

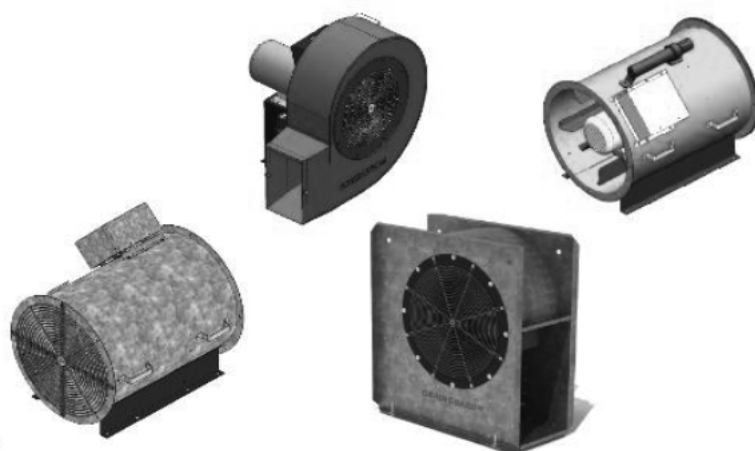


Fan Service Manual

Maintenance, Troubleshooting, Service, and Parts Manual

This manual applies to:

GGF-803XX, GGF-840XX, GGI-803XX, GGI-815XX, GGL-805XX, GGL-850XX, GGX-803XX, GGX-815XX



INSTALLATION AND WIRING MUST BE IN
ACCORDANCE WITH CEC, NEC, AND LOCAL
ELECTRICAL CODES



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: CNA-2624 R1

Revised: February 2024

Original Instructions

This product has been designed and manufactured to meet general engineering standards. Other local regulations may apply and must be followed by the operator. All personnel must be trained in the correct operational and safety procedures for this product. Use the sign-off sheet below to record initial and periodic reviews of this manual with all personnel.

[illegible]

New in this Manual

The following changes have been made in this revision of the manual:

Description	Section
Corrected missing reference	Section 3.6 – Testing on page 23
Corrected missing reference	Section 5.2 – Maintenance Schedule on page 27
Updated schematics	Section 7.1.1 – Current Fan Models (No Motor Thermostat) on page 31
Updated parts list	Section 7.2.3 – Low Speed Centrifugal Fan (GGL) Replacement Parts on page 48

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1. Introduction

1.1. General Description

This fan service manual provides support for the installation, operation, troubleshooting, and maintenance of the following aeration fans:

- GGF (High Speed Centrifugal) Fans
- GGI (Inline Centrifugal) Fans
- GGL (Low Speed Centrifugal) Fans
- GGX (Vane Axial) Fans

1.2. Serial Number Location

The serial number location for aeration fans are shown in the figure below. Have the serial number ready when ordering parts or requesting service or other information. Record information in the table below for easy reference.

Model Number	
Serial Number	
Date Received	

Figure 1. GGF (3–15 HP)

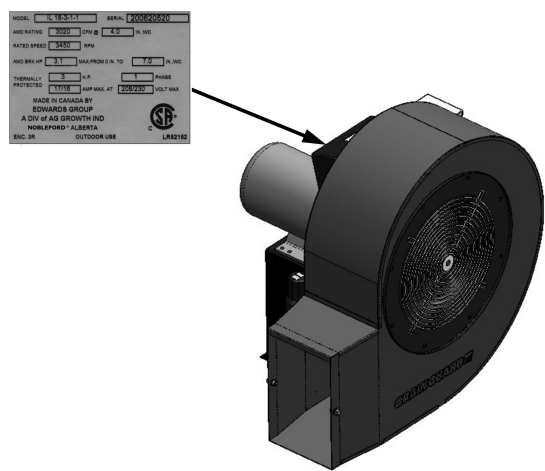


Figure 2. GGF (20–40 HP)

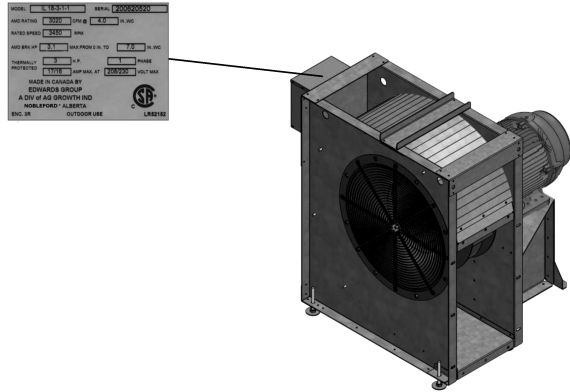


Figure 3. GGI

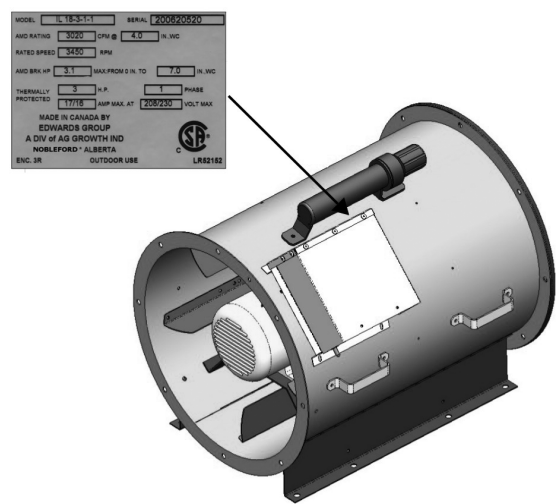


Figure 4. GGL

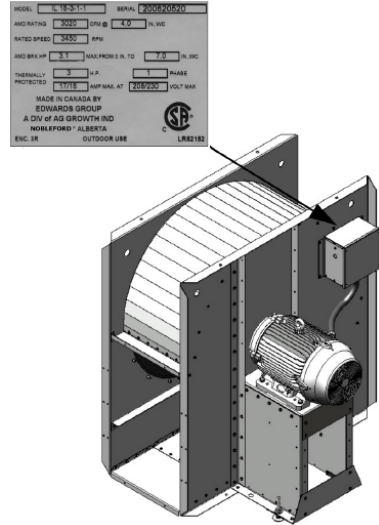
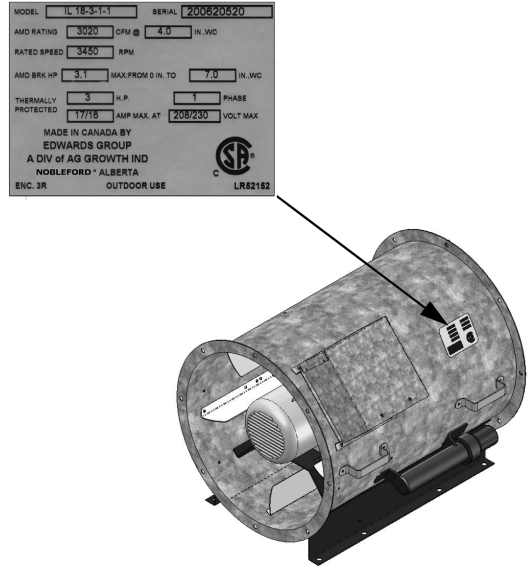


Figure 5. GGX



1.3. Intended Use

The Fan Service manual facilitates the use of aeration fans as listed below, and described throughout this manual. Use in any other way is considered contrary to the intended use and is not covered by the warranty.

- Aeration and natural air drying of grain products.
- Connection to a properly sized upstream or downstream heater (optional).

2. Safety

2.1. Safety Alert Symbol and Signal Words



This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

Signal Words: Note the use of the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.



Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.



Indicates a hazardous situation that, if not avoided, could result in serious injury or death.



Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.



Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

2.2. General Safety Information

Read and understand all safety instructions, safety decals, and manuals and follow them when operating or maintaining the equipment.

- Owners must give instructions and review the information initially and annually with all personnel before allowing them in the work area. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- Use for intended purposes only.
- Modification of the aeration fan in any way without written permission from the manufacturer is not covered by the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.
- Follow applicable local codes and regulations.



2.3. Fan Safety

WARNING

- Keep away from fan impeller/blade; high suction can pull a person toward the inlet. Contact with an unguarded impeller/blade will cause severe injury.
- Keep the inlet screen in place at all times.
- Remove foreign material from the fan inlet before operating.
- Do not operate the fan if there is excessive vibration or noise.
- When the power is locked out, fans can still be dangerous because of potential “windmilling.” Always block the impeller/blade before working on any moving parts.



2.4. Guards Safety

WARNING

- Keep guards in place. Do not operate with guard removed.
- Do not walk on, step on, or damage guards.
- Lock out power before removing a guard.
- Ensure all guards are replaced after performing maintenance.

2.5. Drive and Lockout Safety

Lockout/Tagout equipment before set-up, service, maintenance, and repair. Make sure to follow lockout and tagout procedure in the Electric Motor Safety Section to prevent inadvertent start-up and hazardous energy release.

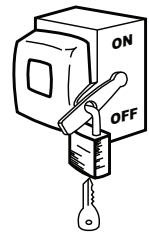
2.6. Electric Motor Safety

WARNING Power Source

- Electric motors and controls shall be installed and serviced by a qualified electrician and must meet all local codes and standards.
- Do not modify the magnetic starter. This component provides overload and under-voltage protection.
- Motor starting controls must be located so that the operator has full view of the entire operation.
- Locate main power disconnect switch within reach from ground level to permit ready access in case of an emergency.
- Motor must be grounded.
- Guards must be in place and secure at all times.
- Ensure electrical wiring and cords remain in good condition; replace if necessary.

Lockout

- The main power disconnect switch should be in the locked position during shutdown or whenever maintenance is performed.
- In the event of unexpected fan shutdown, the fan can be reset using the main power switch located on the fan or using a reset button when equipped.

SERVICE DISCONNECT

2.7. Personal Protective Equipment

The following Personal Protective Equipment (PPE) should be worn when assembling, operating or maintaining the equipment.

Hard Hat

- Wear a hard hat to help protect your head.



Safety Glasses

- Wear safety glasses at all times to protect eyes from debris.



Hearing Protection

- Wear ear protection to prevent hearing damage.



Work Gloves

- Wear work gloves to protect your hands from sharp and rough edges.



Steel-Toe Boots

- Wear steel-toe boots to protect feet from falling debris.



Coveralls

- Wear coveralls to protect skin.



2.8. Safety Equipment

The following safety equipment should be kept on site.

Fire Extinguisher

- Provide a fire extinguisher for use in case of an accident. Store in a highly visible and accessible place.



First-Aid Kit

- Have a properly-stocked first-aid kit available for use should the need arise, and know how to use it.



2.9. Safety Decals

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available **free of charge** from your distributor, dealer, or factory as applicable.

2.9.1 Decal Installation/Replacement

1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the decal backing paper.

Safety Decals Location and Details

Replicas of the safety decals that are attached to the fans are shown below. Safe operation and use of the fans requires familiarization with the various safety decals and the functions that the decals apply to. Safety precautions must be taken to avoid injury, death, or damage.

Figure 6. GGF (3-15 HP) Decal Locations

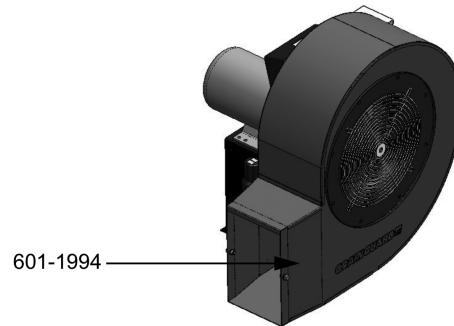
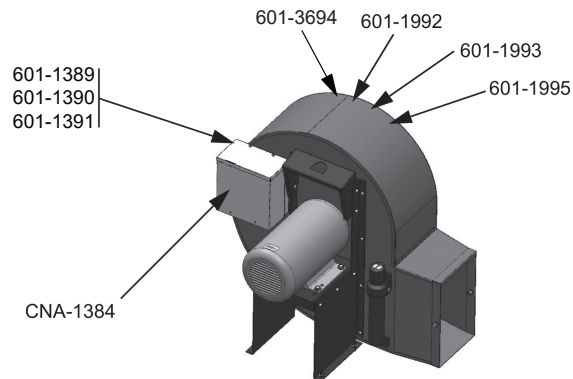


Figure 7. GGF (20-40 HP)

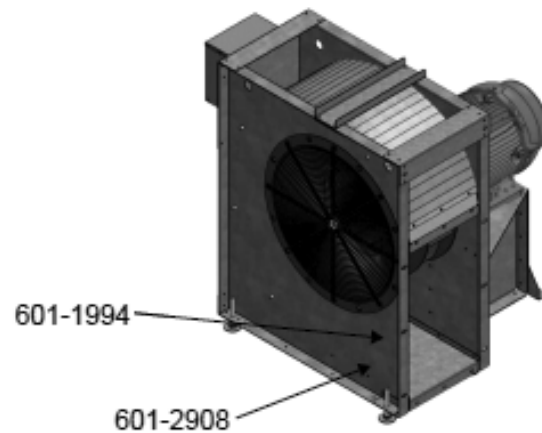
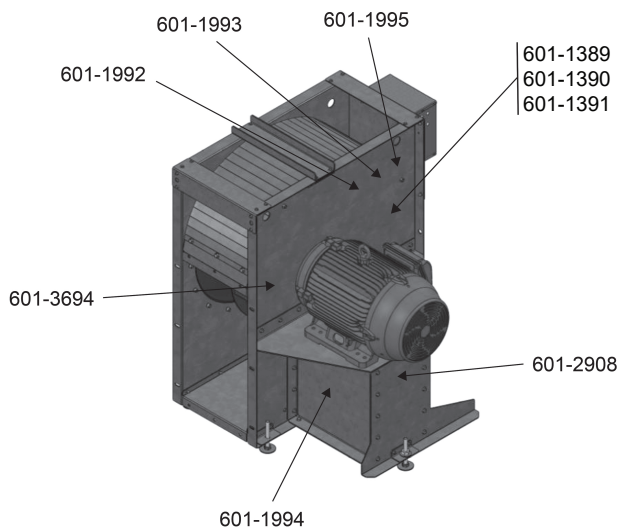


Figure 8. GGI Decal Locations

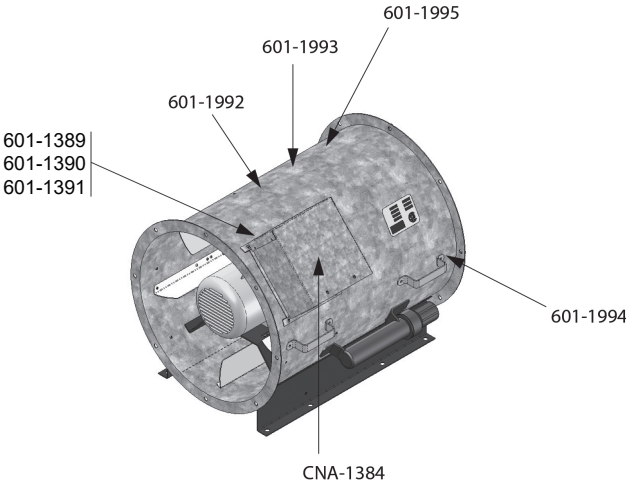


Figure 9. GGL Decal Locations

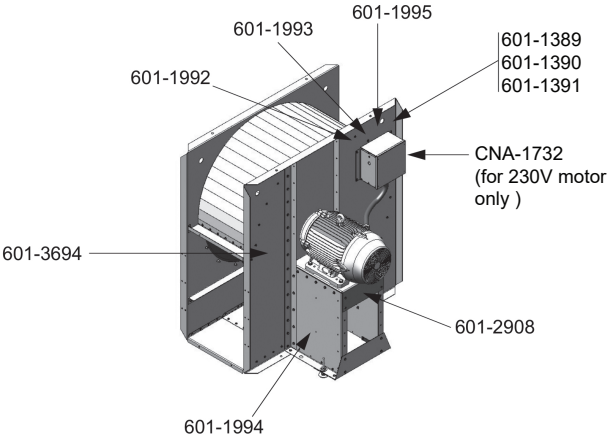


Figure 10. GGX Decal Locations

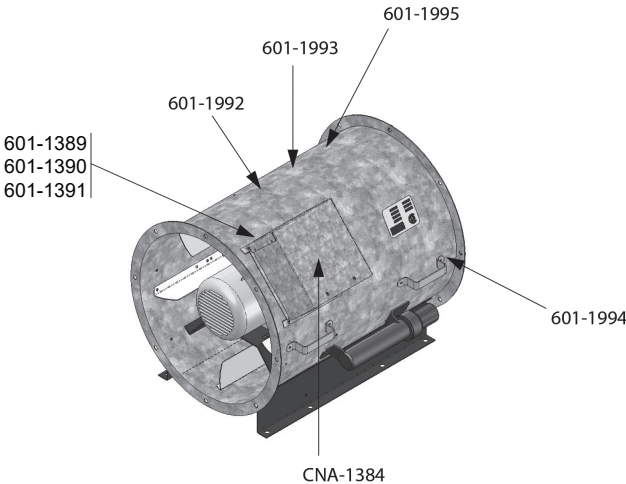


Table 1. Safety Decals

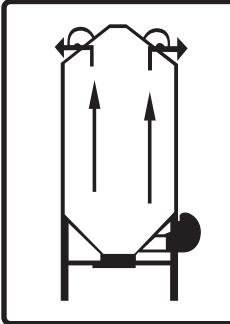
Part Number	Description
601-1992	 NOTICE To prevent possible roof damage, ensure that all roof vents are open and unobstructed. Do not operate aeration fan if it is possible that the roof vents could ice up.
601-1993	 WARNING   AERATION FAN SAFETY INSTRUCTIONS To prevent serious injury or death: • Read operator's manual and all product safety decals before installing, operating or servicing fan. • Do not operate with any safety shield or guard removed or modified. Keep in good working order. • Do not operate fan if there is excessive vibration or noise. • Before operating fan, clear work area of all children and untrained personnel. • Keep hands, legs, feet, hair, jewelry and clothing away from all moving parts. • Shut off and lock out or disconnect power before inspecting or servicing fan. If the operator manual, guards, or safety decals are missing or damaged, contact AGI Nobleford at 1-800-565-2840 or www.aggrowth.com for replacements.

Table 1 Safety Decals (continued)

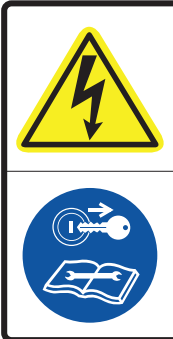
Part Number	Description
601-1994	 WARNING CUTTING HAZARD To prevent serious injury, keep away from blade when fan is operating. Shut off and lockout or disconnect power before inspecting or servicing. Keep guards in place while operating.
601-1995	 WARNING ELECTROCUTION HAZARD To prevent serious injury or death: • Only qualified personnel should service electrical components. • Disconnect and lockout power before inspecting or servicing unit. • Keep electrical components in good repair.
601-2908	NOTICE To prevent vibration damage, adjust the leveling bolts on each support leg so that fan is level and all legs are equally supported by the foundation.
601-3694	NOTICE To prevent equipment damage: • Periodically clean fan blades of insect debris. • Do not overlube. One shot per year when motor is stopped. This motor MUST be properly wired by a Licensed Electrician or the Warranty is void.

Table 1 Safety Decals (continued)

Part Number	Description
CNA-1384	
601-1389	
601-1390	
601-1391	
CNA-1732	

3. Installation

3.1. Installation Safety

** WARNING**

- Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.
- Do not make any modification to the wire and flex cable that has been provided by the manufacturer.
- Do not suspend additional equipment/components from this kit that are not specified in the manual.

3.2. Handling the Fan

Lift the fan by the base or lifting locations only. Never lift the fan by the impeller, motor, motor bracket, housing inlet, outlet, or any fan part not designed for lifting. A spreader should always be used to avoid damage.

3.3. Mounting the Fan on a Flat Bottom Bin

The aeration fan must be properly supported for smooth operation. AGI recommends the fan is always supported from below and not hanging from the fan housing, frame or motor.

3.3.1 Slab Mounted Fans

A concrete foundation is preferable for installing floor-mounted fans.

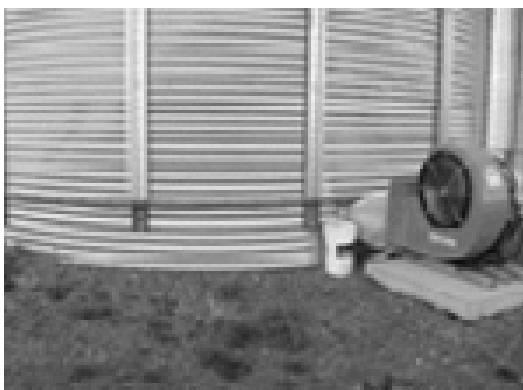
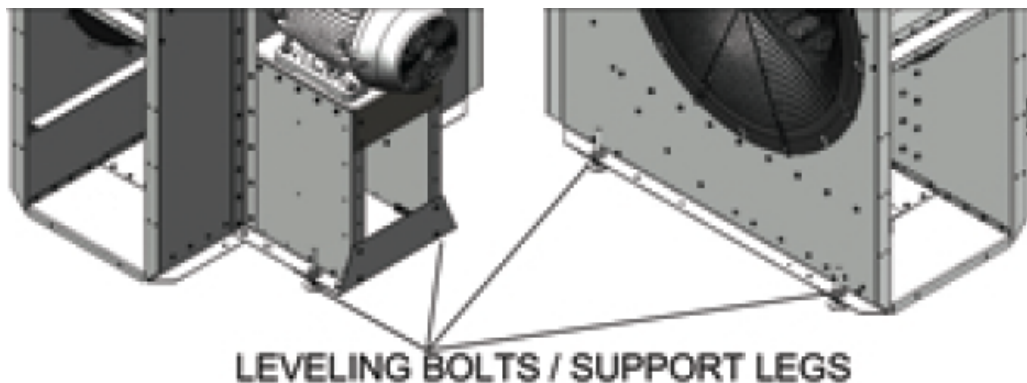
When installing the fan on a concrete pad the following general requirements apply:

- The concrete surface must be flat and level.
- The weight of the slab should be two to four times the weight of the rotating assembly, including the motor.

NOTICE

Damage will occur to the fan if the base is not constructed to sustain the loads.

- The overall dimensions of the concrete base should extend at least six inches beyond the base of the fan.
- Ensure moisture is not accumulating around the fan.
- Locate the fan as close to the bin as possible, leaving approximately 12" to 18" or more between the fan and bin to allow for routine servicing and inspection.
- Level the fan by adjusting the appropriate leveling bolt on each support leg so that they all are equally supported by the foundation. This will distribute the weight of the fan evenly.



NOTICE

To prevent vibration damage, adjust the leveling bolts on each support leg so that fan is level and all legs are equally supported by the foundation.

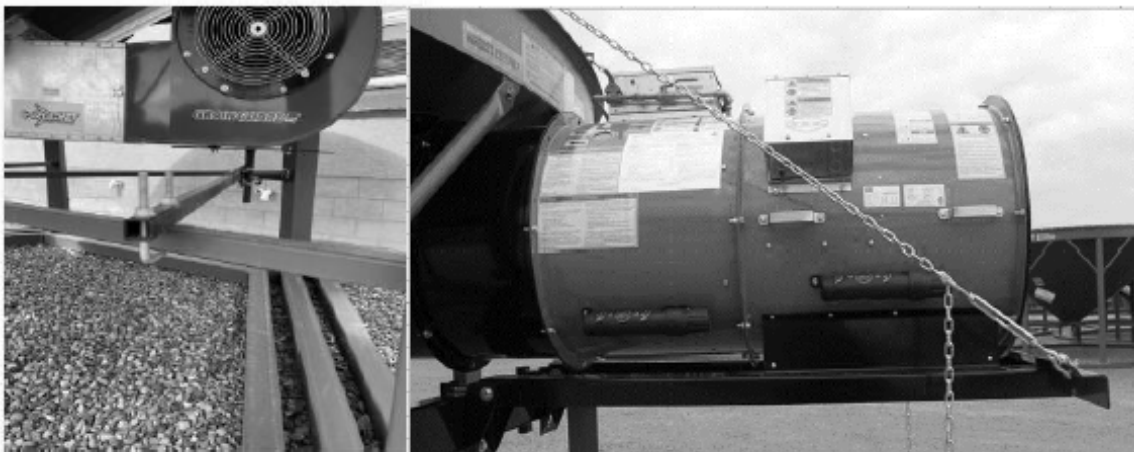
3.4. Mounting the Fan on a Hopper Bottom Bin

To install the fan on a hopper bottom bin:

- Mount the fan on a fan support that is designed by the manufacturer for this application.

Note

Damage will occur to the fan if not properly supported.



3.5. Electrical Connection

Important

Wiring must be completed by a qualified electrician in accordance with all applicable local codes and standards. Provisions of the local electrical code take precedence over the requirements stated in this manual.

- The aeration fan is not suitable for use with solid-state speed controls.
- Voltage, amperage, and rpm are located on the specification plate on the fan housing.
- A wiring diagram is located on the inside of the fan electrical box lid.
- Use a separate circuit from the distribution panel for the fan.
- Installing a time-delayed circuit breaker will allow for a higher tolerance to the motor start-up current (minimum requirement is 2.5 times the maximum running amperage on motor nameplate). Check with your local electrical code for more details.
- Install an independent disconnect switch to isolate the fan from the electrical supply. The switch should be near the fan and must be capable of being locked out by maintenance personnel while servicing the unit.
- Ensure proper cable gauge between the power source and the fan unit. See [Table 2 on page 22](#).

Note

Connecting the incorrect cable gauge will result in low voltage supply to the motor, causing premature failure.

Table 2. Conductor Sizes

HP	Phase	Motor Volts	Recommended Conductor Sizing (AWG) for Various Motor to Transformer Distances				
			100 ft	150 ft	200 ft	300 ft	500 ft
3	1	230	10	8	6	4	2
	3	230	12	10	8	6	2
		460	14	12	10	8	6
		575	14	12	12	10	8
5	1	230	6	4	4	2	0
	3	230	10	8	8	6	4
		460	12	12	12	10	8
		575	14	14	14	14	12
7.5	1	230	6	4	3	2	0
	3	230	8	6	6	4	2
		460	12	12	12	10	8
		575	14	14	14	12	10
10	1	230	4	3	2	0	000
	3	230	6	4	4	3	1
		460	10	12	10	8	6
		575	12	14	12	10	8
14/15	1	230	4	2	1	00	0000
	3	230	6	4	3	2	00
		460	12	10	8	8	4
		575	12	10	10	8	6
20	3	230	4	2	2	0	000
		460	10	8	8	6	4
		575	12	10	10	8	6
25	3	230	2	2	1	00	0000
		460	8	8	6	4	3
		575	12	10	8	6	4
30	3	230	2	1	1	00	0000
		460	8	6	6	4	2
		575	10	10	8	6	4
40	3	230	1	0	00	000	Consult Electrician
		460	4	2	2	1	
		575	6	4	4	2	
50	3	230	1	0	000	0000	Consult Electrician
		460	4	2	1	00	
		575	4	3	2	0	

Note

All electrical connections and wiring must follow all applicable local codes and standards.

3.6. Testing

Inspect the installation prior to starting the fan for testing.

Important

Make sure there is at least 24 inches of grain in the bin when testing the fan.

1. Check for any loose items or debris that could be drawn into the fan or dislodged by the fan discharge. Check the interior of the fan as well.
2. Ensure that the fan inlet is not obstructed or restricted in any way.
3. Ensure guards are in place.
4. Quickly start and stop the fan to check for proper airflow into the bin.



WARNING

Transition and guards / inlet screen must be fully installed or serious injury could result.

5. Start the fan and check for unusual sounds or excessive vibration (see [Section 6. – Troubleshooting on page 29](#)).
6. Do not run the fan for more than a few seconds if the transition is not fully installed.

4. Operation

Understand how to operate the aeration fan safely and effectively.

4.1. Operation Safety

WARNING

- Ensure appropriate safety accessories are installed. Selection and use of safety accessories for the specific installation is the responsibility of the customer.
- Keep away from fan impeller/blade; high suction can pull a person toward the inlet. Contact with an unguarded impeller/blade will cause severe injury.
- Keep inlet screen and safety guards securely in place at all times.
- Ensure the fan inlet, outlet, bin floor ductwork and roof vents are not plugged with any foreign material.
- Do not operate the fan if there is excessive vibration or noise.
- Ensure that electrical cords are in good condition; replace if necessary.
- Ensure maintenance has been performed and is up to date.

4.2. Start-Up and Break-In

Before operating the fan, perform a visual inspection, see [Section 5.3 – Maintenance on page 28](#).

1. Ensure that the fan is properly attached to the grain bin and properly supported. Refer to Installation section.
2. Ensure that the fan inlet is not obstructed or restricted in any way.
3. Open the bin roof vents.
4. Turn on power to fan.
5. **For 230V Models:** Move the toggle switch to the START position (this is the spring-loaded or momentary position of the switch).
6. **For 460V/575V Models:** Press the green START button and hold momentarily until fan starts. The fan should continue to run once green button is released.
7. If the fan does not start or if it stops running, refer to [Section – Troubleshooting on page 29](#).
8. During the first few minutes of operation, ensure that the unit is running properly and not vibrating excessively.

Continual use of a vibrating fan will cause premature failure of the motor and bearings. It will also cause metal fatigue in the fan wheel assembly and fan housing.

9. Bolts and nuts should be rechecked after eight hours and again in two weeks of operation.

4.3. Roof Vents

Roof vents should be sized at 1 ft² for every 1000 ft³ /min of air to minimize condensation.

Roof vents may become partially or fully blocked with ice in temperatures below freezing with high humidity conditions. Discontinue operation of fan in these conditions or add supplemental heat.

NOTICE

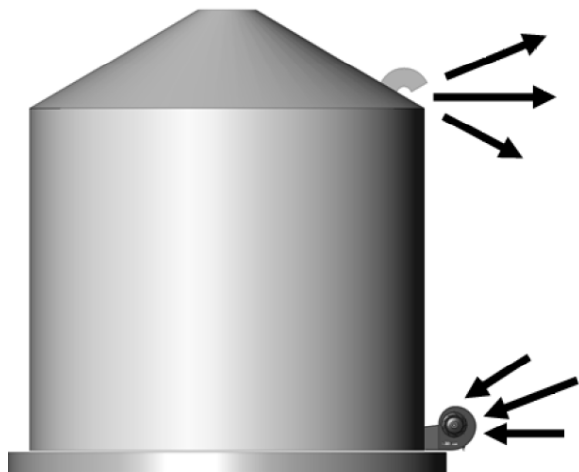
Operating a fan without adequate roof venting or with partially or fully blocked vents can cause damage to the bin roof.

4.4. Fan Rotation and Orientation

The fan is designed to provide air flow in one direction. Operate with positive pressure with air entering through the bottom and exiting out the top, see [Figure 11](#) below.

The air flow direction is labeled on the fan's housing. Never attempt to reverse the air flow by reversing the fan's wiring. Reversing the wiring to change the airflow will result in the airflow being significantly reduced and can damage the roof. Operating with negative pressure is not covered by warranty.

Figure 11. Positive Pressure Airflow



4.5. Emergency Stop

Foreign Object Obstruction

1. Immediately shut down the aeration fan and lock out the power source.
2. Remove the obstruction.
3. Inspect the inlet screen and fan impeller assembly for damage. Repair or replace as required.

Excessive Fan Vibration or Noise

1. Immediately shut down and lock out the power source.
2. Inspect the inlet for an obstruction, remove if necessary.
3. Restart the aeration fan to see if it is still vibrating excessively. If it is, immediately shut off the fan and lock out power source.
4. Contact your local dealer for inspection of the fan impeller assembly.

4.6. Shutdown



1. **For 230V Models:** Move the toggle switch to the OFF position.
2. **For 460V/575V Models:** Press the red STOP button.
3. When shutting down the fan for extended periods of time, shut off the power at the disconnect/source to prevent any inadvertent start-up of the fan.
4. Close bin roof vents.

NOTICE

DO NOT close roof vents until fan has been turned off, or roof damage may occur.

4.7. Extended Shutdown

1. Ensure that all foreign material is removed from the fan.
2. Inspect electrical wires and repair if necessary.
3. Inspect all parts and components and repair or replace as required.
4. Cover the fan with a tarp to keep out foreign material and protect it from weather conditions.
5. Ensure the storage area is in a clean and dry location.

5. Maintenance

Follow maintenance safety procedures to keep the aeration fan in good condition and prevent downtime.

5.1. Maintenance Safety

 WARNING

- Keep components in good condition. Follow the maintenance procedures.
- Ensure the service area is clean, dry, and has sufficient lighting.
- Do not modify any components without written authorization from the manufacturer. Modification can be dangerous and result in serious injuries.
- Shut down and lock out power before maintaining equipment.
- All electrical maintenance must be performed by a qualified electrician in accordance with all applicable local codes and standards.
- After maintenance is complete, replace all guards, service doors, and/or covers.
- Use only genuine AGI replacement parts or equivalent. Use of unauthorized parts will void warranty. If in doubt, contact AGI or your local dealer.



5.2. Maintenance Schedule

Follow the Maintenance Schedule below. Keep good records of the hours the aeration fan has been operated and the maintenance performed.

Daily:
Section 5.3 – Visually Inspect the Aeration Fan on page 28
Annually or as needed:
Section 5.4 – Cleaning the Fan Blade and Housing on page 28
As Required:
Section 5.5 – Servicing and Part Replacement on page 28

5.3. Visually Inspect the Aeration Fan

Check the following during a visual inspection:

1. Ensure all guards are in place and in good working order.
2. Examine the aeration fan for damage or unusual wear. Make sure the impeller is clean, undamaged, and rotates freely.
3. Ensure motor is grounded through the ground lug attached to the control box.
4. Be sure all safety decals are in place and are legible.
5. Check that the air intake area is free of obstructions.
6. Inspect all moving or rotating parts to see if anything has become entangled in them. Remove any entangled material.
7. Check all components. Replace damaged or worn parts before using the aeration fan.
8. Check tightness of bolts/nuts, fasteners, and hardware. Ensure the motor mounting and impeller hub bolts are torqued to 30 ft/lb.

5.4. Cleaning the Fan Blade and Housing

1. Check the housing and fan blade regularly for debris buildup drawn in by the airstream.
2. It is not recommended that the inlet screen be removed for cleaning. If the screens or inlet cones are removed, they must be installed in the exact same place.
3. Use a pressure washer or hose to remove debris from housing and blades.

5.5. Servicing and Part Replacement

If there is any service/part replacement work required on the fan, it is important to reinstall the fan impeller assembly in exactly the same position.

NOTICE

Failure to reinstall the fan impeller in the same position will cause premature wear, vibration, and part failure.

Ensure the edge of the inlet cone (fit into the impeller) covers approximately 1/2 of the lip on the face plate of the impeller. See [Section 7.6 – Fan Impeller Placement on page 63](#).

WARNING

Failure to reinstall the inlet cone and screen before operating the fan may result in serious injury or death.

6. Troubleshooting

Find causes and solutions to common problems that can be encountered.

⚠ WARNING Shut down and lock out all power sources before diagnosing any of the causes or attempting any of the solutions below.

The following section covers some causes and solutions to some of the problems that may be encountered.

If you encounter a problem that is difficult to solve, even after having read through this section, please contact your local dealer or distributor or, go online at <https://www.aggrowth.com> for additional troubleshooting tips. You may also contact an AGI product specialist at 1-800-565-2840. Before you contact them, please have this manual and the serial number available.

Problem	Cause	Solution
Fan does not run	Blown fuse / tripped breaker.	Replace fuse or reset breaker.
	No power at fan.	Turn power on at source.
	Defective wiring / connection.	Follow wiring diagram and check for broken wires and loose connections.
	Incorrect wire size.	Refer to wiring sizing charts for correct size.
	Defective motor.	Replace if necessary.
	Defective magnetic contractor.	Check contractor for proper function.
Fan runs for a short time then shuts off.	Undersize wiring	Refer to wire sizing charts for correct size.
	Low line voltage at fan.	If wire size is correct, call power company.
	Overload devices tripping.	Let overload reset then retry; if symptoms persist check amperage draw. If high, correct, if not, thermal overload could be tripping. Check that setting on thermal overload matches the Full Load Amperage (FLA) on rating plate of motor. Adjust the setting on the overload to match the FLA of the motor if they are not the same.
	Defective magnetic contractor.	Replace the contractor.
	Defective start / stop switch.	Replace switch.
Fan making ticking sound.	Fan impeller rubbing the inlet cone.	Turn off power to fan; rotate impeller slowly to see if impeller is rubbing the housing. If yes, adjust inlet cone positioning to obtain equal clearance all around the impeller.
	Motor bearing defective.	Service the motor at an authorized service shop.
Fan vibrates excessively.	Fan not level or poorly supported.	Level or support the fan. See Installation section.
	Dirt or foreign material buildup on impeller.	Clean the impeller / blade.

Problem	Cause	Solution
	Bent motor shaft.	Replace the motor.
	Improperly mounted impeller.	Replace, or have the impeller rebalanced.
	Broken or cracked fan blade.	Replace the blade.
	Impeller out of balance.	Replace or have the impeller rebalanced.
	Lose motor mounting bolts.	Tighten the bolts. Torque to 30 ft/lb.
	Motor out of balance.	Call your dealer / AGI for assistance.
No power (110V) at Monitor terminal.	Transformer faulty/	Check the voltage (HOV) on outlet side of transformer. If no power, then replace.
	Circuit Breaker tripped or faulty.	Reset Breaker or replace if faulty.
No power (110V) at Heater terminals.	Transformer faulty.	Check for voltage (110 V) on outlet side of transformer. If no power, then replace.
	Circuit Breaker tripped or faulty.	Reset Breaker or replace if faulty.
	Auxiliary Contacts faulty.	Check for Voltage (110 V) going through Auxiliary Contact when Motor Contactor is energized. If no power, then replace.

Fan Troubleshooting Videos Available on YouTube

- [Fan Won't Start](#)
- [Excessive Vibration](#)
- [Starts and Suddenly Stops](#)

7. Appendix

7.1. Electrical Schematics

7.1.1 Current Fan Models (No Motor Thermostat)

Table 3. GGF — High Speed Centrifugal Fans

	601-2294	601-2296	601-2363	601-2381	
HP	230 V 1 PH	230 V 1 PH	230 V 3 PH	460 V 3 PH	575 V 3 PH
3	X		X	X	X
5	X		X	X	X
7	X		X	X	X
10	X		X	X	X
15			X	X	X
20			X	X	X
25			X	X	X
30			X	X	X
40			X	X	X

Table 4. GGI — Inline Centrifugal Fans

	601-2294	601-2296	601-2363	601-2381	
HP	230 V 1 PH	230 V 1 PH	230 V 3 PH	460 V 3 PH	575 V 3 PH
3	X		X	X	X
5	X		X	X	X
7	X		X	X	X
10	X		X	X	X
15		X	X	X	X

Table 5. GGL — Low Speed Centrifugal Fans (Post 2022)

	601-2841	601-3257	601-3258	601-3287	601-3292	601-3294	601-3296	601-3297	601-3300
HP	230 V 1 PH	230 V 1 PH	230 V 3 PH	230 V 3 PH	460/575 V 3 PH	460 V 3 PH	575 V 3 PH	230 V 1 PH	230 V 1 PH
5	X	X	X	X	X	X	X		
7	X	X	X	X	X	X	X		
10	X	X	X	X	X	X	X		
14/15			X	X	X	X	X	X	X
20			X	X	X	X	X		
25			X	X	X	X	X		
30			X	X	X	X	X		
40			X	X	X	X	X		
50					X	X	X		

Table 6. GGL— Low Speed Centrifugal Fans (2017-2022)

	601-2294	601-2296	601-2363	601-2381	
HP	230 V 1 PH	230 V 1 PH	230 V 3 PH	460 V 3 Phase	575 V 3 PH
5	X		X	X	X
7	X		X	X	X
10	X		X	X	X
14/15		X	X	X	X
20			X	X	X
25			X	X	X
30			X	X	X
40			X	X	X
50				X	X

Table 7. GGX - Vane Axial Fans

	601-2294	601-2296	601-2363	601-2381	
HP	230 V 1 PH	230 V 1 PH	230 V 3 PH	460 V 3 PH	575 V 3 PH
3	X		X	X	X
7	X		X	X	X
10	X		X	X	X
14/15		X	X	X	X

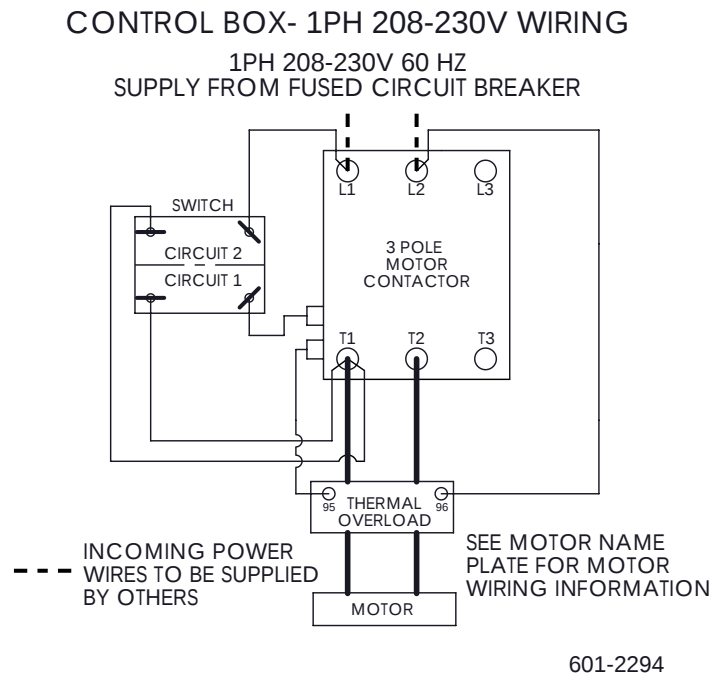
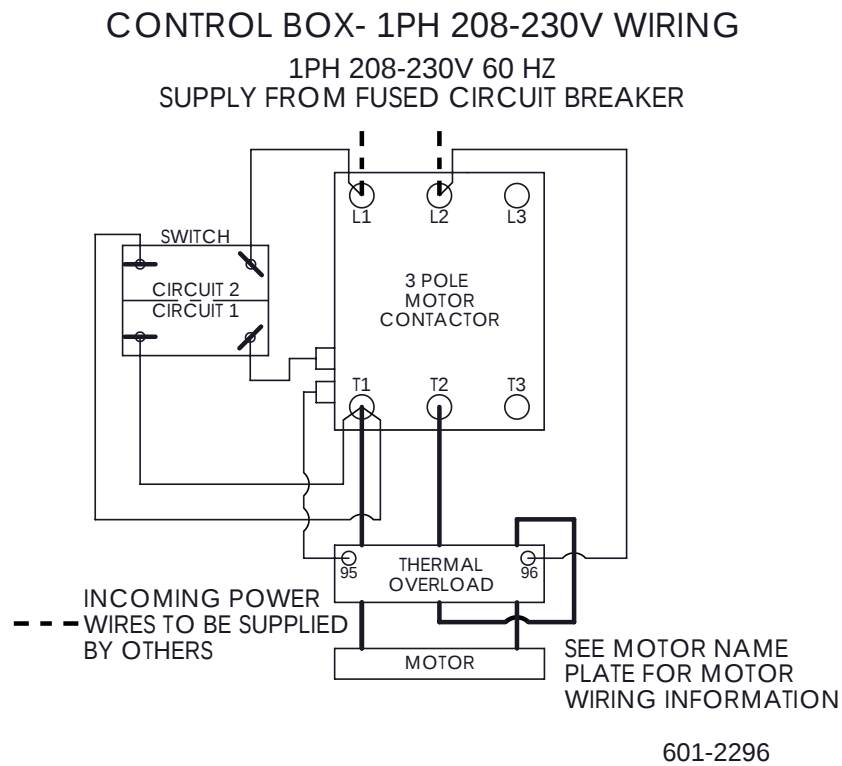
Figure 12. 601-2294 RO.3**Figure 13. 601-2296 RO.3**

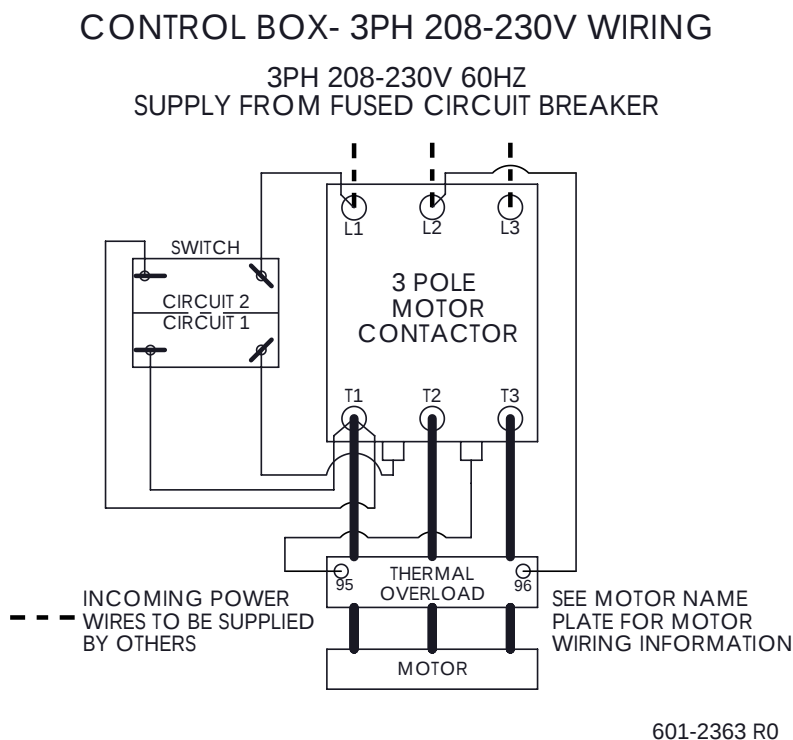
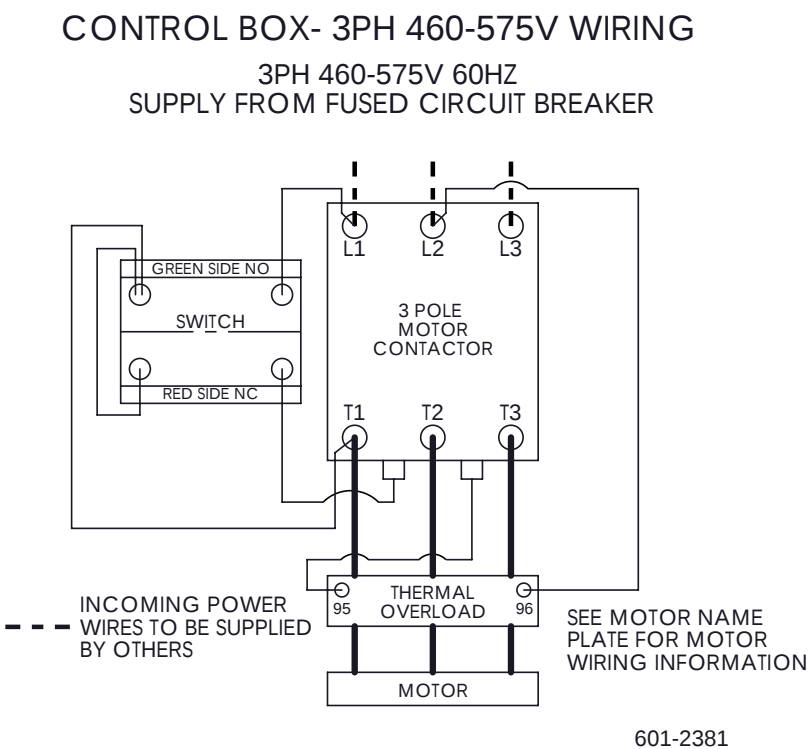
Figure 14. 601-2363 R0.3**Figure 15. 601-2381 R0.3**

Figure 16. 601-2841 R1.1

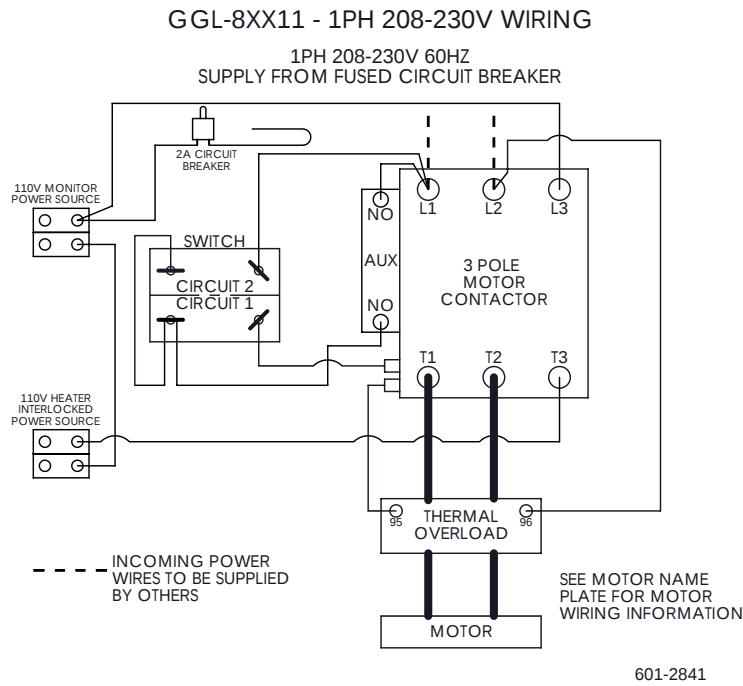


Figure 17. 601-3257 R1.1

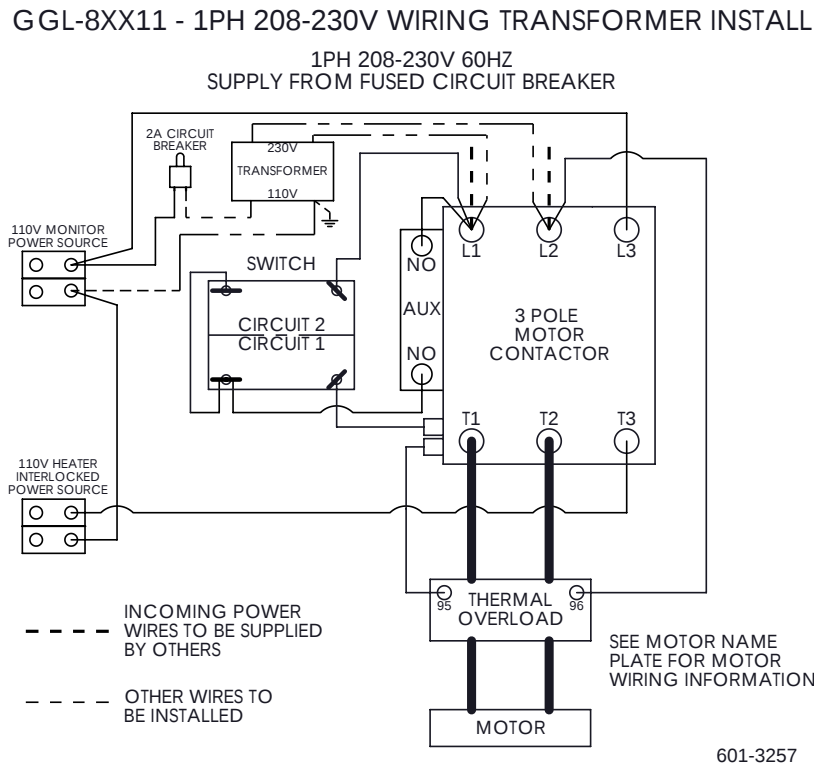


Figure 18. 601-3258 R1.1

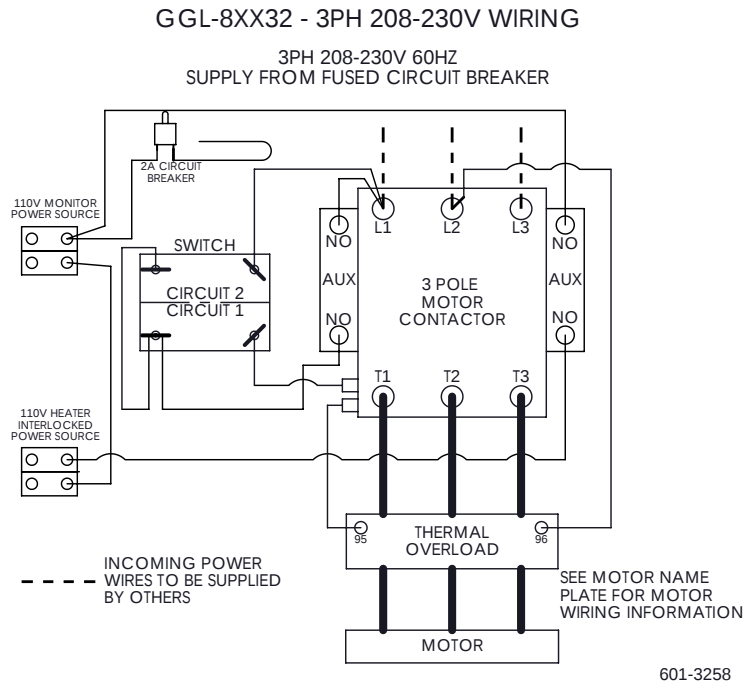


Figure 19. 601-3287 R1.1

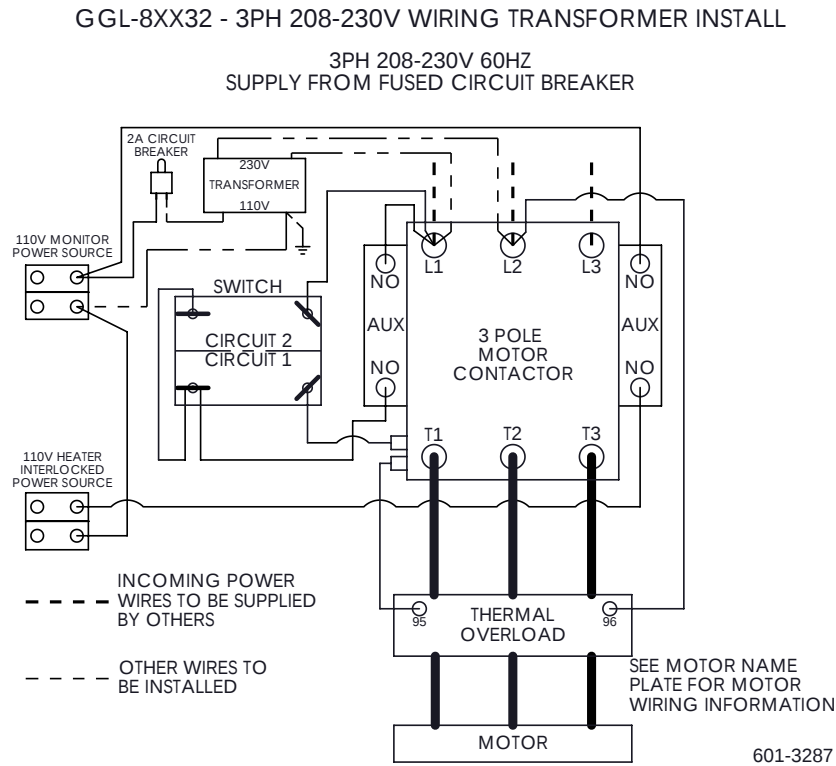


Figure 20. 601-3292 R1.1

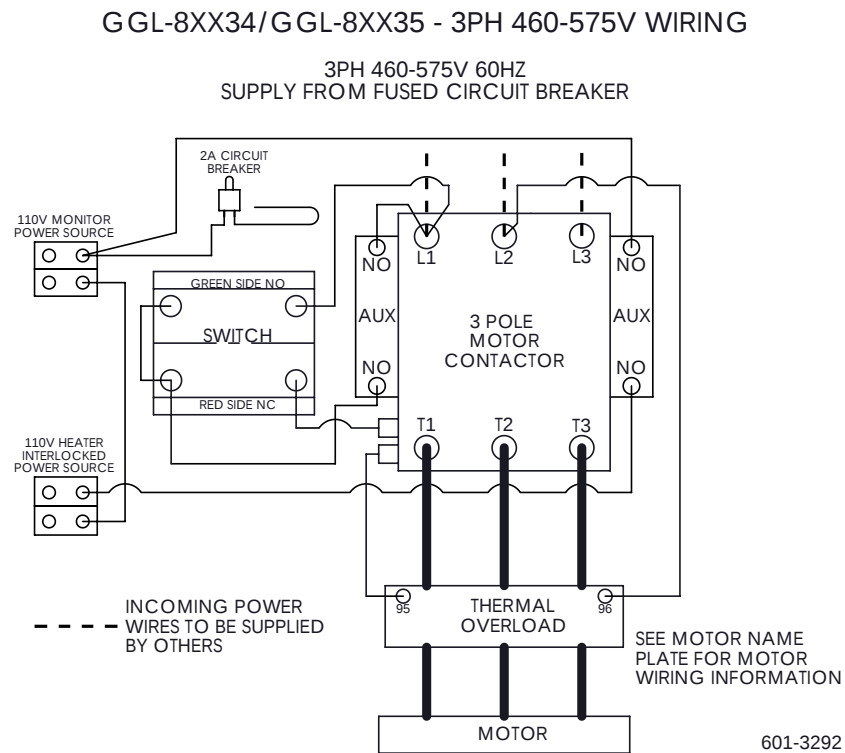


Figure 21. 601-3294 R1.1

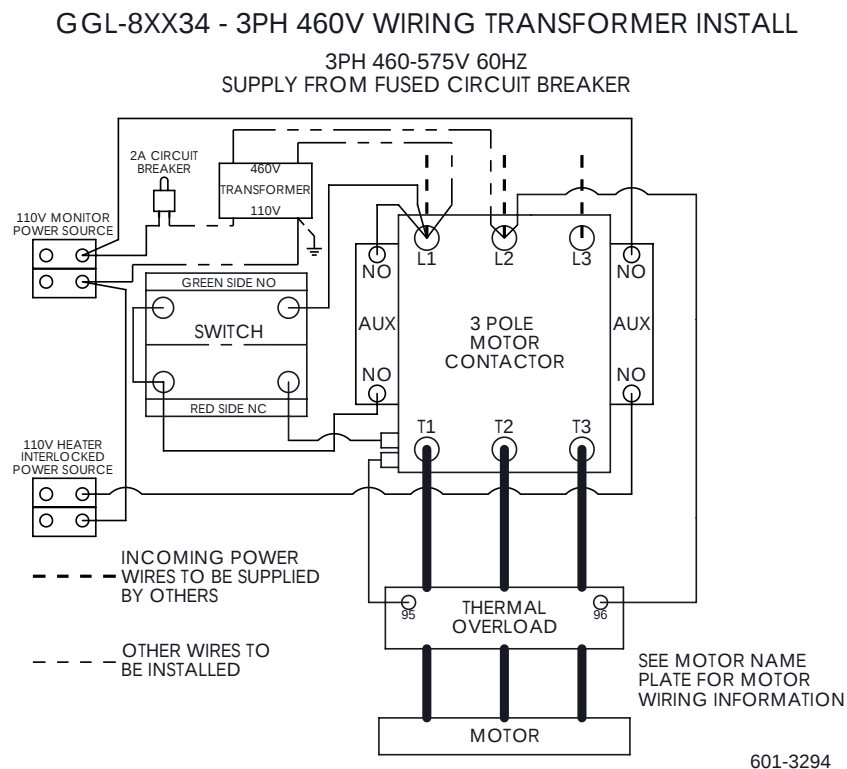


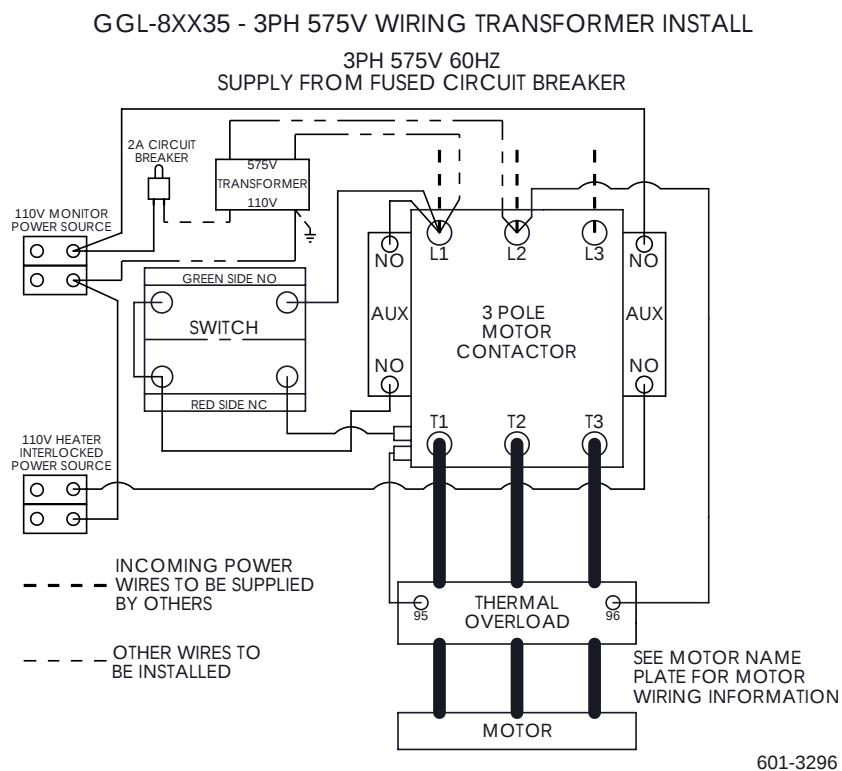
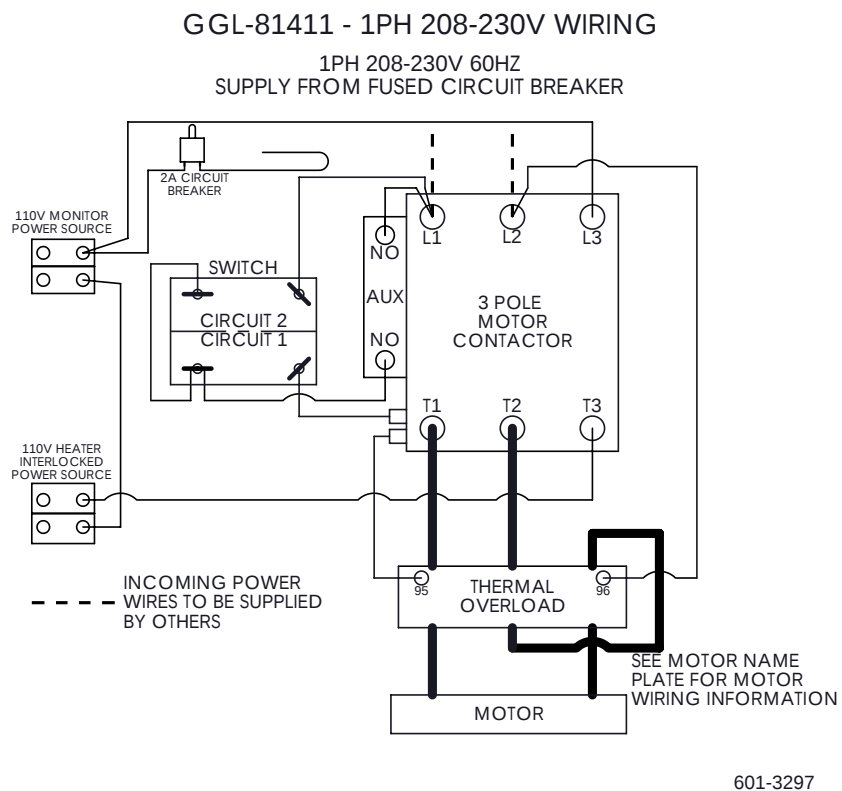
Figure 22. 601-3296 R1.1**Figure 23. 601-3297 R1.2**

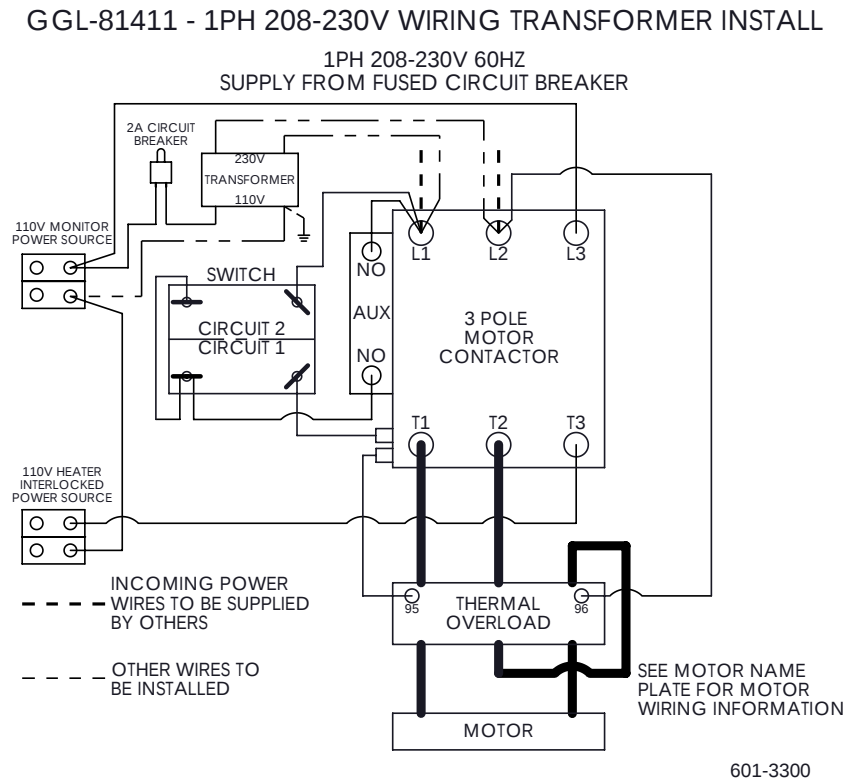
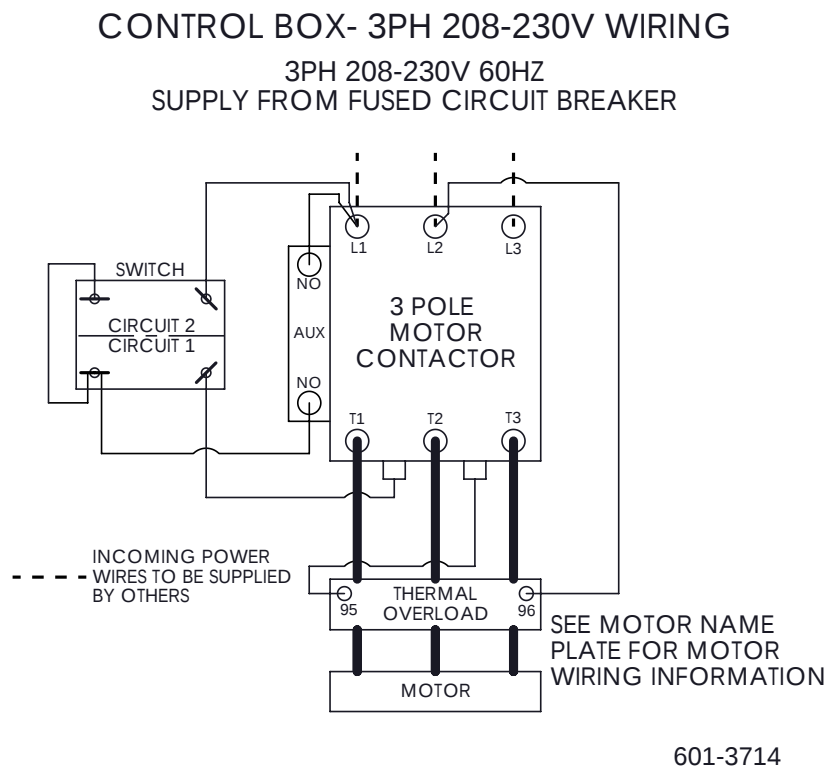
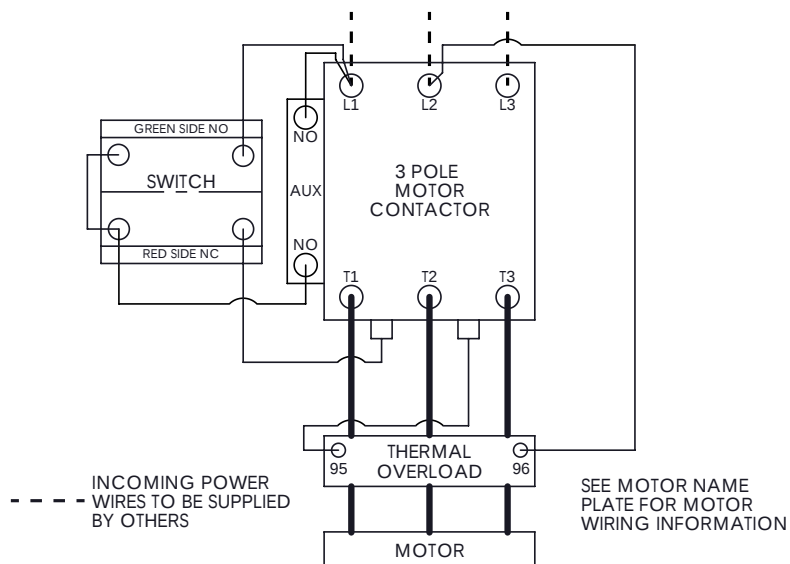
Figure 24. 601-3300 R1.1**Figure 25. 601-3714 R0.1**

Figure 26. 601-3716 R0.1**CONTROL BOX- 3PH 460-575V WIRING**

3PH 460-575V 60HZ
SUPPLY FROM FUSED CIRCUIT BREAKER



601-3716

7.1.2 Pre-2017 Fan Models (With Motor Thermostat)

Table 8. GGF High Speed Centrifugal Fans

	601-3039	601-3040	601-3041	
HP	230 V 1 PH	230 V 3 PH	460 V 3 PH	575 V 3 PH
3	X	X	X	X
5	X	X	X	X
7	X	X	X	X
10	X	X	X	X

Table 9. GGI Inline Centrifugal Fans

	601-3039	601-3040	601-3041	
HP	230 V 1 PH	230 V 3 PH	460 V 3 PH	575 V 3 PH
3	X	X	X	X
5	X	X	X	X
7	X	X	X	X
10	X	X	X	X

Table 10. GGL Low Speed Centrifugal Fans

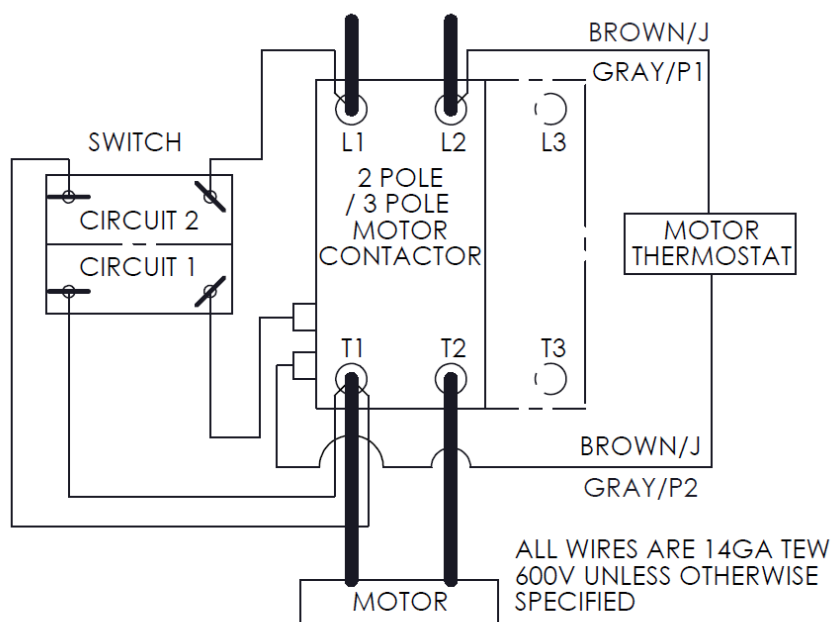
	601-3039	601-3040	601-3041	
HP	230 V 1 PH	230 V 3 PH	460 V 3 PH	575 V 3 PH
5	X	X	X	X
7	X	X	X	X
10	X	X	X	X
14/15	X	X	X	X
20		X	X	X
25		X	X	X
30		X	X	X

Table 11. GGX Vane Axial Fans

	601-3039	601-3040	601-3041	
HP	230 V 1 PH	230 V 3 PH	460 V 3 PH	575 V 3 PH
3	X	X	X	X
5	X	X	X	X
7	X	X	X	X
10	X	X	X	X
15	X	X	X	X

Figure 27. 601–3039 R4**CONTROL BOX- 1PH 208-230V (190-220V) WIRING**

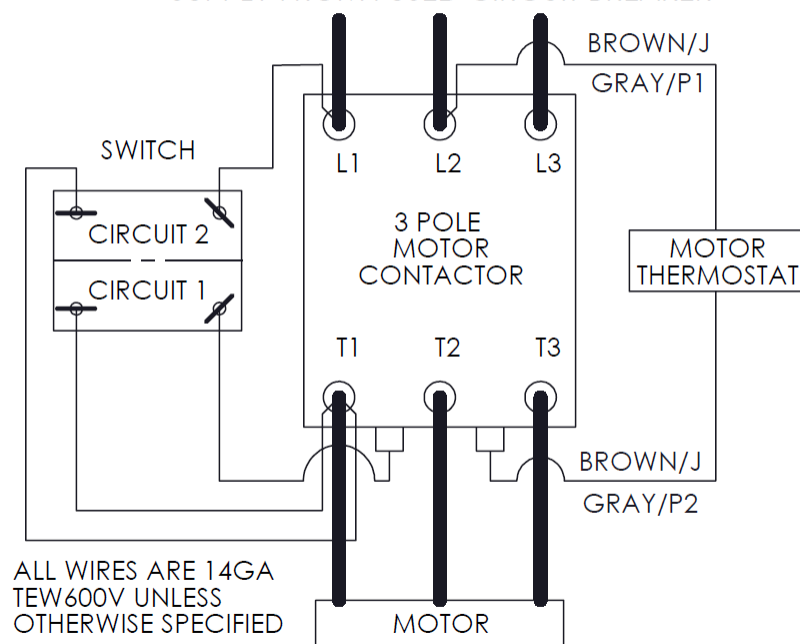
1PH 208-230V 60 HZ (190-220V 50 HZ)
SUPPLY FROM FUSED CIRCUIT BREAKER



601-3039 R4

Figure 28. 601–3040 R4**CONTROL BOX- 3PH 208-230V (190-220V) WIRING**

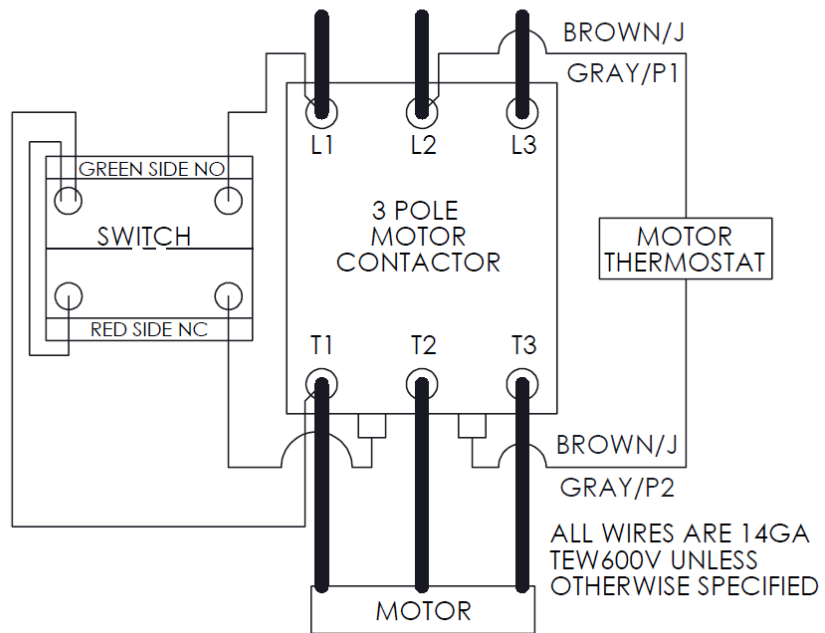
3PH 208-230V 60HZ (190-220V 50HZ)
SUPPLY FROM FUSED CIRCUIT BREAKER



601-3040 R4

Figure 29. 601–3041 R4**CONTROL BOX- 3PH 460-575V (380-415V) WIRING**

3PH 460-575V 60HZ (380-415V 50HZ)
SUPPLY FROM FUSED CIRCUIT BREAKER



601-3041 R4

7.2. Fan Replacement Parts Tables

7.2.1 High Speed Centrifugal Fan (GGF) Replacement Parts

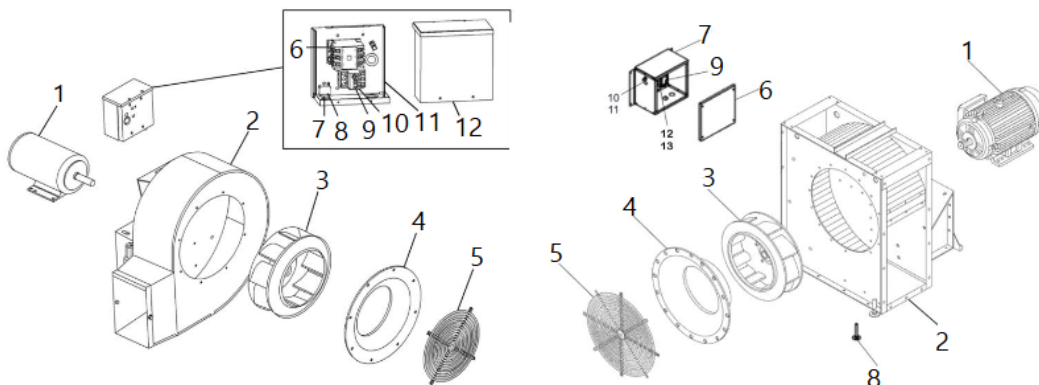


Table 12. High Speed Centrifugal Fan (GGF) Replacement Parts

Item	Description		Part Numbers by Fan HP/Voltage/Phase								
			3 HP	5 HP	7.5 HP	10 HP	15 HP	20 HP	25 HP	30 HP	40 HP
1	Fan Motor	230 V - 1 PH	503-2130	503-2145	503-2160	503-2175	-	-	-	-	-
		230 V/460 V - 3 PH	503-2135	503-2150	503-2165	503-2180	503-2267	503-2269	503-2271	503-2273	503-2275
		575 V - 3 PH	503-2140	503-2155	503-2170	503-2185	503-2268	503-2270	503-2272	503-2274	503-2276
2	Fan Housing		CXA-7488	CXB-7614	CXC-7615	CXD-7616	CXD-7616	Call Factory	Call Factory	Call Factory	Call Factory
3	Fan Impeller		CXA-5002B	CXB-5003B	CXC-5004B	CXD-5005B	CXE-5087B	540-2245	540-2246	540-2247	540-2248
4	Inlet Cone		CXA-1071	CXB-1072	CXC-1073	CXD-1074	CXD-1074	202-2268	202-2268	202-2268	202-2268
5	Inlet Screen		205-1082	205-1082	205-1082	205-1083	205-1083	205-2029	205-2029	205-2029	205-2029
6	Starter Contactor	230 V - 1 PH	504-1112	504-1112	504-1113	504-1113	-	-	-	-	-
		230 V - 3 PH	504-1111	504-1111	504-1111	504-1112	504-1113	504-1286	504-1286	504-1286	504-4653
		460 V - 3 PH	504-1278	504-1278	504-1278	504-1278	504-1278	504-1755	504-1755	504-1755	504-2538
		575 V - 3 PH	504-1280	504-1280	504-1280	504-1280	504-1280	504-1756	504-1756	504-1756	504-4652
7	Starter Switch	230 V - 1 PH/3 PH	507-1292	507-1292	507-1292	507-1292	507-1292	507-1292	507-1292	507-1292	507-1292
		460 V-575 V	507-2397	507-2397	507-2397	507-2397	507-2397	507-2397	507-2397	507-2397	507-2397
8	Switch Cover	230 V - 1 PH/3 PH	507-1293	507-1293	507-1293	507-1293	507-1293	507-1293	507-1293	507-1293	507-1293
		460 V-575 V	507-4582	507-4582	507-4582	507-4582	507-4582	507-4582	507-4582	507-4582	507-4582
9	Relay Overload	230 V - 1 PH	504-4072	504-4508	504-4075	504-4551	-	-	-	-	-
		230 V - 3 PH	504-4618	504-4618	504-4618	504-4621	504-4621	504-4623	504-4623	504-4623	504-4623
		460 V - 3 PH	504-4078	504-4618	504-4618	504-4618	504-4618	504-4621	504-4621	504-4621	504-4623
		575 V - 3 PH	504-4077	504-4078	504-4618	504-4618	504-4618	504-4618	504-4621	504-4621	504-4623
10	Overload Base	230 V - 1 PH	504-4082	504-4082	504-4083	504-4083	-	-	-	-	-
		230 V - 3 PH	504-4620	504-4620	504-4620	-	-	-	-	-	-
		460 V - 3 PH	504-4082	504-4620	504-4620	504-4620	504-4620	-	-	-	-
		575 V - 3 PH	504-4082	504-4082	504-4620	504-4620	504-4620	504-4620	-	-	-

Table 12 High Speed Centrifugal Fan (GGF) Replacement Parts (continued)

Item	Description		Part Numbers by Fan HP/Voltage/Phase								
			3 HP	5 HP	7.5 HP	10 HP	15 HP	20 HP	25 HP	30 HP	40 HP
11	Control Box	230 V - 1 PH	CZA-7390	CZB-7391	CZC-7392	CZD-7393	-	-	-	-	-
		230 V - 3 PH	CZA-7394	CZA-7394	CZA-7394	CZD-7395	CZE-7429	LZF-7419	LZF-7419	LZF-7419	LZI-7438
		460 V - 3 PH	CZA-7396	CZB-7397	CZC-7398	CZC-7398	CZC-7398	LZF-7423	LZF-7423	LZF-7423	LZI-7436
		575 V - 3 PH	CZA-7399	CZB-7400	CZC-7401	CZC-7401	CZC-7401	LZF-7426	LZH-7427	LZH-7427	LZI-7437
12	Control Box Lid		CZA-3973	CZA-3973	CZA-3973	CZA-3973	CZA-3973	LZA-7285	LZA-7285	LZA-7285	LZA-7285

7.2.2 Inline Centrifugal Fan (GGI) Replacement Parts

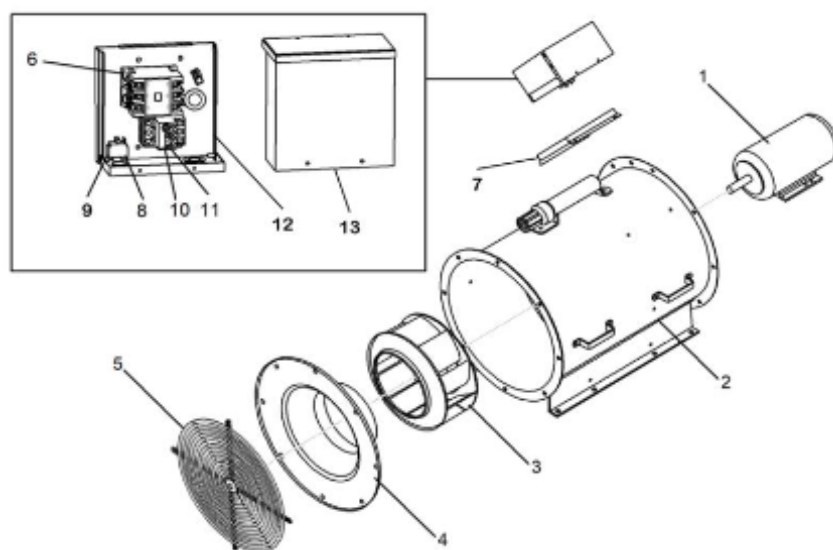


Table 13. Inline Centrifugal Fan (GGI) Replacement Parts

Item	Description		Part Numbers by Fan HP/Voltage/Phase				
			3 HP	5 HP	7.5 HP	10 HP	15 HP
1	Fan Motor	230 V - 1 PH	503-2030	503-2045	503-2060	503-2075	503-2086
		230 V/ 460 V - 3 PH	503-2035	503-2050	503-2065	503-2080	503-2293
		575 V - 3 PH	503-2040	503-2055	503-2070	503-2085	503-2294
2	Fan Housing		IXA-7608	IXB-7609	IXB-7609	IXD-7610	IXD-7610
3	Fan Impeller		CXA-5002B	CXB-5003B	CXC-5004B	CXD-5005B	CXE-5087B
4	Inlet Cone		IXA-1075	IXB-1076	IXC-1077	IXD-5114	IXD-5114
5	Inlet Screen		205-1083	205-1084	205-1084	205-2011	205-2011
6	Starter Contactor	230 V - 1 PH	504-1112	504-1112	504-1113	504-1113	504-2229
		230 V - 3 PH	504-1111	504-1111	504-1111	504-1112	504-1113
		460 V - 3 PH	504-1278	504-1278	504-1278	504-1278	504-1278
		575 V - 3 PH	504-1280	504-1280	504-1280	504-1280	504-1280
7	Starter Switch	230 V - 1 PH/3PH	507-1292	507-1292	507-1292	507-1292	507-1292
		460 V-575 V	507-2397	507-2397	507-2397	507-2397	507-2397
8	Switch Cover	230 V - 1 PH/3 PH	507-1293	507-1293	507-1293	507-1293	507-1293
		460 V-575 V	507-4582	507-4582	507-4582	507-4582	507-4582
9	Relay Overload	230 V - 1 PH	504-4073	504-4508	504-4075	504-4551	504-4076
		230 V - 3 PH	504-4618	504-4618	504-4618	504-4621	504-4621
		460 V - 3 PH	504-4078	504-4618	504-4618	504-4618	504-4621
		575 V - 3 PH	504-4077	504-4078	504-4618	504-4618	504-4618
10	Overload Base	230 V - 1 PH	504-4082	504-4082	504-4083	504-4083	504-4083
		230 V - 3 PH	504-4620	504-4620	504-4620	-	-
		460 V - 3 PH	504-4082	504-4620	504-4620	504-4620	-

Table 13 Inline Centrifugal Fan (GGI) Replacement Parts (continued)

Item	Description		Part Numbers by Fan HP/Voltage/Phase				
			3 HP	5 HP	7.5 HP	10 HP	15 HP
		575 V - 3 PH	504-4082	504-4082	504-4620	504-4620	504-4620
11	Control Box	230 V - 1 PH	IZA-7402	IZB-7403	IZC-7404	IZD-7405	IZE-7432
		230 V - 3 PH	IZA-7406	IZA-7406	IZA-7406	IZD-7407	IZE-7433
		460 V - 3 PH	IZA-7408	IZB-7409	IZB-7409	IZB-7409	IZE-7434
		575 V - 3 PH	IZA-7410	IZB-7411	IZC-7412	IZC-7412	IZC-7412
12	Control Box Mount		IZA-3978	IZB-3981	IZB-3981	IZB-3981	IZB-3981
13	Control Box Lid		CZA-3973	CZA-3973	CZA-3973	CZA-3973	CZA-3973

7.2.3 Low Speed Centrifugal Fan (GGL) Replacement Parts

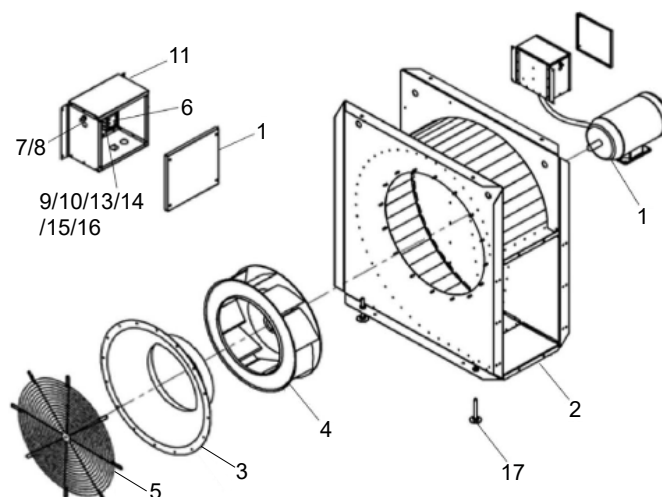


Table 14. Low Speed Centrifugal Fan (GGL) Replacement Parts

Item	Description		Part Numbers by Fan HP/Voltage/Phase								
			5HP	7.5 HP	10HP	15HP	20HP	25HP	30HP	40HP	50HP
1	Fan Motor	230V - 1PH	503-2093	503-2096	503-2099	503-2102	-	-	-	-	-
		230V/460V - 3PH	503-2204	503-2207	503-2210	503-2213	503-2215	503-2217	503-2219	503-2221	503-2223
		575V - 3PH	503-2205	503-2098	503-2211	503-2214	503-2216	503-2218	503-2220	503-2222	503-2224
2	Fan Housing		LZB-7460	LZC-7461	LZD-7462	LZE-7463	LZF-7464	LZH-7466	LZG-7465	LZI-7439	LZJ-7535
3	Inlet Cone		LXB-2093	LXB-2093	LXD-2094	LXD-2094	LXF-2095	LXF-2095	LXG-2096	LXG-2096	LXJ-2831
4	Fan Impellor		LXB-5196B	LXC-5197B	LXD-5198B	LXE-5199B	LXF-5200B	LXH-5201B	LXG-5202B	LXI-5278B	LXJ-5281B
5	Inlet Screen		205-2029	205-2029	205-2089	205-2089	205-2090	205-2090	205-2090	205-2090	205-2826
6	Starter Contactor	230V - 1PH	504-1112	504-1113	504-1113	504-2229	-	-	-	-	-
		230V - 3PH	504-1111	504-1111	504-1112	504-1113	504-1286	504-1286	504-1286	504-4653	-
		460V - 3PH	504-1278	504-1278	504-1278	504-1857	504-1755	504-1755	504-1755	504-2538	504-2872
		575V - 3PH	504-1280	504-1280	504-1280	504-1858	504-1756	504-1756	504-1756	504-4652	504-2873
7	Starter Switch	230V - 1PH & 3PH	507-1292	507-1292	507-1292	507-1292	507-1292	507-1292	507-1292	507-1292	-
		460V-575V	507-2397	507-2397	507-2397	507-2397	507-2397	507-2397	507-2397	507-2397	507-2397
8	Switch Cover	230V - 1PH & 3PH	507-1293	507-1293	507-1293	507-1293	507-1293	507-1293	507-1293	507-1293	-
		460V-575V	507-4582	507-4582	507-4582	507-4582	507-4582	507-4582	507-4582	507-4582	507-4582
9	Relay Overload	230V - 1PH	504-4508	504-4075	504-4551	504-4076	-	-	-	-	-
		230V - 3PH	504-4618	504-4618	504-4621	504-4621	504-4623	504-4623	504-4623	504-4623	-
		460V - 3PH	504-4618	504-4618	504-4618	504-4618	504-4621	504-4621	504-4621	504-4623	504-4623
		575V - 3PH	504-4618	504-4618	504-4618	504-4618	504-4618	504-4621	504-4621	504-4623	504-4623
10	Overload Base	230V - 1PH	504-4082	504-4083	504-4083	504-4083	-	-	-	-	-
		230V - 3PH	504-4620	504-4620	-	-	-	-	-	-	-
		460V - 3PH	504-4620	504-4620	504-4620	504-4620	-	-	-	-	-
		575V - 3PH	504-4620	504-4620	504-4620	504-4620	504-4620	-	-	-	-
11	Control Box	230V - 1PH	LZB-7561	LZC-7569	LZD-7373	LZE-7577	-	-	-	-	-
		230V - 3PH	LZB-7563	LZB-7563	LZD-7375	LZE-7579	LZF-7585	LZF-7585	LZF-7585	LZI-7593	-

Table 14 Low Speed Centrifugal Fan (GGL) Replacement Parts (continued)

Item	Description		Part Numbers by Fan HP/Voltage/Phase								
			5HP	7.5 HP	10HP	15HP	20HP	25HP	30HP	40HP	50HP
		460V - 3PH	LZB-7565	LZB-7565	LZB-7565	LZE-7581	LZF-7587	LZF-7587	LZF-7587	LZI-7595	LZI-7599
		575V - 3PH	LZB-7567	LZB-7567	LZB-7567	LZE-7583	LZF-7589	LZH-7591	LZH-7591	LZI-7597	LZI-7601
12	Control Box Lid		LZA-7620	LZA-7620	LZA-7620	LZA-7620	LZA-7620	LZA-7620	LZA-7620	LZA-7620	LZA-7620
13	Aux Contactor	230V - 1PH	504-2832	504-2832	504-2832	524-2833	-	-	-	-	-
		230V - 3PH	504-2832	504-2832	504-2832	504-2832	524-2833	524-2833	524-2833	504-3353	-
		460V 3-PH	504-2832	504-2832	504-2832	504-2832	504-2832	504-2832	504-2832	524-2833	524-2833
		575V - 3PH	504-2832	504-2832	504-2832	504-2832	504-2832	504-2832	504-2832	524-2833	524-2833
14	Circuit Breaker 2 Amp		510-3179	510-3179	510-3179	510-3179	510-3179	510-3179	510-3179	510-3179	510-3179
15	Transformer 240/460V		504-3175	504-3175	504-3175	504-3175	504-3175	504-3175	504-3175	504-3175	504-3175
16	Transformer 575V		504-3176	504-3176	504-3176	504-3176	504-3176	504-3176	504-3176	504-3176	504-3176
17	LS Leveling Leg		202-2989	202-2989	202-2989	202-2989	202-2989	202-2989	202-2989	202-2989	LUJ-5163

7.2.4 Vane Axial Fan (GGX) Replacement Parts

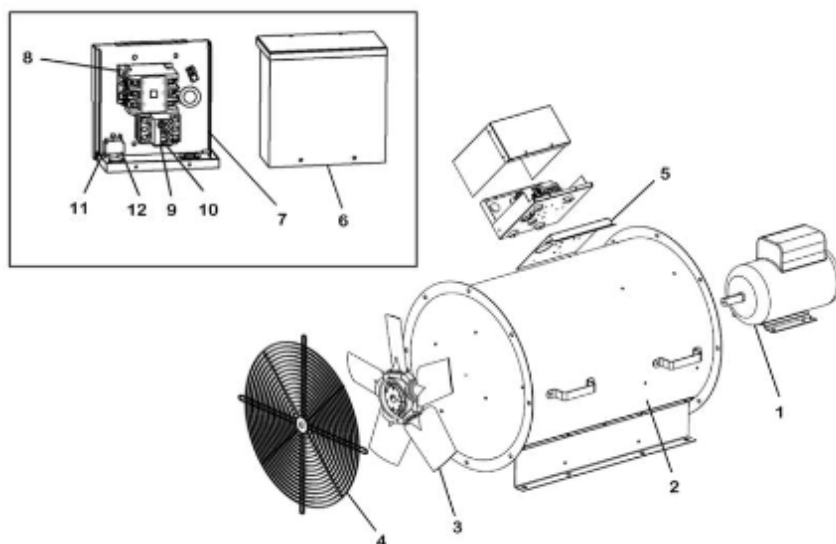


Table 15. Vane Axial Fan (GGX) Replacement Parts

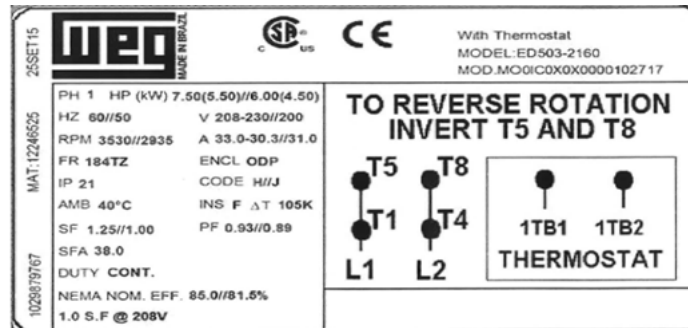
Item	Description		Part Numbers by Fan HP/ Voltage/ PHase			
			3 HP	7.5 HP	10 HP	15 HP
1	Fan Motor	230 V - 1 PH	503-4850	503-4853	503-4856	503-4859
		230 V/ 460 V - 3 PH	503-4851	503-4854	503-4857	503-4860
		575 V - 3 PH	503-4852	503-4855	503-4858	503-4861
2	Fan Housing		Call Factory	Call Factory	Call Factory	Call Factory
3	Fan Impeller		540-2827	540-2019	540-2829	540-2022
4	Inlet Screen		205-1083	205-1084	205-1084	205-2011
5	Starter Contactor	230 V - 1 PH	504-1112	504-1112	504-1113	504-2229
		230 V - 3 PH	504-1111	504-1111	504-1112	504-1113
		460 V - 3 PH	504-1278	504-1278	504-1278	504-1278
		575 V - 3 PH	504-1280	504-1280	504-1280	504-1280
6	Starter Switch	230 V - 1 PH/3 PH	507-1292	507-1292	507-1292	507-1292
		460 V-575 V	507-2397	507-2397	507-2397	507-2397
7	Switch Cover	230 V - 1 PH/3 PH	507-1293	507-1293	507-1293	507-1293
		460 V-575 V	507-4582	507-4582	507-4582	507-4582
8	Relay Overload	230 V - 1 PH	504-4073	504-4075	504-4551	504-4076
		230 V - 3 PH	504-4618	504-4618	504-4621	504-4621
		460 V - 3 PH	504-4078	504-4618	504-4618	504-4621
		575 V - 3 PH	504-4077	504-4618	504-4618	504-4618
9	Overload Base	230 V - 1 PH	504-4082	504-4083	504-4083	504-4083
		230 V - 3 PH	504-4620	504-4620	-	-
		460 V - 3 PH	504-4082	504-4620	504-4620	-
		575 V - 3 PH	504-4082	504-4620	504-4620	504-4620
10	Control Box	230 V - 1 PH	IZA-7402	AZC-7523	AZD-7529	AZE-7531

Table 15 Vane Axial Fan (GGX) Replacement Parts (continued)

Item	Description		Part Numbers by Fan HP/ Voltage/ PHase			
			3 HP	7.5 HP	10 HP	15 HP
		230 V - 3 PH	IZA-7406	IZA-7406	IZD-7407	IZE-7433
		460 V - 3 PH	IZA-7408	IZB-7409	IZB-7409	IZE-7434
		575 V - 3 PH	IZA-7410	IZC-7412	IZC-7412	IZC-7412
11	Control Box Lid		CZA-3973	CZA-3973	CZA-3973	CZA-3973
12	Control Box Lid Large (single phase fans)		-	CZA-4691	CZA-4691	CZA-4691

7.3. How to Read Electric Motor Nameplate

The information from the motor nameplate is needed for motor repairs and replacement, or the purchase of parts for a motor. The nameplate contains information including the voltage, amp ratings, phase, RPM, service factor, and more. Below is a list of the main information you will likely need to service or determine specifications.



Voltage

Shown on the above example as **V 208-230//200** (208/230 is for 60 hz and 200 is for 50Hz). Motors are designed to run at the voltage listed on their nameplate. Some 3 phase motors are dual rated, and are designed to run at 230V and 460V. Typically, motors have an operating tolerance of 10%± of the rated voltage on the nameplate (consult manual). This means that a motor designed to run on 230V can run at 208V (or 240V). Motors should not run outside their designated voltage range or damage may occur.

Full Load Amp Rating

Shown on the above example as **A 33.0-30.3//31.0** (33.0-30.3 is for 60Hz and 31.0 is for 50Hz). The full load amp (or FLA) rating is the rate at which a motor will consume power at 100% of rated load, and at rated and balanced voltage. This number is extremely important. The wiring, starter, circuit breaker, and thermal overloads are all sized based upon the full load amp rating.

Phase

Shown on the above tag as **PH 1**. The motor will be rated for single phase (PH1) or three phase (PH3).

RPM (Speed)

Shown on the above example as **RPM 3530//2935** (3530 is for 60Hz and 2935 is for 50Hz). The RPM listed on the nameplate is the shaft speed for the motor. This number represents what the manufacturer has engineered the motor will rotate at under full load with the set frequency listed on the nameplate.

Service Factor

Shown on the above example as **SF 1.25//1.00** (1.25 is at 230V and 1.00 is at 208V). Motors are designed to handle a temporary increase in demand. Service factor represents the motor's ability to handle these temporary demand increases. The service factor is expressed as a decimal. If you do not see a service factor rating on the motor nameplate the service factor is typically 1.00. Motors running on a VFD (even at 60Hz) will lose service factor and be rated at 1.00.

SFA

Shown on the above example as **SFA 38.0**. It can only be factored in at 230V. SFA is the maximum amps the motor can run at 230 volts.

Frequency

Shown on the above example as **HZ 60/50**. Frequency is directly related to the motor's speed (60Hz = 60 cycles per second). In North America, the standard frequency is typically 60Hz. Outside North America 50Hz is often the standard.

Model Number

Shown on the above example as **MODEL: ED503-2160**.

Serial Number

Shown on the above example as **1029879767** (far left edge of the motor tag).

Enclosure Type

Shown on the above example as **ENCL ODP**. Common enclosure types are Open Drip-Proof (ODP) and Totally Enclosed Fan Cooled (TEFC).

ODP – An Open Drip-Proof motor is an open enclosure that allows air to flow freely inside around the windings. It is protected from drops of liquid falling downward from a 0 to 15 degree angle, but is not waterproof.

TEFC – A Totally Enclosed Fan Cooled enclosure prevents air from flowing freely into the motor. The motor is cooled by an internal fan that blows air on the outside of the enclosure. A TEFC is not fully air or water tight. Outside contaminants can enter the motor, but this typically doesn't interfere with normal operation.

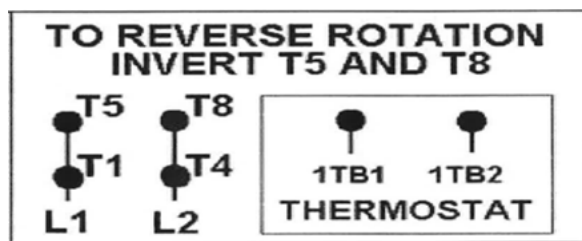
Code

Shown on the above example as **CODE H//J**. H is for 60Hz and J is for 50Hz AC motors that are started at full voltage will draw a greater current (amps) than during normal operations. This is commonly referred to as inrush current or starting current. These codes represent a range of inrush current. To find approximate inrush current for the motor, match the code letter on the motor nameplate with the corresponding approximate mid-range value on the chart; multiply the mid-range value and the full load amp rating on the motor nameplate.

Code Letter	HP Inrush Multiplier	Mid-Range Value
A	Running Amps x 0.00–3.14	1.6
B	Running Amps x 3.15–3.54	3.3
C	Running Amps x 3.55–3.99	3.8
D	Running Amps x 4.00–4.49	4.3
E	Running Amps x 4.50–4.99	4.7
F	Running Amps x 5.00–5.59	5.3
G	Running Amps x 5.60–6.29	5.9
H	Running Amps x 6.30–7.09	6.7
J	Running Amps x 7.10–7.99	7.5
K	Running Amps x 8.00–8.99	8.5
L	Running Amps x 9.00–9.99	9.5
M	Running Amps x 10.00–11.19	10.6
N	Running Amps x 11.20–12.49	11.8
P	Running Amps x 12.50–15.99	13.2
R	Running Amps x 14.00–15.99	15

Voltage Connection (Strapping) Diagrams

Connection diagrams display information about connecting the motor to the proper voltage. Some motors are designed to handle multiple voltages, so there may be more than one diagram. Carefully select the correct diagram. Incorrectly connecting wiring will damage your motor.



7.4. Fan Motor Specifications

7.4.1 GGF Fan Motor Specifications

FLA (Full Load Amps) represents the amount of current the motor is designed to draw at the rated horsepower. **SF (Service Factor)** is a measure of periodically overload capacity at which a motor can operate without damage.

SFA (Service Factor Amps) represents the amount of current the motor will draw when running at the full Service Factor.

Note

Minimum Breaker size needed is 2.5 times the Full Load Amps found on the motor plate.

Table 16. GGF Fan Motor Specifications

Fan	Motor	Voltage	Phase	FLA	SF	SFA	Overload Trip Amperage	Minimum Breaker Size
GGF-80311	503-2130	230	1	12.00	1.15	13.80	15.0	30
GGF-80332	503-2135	230	3	7.02	1.15	8.07	8.8	20
GGF-80334	503-2135	460	3	3.51	1.15	4.04	4.4	10
GGF-80335	503-2140	575	3	3.04	1.15	3.50	3.5	10
GGF-80511	503-2145	230	1	21.40	1.15	24.61	26.8	60
GGF-80532	503-2150	230	3	11.90	1.15	13.69	14.9	30
GGF-80534	503-2150	460	3	5.96	1.15	6.85	7.5	15
GGF-80535	503-2155	575	3	4.77	1.15	5.49	6.0	15
GGF-80711	503-2160	230	1	30.30	1.25	37.88	37.9	80
GGF-80732	503-2165	230	3	17.90	1.15	20.59	22.4	45
GGF-80734	503-2165	460	3	8.97	1.15	10.32	11.2	25
GGF-80735	503-2170	575	3	7.18	1.15	8.26	9.0	20
GGF-81011	503-2175	230	1	40.30	1.20	48.36	50.4	110
GGF-81032	503-2180	230	3	23.10	1.30	30.03	28.9	60
GGF-81034	503-2180	460	3	11.50	1.30	14.95	14.4	30
GGF-81035	503-2185	575	3	9.23	1.15	10.61	11.5	25
GGF-81532	503-2267	230	3	34.00	1.25	42.50	42.5	90
GGF-81534	503-2267	460	3	17.00	1.25	21.25	21.3	45
GGF-81535	503-2268	575	3	13.60	1.25	17.00	17.0	35
GGF-82032	503-2269	230	3	46.40	1.25	58.00	58.0	125
GGF-82034	503-2269	460	3	23.20	1.25	29.00	29.0	60
GGF-82035	503-2270	575	3	18.60	1.25	23.25	23.3	50
GGF-82532	503-2271	230	3	57.00	1.25	71.25	71.3	150
GGF-82534	503-2271	460	3	28.50	1.25	35.63	35.6	80
GGF-82535	503-2272	575	3	22.80	1.25	28.50	28.5	60
GGF-83032	503-2273	230	3	67.60	1.25	84.50	84.5	175
GGF-83034	503-2273	460	3	33.80	1.25	42.25	42.3	90
GGF-83035	503-2274	575	3	27.00	1.25	33.75	33.8	70
GGF-84032	503-2275	230	3	91.60	1.25	114.50	114.5	250
GGF-84034	503-2275	460	3	45.80	1.25	57.25	57.3	125
GGF-84035	503-2276	575	3	36.60	1.25	45.75	45.8	100

7.4.2 GGI Fan Motor Specifications

FLA (Full Load Amps) represents the amount of current the motor is designed to draw at the rated horsepower. **SF (Service Factor)** is a measure of periodically overload capacity at which a motor can operate without damage.

SFA (Service Factor Amps) represents the amount of current the motor will draw when running at the full Service Factor.

Note

Minimum Breaker size needed is 2.5 times the Full Load Amps found on the motor plate.

Table 17. GGI Fan Motor Specifications

Fan	Motor	Voltage	Phase	FLA	SF	SFA	Overload Trip Amperage	Minimum Breaker Size
GGI-80311	503-2030	230	1	15.50	1.15	17.83	19.4	40
GGI-80332	503-2035	230	3	7.30	1.15	8.40	9.0	20
GGI-80334	503-2035	460	3	3.65	1.15	4.20	4.5	10
GGI-80335	503-2040	575	3	2.92	1.15	3.36	3.5	10
GGI-80511	503-2045	230	1	20.50	1.25	25.63	25.6	60
GGI-80532	503-2050	230	3	12.30	1.15	14.15	15.4	35
GGI-80534	503-2050	460	3	6.17	1.15	7.10	7.7	20
GGI-80535	503-2055	575	3	4.94	1.15	5.68	6.2	15
GGI-80711	503-2060	230	1	30.00	1.25	37.50	37.9	80
GGI-80732	503-2065	230	3	17.90	1.15	20.59	22.4	45
GGI-80734	503-2065	460	3	8.97	1.15	10.32	11.2	25
GGI-80735	503-2070	575	3	7.18	1.15	8.26	9.0	20
GGI-81011	503-2075	230	1	42.00	1.25	52.50	52.5	110
GGI-81032	503-2080	230	3	23.70	1.15	27.26	29.6	60
GGI-81034	503-2080	460	3	11.90	1.15	13.69	14.9	30
GGI-81035	503-2085	575	3	9.76	1.15	11.22	11.9	25
GGI-81511	503-2086	230	1	58.00	1.15	66.70	72.5	150
GGI-81532	503-2293	230	3	34.40	1.15	39.56	43.0	90
GGI-81534	503-2293	460	3	17.20	1.15	19.78	21.5	45
GGI-81535	503-2294	575	3	13.80	1.15	15.87	17.3	35

7.4.3 GGX Fan Motor Specifications

FLA (Full Load Amps) represents the amount of current the motor is designed to draw at the rated horsepower. **SF (Service Factor)** is a measure of periodically overload capacity at which a motor can operate without damage.

SFA (Service Factor Amps) represents the amount of current the motor will draw when running at the full Service Factor.

Note

Minimum Breaker size needed is 2.5 times the Full Load Amps found on the motor plate.

Table 18. GGX Fan Motor Specifications

Fan	Motor	Voltage	Phase	FLA	SF	SFA	Overload Trip Amperage	Minimum Breaker Size
GGX-80311	503-4850	230	1	15.00	1.00	15.00	17.3	40
GGX-80332	503-4851	230	3	7.60	1.00	7.60	8.7	20
GGX-80334	503-4851	460	3	3.80	1.00	3.80	4.4	10
GGX-80335	503-4852	575	3	2.90	1.15	3.34	3.6	10
GGX-80711	503-4853	230	1	20.50	1.00	20.50	25.6	60
GGX-80732	503-4854	230	3	18.00	1.00	18.00	20.7	45
GGX-80734	503-4854	460	3	9.00	1.00	9.00	10.4	25
GGX-80735	503-4855	575	3	6.80	1.15	7.82	8.5	20
GGX-81011	503-4856	230	1	38.00	1.00	38.00	43.7	100
GGX-81032	503-4857	230	3	23.00	1.00	23.00	26.5	60
GGX-81034	503-4857	460	3	11.50	1.00	11.50	13.2	30
GGX-81035	503-4858	575	3	9.50	1.15	10.93	11.9	25
GGX-81511	503-4859	230	1	46.00	1.00	46.00	57.5	125
GGX-81532	503-4860	230	3	33.00	1.00	33.00	38.0	90
GGX-81534	503-4860	460	3	16.50	1.00	16.50	19.0	45
GGX-81535	503-4861	575	3	13.60	1.15	15.64	17.0	35

7.4.4 GGL Fan Motor Specifications

FLA (Full Load Amps) represents the amount of current the motor is designed to draw at the rated horsepower. **SF (Service Factor)** is a measure of periodically overload capacity at which a motor can operate without damage.

SFA (Service Factor Amps) represents the amount of current the motor will draw when running at the full Service Factor.

Note

Minimum Breaker size needed is 2.5 times the Full Load Amps found on the motor plate.

Table 19. GGL Fan Motor Specifications

Fan	Motor	Voltage	Phase	FLA	SF	SFA	Overload Trip Amperage	Minimum Breaker Size
GGL-80511	503-2093	230	1	21.40	1.15	24.61	26.8	60
GGL-80532	503-2204	230	3	13.00	1.15	14.95	16.3	35
GGL-80534	503-2204	460	3	6.49	1.15	7.46	8.1	20
GGL-80535	503-2205	575	3	5.19	1.15	5.97	6.5	15
GGL-80711	503-2096	230	1	34.00	1.15	39.10	42.5	90
GGL-80732	503-2207	230	3	18.10	1.15	20.82	22.6	50
GGL-80734	503-2207	460	3	9.07	1.15	10.43	11.3	25
GGL-80735	503-2098	575	3	7.45	1.25	9.31	9.2	20
GGL-81011	503-2099	230	1	39.00	1.15	44.85	48.8	100
GGL-81032	503-2210	230	3	24.40	1.15	28.06	30.5	70
GGL-81034	503-2210	460	3	12.20	1.15	14.03	15.3	35
GGL-81035	503-2211	575	3	9.76	1.25	12.20	12.4	25
GGL-81411	503-2102	230	1	58.00	1.00	58.00	67.9	150
GGL-81532	503-2213	230	3	36.00	1.25	45.00	45.0	90
GGL-81534	503-2213	460	3	18.00	1.25	22.50	22.5	45
GGL-81535	503-2214	575	3	14.40	1.25	18.00	18.0	40
GGL-82032	503-2215	230	3	48.20	1.25	60.25	60.3	125
GGL-82034	503-2215	460	3	24.10	1.25	30.13	30.1	70
GGL-82035	503-2216	575	3	19.30	1.25	24.13	24.1	50
GGL-82532	503-2217	230	3	59.00	1.25	73.75	73.8	150
GGL-82534	503-2217	460	3	29.50	1.25	36.88	36.9	80
GGL-82535	503-2218	575	3	23.60	1.25	29.50	29.5	60
GGL-83032	503-2219	230	3	70.20	1.25	87.75	87.8	200
GGL-83034	503-2219	460	3	35.10	1.25	43.88	43.9	90
GGL-83035	503-2220	575	3	28.10	1.25	35.13	35.1	80
GGL-84032	503-2221	230	3	94.20	1.25	117.75	117.8	250
GGL-84034	503-2221	460	3	47.10	1.25	58.88	58.9	125
GGL-84035	503-2222	575	3	37.70	1.25	47.13	47.1	100
GGL-85034	503-2223	460	3	59.20	1.25	74.00	74.0	150
GGL-85035	503-2224	575	3	47.40	1.25	59.25	59.3	125

7.5. Electrical Generator Requirements

7.5.1 High Speed Centrifugal Fans (GGF)

Table 20. Electrical Generator Requirements for GGF Fans

High Speed Centrifugal Fans (GGF)		Running Amps	Min. Breaker Size Needed is 2.5 Times Running Amps	Inrush Power Code	Inrush (k VA)	Amps Needed for Start Up (Running Amps x Inrush k VA)	Generator (k VA) Required to Start 1 Fan	Generator (k VA) Required to Start 2 Fans	Generator (k VA) Required to Start 3 Fans	Generator (kW) Required to Start 1 Fan	Generator (kW) Required to Start 2 Fans	Generator (kW) Required to Start 3 Fans
1PH 230 V	GGF-80311	14	35	J	7.5	105	24	27	29	19	21	23
3 PH 230 V	GGF-80332	8	20	K	8.5	68	26	30	32	21	24	26
3 PH 460 V	GGF-80334	4	10	K	8.5	34	26	30	32	21	24	26
3 PH 575 V	GGF-80335	3	10	L	9.5	29	28	31	33	23	25	27
1PH 230 V	GGF-80511	22	60	K	8.5	187	41	46	51	33	37	41
3 PH 230 V	GGF-80532	14	35	K	8.5	119	46	52	57	37	42	46
3 PH 460 V	GGF-80534	7	20	K	8.5	60	47	52	58	38	42	47
3 PH 575 V	GGF-80535	5	15	K	8.5	43	42	47	52	34	38	42
1PH 230 V	GGF-80711	33	90	H	6.7	221	49	56	64	39	45	51
3 PH 230 V	GGF-80732	20	50	H	6.7	134	52	61	68	42	49	55
3 PH 460 V	GGF-80734	9	25	H	6.7	60	47	53	61	38	43	49
3 PH 575 V	GGF-80735	8	20	H	6.7	54	52	61	68	42	49	55
1PH 230 V	GGF-81011	43	110	H	6.7	288	63	73	83	50	58	66
3 PH 230 V	GGF-81032	27	70	K	8.5	230	91	101	112	73	81	90
3 PH 460 V	GGF-81034	12	30	K	8.5	102	80	90	100	64	72	80
3 PH 575 V	GGF-81035	10	25	J	7.5	75	73	83	93	59	67	75
1PH 230 V	—	—	—	—	—	—	—	—	—	—	—	—
3 PH 230 V	GGF-81532	34	90	F	5.5	187	75	88	101	60	70	81
3 PH 460 V	GGF-81534	17	50	F	5.5	94	60	88	101	75	70	81
3 PH 575 V	GGF-81535	14	35	F	5.5	77	76	90	105	61	72	84

7.5.2 In-Line Centrifugal Fans (GGI)

Table 21. Electrical Generator Requirements for GGI Fans

In-Line Centrifugal Fans (GGI)		Running Amps	Min. Breaker Size Needed is 2.5 Times Running Amps	Inrush Power Code	Inrush (k VA)	Amps Needed for Start Up (Running Amps x Inrush k VA)	Generator (k VA) Required to Start 1 Fan	Generator (k VA) Required to Start 2 Fans	Generator (k VA) Required to Start 3 Fans	Generator (kW) Required to Start 1 Fan	Generator (kW) Required to Start 2 Fans	Generator (kW) Required to Start 3 Fans
1PH 230 V	GGI-80311	16	40	K	8.5	136	31	33	37	25	27	30
3 PH 230 V	GGI-80332	8	20	K	8.5	68	26	30	32	21	24	26
3 PH 460 V	GGI-80334	4	10	K	8.5	34	26	30	32	21	24	26
3 PH 575 V	GGI-80335	3	10	K	8.5	26	25	31	33	20	25	27
1PH 230 V	GGI-80511	22	60	L	9.5	209	47	52	57	38	42	46
3 PH 230 V	GGI-80532	14	35	H	6.7	94	37	42	47	30	34	38
3 PH 460 V	GGI-80534	7	20	H	6.7	47	37	42	47	30	34	38
3 PH 575 V	GGI-80535	5	15	H	6.7	34	33	38	46	27	31	37
1PH 230 V	GGI-80711	33	90	H	6.7	221	50	57	65	40	46	52
3 PH 230 V	GGI-80732	20	50	H	6.7	134	52	61	68	42	49	55
3 PH 460 V	GGI-80734	9	25	H	6.7	60	47	53	61	38	43	49
3 PH 575 V	GGI-80735	8	20	H	6.7	54	52	61	68	42	49	55
1PH 230 V	GGI-81011	45	110	G	5.9	266	61	73	83	49	58	66
3 PH 230 V	GGI-81032	27	70	H	6.7	181	71	82	92	57	66	74
3 PH 460 V	GGI-81034	13	30	H	6.7	87	68	78	90	55	63	72
3 PH 575 V	GGI-81035	10	25	H	6.7	67	66	76	86	53	61	69
1PH 230 V	GGI-81511	60	150	F	5.5	330	76	90	104	61	72	83
3 PH 230 V	GGI-81532	36	90	F	5.5	198	79	75	108	63	93	86
3 PH 460 V	GGI-81534	17	50	F	5.5	94	75	89	102	60	71	82
3 PH 575 V	GGI-81535	14	30	F	5.5	77	76	90	105	61	72	84

7.5.3 Low Speed Centrifugal Fans (GGL)

Table 22. Electrical Generator Requirements for GGL Fans

Low Speed Centrifugal Fans (GGL)		Running Amps	Min. Breaker Size Needed is 2.5 Times Running Amps	Inrush Power Code	Inrush (k VA)	Amps Needed for Start Up (Running Amps x Inrush k VA)	Generator (k VA) Required to Start 1 Fan	Generator (k VA) Required to Start 2 Fans	Generator (k VA) Required to Start 3 Fans	Generator (kW) Required to Start 1 Fan	Generator (kW) Required to Start 2 Fans	Generator (kW) Required to Start 3 Fans
1PH 230 V	GGL-80511	23	60	J	7.5	173	29	45	50	32	36	40
3 PH 230 V	GGL-80532	14	40	F	5.3	74	26	30	32	21	24	26
3 PH 460 V	GGL-80534	7	20	F	5.3	34	26	30	32	21	24	26
3 PH 575 V	GGL-80535	5	15	F	5.3	37	25	31	33	20	25	27
1PH 230 V	GGL-80711	35	90	J	7.5	263	60	69	76	48	55	61
3 PH 230 V	GGL-80732	21	60	F	5.3	111	37	42	47	30	34	38
3 PH 460 V	GGL-80734	10	25	F	5.3	53	37	42	47	30	34	38
3 PH 575 V	GGL-80735	7	20	F	5.3	37	33	38	46	27	31	37
1PH 230 V	GGL-81011	45	12	F	5.3	239	55	65	76	44	52	61
3 PH 230 V	GGL-81032	29	80	F	5.3	154	52	61	68	42	49	55
3 PH 460 V	GGL-81034	13	35	F	5.3	69	47	53	61	38	43	49
3 PH 575 V	GGL-81035	10	25	F	5.3	53	52	61	68	42	49	55
1PH 230 V	GGL-81411	63	175	H	6.7	422	98	111	126	78	89	101
1PH 230 V	—	—	—	—	—	—	—	—	—	—	—	—
3 PH 230 V	GGL-81532	40	100	F	5.3	212	79	75	108	63	93	86
3 PH 460 V	GGL-81534	18	50	F	5.3	95	75	89	102	60	71	82
3 PH 575 V	GGL-81535	15	40	F	5.3	80	76	90	105	61	72	84
1PH 230 V	—	—	—	—	—	—	—	—	—	—	—	—
3 PH 230 V	GGL-82032	54	150	F	5.3	286	26	30	32	21	24	26
3 PH 460 V	GGL-82034	25	70	F	5.3	133	26	30	32	21	24	26
3 PH 575 V	GGL-82035	20	60	F	5.3	106	25	31	33	20	25	27
1PH 230 V	—	—	—	—	—	—	—	—	—	—	—	—
3 PH 230 V	GGL-82532	65	175	F	5.3	345	37	42	47	30	34	38
3 PH 460 V	GGL-82534	30	80	F	5.3	159	37	42	47	30	34	38
3 PH 575 V	GGL-82535	24	60	F	5.3	127	33	38	46	27	31	37
1PH 230 V	—	—	—	—	—	—	—	—	—	—	—	—
3 PH 230 V	GGL-83032	78	200	F	5.3	413	52	61	68	42	49	55
3 PH 460 V	GGL-83034	36	90	F	5.3	191	47	53	61	38	43	49
3 PH 575 V	GGL-83035	29	80	F	5.3	154	52	61	68	42	49	55
1PH 230 V	—	—	—	—	—	—	—	—	—	—	—	—
3 PH 230 V	GGL-84032	94	250	F	5.3	498	71	82	92	57	66	74
3 PH 460 V	GGL-84034	47	125	F	5.3	249	68	78	90	55	63	72
3 PH 575 V	GGL-84035	38	100	F	5.3	201	66	76	86	53	61	69
1PH 230 V	—	—	—	—	—	—	—	—	—	—	—	—
3 PH 230 V	NA	—	—	—	—	—	—	—	—	—	—	—
3 PH 460 V	GGL-85034	59	150	F	5.3	313	75	89	102	60	71	82
3 PH 575 V	GGL-85035	47	125	F	5.3	249	76	90	105	61	72	84

7.5.4 Vane Axial Fans (GGX)

Table 23. Electrical Generator Requirements for GGX Fans

Vane Axial Fans (GGX)		Running Amps	Min. Breaker Size Needed is 2.5 Times Running Amps	Inrush Power Code	Inrush (kVA)	Amps Needed for Start Up (Running Amps x Inrush kVA)	Generator (kVA) Required to Start 1 Fan	Generator (kVA) Required to Start 2 Fans	Generator (kVA) Required to Start 3 Fans	Generator (kW) Required to Start 1 Fan	Generator (kW) Required to Start 2 Fans	Generator (kW) Required to Start 3 Fans
1PH 230 V	GGX-80311	15	40	H	6.7	98	22	25	28	18	20	23
3PH 230 V	GGX-80332	8	20	K	8.5	68	26	30	32	21	24	26
3PH 460 V	GGX-80334	4	10	K	8.5	34	26	30	32	21	24	26
3PH 575 V	GGX-80335	3	10	L	9.5	29	28	31	33	23	25	27
1PH 230 V	GGX-80711	21	60	K	8.5	179	41	45	50	33	36	40
3PH 230 V	GGX-80732	18	50	K	8.5	153	60	67	75	48	54	60
3PH 460 V	GGX-80734	9	25	K	8.5	77	61	67	62	49	54	50
3PH 575 V	GGX-80735	7	20	L	9.5	67	66	72	80	53	58	64
1PH 230 V	GGX-81011	38	100	F	5.5	209	47	56	65	38	45	52
3PH 230 V	GGX-81032	23	60	G	5.9	136	53	62	72	43	50	58
3PH 460 V	GGX-81034	12	30	G	5.9	71	56	65	75	45	52	60
3PH 575 V	GGX-81035	10	25	G	5.9	59	58	68	77	47	55	62
1PH 230 V	GGX-81511	61	150	K	8.5	519	119	132	146	95	106	117
3PH 230 V	GGX-81532	35	90	H	6.7	235	92	106	121	74	85	97
3PH 460 V	GGX-81534	17	50	H	6.7	114	90	103	117	72	83	94
3PH 575 V	GGX-81535	14	35	J	7.5	105	103	117	131	83	94	105

7.6. Fan Impeller Placement

To ensure the fan is running at peak efficiency, the impeller and cone placement is critical. If the impeller is not in the correct position the fan may cut out as it is running into high amps, or it may not be getting the full amount of airflow the fan can produce. See Figures [Figure 30 on page 63](#), [Figure 31 on page 64](#), and [Figure 32 on page 64](#) below.

Table 24. Impeller Placement for AGI Fans

	High Speed Fan Impeller Placement				
HP	3	5	7	10	15
Measurement with screen and cone	6-13/16"	7-3/8"	7-3/16"	8-9/16"	9-7/16"
Measurement without screen and cone	6-9/16"	7-1/16"	6-3/4"	8-7/8"	9-3/16"
HP	20	25	30	40	-
Measurement with screen and cone	9-3/16"	10-1/16"	11-3/16"	12-3/4"	-
Measurement without screen and cone	9"	9-3/4"	10-7/8"	12-1/2"	-
	In-line Fan Impeller Placement				
HP	3	5	7	10	15
Measurement with screen and cone	9-7/16"	8-1/8"	7-7/8"	11-3/4"	12-7/16"
Measurement without screen and cone	9"	7-7/8"	7-7/16"	11-5/16"	12-1/16"
	Low Speed Fan Impeller Placement				
HP	5	7	10	14/15	20
Measurement with screen and cone	12-1/4"	14-5/8"	14-1/2"	15-7/8"	17-3/8"
Measurement without screen and cone	11-7/8"	14-15/16"	13-3/4"	15-5/16"	17-3/16"
HP	25	30	40	50	-
Measurement with screen and cone	18-11/16"	17-1/2"	19-3/4"	19-3/4"	-
Measurement without screen and cone	18-3/8"	17-1/8"	19-7/16"	19"	-

For High Speed Fans, Low Speed Fans, or Inline Fans

Make sure the +/- 1/16" of the values stated above the impeller is in the correct position. See diagram below for the correct impeller and cone overlap positioning.

Figure 30. Correct Impeller and Cone Overlap Positioning

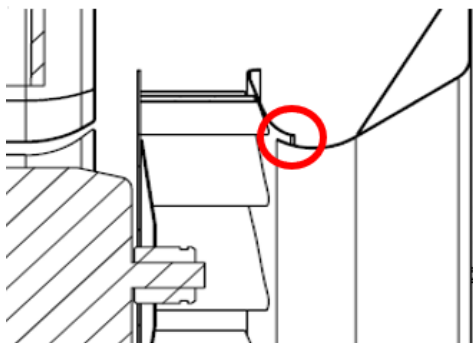
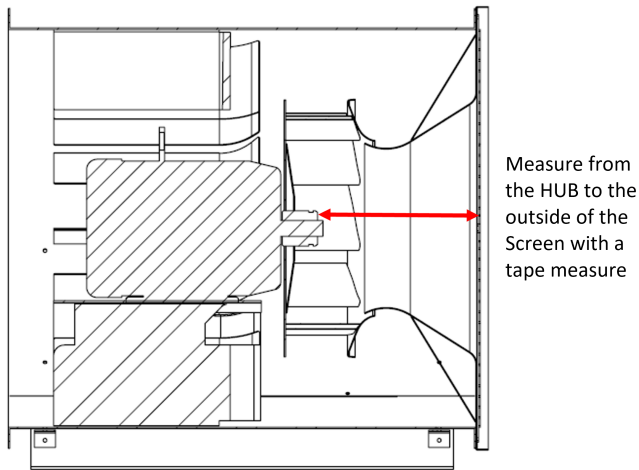
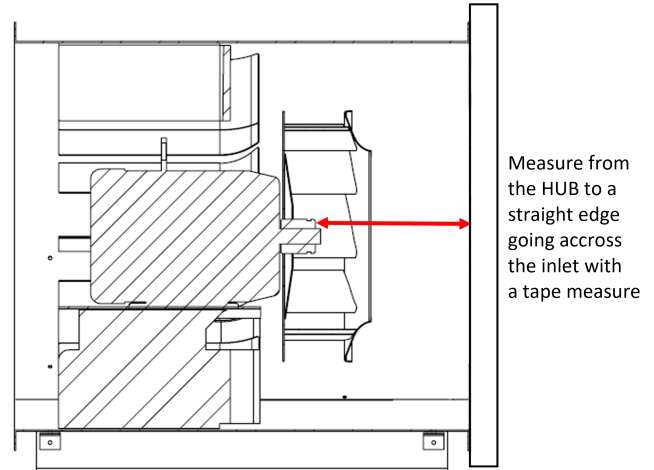
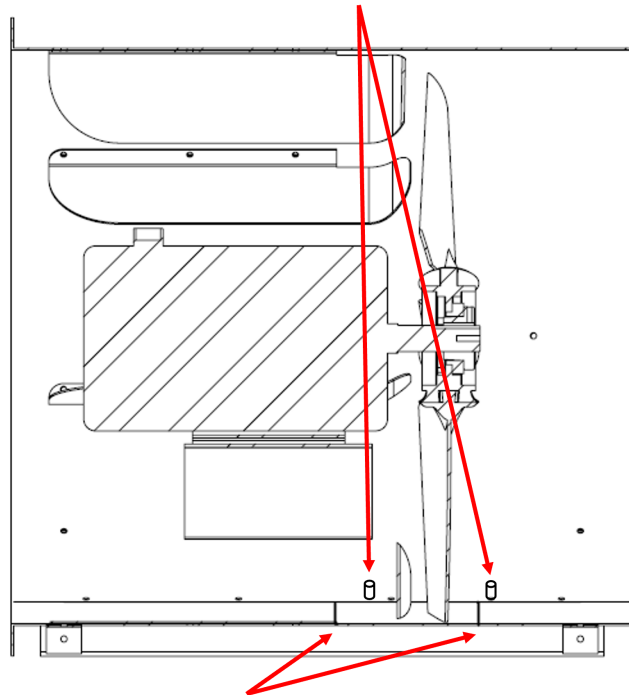


Figure 31. Measurement With Screen and Cone**Figure 32. Measurement Without Screen and Cone****For Axial Fans**

1. Once the blade has been replaced, make sure to spin the blade by hand to see if there is any rubbing or binding from the housing sides.
2. When replacing a fan blade on an Axial, make sure the blade is lined up between the body cut out on the inside of the fan.

If your Fan Blade is aluminum it will need to line up inbetween the nutserts that stick out on the inside of the fan

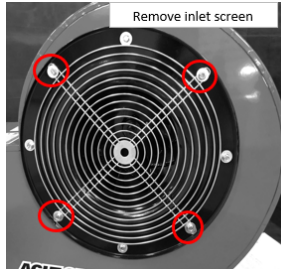


If your Fan Blade is plastic it will need to line up inbetween the body cut out on the inside of the fan

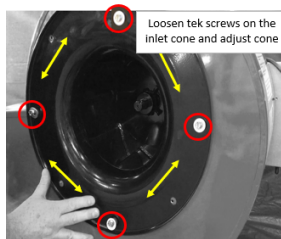
7.7. Fan Inlet Cone Alignment

To get the most efficient airflow from the fan, and to prevent damage of fan components, make sure the fan impeller is not rubbing against the inlet cone, and that there is an even gap between. Adjust the inlet cone as needed.

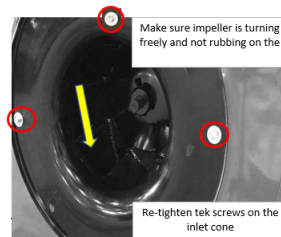
1. Remove inlet screen.



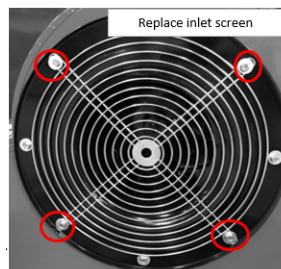
2. Loosen tek screws on the inlet cone and adjust cone.



3. Make sure impeller is turning freely and no rubbing. Re-tighten tek screws on the inlet cone.



4. Replace inlet screen.



8. Warranty

Except as expressly provided in this agreement, AGI Nobleford (hereinafter called the Manufacturer) excludes all express or implied warranties, conditions, and obligations of the Manufacturer, whether statutory or otherwise, concerning the quality of the units or their fitness for any purpose.

Under no circumstances will the Manufacturer be liable for any kind of special, consequential, indirect, or incidental damages resulting from the use of its products, nor shall the Manufacturer's liability ever exceed the selling price of the product.

The Manufacturer warrants their products as follows:

1. Goods free from defect: The unit shall be free from defects in materials and workmanship and shall operate properly in accordance with industry standards when employed in normal usage, provided the unit has been properly installed for a period of: three (3) years from the original date of purchase.
2. The warranty does not include:
 - Routine replacement of parts due to normal wear and tear arising from use.
 - Any defect attributable in whole or in part to misuse or improper installation.
 - Any damage or defect attributable to repair of the unit outside the Manufacturer's facilities or those of an authorized dealer, or the installation of unapproved parts on the unit in the Manufacturer's judgment to affect its performance or reliability, or which has been subject to misuse, negligence, or accident.
 - Any damage attributable to accident or to lightning, power surge, brownout, leaking, damage, or connection to a power source having a greater rating than that specified in the unit specifications.
3. Repair or Replacement: Where any part of the unit fails during normal usage during the warranty period specified, the Manufacturer, or authorized dealer of the Manufacturer, shall repair or replace the defective part of the unit with a new or factory reconditioned part, such replacement or repair to be made without charge for parts or labor, F.O.B. the Manufacturer.
4. Warranties shall not apply to any product made by the Manufacturer that has not been operated in accordance with the Manufacturer's printed instructions or shall have been operated beyond the rated capacity of the product or a use not intended.
5. The Manufacturer reserves the right to make design or specification changes at any time, without contingent obligation to purchasers of products already sold.

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Please include the part number listed on the cover page in your message.