



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Generator
 250 KVA Prime Market
 1500 RPM (50 Hz)

PowerTech™ 9.0L Engine
Model: 6090HF475
 JD Electronic Control

306 hp (228 kW) Prime
 339 hp (253 kW) Standby

Nominal Engine Power @ 1500 RPM			
Prime		Standby	
HP	kW	HP	kW
306	228	339	253

Generator Efficiency %	Fan Power (% of Standby)		Power Factor	Prime Rating		Standby Rating	
	hp	kW		kWe	kVA	kWe	kVA
90-93	17.0	12.7	0.8	195-201	243-251	216-224	270-279

Note 1: Based on nominal engine power.

STANDARD CONDITIONS

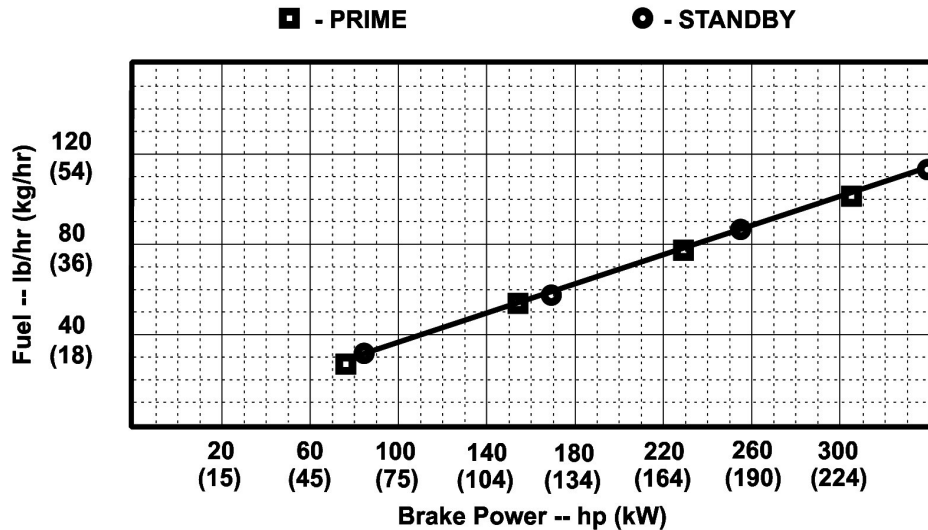
Air Intake Restriction.....12 in.H₂O (3 kPa)
 Exhaust Back Pressure.....30 in.H₂O (7.5 kPa)

Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:
 77 °F (25 °C) air inlet temperature
 29.31 in.Hg (99 kPa) barometer
 104 °F (40 °C) fuel inlet temperature
 0.853 fuel specific gravity @ 60 °F (15.5 °C)

Conversion factors:
 Power: kW = hp x 0.746
 Fuel: 1 gal = 7.1 lb, 1 L = 0.85kg
 Torque: N·m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.

Notes:



Designed/Calibrated to meet:	Certified by:
• EU Stage II	<i>Vincenzo Pender</i> 02-25-'08
Ref: Engine Emission Label	

Performance Curve: 6090HF475_B

Engine Installation Criteria

General Data

Model	6090HF475	
Number of Cylinders	6	
Bore	118.4 mm	4.7 in.
Stroke	136 mm	5.4 in.
Displacement	9.0 L	549 in. ³
Compression Ratio	16.0:1	
Valves per Cylinder, Intake/Exhaust	2/2	
Firing Order	1-5-3-6-2-4	
Combustion System	HPCR	
Engine Type	In-line, 4-Cycle	
Aspiration	Turbocharged and air-to-air aftercooled	
Charge Air Cooling System	Air-to-Air	
Engine Crankcase Vent System	Open	

Physical Data

Length	1211 mm	47.7 in.
Width	633 mm	24.9 in.
Height	1160 mm	45.7 in.
Weight, with oil & no coolant (Includes engine, flywheel housing, flywheel & electrics)	901 kg	1986 lb
Center of Gravity Location, X-axis From Rear Face of Block	434.4 mm	17.1 in.
Center of Gravity Location, Y-axis Right of Crankshaft	2.24 mm	0.1 in.
Center of Gravity Location, Z-axis Above Crankshaft	201.4 mm	7.9 in.
Max. Allowable Static Bending Moment At Rear Face of Flywheel Housing with 5-G Load	814 N·m	600 lb-ft
Thrust Bearing Load Limit Forward, Intermittent	13000 N	2923 lb
Thrust Bearing Load Limit Forward, Continuous	8600 N	1933 lb
Thrust Bearing Load Limit Rearward, Intermittent	6000 N	1349 lb
Thrust Bearing Load Limit Rearward, Continuous	4000 N	899 lb
Max. Continuous Damper Temp	82 °C	180 °F
Max. Torsional Vibration, Front of Crank	0.25 DDA	

Electrical System

Recommended Battery Capacity, 12V @32 °F (0 °C)	1100 amps	
Recommended Battery Capacity, 24V @32 °F (0 °C)	750 amps	
Starter Rolling Current, 12V @32 °F (0 °C)	920 amps	
Starter Rolling Current, 24V @32 °F (0 °C)	600 amps	
Starter Rolling Current, 12V @-22 °F (-30 °C)	1300 amps	
Starter Rolling Current, 24V @-22 °F (-30 °C)	700 amps	
Min. Voltage at ECU during Cranking, 12V	6 volts	
Min. Voltage at ECU during Cranking, 24V	10 volts	
Max. Allowable Start Circuit Resistance, 24V	0.002 Ohm	
Max. Allowable Start Circuit Resistance, 12V	0.0012 Ohm	
Max. Voltage From Engine to Crankshaft, 12V	0.15 volts	
Max. Voltage From Engine to Crankshaft, 24V	0.15 volts	
Max. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp	180 °C	356 °F
Max. Harness Temperature	125 °C	257 °F

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Engine Installation Criteria

Charge Air Cooling System

Air-to-Air Heat Rejection, Prime	27.5 kW	1565 BTU/min
Air-to-Air Heat Rejection, Standby	32.5 kW	1850 BTU/min
Intake Manifold Pressure, Prime	147 kPa	21.3 psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air, Prime	169 °C	336 °F
Intake Manifold Pressure, Standby	169 kPa	24.5 psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air, Standby	194 °C	381 °F
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barametric pressure, Prime		NA
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barametric pressure, Standby		NA
Intake Manifold Temperature at which Power De-rate Occurs	88 °C	190 °F
Max. Pressure Drop through CAC	13 kPa	52.0 in. H ₂ O
Min. Pressure Drop through CAC		NA
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Prime	55 °C	131 °F
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Standby	60 °C	140 °F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Prime		NA
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air, Standby		NA

Cooling System

Max. Water Pump Inlet Restriction	-30 kPa	-4.4 psi
Engine Heat Rejection, Prime	90 kW	5123 BTU/min
Engine Heat Rejection, Standby	99 kW	5635 BTU/min
Coolant Flow	250 L/min	66 gal/min
Thermostat Start to Open	82 °C	180 °F
Thermostat Fully Open	94 °C	201 °F
Engine Coolant Capacity	16 Liter	16.9 quart
Min. Pressure Cap	100 kPa	15 psi
Min. Pump Inlet Pressure	30 kPa	4.4 psi
Max. External Coolant Restriction	14 kPa	2 psi
Max. Top Tank Temperature	110 °C	230 °F
Min. Limiting Ambient Temperature	47 °C	117 °F
Min. Coolant Fill Rate	12 L/min	3.2 gal/min

Exhaust System

Exhaust Flow, Prime	40 m ³ /min	1413 ft. ³ /min
Exhaust Flow, Standby	44 m ³ /min	1554 ft. ³ /min
Exhaust Temperature, Prime	582 °C	1080 °F
Exhaust Temperature, Standby	596 °C	1105 °F
Max. Allowable Exhaust Restriction	7.5 kPa	30 in. H ₂ O
Min. Allowable Exhaust Restriction		NA
Max. Bending Moment on Turbo Outlet	7.0 N·m	5.2 lb-ft
Max. Shear on Turbine Outlet	11 kg	24 lb

Fuel System

ECU Description	L14 Controller	
Fuel Injection Pump	Denso HP4	
Governor Type	Electronic	
Total Fuel Flow, Prime	204 kg/hr	450 lb/hr
Total Fuel Flow, Standby	204 kg/hr	450 lb/hr
Fuel Consumption, Prime	45.9 kg/hr	101 lb/hr
Fuel Consumption, Standby	50.8 kg/hr	112 lb/hr
Fuel Temperature Rise, Inlet to Return Prime	29 °C	84 °F
Fuel Temperature Rise, Inlet to Return Standby	34 °C	93 °F
Max. Fuel Inlet Restriction	20 kPa	80 in. H ₂ O
Max. Fuel Inlet Pressure	20 kPa	80 in. H ₂ O
Max. Fuel Return Pressure	20 kPa	80 in. H ₂ O
Max. Fuel Inlet Temperature	80 °C	176 °F

Lubrication System

Oil Pressure at Rated Speed	220 kPa	32 psi
Oil Pressure at Low Idle	190 kPa	28 psi
Max. Oil Carryover in Blow-By	3 g/hr	0.007 lb/hr
Max. Airflow in Blow-By	40 L/min	10.6 gal/min
Max. Crankcase Pressure	0.5 kPa	2 in. H ₂ O

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Engine Installation Criteria

Air Intake System

Engine Air Flow, Prime	14.4 m ³ /min	509 ft. ³ /min
Engine Air Flow, Standby	15.4 m ³ /min	544 ft. ³ /min
Max. Allowable Temperature Rise	8 °C	46 °F
Max. Air Intake Restriction, Clean Air Cleaner	3.75 kPa	15.0 in. H ₂ O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25 kPa	25.0 in. H ₂ O
Air Cleaner Efficiency		99.9 %

Performance Data

Rated Power, Prime	228 kW	306 HP
Rated Power, Standby	253 kW	339 HP
Rated Speed		1500 rpm
Low Idle Speed		1000 rpm
Rated Torque, Prime	1965 N·m	1449 lb-ft
Rated Torque, Standby	2184 N·m	1611 lb-ft
BMEP, Prime	2024 kPa	294 psi
BMEP, Standby	2249 kPa	326 psi
Altitude Capability, Prime	3048 m	10000 ft
Altitude Capability, Standby	3048 m	10000 ft
Friction Power @Rated Speed	17 kW	23 HP
Air:Fuel Ratio, Prime		21.4:1
Air:Fuel Ratio, Standby		20.8:1
Smoke @Rated Speed Prime		0.29 Bosch No.
Smoke @Rated Speed Standby		0.23 Bosch No.
Noise @1 m Prime		NA
Noise @1 m Standby		NA

Fuel Consumption	Prime		Standby	
	lb/hr	kg/h	lb/hr	kg/h
25 % Power	28.0	12.7	31.1	14.1
50 % Power	53.1	24.1	58.9	26.7
75 % Power	78.0	35.4	86.4	39.2
100 % Power	101.2	45.9	112.0	50.8

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