



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power

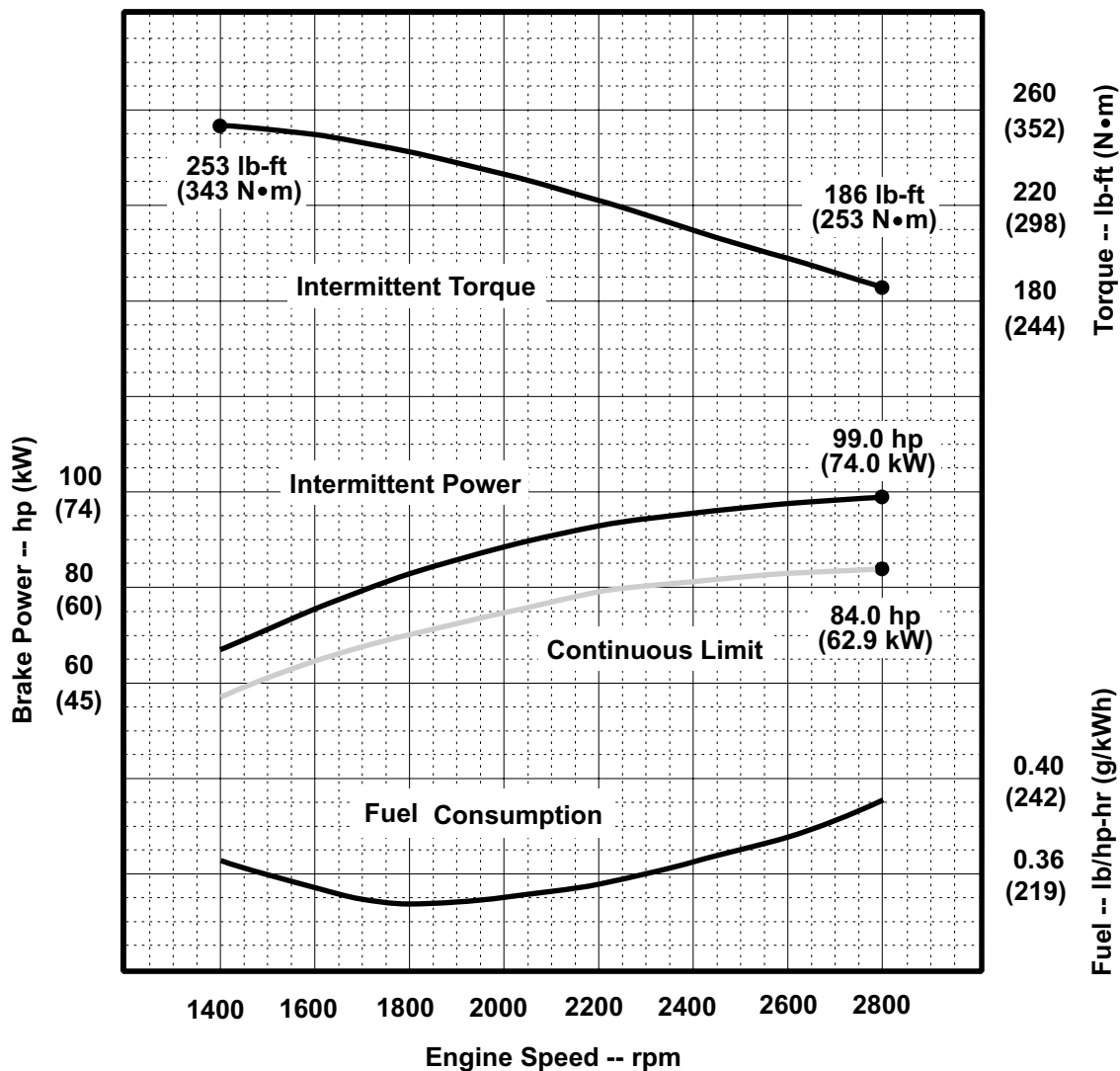
Application: Industrial
Intermittent / Continuous

PowerTech 3.0 L Engine

Model: 5030HF270

99.0 hp @ 2800 rpm

74.0 kW @ 2800 rpm



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-2* Emission Certifications:

Certified by:

CARB; EPA; EU
Ref: Engine Emission Label

Brian L. Carlson
4 Apr 03

* Revised Data

Curve: 5030HF27099I Sheet 1 of 2
April 2003

General Data

Model 5030HF270
 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..... Direct Injection
 Engine Type In-line, 4-Cycle
 Aspiration Turbocharged
 Charge Air Cooling System..... Air-to-Air
 Engine Crankcase Vent System Open
 Maximum Crankcase Pressure--in. H₂O (kPa) 2 (0.5)

Physical Data

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 and 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)
 Max. Allow. Static Bending Moment at Rear
 Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m).... 369 (500)
 Thrust Brng. Load Limit (Forward)--lb (N) [I] 1147 (5100)
 [C] 629 (2800)

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) 12 (3)
 Engine Air Flow--ft³/min (m³/min) [I]..... 283 (8.0)*
 [C] NA
 Intake Manifold Pressure--psi (kPa) [I]..... 20 (137)*
 [C] NA
 Compressor Discharge Temp.--°F (°C)[I] 317 (158)*
 [C] NA
 Max Pressure Drop Through
 Charge Air Cooler--in. H₂O (kPa) 2 (13)*
 Max. Temp. Out of Charge Air Cooler
 @ 77°F (25°C) Ambient Air--°F (°C) 140 (60)

[I] = Intermittent Data [C] = Continuous Data
 Unless noted, all other values pertain to both.

Engine Specification Data

Cooling System

Engine Heat Rejection--BTU/min (kW) [I] ..2103 (36.9)*
 [C]..... NA
 Air-to-Air Exchanger
 Heat Reject.--BTU/min (kW) [I] 801 (14.1)*
 [C]..... NA
 Coolant Flow--gal/min (L/min)..... 40 (150)*
 Thermostat Start to Open--°F (°C) 180 (82)
 Thermostat Fully Open--°F (°C)..... 201 (94)
 Engine Coolant Capacity--qt (L) 2.7 (2.6)*
 Recommended Pressure Cap--psi (kPa)..... 10 (69)
 Maximum Top Tank Temp--°F (°C) 221* (105*)
 Minimum Coolant Fill Rate--gal/min (L/min) 2.5 (9.5)
 Minimum Air-to-Boil Temperature--°F (°C)..... 117 (47)

Electrical System

12 Volt 24 Volt

Rec'md. Battery Capacity (CCA)--amp..... 750 NA
 Max. Allow. Start. Circuit Resist.--Ohm..... 0.0012 NA
 Starter Rolling Current
 At 32 °F (0 °C)--amp 290 NA
 At -22 °F (-30 °C)--amp 370 NA

Exhaust System

Exhaust Flow--ft³/min (m³/min) [I] 654 (18.5)*
 [C]..... NA
 Exhaust Temperature--°F (°C) [I] 825 (441)*
 [C]..... NA
 Max. Allowable Back Pressure--in. H₂O (kPa) 30 (7.5)

Fuel System

Fuel Injection Pump Unit Pump
 Governor Regulation..... 7-10 %
 Governor Type..... Mechanical
 Total Fuel Flow--lb/hr (kg/hr) [I]..... 154 (70)
 Fuel Consumption--lb/hr (kg/hr) [I]..... 39 (17.6)*
 [C]..... NA
 Maximum Fuel Transfer Pump Suction--ft (m) fuel.... 10 (3)
 Max. Fuel Inlet Temperature--°F (°C) 158 (70)
 Fuel Filter Micron Size @ 98% Efficiency..... 5

Lubrication System

Oil Pressure at Rated Speed--psi (kPa) 52 (360)*
 Oil Pressure at Low Idle--psi (kPa) 22 (150)
 In Pan Oil Temperature--°F (°C) 257 (125)
 Oil Pan Capacity, High--qt (L) 11.0 (10.4)
 Oil Pan Capacity, Low--qt (L) 10.0 (9.5)
 Total Engine Oil Capacity with Filters--qt (L)..... 11.8 (11.2)
 Engine Angularity Limits, Any Direction--Degrees [I]..... 40
 [C]..... 30

Performance Data

Rated Power--hp (kW) [I]..... 99 (74.0)
 [C]..... 84 (62.9)
 Rated Speed--rpm 2800
 Peak Torque--lb-ft (N•m) [I]..... 253 (343)*
 [C]..... 215 (291)*
 Peak Torque Speed--rpm..... 1400*
 Low Idle Speed--rpm 900
 BMEP--psi (kPa) [I]..... 151 (1040)*
 [C] 128 (884)*
 Friction Power @ Rated Speed--hp (kW) 28 (21)
 Altitude Capability -- ft (m) 5000 (1524)
 Ratio--Air : Fuel [I]..... 31.6 : 1*
 [C] NA
 Smoke @ Rated Speed--Bosch No [I]..... 1.1*
 [C]..... NA
 Noise--dB(A) @ 1 m [I]..... 89.0*
 [C]..... NA

Engine Speed rpm	Contin.* Limit hp(kW)	Intermit.* Power hp(kW)	Intermit.* Torque lb-ft (N•m)	BSFC* lb/hp-hr (g/kWh)
2800	84 (62.9)	99 (74.0)	186 (253)	0.391 (238)
2600	83 (62.1)	98 (73.1)	198 (268)	0.376 (229)
2400	81 (60.6)	96 (71.3)	209 (284)	0.364 (222)
2200	79 (58.8)	93 (69.2)	222 (300)	0.355 (216)
2000	75 (55.8)	88 (65.7)	231 (314)	0.350 (213)
1800	70 (52.5)	83 (61.7)	242 (328)	0.348 (212)
1600	65 (48.2)	76 (56.7)	250 (338)	0.355 (216)
1400	57 (42.7)	67 (50.3)	253 (343)	0.365 (223)
1200	40 (29.6)	47 (34.8)	205 (277)	0.365 (222)
1000	27 (20.4)	32 (24.1)	169 (230)	0.377 (230)

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

* Revised Data
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 April 2003