



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Gross Power  
 Application: Industrial - Continuous  
 Power Bulge - 0%  
 Torque Rise - 35%

**PowerTech Plus™ 13.5 L Engine**

Model: **6135HF485**

**JD Electronic Control**

**350 hp @ 2100 rpm**

**261 kW @ 2100 rpm**

[See Option Code Table]

**STANDARD CONDITIONS**

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-3 Emission Certifications:

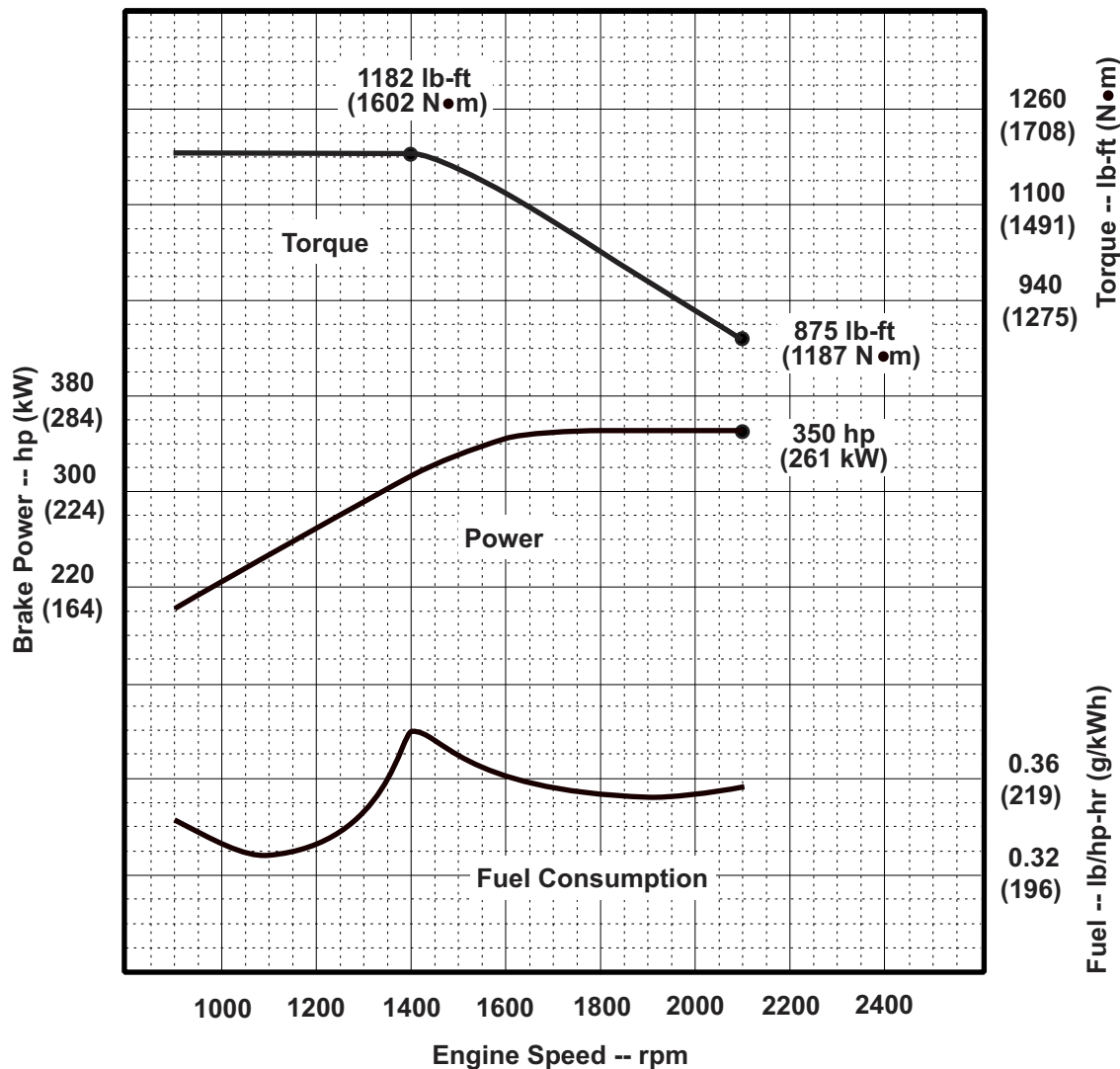
Certified by:

**CARB; EPA; EU**  
 Ref: Engine Emission Label

*Brian L. Carlson*  
 26 April 2006

\* Revised Data

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 April 2006



## Engine Installation Criteria

### General Data

Model ..... 6135HF485  
 Number of Cylinders ..... 6  
 Bore and Stroke--in. (mm)..... 5.20 (132) x 6.50 (165)  
 Displacement--in.<sup>3</sup> (L).....824 (13.5)  
 Compression Ratio ..... 16.0 : 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

### Physical Data

Length--in. (mm) ..... 52.5 (1334)  
 Width--in. (mm) ..... 33.7 (855)  
 Height--in. (mm) ..... 59.5 (1512)  
 Weight, dry--lb (kg) ..... 3292 (1493)  
 (Includes flywheel housing, flywheel & electrics)  
 Center of Gravity Location  
     From Rear Face of Block (X-axis)--in. (mm) 20.0 (507)  
     Right of Crankshaft (Y-axis)--in. (mm).....0.1 (2)  
     Above Crankshaft (Z-axis)--in. (mm) ..... 8.1 (206)  
 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 --lb (N) Forward Rearward  
     Intermittent..... 1821 (8100).....899 (4000)  
     Continuous ..... 1214 (5400).....562 (2500)  
 Max. Continuous Damper Temp--°F (°C) ..... 180 (82)

### Electrical System

**12 Volt**    **24 Volt**

Min. Battery Capacity (CCA)--amp..... 1900 ..... 925  
 Max. Allow. Starting Circuit Resist.--Ohm 0.0012 ..... 0.002  
 Starter Rolling Current  
     At 32 °F ( 0 °C)--amp ..... 920 ..... 600  
     At -22 °F (-30 °C)--amp ..... 1300 ..... 700  
 Min. Voltage at ECU during Cranking--volts..... 6 ..... 10  
 Maximum ECU Temperature--°F (°C) ..... 221 (105)  
 Max. VTG Actuator Surface Temp.--°F (°C)..... 356 (180)  
 Maximum Harness Temperature--°F (°C) ..... 257 (125)

### 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)..... 15 (3.75)  
 Engine Air Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ..... 932 (26.4)  
 Air Cleaner Efficiency--% ..... 99.9

### Charge Air Cooling System

Air/Air Exch'r. Heat Rej.--Btu/min(kW) ..... 3131 (55)  
 Compressor Discharge Temp.(Rated)  
     @ 77 °F (25°C) Ambient Air--°F (°C)..... 338 (170)  
 Compressor Discharge Temp.(Max.) @ Peak Torque,  
     47°C ambient, 80 kPa barometer--°F (°C)..... 387 (197)  
 Max. Pressure Drop, thru CAC--in.H<sub>2</sub>O (kPa) ..... 64 (16)  
 Min. Pressure Drop, thru CAC--in.H<sub>2</sub>O (kPa) ..... 32 (8)  
 Intake Manifold Pressure--psi (kPa) ..... 23 (160)  
 Max CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) 127(53)  
 Min CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) .. 104(40)  
 Max CAC Out Temp @ any Ambient--°F (°C) ..... 190(88)

### Cooling System

Engine Heat Rejection--BTU/min (kW) ..... 9107 (160)  
 Coolant Flow--gal/min (L/min)..... 146 (552)  
 Thermostat Start to Open--°F (°C)..... 180 (82)  
 Thermostat Fully Open--°F (°C)..... 198 (92)  
 Engine Coolant Capacity--qt (L) ..... 19 (18)  
 Minimum Pressure Cap--psi (kPa)..... 14.5 (100)  
 Maximum Top Tank Temp--°F (°C) ..... 221 (105)  
 Minimum Coolant Fill Rate--gal/min (L/min) ..... 3 (12)  
 Minimum Air-to-Boil Temperature--°F (°C)..... 117 (47)  
 Minimum Pump Inlet Pressure--psi (kPa) ..... 4.4 (30)

### Exhaust System

Exhaust Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min)..... 1787 (51)  
 Exhaust Temperature--°F (°C)..... 696 (369)  
 Max. Exhaust Restriction--in. H<sub>2</sub>O (kPa) ..... 40 (10)  
 Min. Exhaust Restriction--in. H<sub>2</sub>O (kPa)..... 16 (4)  
 Max. Bend. Moment on Turbo Out.--lb-ft (N•m) ..... 5.2 (7)  
 Max. Shear on Turbo Outlet--lb (kg) ..... 24 (11)

### Fuel System

ECU Description ..... L15 Controller  
 Fuel Injection Pump ..... Unit Injection  
 Governor Type..... Electronic  
 Total Fuel Flow--lb/hr (kg/hr) ..... 281 (128)  
 Fuel Consumption--lb/hr (kg/hr)..... 127 (58)  
 Max. Fuel Inlet Temperature--°F (°C) ..... 212 (100)  
 Fuel Temp. Rise, Inlet to Return--°F (°C) ..... 111.6 (62)  
 Max. Fuel Inlet Restriction--in. H<sub>2</sub>O (kPa) ..... 40 (10)  
 Max. Fuel Inlet Pressure--in. H<sub>2</sub>O (kPa) ..... 96 (24)  
 Max. Fuel Return Pressure--in. H<sub>2</sub>O (kPa) ..... 140 (35)

### Lubrication System

Oil Pressure at Rated Speed--psi (kPa) ..... 45 (310)  
 Oil Pressure at Low Idle--psi (kPa) ..... 20 (138)  
 Max. Oil Carryover in Blow-by--lb/hr (g/hr) ..... 0.007 (3)  
 Max. Airflow in Blow-by--gal/min (l/min)..... 79 (300)  
 Max. Crankcase Pressure--in. H<sub>2</sub>O (kPa)..... 2 (0.5)

### Performance Data

Rated Power--hp (kW) ..... 350 (261)  
 Rated Speed--rpm ..... 2100  
 Breakaway Speed--rpm ..... 2150  
 Fast Idle Speed--rpm ..... 2300  
 Peak Torque--lb-ft (N•m)..... 1182 (1602)  
 Peak Torque Speed--rpm ..... 1400  
 Low Idle Speed--rpm ..... 900  
 BMEP--psi (kPa) ..... 160 (1105)  
 Friction Power @ Rated Speed--hp (kW) ..... 78 (58)  
 Altitude Capability--ft (m) ..... 10,000 (3050)  
 Ratio--Air : Fuel ..... 29.1 : 1  
 Smoke @ Rated Speed--Bosch No. .... 0.65  
 Noise--dB(A) @ 1 m ..... 98.7\*  
 Power Bulge--% ..... 0  
 Power Bulge Speed--rpm ..... NA  
 Torque Rise--% ..... 35

### Continuous Power

| Engine Speed rpm | Power hp (kW) | Torque lb-ft (N•m) | BSFC lb/hp-hr (g/kWh) |
|------------------|---------------|--------------------|-----------------------|
| 2100             | 350 (261)     | 875 (1187)         | 0.358 (218)           |
| 1900             | 350 (261)     | 967 (1311)         | 0.353 (215)           |
| 1800             | 350 (261)     | 1022 (1386)        | 0.354 (216)           |
| 1600             | 344 (257)     | 1129 (1531)        | 0.360 (219)           |
| 1400             | 315 (235)     | 1182 (1602)        | 0.380 (231)           |
| 1200             | 270 (201)     | 1182 (1602)        | 0.334 (204)           |
| 1000             | 225 (168)     | 1182 (1602)        | 0.335 (204)           |
| 900              | 202 (151)     | 1182 (1602)        | 0.342 (209)           |

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

\* Revised Data  
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 April 2006