

# Allmand<sup>™</sup> MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

**Note:** *SLS is made to save the capacitors and generator. The program ensures the 120 volts are present before the lights are turned on. Primary job is to save the relays.*

## Kubota 1005 & 1105 Parts:

- Auto Shutdown Module- (102577)
- Hot/Cool Sensor Kubota 905,1005,1105- (340302)
- Hot/Cool Sensor Kubota DeepSea 1 wire- (101069)
- Oil Sensor Kubota 905,1005,1105- (340301)
- Oil Sensor Kubota Deep Sea 1 wire -(101070)
- Fuel Shut Off Solenoid- (920751)
- Electric. Fuel Pump- (103331)
- Radiator Kit (JB)- 102910
- 15 Amp switch (lights)- 106781
- SLS Module- 108053
- Filter Kit ( Air, fuel & Oil)- 108692

## Cat 1.1 Parts:

- Auto Shutdown Module- ( 650302)
- Voltage Regulator- (650446)
- 15 Amp switch (lights)- 106781
- SLS Module- 108053
- Filter Kit (Air, Fuel & Oil )-108961
- Temp Sensor- *Contact nearest Cat Dealer*
- Oil Pressure Sensor- *Contact nearest Cat*

# Allmand™ MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

## ML II 8KW (Cat1.1,CSA, 1250 W) alternator will not charge battery:

**\*\*Make sure battery is good and in working condition before testing\*\***

- ❑ To test the output of the alternator, place the positive lead of your volt meter on the positive terminal of the battery, then place the black lead on any ground point on the machine. You should read approximately 14 volts while the engine is running.
- ❑ (Note: All alternators are 12v) Alternators receive charge from the SLS panel within the control box. Make sure to check the 15 amp fuse for the alternator charging circuit.
- ❑ If 15 amp fuse is good then check all wire connections in the harness and to Alternator. Make sure all pins inside of harness plugs (pink & blue) are seated and making contact. Check for oxidation on each pin.
- ❑ If this is a Cat 1.1 early (2012-2017) then proceed to check voltage regulator. Any amount of charge that is lower than 14+.05v is an indication that the voltage regulator will have to be replaced.
- ❑ If the problem persists then proceed to testing or replacing the alternator.

## ML II CSA (CANADA SPEC) LSC 2.1 Powers off LSC screen when starting unit up.

- ❑ Ensure all connections to each terminal are making contact and are secure. Check all crimps and ensure insulation is clipped far enough back at the end of the wire.
- ❑ Check power at pin#6 into LSC and make sure the module is getting power.
- ❑ If there is sufficient voltage and LSC still does not function then replace the entire module.

## Maxi Lite II Vert or LD series runs for 10-20 seconds:

- ❑ If the unit runs for only 10-20 seconds then the issue could be either the Water Temperature or Oil pressure switch.
- ❑ Use a suitable multimeter to measure resistance of the coolant temp switch. When the temperature of the coolant is 50 \* c (122 F) or less, disconnect the wire connector from the coolant temperature switch.
- ❑ Place the lead of the multimeter on the connector of the coolant temperature switch. Place the other lead of the multimeter on a ground for the coolant temperature switch. **\*\*Measure the resistance. The resistance should be 54+ 2 ohms.\*\***

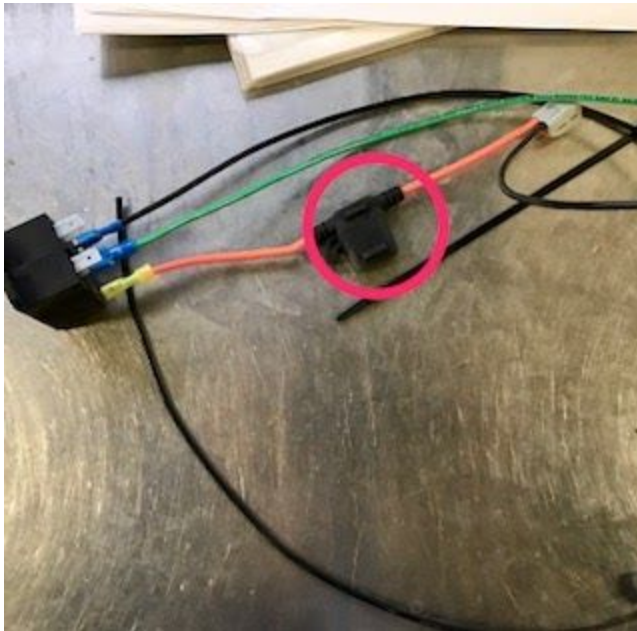
# Allmand™ MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

- ❑ Repeat the previous step when the temperature of the coolant is approximately 120 C (248 F). The resistance should not be less than 15 ohms,

## Maxi Lite II Vert or LD series runs for 45-60 seconds before turning off:

- ❑ Check power from generator to main breaker and if 120 volts are not present, then check the capacitor. If the capacitor passes the test then the issue is in the generator end internally. **\*\*See generator manufacturer manual for flashing tips.\*\***
- ❑ If power is coming from the generator to the main breaker, look for a small 16 gauge black wire connected to the back side of the main breaker. Black wire gets 120 from the main breaker to the orange wire and into the relay. Make sure power is measured correctly.
- ❑ Relay closes and green wire at the opposite end will send 12 volts to pin#4 of the SLS to signify there is generator voltage. IF SLS does not receive power then the unit will cut power to the fuel shut off solenoid hold wire.
- ❑ Check 2 amp inline fuse on orange wire. Replace if failed
- ❑ Check the relay and make sure it opens and closes. If failed replace it
- ❑ Check for loose crimps, faulty connections or loose grounds. If there is a break in the line then tighten or replace.



# Allmand<sup>™</sup> MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

*\*\*\*Units with LSC modules (digital display screens/ Auto start) have a smaller 120 transformer that plugs into pin#16 of LSC. Check power from main breaker all the way up to pin#16 for correct voltage.\*\*\**

## Lights fail to Illuminate.

- ❑ Check power at the main breaker. Power should be 120/240 from the gen to the main breaker. If power is lower than recommended rating, check the capacitor and generator output.
- ❑ If power is 120 at the main breaker, proceed to the light switched and light relays. Each light breaker should have the same voltage at the main breaker (120/240) and current should pass through each light relay. If voltage is found to drop then fix or replace the breaker or the light relay.
- ❑ Power is tested good at both light and switches, ensuring ballast is receiving sufficient voltage in ( @ 120/240). Power out of ballast to the capacitor and light circuit should measure 360-440 volts (+/- 10%) is within spec. ***\*\*If a voltage test yields high voltage other than normal at lamp output to light then this is an indication that the light/tower cord has a short (Example- 500-600 volts indicates backfeeding through tower cord due to short in circuit).***

Testing generator output at the GFCI receptacle:



***WARNING: Dangerous voltage and/or current may be present when a voltage test is being conducted. To reduce the risk of serious injury or death from electrical shock, if you are not trained to safely work with high voltage, do not attempt any of these procedures. You must seek assistance from qualified personnel.***

Generator output voltage may be tested by using a multimeter to measure the voltage across the terminals of the GFCI power receptacle.

# Allmand™ MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

Test the power output at the GFCI receptacle, while the engine is running and the main breaker and receptacle breaker is switched to the “ON” position.

Set the multimeter to the AC volt position and insert the probe tips into the hot and neutral sides of the GFCI receptacle. (See figure A below)

A meter reading of 120.0 volts +10% indicates that the generator is operating properly. Refer to page 2. For further troubleshooting procedures.

A reading less than 120 volts + 10% indicates that the generator may be malfunctioning, or there can be an issue with the main circuit breaker, pop out receptacle circuit breaker, GFCI receptacle by itself, or the wiring between any of these. Refer to page 2 for additional troubleshooting.

*NOTE: Many Allmand light towers designed for use outside North America operate at 230 volts/ 50 Hz. Testing is done the same way following the above instructions. If you are unsure which voltage your light tower is designed to produce contact a qualified electrician for assistance.*



**Figure A.1**

## Testing Generator at Main Circuit Breaker:



**WARNING: Dangerous voltage and/or current may be present when a voltage test is being conducted. To reduce risk of serious injury or death from electrical shock, if you are not trained to safely work with high voltage, do not attempt any of these procedures. You must seek assistance from qualified personnel.**

When testing the Generator output at the GFCI receptacle ( section A ) shows zero or low voltage, or is inclusive, it will then be necessary to test the generator voltage at the main circuit breaker. The main breaker may also be tested for proper function during this procedure.

To access the main breaker, ( ensure the engine is off) remove the four screws holding the control panel faceplate in place and carefully pull the faceplate away from the control box. Allow the faceplate to hang from the attached wiring. **Caution Do not allow any of the terminals on the control panel faceplate contact the control panel box or any other metal object.**

Your multimeter scale must be set to AC volts. Start the engine and while the engine has reached the correct operating speed (RPM) apply one probe from the multimeter to the ground stud , and the other probe to one of the top (input) terminals on the main breaker. Repeat the test for both terminals ( see figure L.1 and L.2). 120 volts+10% must be measured at each terminal. If 120 volts +10% is not measured at each terminal, either the generator, the generator capacitor or the wiring from the generator to the main circuit breaker is faulty. Refer to the troubleshooting flowchart ( Section 1.6 forward) to further isolate the problem.

# Allmand™ MAXI LITE II

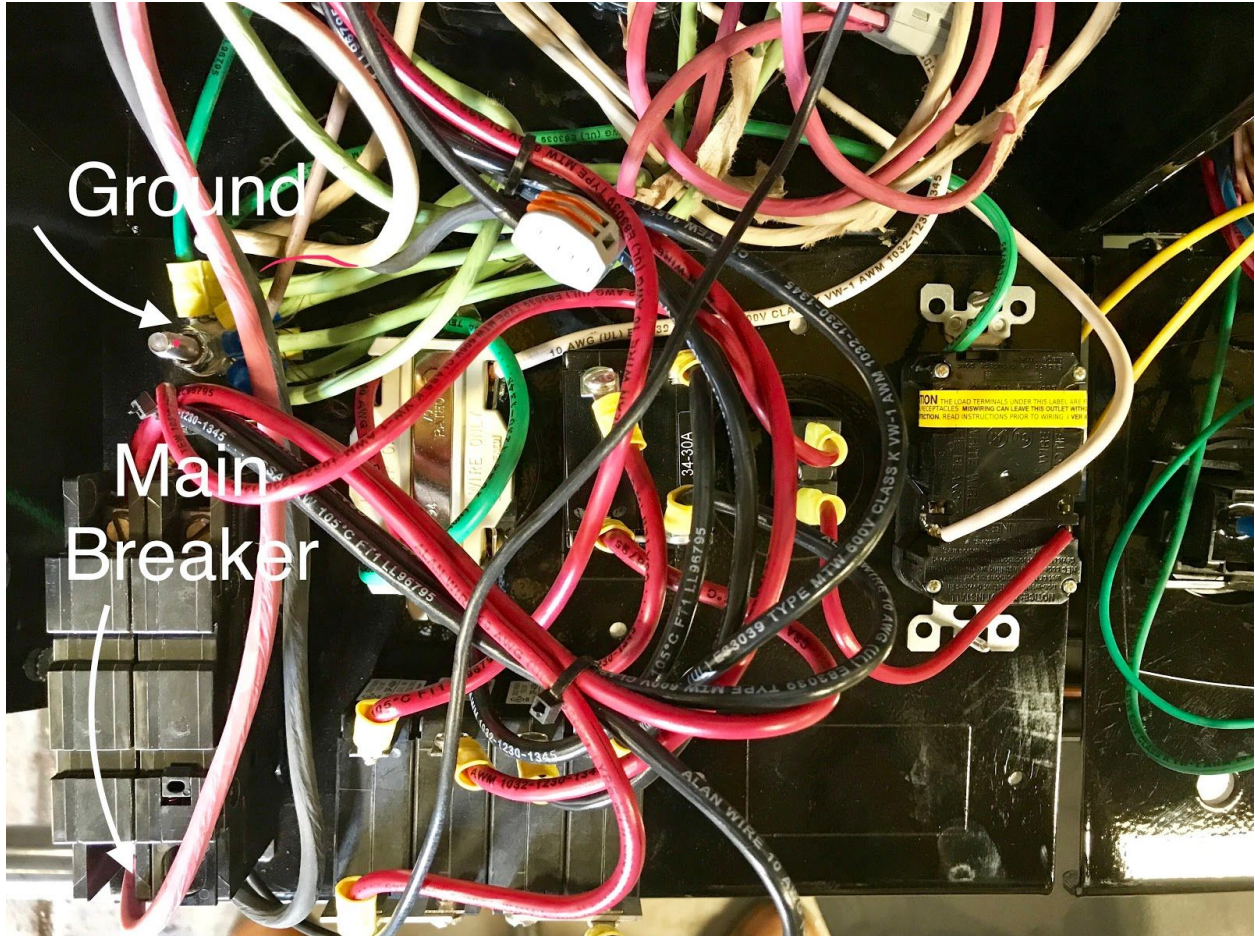
SERIAL NUMBER 10-000001 & 11-000001



**Figure L.1**

# Allmand™ MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001



**Figure L.2**



# Allmand™ MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

## Testing Generator Output at Main Circuit Breaker

( continued from the previous page).



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If the previous procedure indicates proper voltage at the top (Input) main breaker terminals ( see figure M.1 and A.1 on the next page). The meter reading should indicate 120 volts +10%. If a reading of 120 volts +10% is not measured at each terminal, the main breaker is faulty and must be replaced. See page 1 for a list of parts, visit our web site at [www.allmand.com/support/productsmanualsliterature.aspx](http://www.allmand.com/support/productsmanualsliterature.aspx) for a full list of parts breakdowns, or contact the Allmand parts and service team at 1- 800-562-1373 for correct replacement circuit breakers.

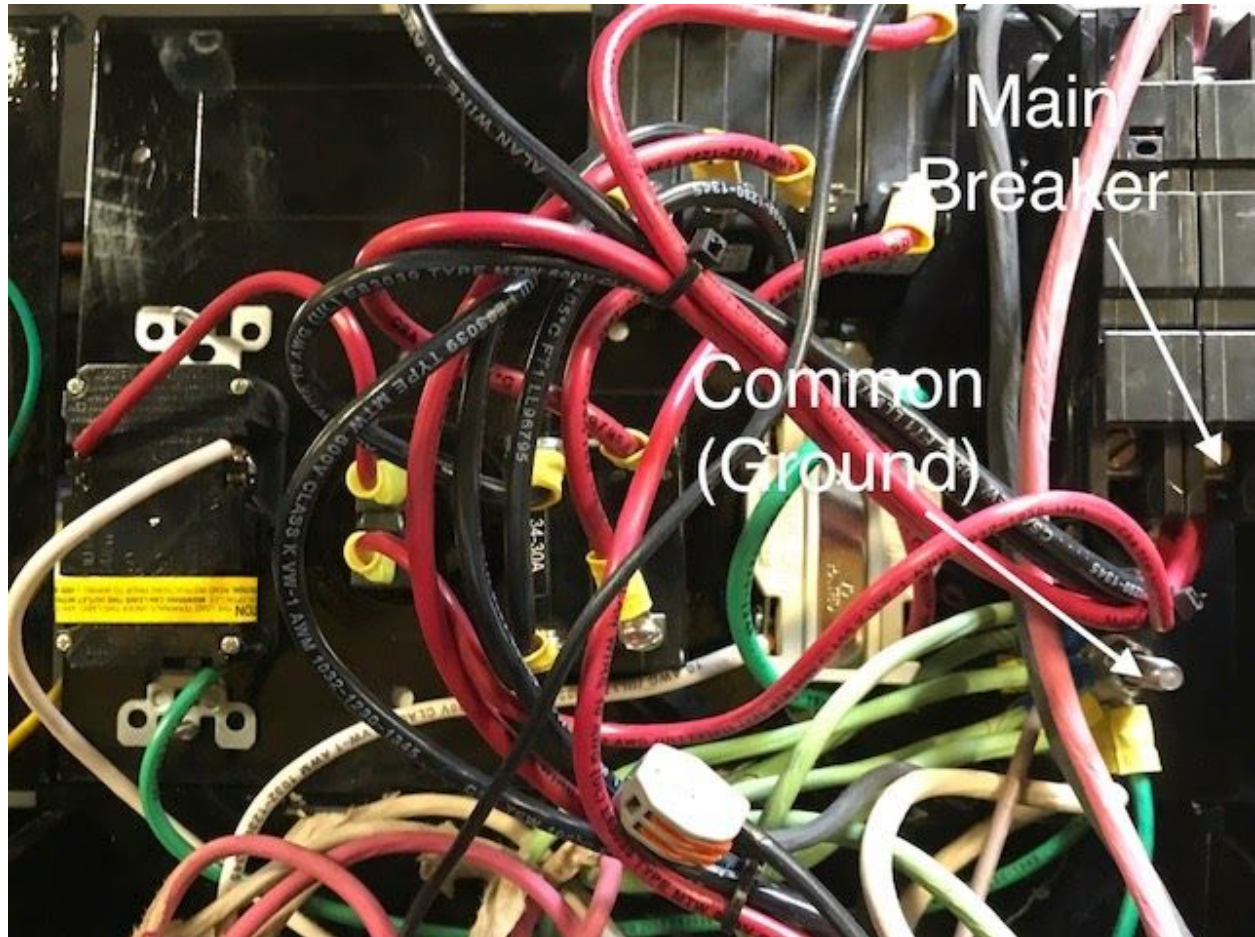


**Figure M.1**

# Allmand™ MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

(Continued from Pg. 11)



**Figure A.1**

## Testing Engine Speed at the GFCI Receptacle.



**WARNING:** *Dangerous voltage and/or current may be present when a voltage test is being conducted. To reduce risk of serious injury or death from electrical shock, if you are not trained to safely work with high voltage, do not attempt any of these procedures. You must seek assistance from qualified personnel.*

The speed of the engine may be tested by using a multimeter with the scale set to read hertz. **NOTE:** *Not all multimeters have Hertz scale.*

Set your multimeter to the Hertz ( Hz ) scale. While the engine is running and the light breakers turned off, insert your meter probes into the GFCI receptacle as shown in **figure N.1**( Pg. 14). The meter should read 62.0 Hertz with no load on the engine. A reading of less than 62.0 Hertz indicates that the engine is not running with enough speed to create the necessary power to operate all of the lamps consistently.

Slow engine speed may be caused by a number of factors:

- A. Incorrectly adjusted engine governor. Adjust governor as shown on the following page ( Figure D.1/Pg 15 ) until a reading of 62.0 Hz is indicated on the multimeter display.
- B. Clogged or dirty air and or/fuel filters. Replace filters if there are any questions as to their condition.
- C. Dirty fuel. Drain fuel tank and fuel system and replace with known clean fuel. Replace fuel filter before re-starting the engine.
- D. Worn or damaged engine. If the above steps fail to correct the engine speed this may indicate a faulty engine. Contact your local servicing dealer for the make and model diesel engine in your light tower. Repair, build or replace as necessary.

**Note:** *Many Allmand light towers designed for use outside of North America operate at 230 Volt + 10%/ 50Hz. Engines on these models must be set for 52.0 Hz at no load per the above instructions. If you are unsure which voltage your light tower is designed to produce, contact a qualified electrician for assistance.*

# Allmand™ MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

Testing engine speed at the GFCI receptacle (continued from previous page).



**WARNING:** Dangerous voltage and/or current may be present when a voltage test is being conducted. To reduce risk of serious injury or death from electrical shock, if you are not trained to safely work with high voltage, do not attempt any of these procedures. You must seek assistance from qualified personnel.



Figure N.1

# Allmand<sup>™</sup> MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

**Note: Consult the service manual or contact your local servicing dealer for the make and model diesel engine in your light tower for specific governor adjustment.**

**Figure D.1**



*CAT 1.1 Governor/ Throttle*



*Kubota 905, 1005 & 1105 Governor/ Throttle*

**Note: If the throttle or Governor is adjusted , make sure the unit does not go over 62.0 Hz. All units are manufactured and sent out and pre set at 60.0 Hz (1700-1800 Rpm).**

## Testing Ballast & Generator Capacitors.



***WARNING: Dangerous voltage and/or current may be present when a voltage test is being conducted. To reduce risk of serious injury or death from electrical shock, if you are not trained to safely work with high voltage, do not attempt any of these procedures. You must seek assistance from qualified personnel.***

Disconnect both capacitor leads

Using a screwdriver or similar instrument with an insulated handle, short the capacitor between the terminals to discharge any stored power (Figure B.1). The capacitor may be freely handled after it has been discharged.

Select *Ohms* on your multimeter to the highest setting.

Check the resistance between the capacitor terminals (Figure R.1).

- A. If the meter shows a low resistance reading which gradually increases, the capacitor is likely good and does not need to be replaced.*
  
- B. If the meter shows a very high resistance that remains steady, the capacitor is open and must be replaced.*
  
- C. If the meter indicates a very low resistance that remains steady, the capacitor is shorted and must be replaced.*

# Allmand<sup>TM</sup> MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

**Figure R.1**



*Working Capacitor tested @ 25.0*

**Figure B.1**



*Discharging Capacitor*

# Allmand<sup>TM</sup> MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

## *Filters per engine option:*

<b>KUBOTA D905,D1005, &amp; D1105 8KW</b>		
AIR	650290	
OIL	920743	
FUEL	920745	
FILTER KIT (ALL FUEL)	108962	
<b>PERKINS 403F-11 8KW</b>		
AIR	650290	
OIL	113867	
FUEL	113874	
FILTER KIT (ALL FUEL)		
<b>CAT C1.1 8KW &amp; C1.5 NA NON TURBO 13KW</b>		
AIR	102580	
OIL	650304	
FUEL	103155	
FILTER KIT (ALL THREE)	108961	
<b>CAT 1.5 T 15KW &amp; CAT 2.2 20KW</b>		
AIR (PRIMARY)	15-000125	
AIR (SECONDARY)	104071	
OIL	650304	
FUEL	103155	
FILTER KIT (ALL FUEL)	108960	
<b>ISUZU 4LE1 &amp; 4LE2 20KW (T3F)</b>		
AIR (PRIMARY)	15-000125	
AIR (SECONDARY)	104071	
OIL	650221	
FUEL	650220	



# Allmand<sup>TM</sup> MAXI LITE II

SERIAL NUMBER 10-000001 & 11-000001

FILTER KIT (ALL FUEL)	108959	
<b>*NEW* ISUZU 4LE2t T4F (DOMESTIC 20KW 2019)</b>		
AIR (PRIMARY)	15-000125	
AIR (SECONDARY)	104071	
OIL	650221	
FUEL	111647	
PRE FUEL	111648	
FUEL FILTER WRENCH	115100	
FUEL FILTER WRENCH	115101	

## Oil Change Intervals:

Mitsubishi L3E- Every 750 hours  
Kubota D1005 & 1105- Every 1,000 hours  
Caterpillar C1.1/C1.5/C1.5t- Every 500 hours  
Perkins 403F-11 - Every 500 hours  
Isuzu 4LE1 & 4LE2t- Every 500 hours

*\*Check engine operators manual for specific recommended lubricants.*

*\*Additional warranty information & claim forms can be obtained on Allmand.com.*

*\*Please contact Allmand Tech line for additional help and troubleshooting @ (308) 995-3431 / Parts (800) 562-1373.*