



JOHN DEERE

### ENGINE PERFORMANCE CURVE

Rating: Gross Power  
Application: Industrial - Intermittent / Constant  
**10% Power Bulge**

**PowerTech 12.5 L Engine**

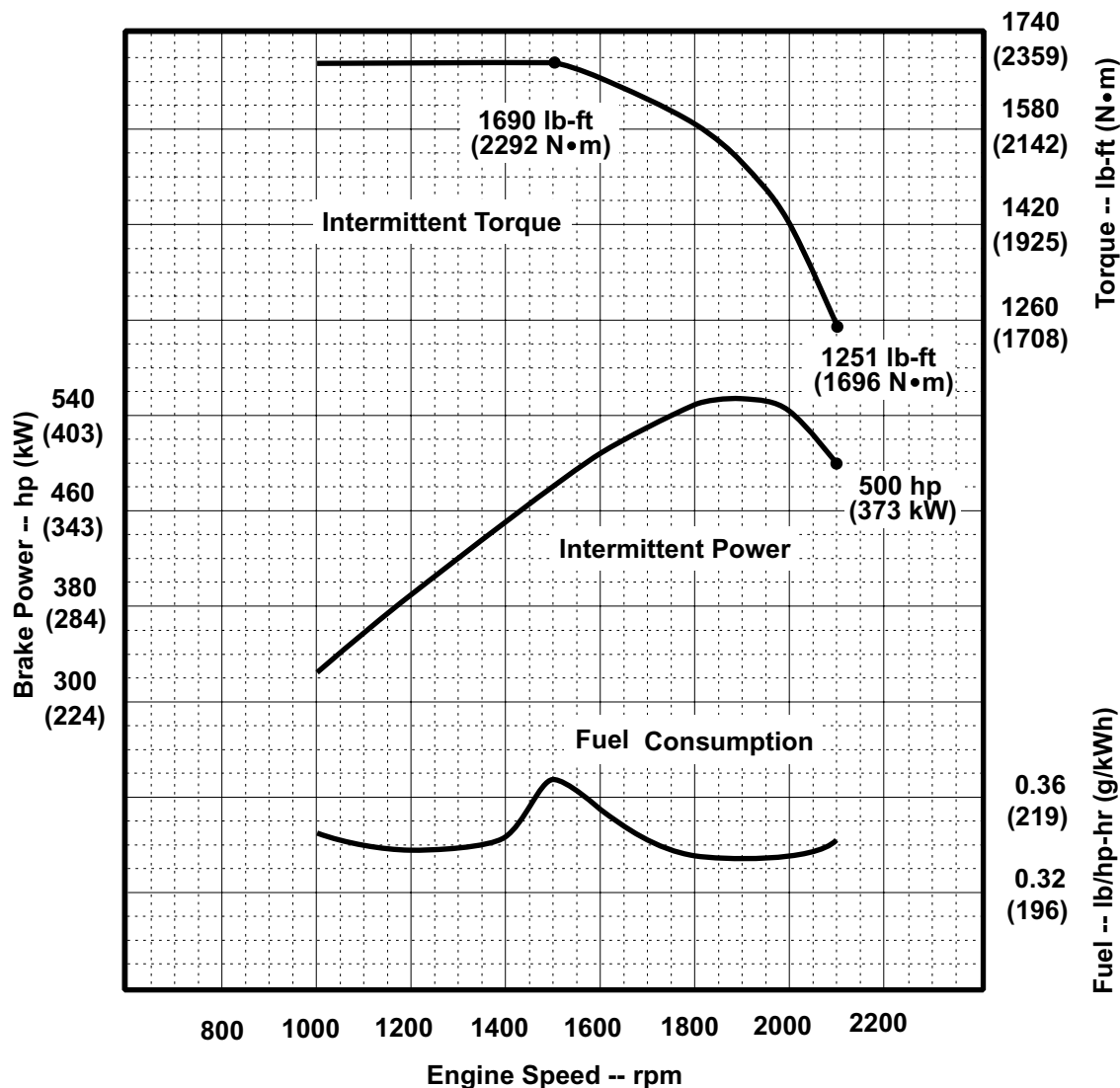
Model: **6125HF070**

**JD Electronic Control**

**500 hp @ 2100 rpm**

**373 kW @ 2100 rpm**

[See Option Code Table]



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; EU**  
Ref: Engine Emission Label

*Brian L. Carlson*  
22 July 04

\* Revised Data

Curve: 6125HF0705001 ..... Sheet 1 of 2  
July 2004

## Common Specifications:

### General Data

Model .....	6125HF070
Number of Cylinders .....	6
Bore and Stroke--in. (mm).....	5.00 (127) x 6.50 (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).....	0.6 (16)
Above Crankshaft (Z-axis)--in. (mm).....	8.6 (218)
Maximum Allowable Static Bending Moment at Rear Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m) .....	600 (814)
Thrust Bearing Load Limit (Forward)--lb (N)	
Intermittent.....	1835 (8162)
Continuous .....	1225 (5449)

### Air System

Maximum Allowable Temp Rise--Ambient Air to	
Engine Inlet--°F (°C) .....	15 (8)
Maximum Air Intake Restriction:	
Dirty Air Cleaner--in. H <sub>2</sub> O (kPa).....	25 (6.25)
Clean Air Cleaner--in. H <sub>2</sub> O (kPa).....	12 (3)
Engine Air Flow--ft <sup>3</sup> /min (m <sup>3</sup> /min) .....	1151 (32.6)
Intake Manifold Pressure--psi (kPa).....	29 (198.6)
Compressor Discharge Temp.--°F (°C).....	385 (196)
Maximum Pressure Drop,	
Charge Air Cooler--in.H <sub>2</sub> O (kPa) .....	52 (13)
Max Temp Out of Charge Air Cooler	
@ 77°F (25°C) Ambient--°F (°C) .....	140 (60)

## Engine Specification Data

### Cooling System

Engine Heat Rejection--BTU/min (kW) .....	8253 (145)
Air/Air Exch'r. Heat Rej.--Btu/min(kW) .....	4724 (83)
Coolant Flow--gal/min (L/min).....	87 (330)
Thermostat Start to Open--°F (°C).....	180 (82)
Thermostat Fully Open--°F (°C).....	201 (94)
Engine Coolant Capacity--qt (L) .....	17.2 (16.3)
Minimum Pressure Cap--psi (kPa).....	7 (48)
Maximum Top Tank Temp--°F (°C) .....	212 (100)
Minimum Coolant Fill Rate--gal/min (L/min) .....	3 (11)
Minimum Air-to-Boil Temperature--°F (°C).....	117 (47)

### Electrical System

	<b>12 Volt</b>	<b>24 Volt</b>
Min. Battery Capacity (CCA)--amp .....	1800.....	900
Max. Allow. Starting Circuit Resist.--Ohm .....	0.0012.....	0.002
Starter Rolling Current		
At 32 °F ( 0 °C)--amp.....	1280.....	600
At -22 °F (-30 °C)--amp .....	1500.....	970

### Exhaust System

Exhaust Flow--ft <sup>3</sup> /min (m <sup>3</sup> /min).....	2638 (74.7)
Exhaust Temperature--°F (°C).....	842 (450)
Max. Allowable Back Pressure--in. H <sub>2</sub> O (kPa) .....	30 (7.5)

### Fuel System

Fuel Injection Pump .....	Unit w/ Electronic Control
Governor Type.....	Electronic
Fuel Consumption--lb/hr (kg/hr).....	171 (77.7)
Fuel Spill Rate--lb/hr (kg/hr).....	132 (60)
Max. Fuel Transfer Pump Suction--ft (m) fuel.....	10 (3.0)
Fuel Filter Micron Size @ 98% Efficiency.....	2

### Lubrication System

Oil Pressure at Rated Speed--psi (kPa) .....	45 (310)
Oil Pressure at Low Idle--psi (kPa) .....	20 (138)
In Pan Oil Temperature--°F (°C) .....	240 (115)

## Performance Data

Rated Power--hp (kW) .....	500 (373)
Rated Speed--rpm .....	2100
Breakaway Speed--rpm .....	2150
Fast Idle Speed--rpm .....	2275
Peak Torque--lb-ft (N•m).....	1690 (2292)
Peak Torque Speed--rpm .....	1500
Low Idle Speed--rpm .....	900
BMEP--psi (kPa) .....	247 (1706)
Friction Power @ Rated Speed--hp (kW) .....	67 (50)
Altitude Capability--ft (m) .....	10,000 (3,000)
Ratio--Air : Fuel .....	27.9:1
Smoke @ Rated Speed--Bosch No. ....	< 1
Noise--dB(A) @ 1 m .....	100.5

### Intermittent Power

Engine Speed rpm	Intermittent Power hp(kW)	Intermittent Torque lb-ft(N•m)	BSFC lb/hp-hr (g/kWh)
2100	500 (373)	1251 (1696)	0.342 (208)
2000	543 (405)	1426 (1934)	0.337 (205)
1900	553 (412)	1527 (2071)	0.337 (205)
1800	545 (406)	1588 (2154)	0.337 (205)
1600	508 (379)	1668 (2262)	0.357 (217)
1500	483 (360)	1690 (2292)	0.368 (224)
1400	451 (336)	1690 (2292)	0.343 (209)
1200	386 (288)	1690 (2292)	0.339 (206)
1000	322 (240)	1690 (2292)	0.345 (210)

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

\* Revised Data  
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