



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Industrial - Continuous
 Power Bulge - 9%
 Torque Rise - 30%

PowerTech Plus™ 6.8 L Engine

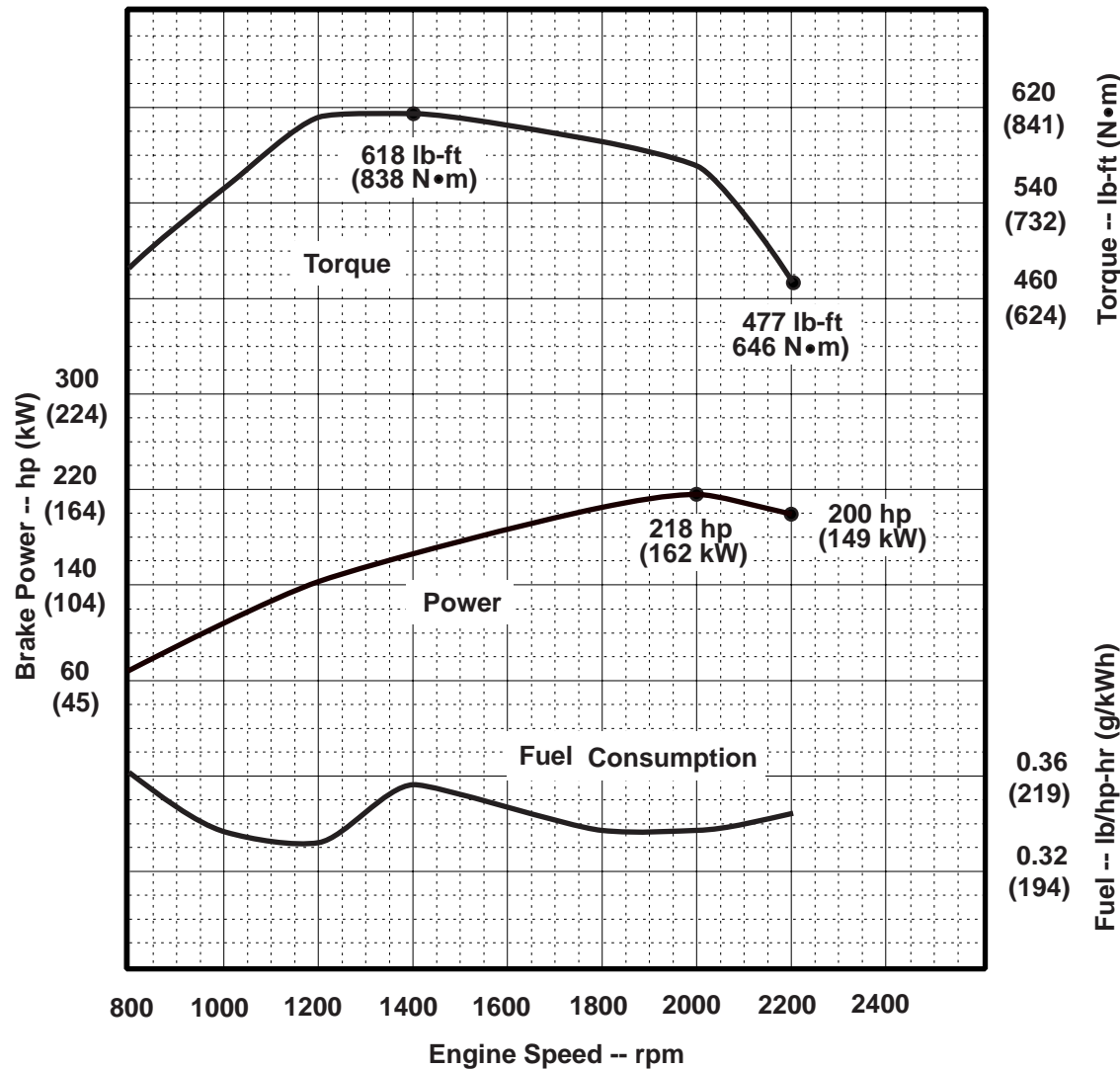
Model: **6068HF485**

JD Electronic Control

200 hp @ 2200 rpm

149 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:

Tier-3 Emission Certifications:

Certified by:

CARB; EPA; EU
 Ref: Engine Emission Label

Brian L. Carlson
 18 FEB05

* Revised Data

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Engine Installation Criteria

General Data

Model 6068HF485
 Number of Cylinders 6
 Bore and Stroke--in. (mm)..... 4.19 (106) x 5.00 (127)
 Displacement--in.³ (L).....415 (6.8)
 Compression Ratio 17.0 : 1
 Valves per Cylinder--Intake/Exhaust..... 2 / 2
 Firing Order..... 1-5-3-6-2-4
 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)44.1 (1120)
 Width--in. (mm)24.1 (611)
 Height--in. (mm)41.7 (1058)
 Weight, with oil*--lb (kg)1495 (678)
 (Includes flywheel housing, flywheel & electrics)
 Center of Gravity Location
 From Rear Face of Block(X-axis)--in.(mm). 15.5 (395)*
 Right of Crankshaft (Y-axis)--in. (mm).....-0.1 (-2.24)*
 Above Crankshaft (Z-axis)--in. (mm) 7.4 (189)
 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) Forward Rearward
 Intermittent.....899 (4000).....450 (2000)
 Continuous495 (2200).....225 (1000)
 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..... 800 570
 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)248 (120)

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)..... 15 (3.75)
 Engine Air Flow--ft³/min (m³/min)462 (13.07)
 Air Cleaner Efficiency--% 99.9

Charge Air Cooling System

Air/Air Exch'r. Heat Rej.--Btu/min(kW) 1755 (31)
 Compressor Discharge Temp.(Rated)
 @ 77 °F (25°C) Ambient Air--°F (°C).....347 (175)
 Compressor Discharge Temp.(Max.)--°F (°C)
 @ any Ambient--°F (°C) 374 (190)
 Max. Pressure Drop, thru CAC--in.H₂O (kPa) 64 (16)
 Min. Pressure Drop, thru CAC--in.H₂O (kPa) 32 (8)
 Intake Manifold Pressure--psi (kPa) 25* (171.0*)
 Max CAC Out Temp @ 77°F (25°C) Amb.--°F (°C) 126(52)
 Min CAC Out Temp @ 77°F (25°C) Amb.--°F (°C). 109(43)
 Max CAC Out Temp @ any Ambient--°F (°C) 190 (88)

Cooling System

Engine Heat Rejection--BTU/min (kW)4772 (84)
 Coolant Flow--gal/min (L/min)..... 85 (321)
 Thermostat Start to Open--°F (°C)..... 180 (82)
 Thermostat Fully Open--°F (°C)..... 203 (95)
 Engine Coolant Capacity--qt (L) 13 (11.9)
 Minimum Pressure Cap--psi (kPa)..... 14.5 (100)
 Maximum Top Tank Temp--°F (°C) 230 (110)
 Minimum Coolant Fill Rate--gal/min (L/min) 3 (11)
 Minimum Air-to-Boil Temperature--°F (°C)..... 117 (47)
 Minimum Pump Inlet Pressure--psi (kPa) 4.4 (30)

Exhaust System

Exhaust Flow--ft³/min (m³/min)..... 932 (26)
 Exhaust Temperature--°F (°C).....669 (354)
 Max. Allowable Back Pressure--in. H₂O (kPa) 40 (10)
 Minimum Exhaust Restriction---in. H₂O (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 L14 Controller
 Fuel System Description..... HPCR*
 Fuel Injection Pump Denso HP3
 Governor Type.....Electronic
 Total Fuel Flow--lb/hr (kg/hr) 160 (72.7)
 Fuel Consumption--lb/hr (kg/hr)..... 69 (31)
 Max. Fuel Inlet Temperature--°F (°C) 176 (80)
 Fuel Temp. Rise, Inlet to Return--°F (°C) 69.1 (38)
 Max. Fuel Inlet Restriction--in. H₂O (kPa) 80 (20)
 Max. Fuel Inlet Pressure--in. H₂O (kPa) NA (NA)
 Max. Fuel Return Pressure--in. H₂O (kPa) 80 (20)

Lubrication System

Oil Pressure at Rated Speed--psi (kPa) 57 (392)
 Oil Pressure at Low Idle--psi (kPa) 15 (105)
 Max. Oil Carryover in Blow-by--lb/hr (g/hr) 0.002 (1.0)
 Max. Airflow in Blow-by--gal/min (l/min)..... 22 (85)
 Max. Crankcase Pressure--in. H₂O (kPa)..... 2 (0.5)

Performance Data

Rated Power--hp (kW) 200 (149)
 Rated Speed--rpm 2200
 Breakaway Speed--rpm 2270
 Fast Idle Speed--rpm 2400
 Peak Torque--lb-ft (N•m)..... 618 (838)
 Peak Torque Speed--rpm 1400
 Low Idle Speed--rpm 800
 BMEP--psi (kPa) 173 (1194)
 Friction Power @ Rated Speed--hp (kW) 36 (27)
 Altitude Capability--ft (m) 10,000 (3000)*
 Ratio--Air : Fuel 28 : 1
 Smoke @ Rated Speed--Bosch No.<1
 Noise--dB(A) @ 1 m 92.1
 Power Bulge--% 9
 Power Bulge Speed--rpm 1800
 Torque Rise--% 30

| Engine Speed rpm | Power hp (kW) | Torque lb-ft (N•m) | BSFC lb/hp-hr (g/kWh) |
|------------------|---------------|--------------------|-----------------------|
| 2200 | 200 (149) | 477 (646) | 0.345 (210) |
| 2000 | 218 (162) | 572 (775) | 0.338 (206) |
| 1800 | 203 (151) | 591 (802) | 0.338 (206) |
| 1600 | 184 (137) | 604 (818) | 0.348 (212) |
| 1400 | 165 (123) | 618 (838) | 0.357 (217) |
| 1200 | 141 (105) | 618 (838) | 0.331 (202) |
| 1000 | 105 (79) | 553 (750) | 0.338 (206) |
| 800 | 74 (55) | 487 (660) | 0.362 (220) |

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

* Revised Data
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