

®  
**Dayton**



## **Insulated Ventilators**

**Models 60RG34, 60RG35, 60RG36,  
60RG39, 60RG40, 60RG41, 60RG42,  
60RG43, 5AE75, 60KU32,  
5AE77, 60RG45, 60RG46, 5AE80,  
60KU34, 6WZN1, 6WZN2, 60KU31,  
60KU33, 60KU42, 60KU43, 60KU44**

®  
**Dayton**

**PLEASE READ AND SAVE  
THESE INSTRUCTIONS.**

**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.**

**PLEASE REFER TO BACK COVER  
FOR INFORMATION REGARDING  
DAYTON'S WARRANTY AND OTHER  
IMPORTANT INFORMATION.**

**Model #:** \_\_\_\_\_

**Serial #:** \_\_\_\_\_

**Purch. Date:** \_\_\_\_\_

*Form 5S6856 / Printed in USA  
04632 Version 5 3/2022*

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## BEFORE YOU BEGIN

**⚠ WARNING** *Installation, troubleshooting and parts replacement are to be performed only by qualified personnel in accordance with all applicable codes and standards, including fire-rated construction.*

### **Electrical Requirements:**



**⚠ WARNING** *Install all wiring, protection and grounding in accordance with the U.S. National Electrical Code (NEC) and all local requirements. Follow all local electrical and safety codes, as well as the U.S. National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).*

### **Tools Needed:**



- Lock-Out Tag-Out
- Phillips Screwdriver
- Drill
- Sheet Metal Screws

### **Recommended Accessories:**

- Speed Control (48C172, 48C173, 43Y140, 35YV92-35YV94)
- Non-Lighted (3DPF7-3DPF8) Ceiling Radiation Damper
- 6" Round Duct Connector (6WZP2)
- 8" Round Duct Connector (6WZP3)

## UNPACKING

### **Contents:**

- Dayton® Insulated Ventilator (1)
- Mounting Brackets with Hardware (2)
- Operating Instructions and Parts Manual (1)



### **Inspect:**

- After unpacking unit, inspect carefully for any damage that may have occurred during transit. Check for loose, missing, or damaged parts. Shipping damage claim must be filed with carrier.
- Check all bolts, screws, set-screws, etc. for looseness that may have occurred during transit. Retighten as required. Rotate wheel by hand to be sure it turns freely.



- See General Safety Instructions on page 2, and Cautions and Warnings as shown.

## GENERAL SAFETY INSTRUCTIONS

**⚠ DANGER** *Do not depend on any switch as the sole means of disconnecting power when installing or servicing the fan. Always disconnect, lock and tag power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury. Motor will restart without warning after thermal protector trips. Do not touch operating motor, it may be hot enough to cause injury.*

**⚠ DANGER** *Do not place any body parts or objects in fan, motor openings or drives while motor is connected to power source.*

**⚠ CAUTION** *For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.*

**⚠ WARNING** *To reduce the risk of fire, electric shock, or injury to persons, observe the following:*

1. Read and follow all instructions and cautionary markings. Make sure electrical power source conforms to requirements of equipment and local codes.
2. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) and the local code authorities.
5. These fans are not recommended for cooking exhaust applications. They are designed primarily for low temperature, clean air applications only. Figure 3, page 6 shows the minimum distance these fans should be placed in relation to cooking equipment.
6. When cutting or drilling into wall or ceiling, do not damage electrical wiring or other hidden utilities.
7. Ducted fans must always be vented to the outdoors.
8. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Circuit Interrupter) - protected branch circuit.
9. Suitable for use with solid-state speed controls.
10. Never place a switch where it can be reached from a tub or shower.
11. Fan/Light combination not to be installed in a ceiling thermally insulated to a value greater than R-40.
12. Before servicing or cleaning unit, switch power off at service panel

and lock service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

## SPECIFICATIONS

Max. Inlet Temp.	104°F
Mounting Location	Ceiling, Horizontal or Vertical Discharge
Housing Material	Galvanized Steel
Agency Compliance	UL/cUL 507, AMCA Sound and Air, Energy Star®

**NOTE:** Models 60RG34, 60RG35, 60RG36, 60RG39, 60RG40, 60RG41, 60RG42, 60RG43 and 60KU42 are acceptable for use over a bathtub or shower when installed in a GFCI protected branch circuit.



Dayton Electric Mfg. Co. certifies that the ventilators shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



Energy Star® Certified models include:

60RG34, 60RG39, 60RG35, 60RG41, 60RG40 and 60RG36



Singlewide	60RG35		60RG36		5AE75 6WZN1	60KU31 60KU33	5AE77 6WZN2
	60RG34	60RG39 60RG40	60RG41 60RG42 60RG43	60KU42			
Recommended Ceiling Opening (inches)	13-1/2 x 10-7/8	13-1/2 x 10-7/8	14-1/4 x 12-1/8	14-1/4 x 12-1/8	18-1/4 x 14-5/8	18-1/4 x 14-5/8	18-1/4 x 14-5/8
Recommended Duct Sizes (inches)	6 Dia.	8 x 6	8 x 8	8X8	8 x 8	8 x 8	10 x 8
Recommended Speed Control	48C172	48C172	48C172	35YV94 43Y140	48C172	35YV94	48C172
Doublewide	60RG46		60RG45		60RG46 5AE80 60KU34		
	60KU32	60KU43	60KU44	60KU44	60KU34	60KU34	60KU34
Recommended Ceiling Opening (inches)	23-7/8 x 11-7/8	23-7/8 x 11-7/8	24 x 14-5/8	24 x 14-5/8	24 x 14-5/8	24 x 14-5/8	24 x 14-5/8
Recommended Duct Sizes (inches)	19-1/2 x 8	19-1/2 x 8	18-3/4 x 8	17-7/16 x 8	18-3/4 x 8	18-3/4 x 8	18-3/4 x 8
Recommended Speed Control	48C172	35YV94 43Y140	48C172	35YV94 43Y140	48C173	48C173	48C173

4 PERFORMANCE

Model 115V	Full Load		Model 115V – EC	Full Load Amps	Watts	RPM	Sones @ 5 Ft. @					CFM Air Delivery @ Static Pressure Shown					
	Watts	Amps					.100"SP	.250"SP	.000"	.100"	.125"	.250"	.375"	.500"	.625"	.750"	1.00"
60RG34	16.9	0.14	—	—	—	870	<0.3	0.4	114	101	98	80	—	—	—	—	—
60RG39	19.4	0.16	—	—	—	950	<0.3	0.5	130	119	115	98	—	—	—	—	—
60RG35	23	0.19	—	—	—	1010	0.4	0.6	144	130	127	109	—	—	—	—	—
60RG40	54.2	0.45	—	—	—	1400	2.5	2	229	214	210	186	156	—	—	—	—
60RG41	56.1	0.47	—	—	—	900	2	2.5	267	246	242	224	199	162	109	68	—
60RG36	67	0.56	—	—	—	1000	2.5	3	294	274	271	250	230	201	147	92	—
60RG42	80.7	0.72	—	—	—	1050	2.5	3	315	293	287	257	231	207	175	124	—
60RG43	135	1.34	—	—	—	1350	4.5	4.5	410	395	391	368	345	325	307	279	—
6WZN1	121	1.74	—	—	—	1000	3.5	3	443	413	405	351	306	—	—	—	—
—	—	—	60KU31	0.75	49.1	850	4.5	3.5	399	354	341	255	—	—	—	—	—
—	—	—	—	2.4	155	2	7.5	604	583	576	540	495	443	377	—	—	—
5AE75	224	3.3	—	—	—	1070	5	4.5	557	512	501	439	392	325	—	—	—
—	—	—	60KU33	0.96	60.4	925	4.5	4	441	410	397	327	—	—	—	—	—
—	—	—	—	3.39	230	1450	9.5	9	709	685	677	656	621	580	534	483	—
6WZN2	285	4.4	—	—	—	1080	6	6	752	714	701	653	588	486	320	—	—
5AE77	348	3.3	—	—	—	1600	8.5	8	812	782	775	741	704	665	625	581	—
60KU32	351	2.98	—	—	—	1015	7	7	790	762	753	728	701	659	621	547	382
60RG45	301	2.78	—	—	—	1055	5.5	5	971	925	915	866	814	754	694	621	327
60RG46	438	4.05	—	—	—	1250	7	7	1144	1098	1084	1032	987	935	875	809	561
5AE80	786	7.4	—	—	—	1450	10	10	1455	1415	1404	1353	1307	1262	1218	1174	—
60KU34	695	6.07	—	—	—	1695	11.5	11	1559	1518	1503	1456	1402	1346	1300	1239	1095
—	—	—	60KU42	0.7	47	935	2	2.5	276	251	248	233	215	196	173	146	93
—	—	—	—	1.46	100	1340	5	5	410	395	390	370	361	349	338	325	294
—	—	—	60KU43	1.82	111	1275	3.5	3.5	568	527	517	466	419	372	329	275	170
—	—	—	—	3.52	218	1425	7	7	801	774	766	729	699	666	634	597	530
—	—	—	60KU44	1.94	120	1050	4	4	838	789	779	735	685	632	579	—	—
—	—	—	—	3.75	240	1225	7.5	7	1162	1106	1092	1023	944	831	668	—	—

Performance certified for installation type B: Free inlet, Ducted outlet. Performance ratings include the effects of an inlet grille and backdraft damper. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a spherical free field calculated per AMCA Standard 301. Values shown are for installation type B: Free inlet spherical some levels.



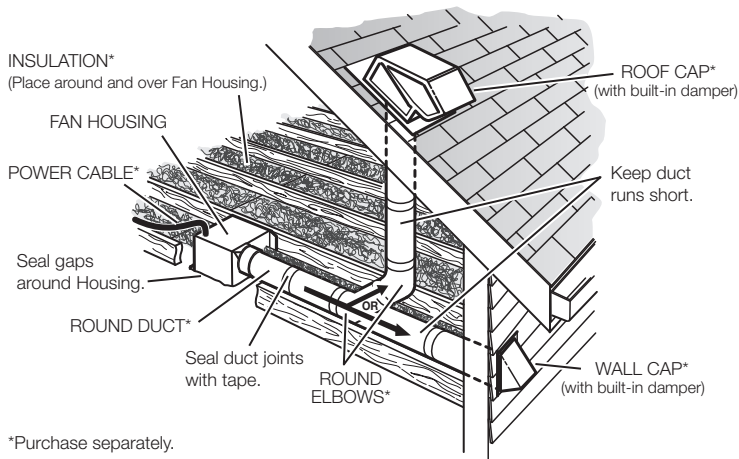
## TYPICAL INSTALLATION

The ducting from this fan to the outside of the building has a strong effect on the air flow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated airflow.

Rigid metal duct is recommended for optimal fan performance.

Ensure duct joints and exterior penetrations are sealed with caulk or other similar material to create an air-tight path and to minimize building heat loss and gain and reduce the potential for condensation.

Place/wrap insulation around duct and/or fan to in order to minimize possible condensation buildup within the duct, as well as minimize building heat loss and gain.



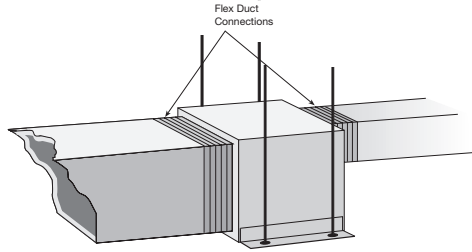
\*Purchase separately.

Energy Star® Certified Fan Model/Size	Recommended Duct Dimensions
60RG34	6 inch round
60RG35, 60RG39, 60RG40	8 x 6 inch rectangular
60RG36, 60RG41	8 x 8 inch rectangular

## OTHER INSTALLATION CONSIDERATIONS

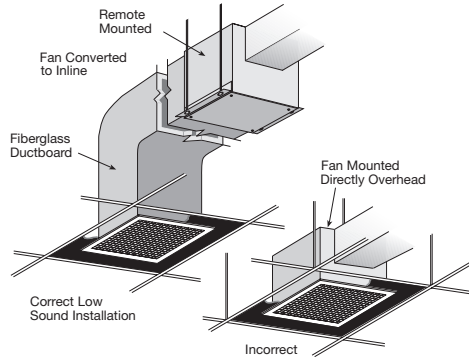
### Ductwork and Noise

Fiberglass ductboard is a better choice than metal ductwork for reducing fan noise and is highly recommended for low sound applications. Where metal duct is used, sound transmission can be reduced with flexible duct connections between the fan and the duct.



### Sound and Location

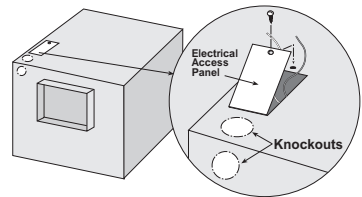
The location of these fans must be taken into consideration before installation. In critical sound installations, insulated ductwork, flexible duct connections or placing the fan in a remote section of ductwork are solutions to meeting the required fan sound levels.



## PREPARE THE FAN

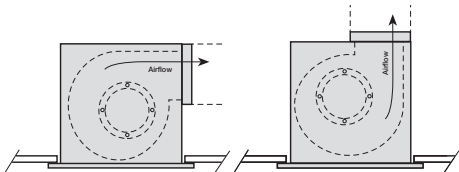
### Remove Wiring Knockout

Remove either top or side wiring knockout, depending on wiring direction, by bending it back and forth to break tabs.



### Ductwork

Check ductwork to see if the fan's discharge requires rotation from horizontal to vertical discharge.



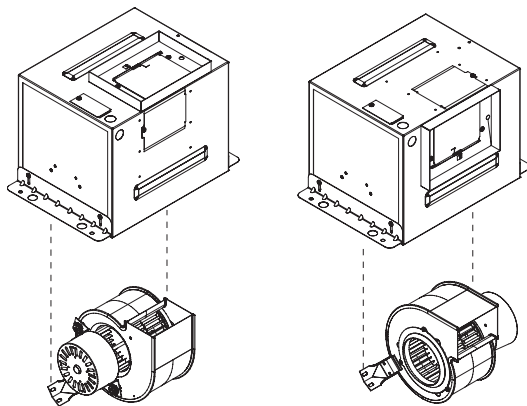
## Fan Rotation

To rotate from horizontal to vertical discharge

A Models Only

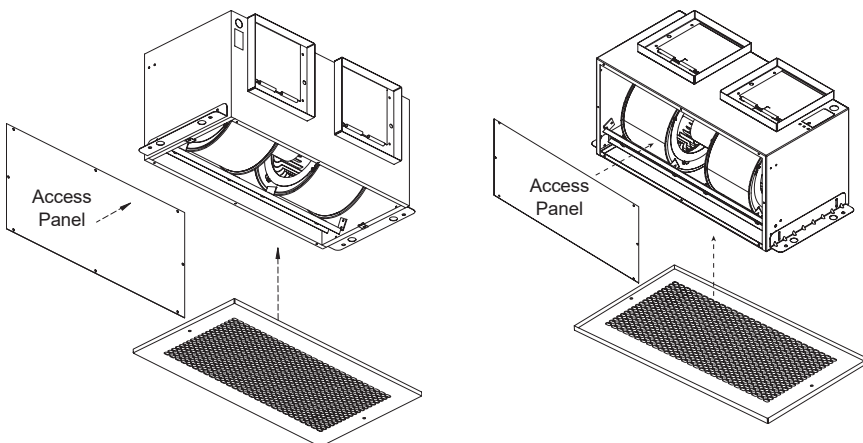
**Models: 60RG34, 60RG35, 60RG36, 60RG39, 60RG40, 60RG41, 60RG42, 60RG43, 5AE75, 5AE77, 6WZN1, 6WZN2, 60KU31, 60KU33, 60KU42**

Remove the two screws holding the power assembly in and pull power assembly out. Rotate power assembly 180 degrees and put back into fan. Use the same screws to reattach power assembly to fan housing. Flip fan over and remove the four screws holding the discharge duct and damper assembly. Exchange the assembly with plate mounted on top of fan, as shown in these illustrations.



**Models: 60RG45, 60RG46, 5AE80, 60KU32, 60KU34, 60KU43, 60KU44**

Remove the eight screws holding the access panel or collar as shown in picture. Rotate the fan housing so the discharge is facing up. Replace access panel or collar and screws.

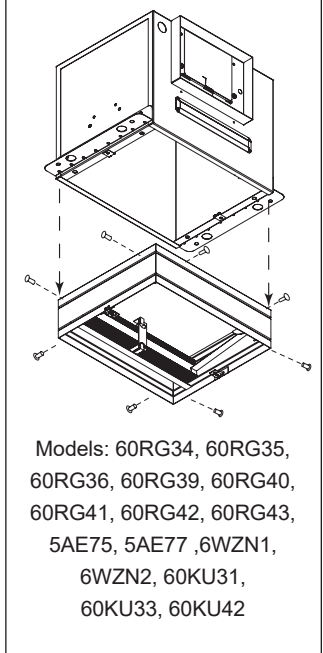


**Ceiling Radiation Damper (CRD)**

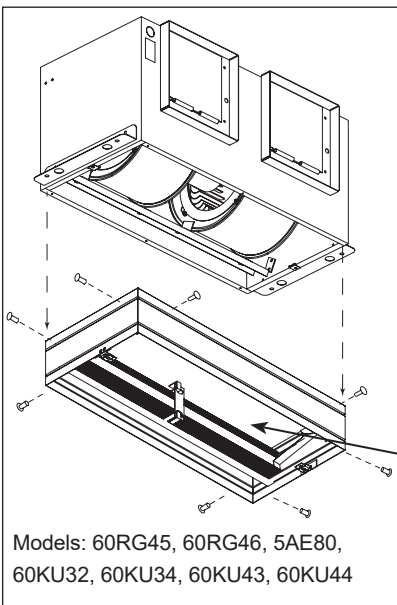
If fan is to be used in a fire resistive membrane ceiling, a ceiling radiation damper must be used.

If the ceiling radiation damper is already mounted to the fan from the factory, proceed to Install the Fan.

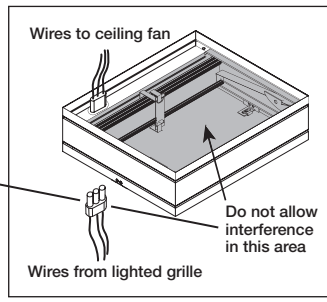
To mount the ceiling radiation damper to fan, make sure grille attachment tabs are facing down. Then place the inlet part of the fan into the ceiling radiation damper collar, and use self-tapping sheet metal screws (by others) to screw through the damper collar and into the fan housing. If the fan/light combination is being used, make sure ceiling radiation damper has an electrical plug in it. The electrical plug must be inserted into the fan. Make sure the electrical wire will not interfere with damper operation as shown in figure below.



Models: 60RG34, 60RG35,  
60RG36, 60RG39, 60RG40,  
60RG41, 60RG42, 60RG43,  
5AE75, 5AE77, 6WZN1,  
6WZN2, 60KU31,  
60KU33, 60KU42

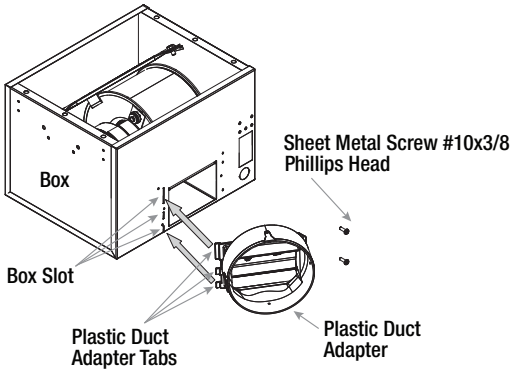


Models: 60RG45, 60RG46, 5AE80,  
60KU32, 60KU34, 60KU43, 60KU44

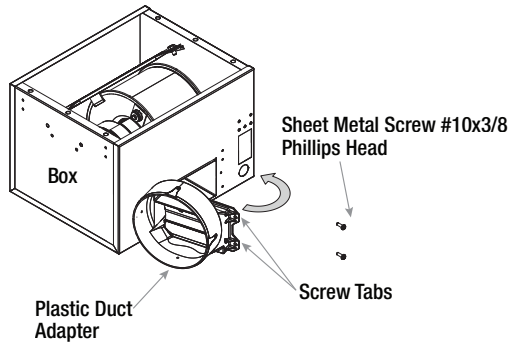


**Discharge Installation 60RG34 Models**

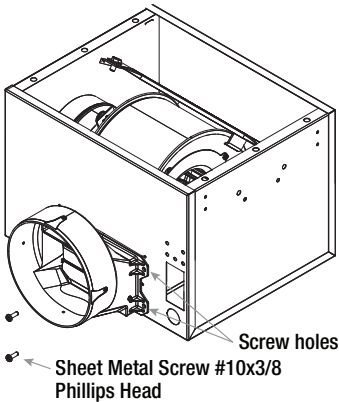
**1** Insert plastic duct tab into box slots.



**2** Rotate plastic duct adapter until the screw tabs meet the box.



**3** Install screws provided to secure discharge.



## INSTALLATION INSTRUCTIONS

1. For best performance, choose a location with the shortest possible duct run and minimum number of elbows. Do not mount near cooking equipment, as shown in Fig. 1.
2. Attach adjustable mounting brackets to fan, but leave the screws loose until proper height is determined, shown in Fig. 2. Cut hole to dimensions shown in table below.

### For Frame Construction:

Position unit between joists. Position brackets such that bottom edge of housing will be flush with finished ceiling, and tighten the adjustable mounting brackets, shown in Fig. 3.

3. Installation of ductwork is critical to the performance of the fan, shown in Fig.4. Straight ductwork (1) or ductwork that turns in the same direction as the wheel (2) is recommended. Ductwork turning opposite the wheel direction (3) will cause turbulence and back pressure resulting in poor performance.
4. Slide ductwork over the fan's discharge collar and securely attach it with sheet metal screws.

**Make sure the screws do not interfere with damper operation. Check damper to make sure it opens freely.**

Note: Model 60RG34 is standard with a round duct. Should any model require a round duct, Round Duct Connector (6WZP3 or 6WZP2) may be ordered from manufacturer for field installation.

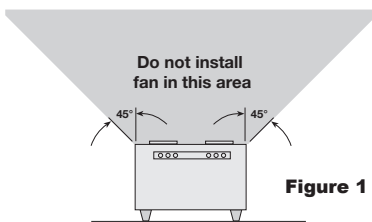


Figure 1

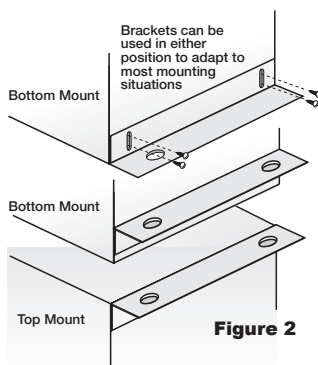


Figure 2

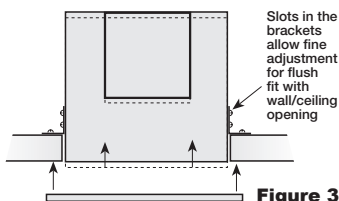
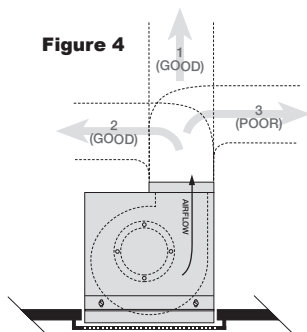


Figure 3

### Ceiling Openings

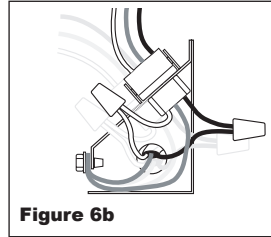
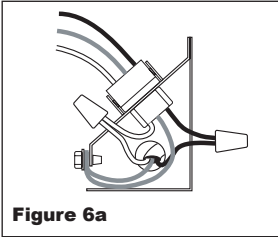
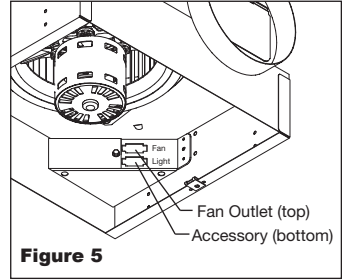
Ceiling Exhaust Sizes	Fan/CRD
60RG34, 60RG35, 60RG39, 60RG40	11 $\frac{1}{8}$ x 13 $\frac{7}{16}$
60RG36, 60RG41, 60RG42, 60RG43, 60KU42	12 $\frac{1}{4}$ x 14 $\frac{3}{8}$
60KU32, 60KU43	24 $\frac{1}{8}$ x 12 $\frac{1}{4}$
5AE75, 5AE77, 6WZN1, 6WZN2, 60KU31, 60KU33	14 $\frac{7}{8}$ x 18 $\frac{1}{16}$
60RG45, 60RG46, 5AE80, 60KU34, 60KU44	14 $\frac{7}{8}$ x 24 $\frac{1}{8}$

Figure 4



## WIRE THE FAN

1. Remove wiring cover. If fan/accessory combination is being used, make sure the fan plug is connected to the fan receptacle and the accessory plug is connected to the accessory receptacle, shown in Fig. 5. Using proper wire connectors, wire the fan as shown in Fig. 6a. For wiring of light proceed to Fig. 6b.
2. Push all wiring into the unit's cover and replace wiring cover.

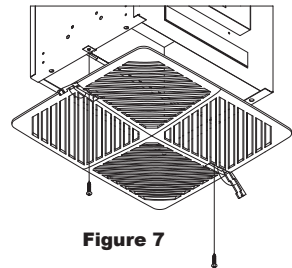


**115 & 277 Volt**  
**Black wire is "Hot"**  
**White wire is "Neutral"**  
**Green wire is "Ground"**

**220 - 240 Volt**  
**Black wire is "Hot"**  
**White wire is "Hot"**  
**Green wire is "Neutral/Ground"**

## ATTACH THE GRILLE

1. Attach grille with two screws provided. Make sure not to over tighten; over tightening will damage grille.
2. Slide attachment screw covers over the attachment screws, shown in Figure 7.



## TROUBLESHOOTING GUIDE

Symptom	Possible Cause(s)	Corrective Action
Ventilator inoperative	<ol style="list-style-type: none"> <li>1. Blown fuse or breaker</li> <li>2. Defective motor</li> <li>3. Incorrectly wired</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace or repair</li> <li>2. Replace or repair</li> <li>3. Shut power OFF and check wiring for proper connections</li> </ol>
Excessive noise or vibration	<ol style="list-style-type: none"> <li>1. Accumulation of material on wheel</li> <li>2. Fan wheel out of balance</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean</li> <li>2. Replace wheel</li> </ol>
Insufficient airflow	<ol style="list-style-type: none"> <li>1. Blocked duct or clogged filters</li> <li>2. Collapsed or perforated duct</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace</li> <li>2. Repair or replace duct section</li> </ol>
Motor overloads or overheats	<ol style="list-style-type: none"> <li>1. Shorted motor winding</li> <li>2. Incorrect voltage input</li> <li>3. Buildup of dust, dirt or other contaminants on motor</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace motor</li> <li>2. Correct to 115V</li> <li>3. Clean motor</li> </ol>

## MAINTENANCE

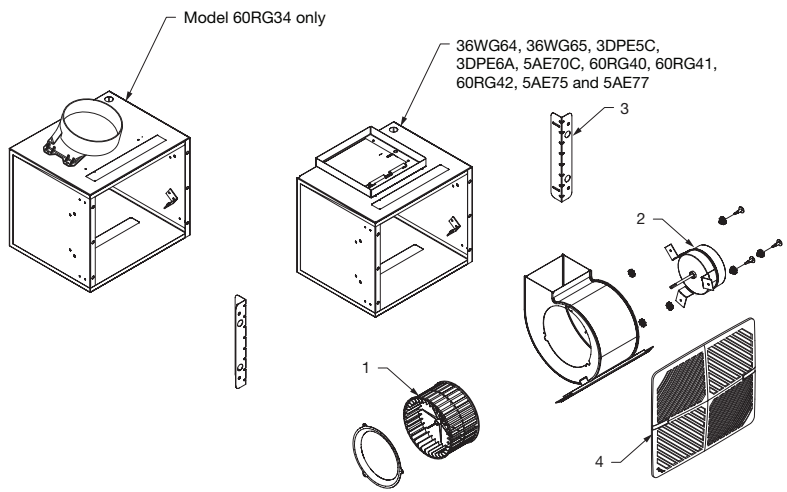
**WARNING**

*Disconnect the power source before working on the unit. Maintenance should be done yearly or as conditions warrant.*

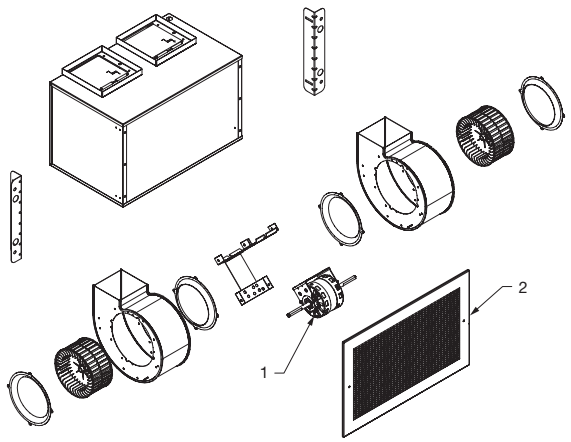
1. The ventilator motor, wheel, housing and grille should be checked for dust and dirt accumulations. Dirt buildup can lead to loss of performance and motor overheating.
  - a. Remove grille. Using a vacuum cleaner with appropriate attachments, vacuum dust from grille. Wash grille with warm, soapy solution of water. Allow grille to dry thoroughly before re-installing.
  - b. To clean wheel and housing, unplug motor from the integral terminal box. Vacuum the wheel. If necessary, the wheel can be washed. Wipe the wheel dry with an absorbent cloth. Wipe out the interior of the housing. Plug blower motor into terminal box.
  - c. Lubricate only those motors which have an oil hole provided. A few drops of all purpose oil (SAE 20) will be sufficient.



## REPAIR PARTS ILLUSTRATION FOR SINGLEWIDE INSULATED VENTILATORS



## REPAIR PARTS ILLUSTRATION FOR DOUBLEWIDE INSULATED VENTILATORS



**For Repair Parts, call 1-800-Grainger**  
 24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

## REPAIR PARTS LIST FOR SINGLEWIDE INSULATED VENTILATORS

		Part Number for Models:					
Ref. No.	Description	60RG34	60RG35	60RG36	60RG39	60RG40	Qty
1	Wheel	21EC04	21EC04	21EC05	21EC04	21EC04	1
2	Motor	21DY26	21DY27	21DY28	21EC38	34G193	1
3	Mounting Bracket Kit	21EA91	21EA91	21EA92	21EA91	21EA91	1
4	Grille	793K37	793K37	793K37	793K37	793K37	1
		Part Number for Models:					
Ref. No.	Description	60RG41	60RG42	60RG43	5AE75	5AE77	Qty
1	Wheel	21EC05	21EC05	21EC05	21EC06	21EC06	1
2	Motor	21EC10	21EC40	21EC11	21EC41	21DV64	1
3	Mounting Bracket Kit	21EA92	21EA92	21EA92	21EA93	21EA93	1
4	Grille	793K37	793K37	793K37	21EA87	21EA87	1
		Part Number for Models:					
Ref. No.	Description	6WZN1	6WZN2	60KU31	60KU33	60KU42	Qty
1	Wheel	21DV70	21DV69	21EC06	21EC06	21EC05	1
2	Motor	21DV63	21DV62	60YG51	60YG52	60YG53	1
3	Mounting Bracket Kit	21EA93	21EA93	21EA93	21EA93	21EA92	1
4	Grille	21EA87	21EA87	21EA87	21EA87	793K37	1

## REPAIR PARTS LIST FOR DOUBLEWIDE INSULATED VENTILATORS

		Part Number for Models:					
Ref. No.	Description	60KU32	60RG45	60RG46	5AE80	60KU34	Qty
1	Motor	21EC12	21EC42	21EC43	21EC44	21EC45	1
2	Grille	21EA89	21EA88	21EA88	21EA88	21EA88	1
		Part Number for Models:					
Ref. No.	Description	60KU43	60KU44				Qty
1	Motor	60YG54	60YG55				1
2	Grille	21EA89	21EA88				1

† Includes (2) scrolls and motor bracket fully assembled, requires purchase of (2) wheels if needed.