



## KIPOR GENERATORS TROUBLESHOOTING TEST PROCEDURES.

Customer:

Date of purchase:

Case #:

Generator:

serial #

### Follow these steps:

**First question is:** what seems to be the problem? Once you have the information, go to the related section.

**TIP:** To quickly go to a section: (Ctrl + f) on the key board and type in section. Press "find next"

### Part one:

#### KIPOR INVERTER STYLE GENERATORS

##### 1a-

**Model: IG1000 – IG2000 -**

Section 1- Fuel related problems

Section 2- Generator won't start has spark and fuel

Section 3-, Generator won't start has no spark.

Section 4- Generator starts but runs erratically

Section 5- No AC Output (Inverter series)

##### 1b-

**Model: IG3000 IG3000E Model: IG6000 all models**

Section 1- Fuel related problems

Section 2- Generator won't start has spark and fuel

Section 3- Generator won't start has no spark

Section 4- Generator starts but runs erratically

Section 5- No Start, will not turn over

## Section 6- No AC Output

### Part two:

## KIPOR CONVENTIONNAL GENERATORS

### 2 a-

**Gas engine MODEL: KGE2400X**

Section 1- Fuel related problems

Section 2- Generator won't start has spark and fuel

Section 3- Generator won't start has no spark

Section 4- Generator starts but runs erratically

Section 5- No AC Output

### 2 b-

**Gas engine MODEL: KGE5500E**

Section 1- Fuel related problems

Section 2- Generator won't start has spark and fuel

Section 3- Generator won't start has no spark

Section 4- Generator starts but runs erratically

Section 5- No Start, will not turn over

Section 6- No AC Output

### 2 c-

**Diesel engine MODEL: KDE5000TA**

Section 1- Fuel related problems

Section 2- Generator won't start

Section 3- Generator won't turn over electric start

Section 4- Generator starts but runs erratically

Section 5- No AC Output

### 2 d-

**Diesel engine MODEL: KDE5000E**

Section 1- Fuel related problems

Section 2- Generator won't start

Section 3- Generator won't turn over electric start

Section 4- Generator starts but runs erratically

Section 5- No AC Output

Section 6- Trouble codes

## Part 1-a

Model: IG1000 – IG2000 –(all models)

### Section 1-

#### Fuel related problems

1.1 Fuel leak

1.2 Fuel flow

1.3 Stepping motor

1.4 Valve adjustment

## 1.1- Fuel Leak

For all generators, check all gas lines, valve, pump and carburetor

**1.2- Fuel Flow.** When you open the drain screw on the bottom of the carb, do you get a steady flow of fuel? If so, there is no blockage. If not, blockage may be the case. It is possible that you have a partial blockage which allows fuel to flow to the carb, giving the appearance of a steady supply, when in fact it is there, but is not enough to meet the demand of the engine. This could be the cause of a genset running for a while and then stalling. It would probably restart after a few minutes as the bowl would fill up again. Check for kinks in the fuel line.

-It is also possible that there is a blockage in the carb. They could try removing the bowl on the bottom of the carb and then removing the float and turning on the fuel. This will allow fuel to flow freely thru the carb. This is a very simple process. . However, it may be easier to do if they remove the carb first. Be careful to not damage the gasket. Clean the parts and replace them and try again, to see if the unit will run properly. It could also be a plugged fuel filter For the 1000 and 2000Ti it's situated in the gas tank were the fuel line is connected.

-For the 1000 and 2000Ti there is a vacuum gas pump. This pump is activated by a vacuum tube connected to the motor housing situated under the carburetor. Make sure that this tube is connected properly.

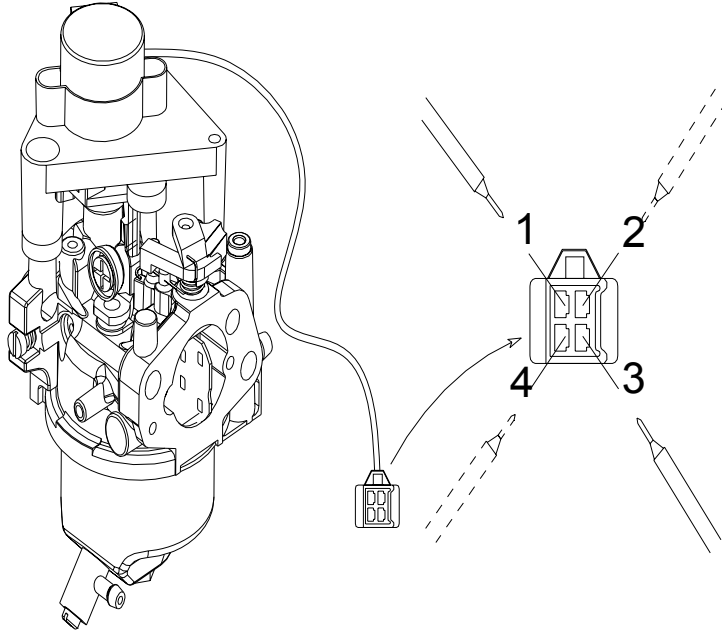


**1.3- Stepping Motor.** Does the stepping motor respond when the inverter module is trying to change the engine speed? In other words, is the stepping motor doing its job and we simply loose horse power to do the job. Or is the stepping motor simply not trying to adjust the carb? Does the stepping motor try to adjust the carb and is unable to? Or does the carb respond properly to the stepping motor, but it still makes no difference? Depending on your answer, it could be the stepping motor or the carb. Spaying WD40 on the linkage and moving it manually might free it up.

Measuring the resistance of stepping motor leading wires

Specified resistance	1 and 3 45~55Ω
	2 and 4 45~55Ω

Replace the stepping motor if the resistance value exceeds the specified range.



**1.4- Valves.** It is also possible that they have improperly adjusted valves. The required clearance is listed in the owner's manual. Check and adjust if necessary.

## Section 2-

### Generator won't start has spark and fuel

- 2.1 No Start, Cranks, has spark & fuel.
- 2.2 Alternator
- 2.3 Ignition timing
- 2.4 Carburetor flooding

### **2.1-No Start, Cranks, has spark & fuel.**

-Do any lights come on while trying to start? If so, which ones?

-Does it "fire" and begin to run, and then die? Or does it never "fire"?

**2.2- Alternator.** It could be the alternator. At the inverter, disconnect the large 6p plug that has only 5 wires. With the meter, check continuity between the two white wires (pins 3 & 6). Reading must be 0.000.

**2.3- Ignition Timing.** It could be ignition timing. Does it back fire? Or occasionally fire and then die? This can not currently be checked without disassembly. But if it occasionally backfires, it is a likely the cause.

**2.4- Carburetor flooding.** Check the oil and look for a strong gas odor. Also check and see if the spark plug is wet. If so, change the carburetor and also make sure to change the oil.

## **Section 3-**

### **Generator won't start has no spark.**

**3.1 No Start, Cranks, has no spark.**

**3.2 Low oil switch**

**3.3 Spark plug**

**3.4 Ignition winding**

**3.5 Ignition coil**

### **3.1 - No Start, Cranks, has no spark.**

#### **For 1000-2000Ti**

-Do you hear a click when you turn the engine switch to on?

-If no, the micro switch is not operating properly. It could be a wire stopping it from moving or could be dirty. Clean with a non flammable pressurized cleaner like electrical contact cleaner. If it still doesn't operate, change the micro switch.

#### **For all models**

-Do any lights come on while trying to start?

-If it's the low oil light:

**3.2- Low Oil Switch.** It could be the low oil switch, if the low oil light is coming on, and the unit will not start. The oil switch might be stuck. 1- Check the oil level. 2- Unplug the oil switch and run the engine for 2 minutes. 3- Reconnect the oil switch with the engine running. 4- Check for a damaged wire (shorting to ground). The wire is orange coming out of the ignition module. It connects to a yellow wire near the motor that passes thru the crankcase. 5- Remove the control panel and disconnect the 10p plug that goes into the back of the ignition module. Check for continuity between the orange wire and ground. There should be none. It should show O.L. for "Open Line". If there is continuity, either the wire is shorted or pinched somewhere, or the switch is faulty

**Low oil switch connector for 1000-2000Ti**

**Orange -yellow/green.**

**Bottom right door opened**



**3.3- Spark plug.** Check, adjust or change the spark plug.

**3.4- Ignition Windings.** It could be the ignition system. They can remove the control panel and unplug the 10p connector that goes to the ignition module (module with 3 lights). Check continuity between ground and green. There should be continuity. Check continuity between ground and yellow. Should be between 86 and 131ohms resistance. If either or both of these are faulty, there could be a loose wire or bad ignition winding. This requires complete disassembly.

**3.5- Ignition Coil.** Unplug the 10p connector that goes to the ignition module (module with 3 lights). To check the primary side of the ignition coil, check continuity between ground and blue wire. There should be a reading between 0.7 and 3.5 ohms. To check the secondary side of the ignition coil, unplug the spark plug wire and check continuity between the blue wire and spark plug wire. There should be a reading between 12.0 and 21.0 k-ohms. If either or both of these are faulty, there could be a loose wire or bad ignition coil. For 1000 and 2000Ti the coil can be changed.

**3.6- Ignition module.** If all of the above are correct it could be the ignition module. (module with 3 lights) We have no tests for this module. Change the module.

## **Section 4-**

## Generator starts but runs erratically

**4.1- Fuel related problem.** Could be caused by a dirty or gummed up carburetor. Clean the fuel system. Check the fuel filter and make sure to use clean fuel. **(Refer to section 1.2-)**

**4.2- Inverter and/or stepping motor related problem.** Could be caused by a bad connection from the stepping motor to the inverter. Check for bad connection. Could also be a burned out secondary winding on the stator. **(Refer to section 2.2-)**

## Section 5-

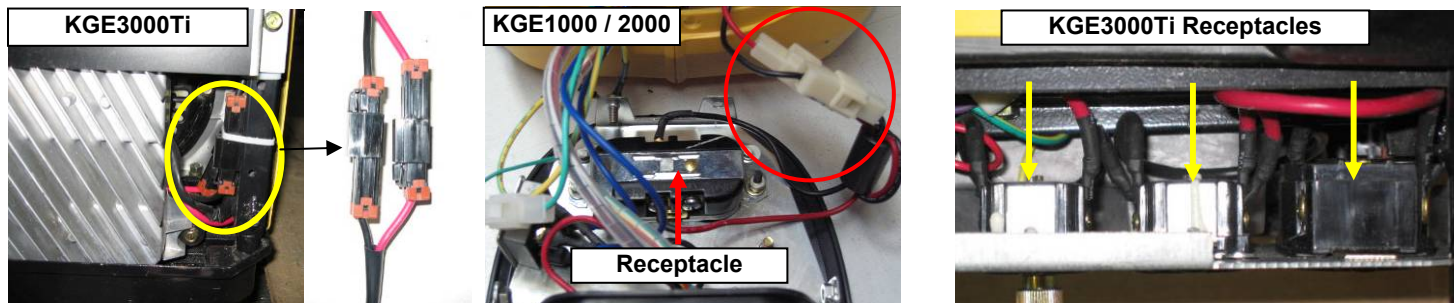
### No AC Output (Inverter series)

**5.1- No AC Output (Inverter series)**

**5.2- Inverter testing**

**5.1-**

-This could be a loose wire from the inverter to the receptacles. On KGE3000Ti, remove the end panel and look down by the lower, right corner, as they face the control panel. On the KGE1000 and 2000Ti this is located behind the control panel. Check to see if the red and black wires are securely plugged in and the wires are securely attached to the receptacles.

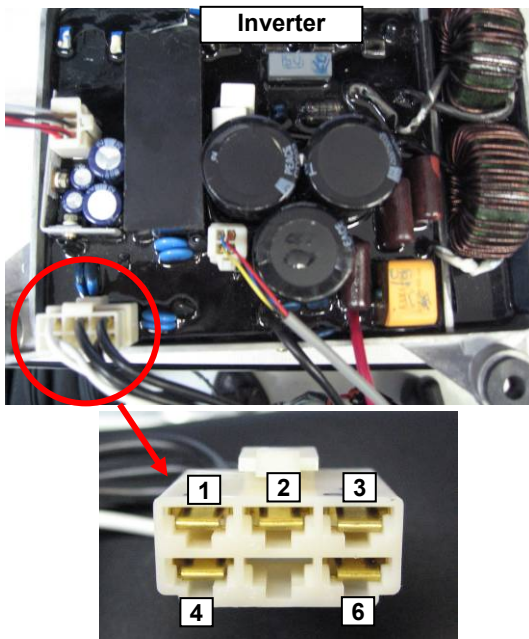


-If no problems are found on the steps above;

**5.2- Inverter testing**

-Next, there is a large 6 position connector that actually has only 5 wires in it, that plugs into the back of the inverter.

-Unplug the connector from the inverter and start the engine, check voltage between pins 1 & 4, between pins 2 & 4, and between pins 1 & 2. They should be approximately 300vac at each test. If at least 2 of the three tests fail, the problem is either a damaged wire harness or a defective alternator. If the wire harness is the problem, look for and repair the damage. If the alternator is the problem, the stator and rotor will need to be replaced. If all three tests are OK, the problem is likely the inverter.



## 1-b

**Model: IG3000 - IG3000E – IG6000( all models)**

### Section 1-

#### Fuel related problems

- 1.1 Fuel leak
- 1.2 Fuel flow
- 1.3 Stepping motor
- 1.4 Valve adjustment
- 1.5 Shutoff solenoid under the 6000 carburetor

#### **1.1- Fuel Leak**

-For the 3000Ti and IG6000 it could be the valve, or it could be the tank leaking between the brass fitting and the plastic of the tank. Both are replaceable. We need to figure out which is leaking and we will send a replacement.

-For all generators, check all gas lines, valve, pump and carburetor

## 1.2- Fuel Flow.

-When you open the drain screw on the bottom of the carb, do you get a steady flow of fuel? If so, there is no blockage. If not, blockage may be the case. It is possible that you have a partial blockage which allows fuel to flow to the carb, giving the appearance of a steady supply, when in fact it is there, but is not enough to meet the demand of the engine. This could be the cause of a genset running for a while and then stalling. It would probably restart after a few minutes as the bowl would fill up again. Check for kinks in the fuel line.

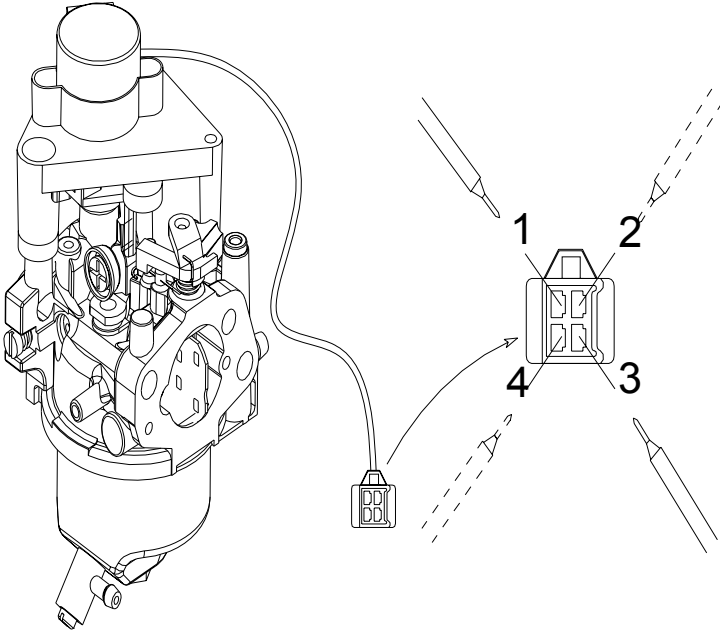
-It is also possible that there is a blockage in the carb. They could try removing the bowl on the bottom of the carb and then removing the float and turning on the fuel. This will allow fuel to flow freely thru the carb. This is a very simple process. . However, it may be easier to do if they remove the carb first. Be careful to not damage the gasket. Clean the parts and replace them and try again, to see if the unit will run properly. It could also be a plugged fuel filter . For the 3000Ti and IG6000 you have to take the fuel valve off and it should come out with the valve.

**1.3- Stepping Motor.** Does the stepping motor respond when the inverter module is trying to change the engine speed? In other words, is the stepping motor doing its job and we simply loose horse power to do the job. Or is the stepping motor simply not trying to adjust the carb? Does the stepping motor try to adjust the carb and is unable to? Or does the carb respond properly to the stepping motor, but it still makes no difference? Depending on your answer, it could be the stepping motor or the carb. Spaying WD40 on the linkage and moving it manually might free it up.

Measuring the resistance of stepping motor leading wires

Specified resistance	1 and 3 45~55Ω
	2 and 4 45~55Ω

Replace the stepping motor if the resistance value exceeds the specified range.



**1.4- Valves.** It is also possible that they have improperly adjusted valves. The required clearance is listed in the owner's manual. Check and adjust if necessary.

**1.5- Shutoff solenoid under the 6000 carburetor**

-There is a fuel shutoff solenoid attached to the carburetor bowl of the 6000 generator. It is connected to a timer relay that activates it for 7 to 8 seconds as the genset is shut down in order to eliminate the possibility of backfire.

Malfunction can create 2 situations:

- A: non-start if it is permanently activated as it will not let fuel flow
- B: could also drain the battery

-If this situation occurs, we recommend changing both parts.

**Section 2-**

**Generator won't start has spark and fuel**

**2.1 No Start, Cranks, has spark & fuel.**

**2.2 Alternator**

### **2.3 Ignition timing**

### **2.4 Carburetor flooding**

## **2.1 -No Start, Cranks, has spark & fuel.**

-Do any lights come on while trying to start? If so, which ones?

-Does it “fire” and begin to run, and then die? Or does it never “fire”?

**2.2- Alternator.** -It could be the alternator. For the 3000, at the inverter, disconnect the large 6p plug that has only 5 wires. With the meter, check continuity between the two white wires (pins 3 & 6). Reading must be 0.000.

-For the 6000, check for continuity between the 2 whites and the 2 greens. Reading should also be 0.000.

**2.3- Ignition Timing.** -It could be ignition timing. Does it back fire? Or occasionally fire and then die? This can not currently be checked without disassembly. But if it occasionally backfires, it is a likely the cause.

**2.4- Carburetor flooding.** -Check the oil and look for a strong gas odor. Also check and see if the spark plug is wet. If so, change the carburetor and also make sure to change the oil.

## **Section 3-**

### **Generator won't start has no spark.**

**3.1 No Start, Cranks, has no spark.**

**3.2 Low oil switch**

**3.3 Spark plug**

**3.4 Ignition winding**

**3.5 Ignition coil**

## **3.1 - No Start, Cranks, has no spark.**

### **For all models**

-Do any lights come on while trying to start?

-If it's the low oil light :

**3.2- Low Oil Switch.** It could be the low oil switch, if the low oil light is coming on, and the unit will not start. The oil switch might be stuck. 1- Check the oil level. 2- Unplug the oil switch and run the engine for 2 minutes. 3- Reconnect the oil switch with the engine running. 4- Check for a damaged wire (shorting to ground). The wire is orange coming out of the ignition module. It connects to a yellow wire near the motor that passes thru the crankcase. 5- Remove the control panel and disconnect the 10p plug that goes into the back of the ignition module. Check for continuity between the orange wire and ground. There should be none. It should show O.L. for "Open Line". If there is continuity, either the wire is shorted or pinched somewhere, or the switch is faulty

**Low oil switch connector for 3500Ti previous model. Green connectors. Right side under the starter.**



**Low oil switch connector for 3000Ti new Model. Orange wires. Bottom right Behind the battery.**



**3.3- Spark plug.** Check, adjust or change the spark plug.

**3.4- Ignition Windings.** It could be the ignition system. They can remove the control panel and unplug the 10p connector that goes to the ignition module (module with 3 lights). Check continuity between ground and green. There should be continuity. Check continuity between ground and yellow. Should be between 86 and 131ohms resistance. If either or both of these are faulty, there could be a loose wire or bad ignition winding. This requires complete disassembly.

**3.5- Ignition Coil.** Unplug the 10p connector that goes to the ignition module (module with 3 lights). To check the primary side of the ignition coil, check continuity between ground and blue wire. There should be a reading between 0.7 and 3.5 ohms. To check the secondary side of the ignition coil, unplug the spark plug wire and check continuity between the blue wire and spark plug wire. There should be a reading between 12.0 and 21.0 k-ohms. If either or both of these are faulty, there could be a loose wire or bad ignition coil.

**3.6- Ignition module.** If all of the above are correct it could be the ignition module. (module with 3 lights) We have no tests for this module. Change the module.

## Section 4-

### Generator starts but runs erratically

**4.1- Fuel related problem.** Could be caused by a dirty or gummed up carburetor. Clean the fuel system. Check the fuel filter and make sure to use clean fuel. **(Refer to section 1.2-)**

**4.2- Inverter and/or stepping motor related problem.** Could be caused by a bad connection from the stepping motor to the inverter. Check for bad connection. Could also be a burned out secondary winding on the stator. **(Refer to section 2.2-)**

## Section 5-

### Section 5- No Start, no crank.

1. **No start- no crank**
2. **Battery low ( does not hold a charge)**
3. **No electric start**

### **5.1- No Start, no crank. (3000- 3500Ti- IG6000 only)**

**(a)** Check battery voltage. Should be 12-14vdc. If not, charge the battery and try starting.

**(b)** Check battery connections. They must be clean and tight.

**(c)** Check 2p connector just inside the door. It must be plugged in securely. (see figure 1.)

**(d)** Check voltage at the starter relay, before cranking. There should be voltage only at the large post that has the battery cable attached to it. If there is no voltage, check the cable and connections. Turn the key to the start position and check for voltage at the second large terminal (Starter side)

**(e)** If voltage is not present at both large posts (12–14 volts), either the relay (solenoid see figure 2.) or the ignition switch is faulty. Disconnect the 2p plug, near the door and check for voltage between the yellow wire and ground making sure the switch is turned to the start position. If voltage is present replace the start relay. If no voltage is present replace the ignition switch.

**(f)** If voltage is present at both large posts, (see figure 3 A and B) the problem is in the starter motor or the cable leading to it.

**(g)** If the first tests for the relay checks out OK, then make sure the 2p plug is securely reconnected and check voltage at the large post that is connected to the cable that goes to the

starter motor, while cranking. If there is no voltage, the relay is faulty. Replace it. If there is voltage, and all of the above items are all working properly, the problem is in the starter motor or the cable leading to it. Remove the end panel and check for secure connections and/or damage in the cable. If no damage is found and connections are good, remove the cabinet and check the connection and voltage at the starter. If there is voltage and the connection is good, and no cranking, the starter motor is faulty

## 5.2- Battery Low.(does not hold a charge)

If the battery will not hold voltage, either the battery or the 12vdc charge circuit is faulty. Check the battery using a battery tester. If faulty, replace the battery. If good, unplug the battery, start the engine with the pull cord and test the voltage at the battery connectors. It should read 12.5 to 13.5volts. If not, remove the control panel and check the fuse on the purple wire(3000 and 3500 only). If the fuse is good, the 12vdc regulator is the likely culprit. Either can be replaced.

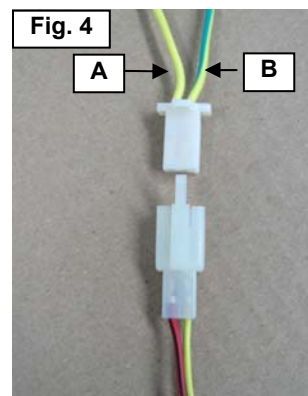
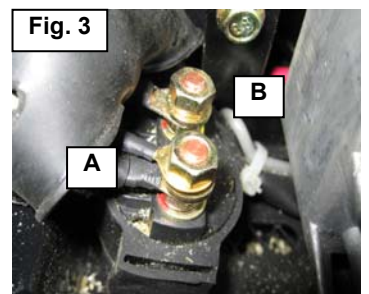
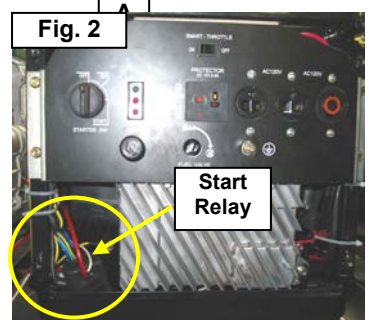
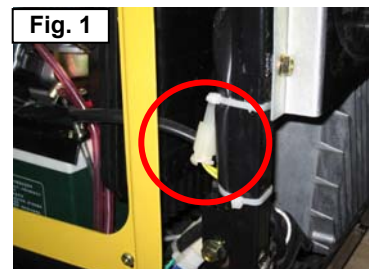
## 5.3- No Electric Start.

(a) Check battery voltage. Should be 12-14 vdc, if not, charge the battery and try starting.

(b) Check battery connections. They must be clean and tight.

(c) Check the plug connections on the back of the ignition switch.

1. If all of the above are correct you will need to remove the front control end panel and check 2p connector, it must be plugged in securely. (fig. 1)
2. Check voltage at the starter relay, (bottom left side fig. 2) before cranking. There should be (12–14 volts) only at the large post that has the battery cable attached to it Fig. 3-A. If there is no voltage, check the cable and connections. Turn the key to the start position and check for voltage at the starter terminal (fig. 3-B)
3. If voltage is not present (12–14 volts) either the relay or the ignition switch is faulty. Disconnect the 2p plug, near the door and check for voltage between the yellow wire (fig. 4-A) and the yellow w/green strip, ground wire (fig. 4-B) there should be (12–14 volts) when the ignition switch in the start position. If voltage is present replace the start relay. If no voltage is present replace the ignition switch. If voltage is present at both large posts, the problem is in the starter motor or the cable leading to it.



4. If the first tests for the relay and ignition switch checks out OK, then make sure the 2p plug is securely reconnected. Remove the cabinet and check the connection and voltage at the starter. If there is no voltage, check the cable and connection. If there is voltage and the connection is good, and no cranking, the starter motor is faulty,

## **Section 6-**

### **Section 6- No AC Output**

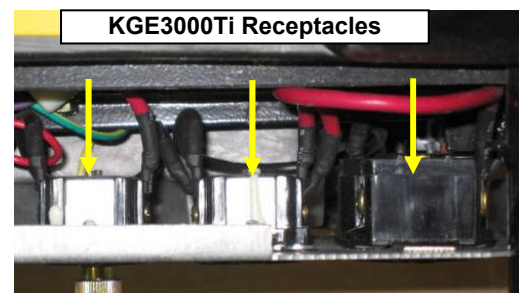
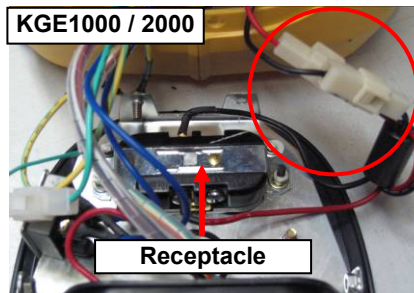
#### **6.1- No AC Output (Inverter series)**

#### **6.2- Testing 2000 or 3000 stator**

#### **6.3- Testing 6000 stator**

#### **6.1- No AC Output**

This could be a loose wire from the inverter to the receptacles. On KGE3000Ti, remove the end panel and look down by the lower, right corner, as they face the control panel. Check to see if the red and black wires are securely plugged in and the wires are securely attached to the receptacles.

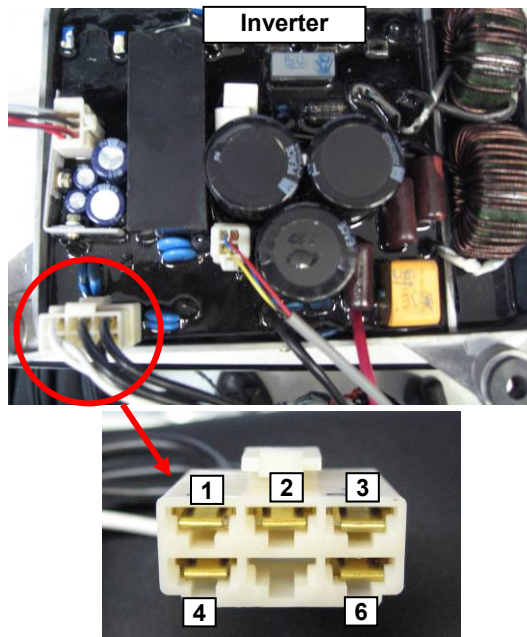


If no problems are found on the steps above;

#### **6.2- Testing 2000 or 3000 stator**

Next, there is a large 6 position connector that actually has only 5 wires in it, that plugs into the back of the inverter.

Unplug the connector from the inverter and start the engine, check voltage between pins 1 & 4, between pins 2 & 4, and between pins 1 & 2. They should be approximately 300vac at each test. If one or more of the three tests fail, the problem is either a damaged wire harness or a defective alternator. If the wire harness is the problem, look for and repair the damage. If the alternator is the problem, the stator and rotor will need to be replaced. If all three tests are OK, the problem is likely the inverter.



### 6.3- Testing 6000 stator

1- Remove the handle and the front plastic panel.

2- Remove all bolts from the control panel and let it hang loose (make sure that the 10 pin wire on the back of the 3 LED module does not come loose)

3- Take off only the 4 bolts and nuts on the outside edge of the bracket holding the inverter. You can disconnect the 2 connectors on the left hand side

4- Start the generator and test the voltage on the wires coming from the stator. You will see 3 black wires in a 4 pin connector on the right hand side and 3 red wires in a 4 pin connector on the left hand side. You should read between 165 vac and 265 vac. You will see that this motor does not rev up like the smaller units do. If you do rev it up, you will see that this stator does as well produce 300+ vac all depending on the engines RPM



**Line voltage measurement,**

**3 --- 2 voltage 150 v (Min.)to 255 v (No load)**

**2 --- 1 voltage 150 v (Min.)to 255 v (No load)**

**1 --- 3 voltage 150 v (Min.)to 255 v (No load)**



## Part two:

### KIPOR CONVENTIONNAL GENERATORS

#### 2a-

#### Gas engine MODEL: KGE2400X

##### Section 1- Fuel related problems

##### Section 2- Generator won't start has spark and fuel

##### Section 3- Generator won't start has no spark

##### Section 4- Generator starts but runs erratically

##### Section 5- No AC Output

### Section 1

#### Fuel related problems

- 1.1 Fuel leak
- 1.2 Fuel flow
- 1.3 Valve adjustment
- 1.4 Governor

#### **1.1- Fuel Leak**

For all generators, check all gas lines, valve, pump and carburetor

**1.2- Fuel Flow.** When you open the drain screw on the bottom of the carb, do you get a steady flow of fuel? If so, there is no blockage. If not, blockage may be the case. It is possible that you have a partial blockage which allows fuel to flow to the carb, giving the appearance of a steady supply, when in fact it is there, but is not enough to meet the demand of the engine. This could be the cause of a genset running for a while and then stalling. It would probably restart after a few minutes as the bowl would fill up again. Check for kinks in the fuel line.

It is also possible that there is a blockage in the carb. They could try removing the bowl on the bottom of the carb and then removing the float and turning on the fuel. This will allow fuel to flow freely thru the carb. This is a very simple process. . However, it may be easier to do if they remove the carb first. Be careful to not damage the gasket. Clean the parts and replace them and try again, to see if the unit will run properly. It could also be a plugged fuel filter

**1.3- Valves.** It is also possible that they have improperly adjusted valves. The required clearance is listed in the owner's manual. Check and adjust if necessary.

**1.4- Governor.** Check the governor for proper operation. It should move freely. Check all linkages and springs

## **Section 2-**

### **Generator won't start has spark and fuel**

**2.1 No Start, Cranks, has spark & fuel.**

**2.2 Choke**

**2.3 Carburetor flooding**

**2.4 Ignition timing**

#### **2.1-No Start, Cranks, has spark & fuel.**

-Is the on/off switch in the ON position?

-Does it "fire" and begin to run, and then die? Or does it never "fire"?

-If it runs and dies, it could be an intermittent spark problem. It could be caused by loose connections reacting to vibration. Check all connections. If it never fires could be a bad fuel / air mixture. See section 1- for instructions. It could also be a compression problem. On a compression test you should read between 50 and 60 PSI. Low compression could cause a no start situation.

**2.2- Choke.** Make sure that the choke is operating properly.

**2.3- Carburetor flooding.** Check the oil and look for a strong gas odor. Also check and see if the spark plug is wet. If so, change the carburetor and also make sure to change the oil.

**2.4- Ignition Timing.** It could be ignition timing. Does it back fire? Or occasionally fire and then die? This can not currently be checked without disassembly. But if it occasionally backfires, it is a likely the cause.

## **Section 3-**

## Generator won't start has no spark.

**3.1 No Start, Cranks, has no spark.**

**3.2 Low oil switch**

**3.3 Spark plug**

**3.4 Armature adjustment**

**3.5 Ignition coil**

### **3.1- No Start, Cranks, has no spark.**

It could be bad connections. Check all connectors and make sure they are all secured. Check the on /off switch for continuity at the "on" position.

### **3.2- Low Oil Switch.**

It could be the low oil switch, if the low oil light is coming on, and the unit will not start. The oil switch might be stuck.

1- Check the oil level.

2- Unplug the oil switch and run the engine for 2 to 3 minutes.

3- Reconnect the oil switch with the engine running.

4- Check for a damaged wire (shorting to ground).

### **3.3- Spark plug.**

Check, adjust or change the spark plug.

### **3.4- Armature adjustment.**

Armature could be defective or air gap adjustment might be off. Adjust the gap and check for spark.

### **3.5- Ignition Coil.**

If there is still no spark, check continuity between the connector and the plug cap. It should read approximately 5.8 KOhms. Continuity between the connector and both legs of the armature should read approximately 1.5 Ohms. There should be full continuity between primary and secondary windings. If any of those readings are bad, change the coil.

## Section 4-

### Generator starts but runs erratically

**4.1- Fuel related problem.**

**4.2- Governor not functioning properly.**

**4.1- Fuel related problem.**

Could be caused by a dirty or gummed up carburetor. Clean the fuel system. Check the fuel filter and make sure to use clean fuel. **(Refer to section 1.2-)**

**4.2- Governor not functioning properly.**

Could be caused by the governor being stuck or misadjusted. Check for free movement. Also check all linkages and springs.

## Section 5-

### No AC Output

**5.1- Stator winding**

**5.2- AVR fault**

**5.1- Stator winding**

Winding Resistance standard ( $\Omega$ ) Standard value of voltage at No load (V)

**Specs for 2400X**

<u>Resistance</u>	<u>voltage</u>
-Main Winding 0.9- 1.1 $\Omega$	120V
-Secondary Winding 2.5 – 2.7 $\Omega$	120V
-Sampling Winding 0.5 $\Omega$	16V
-Charge Winding 0.1 – 0.2 $\Omega$	30VAC

**Stator checks:** Check the resistance of the main winding, secondary winding, sampling winding and battery charge winding. The stator must be changed if any resistance reading is outside the parameters. However, insure that there is continuity in the harness before proceeding with a stator change.

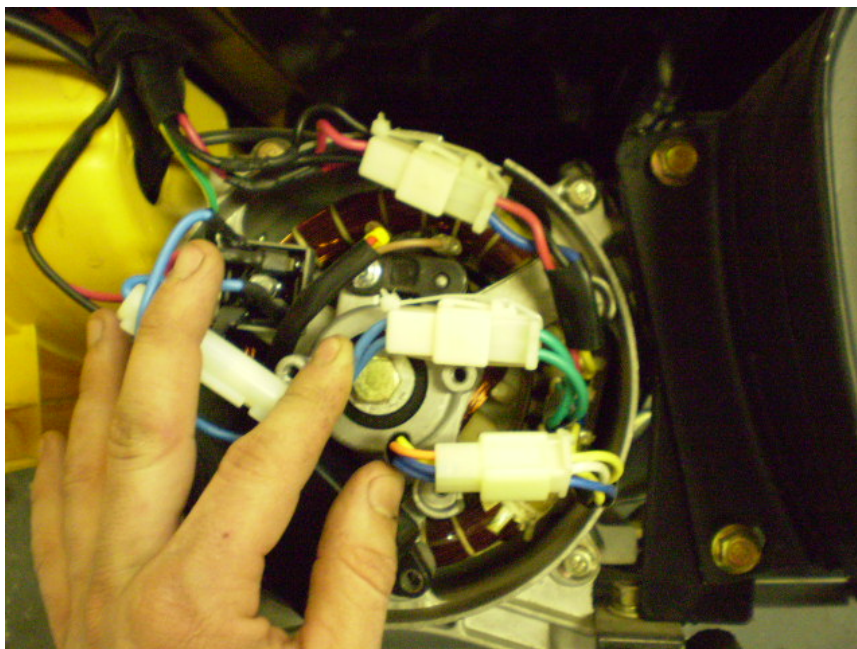
**(a) Main winding:** Check resistance on the four position terminal board. You should have 0.75 to 0.85  $\Omega$  between L1 and L2 and R1 and R2

**(b) Secondary or sub winding:** Locate the 4 pin connector at the top of the stator. Check the resistance between the two yellow wires. The nominal value is 2.5  $\Omega$ . + - 0.2

**(c) Sampling winding:** On the same 4 pin connector, check the resistance between the blue wire and the white wire. The value is 0.5  $\Omega$  + - 0.2.

**(d)** Charge winding: Find the 4 pin connector at the top of the stator. There are only two pins. The resistance value should be 0.1 to 0.3Ω.

**(e)** Carbon brush: There should be no open circuit between lug and pole of the carbon brush and no short circuit between the two poles. Check the brushes for wear. If the brush wear is uneven or the length is less than 0.12 in. (3mm)



## 5.2- AVR fault

**(a)** Voltage can not be regulated:  
- Adjust or replace AVR

**(b)** Generator set automatically stopped after loading, current setting incorrect  
-Check output voltage, adjust or replace AVR

**(c)** Sampling signal but no exciting output Check exciting output voltage of AVR.  
-Adjust and or replace the AVR

**(d)** The voltage can not be established because of insufficient residual voltage in the stator  
-Check that the voltage of main winding is 6 V or more with AVR disconnected.

**(e)**Power loss is increased because of higher voltage output of the secondary winding  
-Check that the voltage of secondary winding. It should not greater than 140 VAC

**(f)** The voltage deviation of zero load and full load is too large.  
- Check AVR and stator.  
- This may be caused by operating the generator in too high an ambient temperature.

**(d)** Overload shutdown caused by high power factor loading  
Check inductive loads for low power factor and adjust size of load to rated power\*

\* Divide the appliance current draw by its power factor to determine the effect on the

generator. A device pulling 40 amps with a power factor of .85 places a 47 amp draw on the generator (40/.85). In this example, the generator would experience an overload shutdown.

## 2 b-

### Gas engine MODEL: KGE5500E

Section 1- Fuel related problems

Section 2- Generator won't start has spark and fuel

Section 3- Generator won't start has no spark

Section 4- Generator starts but runs erratically

Section 5- No Start, will not turn over

Section 6- No AC Output

## Section 1

### Fuel related problems

- 1.1 Fuel leak
- 1.2 Fuel flow
- 1.3 Valve adjustment
- 1.4 Governor

#### **1.1- Fuel Leak**

For all generators, check all gas lines, valve, pump and carburetor

#### **1.2- Fuel Flow.**

(a) When you open the drain screw on the bottom of the carb, do you get a steady flow of fuel? If so, there is no blockage. If not, blockage may be the case. It is possible that you have a partial blockage which allows fuel to flow to the carb, giving the appearance of a steady supply, when in fact it is there, but is not enough to meet the demand of the engine. This could be the cause of a genset running for a while and then stalling. It would probably restart after a few minutes as the bowl would fill up again. Check for kinks in the fuel line.

(b) It is also possible that there is a blockage in the carb. They could try removing the bowl on the bottom of the carb and then removing the float and turning on the fuel. This will allow fuel to flow freely thru the carb. This is a very simple process. . However, it may be easier to do if they

remove the carb first. Be careful to not damage the gasket. Clean the parts and replace them and try again, to see if the unit will run properly. It could also be a plugged fuel filter

**1.3- Valves.** It is also possible that they have improperly adjusted valves. The required clearance is listed in the owner's manual. Check and adjust if necessary.

**1.4- Governor.** Check the governor for proper operation. It should move freely. Check all linkages and springs

## **Section 2-**

### **Generator won't start has spark and fuel**

**2.1 No Start, Cranks, has spark & fuel.**

**2.2 Choke**

**2.3 Carburetor flooding**

**2.4 Ignition timing**

**2.1-No Start, Cranks, has spark & fuel.**

-Is the on/off switch in the ON position?

-Does it "fire" and begin to run, and then die? Or does it never "fire"?

-If it runs and dies, it could be an intermittent spark problem. It could be caused by loose connections reacting to vibration. Check all connections. If it never fires could be a bad fuel / air mixture. See section 1- for instructions. It could also be a compression problem. On a compression test you should read between 50 and 60 PSI. Low compression could cause a no start situation.

**2.2- Choke.**

Make sure that the choke is operating properly.

**2.3- Carburetor flooding.**

Check the oil and look for a strong gas odor. Also check and see if the spark plug is wet. If so, change the carburetor and also make sure to change the oil.

**2.4 - Ignition Timing.**

It could be ignition timing. Does it back fire? Or occasionally fire and then die? This can not currently be checked without disassembly. But if it occasionally backfires, it is a likely the cause.

## **Section 3-**

### **Generator won't start has no spark.**

**3.1 No Start, Cranks, has no spark.**

**3.2 Low oil switch**

**3.3 Spark plug**

**3.4 Armature adjustment**

**3.5 Ignition coil**

#### **3.1- No Start, Cranks, has no spark.**

It could be bad connections. Check all connectors and make sure they are all secured. Check the on /off switch for continuity at the "on" position.

#### **3.2- Low Oil Switch.**

It could be the low oil switch, if the low oil light is coming on, and the unit will not start. The oil switch might be stuck. 1- Check the oil level. 2- Unplug the oil switch and run the engine for 2 to 3 minutes. 3- Reconnect the oil switch with the engine running. 4- Check for a damaged wire (shorting to ground).

#### **3.3- Spark plug.**

Check, adjust or change the spark plug.

#### **3.4- Armature adjustment.**

Armature could be defective or air gap adjustment might be off. Adjust the gap and check for spark.

#### **3.5- Ignition Coil.**

If there is still no spark, check continuity between the connector and the plug cap. It should read approximately 5.8 KOhms. Continuity between the connector and both legs of the armature should read approximately 1.5 Ohms. There should be full continuity between primary and secondary windings. If any of those readings are bad, change the coil.

## **Section 4-**

### **Generator starts but runs erratically**

#### **4.1- Fuel related problem.**

**4.2- Governor not functioning properly.**

**4.3- Valves out of adjustment**

**4.1- Fuel related problem.**

Could be caused by a dirty or gummed up carburetor. Clean the fuel system. Check the fuel filter and make sure to use clean fuel. **(Refer to section 1.2-)**

**4.2- Governor not functioning properly.**

Could be caused by the governor being stuck or misadjusted. Check for free movement. Also check all linkages and springs.

**4.3- Valves out of adjustment.**

Adjust the valves. **(refer to shop manual for specs.)**

## **Section 5-**

### **No AC Output**

**5.1- Stator winding**

**5.2- AVR fault**

**5.1- Stator winding.** Winding Resistance standard ( $\Omega$ ) Standard value of voltage at No load (V)

#### **Specs for KGE5500E**

<b>Resistance</b>	<b>voltage</b>
-Main Winding 0.75 -0.85 $\Omega$	240V
-Secondary Winding 2.5 – 2.7 $\Omega$	135V
-Sampling Winding 0.5 $\Omega$	16V
-Charge Winding 2.5 $\Omega$	30VAC

**Stator checks:** Check the resistance of the main winding, secondary winding, sampling winding and battery charge winding. The stator must be changed if any resistance reading is outside the parameters. However, insure that there is continuity in the harness before proceeding with a stator change.

**(a) Main winding:** Check resistance on the four position terminal board. You should have 0.75 to 0.85  $\Omega$  between L1 and L2 and R1 and R2

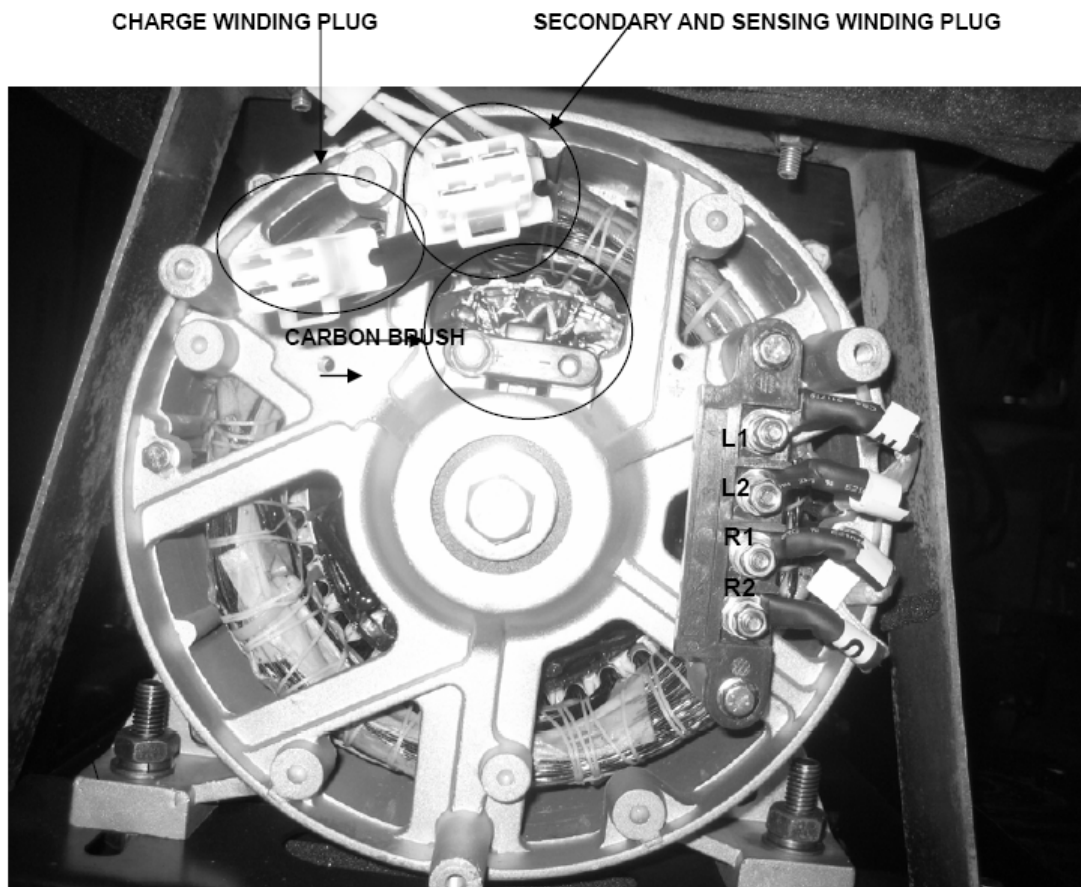
**(b) Secondary or sub winding:** Locate the 4 pin connector at the top of the stator. Check the resistance between the two yellow wires. The nominal value is 2.5  $\Omega$ . + - 0.2

**(c) Sampling winding:** On the same 4 pin connector, check the resistance between the blue wire and the white wire. The value is 0.5  $\Omega$  + - 0.2.

**(d)** Charge winding: Find the 4 pin connector at the top of the stator. There are only two pins. The resistance value should be  $2.5\Omega$ .

**(e)** Carbon brush: There should be no open circuit between lug and pole of the carbon brush and no short circuit between the two poles. Check the brushes for wear. If the brush wear is uneven or the length is less than 0.12 in. (3mm)

#### 4-6 Stator Test Points



## 5.2- AVR fault

**(a)** Voltage can not be regulated:  
- Adjust or replace AVR

**(b)** Generator set automatically stopped after loading, current setting incorrect  
-Check output voltage, adjust or replace AVR

**(c)** Sampling signal but no exciting output Check exciting output voltage of AVR.  
-Adjust and or replace the AVR

**(d)** The voltage can not be established because of insufficient residual voltage in the stator  
-Check that the voltage of main winding is 6 V or more with AVR disconnected.

(e) Power loss is increased because of higher voltage output of the secondary winding  
- Check that the voltage of secondary winding. It should not be greater than 140 VAC

(f) The voltage deviation of zero load and full load is too large.

- Check AVR and stator.

- This may be caused by operating the generator in too high an ambient temperature.

(d) Overload shutdown caused by high power factor loading

Check inductive loads for low power factor and adjust size of load to rated power\*

**\* Divide the appliance current draw by its power factor to determine the effect on the generator. A device pulling 40 amps with a power factor of .85 places a 47 amp draw on the generator (40/.85). In this example, the generator would experience an overload shutdown.**

**2 c-**

**Diesel engine MODEL: KDE5000TA**

**Section 1- Fuel related problems**

Section 2- Generator won't start

Section 3- Generator won't turn over electric start

Section 4- Generator starts but runs erratically

Section 5- No AC Output

Section 6- Trouble codes

## Section 1

### Fuel related problems

**1.1 Fuel leak**

**1.2 Fuel flow**

**1.3 Valve adjustment**

**1.4 Governor**

#### **1.1 fuel Leak**

For all generators, check all fuel lines, valve, pump, injector etc..

#### **1.2 Fuel flow**

**(a)** Fuel oil is not sufficient Refill the fuel oil

**(b)** Fuel cock is not at START position. Turn it to START position

**(c)** Fuel delivery line to fuel tank is bent or pipe is clogged.

**(d)** Check if fuel filter is clogged. Clean or replace

**(e)** The injection pump does not deliver fuel. Remove the high pressure fuel line, check for fuel flow, repair or replace pump

**(f)** Fuel injector does not deliver fuel. Remove the fuel injector, check nozzle- clean or replace

#### **1.3 Valve adjustment**

**(a)** Valves are improperly adjusted Check or adjust valve clearance.(see shop manual for specs)

**(b)** The governor lever of engine throttle is not at START position

#### **1.4 Governor**

The governor lever of engine throttle is defective Check and replace as necessary

## Section 2-

## Generator won't start

- (a) Deteriorated diesel oil in fuel oil Drain the fuel oil, check and clean
- (b) The governor lever of engine throttle is not at START position Switch on
- (c) Engine oil filter is clogged causing low oil protection. Clean or replace
- (d) Solenoid fuel valve is clogged or does not work because power is off. Check the 12V power supply and/or replace solenoid valve
- (e) The governor lever of engine throttle is defective Check and replace as necessary
- (f) Oil alert switch won't allow ignition Check and replace as necessary

## Section 3- Generator won't turn over electric start

- (a) The battery has is discharged Check battery and battery charge regulator
- (b) The ignition switch fails to engage starter. Check battery condition then check the switch
- (c) Starting motor is defective Replace
- (d) Engine is seized Check and observe the engine rotation,

## Section 4- Generator starts but runs erratically

**(NOTE: Engine speed is unstable, too high or too low )**

- (a) The fuel supply is insufficient. Adjust or disassemble to clean Injection pump or injector. If defective replace the part
- (b) Generator has an overload or short circuit fault
- (c) Engine governor spring is faulty. Adjust or change the spring.
- (d) Valves out of adjustment. Adjust the valves. (See shop manual for specs.)

## Section 5- No AC Output

### No AC Output

#### **5.1- General failure**

#### **5.2- Stator winding**

#### **5.3 - AVR fault**

#### **5.1- General failure**

**(NOTE: The generator produces no AC power or the voltage is abnormal or fluctuating.)**

(a) Circuit breaker fails to function. Remove it and check for open circuit. The resistance reading in multimeter should be "0"

(b) The wiring of gauge panel is loose. Check the wiring harness.

(c) The connection of receptacle is loose or contact broken. Check or replace receptacle

(d) The stator leads are not properly connected. Check the wiring harness

(e) The four point output terminal is cracked. Check or replace terminal

(f) Short, open, or grounded stator windings. Check resistance values of all windings. Replace stator if it is shorted, open or grounded

(g) Loss of magnetism in main rotor. Check AVR

(h) Short, open, or grounded rotor windings. Check resistance values and replace rotor as necessary 40-45ohms

(i) Carbon brush assembly defective. Check resistance value at slip rings. Check brushes for wear or weak spring tension

(j) Insulation resistance of generator is too low. Check insulation resistance of stator and rotor. Replace stator and rotor as necessary.

## 5.2- Stator winding.

**Winding Resistance standard ( $\Omega$ ) Standard value of voltage at No load (V)**

### Specs for KDE5000TA

<u>Resistance</u>	<u>voltage</u>
-Main Winding 0.75 -0.85 $\Omega$	240V
-Secondary Winding 2.5 – 2.7 $\Omega$	135V
-Sampling Winding 0.5 $\Omega$	16V
-Charge Winding 2.5 $\Omega$	30VAC

**Stator checks:** Check the resistance of the main winding, secondary winding, sampling winding and battery charge winding. The stator must be changed if any resistance reading is outside the parameters. However, insure that there is continuity in the harness before proceeding with a stator change.

(a) Main winding: Check resistance on the four position terminal board. You should have 0.75 to 0.85  $\Omega$  between L1 and L2 and R1 and R2

(b) Secondary or sub winding: Locate the 4 pin connector at the top of the stator. Check the resistance between the two yellow wires. The nominal value is 2.5  $\Omega$ . + - 0.2

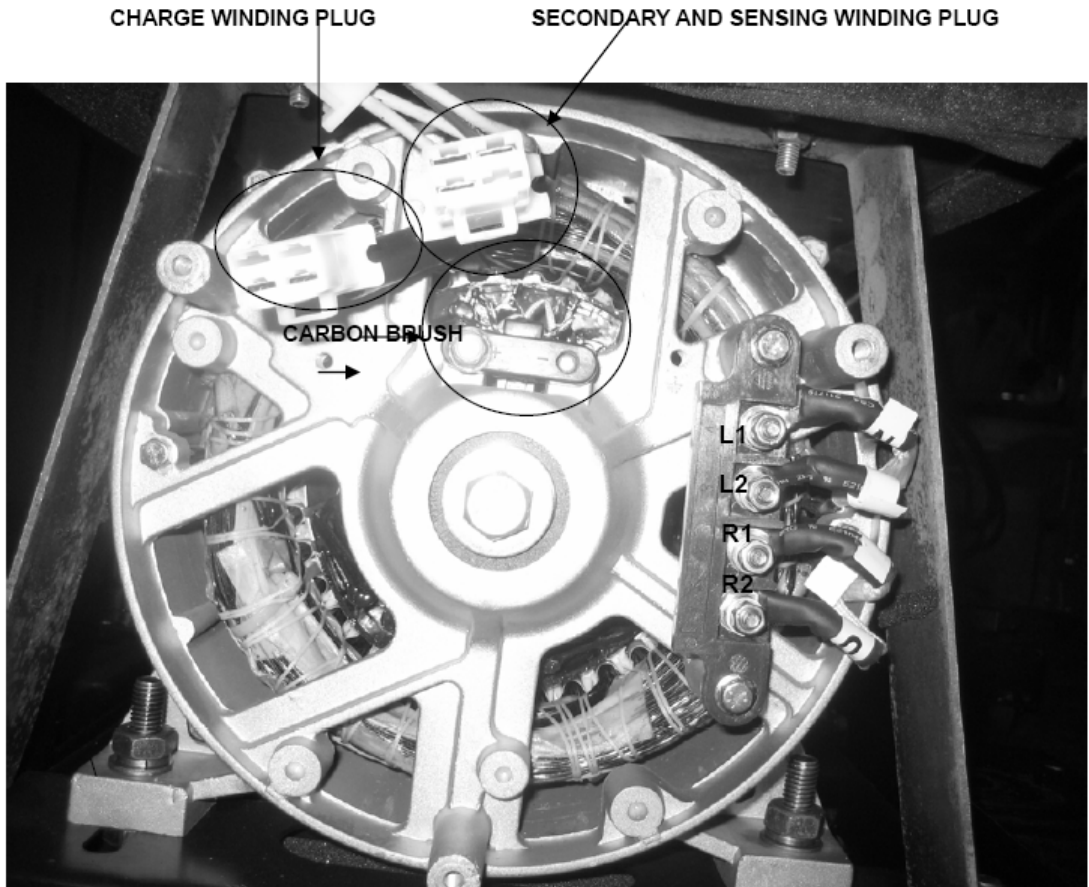
(c) Sampling winding: On the same 4 pin connector, check the resistance between the blue wire and the white wire. The value is 0.5  $\Omega$  + - 0.2.

(d) Charge winding: Find the 4 pin connector at the top of the stator. There are only two pins. The resistance value should be 2.5 $\Omega$ .

(e) Carbon brush: There should be no open circuit between lug and pole of the carbon

brush and no short circuit between the two poles. Check the brushes for wear. If the brush wear is uneven or the length is less than 0.12 in. (3mm)

#### 4-6 Stator Test Points



### 5.3- AVR fault

- (a) Voltage can not be regulated:
  - Adjust or replace AVR
- (b) Generator set automatically stopped after loading, current setting incorrect
  - Check output voltage, adjust or replace AVR
- (c) Sampling signal but no exciting output Check exciting output voltage of AVR.
  - Adjust and or replace the AVR
- (d) The voltage can not be established because of insufficient residual voltage in the stator
  - Check that the voltage of main winding is 6 V or more with AVR disconnected.
- (e) Power loss is increased because of higher voltage output of the secondary winding
  - Check that the voltage of secondary winding. It should not greater than 140 VAC
- (f) The voltage deviation of zero load and full load is too large.
  - Check AVR and stator.
  - This may be caused by operating the generator in too high an ambient temperature.

**(d)** Overload shutdown caused by high power factor loading  
Check inductive loads for low power factor and adjust size of load to rated power\*

**\* Divide the appliance current draw by its power factor to determine the effect on the generator. A device pulling 40 amps with a power factor of .85 places a 47 amp draw on the generator (40/.85). In this example, the generator would experience an overload shutdown.**

## Section 6- Trouble codes

### **6.1 Digital Panel Protection Values**

#### **6.2 KDE5000TA display panel**

### **6.1 Digital Panel Protection Values**

**(a)** Low oil pressure protection- oil pressure low for 5s: shutdown and display P-01

**(b)** Under frequency protection- output frequency = 57 Hz for 10 seconds: shutdown and display P-02

**(c)** Over frequency protection- output frequency = 65HZ for 10 seconds: shutdown and display P-02

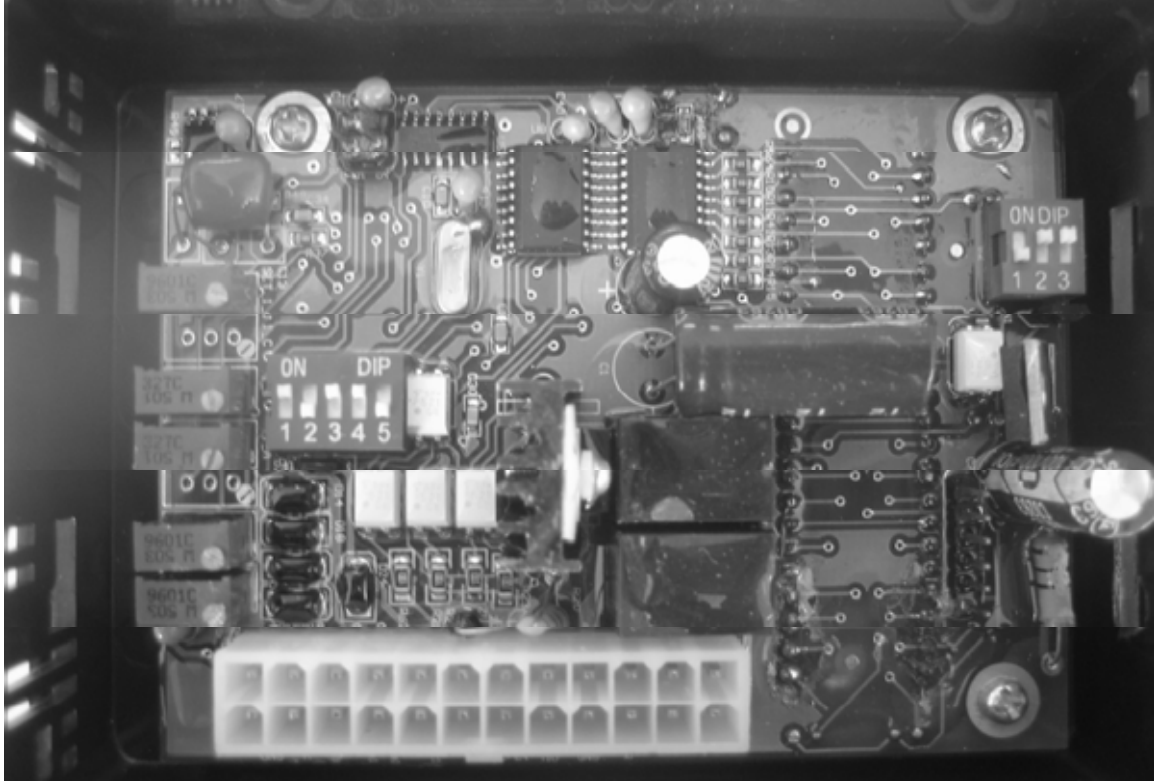
**(d)** Under voltage protection- output voltage = 105V or 210V: shutdown and display P-03

**(e)** Over voltage protection- output voltage = 132V or 264V: shutdown and display P-03

**(f)** Over load protection- output current exceeds 21.2/42.4A: shutdown and display P-04

**(g)** Charge malfunction warning: no protection but display P-05

**(h)** High temperature- no protection or fault: water cooled engine models only



## 6.2 KDE500TA DISPLAY PANEL

### 6.2-Setting

**The digital display panel is preset at the factory. If it becomes necessary to replace the panel, it will have to be programmed before installation.**

- (a) Connect the ribbon cable to the new display unit. Be careful not to twist the cable
- (b) Remove the back cover of the panel.
- (c) Press and hold down the Function "FUNC" and turn the ignition switch ON. Wait 5 seconds to enter the program
- (d) Locate the five position DIP switch board and put the DIP switches in the following position to set the Proper voltage and frequency:  
**1 = on**  
**2 = off**  
**3 = on**  
**4 = on**  
**5 = off**
- (e) The three position DIP switch board is factory set but make sure the settings are as follows:  
**1 = off**  
**2 = on**  
**3 = on**

## **6.3-control panel fault**

- (a)** No display on screen.
- (b)** Displays wrong code.
- (c)** Generator cannot start.

### **For all these faults:**

- Check 12V power supply of the generator and check wiring
- If there is no problem found replace the screen

## **2 d-**

**Diesel engine MODEL: KDE5000E**

Section 1- Fuel related problems

Section 2- Generator won't start

Section 3- Generator won't turn over electric start

Section 4- Generator starts but runs erratically

Section 5- No AC Output

## **Section 1**

## Fuel related problems

- 1.1 Fuel leak**
- 1.2 Fuel flow**
- 1.3 Valve adjustment**
- 1.4 Governor**

### **1.1 fuel Leak**

For all generators, check all fuel lines, valve, pump, injector etc..

### **1.2 Fuel flow**

- (a)** Fuel oil is not sufficient Refill the fuel oil
- (b)** Fuel cock is not at START position. Turn it to START position
- (c)** Fuel delivery line to fuel tank is bent or pipe is clogged.
- (d)** Check if fuel filter is clogged. Clean or replace
- (e)** The injection pump does not deliver fuel. Remove the high pressure fuel line, check for fuel flow, repair or replace pump
- (f)** Fuel injector does not deliver fuel. Remove the fuel injector, check nozzle- clean or replace

### **1.3 Valve adjustment**

- (a)** Valves are improperly adjusted Check or adjust valve clearance.(see shop manual for specs)
- (b)** The governor lever of engine throttle is not at START position

### **1.4 Governor**

The governor lever of engine throttle is defective Check and replace as necessary

## Section 2-

### Generator won't start

- (a)** Deteriorated diesel oil in fuel oil Drain the fuel oil, check and clean
- (b)** The governor lever of engine throttle is not at START position Switch on
- (c)** Engine oil filter is clogged causing low oil protection. Clean or replace
- (d)** Solenoid fuel valve is clogged or does not work because power is off. Check the 12V power supply and/or replace solenoid valve
- (e)** The governor lever of engine throttle is defective Check and replace as necessary
- (f)** Oil alert switch won't allow ignition Check and replace as necessary

## Section 3- Generator won't turn over electric start

- (a) The battery has is discharged Check battery and battery charge regulator
- (b) The ignition switch fails to engage starter. Check battery condition then check the switch
- (c) Starting motor is defective Replace
- (d) Engine is seized Check and observe the engine rotation,

## Section 4- Generator starts but runs erratically

**(NOTE:** Engine speed is unstable, too high or too low )

- (a) The fuel supply is insufficient. Adjust or disassemble to clean Injection pump or injector. If defective replace the part
- (b) Generator has an overload or short circuit fault
- (c) Engine governor spring is faulty. Adjust or change the spring.
- (d) Valves out of adjustment. Adjust the valves. (See shop manual for specs.)

## Section 5- No AC Output

### No AC Output

#### **5.1- General failure**

#### **5.2- Stator winding**

#### **5.3 - AVR fault**

#### **5.1- General failure**

**(NOTE:** The generator produces no AC power or the voltage is abnormal or fluctuating.)

- (a) Circuit breaker fails to function. Remove it and check for open circuit. The resistance reading in multimeter should be "0"
- (b) The wiring of gauge panel is loose. Check the wiring harness.
- (c) The connection of receptacle is loose or contact broken. Check or replace receptacle
- (d) The stator leads are not properly connected. Check the wiring harness
- (e) The four point output terminal is cracked. Check or replace terminal
- (f) Short, open, or grounded stator windings. Check resistance values of all windings. Replace stator if it is shorted, open or grounded
- (g) Loss of magnetism in main rotor. Check AVR
- (h) Short, open, or grounded rotor windings. Check resistance values and replace rotor as necessary  
40-45ohms

(i) Carbon brush assembly defective. Check resistance value at slip rings. Check brushes for wear or weak spring tension

(j) Insulation resistance of generator is too low. Check insulation resistance of stator and rotor. Replace stator and rotor as necessary.

## 5.2- Stator winding.

**Winding Resistance standard ( $\Omega$ ) Standard value of voltage at No load (V)**

### Specs for KDE5000TA

<u>Resistance</u>	<u>voltage</u>
-Main Winding 0.75 -0.85 $\Omega$	240V
-Secondary Winding 2.5 – 2.7 $\Omega$	135V
-Sampling Winding 0.5 $\Omega$	16V
-Charge Winding 2.5 $\Omega$	30VAC

**Stator checks:** Check the resistance of the main winding, secondary winding, sampling winding and battery charge winding. The stator must be changed if any resistance reading is outside the parameters. However, insure that there is continuity in the harness before proceeding with a stator change.

(a) Main winding: Check resistance on the four position terminal board. You should have 0.75 to 0.85  $\Omega$  between L1 and L2 and R1 and R2

(b) Secondary or sub winding: Locate the 4 pin connector at the top of the stator. Check the resistance between the two yellow wires. The nominal value is 2.5  $\Omega$ . + - 0.2

(c) Sampling winding: On the same 4 pin connector, check the resistance between the blue wire and the white wire. The value is 0.5  $\Omega$  + - 0.2.

(d) Charge winding: Find the 4 pin connector at the top of the stator. There are only two pins. The resistance value should be 2.5 $\Omega$ .

(e) Carbon brush: There should be no open circuit between lug and pole of the carbon brush and no short circuit between the two poles. Check the brushes for wear. If the brush wear is uneven or the length is less than 0.12 in. (3mm)

#### 4-6 Stator Test Points



### 5.3- AVR fault

**(a)** Voltage can not be regulated:

- Adjust or replace AVR

**(b)** Generator set automatically stopped after loading, current setting incorrect

-Check output voltage, adjust or replace AVR

**(c)** Sampling signal but no exciting output Check exciting output voltage of AVR.

-Adjust and or replace the AVR

**(d)** The voltage can not be established because of insufficient residual voltage in the stator

-Check that the voltage of main winding is 6 V or more with AVR disconnected.

**(e)**Power loss is increased because of higher voltage output of the secondary winding

-Check that the voltage of secondary winding. It should not be greater than 140 VAC

**(f)** The voltage deviation of zero load and full load is too large.

- Check AVR and stator.

- This may be caused by operating the generator in too high an ambient temperature.

**(d)** Overload shutdown caused by high power factor loading

Check inductive loads for low power factor and adjust size of load to rated power\*

**\* Divide the appliance current draw by its power factor to determine the effect on the generator. A device pulling 40 amps with a power factor of .85 places a 47 amp draw on the generator ( $40/.85$ ). In this example, the generator would experience an overload shutdown.**

Created by: Ron Dube March 17, 2009

Modified: March 17, 2009