



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: M3 - 321 hp (239 kW) @ 2600 rpm

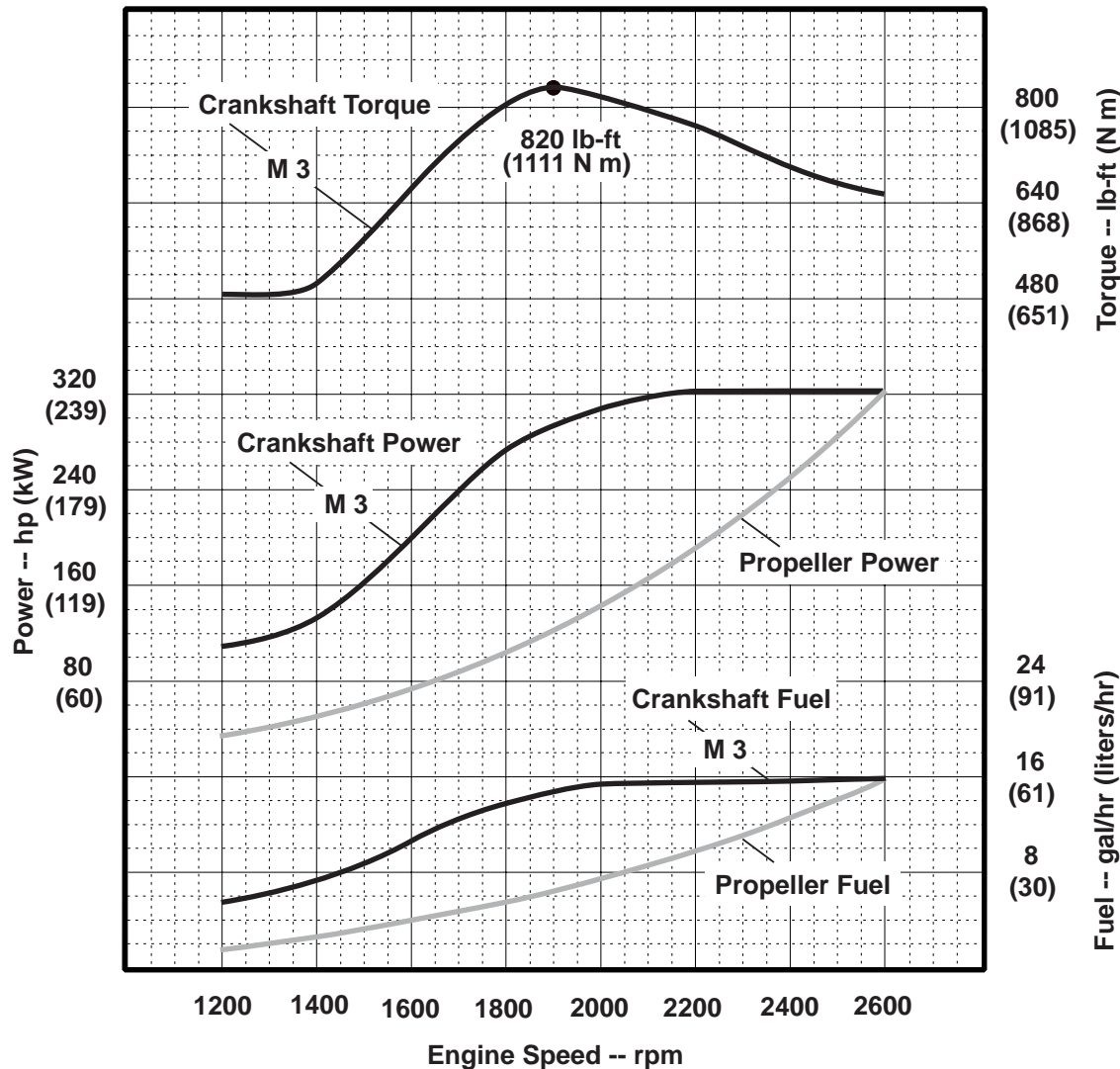
Application: Marine

PowerTech 6.8 L Engine

Model: **6068SFM75**

[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:

- EPA Commercial Marine (40 CFR Part 94)
- IMO Annex VI
- EU 2004/26/EC

Ref: Engine Emission Label

Certified by:

Jennifer Barrett
 12 April 2007

* Revised Data

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General Data

Model 6068SFM75
 Number of Cylinders 6
 Bore and Stroke--in.(mm)..... 4.20 x 5.00 (106 x 127)
 Displacement--in³ (L) 414 (6.8)
 Compression Ratio 16.7 : 1
 Valves per Cylinder -- Intake / Exhaust 2 / 2
 Firing Order 1-5-3-6-2-4
 Engine Type In-line, 4-Cycle
 Aspiration Turbocharged & Aftercooled
 Aftercooling System Sea Water
 Engine Crankcase Vent System Closed

Physical Data

(Includes Engine, Flywheel Housing, Flywheel & Electrics)
 Length--in.(mm) 54.3 (1380)
 Width--in.(mm) 44.2 (1122)
 Height (centerline to top)--in.(mm) 26.0 (661)
 Height (centerline to bottom)--in.(mm) 11.7 (298)
 Weight, dry--lb (kg)..... 1962 (890)
 Center of Gravity Location
 From Rear Face of Block (X-axis)--in.(mm) 16.5 (420)
 Right of Crankshaft (Y-axis)--in.(mm)..... 5.3 (135)
 Above Crankshaft (Z-axis)--in.(mm)..... 9.6 (244)
 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)..... 166 (0.11)
 Maximum Allowable Air Temperature Rise
 Ambient to Engine Inlet--°F (°C) 30 (17)
 Engine Air Flow--ft³/min (m³/min) 614 (17.4)
 Intake Manifold Pressure--psi (kPa)..... 18 (123)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in. H₂O (kPa) 25 (6.25)
 Clean Air Cleaner--in. H₂O (kPa)..... 12 (3.0)
 Manifold Air Temperature--°F (°C) 84 (29)

Engine Installation Criteria

Cooling System

Coolant Flow--gal/min (L/min)..... 98 (350)
 Minimum Coolant Fill Rate--gal/min (L/min) 3.2 (12)
 Thermostat Start to Open--°F (°C) 180 (82)
 Thermostat Fully Open--°F (°C) 201 (94)
 Maximum Top Tank Temperature--°F (°C) 212 (100)
 Max. Seawater Temperature--°F (°C) 90 (32)
 Recommended Pressure Cap--psi (kPa)..... 16 (110)
 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)--amp 920 600

Exhaust System

Exhaust Temperature--°F (°C) 820 (438)
 Exhaust Gas Flow--ft³/min (m³/min) 1466 (42)
 Minimum Exhaust Pipe Diameter - Dry--in.(mm) .. 4.5 (114)
 Minimum Exhaust Pipe Diameter - Wet--in.(mm) . 6.0 (152)
 Maximum Back Pressure--in. H₂O (kPa) 30 (7.5)
 Maximum Weight on Turbocharger--lb (kg) 55 (25)

Fuel System

ECU Description L14 Controller
 Fuel Injection Pump Denso HP3
 Governor Type Electronic
 Governor Regulation--percent 0 - 5.7
 Total Fuel Flow--lb/hr (kg/hr) 313 (142)
 Total Fuel Flow--gal/hr (L/hr)..... 44 (167)
 Fuel Consumption--lb/hr (kg/hr) 112.7(51.1)
 Fuel Consumption--gal/hr (L/hr)..... 15.9 (60.1)
 Max. Fuel Inlet Restriction--in. H₂O (kPa) 80 (20)
 Max. Fuel Inlet Temperature--°F (°C) 176 (80)
 Minimum Rec'd. Fuel Line ID--in.(mm) 0.31 (8)
 Minimum Rec'd. Fuel Line Size -6
 Fuel Filter Micron Size @ 98% Efficiency--Micron..... 2

Lubrication System

Oil Pressure @ Rated Speed--psi (kPa)..... 60 (414)
 Oil Pressure @ Low Idle--psi (kPa) 15 (105)

Sea Water System

Sea Water Pump Flow--gal/min (L/min)..... 118 (446)
 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 Codes 72QM / 72QN
 Rated Power--hp (kW) 321 (239)
 Rated Power (Metric, Fuel @ 77 °F (25 °C)--PS 325
 Rated Speed--rpm 2600
 Rated Torque--lb-ft (N•m)..... 647 (878)
 Peak Torque--lb-ft (N•m)..... 820 (1111)
 Peak Torque Speed--rpm..... 1900
 Torque Rise--percent 26
 Low Idle Speed--rpm 600
 BMEP--psi (kPa) 236 (1624)
 Smoke @ Rated Speed--Bosch No. 1.39

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)
2600	321 (239)	647 (878)	321 (239)	15.9 (60.2)
2400	321 (239)	701 (951)	252 (188)	12.4 (46.8)
2200	321 (239)	765 (1037)	194 (145)	9.6 (36.5)
2000	308 (230)	810 (1098)	146 (109)	7.3 (27.5)
1900	296 (221)	820 (1111)	125 (93)	6.3 (24.0)
1800	274 (204)	799 (1083)	106 (79)	5.4 (20.5)
1600	202 (150)	662 (898)	75 (56)	3.9 (14.6)
1400	131 (98)	492 (667)	50 (37)	2.7 (10.1)
1200	110 (82)	481 (652)	32 (24)	1.8 (6.6)
1000	82 (61)	430 (583)	18 (14)	1.1 (4.2)

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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