

**PLEASE READ AND SAVE THESE INSTRUCTIONS.**

PENN BARRY

Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Zephyr Fans Models Z14 & Z15



Receiving and Handling

PennBarry fans are carefully inspected before leaving the factory. When the unit is received, inspect the carton for any signs of tampering. Inspect the unit for any damage that may have occurred during transit and check for loose, missing or damaged parts. Mishandled units can void the warranty provisions. PennBarry is not responsible for damages incurred during shipment.

Avoid severe jarring and/or dropping. Handle units with care to prevent damage to components or special finishes.

Storage

Long-term storage requires special attention. Units should be stored on a level, solid surface, preferably indoors. If outside storage is necessary, protect the units against moisture and dirt by encasing the cartons in plastic or some similar weatherproof material. Periodically inspect units and rotate wheel to spread bearing lubricant.

Unpacking

Place carton in an upright position and remove staples or use a sharp (knife edge) tool to CAREFULLY cut or scribe the sealing tape on both sides at the top of the carton. Open carton flaps. Remove any cardboard and wooden filler pieces, as well as loose components or accessories shipped with the unit.

Carefully remove the unit from the carton. Inspect the unit for any damage that may have occurred during transit and check for loose, missing or damaged parts.

Description

PennBarry Zephyr fan models Z14 and Z15, are designed to produce high volumes of air at low noise levels. Fans can be used for general ventilation and exhaust applications. These larger capacity fans will accommodate single or multi-room ventilation and can be installed above the ceiling.

Ceiling fans feature discharge position adaptability through interchangeable housing members - right angle (RA) discharge or top discharge (TD) - for selection of air flow direction. Complete motor and blower assembly can be removed for full accessibility to all components for servicing, inspection, etc.

Installation

RIGHT ANGLE DISCHARGE (RA) POSITION

PennBarry fans are supplied with support channels which should be utilized as the point of attachment for 3/8" diameter threaded steel rods for installation purposes (see Fig.1). Four (4) rods are required for each unit, rods are supplied by others. The rods should be attached securely into the ceiling panel or joist system and cut to length so the fan will hang in a level plane. PennBarry fans should be hung so that they are flush with the ceiling surface, inlet guard or aluminum louvers. Electrical lines should be connected as described in the section on wiring.

TOP DISCHARGE (TD) OR INLINE ARRANGEMENT

When top discharge design installation is required, it is necessary to relocate the access door panel (see Figures 2 & 2a). Remove the access door by removing the sheet metal screws holding it in place. Remove the flange from the intake side of the housing. Remount the access door in the same location where the intake flange was just removed. Remount the flange in the same location where the access door was just removed.

The fan must be directly supported by a building structure.

Electrical lines should be connected to this top discharge mounted fan as described in the following section on wiring. Suitable ducts can now be attached to the fan housing. Inlet guards and/or aluminum louvers can be attached to the inlet side. Totally enclosed motors are available if required.

Discharge side must be guarded unless it is connected to a duct.

Figure 1: Right Angle Discharge (RA)

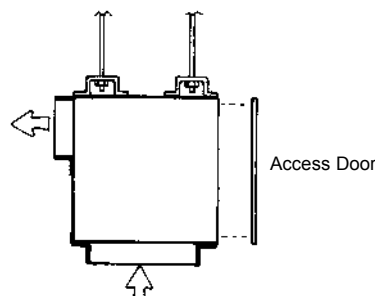


Figure 2: Top Discharge (TD)

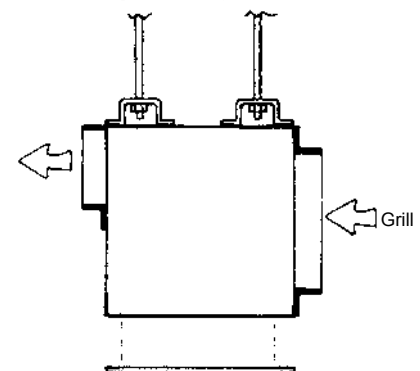
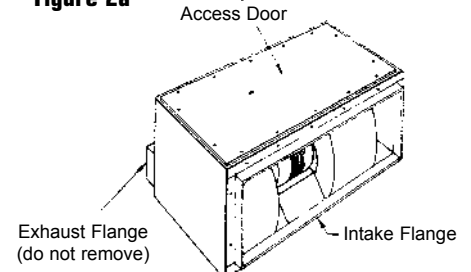


Figure 2a



WIRING

Before wiring fan, LOCK OUT ALL POWER SOURCES. Normally power lines are brought up to the fan through proper conduit lines.

When performing any electrical wiring, follow all local and national electrical and safety codes, as well as the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

All wiring should be performed by a qualified electrician.

All motors are checked prior to shipment. Motors are factory sealed and should not require lubrication.

The motor must be securely and adequately grounded to a grounded metal raceway system, or by using a separate grounding wire connected to bare metal on the motor frame or to the grounding screw located inside the motor terminal box, or by other suitable means. Refer to National Electrical Code (NEC) Article 250 (grounding) for additional information (See Figures 3 & 3a).

IMPORTANT: MAKE SURE THE PROPER LINE VOLTAGE IS SUPPLIED TO THE FAN.

Make the necessary electrical connection to the junction box and test the fan for proper rotation.

Protect the power cord from coming in contact with sharp edges or other objects.

Do not kink the power cord or allow it to come in contact with oil, grease, hot surfaces, or chemicals.

CAUTION *Incorrect rotation overloads motor severely and results in serious motor damage. Follow rotation directional arrow on housing.*

For Model Z14 115/1/50-60, use Model LT40 (10 Amps. Max.). For Model Z15 230/1/50-60, use Model LT35 (5 Amps. Max.).

Figure 3: Wiring Diagram for Z14

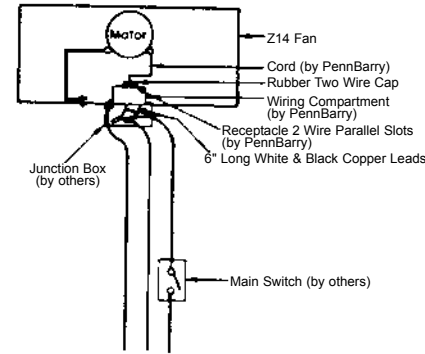
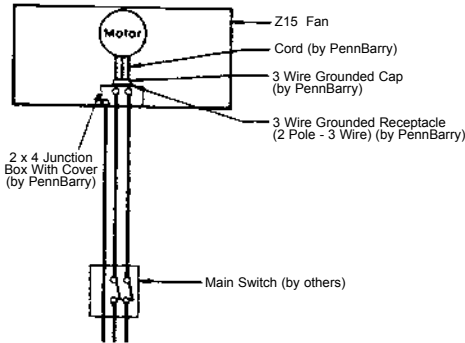


Figure 3a: Wiring Diagram for Z15



Maintenance

Do not attempt maintenance on a fan until the electrical supply has been completely disconnected. Lubrication is a primary maintenance responsibility. If the fan is installed in a corrosive or dirty atmosphere, periodically clean the centrifugal wheel, inlet, motor housing and other moving parts.

MOTOR LUBRICATION

In general, standard motors are furnished with prelubricated, sealed-for-life ball bearings which require no lubrication for 7 to 10 years of normal service. Where motors have been ordered with greasable bearings, these bearings are factory lubricated and require no attention for one year under normal conditions. If grease relief fittings are provided, remove them when performing maintenance to allow grease to flow out. Whenever possible, apply grease while the motor is running. This practice should not supersede any safety considerations. DO NOT OVER GREASE, as most lubricants deteriorate motor windings, thereby reducing motor life and presenting a fire hazard.

Hidden Danger

In addition to the normal dangers of rotating machinery, fans present an additional hazard in their ability to suck in not only air, but loose material as well. Solid objects can pass through the fan and be discharged by the impeller as potentially dangerous projectiles. Therefore, screen intake to ductwork, whenever possible, to prevent the accidental entrance of solid objects. Never open access doors to a duct system with the fan running.

When starting the fan for the first time, completely inspect the ductwork and interior of the fan (with the power locked off), to make certain there is no foreign material which can be sucked into or blown through the ductwork.

Where the fan is accessible to untrained personnel or the general public, use maximum safety guards, even at the cost of some performance loss.

CAUTION *Unprotected fans located less than 7' above the floor also require guarding as specified in the Occupational Safety and Health Act (OSHA).*

Fans may be connected directly to ductwork which will prevent contact with the internal moving parts, but when the inlet or outlet is exposed, install a suitable guard. PennBarry recommends the use of guards on all exposed non-ducted fans, ceiling and wall mounted.

Figure 4: Do Not Install In A Cooking Area

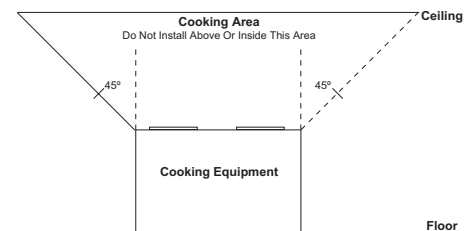


Figure 5: Brick Vents

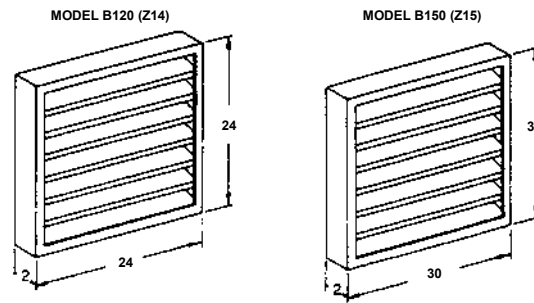
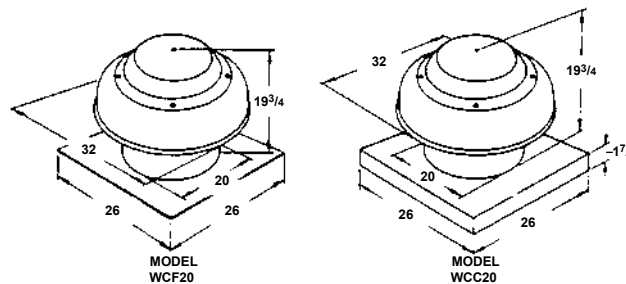


Figure 6: Roof Caps (Z14 & Z15)



All dimensions are in inches.

Figure 7: Dimensional Data

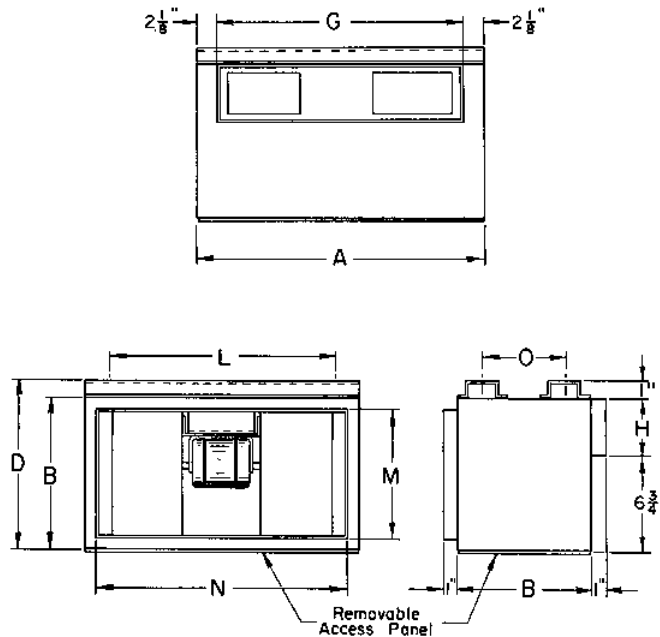


Table 2: Models Z14 & Z15 Dimensions

Model	A	B	C	D	Outlet		L	Inlet		O
					G	H		M	N	
Z14	38	14 1/2	14 1/2	15 1/2	33 3/4	7 7/8	30 1/2	12 1/2	36	7 5/8
Z15	45 1/2	16 1/2	16 1/2	17 1/2	41 1/4	9 3/4	34 1/2	14 1/2	43 1/2	10

All dimensions are in inches.

Exploded View & Parts List

Figure 9

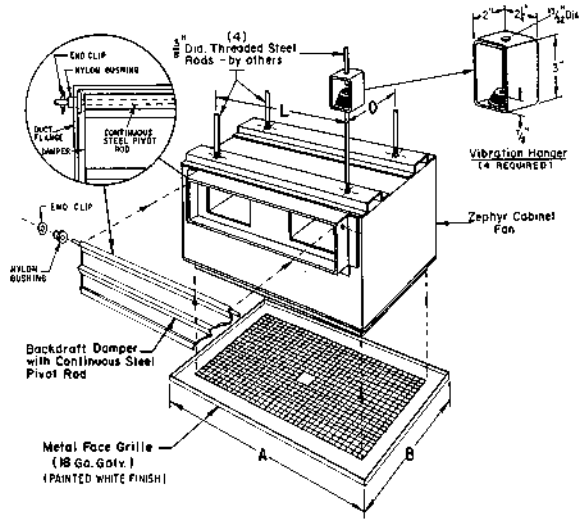
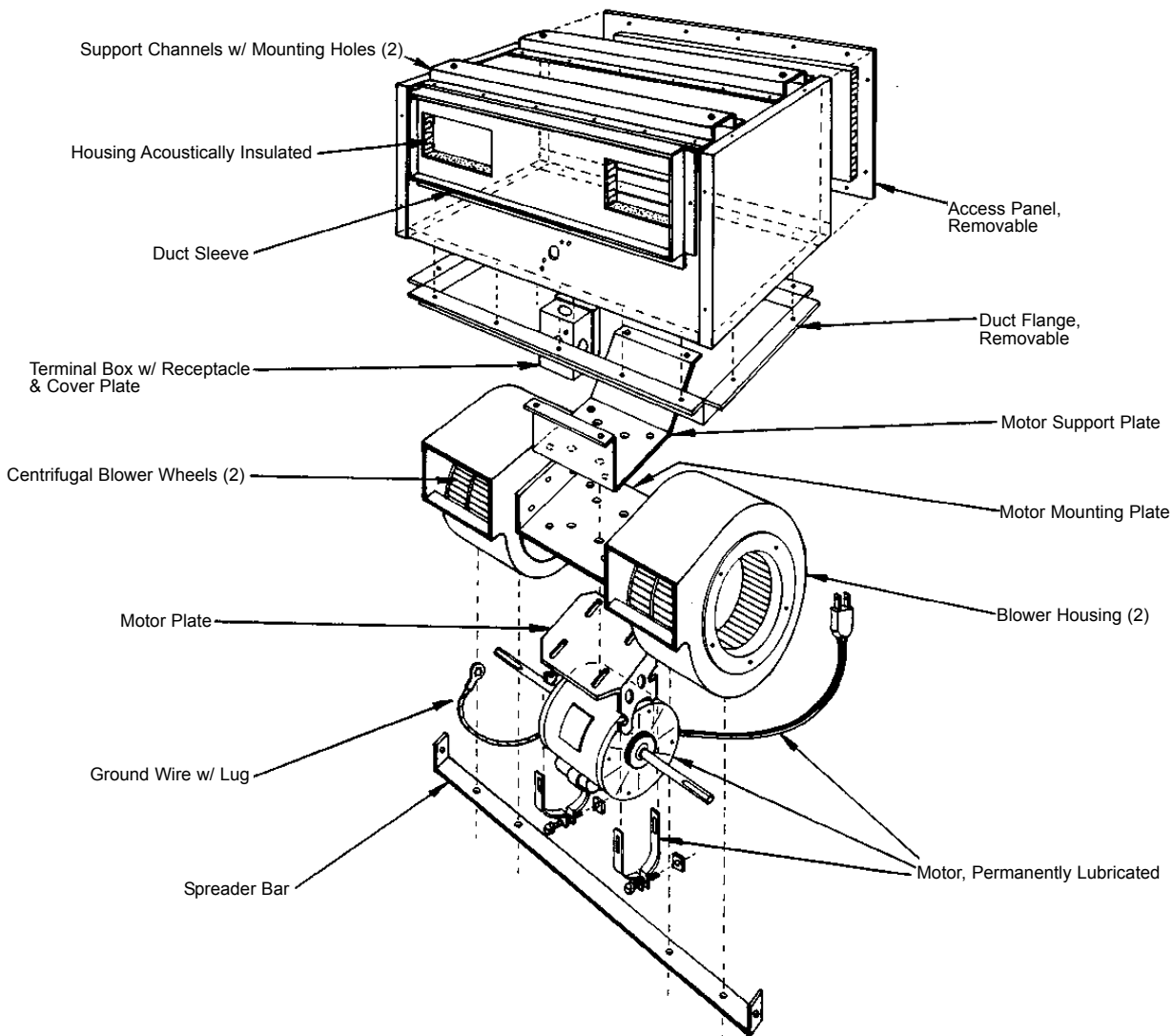


Table 3: Models Z14 & Z15 Metal Grill Dimensions

Model	Metal Face Grill		L	O
	A	B		
Z14	40 1/2	17	30 1/2	7 7/8
Z15	48	19	34 1/2	10

All dimensions are in inches.

Figure 10



Troubleshooting Checklist

Symptom	Possible Cause(s)	Corrective Action
Excessive noise	<ol style="list-style-type: none"> 1. Defective or loose motor bearings 2. Ventilator base not securely anchored 3. Loose or unbalanced wheel/propeller 4. Misaligned pulleys or shaft 5. Loose or damaged wheel/propeller 6. Wheel running in wrong direction 	<ol style="list-style-type: none"> 1. Replace motor with same frame size, RPM, HP 2. Reset properly 3. Tighten screws, remove build-up, balance wheel/propeller 4. correct alignment 4. Replace wheel/propeller 6. Reverse direction
Fan inoperative	<ol style="list-style-type: none"> 1. Blown fuse or open circuit breaker 2. Loose or disconnected wiring 3. Defective motor 4. Broken belts 	<ol style="list-style-type: none"> 1. Replace fuses or circuit breaker 2. Shut off power and check wiring for proper connections 3. Repair or replace motor 4. Replace belts
Insufficient airflow	<ol style="list-style-type: none"> 1. Open access doors or loose sections of ducts 2. Clogged filters 3. Operation in wrong direction 4. Insufficient make-up air direction 	<ol style="list-style-type: none"> 1. Check for leakage 2. Clean filters 3. Correct rotation of wheel/propeller 4. Add make-up fan or louver opening
Water leaking into ductwork or collection of grease under fan	<ol style="list-style-type: none"> 1. Fan installed with slope in the wrong direction 2. Clogged drain spout 3. Cooling tube or motor dome top removed 4. Grease container full 	<ol style="list-style-type: none"> 1. Slope should be fitted in the direction of the drainage opening or grease collection box and drain spout 2. Clean drain spout 3. Install new cooling tube with gasket and dome top 4. Empty grease box
Motor overheating	<ol style="list-style-type: none"> 1. Belt slippage 2. Overvoltage or under voltage 3. Operation in wrong direction 4. Fan speed too high 5. Incorrect motor (service factor 1.0, low ambient temperature) 6. Blocked cooling tube or leaky gasket 7. Insufficient airflow to kitchen hood fan operating on low speed with kitchen in full operation 8. Undersized motor 	<ol style="list-style-type: none"> 1. Adjust tension or replace bad belts 2. Contact power supply company 3. Reverse direction of motor 4. Slow down fan by opening variable pitch pulley on motor shaft 5. Replace motor with correct open, NEMA service factors (1.15 or higher) with 40 degrees ambient 6. Remove blockage and seal cooling tube in place 7. Check airflow under hood and adjust kitchen equipment output 8. Check motor ratings with catalog speed and air capacity chart

Note: Care should be taken to follow all local electrical, safety and building codes. Provisions of the National Electric Code (NEC), as well as the Occupational Safety and Health Act (OSHA) should be followed.

All motors are checked prior to shipment. If motor defects should develop, prompt service can be obtained from the nearest authorized service station of the motor manufacturer while under warranty. Exchange, repair or replacement will be provided on a no charge basis if the motor is defective within the warranty period. The PennBarry representative in your area will provide a name and address of an authorized service station if requested. **WARNING:** Motor guarantee is void unless overload protection is provided in motor wiring circuit.

Notes:

Notes:

Limited Warranty

What Products Are Covered

PennBarry Fans and Ventilators (each, a "PennBarry Product")

One Year Limited Warranty For PennBarry Products

PennBarry warrants to the original commercial purchaser that the PennBarry Products will be free from defects in material and workmanship for a period of one (1) year from the date of shipment.

Exclusive Remedy

PennBarry will, at its option, repair or replace (without removal or installation) the affected components of any defective PennBarry Product; repair or replace (without removal or installation) the entire defective PennBarry Product; or refund the invoice price of the PennBarry Product. In all cases, a reasonable time period must be allowed for warranty repairs to be completed.

What You Must Do

In order to make a claim under these warranties:

1. You must be the original commercial purchaser of the PennBarry Product.
2. You must promptly notify us, within the warranty period, of any defect and provide us with any substantiation that we may reasonably request.
3. The PennBarry Product must have been installed and maintained in accordance with good industry practice and any specific PennBarry recommendations.

Exclusions

These warranties do not cover defects caused by:

1. Improper design or operation of the system into which the PennBarry Product is incorporated.
2. Improper installation.
3. Accident, abuse or misuse.
4. Unreasonable use (including any use for non-commercial purposes, failure to provide reasonable and necessary maintenance as specified by PennBarry, misapplication and operation in excess of stated performance characteristics).
5. Components not manufactured by PennBarry.

Limitations

1. In all cases, PennBarry reserves the right to fully satisfy its obligations under the Limited Warranties by refunding the invoice price of the defective PennBarry Product (or, if the PennBarry Product has been discontinued, of the most nearly comparable current product).
2. PennBarry reserves the right to furnish a substitute or replacement component or product in the event a PennBarry Product or any component of the product is discontinued or otherwise unavailable.
3. PennBarry's only obligation with respect to components not manufactured by PennBarry shall be to pass through the warranty made by the manufacturer of the defective component.

General

The foregoing warranties are exclusive and in lieu of all other warranties except that of title, whether written, oral or implied, in fact or in law (including any warranty of merchantability or fitness for a particular purpose).

PennBarry hereby disclaims any liability for special, punitive, indirect, incidental or consequential damages, including without limitation lost profits or revenues, loss of use of equipment, cost of capital, cost of substitute products, facilities or services, downtime, shutdown or slowdown costs.

The remedies of the original commercial purchaser set forth herein are exclusive and the liability of PennBarry with respect to the PennBarry Products, whether in contract, tort, warranty, strict liability or other legal theory shall not exceed the invoice price charged by PennBarry to its customer for the affected PennBarry Product at the time the claim is made.

Inquiries regarding these warranties should be sent to: PennBarry, 1401 North Plano Road, Richardson, TX 75081.