INSPECTION CHECK LIST

FOR PREPARING THE MAXI LITE FOR DELIVERY OR RENTAL

The MAXI LITE requires service as well as proper operation in order to provide the performance and safety it has been designed for. Never deliver or put a machine into service with known defects or missing instructions or decals. Always instruct the customer in the proper operation and safety procedures as described in the operator’s manual. Always provide the manual with the equipment for proper and safe operation.

CHECK LIST:

- Visually inspect the equipment to ensure that all instructions and decals are in place and legible.
- Inspect the tower latch and knob assembly which locks the tower in the vertical position for proper operation.
- Check the hitch assembly and safety tow chains.
- Check the outriggers and jacks to make sure they operate properly.
- Inspect the light assemblies for damage and test for proper operation.
- Inspect the electrical wiring for signs of damage.
- Check the ground rod cable and the ground lug. Make sure they are clean, undamaged, and functional.
- Inspect the tires to ensure good condition and proper inflation.
- Check oil, fuel, coolant levels, and hydraulic fluid levels.
- Check to make sure the operator’s manual is with the equipment.
- Inspect the machine physically for damage and repair if necessary.

NOTE: See appropriate section of manual for scheduled maintenance intervals.

After completing the inspection check list, operate the tower through a complete operation cycle, following the operating instructions in the operator’s manual.

⚠️ WARNING
NEVER ALLOW ANYONE TO OPERATE THE EQUIPMENT WITHOUT PROPER TRAINING!
ALWAYS READ THE INSTRUCTIONS FIRST!
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSPECTION CHECK LIST</td>
<td>2</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>3</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>4</td>
</tr>
<tr>
<td>SAFETY SYMBOL INFORMATION</td>
<td>4</td>
</tr>
<tr>
<td>SAFETY AND WARNING DECALS</td>
<td>5-7</td>
</tr>
<tr>
<td>HYDRAULIC MAST OPERATION</td>
<td>8-9</td>
</tr>
<tr>
<td>MODEL AND SERIAL NUMBERING SYSTEM</td>
<td>10</td>
</tr>
<tr>
<td>SPECIFICATIONS</td>
<td>11-15</td>
</tr>
<tr>
<td>CONTROLS AND COMPONENTS</td>
<td>16-23</td>
</tr>
<tr>
<td>ROUTINE MAINTENANCE SCHEDULE</td>
<td>24</td>
</tr>
<tr>
<td>TROUBLESHOOTING</td>
<td>25</td>
</tr>
<tr>
<td>ASSEMBLY PARTS AND ACCESSORIES</td>
<td>26</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction

This manual provides the information necessary for the safe operation of the Allmand Bros., Inc., MAXI-LITE light tower.

The MAXI-LITE standard tower configuration is operated by a two cylinder hydraulic system used to erect, extend, and lower the tower.

Specific operating instructions and specifications are contained in this publication to familiarize the operator and maintenance personnel with the correct and safe procedures necessary to maintain and operate the equipment.

Take time to read this book thoroughly. If you are uncertain about any of the information presented in the manual, contact the factory or your dealer for clarification before operation.

Chapter 2: Safety Symbols

The purpose of the SAFETY INFORMATION SYMBOL shown below is to attract your special attention to safety related information contained in the text.

- **DANGER**
- **WARNING**
- **CAUTION**

FAILURE TO UNDERSTAND AND COMPLY WITH SAFETY RELATED INFORMATIONAL INSTRUCTIONS MAY RESULT IN INJURY TO OPERATOR OR OTHERS. IF YOU DO NOT UNDERSTAND ANY PART OF THIS INFORMATION CONTACT YOUR DEALER FOR CLARIFICATION PRIOR TO OPERATING EQUIPMENT.

Chapter 3: Notes

The word NOTE is used to bring your attention to supplementary information in relation to various aspects of proper operation and maintenance.

**NOTE:** Keep this manual accessible during operation to provide convenient reference.

**NOTE:** Any reference in this manual to LEFT or RIGHT shall be determined by looking at the trailer from the rear.
SAFETY AND WARNING DECALS

SAFETY WARNING

ALWAYS REPLACE ANY SAFETY AND INSTRUCTION DECALS THAT BECOME DAMAGED, PAINTED, OR OTHERWISE ILLEGIBLE.

Refer to these representations of the safety warning decals used on the MAXI-LITE to insure correct ordering if replacing becomes necessary.

OPERATING INSTRUCTIONS

PART NO. D-151
Location: Inside left hand door panel of Lister Petter engine units.

PART NO. D-249
Location: Inside left hand door panel of Kubota engine units.

PART NO. D-264
Location: Inside left hand door panel.

DIRECT MAST & RAISE LIGHTS

1. Push button for extending and raising mast.
   (Hydraulic tower model only.)

2. Direct mast and raise light.
   (Hydraulic tower model only.)

3. Release the direct mast switch up to
   lower mast and position headlight on safety
   mast.

4. Direct mast and raise light.
   (Hydraulic tower model only.)

5. LAY MAST DOWN.

   (Hydraulic tower model only.)

   1. Push button for retracting and lower mast.
      (Hydraulic tower model only.)

   2. Direct mast and lower light.
      (Hydraulic tower model only.)

   3. Release the direct mast switch down to
      lay mast down and position headlight on safety
      mast.

   4. Direct mast and lower light.
      (Hydraulic tower model only.)
SAFETY AND WARNING DECALS

PART NO. D-165
Location: Inside left hand door panel

PART NO. D-166
Location: AC control panel

PART NO. D-163
Location: On left side wheel well

PART NO. D-165
Location: Inside left hand door panel

PART NO. D-162
Location: On left front ABS panel

PART NO. D-084
Location: AC control panel

PART NO. D-133
Location: On left side panel below ground lug

PART NO. D-169
Location: On right hand wheel well
SAFETY AND WARNING DECALS

PART NO. D-139
Location: On rear panel under the rear tower support.

PART NO. D-002
Location: Light bar cover

PART NO. D-160
Location: On pintle hitch
Location: Inside left hand door panel

PART NO. D-003
Location: Inside left hand door panel

PART NO. D-152
Location: Inside left hand door panel

WARNING
Do not stand in front of Mast or underneath rear of Mast when raising or lowering.

WARNING
Non-vertical tower can cause severe injury or death. Do not lower the tower to the horizontal position unless the flat spring pin assembly at the front of the mast securely locks the sections together.

To Prevent injury or Machine Damage
* Pull pin back to release mast from mast support before operating winch.

D-263
DESCRIPTION OF OPERATION

The Allmand MAXI-LITE tower assembly consists of a three section telescoping mast that can be raised and extended by operating two toggle switches mounted on the D.C. Control Panel. The lift cylinder toggle switch operates a solenoid on a hydraulic pump that pressurizes a cylinder to raise the mast from the horizontal towing position to the vertical position. The extend cylinder toggle switch operates a solenoid on the same hydraulic pump that pressurizes a cylinder that extends the telescoping sections.

The three section mast assembly can be rotated from the ground by loosening a knob and rotating the entire assembly 360° to aim the lights as necessary.

SAFETY WARNING

- ALWAYS CHECK FOR OVERHEAD OBSTRUCTIONS BEFORE RAISING AND LOWERING MAST. ALLOW 35° CLEARANCE. AVOID ALL OVERHEAD ELECTRICAL WIRES.
- TO PREVENT INSTABILITY AND HELP ENSURE SAFE OPERATION, ALWAYS PROVIDE PROPER GROUND SUPPORT BEFORE RAISING MAST.
- BEFORE RAISING MAST, VISUALLY INSPECT EQUIPMENT FOR DAMAGE OR WEAR. FAMILIARIZE YOURSELF WITH THE LOCATION AND FUNCTION OF ALL OPERATING PARTS BY STUDYING THIS MANUAL. OBSERVE ALL CAUTION DECALS LOCATED ON EQUIPMENT.

NOTE: The latch locks the mast in the vertical position and disengages the sections allowing the tower assembly to be rotated to position the lights.

TO ERECT MAST AND RAISE LIGHTS

1. Extend both side outrigger jacks, rear jack and tongue jack to stabilize and level the trailer.

NOTE: Jacks should be placed only on firm footing.

SAFETY WARNING

- WHEN EXTENDING REAR JACK, WATCH TO ENSURE YOU ARE CLEAR OF THE OVERHANGING ENDS OF THE MAST.
- THE SUPPLEMENTAL GROUND ROD IS A SAFETY DEVICE THAT MAY REDUCE THE CHANCE OF PERSONAL INJURY FROM STRAY ELECTRICAL CURRENT. Therefore, Allmand recommends using the ground rod. However, it is the user’s responsibility to determine the requirements and/or applicability of local, state, or national electrical code which governs the use of the ground rod.

2. Attach the ground rod to the grounding lug, and drive the ground rod fully for adequate electrical ground, as required by local, state, or national code.

3. Release the pin that secures the mast to the rear mast support.

4. Operate the LIFT CYLINDER toggle switch UP to raise the mast from horizontal to vertical.

5. Turn black knob counterclockwise and engage latch in strike plate. Retighten black knob.

6. Operate the EXTEND CYLINDER toggle switch UP to raise the lights vertically.

7. To rotate the lights, loosen the black knob on mast and turn the tower assembly with the handles provided. Retighten knob.
SAFETY WARNING

- IF THE TOWER CANNOT BE ROTATED AFTER LOOSENING THE BLACK KNOB, CHECK TO ASSURE THE LOWER LATCH IS ENGAGED IN THE STRIKE PLATE. THIS DOUBLE LATCH FEATURE PREVENTS THE TOWER FROM BEING ROTATED IF THE LATCH IS NOT ENGAGED.

SAFETY WARNING

VISUALLY INSPECT EQUIPMENT FOR DAMAGE BEFORE OPERATING. ALLOW ADEQUATE CLEARANCE AROUND TRAILER FOR TOWER AND INSURE THAT NO PERSONS ARE STANDING IN FRONT OF, OR BEHIND UNIT WHEN LOWERING.

TO LOWER MAST AND LIGHTS

1. Turn off lights.

2. Loosen black knob and rotate tower until the black triangles are aligned and re-tighten knob.

3. Operate the extend cylinder toggle switch DOWN to lower the lights to the lowest vertical position.

4. Turn the black knob counterclockwise and lift to release the latch from the strike plate. Retighten the knob with the latch disengaged from the strike plate.

5. Operate the lift cylinder toggle switch down to lower the mast from vertical to horizontal into the towing position.

NOTE: The tower has to be positioned with the winch handle pointing directly forward before the latch can be released. This aligns the tower correctly with the pin in the rear tower support, preventing tower extension during towing.

6. Secure pin locking mast to rear tower support.

7. Remove ground rod from earth. Disconnect wire from ground lug and secure in trailer.

8. Raise jacks and rear stand, retract outriggers and secure for towing.

NOTE: Ensure the detent pins are properly engaged in the outriggers before towing.
MODEL NUMBERING SYSTEM

EXAMPLE: ML683HCKFMX
MAXI-LITE trailer, 6KW generator (standard), 1000 Watt Ballast Capacitors, Hydraulic tower, Coiled Cord w/Tunnel, Kubota water cooled engine, Marathon Generator, Metal Halide Lamps, and Light Package

ML-MAXI-LITE trailer
683 - 6KW Gen., standard 1000 watt Ballast Cap.
695 - 6KW Gen., Special Capacity 28 UF
883 - 8KW Gen., standard 1000 watt Ballast Cap.
895 - 8KW Gen., Special Cap. 28 UF
XL - 6-Light Option
E - Electric Winch 120V
R - Cord Reel
I - Straight Cord
C - Coiled Cord
P - Perkins 103-10 Water Cooled Engine
W - Lister Petter LPW-3 Water Cooled Engine
K - Kubota Water Cooled Engine
F - Marathon Pancake Generator
P - T & J Pow r Gard Generator
O - Allmand 6KW Generator
M - Metal Halide, 1000 Watt Multi-Vapor Lamps
H - High pressure sodium 1000 Watt
  (Power-lite Fixtures)
X - Indicates stop, turn and tail lights
V - Visor Package
S - Sound Attenuation
NOTE: 50 following a generator letter indicates 50 hertz.

SERIAL NUMBERING SYSTEM

EXAMPLE: 00 03 ML 11
00 - Year of manufacture
03 - Month of manufacture
ML - MAXI-LITE
11 - Allmand code indicating this unit was the 11th produced that month.

SERIAL NUMBER LOCATION

Trailer: All MAXI-LITE models have a serial number plate located just below the rear tower support on the rear panel.

Generator: Plate attached to the side of the generator housing

Engine: Plate attached to the engine

KUBOTA D905-BG and D1105-BG:
Left side, between manifold and starter

PERKINS 103-10:
Upper right front corner behind injector pump

DESCRIPTION OF MODELS AND OPTIONS

The MAXI-LITE hydraulic light tower uses four 1000 Watt Metal Halide or High Pressure Sodium lamps with the exclusive Allmand SHO lighting system to produce a total of 334,204 lumens (83,551 lumens per fixture). Optional reflective visors and 6-light units are available. The lights are mounted on a hydraulically operated tower. The tower is operated by two hydraulic cylinders powered by an electrically driven hydraulic pump. One cylinder, mounted on the trailer frame, erects the mast from the horizontal towing position to vertical. The second cylinder, mounted inside the tower, extends the mast vertically to the desired height. The hydraulic cylinders both erect the mast from horizontal to vertical and extend the mast vertically to the desired height. Inside fixture storage is offered for the 4-light option.

The heavy duty trailer shell has 12 gauge doors and roof panels. The shell houses the 15” wheels and tires inside the side panels. The front panels are rust proof ABS plastic. The MAXI-LITE light tower is powered by either one of two Kubota water cooled engines, 10.5 hp or 13.6 hp., or a Perkins water cooled 10.7 hp diesel engine. Each engine mounts to either the 6KW or 8KW generator. The trailer houses a 50 gallon poly fuel tank and an optional sound attenuation package.
KUBOTA D905, D1105, AND PERKINS 103.10

FUEL AND LUBRICATING OIL REQUIREMENTS

*See the KUBOTA 905 EBG1 or 1105 EBG1 Engine Operators Handbook or the PERKINS 103-10 Engine Operators Handbook for information on oil and fuel requirements.*

TOWING INSTRUCTIONS

Before towing the MAXI-LITE the trailer should be inspected visually to insure that the following operations have been completed.

1. Hitch is securely attached to towing vehicle (safety chain secure).
2. All outriggers and jacks are retracted and secured.
3. Tower is lowered and the rear tower support pin is in place.
4. Light fixtures are positioned for transport.
5. Doors are closed and secure.
6. Check for adequate tire pressure.
7. Taillights are connected and operating (if equipped).
8. Ground rod is removed from ground and secured in the trailer.

GROUND ROD INSTRUCTIONS

1. Remove ground rod stowed inside the left door (attached to the lower frame).
2. Unroll the electrical wire lead from the ground rod.
3. Attach the ground rod lead to the grounding lug located near the ballast compartment.
4. Drive the ground rod a minimum of 2 1/2 FT into the earth for adequate electrical grounding. If this is not possible consult your local qualified electrician.
5. After shutdown of engine: Remove the ground rod from the earth, remove lead from the trailer ground lug and store ground rod inside left door.
BEFORE STARTING
1. Fill the engine with the right grade of lubricating oil and to correct level (check dipstick).
2. Ensure there is an adequate supply of fuel.
3. Ensure that the air cleaner is firmly attached, the air canister seals and the hose clamps are properly sealed. Air cleaner element should be checked and replaced if necessary.
4. Install the ground rod.

DESCRIPTION OF OPERATION
By depressing the start assist switch, the fuel solenoid is energized. The solenoid plunger is drawn into the coil and activates the fuel control linkage to RUN position. When the engine starts, adequate engine oil pressure at the oil pressure switch will maintain the solenoid in the energized position. The start assist switch can be released as soon as the engine starts. A 10A inline fuse protects the solenoid from electrical damage.

LOW OIL PRESSURE SHUTOFF SYSTEM
Should a low oil pressure condition occur (less than 5 PSI) the pressure sending unit breaks the circuit between the battery and the fuel solenoid, allowing the spring load to immediately move the fuel control to the shutoff position.

HIGH COOLANT TEMPERATURE SHUTOFF SYSTEM
Should a high coolant temperature condition occur, the temperature sending unit breaks the circuit between the battery and the fuel solenoid, allowing the spring load to immediately move the fuel control to the shutoff position.

STARTING THE KUBOTA AND PERKINS ENGINES

NOTE: The Kubota and the Perkins engines include a glow plug cold start system controlled by the ignition switch on the control panel. Glow plugs are not needed on a warm engine or if the ambient temperature is above 50 F. Do not use starting fluid or ether.

1. Turn the ignition switch to the PREHEAT position and hold until the glow plug lamp goes out.
2. Turn the ignition switch to the Start position until the engine starts. Release key as soon as the engine starts.
3. If engine fails to start, it may be necessary to cycle the glow plugs again.

NOTE: To prevent equipment damage, DO NOT hold ignition switch for more than 10 seconds in the start position. If the engine does not start in 10 seconds, wait 30 seconds and try the start sequence again. Do not run the cell motor for more than 20 seconds continuously. Limit engine cranking to 3 attempts with a 2 minute cool-down between each. After 3 attempts allow to cool to ambient temperature.

STOPPING THE KUBOTA AND PERKINS ENGINES

Turn the ignition switch to the OFF position. This breaks the circuit between the battery and the fuel solenoid, allowing the spring load to immediately move the fuel control to the shutoff position.
SPECIFICATIONS

ELECTRICAL
Hard wired electrical circuits
Componentized ballast assemblies
Ground rod
Hour meter
Voltmeter (optional)
External 120V and 240V outlets (optional)

FLOOD LIGHT ASSEMBLY
Four or six 1000 watt lamp fixtures sealed for all weather use. Lamps can be either the SHO 1000 fixture, 1250 watt fixture or PowerLite fixture.

SHO 1000 FIXTURE - BT-37 lamp, Metal Halide, Laboratory rated life is 10,000 hours.

Lumen rating: 110,000
Warm-up time: 2-4 minutes
Restart time: 10-15 minutes

POWERLITE FIXTURE - BT-56 1000 watt Multi-Vapor lamp, Metal Halide, Laboratory rated life is 12,000 hours.

Lumen rating: 110,000
Warm-up time: 2-4 minutes
Restart time: 10-15 minutes

POWERLITE FIXTURE - E-25 1000 watt High Pressure Sodium lamp (often referred to as H.P.S), Laboratory rated life is 24,000 hours.

Lumen rating: 140,000
Warm-up time: 4-6 minutes
Restart time: 1 minute

NOTE: A trailer equipped with Metal Halide lights and a trailer equipped with High Pressure Sodium lights use different ballasts and starters. Therefore, it is not advisable to interchange bulb types.

MAST
1. A single stage hydraulic cylinder inside the cabinet raises the tower from the horizontal towing position to vertical.
2. A three-stage telescopic hydraulic cylinder supported inside a steel tube mast extends to raise the lights to 30 feet.
3. Hydraulic power is provided by a self-contained 12 volt hydraulic power unit operated by two switches located on the control panel.

TRAILER
The complete generator is housed in a lockable enclosure with the frame fabricated from heavy gauge steel mounted on a two-wheel, leaf spring axle. The design enables the trailer to contain the outriggers in a simple compact position.

When the mast is in the operating position it is located in the middle of a four point outrigger system for optimum balance and stability. This system was engineered to allow the light plant to remain operational in sustained winds of 65 MPH with the mast extended to full height and the outriggers in position.

The design includes an adjustable-height reversible hitch, which includes a 2” ball and pintle hook hitch.

STABILIZERS
Four (4) point outrigger design with tower center mounted between two (2) retractable side outriggers, tongue and rear jack.
### MAXI-LITE DIMENSIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height lowered:</td>
<td>6'0&quot; (1.84 m)</td>
</tr>
<tr>
<td>Height extended:</td>
<td>30' (9.14 m)</td>
</tr>
<tr>
<td>Length:</td>
<td>14'9&quot; (4.49 m)</td>
</tr>
<tr>
<td>Width:</td>
<td>6'4&quot; (1.93 m)</td>
</tr>
<tr>
<td>Outrigger width:</td>
<td>11'6&quot; (3.5 m)</td>
</tr>
<tr>
<td>Trailer:</td>
<td>Structural steel frame, Leaf spring axle</td>
</tr>
<tr>
<td>Wheels &amp; tires:</td>
<td>15&quot;</td>
</tr>
</tbody>
</table>

### DOMESTIC SHIPPING WEIGHT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixtures:</td>
<td>15 lbs. ea. = 60 lbs.</td>
</tr>
<tr>
<td>Trailer with mast:</td>
<td>2,180 lbs. (902.7 kg)</td>
</tr>
<tr>
<td>Total weight:</td>
<td>2,240 lbs. (1016 kg)</td>
</tr>
</tbody>
</table>
### KUBOTA D905-EBG1 ENGINE
Kubota D905-EBG1, Indirect injection 3 Cylinder

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement</td>
<td>54.80 cu. in. (898 cm)</td>
</tr>
<tr>
<td>Bore</td>
<td>2.83 in. (72 mm)</td>
</tr>
<tr>
<td>Stroke</td>
<td>2.90 in. (73.6 mm)</td>
</tr>
<tr>
<td>Power output</td>
<td>10.5 BHP @ 1800 rpm</td>
</tr>
<tr>
<td>Power output derating</td>
<td>3.0% for every 1000 ft. altitude (305 m) above sea level</td>
</tr>
<tr>
<td>Ambient temp</td>
<td>1% per 10°F (5.6°C) above 77°F (25°C)</td>
</tr>
<tr>
<td>Fuel</td>
<td>Diesel</td>
</tr>
<tr>
<td>Fuel consumption</td>
<td>0.63 US gal (2.39 L/hr)</td>
</tr>
<tr>
<td>Starting</td>
<td>Glow plugs needed below 45°F. 12V electric</td>
</tr>
<tr>
<td>Oil sump capacity</td>
<td>5.4 US qt. (5.14L)</td>
</tr>
</tbody>
</table>

Low oil pressure shutdown, high engine temp. shutdown, and glow plug cold start assist are standard.

### KUBOTA D1105-EBG1 ENGINE
Kubota D1105-EBG1, Indirect injection 3 Cylinder

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Displacement</td>
<td>68.53 cu. (1.1 cm)</td>
</tr>
<tr>
<td>Bore</td>
<td>3.07 in. (78 mm)</td>
</tr>
<tr>
<td>Stroke</td>
<td>3.09 in. (78.4 mm)</td>
</tr>
<tr>
<td>Power output</td>
<td>13.6 BHP @ 1800 rpm</td>
</tr>
<tr>
<td>Power output derating</td>
<td>3.0% for every 1000 ft. altitude (305 m) above sea level</td>
</tr>
<tr>
<td>Ambient temp</td>
<td>1% per 10°F (5.6°C) above 77°F (25°C)</td>
</tr>
<tr>
<td>Fuel</td>
<td>Diesel</td>
</tr>
<tr>
<td>Fuel consumption</td>
<td>0.63 gal (2.39 L/hr)</td>
</tr>
<tr>
<td>Starting</td>
<td>Glow plugs needed below 45°F. 12V electric</td>
</tr>
<tr>
<td>Oil sump capacity</td>
<td>5.4 US qt. (5.14L)</td>
</tr>
</tbody>
</table>

Low oil pressure shutdown, high engine temp. shutdown, and glow plug cold start assist are standard.

### PERKINS 103.10 ENGINE
Perkins 103.10, Indirect injection 3 Cylinder

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement</td>
<td>58.3 cu. in. (954 cc)</td>
</tr>
<tr>
<td>Bore</td>
<td>75 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>72 mm</td>
</tr>
<tr>
<td>Power output</td>
<td>10.7 BHP @ 1800 RPM</td>
</tr>
<tr>
<td>Power output derating</td>
<td>3.5% for every 1000 ft. altitude (305 m) above sea level</td>
</tr>
<tr>
<td>Air Inlet Temp</td>
<td>1% per 10°F (5.6°C) above 77°F (25°C)</td>
</tr>
<tr>
<td>Fuel</td>
<td>Diesel</td>
</tr>
<tr>
<td>Oil sump capacity</td>
<td>Fill to correct level</td>
</tr>
<tr>
<td>Starting</td>
<td>12 volt electric</td>
</tr>
</tbody>
</table>

Low oil pressure shutdown, high engine temp. shutdown, and glow plug cold start assist are standard.
**NOTE:** COMPONENTS SHOWN ARE STANDARD. PICTURES MAY VARY WITH DIFFERENT OPTIONS.

**FIG. 1. A.C. CONTROL PANEL**

1. Switch, Circuit Breaker (Lights 1 through 4)
2. Switch, Circuit Breaker (240V Receptacle)
3. Switch, Circuit Breaker (120V Receptacles)

**SAFETY WARNING**

FAILURE TO UNDERSTAND AND COMPLY WITH SAFETY RELATED INFORMATION AND INSTRUCTIONS MAY RESULT IN INJURY TO THE OPERATOR OR OTHERS. IF YOU DO NOT UNDERSTAND ANY PART OF THIS CONTACT YOUR DEALER FOR CLARIFICATION PRIOR TO OPERATING EQUIPMENT.

**FIG. 2. D.C. CONTROL PANEL**

4. Voltmeter (optional)
   Indicates charging circuit voltage
5. Hour Meter
   Shows total elapsed hours of engine operation
6. Momentary Contact Switch
   Lift up on 6 to raise tower
   Press down on 6 to fold the tower
7. Momentary Contact Switch
   Lift up on 7 to extend the tower
   Press down on 7 to lower the tower
8. Glow Plug Indicator
9. Ignition ON/OFF Switch
10. Control Panel complete
NOTE: COMPONENTS SHOWN ARE STANDARD. PICTURES MAY VARY WITH DIFFERENT OPTIONS.

FIG. 3 BALLAST PANEL

11. Ballast, Capacitors 1 through 4
12. Ballast, Transformers 1 through 4

FIG. 4 CONVENIENCE PANEL

13. 120 Volt/15 Amp Outlet Receptacles (Ground fault)
14. 240 Volt/15 Amp D.C. Outlet Receptacle
15. Power Cord Access Hole

SAFETY WARNING

FAILURE TO UNDERSTAND AND COMPLY WITH SAFETY RELATED INFORMATION AND INSTRUCTIONS MAY RESULT IN INJURY TO THE OPERATOR OR OTHERS. IF YOU DO NOT UNDERSTAND ANY PART OF THIS CONTACT YOUR DEALER FOR CLARIFICATION PRIOR TO OPERATING EQUIPMENT.
NOTE: COMPONENTS SHOWN ARE STANDARD. PICTURES MAY VARY WITH DIFFERENT OPTIONS.

FIG. 5 GROUND ROD
16. Ground Rod
Ground rod should be attached to grounding lug with wire provided and ground rod and then driven fully into the earth for adequate electrical ground, as required by local, state, or national electrical code.

FIG. 6 ENGINE (Left Side)
17. Air Cleaner
18. Fuel Filter
19. Fuel Lift Pump
20. Fuse (10 Amp)
21. Oil fill
22. Stop Solenoid
23. Oil Filter

FIG. 7 ENGINE (Right Side)
24. Fuel Return Line
25. Fuel Suction Line
26. Starter
27. Glow Plug
**NOTE:** COMPONENTS SHOWN ARE STANDARD. PICTURES MAY VARY WITH DIFFERENT OPTIONS.

**FIG. 8 REAR JACK**
28. Rear Jack

⚠️ **SAFETY WARNING**
WHEN EXTENDING REAR JACK, WATCH TO INSURE YOU ARE CLEAR OF THE OVERHANGING ENDS OF THE MAST BEFORE STANDING UP.

**FIG. 9 OUTRIGGER JACK**
29. Pin—Retains outrigger in retracted position for towing
30. Jack Pin—Pull to allow jack to rotate
31. Outrigger Jack
32. Jack Handle—Crank handle to raise and lower foot of jack to level trailer.

**FIG. 10 REAR TOWER SUPPORT**
33. Pin—Locks tower into rear tower support
34. Rear Tower Support
**NOTE:** COMPONENTS SHOWN ARE STANDARD. PICTURES MAY VARY WITH DIFFERENT OPTIONS.

**FIG. 11 TONGUE ASSEMBLY**
35. Taillight Wiring Harness
36. Safety Tow Chains
37. Reversible Hitch (2" Ball and Pintle Hitch)

**FIG. 12 FORKLIFT POCKETS**
38. Forklift Pockets
39. Lifting Eye

**FIG. 13 DOOR PROP**
40. Door Prop—Locks Door Panel in Open Position
NOTE: COMPONENTS SHOWN ARE STANDARD. PICTURES MAY VARY WITH DIFFERENT OPTIONS.

FIG. 14 KICKOUT SPRING
41. Kickout Spring—Tilts mast off center when folding mast down

FIG. 15 TOWER LOCKING BAR LATCH
42. Mast Locking Bar Latch — Locks mast in vertical position and allows tower to rotate.
43. Mast Locking Bar Safety Switch — Prevents extension of mast when locking bar is not engaged.

NOTE: Tower must be positioned with the two black triangles on the tower assembly, near the mast handles, pointing at each other. Then the locking bar can be released from the strike plate allowing the tower to rotate toward horizontal towing position.
NOTE: COMPONENTS SHOWN ARE STANDARD. PICTURES MAY VARY WITH DIFFERENT OPTIONS.

FIG. 16 TOWER CONTROLS
44. Alignment arrows — Must be aligned to unlock the tower
45. Lock Knob — Locks tower in position.
46. Mast Handles — Use to rotate tower and lights.

FIG. 17 COIL CORD
47. Coil Cord and Coil Cord Tunnel

FIG. 18 LAMP CONNECTORS
48. Lamp Connector Lead — For quick connecting/disconnecting of the lamp fixtures
NOTE: COMPONENTS SHOWN ARE STANDARD. PICTURES MAY VARY WITH DIFFERENT OPTIONS.

FIG. 19 HYDRAULIC PUMP ASSEMBLY
49. Hydraulic Pump Assembly with Hydraulic Reservoir
50. Electric hydraulic pump drive motor
ROUTINE MAINTENANCE SCHEDULE

KUBOTA D905 and D1105 and PERKINS 103-10
INSPECTION AND LUBRICATION SCHEDULE

Check hydraulic fluid level.

Lubrication grease specifications: N.G.L.I. consistency #2, high temperature anti-friction bearing lubricating grease.

Service intervals shown below have been established for operation under normal conditions. Where equipment is operated under severe conditions (very dusty, extreme heat or cold, etc.) affected items should be serviced more frequently.

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>ITEM</th>
<th>PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily or 10 Hr.</td>
<td>Fuel level</td>
<td>Check and fill as necessary</td>
</tr>
<tr>
<td></td>
<td>Lubricating oil</td>
<td>Check level and condition</td>
</tr>
<tr>
<td></td>
<td>Air Cleaner</td>
<td>Clean under very dusty conditions.</td>
</tr>
<tr>
<td>100 Hr.</td>
<td>All 10 Hr. items</td>
<td>As above</td>
</tr>
<tr>
<td></td>
<td>Air Cleaner</td>
<td>Service as required. Service requirements may be accelerated</td>
</tr>
<tr>
<td></td>
<td>Battery</td>
<td>Check level of electrolyte</td>
</tr>
<tr>
<td></td>
<td>Engine Generator assembly</td>
<td>Check for fuel and lubricating oil leaks</td>
</tr>
<tr>
<td>200 Hr.</td>
<td>All 100 Hr. items</td>
<td>As above</td>
</tr>
<tr>
<td></td>
<td>Engine lubricating oil system</td>
<td>Drain lubricating oil, flush out system, renew filter element and refill with correct grade and type oil</td>
</tr>
<tr>
<td>400 Hr.</td>
<td>Coolant</td>
<td>Check level and condition</td>
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<tr>
<td></td>
<td>Fuel Filter</td>
<td>Replace with new.</td>
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<tr>
<td>500 Hr.</td>
<td>All 200 Hr. Items</td>
<td>As above</td>
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<tr>
<td></td>
<td>Fan belt</td>
<td>Check tension and condition</td>
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<tr>
<td></td>
<td>Radiator</td>
<td>Clean out fins with water or air</td>
</tr>
<tr>
<td>1000 hr. or yearly</td>
<td>All 500 Hr. Items</td>
<td>As above</td>
</tr>
<tr>
<td></td>
<td>Engine Valves</td>
<td>Adjust clearance</td>
</tr>
<tr>
<td></td>
<td>Axle wheel bearings</td>
<td>Clean and repack</td>
</tr>
<tr>
<td></td>
<td>Fuel System</td>
<td>Clean sediment from tank</td>
</tr>
</tbody>
</table>
## SAFETY WARNING

**DANGER!**

**HIGH VOLTAGE!** DO NOT ATTEMPT TO TEST AND REPAIR GENERATOR AND BALLAST ELECTRICAL SYSTEMS UNLESS YOU UNDERSTAND AND ARE QUALIFIED TO WORK ON SUCH SYSTEMS.

When one lamp does not light, **TURN OFF THE GENERATOR** and test the lamp by switching leads with a lamp that **DOES** light. **DO NOT WEAR JEWELRY WHILE WORKING WITH ELECTRICITY!** If the following procedures do not solve your problem, have the circuit tested by a licensed electrician. **DO NOT** attempt to test generator voltage or ballast electrical systems unless you are a qualified electrician. Consult the factory for voltage specifications and test procedures.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ONE OR MORE LIGHTS</strong></td>
<td><strong>DO NOT LIGHT UP.</strong></td>
</tr>
<tr>
<td></td>
<td>1. Circuit breakers in the outlet box are not turned on or have tripped.</td>
</tr>
<tr>
<td></td>
<td>2. Lamps are not allowed time to cool after last being lit. You must allow 15 minutes between the time the lights are shut off and the time they are restarted.</td>
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<tr>
<td></td>
<td>3. The lamp or lamps are burned out or broken.</td>
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<td></td>
<td>4. One or more of the lamps are not screwed in securely.</td>
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<tr>
<td></td>
<td>5. Plug and socket at light bar not securely pushed together and locked.</td>
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<tr>
<td></td>
<td>6. The temperature of the ballast is below –20 degrees F. The efficiency of the capacitors in the ballast is not enough to ignite the lamps. For operations where the temperatures of the ballasts falls below –20 degrees F. some means of warming the ballast must be used.</td>
</tr>
<tr>
<td></td>
<td>7. Low electrical system voltage.</td>
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<tr>
<td></td>
<td>8. A loose connection in the back of the lamp socket in the lamp holder.</td>
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<td></td>
<td>9. A circuit breaker or breakers are defective.</td>
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<td></td>
<td>10. A loose connection on the terminal board.</td>
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<td></td>
<td>11. The engine and generator are not running up to speed (1800 RPM).</td>
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<td></td>
<td>12. A wrong style replacement lamp (requiring a different ballast) has been installed.</td>
</tr>
<tr>
<td></td>
<td>13. Too much power is being drawn from the auxiliary outlets.</td>
</tr>
<tr>
<td></td>
<td>14. Capacitor or transformer has failed.</td>
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<tr>
<td></td>
<td>15. Corrosion has occurred on the lamp bases.</td>
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</tbody>
</table>