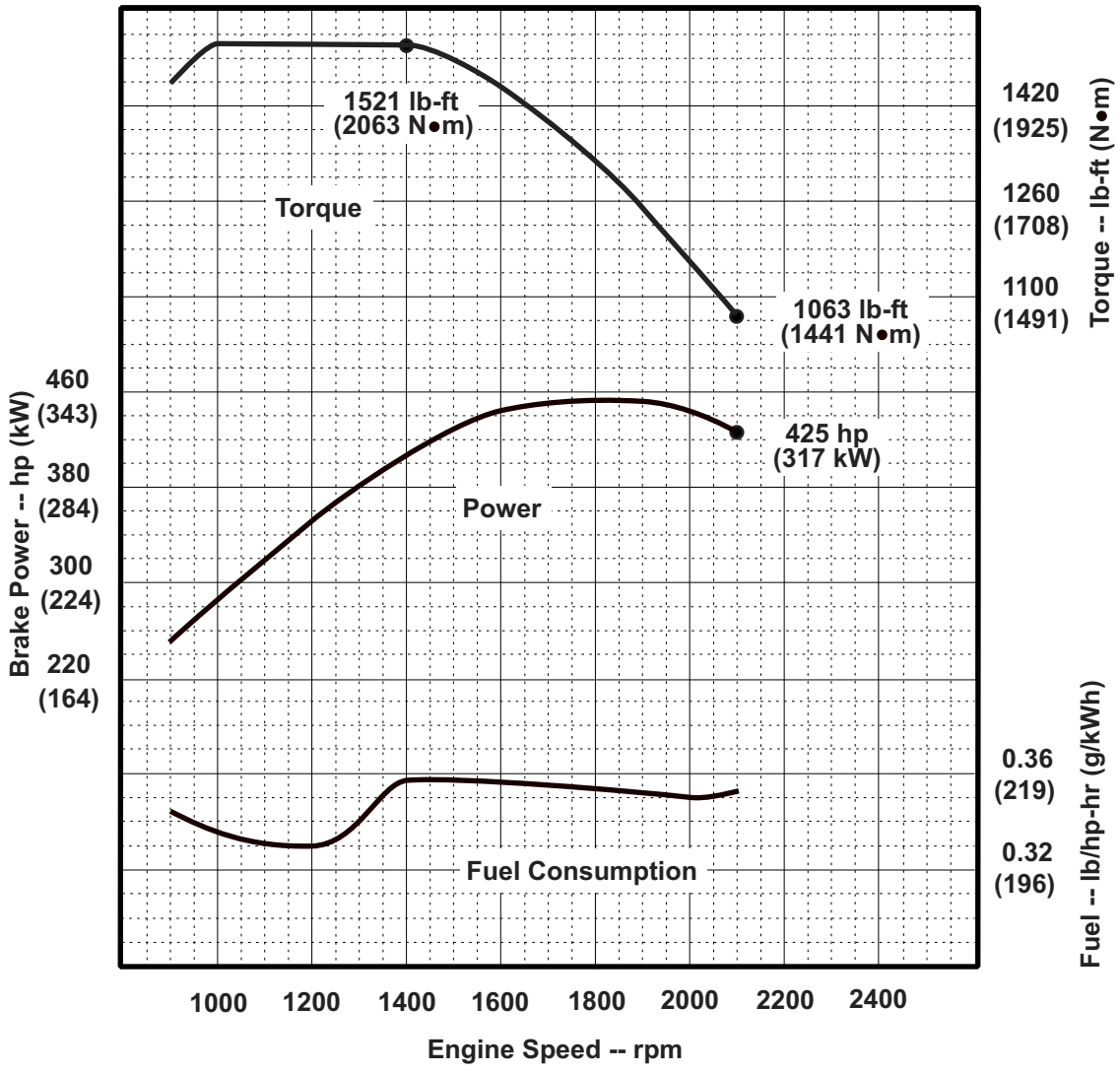
JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
Application: Industrial - Continuous
Power Bulge - 6%
Torque Rise - 43%

PowerTech Plus™ 13.5 L Engine
Model: **6135HF485**
JD Electronic Control
425 hp @ 2100 rpm
317 kW @ 2100 rpm
[See Option Code Table]



STANDARD CONDITIONS

Air Intake Restriction ..... 12 in.H_2O (3 kPa)
Exhaust Back Pressure ..... 30 in.H_2O (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. H_2O (kPa)	25 (6.25)
Clean Air Cleaner--in. H_2O (kPa)	15 (3.75)
Engine Air Flow--ft^3/min (m^3/min)	1059 (30.0)
Air Cleaner Efficiency--%	99.9

Charge Air Cooling System

Air/Air Exch'r. Heat Rej.–Btu/min(kW)	4041 (71)
Compressor Discharge Temp.(Rated @ 77 °F (25°C) Ambient Air--°F (°C)	361 (183)
Compressor Discharge Temp.(Max.) @ Peak Torque, 47°C ambient, 80 kPa barometer--°F (°C)	451 (233)
Max. Pressure Drop, thru CAC--in.H_2O (kPa)	64 (16)
Min. Pressure Drop, thru CAC--in.H_2O (kPa)	32 (8)
Intake Manifold Pressure--psi (kPa)	25 (175)
Max CAC Out Temp @ 77°F (25°C) Amb.--°F (°C)	127(53)
Min CAC Out Temp @ 77°F (25°C) Amb.--°F (°C)	108(42.3)
Max CAC Out Temp @ any Ambient--°F (°C)	190(88)

Cooling System

Engine Heat Rejection--BTU/min (kW)	9392 (165)
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^3/min (m^3/min)	2225 (63)
Exhaust Temperature--°F (°C)	761 (405)
Max. Exhaust Restriction--in. H_2O (kPa)	40 (10)
Min. Exhaust Restriction----in. H_2O (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)	304 (138)
Fuel Consumption--lb/hr (kg/hr)	150 (68)
Max. Fuel Inlet Temperature--°F (°C)	212 (100)
Fuel Temp. Rise, Inlet to Return--°F (°C)	109.8 (61)
Max. Fuel Inlet Restriction--in. H_2O (kPa)	40 (10)
Max. Fuel Inlet Pressure--in. H_2O (kPa)	96 (24)
Max. Fuel Return Pressure--in. H_2O (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_2O (kPa)	2 (0.5)

Performance Data

Rated Power--hp (kW)	425 (317)
Rated Speed--rpm	2100
Breakaway Speed--rpm	2150
Fast Idle Speed--rpm	2300
Peak Torque--lb-ft (N•m)	1521 (2063)
Peak Torque Speed--rpm	1400
Low Idle Speed--rpm	900
BMEP--psi (kPa)	195 (1342)
Friction Power @ Rated Speed--hp (kW)	78 (58)
Altitude Capability--ft (m)	10,000 (3050)
Ratio--Air : Fuel	28.2 : 1
Smoke @ Rated Speed--Bosch No.	0.45
Noise--dB(A) @ 1 m	99.7*
Power Bulge--%	6
Power Bulge Speed--rpm	1900
Torque Rise--%	43

Continuous Power

Engine Speed rpm	Power hp (kW)	Torque lb-ft (N•m)	BSFC lb/hp-hr (g/kWh)
2100	425 (317)	1063 (1441)	0.352 (214)
2000	440 (328)	1154 (1565)	0.350 (213)
1800	450 (336)	1316 (1785)	0.354 (216)
1600	443 (330)	1454 (1971)	0.356 (217)
1400	406 (302)	1521 (2063)	0.358 (218)
1200	348 (259)	1521 (2063)	0.331 (201)
1000	290 (216)	1521 (2063)	0.336 (205)
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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April 2006