



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Industrial - Heavy Duty/Continuous
7% Timed Power Bulge

PowerTech 8.1 L Engine

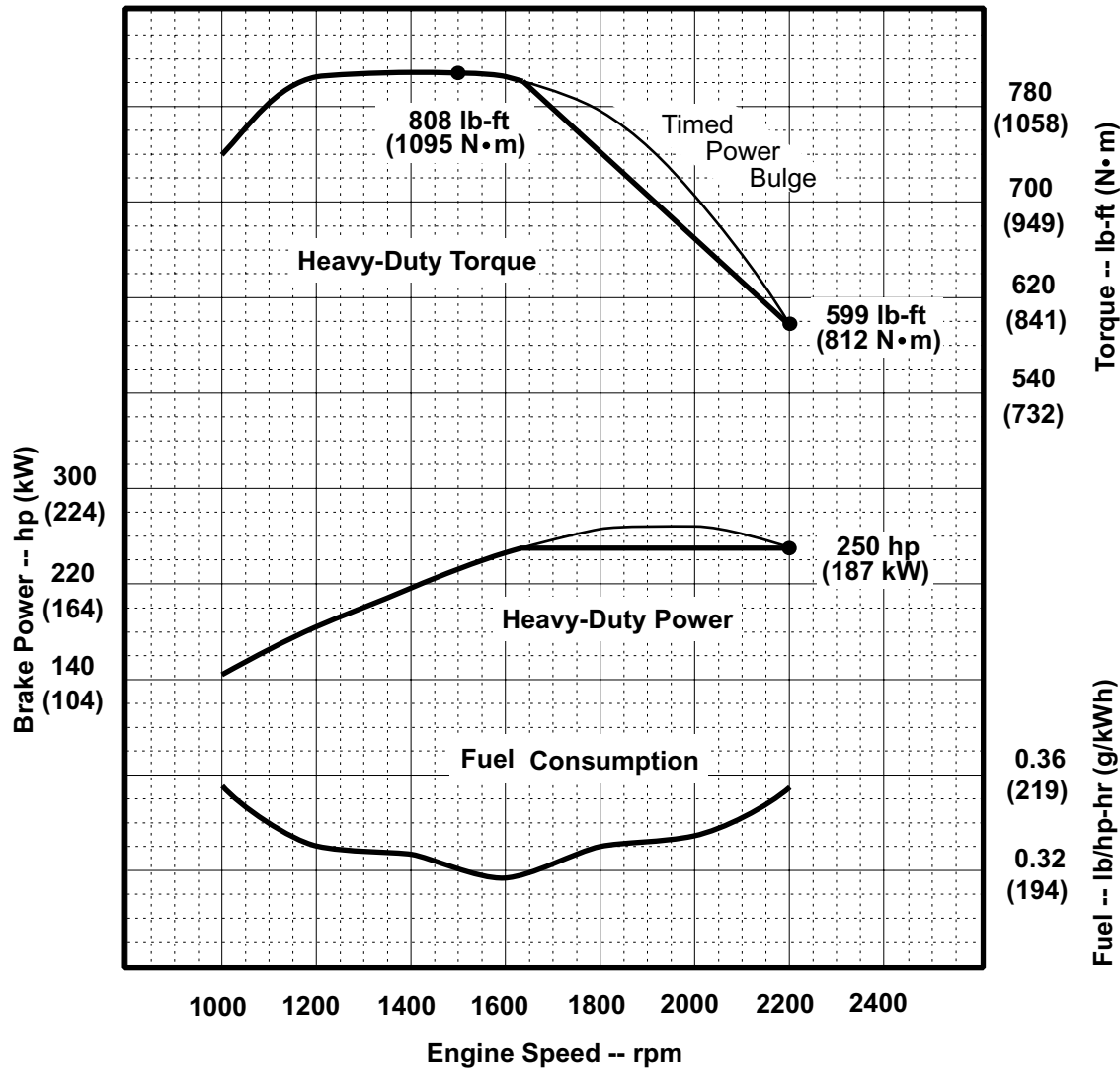
Model: **6081HF070**

JD Electronic Control

250 hp @ 2200 rpm

187 kW @ 2200 rpm

[See Option Code Tables]



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
 22 July 04

* Revised Data

Curve: 6081HF070250HD Sheet 1 of 2
 July 2004

Common Specifications:

General Data

Model	6081HF070
Number of Cylinders	6
Bore and Stroke--in. (mm).....	4.56 X 5.06 (116 X 129)
Displacement--in. ³ (L).....	496 (8.1)
Compression Ratio	16.5:1
Valves per Cylinder--Intake/Exhaust.....	1 / 1
Firing Order.....	1-5-3-6-2-4
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. H ₂ O (kPa)	2 (0.5)

Physical Data

Length--in. (mm)	47.6 (1210)
Width--in. (mm)	23.5 (599)
Height--in. (mm)	45.4 (1152)
Weight, dry--lb (kg)	1711 (776)
(Includes flywheel housing, flywheel & electrics)	
Center of Gravity Location	
From Rear Face of Block (X-axis)--in. (mm) ..	19.2 (488)
Right of Crankshaft (Y-axis)--in. (mm)	-0.3 (-8)
Above Crankshaft (Z-axis)--in. (mm).....	5.7 (145)
Max. Allow. Static Bending Moment at Rear Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m).....	600 (814)
Thrust Bearing Load Limit (Forward)--lb(N)	
Intermittent	2925 (13010)
Continuous	1950 (8673)

Air System

Maximum Allowable Temp Rise--Ambient Air to	
Engine Inlet--°F (°C)	15 (8)
Maximum Air Intake Restriction	
Dirty Air Cleaner--in. H ₂ O (kPa).....	25 (6.25)
Clean Air Cleaner--in. H ₂ O (kPa).....	12 (3)
Engine Air Flow--ft ³ /min (m ³ /min)	724 (20.5)
Intake Manifold Pressure--psi (kPa).....	25 (175)
Compressor Discharge Temp.--°F (°C).....	356 (180)
Max. Press. Drop Through	
Charge Air Cooler--in.H ₂ O (kPa)	52 (13)
Max. Temp Out of Charge Air Cooler	
@ 77°F (25°C) Ambient--°F (°C).....	140 (60)

Engine Specification Data

Cooling System

Engine Heat Rejection--BTU/min (kW)	4269 (75.0)
Air/Air Exch. Heat Reject.--Btu/min (kW)	2556 (44.9)
Coolant Flow--gal/min (L/min).....	87 (330)
Thermostat Start to Open--°F (°C).....	180 (82)
Thermostat Fully Open--°F (°C).....	201 (94)
Engine Coolant Capacity--qt (L)	15 (14)
Minimum Pressure Cap--psi (kPa).....	10 (69)
Maximum Top Tank Temp--°F (°C)	221 (105)
Minimum Coolant Fill Rate--gal/min (L/min)	3 (11)
Minimum Air-to-Boil Temperature--°F (°C).....	117 (47)

Electrical System

12 Volt 24 Volt

Min. Battery Capacity (CCA)--amp	800.....	570
Max. Allow. Starting Circuit Resist.--Ohm 0.0012.....	0.002	
Starter Rolling Current		
At 32 °F (0 °C)--amp.....	950.....	600
At -22 °F (-30 °C)--amp	1300.....	700

Exhaust System

Exhaust Flow--ft ³ /min (m ³ /min).....	1483 (42.0)
Exhaust Temperature--°F (°C).....	698 (370)
Max. Allowable Back Pressure--in. H ₂ O (kPa)	30 (7.5)

Fuel System

Fuel Injection Pump	Denso ECD-U2
Governor Type.....	Electronic
Total Fuel Flow--lb/hr (kg/hr)	772 (350)
Fuel Consumption--lb/hr (kg/hr).....	90 (40.7)
Max. Fuel Transfer Pump Suction--ft (m) fuel.....	10 (3)
Max. Fuel Inlet Temperature--°F (°C)	149 (65)
Fuel Filter Micron Size @ 98% Efficiency.....	2

Lubrication System

Oil Pressure at Rated Speed--psi (kPa)	50 (345)
Oil Pressure at Low Idle--psi (kPa)	30 (210)
In-Pan Oil Temperature--°F (°C)	239 (115)

Performance Data

Rated Power--hp (kW)	250 (187)
Rated Speed--rpm	2200
Breakaway Speed--rpm	2250
Fast Idle Speed--rpm	2380
Peak Torque--lb-ft (N•m).....	808 (1095)
Peak Torque Speed--rpm	1500
Low Idle Speed--rpm	800
BMEP--psi (kPa)	183 (1260)
Friction Power @ Rated Speed--hp (kW)	40 (30)
Altitude Capability--ft (m)	10,000 (3050)
Ratio--Air : Fuel	34.0:1
Smoke @ Rated Speed--Bosch No.	< 2
Noise--dB(A) @ 1 m	N/A

Engine Speed rpm	Heavy-Duty		BSFC lb/hp-hr (g/kWh)
	Power hp(kW)	Torque lb-ft (N•m)	
2200	250 (187)	599 (812)	0.355 (216)
2000	250 (187)	659 (893)	0.330 (201)
1800	250 (187)	732 (992)	0.322 (196)
1700	250 (187)	774 (1050)	0.320 (195)
1600	245 (183)	804 (1090)	0.318 (194)
1500	231 (172)	808 (1095)	0.322 (196)
1400	215 (161)	808 (1095)	0.327 (199)
1200	184 (137)	804 (1090)	0.330 (201)
1000	141 (105)	740 (1003)	0.356 (217)

Engine Speed rpm	Timed Power Bulge		BSFC lb/hp-hr (g/kWh)
	Power hp(kW)	Torque lb-ft (N•m)	
2200	250 (187)	599 (812)	0.356 (216)
2000	268 (200)	704 (955)	0.333 (203)
1800	265 (198)	774 (1049)	0.330 (201)
1700	257 (192)	794 (1076)	0.320 (195)
1600	245 (183)	804 (1090)	0.318 (194)

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

* Revised Data
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