



**GENERAL POWER**  
THE GENERATOR COMPANY

## John Deere Engines Troubleshooting

Symptom	Problem	Solution
<b>Engine cranks but will not start</b>	Incorrect starting procedure.	Verify correct starting procedure.
	No fuel.	Check fuel in tank.
	Fuel filter plugged or full of water.	Replace fuel filter or drain water from filter.
	Exhaust restricted.	Check and correct exhaust restriction.
	Injection pump not getting fuel or air in fuel system.	Check fuel flow at supply pump or bleed fuel system.
	Faulty injection pump or nozzles.	Consult authorized diesel repair station for repair or replacement.
<b>Engine hard to start or will not start</b>	Engine starting under load.	Disengage PTO.
	Improper starting procedure.	Review starting procedure.
	No fuel.	Check fuel tank.
	Air in fuel line.	Bleed fuel line.
	Cold weather.	Use cold weather starting aids.
	Slow starter speed.	See "Starter Cranks Slowly".
	Crankcase oil too heavy.	Use oil of proper viscosity.
	Improper type of fuel.	Consult fuel supplier; use proper type fuel for operating conditions.
	Water, dirt, or air in fuel system.	Drain, flush, fill, and bleed system.
	Clogged fuel filter.	Replace filter element.
	Dirty or faulty injection nozzles.	Have authorized servicing dealer or engine distributor check injectors.
	Defective glow plugs (Cold weather starting)	Test glow plugs (See 3000 hour/36 month maintenance section)
Electronic fuel system problem (if equipped)	See your John Deere distributor or servicing dealer.	
<b>Engine knocks</b>	Low engine oil level.	Add oil to engine crankcase.
	Low coolant temperature.	Remove and check thermostat.
	Engine overheating.	See "Engine Overheats".

	Engine cold	Wrong or defective thermostat. Remove and check thermostat.
<b>Abnormal Engine Noise</b>	Turbocharger bearings not lubricated (insufficient oil pressure)	Determine cause of lack of lubrication; repair as required. See your John Deere engine distributor or servicing dealer.
	Worn timing gears or excess backlash	Check timing gear back lash. See your John Deere engine distributor or servicing dealer.
	Excessive valve clearance	Check and adjust valve clearance. See CHECKING AND ADJUSTING VALVE CLEARANCE in the "Lubrication and Maintenance/3000 Hour/36 Month" section earlier in this manual.
	Worn main or connecting rod bearings	Determine bearing clearance. See your John Deere engine distributor or servicing dealer.
	Excessive crankshaft end play	Check crankshaft end play. See your John Deere engine distributor or servicing dealer.
	Loose main bearing caps	Check bearing clearance; replace bearings and bearing cap screws as required. See your John Deere engine distributor or servicing dealer.
	Worn connecting rod bushings and piston pins	Inspect piston pins and bushings. See your John Deere engine distributor or servicing dealer.
	Scored pistons	Inspect pistons. See your John Deere engine distributor or servicing dealer.
	Worn camshaft lobes	Inspect camshaft. See your John Deere engine distributor or servicing dealer.
	Worn rocker arm shaft(s)	Inspect rocker arm shafts. See your John Deere engine distributor or servicing dealer.
<b>Engine runs irregularly or stalls frequently</b>	Clogged fuel filter.	Replace fuel filter element.
	Water, dirt, or air in fuel system.	Drain, flush, fill, and bleed system.
	Low coolant temperature.	Remove and check thermostat.
	Dirty or faulty injection nozzles.	Have authorized servicing dealer or engine distributor check injectors.

	Electronic fuel system problem	See your John Deere distributor or servicing dealer.
<b>Below normal engine temperature</b>	Defective thermostat.	Remove and check thermostat.
	Defective temperature gauge or sender.	Check gauge, sender, and connections.
	Poor quality fuel	Change to better quality fuel.
<b>Lack of power</b>	Engine overloaded.	Reduce load.
	Intake air restriction.	Service air cleaner.
	Clogged fuel filter.	Replace filter elements.
	Improper type of fuel.	Use proper fuel.
	Overheated engine.	See "Engine Overheats".
	Below normal engine temperature.	Remove and check thermostat.
	Improper valve clearance.	See your authorized servicing dealer or engine distributor.
	Dirty or faulty injection nozzles.	Have authorized servicing dealer or engine distributor check injectors.
	Injection pump out of time.	See your authorized servicing dealer or engine distributor.
	Electronic fuel system problem	See your John Deere distributor or servicing dealer.
	Turbocharger not functioning.	See your authorized servicing dealer or engine distributor.
	Leaking exhaust manifold gasket.	See your authorized servicing dealer or engine distributor.
	Restricted fuel hose.	Clean or replace fuel hose.
	Low fast idle speed.	See your authorized servicing dealer or engine distributor.
<b>Low oil pressure</b>	Low oil level.	Add oil.
	Restricted crankcase vent tube.	Clean vent tube, verify crankcase oil level is not too high.
	Improper type of oil.	Drain, fill crankcase with oil of proper viscosity and quality.
<b>High oil consumption</b>	Crankcase oil too light.	Use proper viscosity oil.
	Oil leaks.	Check for leaks in lines, gaskets, and drain plug.
	Restricted crankcase vent tube.	Clean vent tube, verify crankcase oil level is not too high.

	Defective turbocharger.	See your authorized servicing dealer or engine distributor.
<b>Engine emits white smoke</b>	Improper type of fuel.	Use proper fuel.
	Low engine temperature.	Warm up engine to normal operating temperature.
	Defective thermostat.	Remove and check thermostat.
	Defective injection nozzles.	See your authorized servicing dealer or engine distributor.
	Defective glow plugs.	Test glow plugs. (See 3000 hour/36 month maintenance section.)
<b>Engine emits black or gray exhaust smoke</b>	Improper type of fuel.	Use proper fuel.
	Clogged or dirty air cleaner.	Service air cleaner.
	Engine overloaded.	Reduce load.
	Injection nozzles dirty.	See your authorized servicing dealer or engine distributor.
	Electronic fuel system problem	See your authorized servicing dealer or engine distributor.
	Turbocharger not functioning.	See your authorized servicing dealer or engine distributor.
<b>Engine overheats</b>	Coolant stays at high temperature	Check for debris in front of cooling package
	Engine overloaded.	Reduce load.
	Low coolant level.	Fill radiator to proper level, check radiator and hoses for loose connections or leaks.
	Faulty radiator cap.	Have technician check.
	Stretched poly-vee belt or defective belt tensioner.	Check automatic belt tensioner and check belts for stretching. Replace as required.
	Low engine oil level.	Check oil level. Add oil as required.
	Cooling system needs flushing.	Flush cooling system.
	Defective thermostat.	Remove and check thermostat.
	Defective temperature gauge or sender.	Check coolant temperature with thermometer and replace, if necessary.
	Incorrect grade of fuel.	Use correct grade of fuel.
<b>High fuel consumption</b>	Improper type of fuel.	Use proper type of fuel.
	Clogged or dirty air cleaner.	Service air cleaner.
	Engine overloaded.	Reduce load.
	Improper valve clearance.	See your authorized servicing dealer or engine distributor.

	Injection nozzles dirty.	See your authorized servicing dealer or engine distributor.
	Electronic fuel system problem	See your authorized servicing dealer or engine distributor.
	Defective turbocharger.	See your authorized servicing dealer or engine distributor.
	Low engine temperature.	Check thermostat.
<b>Undercharged electrical system</b>	Excessive electrical load from added accessories.	Remove accessories or install higher output alternator.
	Excessive engine idling.	Increase engine rpm when heavy electrical load is used.
	Poor electrical connections on battery, ground strap, starter, or alternator.	Inspect and clean as necessary.
	Defective battery.	Test battery.
	Defective alternator.	Test charging system.
<b>Battery uses too much water</b>	Cracked battery case.	Check for moisture and replace as necessary.
	Defective battery.	Test battery.
	Battery charging rate too high.	Test charging system.
<b>Batteries will not charge</b>	Loose or corroded connections.	Clean and tighten connections.
	Sulfated or worn-out batteries.	See your authorized servicing dealer or engine distributor.
	Stretched poly-vee belt or defective belt tensioner.	Adjust belt tension or replace belts.
<b>Starter will not crank</b>	PTO engaged (if equipped).	Disengage PTO.
	Loose or corroded connections.	Clean and tighten loose connections.
	Low battery output voltage.	See your authorized servicing dealer or engine distributor.
	Faulty start circuit relay.	See your authorized servicing dealer or engine distributor.
	Blown main system fuse.	Replace fuse.
<b>Starter cranks slowly</b>	Low battery output.	See your authorized servicing dealer or engine distributor.
	Crankcase oil too heavy.	Use proper viscosity oil.
	Loose or corroded connections.	Clean and tighten loose connections.
<b>Starter and hour meter functions; rest of electrical system does not function</b>	Blown fuse.	Replace fuse.
<b>Entire electrical system does not function</b>	Faulty battery connection.	Clean and tighten connections.

	Sulfated or worn-out batteries.	See your authorized servicing dealer or engine distributor.
	Blown main system fuse.	Replace fuse.