



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: M2 - 300 hp (224 kW) @ 2200 rpm

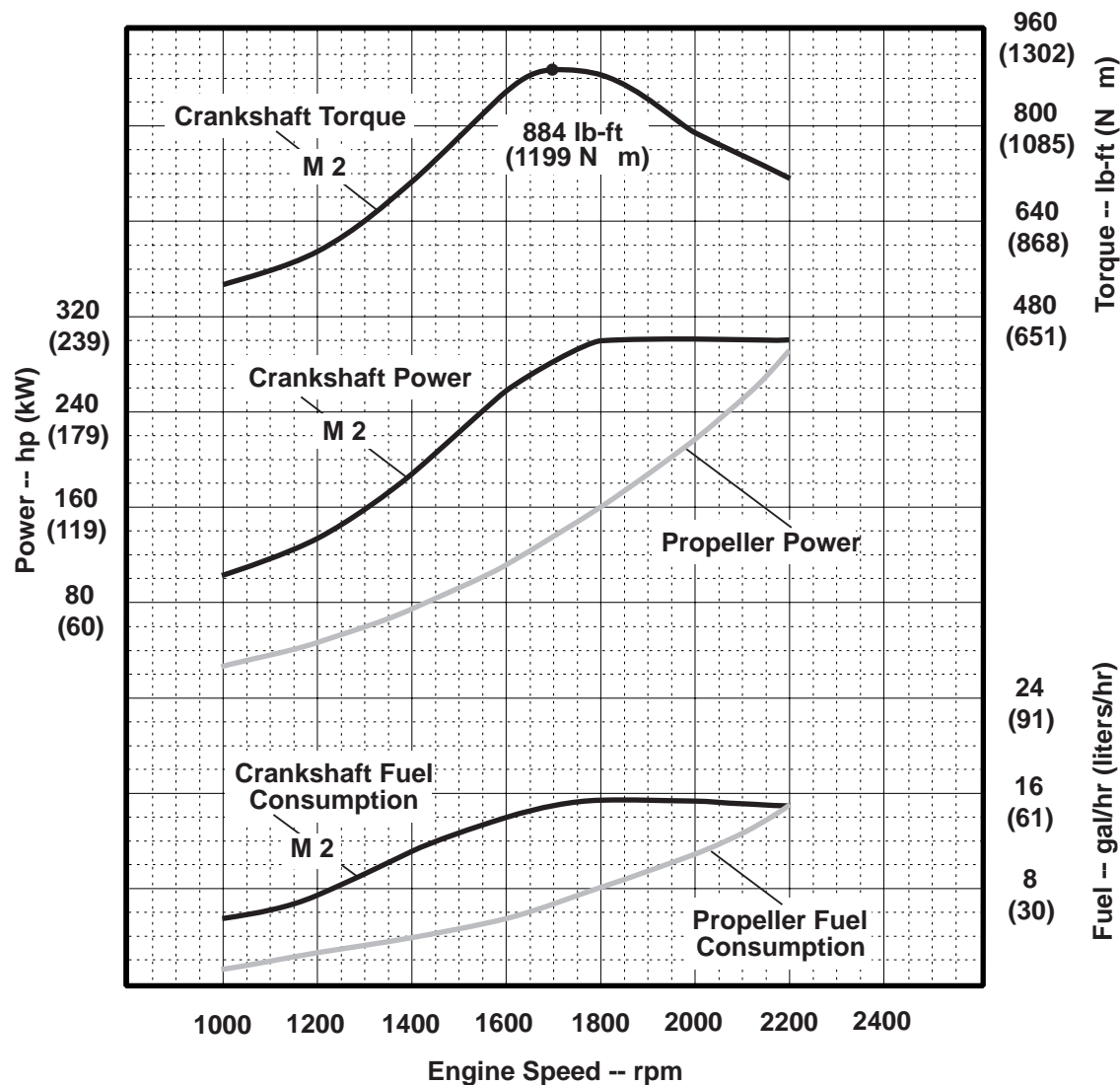
Application: Marine

**PowerTech 8.1 L Engine**

Model: **6081AFM01**

[Option 1601 / 1602 / 1607 / 1608]

(Propeller Shaft Power Based on 97% Marine Gear Efficiency)



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:

Marine Emissions:

Certified by:

**IMO COMPLIANT**

Ref: Engine Emission Label

*Neal Seeger*  
 21 May 2001

\* Revised Data

Curve: 6081AFM01300M2..... Sheet 1 of 2  
 May 2001

## Common Specifications:

### General Data

Model ..... 6081AFM01  
 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.....Engine Coolant-to-Air

### Physical Data

(Includes Engine, Flywheel Housing, Flywheel & Electrics)  
 Length--in.(mm) .....51.2\* (1300)\*  
 Width--in.(mm) .....31.0\* (787)\*  
 Height--in.(mm) .....40.2\* (1022)\*  
 Weight, dry--lb (kg).....1876 (853)  
 Center of Gravity Location  
 From Rear Face of Block (X-axis)--in.(mm) ....15.7 (399)  
 Right of Crankshaft (Y-axis)--in.(mm)..... -1.1 (-29)  
 Above Crankshaft (Z-axis)--in.(mm).....7.4 (189)  
 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) ....1950 (8673)  
 Maximum Installed Angle  
 Front Up--degrees..... 12  
 Front Down--degrees..... 0

### Fuel System

Fuel Injection Pump ..... Bosch P-7100  
 Governor Type .....John Deere Electronic  
 Governor Regulation..... Selectable  
 Fuel Consumption--gal/hr (L/hr).....15.0 (56.6)  
 Total Fuel Flow--gal/hr (L/hr) .....79 (300)  
 Maximum Leak Off Line Pressure--psi (kPa) .....4 (28)  
 Max. Fuel Transfer Pump Suction Lift--ft (m) fuel .....10 (3)  
 Maximum Fuel Height Above Transfer Pump--ft (m) 9 (2.7)  
 Fuel Filter Size @98% Efficiency--Micron..... 8

<sup>1</sup> According to ISO 3046:

Fuel Inlet Temperature = 86 °F (30 °C).

<sup>2</sup> According to SAE J1995:

Fuel Inlet Temperature = 104 °F (40 °C).

## Engine Specification Data

### Lubrication System

Oil Pressure @ Rated Speed--psi (kPa)..... 50 (345)  
 Oil Pressure @ Low Idle--psi (kPa) ..... 25 (170)  
 Oil Temperature in Pan--°F (°C) ..... 239 (115)  
 Oil Pan Capacity, High--qt (L) ..... 32.8 (31)  
 Oil Pan Capacity, Low--qt (L) ..... 31.7 (30)  
 Total Oil Capacity with Filters--qt (L) ..... 33.8 (32)  
 Operational Angularity Limit - Any--degrees ..... 30  
 Maximum Crankshaft Pressure--in. H<sub>2</sub>O (kPa)..... 2 (0.5)  
 Engine Crankcase Vent System ..... Open

### Exhaust System

Exhaust Temperature--°F (°C) ..... 840 (449)  
 Exhaust Gas Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ..... 2100 (59.5)  
 Maximum Back Pressure--in. H<sub>2</sub>O (kPa) ..... 30 (7.5)  
 Maximum Weight on Turbocharger--lb (kg) ..... 55 (25)  
 Minimum Exhaust Outlet Size--in.(mm)  
 Dry ..... 5.0 (125)  
 Wet..... 5.5 (140)

### Cooling System

Engine Heat Rejection--BTU/min (kW) ..... 10,125 (178)  
 Engine Radiated Heat--BTU/min (kW)..... 1630 (28.7)  
 Coolant Flow--gal/min (L/min)..... 70 (265)  
 Minimum Coolant Fill Rate--gal/min (L/min) ..... 3 (11)  
 Thermostat Start to Open--°F (°C) ..... 176 (80)  
 Thermostat Fully Open--°F (°C)..... 201 (94)  
 Maximum Top Tank Temperature--°F (°C) ..... 212 (100)  
 Minimum Water-to-Boil Temperature--°F (°C)..... 90 (32)  
 Recommended Pressure Cap--psi (kPa) ..... 10 (69)  
 Max. Water Pump Inlet Restriction--in. H<sub>2</sub>O (kPa)... 40 (10)  
 Max. Pressure Drop Across Keel Cooler--psi (kPa) .. 6 (41)  
 Engine Coolant Capacity--qt (L) ..... 26 (25)

### Sea Water System

Sea Water Pump Flow--gal/min (L/min)..... 52\* (199\*)  
 Maximum Inlet Restriction--in. H<sub>2</sub>O (kPa)..... 120 (30)  
 Maximum Outlet Pressure--psi (kPa) ..... 24 (165)  
 Maximum Suction Lift--ft (m)..... 10 (3)

### Air System

Minimum Ventilation Area--in<sup>2</sup> (m<sup>2</sup>) ..... 189 (0.122)  
 Maximum Allowable Air Temperature Rise  
 Ambient to Engine Inlet--°F (°C) ..... 31 (17)  
 Engine Air Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ..... 700 (19.7)  
 Intake Manifold Pressure--psi (kPa) ..... 22 (151)  
 Maximum Air Intake Restriction  
 Dirty Air Cleaner--in. H<sub>2</sub>O (kPa) ..... 25 (6.3)  
 Clean Air Cleaner--in. H<sub>2</sub>O (kPa) ..... 12 (3.0)

### Electrical System

12 Volt 24 Volt

Recommended Battery Capacity  
 Cold Cranking Amps @ 32 °F (0 °C)--amp...800 ..... 570  
 Max. Starting Circuit Resistance--Ohms.....0.0012 .. 0.002  
 Starter Rolling Current @ 32 °F (0 °C)--amp .....950 ..... 600

### Electronic Engine Controls

Performance Connector Jumper Wires:  
 (0 = Open; 1 = Closed, or Jumper Wire Installed)  
 300 hp (224 kW) @ 2200 rpm:  
 Jumper Wires -- A = 0..... B = 1..... C = 0  
 Governor Droop:  
 Jumper Wire E = 0 (Droop); E = 1 (Isochronous)  
 Jumper Wire D is Not Used.

### Performance Data

Rated Power (Metric)--PS..... 304  
 Rated Power (fuel @ 86 °F (30 °C)--hp (kW) <sup>1</sup> ... 300 (224)  
 Rated Power (fuel @ 104 °F (40 °C)--hp (kW) <sup>2</sup> . 295 (220)  
 Rated Speed--rpm ..... 2200  
 Rated Torque--lb-ft (N•m)..... 717 (972)  
 Peak Torque--lb-ft (N•m)..... 884 (1199)  
 Peak Torque Speed--rpm..... 1700  
 Torque Rise--percent ..... 23  
 Low Idle Speed--rpm ..... 700  
 BMEP--psi (kPa) ..... 392 (1508)

### Fuel Consumption for Typical Propeller Curve

Engine rpm	Crank Power hp (kW)	Crank Torque lb-ft (N•m)	Prop Power hp (kW)	Prop Fuel gal/hr(L/hr)
2200	300 (224)	717 (972)	291 (217)	15.0 (56.6)
2100	300 (224)	751 (1019)	253 (189)	12.9 (48.9)
2000	300 (224)	789 (1070)	219 (163)	11.1 (42.0)
1900	300 (224)	830 (1126)	188 (140)	9.6 (36.3)
1800	300 (224)	876 (1188)	160 (119)	8.1 (30.8)
1700	286 (213)	884 (1199)	134 (100)	6.9 (26.3)
1600	260 (194)	854 (1158)	112 (84)	5.5 (20.8)
1400	189 (141)	709 (962)	75 (56)	3.9 (14.6)
1200	135 (101)	593 (804)	47 (35)	2.4 (9.2)
1000	102 (76)	535 (726)	27 (20)	1.6 (6.0)

Data based on keel-cooled engine.

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

\* Revised Data

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 May 2001