



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
Application: Industrial - Continuous
Power Bulge - 11%
Torque Rise - 36%

PowerTech Plus™ 13.5 L Engine

Model: 6135HF485

JD Electronic Control

450 hp @ 1900 rpm

336 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:

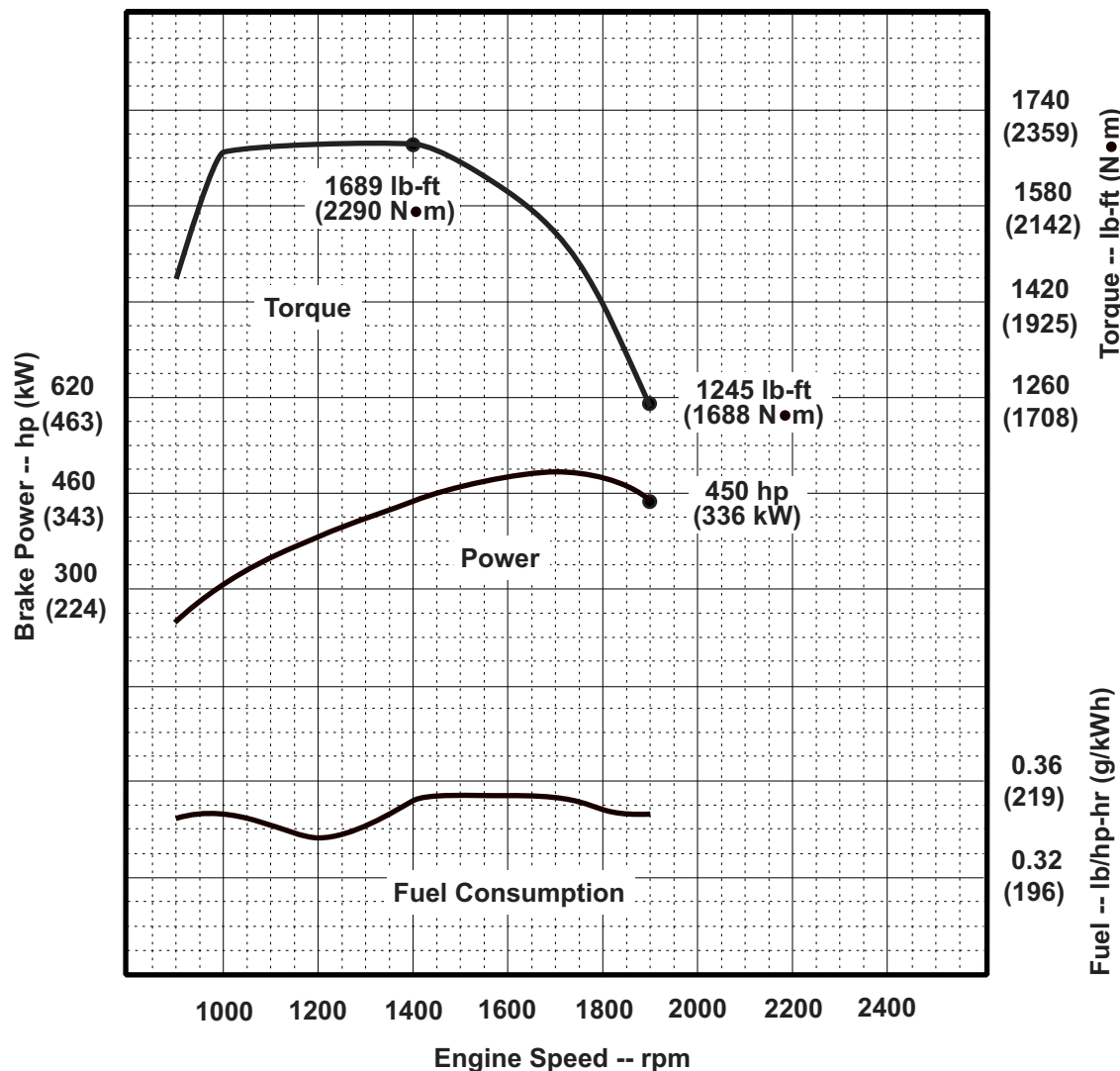
Certified by:

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) 1024 (29.0)
 Air Cleaner Efficiency--% 99.9

Charge Air Cooling System

Air/Air Exch'r. Heat Rej.--Btu/min(kW) 4440 (78)
 Compressor Discharge Temp.(Rated)
 @ 77 °F (25°C) Ambient Air--°F (°C)..... 406 (208)
 Compressor Discharge Temp.(Max.) @ Peak Torque,
 47°C ambient, 80 kPa barometer--°F (°C)..... 450 (232)
 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 (220)
 Max CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) 127(53)
 Min CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) 110(43.2)
 Max CAC Out Temp @ any Ambient--°F (°C) 190(88)

Cooling System

Engine Heat Rejection--BTU/min (kW) 10,416 (183)
 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)..... 2084 (59)
 Exhaust Temperature--°F (°C)..... 739 (393)
 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) 309 (140)
 Fuel Consumption--lb/hr (kg/hr)..... 157 (71)
 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) 450 (336)
 Rated Speed--rpm 1900
 Breakaway Speed--rpm 1950
 Fast Idle Speed--rpm 2100
 Peak Torque--lb-ft (N•m)..... 1689 (2290)
 Peak Torque Speed--rpm 1400
 Low Idle Speed--rpm 900
 BMEP--psi (kPa) 228 (1571)
 Friction Power @ Rated Speed--hp (kW) 61 (46)
 Altitude Capability--ft (m) 10,000 (3050)
 Ratio--Air : Fuel 26.6 : 1
 Smoke @ Rated Speed--Bosch No. 0.39
 Noise--dB(A) @ 1 m 98.5*
 Power Bulge--% 11
 Power Bulge Speed--rpm 1700
 Torque Rise--% 36

Continuous Power

Engine Speed rpm	Power hp (kW)	Torque lb-ft (N•m)	BSFC lb/hp-hr (g/kWh)
1900	450 (336)	1245 (1688)	0.347 (211)
1800	487 (363)	1420 (1925)	0.348 (212)
1700	498 (371)	1539 (2086)	0.353 (215)
1600	492 (367)	1614 (2188)	0.353 (215)
1400	450 (336)	1689 (2290)	0.351 (214)
1200	386 (288)	1689 (2290)	0.337 (205)
1000	317 (237)	1667(2260)	0.347 (212)
900	250 (187)	1460 (1980)	0.344 (209)

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

* Revised Data
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