Genie®
A TEREX BRAND

Service Manual

AL5 Vertical Mast with Tier 4

Part No. 1255863
Rev 1
July 2015

Specifications

Machine Specifications

Total lighting wattage	4 x 1000 watts
Fuel capacities	
Single tank	30 gallons 114 liters
Large tank (option)	60 gallons 227 liters
Tires and wheels	
Tire size	ST205/75D15
Load range	C
Lug nut torque, dry	90 ft-lbs 122 Nm
Lug nut torque, lubricated	67.5 ft-lbs 91.5 Nm

Performance Specifications

Tongue weight, maximum	
With fuel (single tank)	150 lbs 68 kg
With fuel (large tank)	130 lbs 59 kg
Run time	
Single tank	50 hours
Large tank	100 hours

For operational specifications, refer to the Operator's Manual.

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice or obligation.

Generator Options

Marathon 8 kW 201CSA5412	
Generator rpm @ full load	60Hz, 1800 rpm
Temperature, ambient maximum	104° F 40° C
Power	8 kW
Marathon 8 kW 201CSA5420	
Generator rpm @ full load	60 Hz, 1800 rpm
Temperature, ambient maximum	104° F 40° C
Power	8 kW
Marathon 12 kW 281CSL1513	
Generator rpm @ full load	60 Hz, 1800 rpm
Temperature, ambient maximum	104° F 40° C
Power	12 kW
Marathon 20 kW 334CSA3028	
Generator rpm @ full load	60 Hz, 1800 rpm
Temperature, ambient maximum	104° F 40° C
Power	20 kW

For operational specifications, refer to the Operator's Manual.

Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice or obligation.

Scheduled Maintenance Procedures

Maintenance Symbols Legend

Note: The following symbols have been used in this manual to help communicate the intent of the instructions. When one or more of the symbols appear at the beginning of a maintenance procedure, it conveys the meaning below.

Indicates that tools will be required to perform this procedure.

Indicates that new parts will be required to perform this procedure.

Indicates that dealer service will be required to perform this procedure.

Indicates that a cold engine will be required to perform this procedure.

Indicates that a warm engine will be required to perform this procedure.

Pre-delivery Preparation Report

The pre-delivery preparation report contains checklists for each type of scheduled inspection.

Make copies for each inspection. Store completed forms as required.

Maintenance Schedule

The *Scheduled Maintenance Procedures* section and the *Maintenance Inspection Report* have been divided into subsections. Use the following chart to determine which group(s) of procedures are required to perform a scheduled inspection.

Inspection	Checklist
Daily or every 8 hours	A
Quarterly or every 250 hours	A + B
Semi-annually or every 500 hours	A + B + C
Annually or every 1000 hours	A + B + C + D
Two-year or every 2000 hours	A + B + C + D + E

Maintenance Inspection Report

The maintenance inspection report contains checklists for each type of scheduled inspection.

Make copies of the *Maintenance Inspection Repor*t to use for each inspection. Maintain completed forms for a minimum of 4 years or in compliance with your employer, jobsite and governmental regulations and requirements.

A-11
Perform Engine Maintenance - Kubota

Engine specifications require that this procedure be performed every 100 hours.

- Check fuel lines and clamps

Required maintenance procedures and additional engine information is available in the Kubota D1105-E and V1505-E Operator's Manual (Kubota 16683-89169 part number)

Kubota D-1105 and V-1505 Operator's Manual	
Genie part number	893020

A-12
Perform Engine Maintenance - Kubota

Engine specifications require that this procedure be performed every 200 hours.

- Change engine oil
- Replace oil filter

Required maintenance procedures and additional engine information is available in the Kubota D1105-E and V1505-E Operator's Manual (Kubota 16683-89169 part number)

Kubota D-1105 and V-1505 Operator's Manual	
Genie part number	893020

Checklist B Procedures

B-7
Lubricate the T-bolt

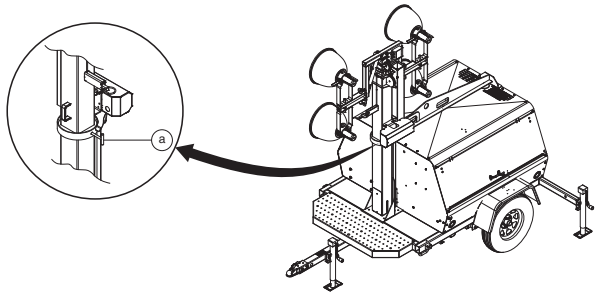
Terex specifications require that this procedure be performed every 250 hours or quarterly, whichever comes first.

Maintaining the T-bolt is essential to good machine performance and safe operation. An unsafe working condition exists if the T-bolt has excessive wear and/or does not operate smoothly, free of hesitation and binding.

1 Using the illustration as a guide, locate the T-bolt at the bottom of the mast assembly. Remove the T-bolt from the mast.

2 Remove all dust, dirt and oil residue from the threaded surfaces of the T-bolt, and apply a few drops of light oil or thread lubricant onto the threaded surfaces.

3 Fully install the T-bolt into the mast.



a T-bolt

B-8
Inspect and Adjust the Brakes (if equipped)

Axle specifications require that this procedure be performed every 3000 miles or quarterly, whichever comes first.

Maintaining the axle brakes in good condition is essential to safe operation and good performance. Brakes which are out of adjustment can result in longer stopping distances and excessive brake wear on the towing vehicle. Component damage may also result if problems are not discovered and repaired in a timely fashion.

Note: Perform this procedure with the machine on a firm, level surface with the machine in the stowed position.

1 Select a wheel. Chock the front and rear of the tire at the opposite side of the machine.

2 Loosen the wheel lug nuts. Do not remove them.

3 Place a lifting jack under the axle near the wheel to be removed. Lift the axle until the wheel is off the ground and place a jack stand under the axle. Lower the axle onto the jack stand and remove the wheel.

4 Remove the dust cap from the hub. Remove the cotter pin from the castle nut.

5 Remove the castle nut and washer.

6 Pull the hub off of the spindle. The washer and outer bearing should fall loose from the hub.

Checklist D Procedures

D-1
Perform Engine Maintenance - Kubota

Engine specifications require that this procedure be performed every 1500 hours or bi-annually, whichever comes first.

- Injectors

Required maintenance procedures and additional engine information is available in the Kubota D1105-E and V1505-E Operator's Manual (Kubota 16683-89169 part number)

Kubota D-1105 and V-1505 Operator's Manual	
Genie part number	893020

2-1 How to Remove the Mast Assembly

⚠WARNING Bodily injury hazard. The procedures in this section require specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is required.

⚠ CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling the cable.

1 Remove the fasteners securing the coil cable cover onto the side of the mast. Set the cover and fasteners to the side, and lay the coil cable to the side.

2 Tag and disconnect the light heads from the mast junction box, and remove the light heads from the mast.

3 Remove the junction box from the light bar. Lay the coil cord and junction box to the side.

4 Remove the fasteners securing the mast base to the chassis.

5 Remove the fasteners securing the mast base to the chassis.

6 Attach a lifting strap from an overhead crane to the mast base beneath the rotating section and T-bolt. Remove the mast from the machine.

2-2 How to Disassemble the Mast Assembly

1 Remove the mast assembly. See 1-1, How to Remove the Mast Assembly.

2 Remove the T-bolt from the mast base assembly.

3 Remove the nut from the bottom of the mast base. Remove the mast base assembly from the 6" inch mast section.

⚠ CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling the cable.

NOTICE Component damage hazard. Cables can be damaged if they are kinked or pinched.

4 Working at the top of the 3 inch / 7.5 cm mast section, use a drill to remove the rivets securing the wear pads in position.

5 Remove the 2 inch / 5 cm mast section from the 3 inch / 7.5 cm mast section. Disconnect the cable from the 4 inch / 10 cm mast section by removing the cable retention pin.

6 Remove the wear pads from the bottom of the 2 inch / 5 cm mast section.

7 Working at the top of the 4 inch / 10 cm mast section, use a drill to remove the rivets securing the wear pads in position.

8 Remove the 3 inch / 7.5 cm mast section from the 4 inch / 10 cm mast section. Disconnect the cable from the 5 inch / 12.5 mast section by removing the cable retention pin.

3 Tag and disconnect the wires attached to the capacitor(s).

4 With an ohmmeter set to its highest resistance scale, connect the ohmmeter leads to the capacitor terminals and observe the reading on the meter. Then, reverse the connections and observe the reading on the meter.

⊙ Result: The meter indicates a very low resistance which then gradually increases AND a very high resistance which then gradually decreases. The capacitor is working.

⊠ Result: The meter indicates a very high resistance which does not decrease. The capacitor is faulty and should be replaced.

⊠ Result: The meter indicates a very low resistance which does not increase. The capacitor is faulty and should be replaced.

7-3 How to Check a Generator Diode

⚠ DANGER High voltage. Exposure to electrical wires or electrical current will result in death or serious injury. Turn off all power when not needed for testing. Use extreme caution when working with high voltage electrical components.

⚠ DANGER Electrocution/burn hazard. Attempting to service the machine before the capacitor is fully discharged will result in death or serious injury.

Note: Be sure the engine has been turned off for at least 15 minutes before servicing the machine. Use a voltmeter to confirm there is no residual voltage in the capacitor.

1 Remove the fasteners securing the end cover/bearing housing to the generator. Remove the cover.

2 Locate the diode at the end of the generator.

Diagnostics

Problem	Possible Cause	Solution
Generator produces full voltage at no load or voltage drops at full load	Loose or broken lead wires	Inspect lead wires and connections for broken wires and loose connections.
	Rotor open or shorted	Measure resistance between leads..
	Stator grounded or shorted	Contact the Genie Service Department.
Generator voltage too high	HIgh engine speed	Adjust the rpm Refer to Section 2, Specifications
Generator produces no voltage at no load or at full load	Faulty surge suppressor	Disconnect suppressor from circuit. If there is an obvious increase in voltage, replace the suppressor.
	Faulty capacitor	Replace capacitor.
	Loss of residual magnetism	Flash the rotor.
	Open winding	Replace the generator.
Generator will not hold voltage (loss of residual magnetism)	Machine has been unused for a significant length of time	Flash the rotor.
	Rotor shorting out when the unit gets hot	Inspect rotor windings for broken and/or burned wires.
	Pinched leads	Inspect and repair as needed.
	Faulty capacitor	Replace the capacitor.
	Faulty diode	Replace the diode.
	Faulty surge suppressor	Replace the surge suppressor.