



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Gross Power  
 Application: Generator  
 1800 RPM (60 Hz)

**POWERTECH 12.5L Engine**  
 Model: **6125HF070**

**512 hp (382 kW) Prime**  
**563 hp (420 kW) Standby**

[See Option Code Table]

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
512	382	563	420

Generator Efficiency %	Fan Power		Power Factor	Prime Rating		Standby Rating <sup>1</sup>		4 sec Standby Block Load Capability
	hp	kW		kW	kVA	kW	kVA	
88-92	28	20.9	0.8	318-332	397-415	351-367	439-459	100%

Note 1: Based on nominal engine power.

Air Intake Restriction ..... 12 in.H<sub>2</sub>O (3 kPa)  
 Exhaust Back Pressure ..... 30 in.H<sub>2</sub>O (7.5 kPa)

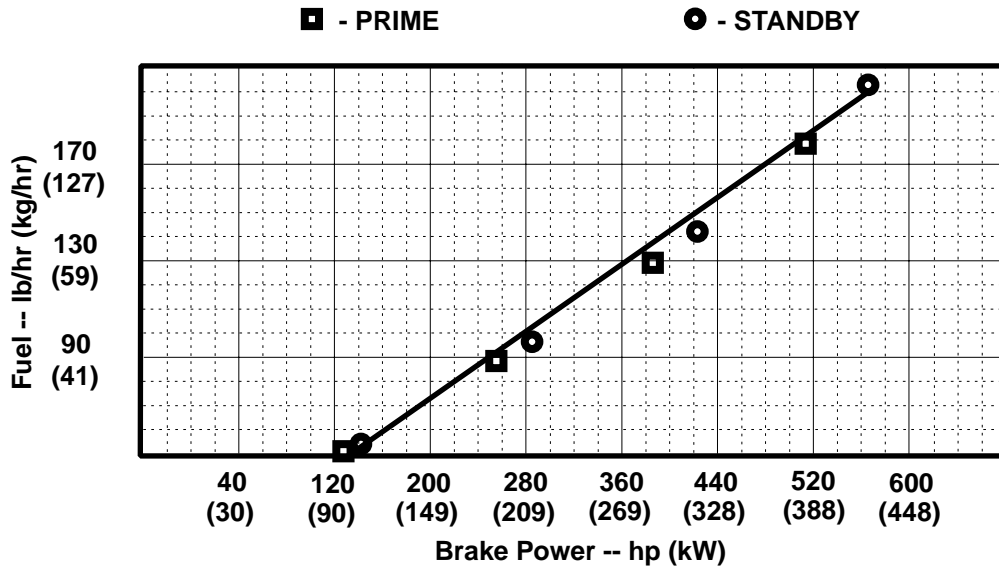
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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 = 0.85 kg
- Torque: N•m = lb-ft x 1.356

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



Notes:

Tier-2 Emission Certifications:	Certified by:
CARB; EPA	<i>Kevin Bailey</i>
Ref: Engine Emission Label	12 MARCH 2001

\* Revised Data  
 Curve 6125HF1800563 ..... Sheet 1 of 2  
 March 2001

## Engine Specification Data

### General Data

Model ..... 6125HF070  
 Number of Cylinders ..... 6  
 Bore and Stroke--in. (mm) ..... 5.00 x 6.50 (127 x 165)  
 Displacement--in.<sup>3</sup> (L) ..... 763 (12.5)  
 Compression Ratio ..... 17:1  
 Valves per Cylinder--Intake/Exhaust ..... 2/2  
 Firing Order ..... 1-5-3-6-2-4  
 Combustion System ..... Unit Injection  
 Engine Type ..... In-line 4-Cycle  
 Aspiration ..... Turbocharged  
 Charge Air Cooling System ..... Air-to-Air  
 Engine Crankcase Vent System ..... Open  
 Maximum Crankcase Pressure--in.H<sub>2</sub>O (kPa) ..... 2 (0.5)

### Physical Data

Length--in. (mm) ..... 52.2 (1326)  
 Width--in. (mm) ..... 31.8 (808)  
 Height--in. (mm) ..... 48.8 (1239)  
 Weight, dry--lb (kg) ..... 2657 (1205)  
 (Includes flywheel housing, flywheel & electrics)  
 Center of Gravity Location  
     From Rear Face of Block (X-axis)--in. (mm) .21.5 (545)  
     Right of Crankshaft (Y-axis)--in. (mm) ..... 0.63 (16)  
     Above Crankshaft (Z-axis)--in. (mm) ..... 8.6 (218)  
 Max. Allow. Static Bending Moment at Rear  
     Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m).600 (814)  
 Thrust Bearing Load Limit (Forward)  
     Continuous--lb (N) ..... 1225 (5449)  
     Intermittent--lb (N) ..... 1835 (8162)

### Electrical System

Recommended Battery Capacity (CCA)  
     12 Volt System--am ..... 1800  
     24 Volt System--am ..... 900  
 Maximum Allowable Starting Circuit Resistance  
     12 Volt System--Ohm ..... 0.0012  
     24 Volt System--Ohm ..... 0.002  
 Starter Rolling Current--12 Volt System  
     At 32 °F ( 0 °C)--amp ..... 1280  
     At -22 °F (-30 °C)--a ..... 1500  
 Starter Rolling Current--24 Volt System  
     At 32 °F (0 °C)--amp ..... 600  
     At -22 °F (-30 °C)--amp ..... 970

### Exhaust System

Exhaust Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ..... 2656(75.2) ..3055(86.5)  
 Exhaust Temperature--°F (°C) ..... 982 (528) ..1015 (546)  
 Max. Allow. Back Press.--in.H<sub>2</sub>O (kPa)30 (7.5).....30 (7.5)  
 Recm'd Exhaust Pipe Dia--in. (mm).... 5 (127) .....5 (127)

### Air System

**Prime Standby**  
 Max. Allowable Temp Rise--Ambient Air to  
     Engine Inlet--°F (°C) ..... 15 (8) ..... 15 (8)  
 Maximum Air Intake Restriction  
     Dirty Air Cleaner--in.H<sub>2</sub>O (kPa) ...25 (6.25) .... 25 (6.25)  
     Clean Air Cleaner--in.H<sub>2</sub>O (kPa) ..... 12 (3) ..... 12 (3)  
 Engine Air Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) .. 1031 (29.2) 1162 (32.9)  
 Intake Manifold Press.--psi (kPa)..... 31 (211) ..... 36 (250)  
 Rec'd. Intake Pipe Dia--in. (mm)..... 5.5 (140).... 5.5 (140)  
 Compress. Discharge Temp.--°F (°C) 379(193).... 426 (219)  
 Maximum Pressure Drop Through  
     Charge Air Cooler--in.H<sub>2</sub>O (kPa) .... 52 (13)..... 52 (13)  
 Max. Temp. Out of Charge Air Cooler  
     @ 77°F (25°C) Ambient--°F (°C) .. 140 (60)..... 140 (60)

### Cooling System

**Prime Standby**  
 Engine Heat Reject.--BTU/min (kW) 8592(151) .9047(159)  
 Air/Air Exchanger Heat Rejection--  
     Btu/min (kW) ..... 4154 (73) ... 5462(96)  
 Coolant Flow--gal/min (L/min)..... 73 (276) ..... 73 (276)  
 Thermostat Start to Open--°F (°C)..... 180 (82) ..... 180 (82)  
 Thermostat Fully Open--°F (°C)..... 201 (94) ..... 201 (94)  
 Engine Coolant Capacity--qt (L) ..... 17 (16.2) ..... 17 (16.2)  
 Rec'd. Pressure Cap--psi (kPa) ..... 7 (48) ..... 7 (48)  
 Max. Top Tank Temp--°F (°C) ..... 212 (100) ... 221 (105)  
 Min. Coolant Fill Rate--gal/min (L/min) ... 3 (11) ..... 3 (11)  
 Min. Air-to-Boil Temperature--°F (°C) . 117 (47) ..... 117 (47)

### Fuel System

**Prime Standby**  
 Fuel Injection Pump ..... Unit/E.C..... Unit/E.C.  
 Governor Type ..... Electronic... Electronic-  
 Fuel Consumption--lb/hr (kg/hr) .. 178.6 (81.2). 203.1 (92.3)  
 Max. Fuel Trans. Pump Suction--  
     ft (m) fuel ..... 10 (3)..... 10 (3)  
 Fuel Filter Micron Size @ 98 % Efficiency ... 2..... 2

### Lubrication System

**Prime Standby**  
 Oil Press. at Rated Speed--psi (kPa). 40 (275)..... 40 (275)  
 Oil Pressure at Low Idle--psi (kPa) .... 20 (138)..... 20 (138)  
 In Pan Oil Temperature--°F (°C) ..... 239 (115).... 239 (115)  
 Oil Pan Capacity, High--qt (L) ..... 42 (40)..... 42 (40)  
 Oil Pan Capacity, Low--qt (L) ..... 40 (38)..... 40 (38)  
 Engine Oil Capacity with Filters--qt (L) 44 (42)..... 44 (42)  
 Engine Angularity Limits (Continuous)  
     Any Direction--degrees ..... 20..... 20

### Electronic Engine Controls (JDEC)

Torque Curve Option (Pins A and B)  
     Curve 1 ..... 563 hp (420 kW) standby power  
     Curve 2..... Not used  
 Governor Droop (Pin E)  
     Isochronous..... 0%  
     Droop 1800 rpm ..... 4%  
 Pins "C" and "D" ..... Not used

OPTION CODE TABLE				
JDEC ECU FEATURE PROGRAMMING				
Option Code	ECU Voltage	Cruise Control	Adj. 2-stroke Throttle	Engine Protection
165A	12	No	Yes	None
165B	12	No	Yes	Shutdown only
165C	24	No	Yes	None
165D	24	No	Yes	Shutdown only

### Performance Data

**Prime Standby**  
 Rated Power--hp (kW) ..... 512 (382) ..... 563 (420)  
 Rated Speed--rpm ..... 1800 ..... 1800  
 Low Idle Speed--rpm ..... 1000 ..... 1000  
 BMEP--psi (kPa) ..... 294 (2027) ... 323 (2227)  
 Friction Power  
     @ Rated Speed--hp (kW)..... 30 (22) ..... 30 (22)  
 Altitude Capability --ft (m) ..... 9000 (2745)..... 8900 (2700)  
 Ratio--Air : Fuel..... 24.5:1 ..... 24.0:1  
 Noise--dB(A) @ 1 m ..... 100.5\* ..... 100.5\*

### Fuel Consumption -- lb/hr (kg/h)

**Prime Standby**  
 25 % Power ..... 51.5 (23.4) .... 55.4 (25.2)  
 50 % Power ..... 89.3 (40.6) .... 97.2 (44.2)  
 75 % Power ..... 129.6 (58.9) .. 141.7 (64.4)  
 100 % Power ..... 178.6 (81.2) .. 203.1 (92.3)

All values at rated speed and power with standard options unless otherwise noted.

\* Revised Data  
 Curve 6125HF1800563..... Sheet 2 of 2  
 March 2001