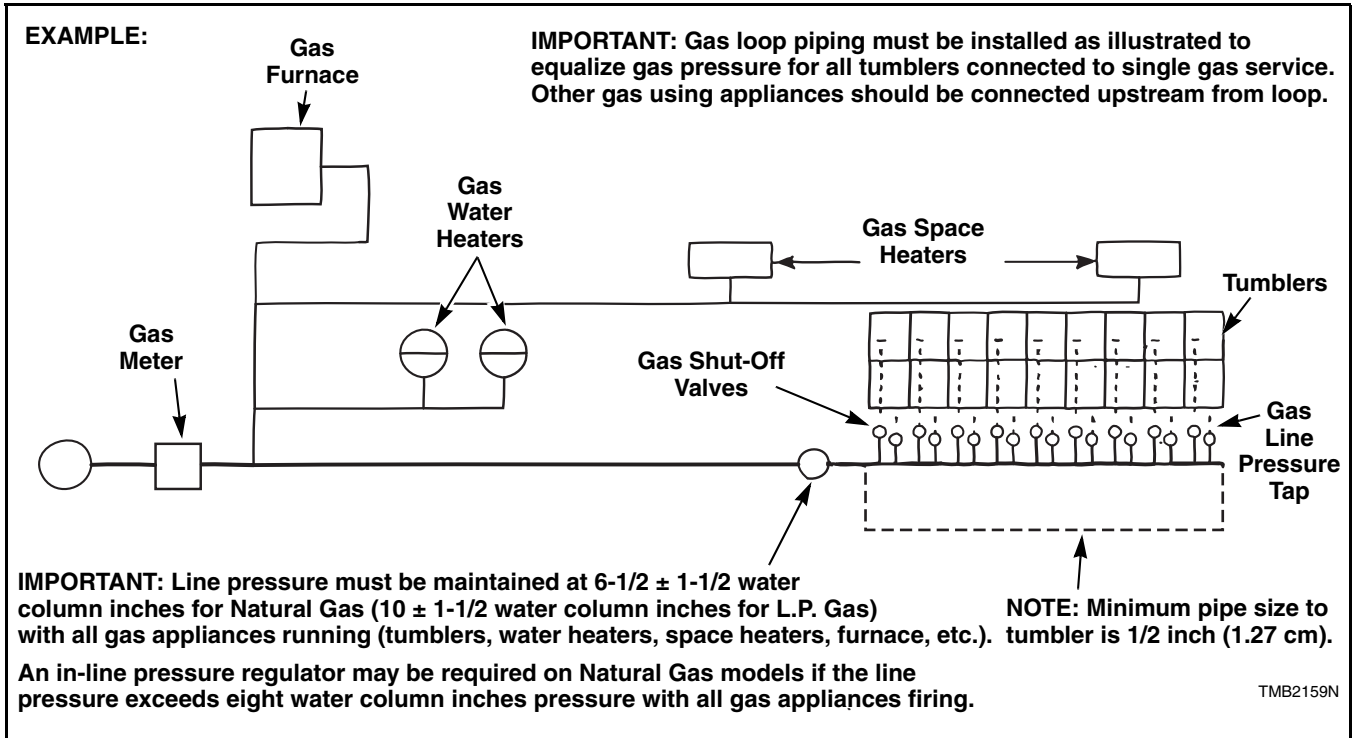


Figure 8

Example Of Gas Supply Piping

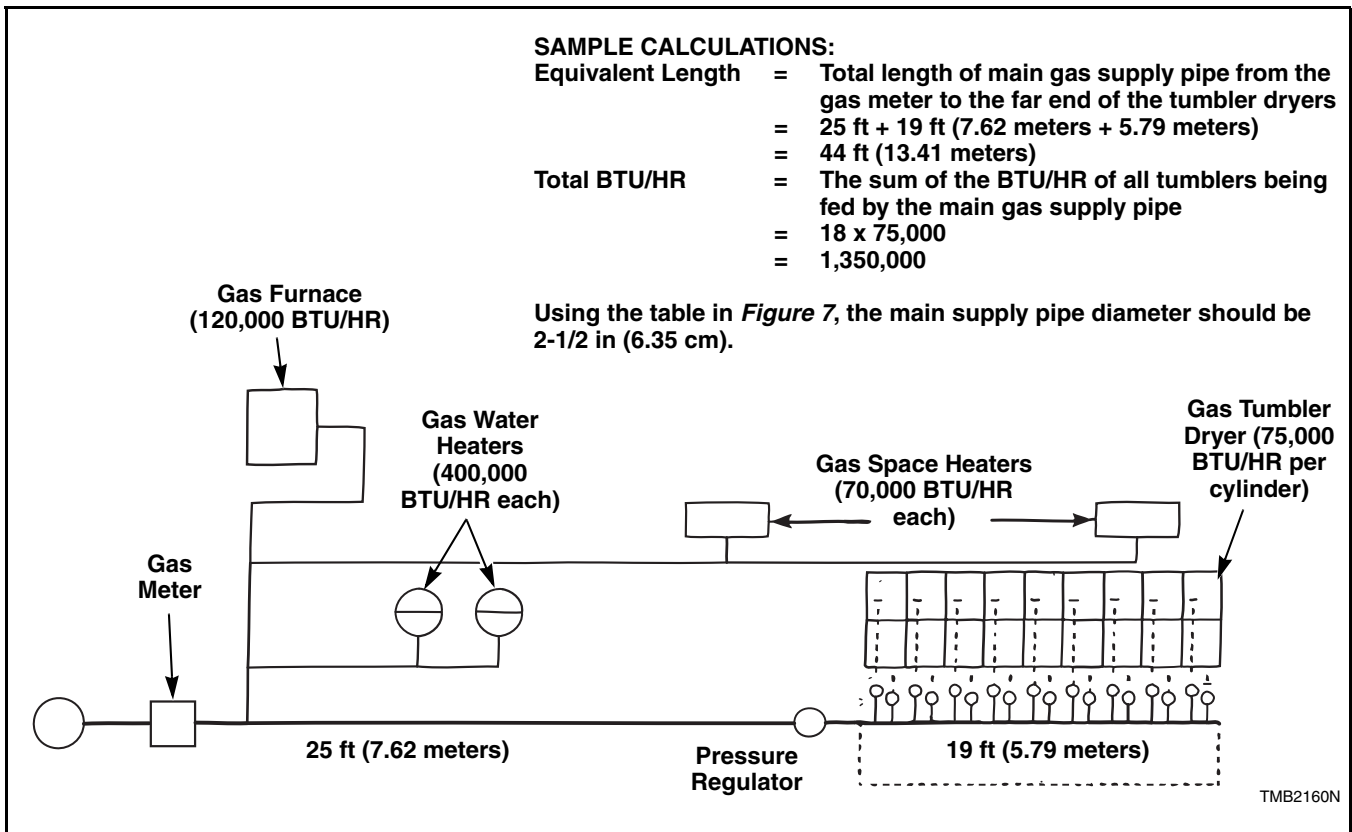


Figure 9

Electrical Requirements

Requirements

Heat Source	Electrical Specs				Wires Required and Terminal Block Connection
Gas	120/50 or 60/1	L1	N		Ground to Green Ground Screw
Gas	208/240/60/1	L1	N	L2	Ground to Green Ground Screw
Gas	220/60/1	L1	N		Ground to Green Ground Screw
Gas	240/50/1	L1	N	L2	Ground to Green Ground Screw

Provide adequate wiring and a 20 amp circuit breaker for each stacked tumbler. The unit is designed to accept **ONE** electrical hook-up through the top pocket only. The tumbler is prewired to electrically operate both the upper and lower units.

Refer to the chart below for requirements for specific voltages.


Gas Drying Tumblers				
	120 Volt 50/60 Hertz 1 Phase*	208/240 Volt 60 Hertz 1 Phase**	240 Volt 50 Hertz 1 Phase	220 Volt 60 Hertz 1 Phase
Wire Size	As Required by Local Codes			
Disconnect Switch	20 Amp	Use Circuit Breaker Only 15 Amp 2 Pole	Use Circuit Breaker Only 15 Amp 2 Pole	Use Circuit Breaker Only 15 Amp 2 Pole
Fusetron	20 Amp			
Circuit Breaker	20 Amp			
Number of Poles	1	2	2	2

*120 Volt, 60 Hertz, 1 Phase gas tumblers require a 120 Volt, 2-wire grounded system (Line 1, Neutral and Ground).

**208/240 Volt, 60 Hertz, 1 Phase gas tumblers require 3-wire grounded system (Line 1, Line 2, Neutral and separate ground).

IMPORTANT: If electrical supply is coming from a three phase service, **DO NOT** connect a “Stinger Leg” to a single phase machine.

NOTE: The electrical service to a gas tumbler must be electrically grounded in accordance with local codes or, in the absence of local codes, with the National Electric Code, ANSI/NFPA No. 70. The gas service to a gas tumbler must conform with the local codes and ordinances, or in the absence of local codes and ordinances, with the latest edition of the National Fuel Gas Code ANSI Z223.1.

	WARNING
<p>All electrical connections should be made by a qualified electrician.</p> <p>To reduce the risk of electrical shock, serious injury or death, before making any electrical connections, de-energize the electrical circuit being connected to the tumbler. Never attempt to connect a live circuit.</p>	
W650	


The following steps outline the procedure for connecting the electrical service to the tumbler. The wiring diagram is attached to the rear of the tumbler. Refer to *Figure 10*.

IMPORTANT: Do not connect the tumbler to any voltage or current other than that specified on the tumbler serial plate.

1. Install a fused disconnect switch, or a circuit breaker, as close to the tumbler as possible. If more than one stacked tumbler is being installed, provide a disconnect switch or circuit breaker for each. This will make it possible to individually disconnect stacked tumblers for maintenance purposes.
2. Connect the conduit-encased leads to the disconnect switch, or circuit breaker. Remove the screw holding the upper junction box cover to the upper junction box. Refer to *Figure 10*. Insert the other end of conduit through the hole in the top of the junction box. Connect the wire leads to the appropriate terminals of the terminal block (L1 and L2 or L1 and N). If the electrical service is 120 Volt, connect the neutral wire to **NEUTRAL**. The ground wire must be connected to the green ground screw located in the junction box. Refer to *Figure 10*.
3. Reinstall cover on the junction box.

Grounding Instructions

This drying tumbler must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electronic shock by providing a path of least resistance for electric current. This dryer must be connected to a grounded metal, permanent wiring system or to the ground screw (located in the junction box).

	WARNING
<p>To reduce the risk of fire and electric shock, check with a qualified serviceperson for proper grounding procedures. Improper connection of the equipment grounding conductor may result in a risk of electric shock.</p>	
W068R1	

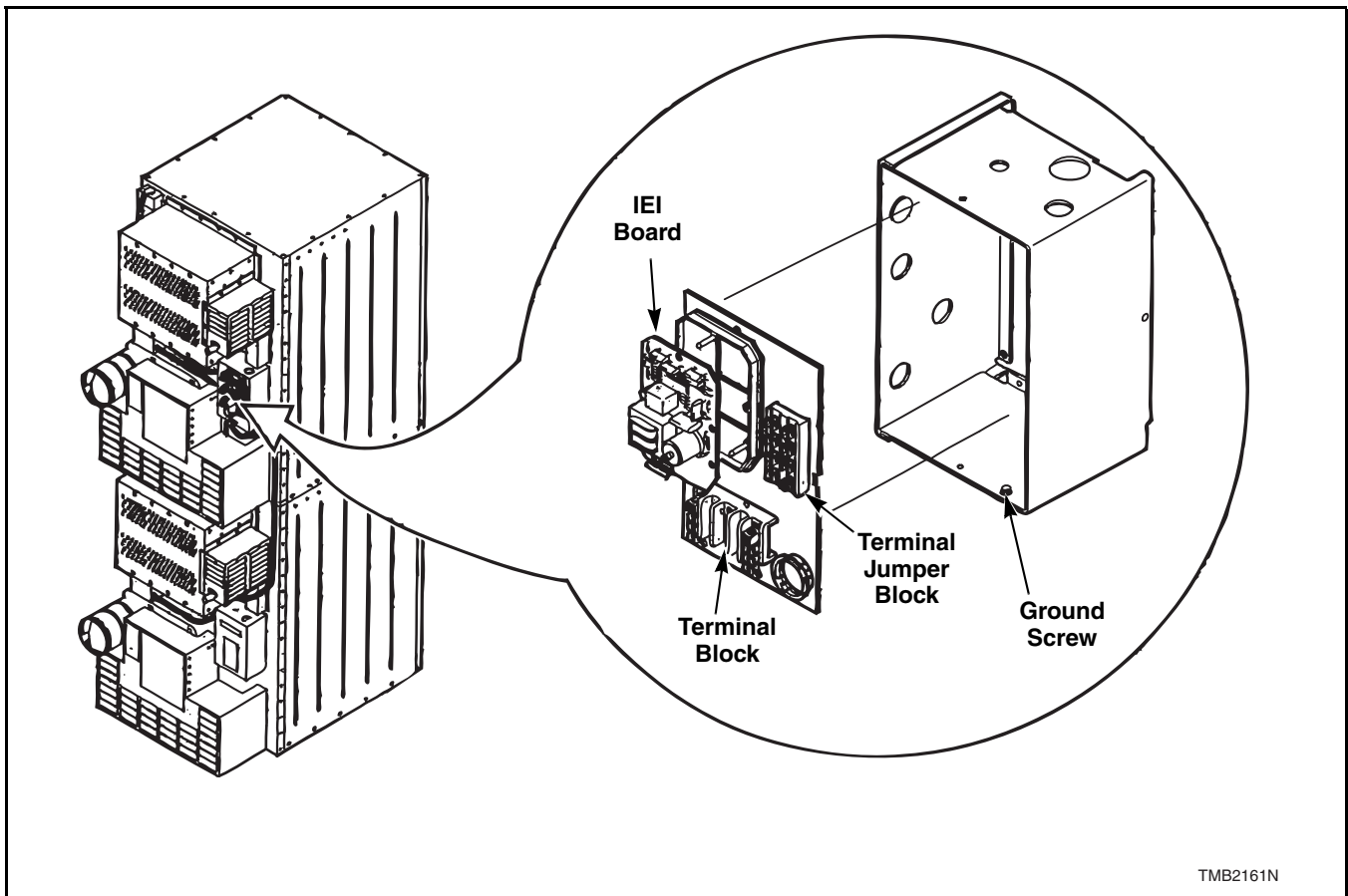



Figure 10

Installation Instructions


Before connecting the gas piping to the tumbler, make certain that gas service is the same as that specified on the nameplate (below the gas connection). Refer to *Figure 11*.

NATURAL GAS service must be supplied at $6\text{-}1/2 \pm 1\text{-}1/2$ inches water column pressure.


L.P. GAS service must be supplied at $11 \pm .3$ inches water column pressure.

	WARNING
<p>To reduce the risk of fire or explosion, DO NOT CONNECT THE GAS LINE TO EITHER OF THE TUMBLERS IF THE GAS SERVICE IS NOT THE SAME AS THAT SPECIFIED ON THE TUMBLER! It will first be necessary to convert the gas burner orifice and gas valve. Appropriate conversion kits are available.</p>	
W652	

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

	WARNING
<p>To reduce the risk of fire or explosion:</p> <ul style="list-style-type: none">• 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 $1/2$ psig (3.45 kPa).• 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 $1/2$ psig (3.45 kPa).	
W648	

Purge air and sediment from the gas service line before connecting it loosely to the tumbler. Purge remaining air until odor of gas is detected, then tighten connection. Use pipe compound resistant to actions of L.P. gas on all pipe threads.

	WARNING
<p>Check all pipe connections, internal and external, for gas leaks using a soapy solution. To reduce the risk of explosion or fire, DO NOT USE AN OPEN FLAME TO CHECK FOR LEAKS! Gas connections should be checked annually for leakage.</p>	
W649	

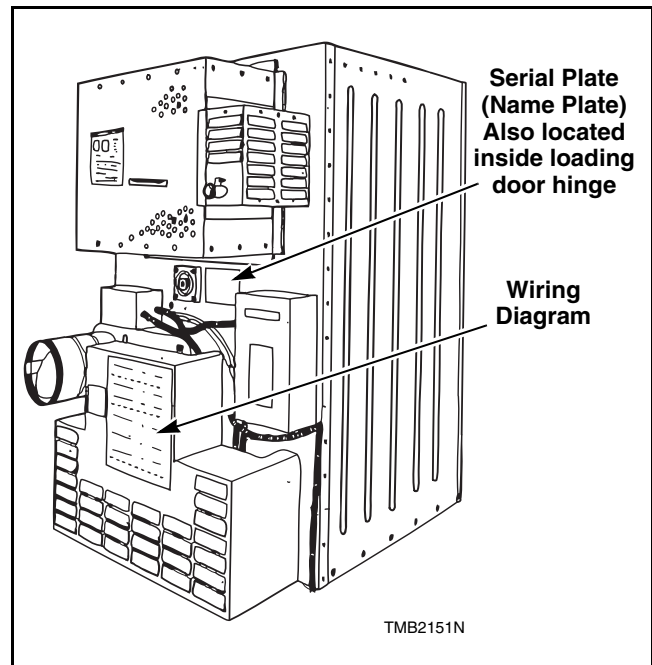


Figure 11

Instructions for Lighting and Shutting Down Instant Electronic Ignition System

1. Turn gas shut-off valve to “on” position (handle parallel with gas line). Refer to *Figure 12*.
2. Start tumbler in drying cycle. Spark igniter will begin sparking as the gas valve simultaneously opens. The gas burner is ignited by the sparking igniter. The igniter will then shut off. Burner will remain on for as long as the temperature control calls for heat.
3. Opening the loading door will extinguish burner flames. Closing loading door and restarting tumbler should cause gas to be re-ignited.
4. If gas does not light, open and close loading door again and restart the ignition cycle.

IMPORTANT: The Instant Electronic Ignition system will attempt to light the gas by sparking for approximately 15 seconds. If gas does not ignite within 15 seconds, the Instant Electronic Ignition control will go into safety lockout (if this occurs, the red light on the IEI board will be illuminated). The valve will not open until the Instant Electronic Ignition control is reset. Reset by opening and closing the loading door.

If condition persists, check that the gas shut-off valve is open and that gas service is properly connected. If condition still persists, remove tumbler from service.

5. To remove tumbler from service, disconnect electrical service and turn gas shut-off valve to “off” position (handle at right angle to gas line). Refer to *Figure 12*.

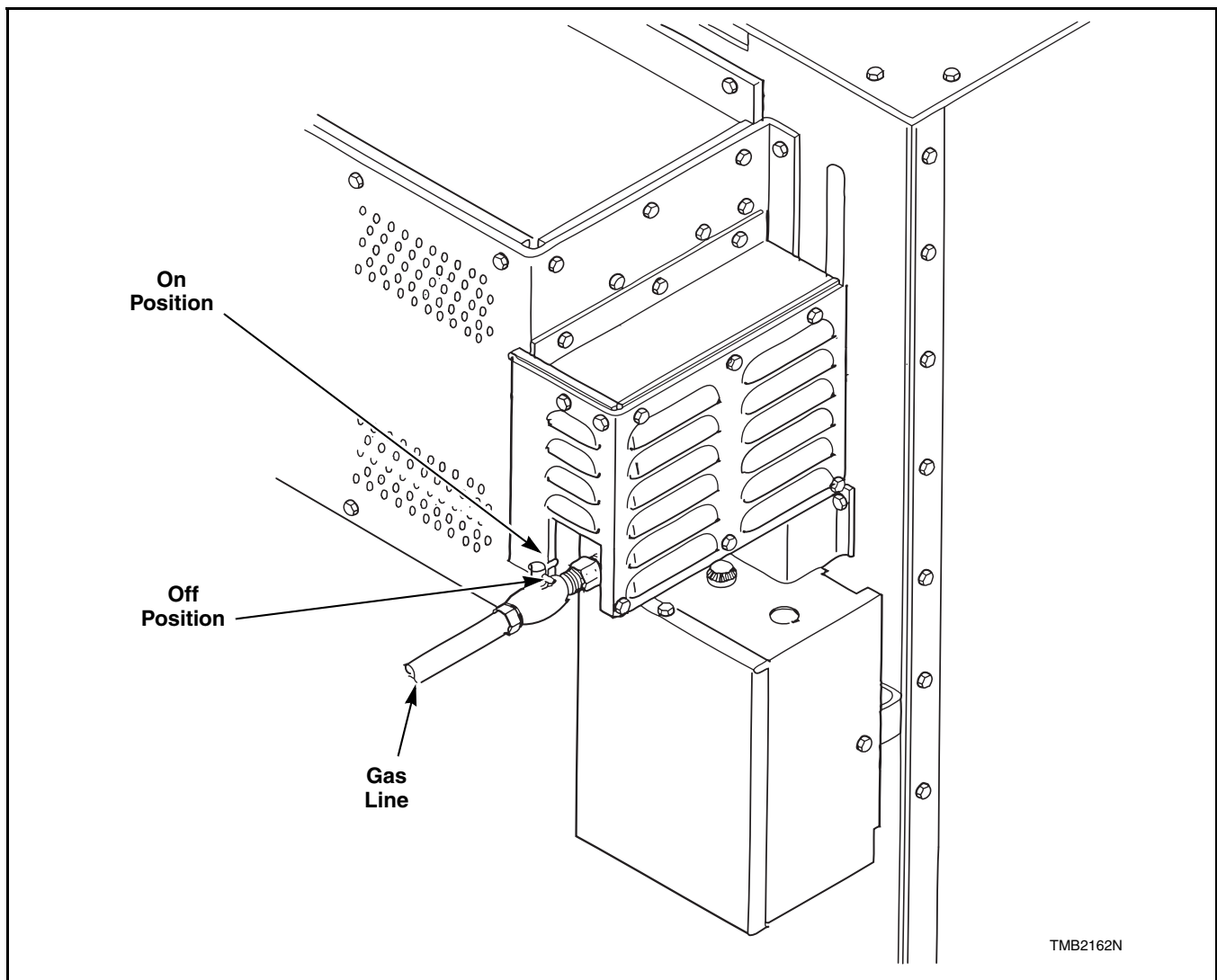


Figure 12

Adjustments

Air Flow Switch

The air flow switch on the 32DG model is set at the factory for proper operation.

IMPORTANT: Air flow switch vane must remain closed during operation. If it opens and closes during the drying cycle, this indicates insufficient air flow through the tumbler. 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 air flow switch is malfunctioning.

Refer to the Parts and Service manual for information on adjusting the air flow switch.

NOTE: Air flow switch operation may be affected by a clogged lint screen, lack of make-up air, or obstructions in the customer installed main or collector ducts. These conditions must be checked and corrected before attempting to adjust the air flow switch.

Cylinder Door Switch and Strike

The door switch should be adjusted so the cylinder stops when door is opened two inches (5.08 cm), plus or minus 1/4 inch (6.35 mm). This switch is a normally open switch and is closed when the door is closed.

1. Close door and start tumbler, slowly open loading door. Cylinder and heat system should shut off when door is open two inches plus or minus 1/4 inch.
2. Slowly close loading door. When door is two inches (5.08 cm) from being fully closed, the tab on the door should contact the switch plunger and depress it enough to close the switch with an audible “click.” Refer to *Figure 13*.
3. If tab does not depress the switch plunger enough to operate the switch, bend tab on loading door INWARD towards machine (away from hinge) and repeat steps 1 and 2.

4. If the tab on the door operates the switch before the two inch distance, bend tab on loading door OUTWARD away from machine (towards the hinge) and repeat steps 1 and 2.


Cylinder Door Strike

Refer to *Figure 14*.

The 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 eight to 15 pounds (35.6N to 80N) pull is required to open door.

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

Drive V-Belt

	WARNING
To avoid serious injury, disconnect power to the tumbler before performing this operation.	
W653	

The drive V-belt tension is automatically set by a spring loaded idler system. There is no adjustment.

	WARNING
Guard/panel MUST be re-installed on rear of tumbler after belt adjustment is made.	
W654	

1. Remove belt guard front panel from rear of tumbler.
2. The belt should show no signs of excess wear or cracking. If it does, replace with a genuine service replacement.
3. Ensure that spring loaded idler arm is free to move by squeezing the belt together. Idler arm should move freely with moderate (approximately 20 pounds, 9.08 kg) of spring force.
4. Replace the belt guard. Failure to do so will result in the tumbler not starting.

Adjustments

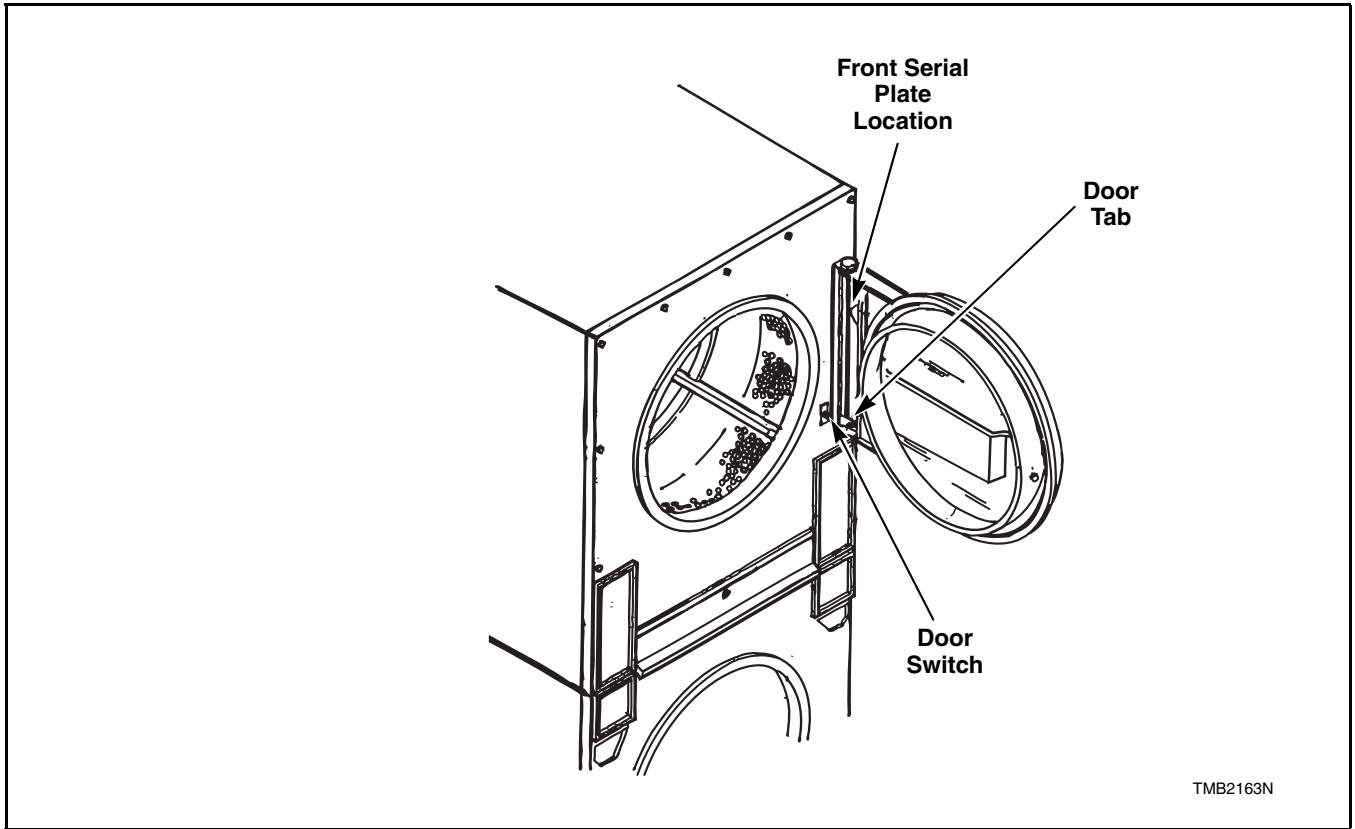


Figure 13

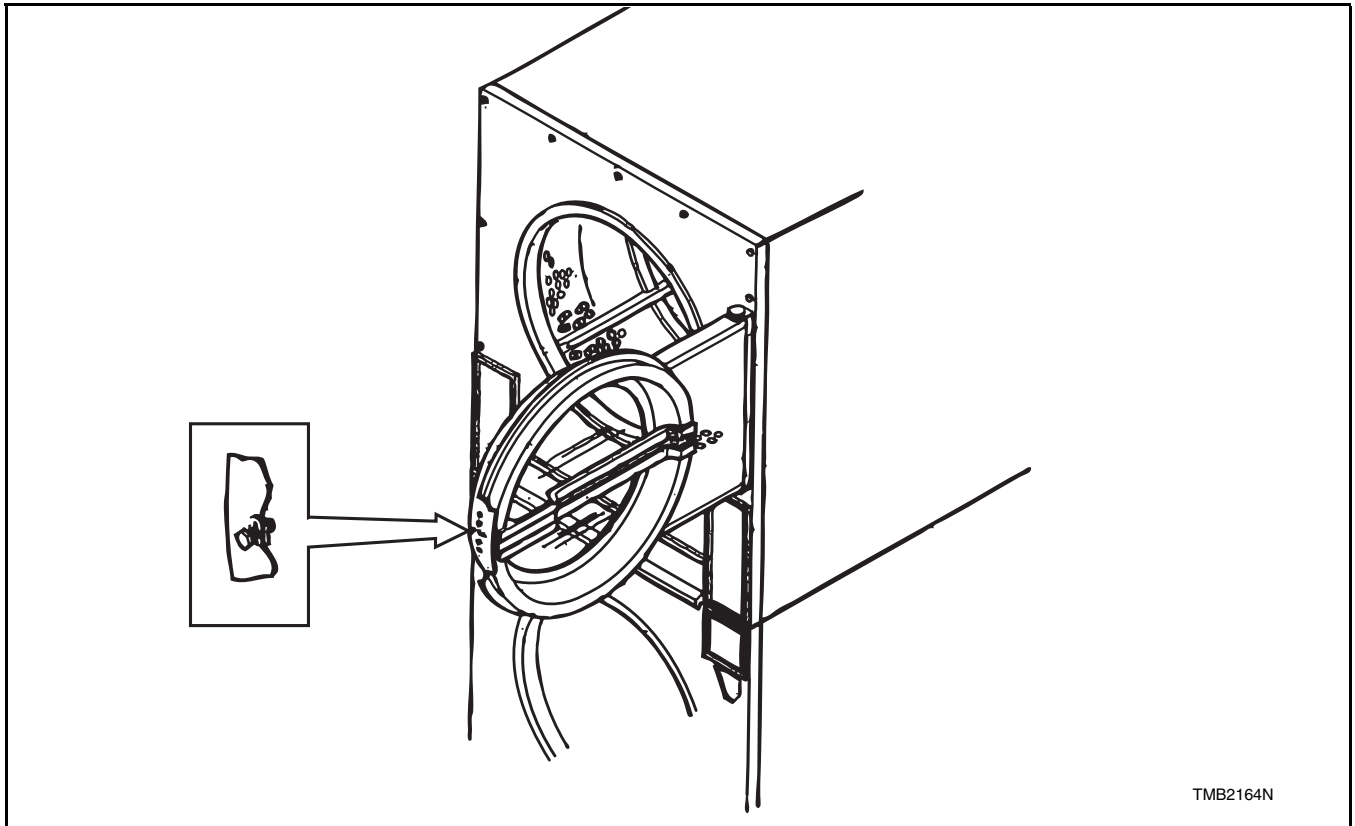


Figure 14


Operating Checks

Electronic Control

The stacked tumbler comes equipped with an Electronic Control. The Electronic Control gives the owner a variety of programming options. To learn how to use the Electronic Control in more detail, consult the supplemental manual provided with this machine.


Preliminary Operating Check

1. Remove or open all panels, drawers and guards and check accessible bolts, nuts, screws, terminals and fittings for tightness (only remove front panel of the belt guard).

	WARNING
Guards/panels must be replaced prior to energizing unit to reduce the risk of possible serious injury.	
W655	

2. Replace belt guard front panel on rear of machine.
3. Set Electronic Control for Free Dry, refer to Electronic Control Supplemental Manual for instructions.
4. Start the tumbler by pressing and releasing the START pad. Open the loading door. The cylinder should stop rotating within seven seconds after the door is opened a distance of 1-3/4 to 2-1/4 inches (45 to 57 mm). If it does not, adjust the loading door interlock. Refer to the appropriate paragraph in the *Adjustments* section of this manual.


5. Start the tumbler and check the burner flame.
6. Load the cylinder with 30 pounds of cotton clothes or clean rags.
7. Check the air flow switch operation by opening the loading door. The heating system should shut off when the loading door is opened a distance of one to 1-1/2 inches (25 to 38 mm).

	WARNING
The tumbler must not be operated if the airflow switch does not shut off heating system in step 8. Faulty airflow switch may cause an explosive gas mixture to collect in the tumbler.	
W656	

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 before attempting to adjust the airflow switch. To adjust the airflow switch refer to appropriate paragraph in the *Adjustments* section of this manual.

Operating Instructions


The following steps outline the procedure for operating the tumbler through a complete drying cycle.

	WARNING
<p>To reduce the risk of fire:</p> <ul style="list-style-type: none">• DO NOT DRY articles containing foam rubber or similarly textured rubberlike materials.• DO NOT DRY plastics, anything containing wax or chemicals such as mops and cleaning cloths, or anything dry-cleaned at home with a dry-cleaning solvent.• 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.	
W076	

IMPORTANT: 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.

Always follow the fabric care instructions supplied by the garment manufacturer.

NOTE: Electrical power to the tumbler must be on. The AVAILABLE light will be lit. Refer to *Figure 14*.

	WARNING
<p>To reduce the risk of serious injury, allow cylinder to stop before cleaning lint screen.</p>	
W412	

1. Energize the electrical circuit to the tumbler at the disconnect switch or the circuit breaker.
2. Open the lint drawer and check for any accumulated lint on lint screen. Close drawer tightly against tumbler front panel and lock drawer securely.

IMPORTANT: Failure to tightly close lint drawer will result in the tumbler not starting.

3. Open the loading door and load the cylinder with laundry. The unit is designed for a 30 pound cotton load (dry maximum load). **DO NOT** overload! Overloading will result in excessive drying time, wrinkled laundry and wear to cylinder bearings or rollers.
4. Refer to Section IV of the Electronic Control manual for further instructions on how to operate the stacked tumbler. The Electronic Control manual is supplied with the tumbler.

Preventive Maintenance Instructions



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

Daily

Lint Removal



WARNING

To reduce the risk of serious injury, do not open the lint panel while the tumbler is in operation. Before cleaning the lint screen, open tumbler door and allow cylinder to completely stop.

W410

1. Unlock the lint drawer and remove it. Refer to *Figure 15*.
2. Remove all accumulated lint in the lint compartment area by tipping the drawer over a garbage collection can or similar container.
3. Be sure the lint screen is not torn. If it is, replace immediately. A torn screen allows lint to pass from the tumbler to the ductwork system creating a restriction to air circulation or adversely affecting the recirculation function of the tumbler. Both affect machine efficiency.
4. The lint screen is designed to completely cover the entire opening in the angled section of the lint drawer. Be sure that it does so. Excessive gaps between the lint screen and the lint drawer allows lint to pass into the ductwork system.
5. Wipe any accumulated lint from the lint drawer compartment area. Failure to do so will allow a buildup of lint in this area.
6. Reinstall the lint drawer, ensuring a tight fit and lock.

IMPORTANT: Failure to lock lint drawer will result in the tumbler not starting.

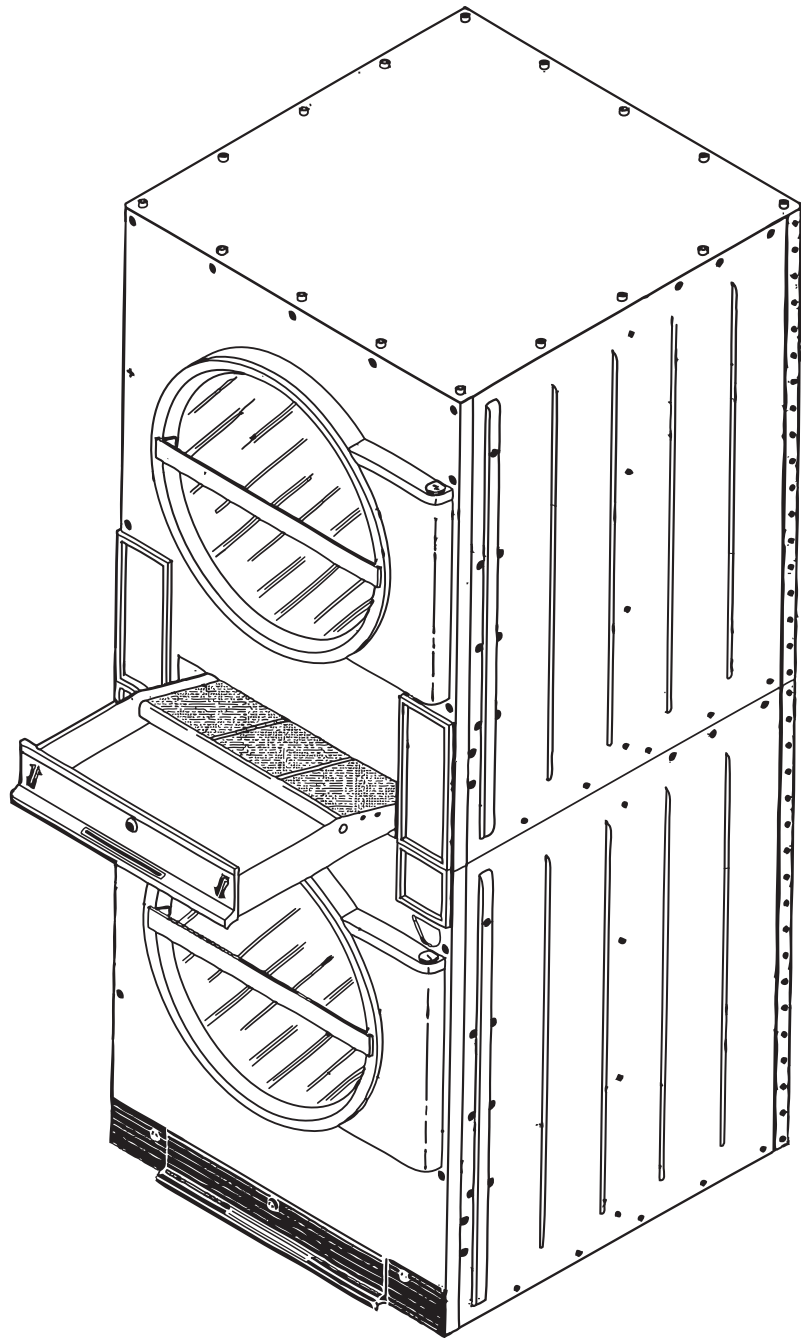
Monthly

Lubrication

Motor bearings, fan bearings, cylinder bearings and cylinder roller bearings are pre-lubricated sealed bearings and require no lubrication.

Lint Removal

Remove the exhaust duct from exhaust thimble and remove lint. If excessive lint is evident at the thimble, further disassemble the duct work and remove lint. Also, remove blower housing assembly from cabinet and remove any lint present in blower housing or on fan.



TMB2165N

Figure 15

Every Six Months

Lint Removal and Cylinder Belt Inspection



WARNING

To reduce the risk of serious injury, disconnect power to the tumbler before performing this operation.

W657

Drive System

1. Remove belt guard cover.
2. Clean the lint and any other foreign materials from the air vents located on the front and back of the drive motor. The drive motor is air cooled and if the air vents become clogged, the motor will overheat and the internal thermal overload protector will cycle off.
3. Reinstall belt guard cover.

Front Panel

1. Remove front panel by removing lint drawer and loading door. Remove fastening screws for front panel, disconnect control housing, terminal blocks.
2. Pull front panel out. Remove any lint that has accumulated in the corner of the inside. Use a vacuum where possible or a small brush.
3. The poly-v cylinder belt tension is automatically set by a spring loaded idler system. There is no adjustment. The belt should show no signs of excess wear or cracking. If it does, replace with a genuine service replacement.

4. Inspect the belt tensioning idler assembly. The idler arm should move freely (with considerable belt-spring tension [approximately 40 pounds]) and should not bind in any position between stops.
5. Clean lint off any of the idler assembly parts.
6. Reassemble the front panel by lifting and placing the panel at its edge resting on the machine front.
7. Reach in through door opening, and connect the terminal blocks to each control housing.
8. Push the front panel into place and line up holes.
9. Insert corner screws first and then remaining screws. Tighten all screws.
10. Reinstall lint drawer, pressing it firmly against the front panel and locking it.
11. Reinstall loading door.

Overall Check

Check the tumbler over thoroughly for loose nuts, bolts and screws and for loose gas and electrical connections.



WARNING

To reduce the risk of fire or electric shock, electrical connections such as electric service and grounding connections should be examined for proper torque a week after initial installation, again after a month of operation and thereafter every six months.

W658

Preventive Maintenance Instructions

Three Month Maintenance	(DATES)							
Clean air vents on drive motor.								
Check and clean steam coils. (Steam Models Only)								
Clean exhaust ducts.								
Check flow of combustion air.								
Check flow of ventilation air.								
Check belt tension.								
Check chain tension.								

Six Month Maintenance	(DATES)							
Check for loose nuts.								
Check for loose bolts.								
Check for loose screws.								
Check for loose gas connections.								
Check for loose electrical connections.								
Check for loose steam connections. (Steam Models Only.)								