



JOHN DEERE

ENGINE PERFORMANCE CURVE

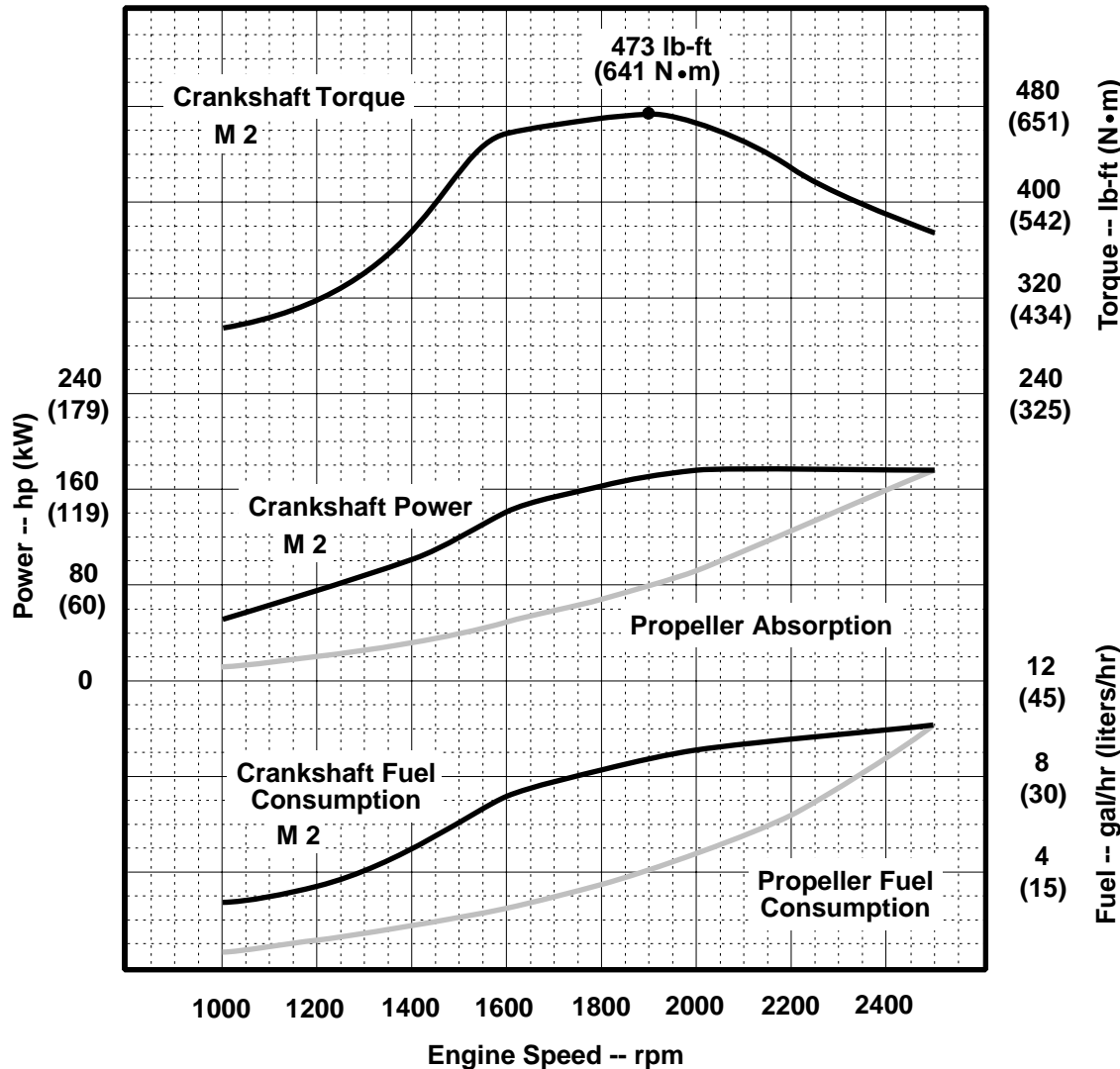
Rating: M2 - 178 hp (133 kW) @ 2500 rpm

PowerTech 6.8 L Engine

Model: **6068TFM75**

(Propeller Power is approximately 97% of Crankshaft Power)

Application: Marine



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 8665 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:

- EPA Commercial Marine (40 CFR Part 94)
 - IMO Annex VI
- Ref: Engine Emission Label

NEAL LEEDER
16 APR 2004

* Revised Data

Curve: 6068TFM75178M2..... Sheet 1 of 2
 April 2004

Common Specifications:

General Data

Model 6068TFM75
 Number of Cylinders 6
 Bore and Stroke--in.(mm)..... 4.2 x 5.0 (107 x 127)
 Displacement--in³ (L) 414 (6.8)
 Compression Ratio 17.6 : 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
 Aftercooling System none
 Engine Crankcase Vent System Open
 Maximum Crankcase Pressure--in. H₂O (kPa) 2 (0.5)

Physical Data

(Includes Engine, Flywheel Housing, Flywheel & Electrics)
 Length--in.(mm) 44.9 (1141)
 Width--in.(mm) 27.7 (703)
 Height (centerline to top)--in.(mm) 24.4 (620)
 Height (centerline to bottom)--in.(mm) 10.3 (262)
 Weight, dry--lb (kg)..... 1609 (730)*
 Center of Gravity Location
 From Rear Face of Block (X-axis)--in.(mm) 16.9 (430)
 Right of Crankshaft (Y-axis)--in.(mm)..... -1.0 (-25)
 Above Crankshaft (Z-axis)--in.(mm)..... 7.9 (200)
 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) 900 (4003)
 Maximum Installed Angle
 Front Up--degrees..... 9*
 Front Down--degrees 0

Air System

Minimum Ventilation Area--in² (m²) 113.0 (0.073)
 Maximum Allowable Air Temperature Rise
 Ambient to Engine Inlet--°F (°C) 30 (17)
 Engine Air Flow--ft³/min (m³/min) 417 (11.8)
 Intake Manifold Pressure--psi (kPa)..... 13 (93)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in. H₂O (kPa) 25 (6.25)
 Clean Air Cleaner--in. H₂O (kPa) 12 (3.0)

Engine Specification Data

Cooling System

Engine Heat Rejection--BTU/min (kW) 7058 (124)
 Engine Radiated Heat--BTU/min (kW)..... 1116 (19.6)
 Coolant Flow--gal/min (L/min)..... 47 (178)
 Minimum Coolant Fill Rate--gal/min (L/min) 3.2 (12)
 Thermostat Start to Open--°F (°C) 180 (82)
 Thermostat Fully Open--°F (°C)..... 203 (95)
 Maximum Top Tank Temperature--°F (°C) 212 (100)
 Minimum Sea Water-to-Boil Temperature--°F (°C) .. 90 (32)
 Min. Water Pump Inlet Pressure--in. H₂O (kPa) 00 (00)
 Recommended Pressure Cap--psi (kPa) 10 (70)
 Max. Pressure Drop Across Keel Cooler--psi (kPa) .. 6 (40)
 Engine Coolant Capacity--qt (L) 20* (19*)

Electrical System

Recommended Battery Capacity **12 Volt** **24 Volt**
 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 ... 920 600

Exhaust System

Exhaust Temperature--°F (°C) 876 (469)
 Exhaust Gas Flow--ft³/min (m³/min) 1038 (29.4)
 Min. Exhaust Pipe Diameter, Dry--in.(mm) 3.5 (88)
 Min. Exhaust Pipe Diameter, Wet--in.(mm) 4.0 (100)
 Max. Allowable Back Pressure--in. H₂O (kPa) 30 (7.5)
 Max. Weight on Turbocharger--lb (kg) 27 (12)

Fuel System

ECU Description John Deere Electronic Control
 Fuel Injection Pump Bosch VP-44
 Governor Type Electronic
 Governor Regulation--percent 0 to 5
 Total Fuel Flow--lb/hr (kg/hr)..... 298 (135)
 Total Fuel Flow--gal/hr (L/hr)..... 42 (159)
 Min. Rec'd. Fuel Line ID--in.(mm)..... 0.27 (7.0)
 Min. Rec'd. Fuel Line Size -5
 Fuel Consumption--lb/hr (kg/hr) 71.8 (32.6)
 Fuel Consumption--gal/hr (L/hr)..... 10.1 (38.3)
 Maximum Leak Off Line Pressure--psi (kPa) 11.6 (80)
 Max. Fuel Transfer Pump Suction Lift--ft (m) fuel ... 10 (3.0)
 Max. Fuel Inlet Restrict., Clean--in. H₂O (kPa) ..-120 (-30.0)
 Max. Fuel Inlet Restrict., Dirty--in. H₂O (kPa)....-160 (-40.0)
 Max. Fuel Inlet Pressure--psi (kPa) 4 (30)
 Max. Fuel Height Above Transfer Pump--ft (m) 10 (3.0)
 Max. Fuel Inlet Temperature--°F (°C) 167 (75)
 Fuel Filter Size @98% Efficiency--Micron 2

Lubrication System

Oil Pressure @ Rated Speed--psi (kPa) 51 (350)
 Oil Pressure @ Low Idle--psi (kPa) 15 (100)

Sea Water System

Sea Water Pump Flow--gal/min (L/min)..... 31 (117)
 Maximum Inlet Restriction--in. H₂O (kPa) 120 (30)
 Maximum Outlet Pressure--psi (kPa)..... 20 (135)
 Maximum Suction Lift--ft (m)..... 10 (3.0)

Performance Data

Performance Option Codes 72GF / 72GG
 Rated Power--hp (kW) 178 (133)
 Rated Power (Metric) Fuel @ 77 °F (25 °C)--PS 180.8
 Rated Speed--rpm 2500
 Rated Torque--lb-ft (N•m)..... 375 (508)
 Peak Torque--lb-ft (N•m) 473 (641)
 Peak Torque Speed--rpm 1900
 Torque Rise--percent 26
 Low Idle Speed--rpm 650
 BMEP--psi (kPa) 136 (940)
 Smoke @ Rated Speed--Bosch No. <1.1

Fuel Consumption for Typical Propeller Curve

| Engine rpm | Crank. Power hp (kW) | Crank. Torque lb-ft (N•m) | Prop. Absorption hp (kW) | Prop. Fuel gal/hr(L/hr) |
|------------|----------------------|---------------------------|--------------------------|-------------------------|
| 2500 | 178 (133) | 375 (508) | 178 (133) | 10.1 (38.3) |
| 2400 | 178 (133) | 390 (529) | 158 (118) | 8.7 (32.9) |
| 2200 | 178 (133) | 426 (577) | 122 (91) | 6.5 (24.6) |
| 2000 | 177 (132) | 465 (630) | 91 (68) | 4.8 (18.3) |
| 1900 | 171 (128) | 473 (641) | 78 (58) | 4.2 (15.7) |
| 1800 | 161 (120) | 470 (637) | 67 (50) | 3.5 (13.4) |
| 1600 | 139 (104) | 458 (621) | 47 (35) | 2.5 (9.5) |
| 1400 | 101 (75) | 377 (512) | 31 (23) | 1.7 (6.4) |
| 1200 | 72 (54) | 317 (430) | 20 (15) | 1.1 (4.1) |
| 1000 | 56 (42) | 296 (401) | 11 (9) | 0.6 (2.4) |

Data based on keel-cooled engine.
 All values at rated speed and power with standard options unless otherwise noted.

* Revised Data
 Curve: 6068TFM75178M2 Sheet 2 of 2
 April 2004