



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Industrial - Continuous
 Power Bulge - 12%
 Torque Rise - 38%

PowerTech Plus™ 13.5 L Engine

Model: **6135HF485**

JD Electronic Control

400 hp @ 1900 rpm

298 kW @ 1900 rpm

[See Option Code Table]

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 = 0.85 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:

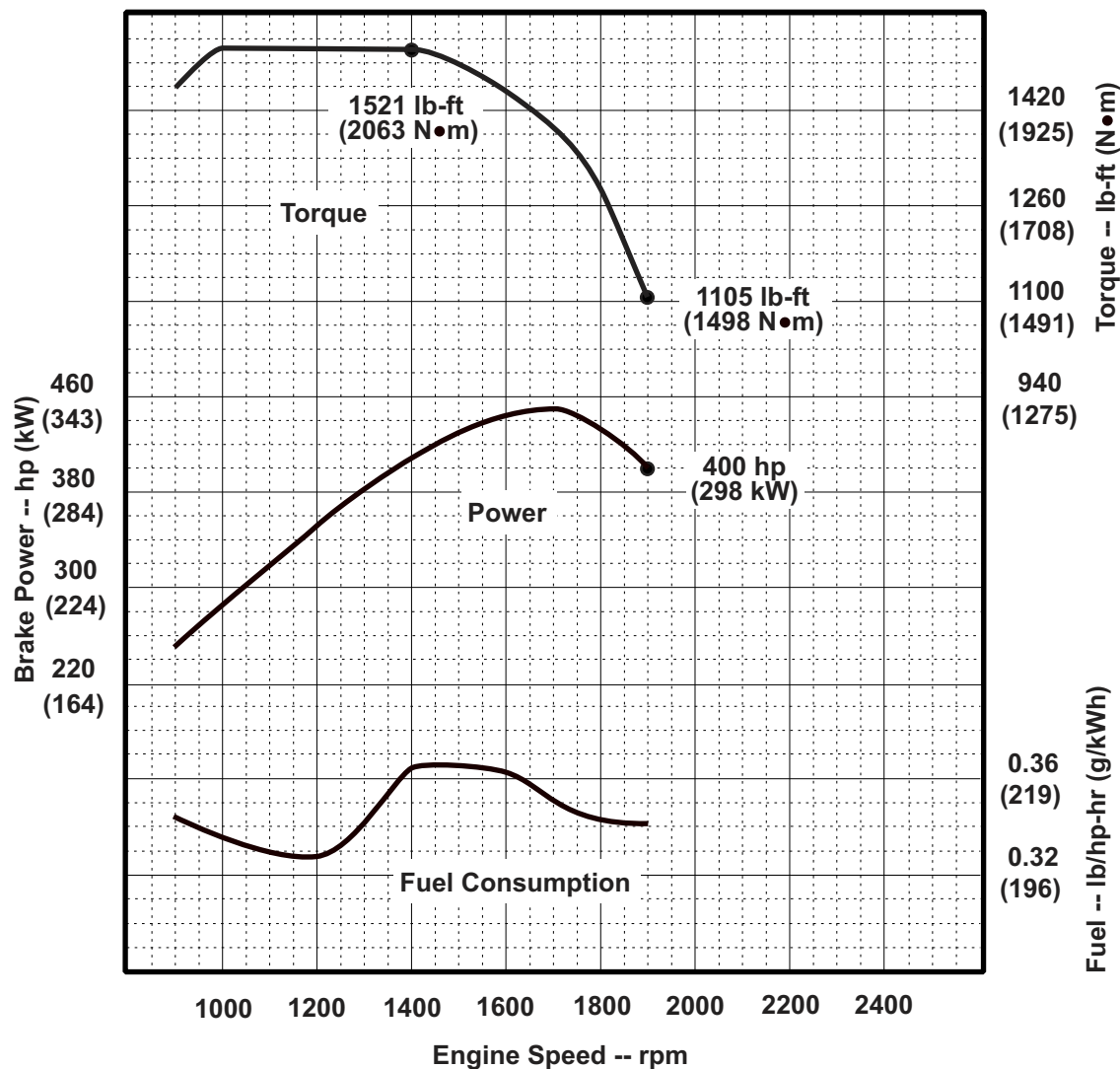
Certified by:

CARB; EPA; EU
 Ref: Engine Emission Label

Brian L. Carlson
 26 April 2006

* Revised Data

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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.³ (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. H₂O (kPa)..... 25 (6.25)
 Clean Air Cleaner--in. H₂O (kPa)..... 15 (3.75)
 Engine Air Flow--ft³/min (m³/min) 936 (26.5)
 Air Cleaner Efficiency--% 99.9

Charge Air Cooling System

Air/Air Exch'r. Heat Rej.--Btu/min(kW) 3501 (61.5)
 Compressor Discharge Temp.(Rated)
 @ 77 °F (25°C) Ambient Air--°F (°C)..... 364 (184.5)
 Compressor Discharge Temp.(Max.) @ Peak Torque,
 47°C ambient, 80 kPa barometer--°F (°C)..... 433 (223)
 Max. Pressure Drop, thru CAC--in.H₂O (kPa) 64 (16)
 Min. Pressure Drop, thru CAC--in.H₂O (kPa) 32 (8)
 Intake Manifold Pressure--psi (kPa) 32 (222)
 Max CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) 127(53)
 Min CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) 107(41.4)
 Max CAC Out Temp @ any Ambient--°F (°C) 190(88)

Cooling System

Engine Heat Rejection--BTU/min (kW) 9136 (160.5)
 Coolant Flow--gal/min (L/min)..... 132 (498)
 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--ft³/min (m³/min)..... 1872 (53)
 Exhaust Temperature--°F (°C)..... 712 (378)
 Max. Exhaust Restriction--in. H₂O (kPa) 40 (10)
 Min. Exhaust Restriction--in. H₂O (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) 289 (131)
 Fuel Consumption--lb/hr (kg/hr)..... 137 (62)
 Max. Fuel Inlet Temperature--°F (°C) 212 (100)
 Fuel Temp. Rise, Inlet to Return--°F (°C) 102.6 (57)
 Max. Fuel Inlet Restriction--in. H₂O (kPa) 40 (10)
 Max. Fuel Inlet Pressure--in. H₂O (kPa) 96 (24)
 Max. Fuel Return Pressure--in. H₂O (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. H₂O (kPa)..... 2 (0.5)

Performance Data

Rated Power--hp (kW) 400 (298)
 Rated Speed--rpm 1900
 Breakaway Speed--rpm 1950
 Fast Idle Speed--rpm 2100
 Peak Torque--lb-ft (N•m)..... 1521 (2063)
 Peak Torque Speed--rpm 1400
 Low Idle Speed--rpm 900
 BMEP--psi (kPa) 202 (1395)
 Friction Power @ Rated Speed--hp (kW) 61 (46)
 Altitude Capability--ft (m) 10,000 (3050)
 Ratio--Air : Fuel 28.0 : 1
 Smoke @ Rated Speed--Bosch No. 0.35
 Noise--dB(A) @ 1 m 98.3*
 Power Bulge--% 12
 Power Bulge Speed--rpm 1700
 Torque Rise--% 38

Continuous Power

| Engine Speed rpm | Power hp (kW) | Torque lb-ft (N•m) | BSFC lb/hp-hr (g/kWh) |
|------------------|---------------|--------------------|-----------------------|
| 1900 | 400 (298) | 1105 (1498) | 0.341 (208) |
| 1800 | 440 (328) | 1283 (1739) | 0.342 (208) |
| 1700 | 449 (335) | 1386 (1879) | 0.351 (214) |
| 1600 | 443 (330) | 1454(1971) | 0.361 (220) |
| 1400 | 406 (302) | 1521 (2063) | 0.363 (221) |
| 1200 | 348 (259) | 1521 (2063) | 0.333 (203) |
| 1000 | 290 (216) | 1521 (2063) | 0.337 (205) |
| 900 | 250 (187) | 1460 (1980) | 0.344 (210) |

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

* Revised Data
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