



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Industrial - Intermittent
 Power Bulge - 0%
 Torque Rise - 20%

PowerTech Plus™ 9.0 L Engine

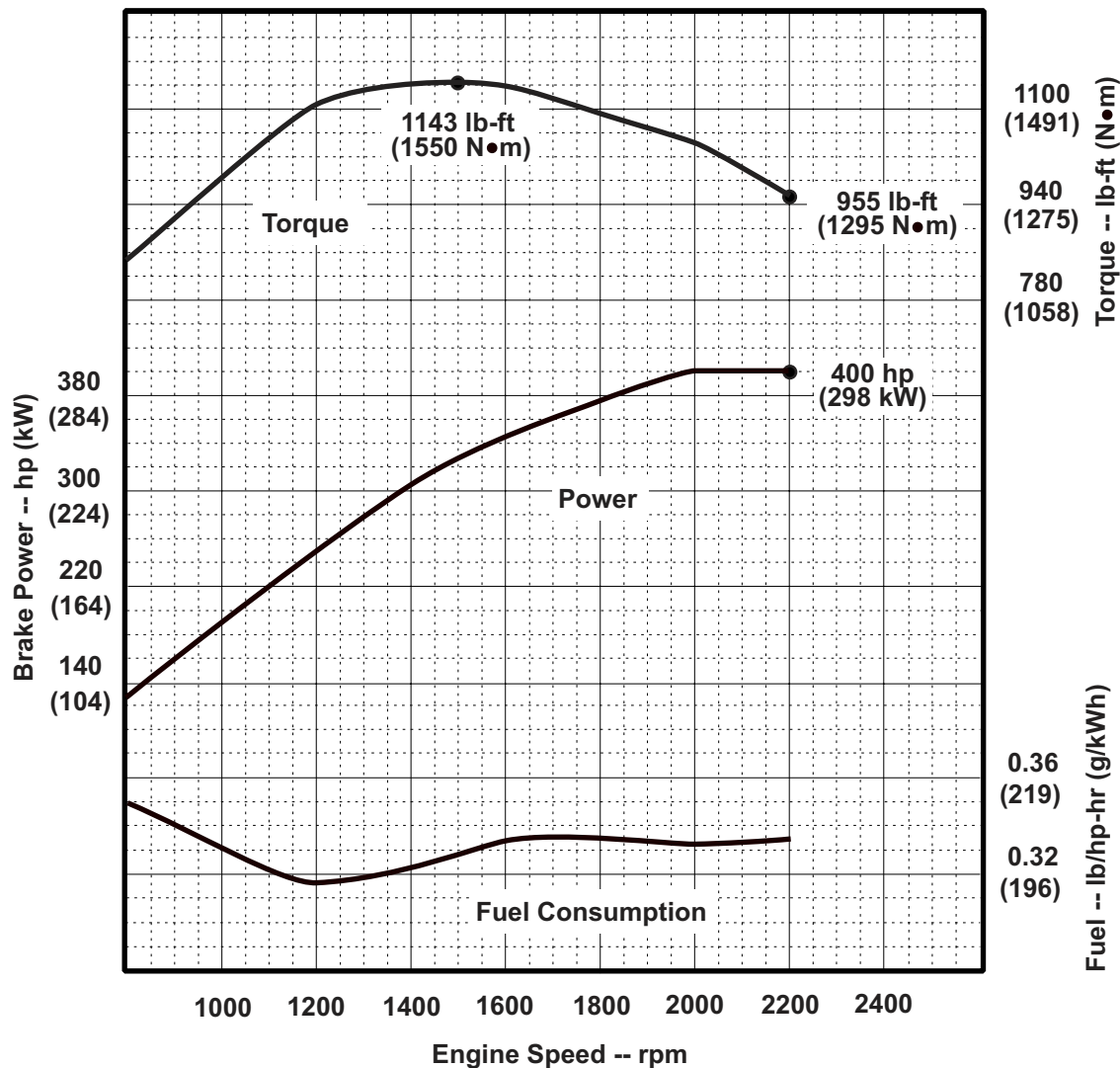
Model: **6090HF485**

JD Electronic Control

400 hp @ 2200 rpm

298 kW @ 2200 rpm

[See Option Code Table]



STANDARD CONDITIONS*

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:

Restricted Rating . . . Approval from Application Engineering required.

Tier-3 Emission Certifications:	Certified by:
CARB; EPA; EU Ref: Engine Emission Label	Brian L. Carlson 15 July 2005

* Revised Data
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Engine Installation Criteria

General Data

Model	6090HF485
Number of Cylinders	6
Bore and Stroke--in. (mm).....	4.661 (118.4) x 5.354 (136.0)
Displacement--in. ³ (L)	548 (9)
Compression Ratio	16.0 : 1
Valves per Cylinder--Intake/Exhaust	2 / 2
Firing Order.....	1-5-3-6-2-4
Combustion System.....	HPCR
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)	47.6 (1208)
Width--in. (mm)	24.8 (630)
Height--in. (mm)	43.8 (1113)
Weight, dry--lb (kg)	1986 (901)
(Includes flywheel housing, flywheel & electrics)	
Center of Gravity Location	
From Rear Face of Block(X-axis)--in.(mm)	17.1 (434.4)
Right of Crankshaft (Y-axis)--in. (mm).....	0.1 (2.2)
Above Crankshaft (Z-axis)--in. (mm).....	7.9 (201.4)
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) <u>Forward</u> <u>Rearward</u>	
Intermittent.....	2923 (13,000) ... 1349 (6000)
Continuous	1933 (8600)..... 899 (4000)
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.....	1100	750
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 ₂ O (kPa).....	25 (6.25)
Clean Air Cleaner--in. H ₂ O (kPa).....	15 (3.75)
Engine Air Flow--ft ³ /min (m ³ /min)	825 (23.37)
Air Cleaner Efficiency--%	99.9

Lubrication System

Oil Pressure at Rated Speed--psi (kPa)	42 (290)
Oil Pressure at Low Idle--psi (kPa)	25 (170)
Max. Oil Carryover in Blow-by--lb/hr (g/hr)	0.007 (3)
Max. Airflow in Blow-by--gal/min (l/min).....	40 (150)
Max. Crankcase Pressure--in. H ₂ O (kPa).....	2 (0.5)

Performance Data

Rated Power--hp (kW)	400 (298)
Rated Speed--rpm	2200
Breakaway Speed--rpm	2270
Fast Idle Speed--rpm	2420
Peak Torque--lb-ft (N•m).....	1143 (1550)
Peak Torque Speed--rpm	1500
Low Idle Speed--rpm	800
BMEP--psi (kPa)	262 (1806)
Friction Power @ Rated Speed--hp (kW)	50 (37)
Altitude Capability--ft (m)	10,000 (3000)*
Ratio--Air : Fuel	25.0 : 1
Smoke @ Rated Speed--Bosch No.	0.42
Noise--dB(A) @ 1 m	93.7*
Power Bulge--%	0
Power Bulge Speed--rpm	NA
Torque Rise--%	20

Engine Speed rpm	Power hp (kW)	Torque lb-ft (N•m)	BSFC lb/hp-hr (g/kWh)
2200	400 (298)	955 (1295)	0.336 (205)
2000	400 (298)	1048 (1421)	0.333 (203)
1800	375 (280)	1095 (1485)	0.336 (204)
1600	347 (259)	1140 (1546)	0.334 (204)
1500	326 (243)	1143 (1550)	0.329 (200)
1400	304 (227)	1143 (1550)	0.322 (196)
1200	253 (189)	1106 (1500)	0.318 (194)
1000	186 (139)	981 (1330)	0.331 (202)
800	129 (96)	848 (1150)	0.350 (213)

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

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