

marathon™

PANCAKE CAPACITOR GENERATOR

Installation, Operation and Maintenance Manual

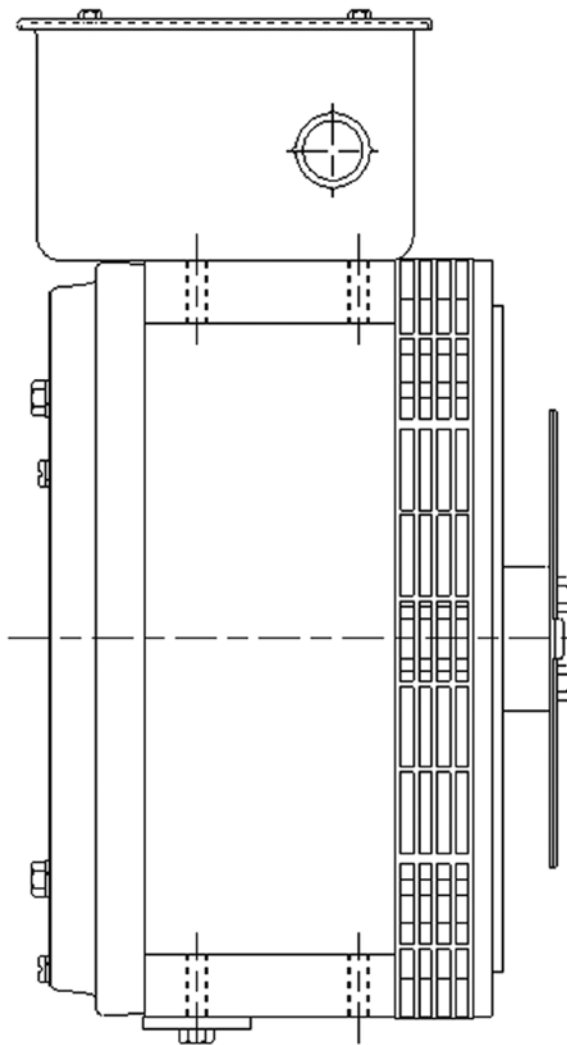


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INTRODUCTION

Thank you for choosing a Marathon Capacitor Generator.

Please read the installation and service sections of this manual carefully before starting the generator. A clean environment and proper installation are as critical to generator performance as the engineering of the internal components. If you have any difficulty installing or servicing your Marathon generator, our service and technical staff will be happy to help you. We are confident that by following these guidelines, you will get many years of reliable service from your Marathon generator.

Initial Inspection

Your Marathon generator has been carefully inspected and tested before leaving the factory. However, it is wise to examine the generator before installation. Carefully unpack and examine the generator. If there is any damage, file a damage claim with the shipper or agent immediately. Save all packaging materials for inspection by agent.

GENERAL DATA

Construction	Capacitor Excitation	
Speed	60 Hz	1850 rpm at no load 1850 rpm at full load
	50 Hz	1550 rpm at no load 1500 rpm at full load
Air Cooled		
Max. Ambient Temp.	40°C	
Insulation	Class F	
Voltage Response	0.1 sec.	

Model	60 Hz	50 Hz
201CSA5411	6 KW	N/A
201CSA5420	8 KW	6 KW

The 201CSA5420 is shipped with a 25uf capacitor for 60 Hz use. For use at 50 Hz replace capacitor with a 45uf capacitor – Marathon part number: 97F9645.

SAFETY

PLEASE REMEMBER SAFETY FIRST. If you are not sure of the instructions or procedures contained in this manual, seek qualified help before continuing. **When in doubt, ask.**

This manual emphasizes the safety precautions necessary during the installation, operation, and maintenance of your Capacitor generator. Each section has caution and warning messages. These messages are for your safety, and the safety of the equipment involved. If any of the cautions or warnings are not readily understood, seek clarification from qualified personnel before proceeding.

Before any service work is done, disconnect all power sources and, where appropriate, lock out all controls to prevent an unexpected start-up of the generator set driver. Proper grounding (earthing) in compliance with local and national electrical codes and standards must be provided. These safety precautions are necessary to prevent potential serious personal injury or even death.

The hazards associated with lifting or moving your generator are pointed out in the installation and service sections. Incorrect lifting or moving can result in personal injury or damage to the unit.

Prior to start-up of the unit ensure that all generator leads are properly connected and insulated. **Always assume there will be voltage present at the generator terminals whenever the generator shaft is rotating and proceed accordingly.**

Use extreme caution when handling capacitors. A potential shock condition exists even when the engine has shut off. See page 4 for the proper handling of capacitors.

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This manual is not intended to be a substitute for properly trained personnel. Installation and repairs should only be attempted by those qualified and trained. The cautions and warnings point out known conditions and situations that are potentially hazardous. Each installation may well create its own set of hazards. No manual can cover every possible situation.

INSTALLATION

Location/Environment

The engine-generator set must be installed in a protected environment, with a minimal exposure to fumes, moisture, dust, and dirt.

THE OUTSIDE AIR TEMPERATURE MUST NOT EXCEED 40°C (104°F) FOR CONTINUOUS DUTY USE.

- DO NOT obstruct the generator intake and outlet air passages.
- Provide sufficient air circulation around the set to remove engine heat and to provide ample generator cooling.
- Hot air from the engine radiator must not enter the generator.
- Check the mounting surface to be sure that it is rigid enough to keep vibration and noise to a minimum.

Base Mounting

Mount generator securely. Before tightening hold-down bolts, use shims as necessary under the generator feet for uniform support. If this is not done, the frame may become distorted resulting in excess vibration that could damage the generator.

Mechanical Mounting (Refer to Figure 1):

To mount a single-bearing capacitor generator to an engine:

- If connected, disconnect the positive (+) terminal from the engine cranking battery.
- Place a jack or other support under the engine flywheel housing.
- Remove the pot cover from the back of the generator and disconnect all incoming power leads.
- Remove the exhaust screen band.

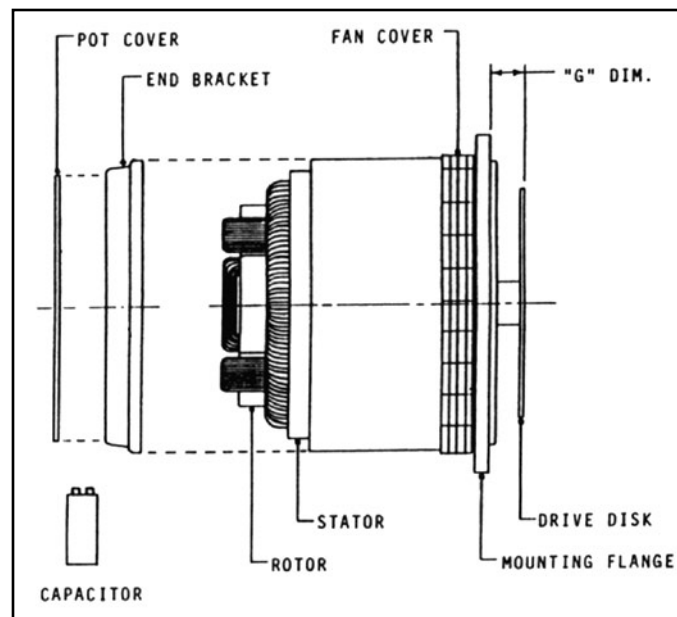


Figure 1- General Assembly

- Place a strap around generator rotor assembly and support from hoist.
- Pull the rotor assembly from the frame. **CAUTION:** Do not scratch or cut the copper stator winding when removing rotor.
- Bolt the rotor assembly's drive disc to the engine flywheel, using the proper size flat washers and S.A.E. grade 8 bolts. Torque the drive disc mounting bolts to the engine manufacturer's specifications.
- Push the generator frame assembly carefully back over the rotor. Mount the frame assembly to the engine flywheel housing with the proper size bolts, lock washer, and nuts.
- Remount the exhaust screen band.
- Reconnect all incoming power leads. See the wiring diagram supplied with this manual.
- Remount the pot cover and fasten securely.
- Remove the jack support from under the engine flywheel housing.
- Reconnect the positive (+) terminal lead to the engine cranking battery.

Electrical Connections

For electrical connections, see connection diagrams on page 7. Ground (earth) the generator frame and neutral lead in accordance with all National and Local Electrical Codes. **Failure to properly ground (earth) the generator could result in severe personal injury or even death!**

NOTE: Be sure that ALL electrical connections are correct before starting generator.

OPERATION

Initial Start-up

- a. Carefully inspect the generator before start-up. Check all electrical connections, and ensure that all bolts have been securely fastened.
- b. Rotate the shaft. The shaft and rotor assembly should turn freely. Do not use the fan as a fulcrum to bar over the unit.
- c. Start engine. See the engine manufacturer's operating manual for proper engine starting procedures.
- d. Check vibration. If excessive, check all mechanical connections.

GENERATOR SPEED

Rating	No Load RPM	Minimum Full Load RPM
60 Hz	1800 - 1850	1800 less 1%
50 Hz	1500 - 1550	1500 less 1%

- e. The generator voltage is adjusted at the factory to a specified speed; however, it is advisable to verify upon installation.
- f. Observe and record the generator voltage at no load and at full load. Immediately after start-up (cold) and after 30 minutes of full load (hot). The voltage is easily adjustable by adjusting the engine speed. The voltage will increase as the generator rpm is increased.
- g. If voltage cannot be adjusted, see the section on TROUBLE SHOOTING, page 6.
- h. Check the temperature rise after running for 30 minutes at full load. If excessive, examine the generator for the following:
 1. Obstructed air flow
 2. Hot air feeding into the inlet of the generator
 3. Bypassed air (air not pulled through generator)
- i. Examine ratings and actual load applied to determine if the generator rating may be too low for the load applied.

Standard generator kW ratings are based on 40°C ambient temperature. **For operation at higher ambient temperatures, reduce the generator kW rating 1% for each degree above 40°C. For operation at high altitudes, reduce the generator kW rating 2% for each 1000 ft above sea level.**

Frame temperatures above 60°C. (140°F) are too high, indicating a temperature rise in the copper windings of 105°C (121°F) or more.

Capacitor Excitation/Voltage Regulation

A single capacitor, located in the conduit box, is used to regulate the voltage to within 5% at rated load. Use extreme caution when handling capacitors. The capacitor will still contain high voltage even after the engine has stopped operating.

Always discharge the capacitor before handling. Use an insulated conductor (jumper wire) or a screw driver with an insulated handle to short across the capacitor terminals, and discharge the capacitor prior to handling.

MAINTENANCE

Periodic Inspection

Clean and inspect generator after every 200 hours of normal operating time. If the generator is housed in a harsh environment, it is advisable to clean and inspect the unit more frequently. If dirt and grease is allowed to build-up, the generator will run hotter, lose efficiency, and reduce the life of the generator.

Remove pot cover to examine the rotor, shaft, and bearing for excessive wear. Replace the bearing after 10,000 hours of normal operating time or sooner if wear is evident.

Cleaning

Remove all dust, dirt, and oil and grease build-up from external surfaces. Use a low-pressure air hose (25-psi maximum) to blow dirt and grease from the internal components through the fan opening. Clean inside the control box. Check for loose or damaged lead wires and loose components mounted in the box.

NOTE: Do not remove any internal generator parts or warranty is void.

SERVICE

Flashing the Rotor - Refer to Figure 2

NOTE: Do not run the generator during this operation.

- a. Disconnect all incoming power leads to the generator.
- b. Connect the (+) lead of a 12 volt battery to the "R" connection.
- c. Connect the (-) lead of the battery to the rotor shaft.
- d. Disconnect battery leads.

- e. Check the generator no load terminal voltage. It should be within $\pm 10\%$ of rated value.
- f. If residual voltage is normal, the capacitor is defective and should be replaced.

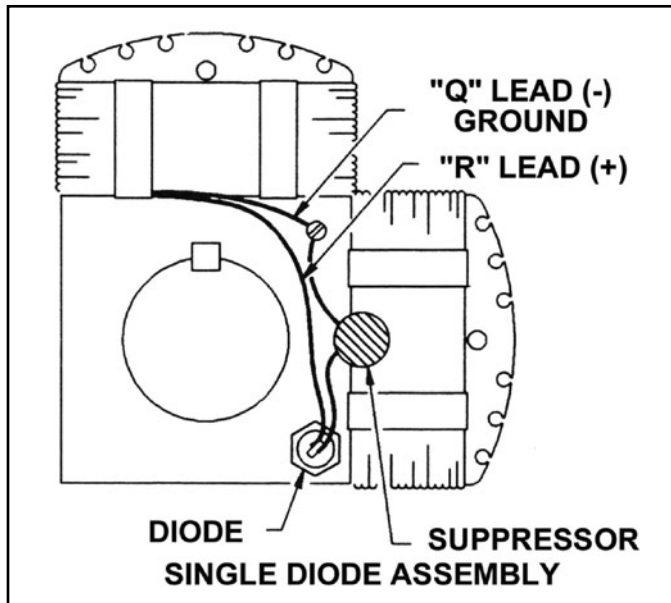


Figure 2

Checking the Capacitor

- a. Check the capacitor "charge and discharge" readings using an ohmmeter on the RX-1000 scale.
- b. Place the ohmmeter leads on the capacitor terminals one at a time. A meter deflection should be seen (charging), followed by a slow return to infinity (discharging).
- c. Reverse the ohmmeter leads and repeat the procedure. The results should be the same. No meter deflection or continuity indicates a defective capacitor. Replace the device.

Checking Diode

- a. Check each diode individually by removing the (+) rotor lead stud connection (see Figures 2 and 3). Diodes are good if the resistance reading is approximately mid-scale on the lowest ohm rating.
- b. Check for leakage in each diode by reversing their polarity. Diodes are good if the resistance reading is infinite. A faulty diode will give a resistance value of zero.
- c. Prior to installing a replacement diode, clean the surface of the exciter rotor core, and run a bead of a thermal-electrical compound around the base of the diode. The diode threads should not be coated.
- d. Torque the diode base to 20–30 in-lb. **Do not over torque the diode base.**

Ordering Parts

When ordering parts, always include the name and quantity of each part along with the serial and model numbers from the generator nameplate.

For parts ordering information, contact:

Marathon
100 E. Randolph St.
P.O. Box 8003
Wausau, WI 54402-8003
Phone: 715.675.8257

RETURNED GOODS

Consult Marathon for authorization before returning any product. We cannot be responsible for any items returned without authorization.

CAUTION: Single bearing generators must have their rotor assembly properly secured to prevent damage during transit to the factory, or to an authorized service center.

TROUBLESHOOTING

Visual Examination

Inspect the generator visually. Look for obvious damage such as: Charred windings, pinched wires, cracked insulation, loose terminal lugs, etc. All connections should be fastened securely. Check the operating speed and see that the unit has been reassembled and reconnected correctly.

SYMPTOM	CAUSE	SOLUTION
Will not hold voltage - Loss of residual magnetism	Unit has been stored. Rotor shorting out when unit gets hot. Pinched leads. Defective Capacitor. Defective Diodes Defective Surge Suppressor.	Flash Rotor (see SERVICE section). Check rotor windings for broken or burned wires. Examine all lead wires and correct. Replace. Replace. Replace.
Full voltage at no load Voltage drops at full load	Loose or broken lead wires. Rotor opened or shorted. Stator ground or shorted.	Check lead wires and connections for broken wires and loose connections. Compare connections with the wiring diagram supplied with generator. Measure resistance between leads. Consult Factory.
Low Voltage	Loss of residual magnetism. Low engine speed. Faulty diode.	Flash Rotor (see SERVICE section). Check engine speed and generator ratings. 1800 rpm/60 Hz Replace diode.
Voltage too high	Fast engine speed.	Check engine speed and generator ratings. 1800 rpm/60 Hz
Uncontrollable voltage	Incorrect engine adjustment.	Check engine operation, speed, fuel lines & injector.
No voltage at no-load or full-load	Faulty suppressor.	Disconnect from circuit. If there is an obvious increase in voltage, replace the suppressor.
Voltage spikes appearing in sine wave	Incorrect engine adjustment, fuel line, or poor gas. Loose connection. Bad ground connection. Load induced.	Change fuel filter and check engine speed. Inspect all connections. Inspect all ground connections. Filter load.

CAPACITOR PANCAKE SPECIFICATIONS

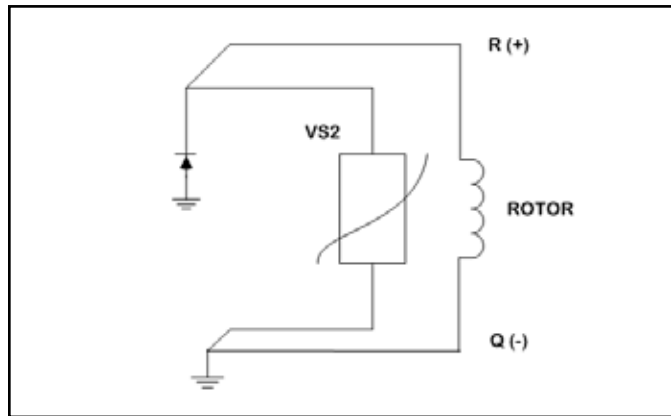
Generator Model No	kW	Hz	Main Stator		Main Rotor	Capacitor		Diode Qty - P/N	Surge Suppressor Qty - P/N
			L-L Res. Ohms	E1-E4 Res. Ohms	Res. Ohms	Rating	P/N		
201CSA5411	6	60	0.703	1.832	1.200	440V, 25uf	92726	1 - 730825-01	1 - 761670-01
201CSA5420	8	60	0.498	1.978	1.272	600V, 25uf	27L1502	1 - 730825-01	1 - 761670-01
201CSA5420	6	50	0.498	1.978	1.272	440V, 45uf	97F9645	1 - 730825-01	1 - 761670-01
332CSA5213	6.5	50	0.370	2.410	1.540	450V, 45uf	769804-01	1 - 730825-01	1 - 761670-01

Diode P/N 730825-01: Reverse polarity, 40 amp, 600 PIV, stud type - ¼ - 28 UNF - 2A.

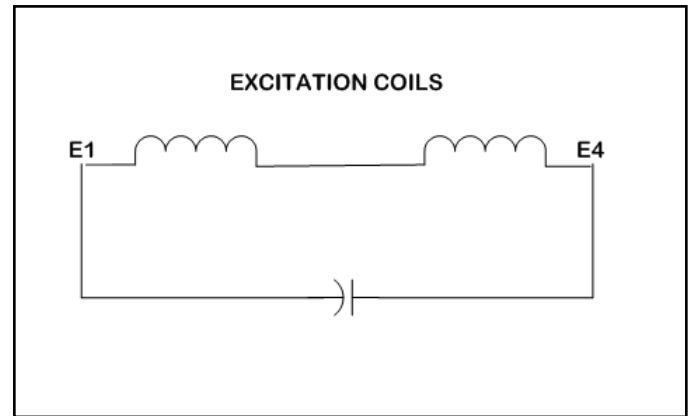
Torque base stud to 25 In-Lb maximum.

Surge Suppressor P/N 761670-01: MOV, 250 Volts cont., 40 Joules.

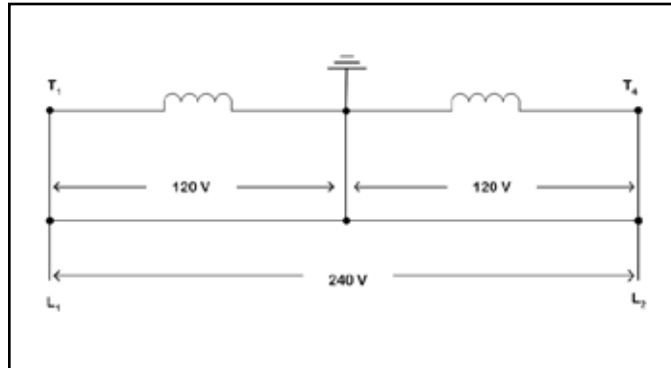
CONNECTION DIAGRAMS



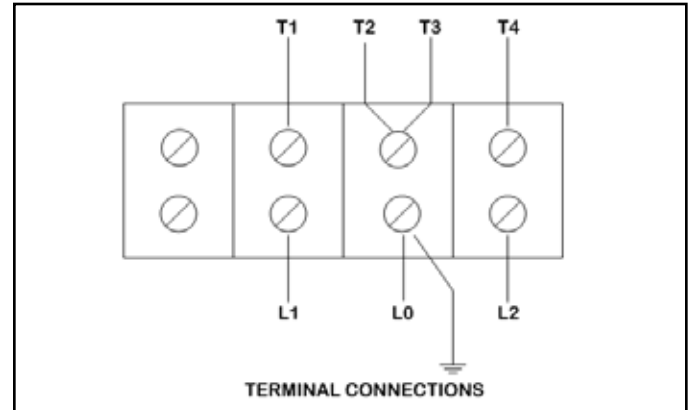
Diode and Suppressor



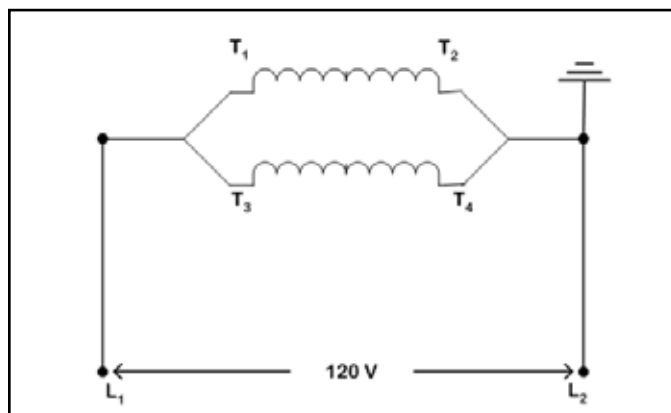
Excitation Windings



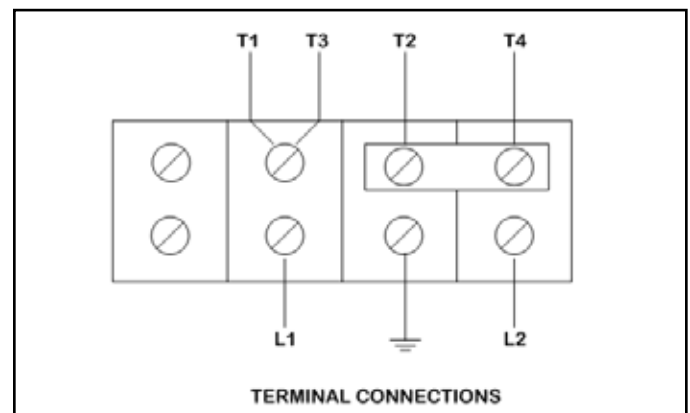
240 Volt Connections



TERMINAL CONNECTIONS



120 Volt Connections



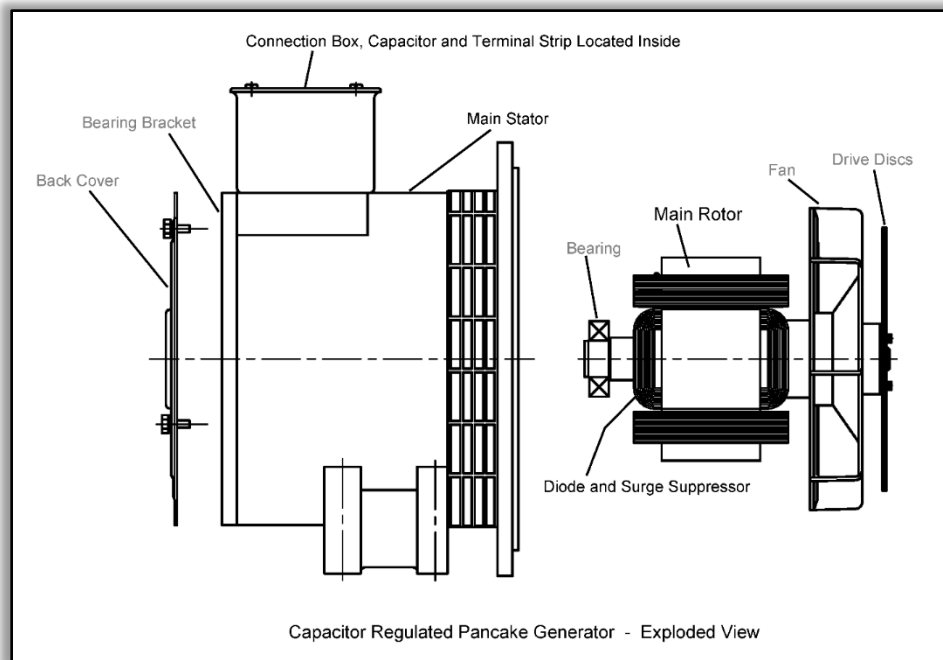
TERMINAL CONNECTIONS



Trouble Shooting Capacitor Regulated Pancake Light Tower Generators

These are small, capacitor regulated generators. The most common model numbers include 201CSA5411 which is a 6kW unit and the 201CSA5420 which is an 8 kW unit. A more complete listing of models is included at the end of the trouble shooting guide.

A capacitor regulated, light tower generator is simple to trouble shoot with just 6 main components: **the main stator winding, the main rotor winding, the excitation winding, a capacitor, diode and surge suppressor.** For tools you will need a good multi-meter – a Fluke works very well – a ratchet set, a set of screwdrivers and a soldering iron. You can make an analog style meter work as well.



This trouble shooting guide is intended to address the most common causes of very low or no output voltage, usually 3V – 10V either Line-to-Line or Line-to-Neutral as measured at the generator output terminal strip located in the connection box mounted on top of the generator.

If the generator has been sitting, unused, for 3 – 6 months, or longer it may have lost its residual magnetic field required to build voltage. If you suspect this is the case, refer to the section on **Restoring Residual Magnetism** near the end of this trouble shooting guide.

Start trouble shooting in the connection box mounted on the top of the generator. It's easily accessible – especially when the generator is mounted in a light tower – and contains most of the wiring and components that you need to check.

SAFETY NOTE – All trouble shooting must be done with the gen-set shut down.

Step 1 : Check the Capacitor

SAFETY NOTE – Discharge capacitor by shorting terminals with insulated jumper wire or screwdriver with insulated handle.

Digital Multimeter: Disconnect leads from capacitor – Blue Leads in Figure 1. Switch multimeter to the capacitor setting, and directly check the capacitance reading. **If capacitance measured is significantly less than capacitance rating specified, you have a failed capacitor that must be replaced.**

OR

Analog meter: Disconnect leads from capacitor – Blue Leads in Figure 1. Switch meter to Ohms x 1000 scale. Touch leads to the capacitor terminals – you should see the resistance start very low, near zero, gradually increase towards infinity and then return back to zero. Discharge capacitor, reverse leads and repeat. **If you do not see the charge / discharge pattern, you have a failed capacitor that must be replaced.**



Figure 1

Step 2 : Check the Main Stator Winding

The main stator windings are very low resistance which makes them difficult to test. Set meter to the lowest possible Ohms scale. Connect one side to T1 and the other side to T4 – top and bottom Yellow Leads in Figure 1. You must have good continuity and should have a resistance reading between .3 to .7 Ohms. Refer to Specifications Table for resistance by model.

If you have NO continuity or you have a significantly higher ohm reading – anything higher than about 3 ohms you have a failed main stator winding.

Failed main stator windings cannot be repaired. Replace generator.

Step 3 : Check the Excitation Winding

SAFETY NOTE – Discharge capacitor by shorting terminals with insulated jumper wire or screwdriver with insulated handle.

Disconnect leads from capacitor – Blue Leads in Figure 1. These are the excitation winding leads, typically labeled E1 and E4. Set meter to the lowest ohm scale available. Connect one side to E1 and the other side to E4. You should have good continuity and somewhere between 1.0 to 2.5 ohms. Refer to Specifications Table for resistance by model.

If you have NO continuity or a significantly higher ohm reading – anything higher than 5 ohms **you have a failed excitation winding.**

Failed excitation windings cannot be repaired. Replace generator.

Step 4 : Check for Grounded or Shorted Main Stator Windings

Set meter to the highest possible Ohms scale.

Check for continuity between the excitation winding leads E1 & E4 – Blue Leads in Figure 2 and main stator leads T1, T2, T3 & T4 – Yellow Leads in Figure 1. You should have no continuity between E1 & E4 and T1, T2, T3 & T4. Readings should be greater than 1 megohm or infinite.

If you have continuity or < 1 megohm resistance between the excitation the main stator windings, **you have a failed excitation and main stator windings.**

Check for continuity between the excitation winding leads E1 & E4 – Blue Leads in Figure 2, and the ground terminal; then check for continuity between the main stator leads T1, T2, T3 & T4 – Yellow Leads in Figure 1 and the ground terminal. You should have no continuity between any of the leads and the ground terminal. Readings should be greater than 1 megohm or infinite.

If you have continuity between the windings and the ground terminal, **you have failed excitation and main stator windings.**

A final note on the excitation windings. The excitation winding is a high voltage winding. It is not unusual for the excitation winding to test good at rest when the generator is not operating and to fail in operation at high voltage by faulting to the main stator winding.

If your light tower generator windings and components check out good at rest, but the generator fails to build voltage, **you have a defect between the excitation winding and the main stator windings.**

Failed excitation windings cannot be repaired. Replace generator.

If testing STEPS 1 - 4 have not found any faults or defects, move to the opposite drive end of the generator to check the diode and surge suppressor. Depending on accessibility, you may be able to test the diode and surge suppressor without removing the bearing bracket.

Step 5 : Check the Surge Suppressor, Only if Output is Zero Volts

The suppressor is located on the shaft end, near the diode. It may be covered in epoxy potting material. One lead is screwed to the rotor core; the other is soldered to the top of the diode.

Lift the lead fastened to the rotor core. Connect test leads to each side of the suppressor. **Continuity or very low resistance indicates a failed suppressor that must be replaced or removed from the circuit.**

An alternate test is to cut it out of the circuit, insulate and secure the remaining leads, and then run the generator. Do not cut the main rotor lead which is also connected to the diode.

If the suppressor was bad and there are no other component failures, it will now build voltage.

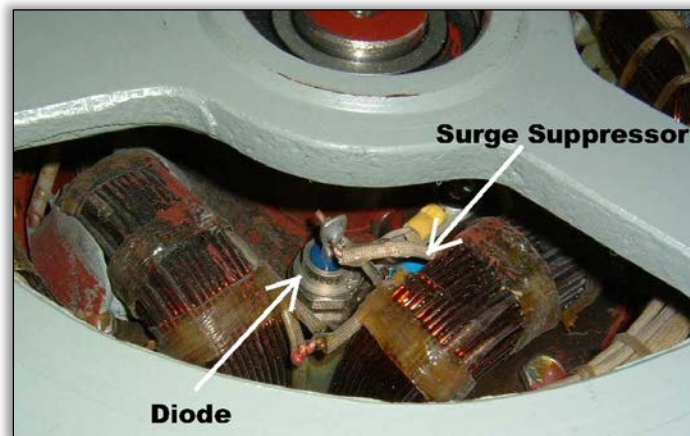


Figure 2

Step 6 : Checking and Replacing the Diode

Unsolder all leads connected to the top of the diode.

Multimeter Diode Test : Switch multimeter to diode test mode, place one lead on the top of diode, the other lead in contact with bare metal on the shaft end. Reverse the leads and repeat. A good diode will have no voltage reading in one direction and 0.4 – 0.5Vdc in the other.

No voltage in either direction or voltage in both directions indicates a failed diode that must be replaced.

OR

Analog Meter: Place one lead on top of the diode and the other lead in contact with the shaft end. Reverse leads and repeat. A good diode will have much greater resistance in one direction. Typical forward resistance is under 100 Ohms. Typical resistance in the reverse direction is over 30,000 ohms.

Continuity with little or no resistance in both directions or very high resistance in both directions indicates the diode has failed and must be replaced.

Once unsoldered, turn CCW to remove a failed diode. Install a new diode, **torque to 25 – 30 in-lbs. CRITICAL do not over torque.** An extra ¼ turn can cause excessive torque and fail the diode. Solder leads back in place to the top of the diode.

Field Flashing / Restoring Residual Magnetism

If the generator has been sitting, unused, for 3 – 6 months, or longer it may have lost its residual magnetic field required to build voltage. There are several ways to restore residual magnetism to a generator. Only one is required. **The static procedure with the GEN-SET at rest is safest.**

12V Static Field Flash **SAFETY NOTE – Do NOT Run Generator**

Disconnect all incoming leads to the generator.

Connect a lead to the (+) lead of a 12V battery. Connect the other end to the top of the diode.

Connect a lead to the (-) lead of a 12V battery and brush the other end of the lead on the bare metal on the generator shaft end. You may need to repeat several times. A good field flash will show a strong spark as you pull the lead away from the generator shaft end.

120V Field Flash Through Service Receptacle

SAFETY NOTE – DANGEROUS VOLTAGE WILL BE PRESENT

Fabricate a Power Cable with male 120Vac wall plugs on each end, attached to both sides of a switchable 10-15A breaker.

With the generator at rest, plug power cable in to wall outlet and service receptacle on Light Tower trailer. Set meter to VOLTS and connect to generator output leads.

Start and run generator, no-load, with lamps and breaker switched off. Switch breaker on & off several times and observe output voltage.

If output voltage comes up to normal range, run generator for 15 min. to build residual magnetism.

If your light tower generator windings and components check out good at rest, but the generator fails to build voltage, **you have a defect between the excitation winding and the main stator windings** that you are unable to detect this fault with the available equipment.

Failed excitation windings cannot be repaired. Replace generator.



Capacitor Regulated Light Tower Generator Specifications

Current Production Models - 2/17/16

Model No.	kW	Hz	Main Stator		Rotor	Capacitor		Diode P/N	Surge Suppressor P/N
			L-L Res. Ohms	E1-E4 Res. Ohms	Res. Ohms	Rating	P/N		
201CSA5411	6	60	0.724	2.238	1.2	440V, 25uf	92726 97F9632	730825-01	761670-01
201CSA5420	8	60	0.498	1.978	1.272	600V, 25uf	27L1502	730825-01	761670-01
201CSA5422	6	50	0.498	1.978	1.272	440V, 45uf	97F9645	730825-01	761670-01
332CSA5213	6.5	50	0.37	2.41	1.54	450V, 45uf	769804-01	730825-01	761670-01

Diode Specifications :Reverse polarity, 40 amp, 600 PIV, stud type ¼ - 28 UNF - 2A. Torque base stud to 25 In-Lb maximum.

Surge Suppressor Specifications: MOV, 250 Volts cont., 40 Joules.

Legacy Models - 2/17/16

Model No.	kW	Hz	Main Stator		Rotor	Capacitor		Diode P/N	Surge Suppressor P/N
			L-L Res. Ohms	E1-E4 Res. Ohms	Res. Ohms	Rating	P/N		
201CSA5412	8	60	0.564	1.986	1.729	600V,25uf	27L1502	730825-01	761670-01
332CSA5201	6	60	0.43	2.16	1.38	450V, 45uf	769804-01	730825-01	761670-01
332CSA5202	6	60	0.43	2.16	1.38	450V, 45uf	769804-01	730825-01	761670-01
332CSA5203	6	60	0.43	2.16	1.38	450V, 45uf	769804-01	730825-01	761670-01
332CSA5210	8	60	0.28	1.52	1.49	450V, 45uf	769804-01	730825-01	761670-01
332CSA5211	8	60	0.28	1.52	1.49	450V, 45uf	769804-01	730825-01	761670-01
332CSA5212	6.5	50	0.37	2.41	1.54	450V, 45uf	769804-01	730825-01	761670-01
332CSA5214	6	60	0.43	2.16	1.38	450V, 45uf	769804-01	730825-01	761670-01
332CSA5215	6	60	0.43	2.16	1.38	450V, 45uf	769804-01	730825-01	761670-01
332CSA5216	6	60	0.43	2.16	1.38	450V, 45uf	769804-01	730825-01	761670-01
332CSA5218	6	60	0.43	2.16	1.38	450V, 45uf	769804-01	730825-01	761670-01
332RSA/B1020	6	60	0.69	1.86	1.38	440V, 60uf	769806-04	730825-01	761670-01
332RSA/B1021	6	60	0.69	1.86	1.38	440V, 60uf	769806-04	730825-01	761670-01
332RSA/B1022	8	60	0.44	1.64	1.5	440V, 50uf	769806-03	730825-01	761670-01
332RSA1023	8	60	0.44	1.64	1.5	440V, 50uf	769806-03	730825-01	761670-01
332RSA1024	6.5	60	0.6	2.12	1.5	440V, 50uf	769806-03	730825-01	761670-01
332RSA1025	6.5	60	0.6	2.12	1.5	440V, 50uf	769806-03	730825-01	761670-01
332RSA5021	7.5	60	0.64	1	1.5	370V, 45uf	789806-06	9253-26R	761670-01
334RSA1006	10	60	0.331	1.38	1.72	440V, 35uf	769806-05	9253-26R	761670-01
201CSA5412	8	60	0.564	1.986	1.729	600V, 25uf	27L1502	730825-01	761670-01
332CSA5201	6	60	0.43	2.16	1.38	450V, 45uf	769804-01	730825-01	761670-01

Diode p/n: 730825-01 : Reverse polarity, 40 amp, 600 PIV, stud type ¼ - 28 UNF - 2A. Torque base stud to 25 In-Lb maximum.

Diode p/n: 9253-26R : Reverse polarity, 12 amp, 600 PIV, stud type 10 - 32 UNF - 2A. Torque base stud to 30 In-Lb maximum.

Surge Suppressor Specifications: MOV, 250 Volts cont., 40 Joules.

marathon™

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