JLG Emissions Warranty

Purpose

The Environmental Protection Agency (EPA) and California Air Resources Board (CARB) regulate the emission of pollutants from all ground operated non-road compression ignition, large non-road sparkignition, and small non-road spark-ignition engines and vehicles.

The Clean Air Act (see http://www.epa.gov/laws-regulations/summary-clean-air-act) requires manufacturers of equipment containing these types of engines, such as JLG, to meet two conditions. The first condition is that each unit is designed, built and equipped in a manner that allows it to meet the emissions requirements set forth by the EPA (see Title 40 Subchapter U of the Code of Federal Regulations) or CARB. The second condition is that the unit is free from any defects in material or workmanship that might prevent the unit from meeting these requirements and that JLG warrants to the end user of the unit compliance of the emissions control system with those conditions for the periods set forth in the regulations.

The California Air Resources Board (CARB) similarly regulates ground-based, non-road compression ignition, large non-road spark-ignition, and small non-road spark-ignition engines and vehicles that are operated primarily within the State of California, and not employed in construction or agricultural activities. With respect to such engines/vehicles, the California Code of Regulations (see http://www.arb.ca.gov/regs/regs.htm) imposes corresponding warranty obligations.

This Emissions Warranty explains the scope, terms and respective responsibilities of JLG, the Product Owner, and the equipment end user relative to JLG's emissions control warranty obligations under EPA and CARB regulations (to the extent the latter may be applicable).

With respect thereto, JLG purchases engines and emission control componentry from various manufacturers for use in our equipment. Some defects of the engine or emissions control system may require cooperation with the Original Equipment Manufacturer (OEM) of the affected machinery. Some defects may be able to be resolved by JLG directly. In either case JLG is your first point of contact for quick resolution of emissions related defects. JLG's emissions warranty coverage provisions are intended to ensure that product owners have guaranteed access to free emission warranty repair work, and we will make every effort to ensure that occurs.

Scope

This policy applies to any new and in use equipment manufactured by JLG which contains any of the following engine types: ground operated non-road compression ignition, large non-road spark-ignition, and small non-road spark-ignition engine. The warranty period begins when the unit is placed into service. The policy holder is ultimately the end user of the equipment. Policy holders may obtain warranty service at no cost, including parts, labor and diagnostic services, for their equipment from an authorized JLG Servicer or any authorized servicer of the Engine OEM. These expenses shall be based

upon JLG selling price for all warranted parts replaced and labor charges based on standard JLG repair time and standard labor rate. This policy covers machines produced both domestically and abroad which are in use within the United States of America, its territories (America Samoa, Commonwealth of Northern Mariana Islands, Guam, Puerto Rico, and U.S. Virgin Islands), and Canada. Coverage applies only to machines containing US EPA or CARB certified labeled engines. This warranty covers the equipment described herein for the periods set forth hereafter, provided there has been no abuse, neglect or improper maintenance of the engine/equipment. JLG will honor this emissions warranty, even if the end user/owner elects to employ independent service providers or use third-party replacement parts for *routine* maintenance, subject to the foregoing limitation regarding abuse and neglect. End users may also perform their own repairs of emissions-related components, although the cost of services provided by other than an authorized JLG servicer or OEM are outside the scope of this warranty and will not be paid for by JLG free of charge.

Please also note that the Emissions Control System Warranty is required by EPA, and in certain equipment applications, by CARB, and is a distinct and additional warranty subject to different terms than the general commercial warranty that JLG and its engine suppliers provide to customers who purchase JLG equipment and associated engines. JLG will honor both warranties, subject to the terms and conditions set forth herein, and customers are advised to follow the same procedures for making a warranty claim whether it is based on the general commercial warranty provided by JLG for its parts and equipment, or the separate Emissions Control System Warranty provided by JLG that is required by EPA/CARB.

EPA 1039.120 Non-road compression ignition Diesel engines less than 19kw or 25HP

Units containing this type of engine include smaller aerial work platforms such as the 260MRT, 3369LE, 4069LE, 530LRT, 3394RT, and 4394RT Scissors and 340AJ Boom Lift. All M Model electric aerial work platforms including but not limited to the M3369, M4069 M400AJP/AJPN, M450AJ, and M600J/JP may have this type of engine. Certain Hybrid-drive units such as the H340 and H400 may also have this type of engine. If you are uncertain of the type of engine in your machine please contact JLG for assistance.

Constant and variable speed units are covered for 1500 hours or 2 years whichever comes first. Covered components include any component whose failure would increase emissions of any pollutant regulated by the EPA.

In general the following categories of components of this type of engine are covered by this warranty:

- Air-Induction System
- Ignition System
- Exhaust gas recirculation systems
- Aftertreatment devices
- Crankcase ventilation valves
- Sensors

- Fuel System
- Engine Electronic Control System Components

Fuel Requirements

• Ultra-Low Sulphur Diesel Fuel (less than 15parts per million Sulphur) required

EPA 1039.120 Non-road compression ignition Diesel engines greater than or equal to 19kw (25HP) ≤kW < 56kW (75HP)

Units containing this type of engine may include aerial products; 400S, 400SC, 460SJ, 450A/AJ, 600A/AJ, 600AN/AJN, 600S/SJ, 600SC/SJC, 660SJ, 680S, 740AJ, 800A/AJ, 800A/SJ, 1200SJP, 1250AJP, 1350SJP and 1500SJ along with the G5-18A Telehandler product. Rough terrain scissors may also be powered by this type of engine. If you are uncertain of the type of engine in your machine please contact JLG for assistance.

Constant or variable speed units are covered for 3000 hours or 5 years, whichever comes first. Covered components include any component whose failure would increase emissions of any pollutant regulated by the EPA.

In general the following categories of components of this type of engine are covered by this warranty:

- Air-Induction System
- Ignition System
- Exhaust gas recirculation systems
- Aftertreatment devices
- Crackcase ventilation valves
- Sensors
- Fuel System
- Engine Electronic Control System Components
- Turbocharger (if applicable for your engine type)
- Charge Air Cooling Systems (if applicable for your engine type)
- Exhaust Gas Recirculation (EGR) System (if applicable for your engine type)
- Closed Crankcase Ventilation System (if applicable regulation for your engine type)

Fuel Requirements

Ultra-Low Sulphur Diesel Fuel (less than 15parts per million Sulphur) required

EPA 1039.120 Non-road compression ignition Diesel engines greater than to 56kw/75HP

Units containing this type of engine may include the Skytrak 6036, 6042, 8042, 10042, 10054 and JLG 642,943, 1043, 1055, 1255 telehandler products along with the 1500AJP and 1850SJ aerial work

platforms also contain this type of engine. If you are uncertain of the type of engine in your machine please contact JLG for assistance.

Constant or variable speed units are covered for 3000 hours or 5 years, whichever comes first. Covered components include any component whose failure would increase emissions of any pollutant regulated by the EPA.

In general the following categories of components of this type of engine are covered by this warranty:

- DEF tank assembly
- DEF header assembly
- DEF tank heater coolant control valve
- DEF hoses
- Coolant hoses that are associated with DEF systems
- DEF heater control relay
- Exhaust stream components through the last after treatment device
- Charge air cooler, including interconnecting pipes and couplers to the engine
- Wire harness circuits that are connected at both ends to emissions systems

Fuel Requirements

Ultra-Low Sulphur Diesel Fuel (less than 15parts per million Sulphur) required

EPA 1048.120 Large Non-Road Spark-Ignition Engines rated 19KW (25HP) or greater

Rough terrain scissors 3394RT, 4394RT, 530LRT and boom models 400S, 450A/AJ, 460SJ, 600S/SJ, 600A/AJ, 600AN/AJN, 740AJ, 800S/SJ, and 800A/AJ families may contain engines in this range. If you are uncertain of the type of engine in your machine please contact JLG for assistance.

Evaporative emission controls are covered for 2 years. Exhaust emission controls are covered for 3 years. High cost components are covered for 5 years. Covered components include any component whose failure would increase emissions of any pollutant regulated by the EPA.

In general the following categories of components of this type of engine are covered by this warranty:

Exhaust emission components

Exhaust stream components through the last after treatment device

Evaporative emission components

- Fuel tank including the cap
- Fuel lines, fittings, and clamps for both vapor and liquid
- Fuel pump and control valves

- Fuel purge and safety valves
- Carbon canister

GM Emission Warranty Parts List

- Fuel Metering System
 - o Fuel injection system.
 - o Air/fuel ratio feedback and control system.
 - Carburetor system (internal parts and/or pressure regulator or fuel mixer or injection system).
- Air Induction System
 - o Intake manifold(s) or air intake system.
 - o Turbocharger systems.
 - o Air filter
- Ignition Control System
 - o Engine Wire Harness
 - o Ignition coil and spark plugs.
- Positive Crankcase Ventilation (PCV) System.
 - o PCV Valve.
- Catalyst System
 - o Exhaust manifold
 - o Catalytic converter.
 - o Engine Control Module (ECM).
 - o Electronic Pressure Regulator (EPR).
- Miscellaneous items Used in Above Systems
 - o Vacuum, temperature, and time sensitive valves and switches.
 - Sensors used for electronic controls
 - Hoses, belts, connectors, assemblies, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware.
 - o belts and idlers

Fuel recommendations

Fuel should meet these recommendations:

- Clean, fresh, unleaded gasoline.
- A minimum of [87 Octane].
- Gasoline with up to 10% ethanol is acceptable.

CAUTION: Do not use unapproved gasolines, such as [E15 and E85]. Do not mix oil in gasoline or modify the engine to run on alternate fuels. Use of unapproved fuels can cause damage to engine components, which will not be covered under the warranty.

The engine in this category of equipment is certified to operate on gasoline, but all fuel is not the same. To protect the fuel system from gum formation during storage, JLG recommends that the user mix a fuel stabilizer into the fuel. If starting or performance problems occur, JLG recommends changing fuel providers or brands.

EPA 1054.120 Small Non-Road Spark-Ignition Engines rated below 19kw (25HP)

The 340AJ, X500AJ, X600AJ, X700AJ, X770AJ, T350, T500J, and the 260MRT may contain this type of engine. If you are uncertain of the type of engine in your machine please contact JLG for assistance.

Both Evaporative and Exhaust emission controls are covered for 2 years. Covered components include any component whose failure would increase emissions of any pollutant regulated by the EPA.

In general the following categories of components of this type of engine are covered by this warranty:

Exhaust emission components

• Exhaust stream components through the last after treatment device

Evaporative emission components

- Fuel tank including the cap
- Fuel lines, fittings, and clamps for both vapor and liquid
- Fuel pump and control valves
- Fuel purge and safety valves
- Carbon canister

Fuel recommendations

Fuel should meet these recommendations:

- Clean, fresh, unleaded gasoline.
- A minimum of 87 Octane
- Gasoline with up to 10% ethanol is acceptable.

CAUTION: Do not use unapproved gasolines, such as [E15 and E85]. Do not mix oil in gasoline or modify the engine to run on alternate fuels. Use of unapproved fuels can cause damage to engine components, which will not be covered under the warranty.

The engine in this category of equipment is certified to operate on gasoline, but all fuel is not the same. To protect the fuel system from gum formation during storage, JLG recommends that the user mix a fuel stabilizer into the fuel. If starting or performance problems occur, JLG recommends changing fuel providers or brands.

How to file claims

The policy holder may contact JLG by calling toll-free 1-800 554 LIFT to speak to a member of the Warranty team between the hours of 8:00AM EST and 5:00 PM EST. Email can be sent to JLGWarranty@jlg.com as well. Self-service information is available on Online Express (https://onlineexpress2.jlg.com). The typical warranty scenario involves first diagnosing the defect, ordering parts, performing the repair, and filing a warranty claim with either JLG or the OEM directly. Claims can be filed online by accessing the system in Online Express. End users of JLG equipment may locate an authorized Service here: http://locator.jlg.com/

<u>NOTE</u>: Only OEM Certified replacement parts will be authorized for emission related engine repairs so that the engine can be placed back into emission compliance configuration.

For ease of reference please refer to the chart provided:

If your engine is certified as	And its maximum power is	And its rated speed is	Then its warranty period is
Variable speed or constant speed	kW <19 (25.4hp)	Any speed	1,500 hours or two years
Constant speed (Genset Engines)	19 ≤kW <37(50hp)	3,000 rpm or higher	1,500 hours or two years
Constant speed	19 ≤kW <37	Less than 3,000 rpm	3,000 hours or five years
Variable speed	19 ≤kW <37	Any speed	3,000 hours or five years
Variable speed or constant speed	kW ≥37	Any speed	3,000 hours or five years