



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: M3 - 236 hp (176 kW) @ 2400 rpm

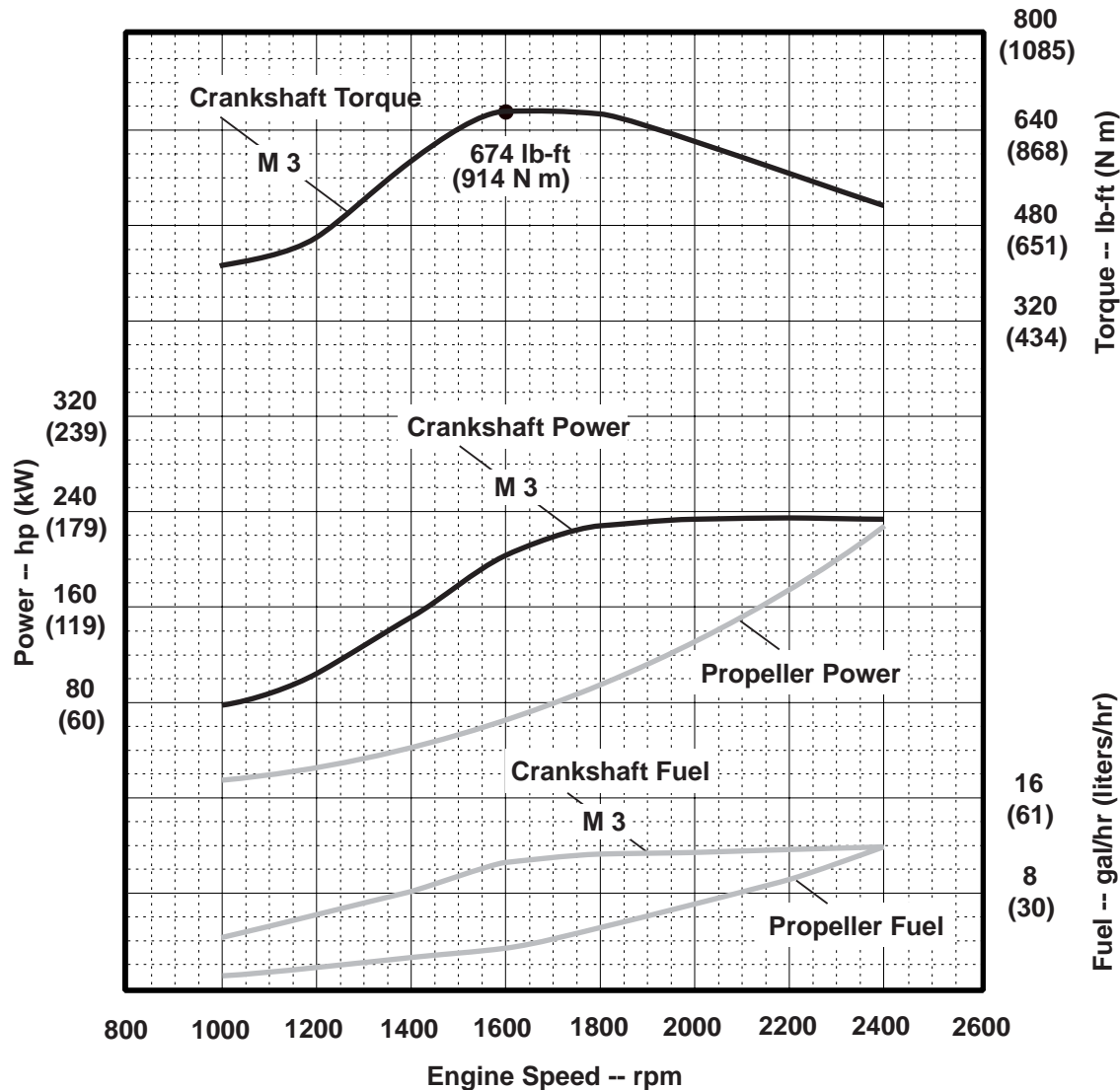
Application: Marine

PowerTech 6.8 L Engine

Model: **6068SFM50**

[See Option Code Table]

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



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 LEEPER
22 APR 2004

* Revised Data

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Common Specifications:

General Data

Model 6068SFM50
 Number of Cylinders 6
 Bore and Stroke--in.(mm)..... 4.19 x 5.00 (106 x 127)
 Displacement--in³ (L)414 (6.8)
 Compression Ratio 17.0 : 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 Seawater

Physical Data

(Includes Engine, Flywheel Housing, Flywheel & Electrics)
 Length--in.(mm)46.6 (1183)
 Width--in.(mm)28.4 (721)
 Height (centerline to top)--in.(mm)24.4 (619)
 Height (centerline to bottom)--in.(mm)12.9 (327)
 Weight, dry--lb (kg)..... 1711* (776*)
 Center of Gravity Location
 From Rear Face of Block (X-axis)--in.(mm)16.9 (430)
 Right of Crankshaft (Y-axis)--in.(mm)..... 2.0 (50)
 Above Crankshaft (Z-axis)--in.(mm).....8.9 (225)
 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--degrees0

Air System

Minimum Ventilation Area--in² (m²).....180 (0.12)
 Maximum Allowable Air Temperature Rise
 Ambient to Engine Inlet--°F (°C)30* (17*)
 Engine Air Flow--ft³/min (m³/min)516 (14.6)
 Intake Manifold Pressure--psi (kPa).....17 (114.6)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in. H₂O (kPa).....25 (6.3)
 Clean Air Cleaner--in. H₂O (kPa).....12 (3.0)

Engine Specification Data

Cooling System

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).....201 (94)
 Recommended Pressure Cap--psi (kPa)..... 1 (10)
 Engine Coolant Capacity--qt (L) 20* (19*)

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)--amp920 600

Exhaust System

Exhaust Gas Flow--ft³/min (m³/min) 1088 (30.8)
 Exhaust Temperature--°F (°C) 711 (377)
 Maximum Back Pressure--in. H₂O (kPa) 30 (7.5)
 Maximum Weight on Turbocharger--lb (kg) 55 (25)
 Rec'd Minimum Exhaust Outlet Diameter--in.(mm)
 Dry 4.5 (115)
 Wet.....5.0 (127)

Fuel System

Fuel Injection Pump Bosch VP-44
 Governor TypeElectronic
 Governor Regulation--percent 4
 Total Fuel Flow--gal/hr (L/hr)..... 44 (165.5)
 Minimum Hose ID--in. (mm).....0.27 (7)
 Minimum Fuel Supply and Return Hose Size -5
 Fuel Consumption--gal/hr (L/hr)..... 12.0 (45.5)
 Maximum Leak Off Line Pressure--psi (kPa)..... 2 (14)
 Max. Fuel Transfer Pump Suction Lift--ft (m) fuel3 (0.9)
 Max. Fuel Inlet Pressure--psi (kPa) 4 (30)
 Max. Fuel Height Above Transfer Pump--ft (m) 4.6 (1.4)
 Max. Fuel Inlet Temperature--°F (°C) 167 (75)
 Fuel Filter Size @98% Efficiency--Micron 5

Lubrication System

Oil Pressure @ Rated Speed--psi (kPa)..... 56 (385)
 Oil Pressure @ Low Idle--psi (kPa) 15 (105)

Sea Water System

Sea Water Pump Flow--gal/min (L/min)..... 57 (214)
 Maximum Inlet Restriction--in. H₂O (kPa) 120 (30)
 Maximum Outlet Pressure--psi (kPa)..... 24 (165)
 Maximum Suction Lift--ft (m)..... 10 (3)

Performance Data

Performance Option Codes72FZ / 72GA
 Rated Power--hp (kW) 236 (176)
 Rated Power (Metric), Fuel @ 77 °F (25 °C)--PS 239
 Rated Speed--rpm 2400
 Rated Torque--lb-ft (N•m)..... 517 (700)
 Peak Torque--lb-ft (N•m) 674 (914)
 Peak Torque Speed--rpm..... 1600
 Torque Rise--percent 30.5
 Low Idle Speed--rpm 650
 BMEP--psi (kPa) 188 (1294)

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)
2400	236 (176)	516 (700)	229 (171)	12.0 (45.5)
2300	236 (176)	539 (731)	201 (150)	10.6 (40.0)
2200	236 (176)	564 (765)	176 (131)	9.2 (34.7)
2100	236 (176)	591 (801)	153 (114)	8.0 (30.2)
2000	236 (176)	620 (841)	132 (99)	6.9 (26.1)
1900	233 (174)	645 (875)	114 (85)	5.9 (22.4)
1800	228 (170)	665 (902)	97 (72)	5.1 (19.4)
1600	205 (153)	674 (914)	68 (51)	3.6 (13.6)
1400	158 (118)	592 (802)	45 (34)	2.5 (9.4)
1200	106 (79)	465 (630)	29 (21)	1.6 (6.1)
1000	79 (59)	415 (562)	17 (12)	1.0 (3.9)

Data based on seawater aftercooled engine.
 All values at rated speed and power with standard options unless otherwise noted.

* Revised Data
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