

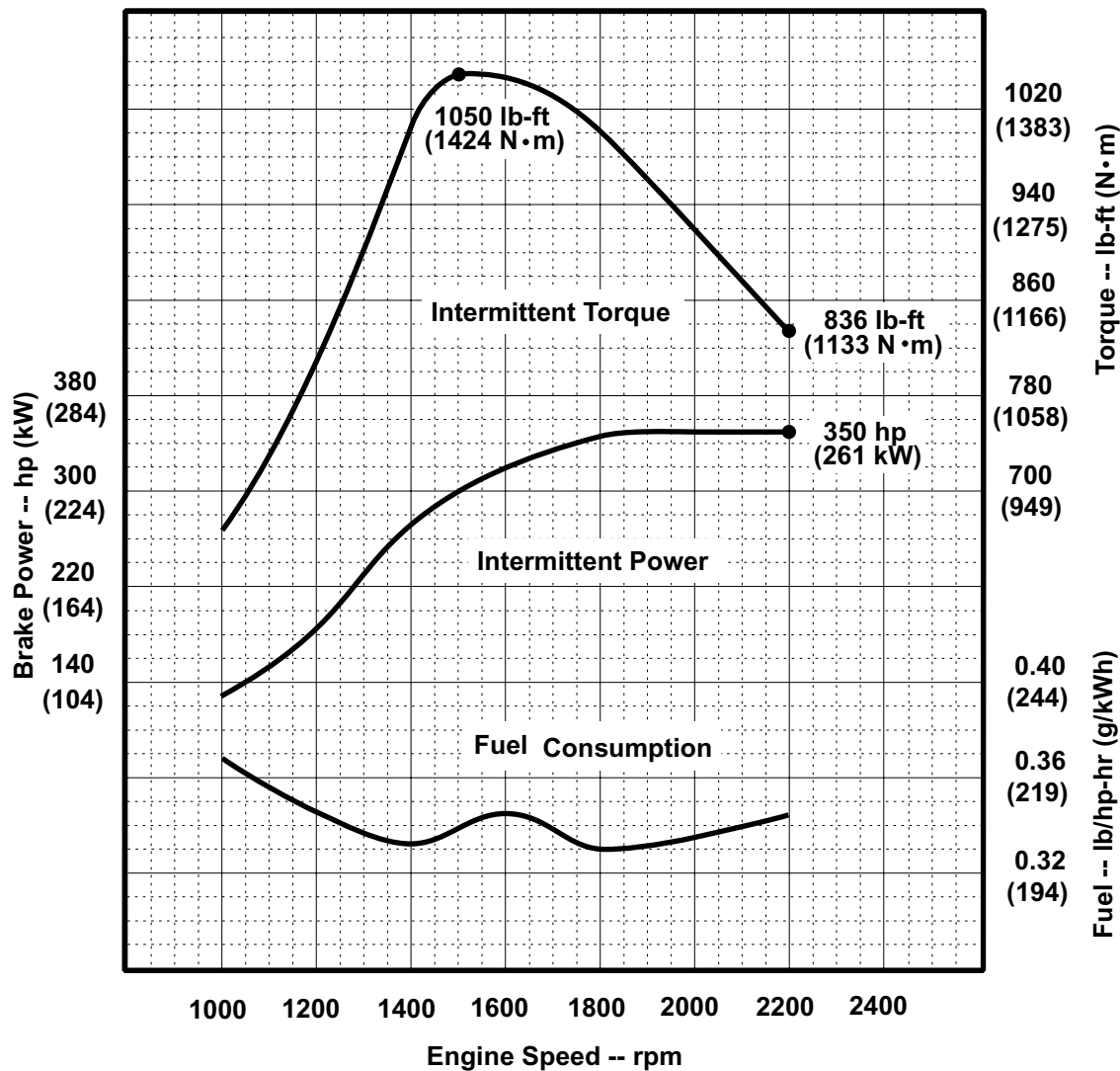


JOHN DEERE

### ENGINE PERFORMANCE CURVE

Rating: Gross Power  
Application: Industrial - Intermittent

**PowerTech 8.1 L Engine**  
Model: **6081HF070**  
**JD Electronic Control**  
**350 hp @ 2200 rpm**  
**261 kW @ 2200 rpm**  
[See Option Code Tables]



Air Intake Restriction ..... 12 in.H<sub>2</sub>O (3 kPa)  
Exhaust Back Pressure ..... 30 in.H<sub>2</sub>O (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

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## 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. <sup>3</sup> (L).....	496 (8.1)
Compression Ratio .....	15.7:1
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 <sub>2</sub> 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 <sub>2</sub> O (kPa).....	25 (6.25)
Clean Air Cleaner--in. H <sub>2</sub> O (kPa).....	12 (3)
Engine Air Flow--ft <sup>3</sup> /min (m <sup>3</sup> /min) .....	858 (24.3)
Intake Manifold Pressure--psi (kPa).....	33 (226)
Compressor Discharge Temp.--°F (°C).....	401 (205)
Max. Press. Drop Through	
Charge Air Cooler--in.H <sub>2</sub> 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) .....	5749 (101)
Air/Air Exch. Heat Reject.--Btu/min (kW) .....	3814 (67)
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.....	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 <sup>3</sup> /min (m <sup>3</sup> /min).....	1893 (54)
Exhaust Temperature--°F (°C).....	772 (411)
Max. Allowable Back Pressure--in. H <sub>2</sub> 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).....	121 (55)
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) .....	350 (261)
Rated Speed--rpm .....	2200
Breakaway Speed--rpm .....	2250
Fast Idle Speed--rpm .....	2380
Peak Torque--lb-ft (N•m).....	1045 (1417)
Peak Torque Speed--rpm .....	1500
Low Idle Speed--rpm .....	800
BMEP--psi (kPa) .....	255 (1761)
Friction Power @ Rated Speed--hp (kW) .....	40 (30)
Altitude Capability--ft (m) .....	9400 (2865)
Ratio--Air : Fuel .....	30.3:1
Smoke @ Rated Speed--Bosch No. ....	< 2
Noise--dB(A) @ 1 m .....	N/A

Engine Speed rpm	Intermittent		BSFC lb/hp-hr (g/kWh)
	Power hp(kW)	Torque lb-ft (N•m)	
2200	350 (261)	836 (1133)	0.345 (210)
2000	350 (261)	920 (1248)	0.335 (204)
1800	345 (257)	1004 (1361)	0.330 (201)
1700	334 (249)	1029 (1395)	0.336 (205)
1600	318 (237)	1045 (1417)	0.345 (210)
1500	300 (224)	1050 (1424)	0.336 (205)
1400	270 (201)	1011 (1371)	0.332 (202)
1200	186 (139)	811 (1100)	0.346 (211)
1000	127 (95)	666 (903)	0.369 (225)

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

\* Revised Data  
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