



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: M5 - 400 hp (298 kW) @ 2800 rpm

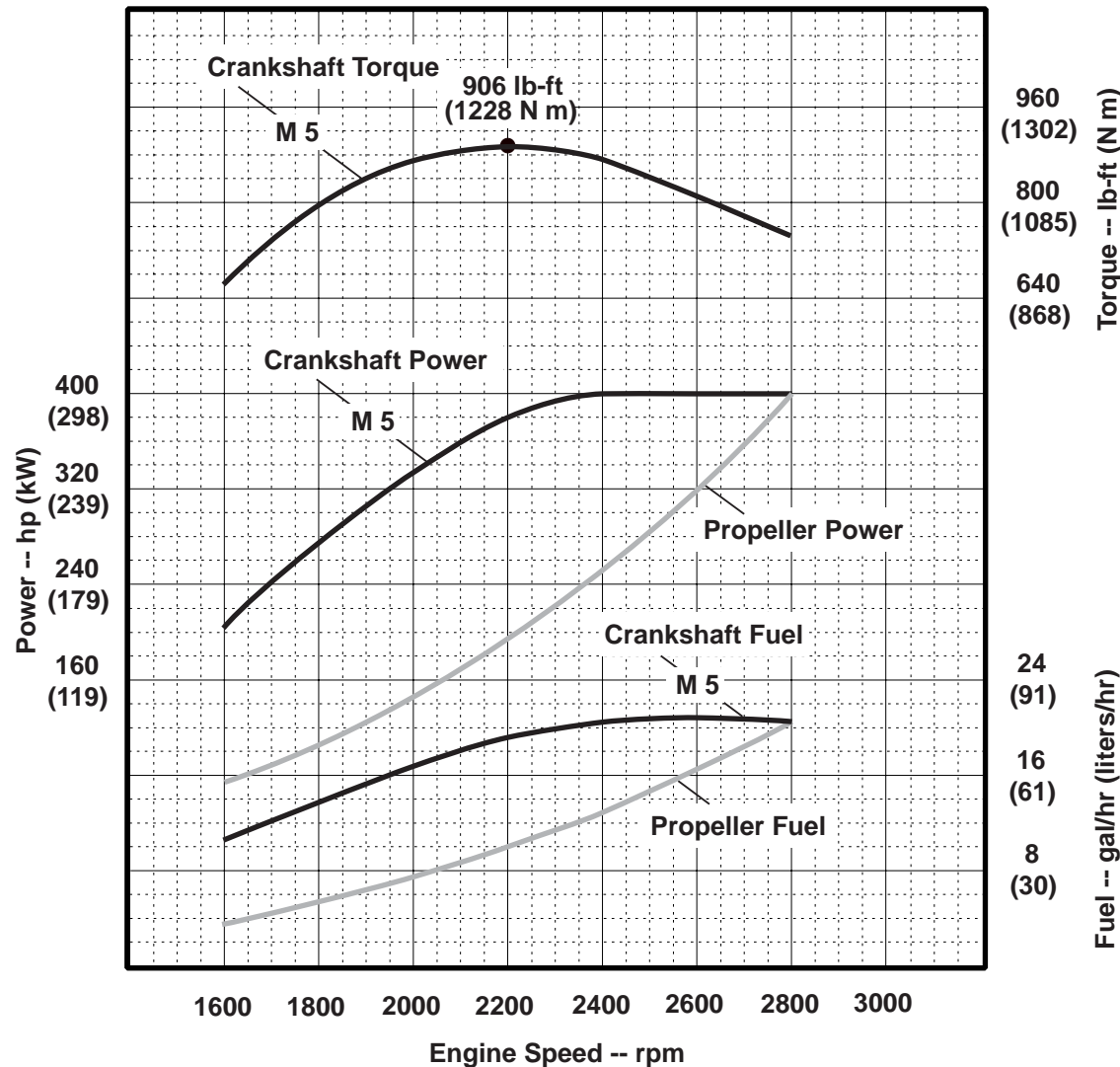
Application: Marine

**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.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 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 Recreational 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

Curve: 6068SFM75400M5..... Sheet 1 of 2  
 April 2007

## General Data

Model ..... 6068SFM75  
 Number of Cylinders ..... 6  
 Bore and Stroke--in.(mm)..... 4.20 x 5.00 (106 x 127)  
 Displacement--in<sup>3</sup> (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--in<sup>2</sup> (m<sup>2</sup>)..... 217 (0.14)  
 Maximum Allowable Air Temperature Rise  
     Ambient to Engine Inlet--°F (°C) ..... 30 (17)  
 Engine Air Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) ..... 805 (22.8)  
 Intake Manifold Pressure--psi (kPa)..... 25 (172)  
 Maximum Air Intake Restriction  
     Dirty Air Cleaner--in. H<sub>2</sub>O (kPa) ..... 25 (6.25)  
     Clean Air Cleaner--in. H<sub>2</sub>O (kPa)..... 12 (3.0)  
 Manifold Air Temperature--°F (°C) ..... 91 (33)

## Engine Installation Criteria

### Cooling System

Coolant Flow--gal/min (L/min)..... 104 (394)  
 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--ft<sup>3</sup>/min (m<sup>3</sup>/min) ..... 1921 (54)  
 Minimum Exhaust Pipe Diameter - Dry--in.(mm) .. 5.0 (127)  
 Minimum Exhaust Pipe Diameter - Wet--in.(mm) . 6.0 (152)  
 Maximum Back Pressure--in. H<sub>2</sub>O (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) ..... 346 (156.8)  
 Total Fuel Flow--gal/hr (L/hr)..... 48.7 (184.5)  
 Fuel Consumption--lb/hr (kg/hr) ..... 145.1 (65.8)  
 Fuel Consumption--gal/hr (L/hr)..... 20.4 (77.4)  
 Max. Fuel Inlet Restriction--in. H<sub>2</sub>O (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)..... 61 (423)  
 Oil Pressure @ Low Idle--psi (kPa) ..... 15 (105)

## Sea Water System

Sea Water Pump Flow--gal/min (L/min)..... 127 (480)  
 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)

## Performance Data

Performance Option Codes ..... 72KF / 72KG  
 Rated Power--hp (kW) ..... 400 (298)  
 Rated Power (Metric), Fuel @ 77 °F (25 °C)--PS ..... 405.2  
 Rated Speed--rpm ..... 2800  
 Rated Torque--lb-ft (N•m)..... 750 (1016)  
 Peak Torque--lb-ft (N•m) ..... 909 (1232)  
 Peak Torque Speed--rpm..... 2200  
 Torque Rise--percent ..... 21  
 Low Idle Speed--rpm ..... 600  
 BMEP--psi (kPa) ..... 273 (1880)  
 Smoke @ Rated Speed--Bosch No. .... 1.25

## 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)
2800	400 (298)	750 (1016)	400 (298)	20.5 (77.6)
2600	400 (298)	807 (1094)	320 (239)	16.5 (62.4)
2400	400 (298)	875 (1186)	252 (188)	13.0 (49.1)
2200	381 (284)	909 (1232)	194 (145)	10.0 (37.8)
2000	334 (249)	877 (1189)	146 (109)	7.6 (28.7)
1800	274 (204)	799 (1083)	106 (79)	5.6 (21.0)
1600	202 (150)	662 (898)	75 (56)	3.8 (14.5)
1400	137 (102)	512 (694)	50 (37)	2.6 (9.9)
1200	110 (82)	480 (651)	31 (24)	1.7 (6.3)
1000	82 (61)	430 (583)	18 (14)	1.0 (3.7)

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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 April 2007