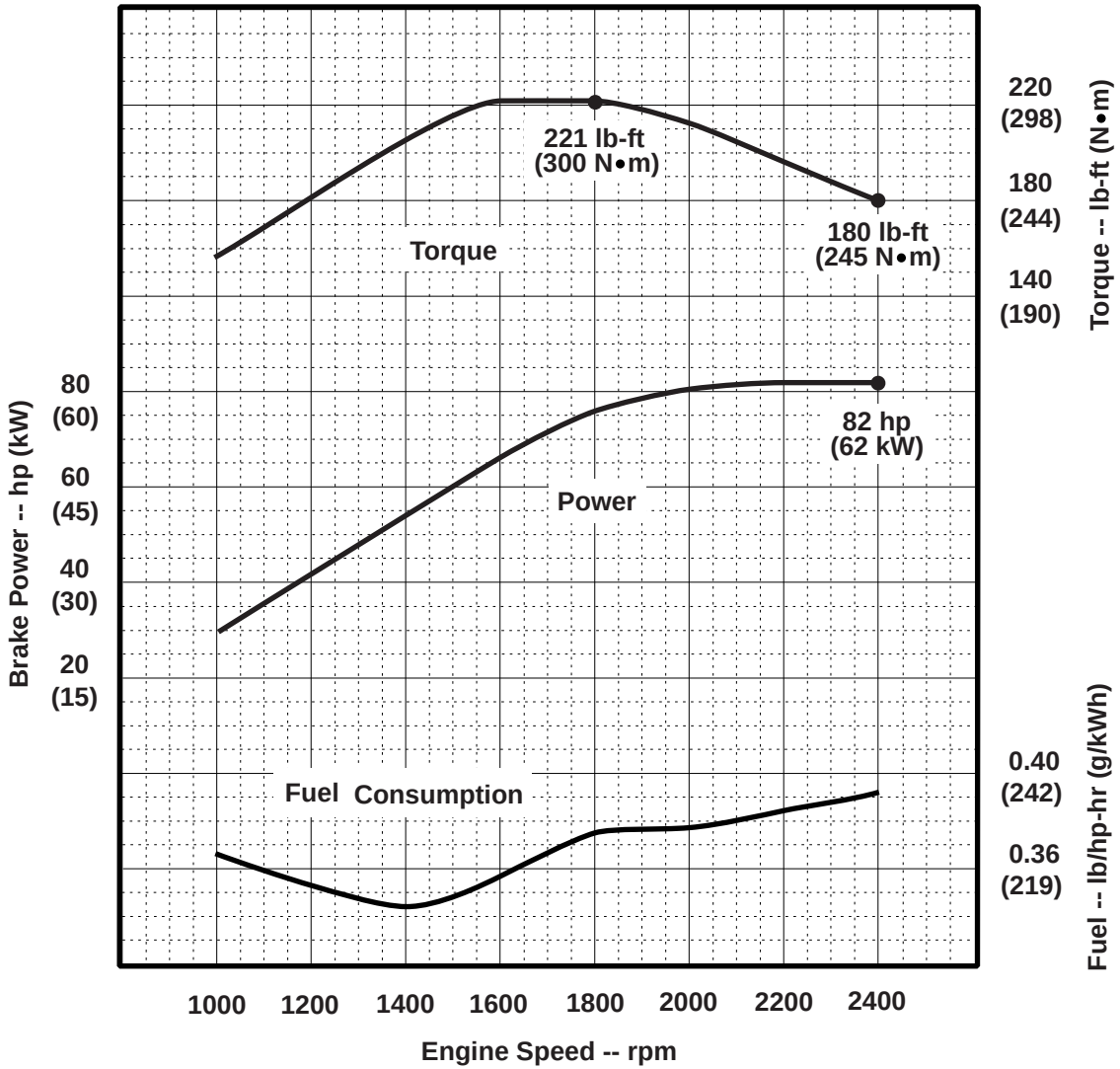
JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
Application: Industrial - Intermittent
Power Bulge - 0%
Torque Rise - 22%

PowerTech E™ 3.0 L Engine
Model: 5030HF285

82 hp @ 2400 rpm
62 kW @ 2400 rpm



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	Vincenzo Perdue 11-28-2007

* Revised Data
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Engine Installation Criteria

General Data

Model 5030HF285
Number of Cylinders 5
Bore and Stroke--in. (mm)..... 3.4 x 4.1 (86 x 105)
Displacement--in.^{3} (L) 186 (3.05)
Compression Ratio ..... 18.2 : 1
Valves per Cylinder--Intake/Exhaust ..... 1 / 1
Firing Order 1-2-4-5-3
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 (Estimated based on Tier 2)

Length--in. (mm) 31.5 (799)
Width--in. (mm) 22.3 (566)
Height--in. (mm) 31.5 (800)
Weight, dry--lb (kg) 633 (287)
(Includes flywheel housing, flywheel & electrics)
Center of Gravity Location
From Rear Face of Block (X-axis)--in. (mm) 9.5 (241)
Right of Crankshaft (Y-axis)--in. (mm)..... 0.5 (12)
Above Crankshaft (Z-axis)--in. (mm)..... 4.9 (124)
Maximum Allowable Static Bending Moment at Rear Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m) 369 (500)

Thrust Bearing Load Limit --lb (N)	Forward	Rearward
Intermittent	1147 (5100)	337 (1500)
Continuous	629 (2800)	180 (800)

Max. Front of Crank. Torsional Vibration--DDA..... 0.25
Max. Continuous Damper Temp--°F (°C) 180 (82)

Electrical System

	12 Volt	24 Volt
Min. Battery Capacity (CCA)--amp	750	500
Max. Allow. Starting Circuit Resist.--Ohm	0.0012	0.002
Starter Rolling Current		
At 32 °F (0 °C)--amp	290	310
At -22 °F (-30 °C)--amp	370	340
Min. Voltage at ECU during Cranking--volts	6	10

Maximum ECU Temperature--°F (°C) 221 (105)
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)..... 12 (3.0)
Engine Air Flow--ft^3/min (m^3/min) 215 (6.1)
Air Cleaner Efficiency--% 99.9

Charge Air Cooling System

Air/Air Exch'r. Heat Rej.–Btu/min(kW) 620 (10.9)
Compressor Discharge Temp.(Rated @ 77 °F (25°C) Ambient Air--°F (°C)..... 307 (153)
Compressor Discharge Temp.(Max.) @ any Ambient--°F (°C) ..... NA
Max. Pressure Drop, thru CAC--in.H_2O (kPa) 52 (13)
Min. Pressure Drop, thru CAC--in.H_2O (kPa) 28 (7)
Intake Manifold Pressure--psi (kPa) 18 (125)
Max CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) 140(60)
Min CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) 118 (48)
Max CAC Out Temp @ any Ambient--°F (°C) 190 (88)

Cooling System

Engine Heat Rejection--BTU/min (kW) 2117 (37.2)
Coolant Flow--gal/min (L/min)..... 34 (130)
Thermostat Start to Open--°F (°C)..... 192 (89)
Thermostat Fully Open--°F (°C)..... 212 (100)
Engine Coolant Capacity--qt (L) 3.1* (2.9*)
Minimum Pressure Cap--psi (kPa)..... 15 (103)
Maximum Top Tank Temp--°F (°C) 230 (110)
Minimum Coolant Fill Rate--gal/min (L/min) 3.0 (9.5)
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)..... 509 (14)
Exhaust Temperature--°F (°C)..... 853 (456)
Max. Exhaust Restriction--in. H_2O (kPa) 30 (7.5)
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 ..... L18 Controller
Fuel Injection Pump ..... Delphi EUP
Governor Type ..... Electronic
Total Fuel Flow--lb/hr (kg/hr) 154 (70)
Fuel Consumption--lb/hr (kg/hr)..... 32 (15)
Max. Fuel Inlet Temperature--°F (°C) 185 (85)
Fuel Temp. Rise, Inlet to Return--°F (°C) 55.8 (31)
Max. Fuel Inlet Restriction--in. H_2O (kPa) 120 (30)
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) 44 (300)
Oil Pressure at Low Idle--psi (kPa) 36 (250)
Max. Oil Carryover in Blow-by--lb/hr (g/hr) 0.002 (1.0)
Max. Airflow in Blow-by--gal/min (l/min)..... 15 (55)
Max. Crankcase Pressure--in. H_2O (kPa)..... 2 (0.5)

Performance Data

Rated Power--hp (kW) 82 (62)
Rated Speed--rpm 2400
Breakaway Speed--rpm 2470
Fast Idle Speed--rpm 2600
Peak Torque--lb-ft (N•m)..... 221 (300)
Peak Torque Speed--rpm 1800
Low Idle Speed--rpm 900
BMEP--psi (kPa)..... 135 (934)
Friction Power @ Rated Speed--hp (kW) 20 (15)
Altitude Capability--ft (m) 10,000 (3050)
Ratio--Air : Fuel ..... 27 : 1
Smoke @ Rated Speed--Bosch No. 1.3
Noise--dB(A) @ 1 m ..... NA
Power Bulge--% 0
Power Bulge Speed--rpm ..... NA
Torque Rise--% 22

Engine Speed rpm	Power hp (kW)	Torque lb-ft (N•m)	BSFC lb/hp-hr (g/kWh)
2400	82 (62)	180 (245)	0.391 (238)
2200	82 (62)	197 (267)	0.383 (234)
2000	81 (60)	212 (287)	0.378 (231)
1800	76 (57)	221 (300)	0.375 (228)
1600	67 (50)	221 (300)	0.358 (218)
1400	54 (40)	202 (274)	0.343 (209)
1200	42 (31)	182 (247)	0.352 (214)
1000	30 (23)	158 (215)	0.365 (222)

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

* Revised Data
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