

**POWER Units for
Gensets (Saran)
2.9L/4039/4.5/6.8L
(128/008/158/258)**

**OPERATOR'S
MANUAL**



**John Deere Usine de Saran
OMCD16564 (03JAN00)**

Printed in Germany
ENGLISH



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3500 HOURS OF OPERATION

- Engine oil, replace
- Engine oil filter, replace
- Fuel filter, replace
- Belt, check tension and wear (300-Series and POWERTech with manual tensioner)
- Valve clearance, adjust (300-Series)

Number of hours:	Comments:	Dealer or distributor stamp
Date:		
Job done by:		

DPSG,CD03523,62 -19-16AUG99-1/1

4000 HOURS OF OPERATION

- | | |
|--|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> Engine oil, replace <input type="checkbox"/> Engine oil filter, replace <input type="checkbox"/> Fuel filter, replace <input type="checkbox"/> Check belt and tensioning system <input type="checkbox"/> Crankcase vent tube, clean | <ul style="list-style-type: none"> <input type="checkbox"/> Cooling system, drain and flush (if COOL-GARD is not used) <input type="checkbox"/> Valve clearance, adjust (POWERTech) <input type="checkbox"/> Air intake system, check <input type="checkbox"/> Vibration damper, check |
|--|--|

Number of hours:	Comments:	Dealer or distributor stamp
Date:		
Job done by:		

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Record Keeping

Option Codes	Description	Option Codes	Description
Engine Base Code: _____			
11___	Rocker Arm Cover	45___	Balancer Shaft
12___	Oil Filler Neck	46___	Cylinder Block With Liners and Camshaft
13___	Crankshaft Pulley	47___	Crankshaft and Bearings
14___	Flywheel Housing	48___	Connecting Rods and Pistons
15___	Flywheel	49___	Valve Actuating Mechanisms
16___	Fuel Injection Pump	50___	Oil Pump
17___	Air inlet	51___	Cylinder Head With Valves
18___	Air cleaner	52___	Auxiliary Gear Drive
19___	Oil pan	54___	Oil heater
20___	Coolant pump	55___	Shipping stand
21___	Thermostat Cover	56___	Paint Option
22___	Thermostat	57___	Coolant Inlet
23___	Fan Drive	59___	Oil Cooler
24___	Fan Belt	60___	Add-on Auxiliary Drive Pulley
25___	Fan	62___	Alternator Mounting
26___	Engine Coolant Heater	64___	Exhaust Elbow
27___	Radiator	65___	Turbocharger
28___	Exhaust Manifold	66___	Temperature Switch
29___	Ventilator System	67___	Electronic Tachometer Sensor
30___	Starting Motor	68___	Damper
31___	Alternator	69___	Engine Serial Number Plate
32___	Instrument Panel	74___	Air Conditioning System Compressor Mounting
35___	Fuel Filter	75___	Air Restriction Indicator
36___	Front Plate	76___	Oil Pressure Switch
37___	Fuel Transfer Pump	86___	Fan Pulley
39___	Thermostat Housing	87___	Automatic Belt Tensioner
40___	Oil Dipstick	88___	Oil Filter
41___	Belt Driven Front Auxiliary Drive	91___	Special Equipment (Factory Installed)
43___	Starting Aid	97___	Special Equipment (Field Installed)
44___	Timing Gear Cover with Gears	98___	Shipping

DPSG,CD03523,14 -19-05JUL99-2/2

REMOVE PAINT BEFORE WELDING OR HEATING

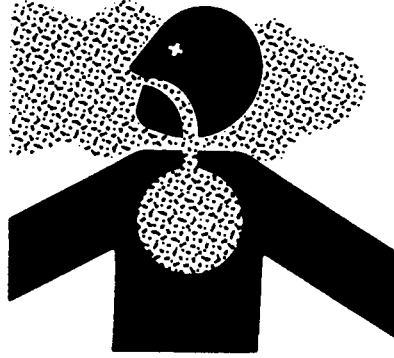
Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



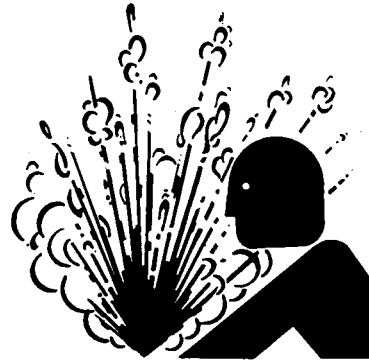
TS220 -UN-23AUG88

DX,PAINT -19-03MAR93-1/1

SERVICE COOLING SYSTEM SAFELY

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



TS281 -UN-23AUG88

DX,RCAP -19-04JUN90-1/1

ENGINE OPERATION

Warming engine

Operate engine at high idle for 1 to 2 minutes before applying the load.

NOTE: This procedure does not apply to standby generator sets where the engine is loaded immediately upon reaching rated speed.

Normal engine operation

Compare engine coolant temperature and engine oil pressure with specifications below:

Minimum oil pressure at full load rated speed¹—Specification

Pressure..... 275 kPa (2.75 bar; 40 psi)

Coolant temperature range—Specification

Temperature 82°—94°C (180°—202°F)

Stop engine immediately if coolant temperature is above or oil pressure below specifications or if there are any signs of part failure. Symptoms that may be early signs of engine problems could be:

- Sudden loss of power

- Unusual noise or vibration
- Excessive black exhaust fumes
- Excessive fuel consumption
- Excessive oil consumption
- Fluid leaks

Recommendation for turbocharger engines

Should the engine stall when operating under load, IMMEDIATELY restart it to prevent overheating of turbocharger components.

Idling engine

Avoid excessive engine idling. Prolonged idling may cause the engine coolant temperature to fall below its normal range. This, in turn, causes crankcase oil dilution, due to incomplete fuel combustion, and permits formation of gummy deposits on valves, pistons and piston rings. It also promotes rapid accumulation of engine sludge and unburned fuel in the exhaust system. If an engine will be idling for more than 5 minutes, stop and restart later.

NOTE: Generator set applications have the governor locked at a specified speed and do not have a slow idle function. These engines idle at no load governed speed (fast idle).

¹Oil at normal operating temperature of 115°C (240°F).

STANDBY POWER UNITS

To assure that your engine will deliver efficient standby operation when needed, start engine and run at rated speed (with 50%—70% load) for 30 minutes every

2 weeks. DO NOT allow engine to run an extended period of time with no load.

CHECKING BELT (POWERTECH ENGINES WITH MANUAL TENSIONER)

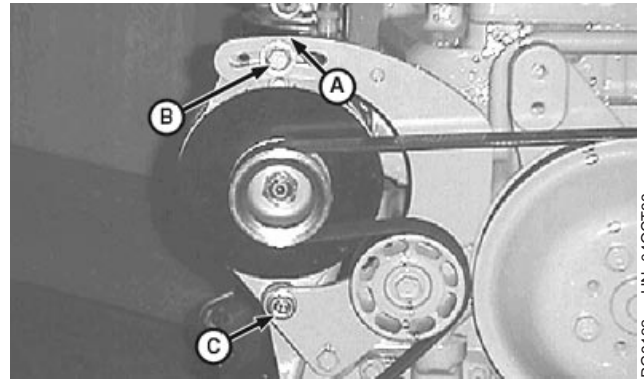
Inspect belt for cracks, fraying, or stretched out areas. Replace if necessary.

NOTE: Belt adjustment is measured using a gauge stamped on the top edge of the alternator bracket.

1. Loosen cap screws (B) and (C).
2. Slide alternator in slot by hand to remove all excess slack in belt.

IMPORTANT: Do not pry against alternator rear frame.

3. Using the gauge (A) on the alternator bracket, stretch belt by prying outward on alternator front frame. Stretch the belt 1 gauge unit for a used belt and 1.5 gauge units for a new belt.
4. Tighten cap screws (B) and (C).



A—Belt gauge
B—Cap screw
C—Cap screw

RG9132 -UN-04OCT99

DPSG,CD03523,57 -19-16AUG99-1/1

Maintenance/2500 hours/3 years

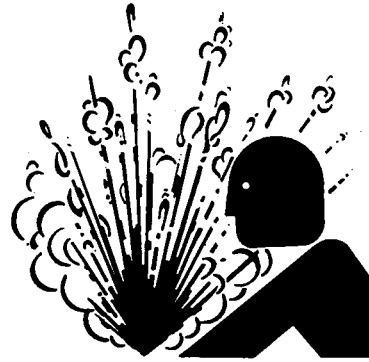
DRAIN AND FLUSH COOLING SYSTEM

NOTE: Drain and flush cooling system every 2500 hours/3 years when John Deere COOL-GARD coolant is used. Otherwise every 2000 hours/2 years.

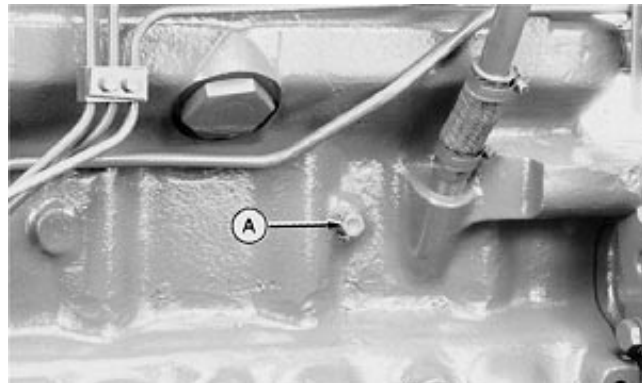
CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

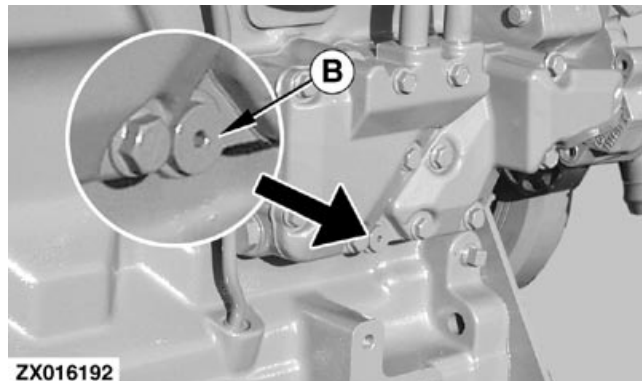
1. Slowly open the radiator cap.
2. Remove engine block drain plug (A).
3. On POWERTech engines, remove oil cooler housing drain plug (B).
4. Open radiator drain valve (C). Drain all coolant from radiator.
5. Close all drain orifices after coolant has drained.
6. Fill the cooling system with clean water. Run engine until water passes through the thermostat to stir up possible rust or sediment.
7. Stop engine and immediately drain the water from system before rust and sediment settle.
8. After draining water, close all drain orifices and fill the cooling system with clean water and TY15979 John Deere Heavy Duty Cooling System Cleaner or equivalent cleaner. Follow manufacturer's directions on label.
9. After cleaning the cooling system, drain cleaner and fill with water to flush the system. Run engine until water passes through the thermostat, then drain out flushing water.



TS281 -UN-23AUG88



RG4894 -UN-14DEC88



ZX016192

ZX016192 -UN-11JAN89



CD30765 -UN-27AUG99

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Troubleshooting

Symptom	Problem	Solution
	Injection pump shut-off not reset.	Turn key switch to "OFF" then to "ON".
Engine knocks	Low engine oil level.	Add oil to engine crankcase.
	Injection pump out of time.	See your authorized servicing dealer or engine distributor.
	Low coolant temperature.	Remove and check thermostat.
	Engine overheating.	See "Engine Overheats".
Engine runs irregularly or stalls frequently	Low coolant temperature.	Remove and check thermostat.
	Clogged fuel filter.	Replace fuel filter element.
	Water, dirt or air in fuel system.	Drain, flush, fill and bleed system.
	Dirty or faulty injection nozzles.	Have authorized servicing dealer or engine distributor check injectors.
Below normal engine temperature	Defective thermostat.	Remove and check thermostat.
	Defective temperature gauge or sender.	Check gauge, sender and connections.
Lack of power	Engine overloaded.	Reduce load.
	Intake air restriction.	Service air cleaner.
	Clogged fuel filter.	Replace filter element.
	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.

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