



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: M5 - 300 hp (224 kW) @ 2600 rpm

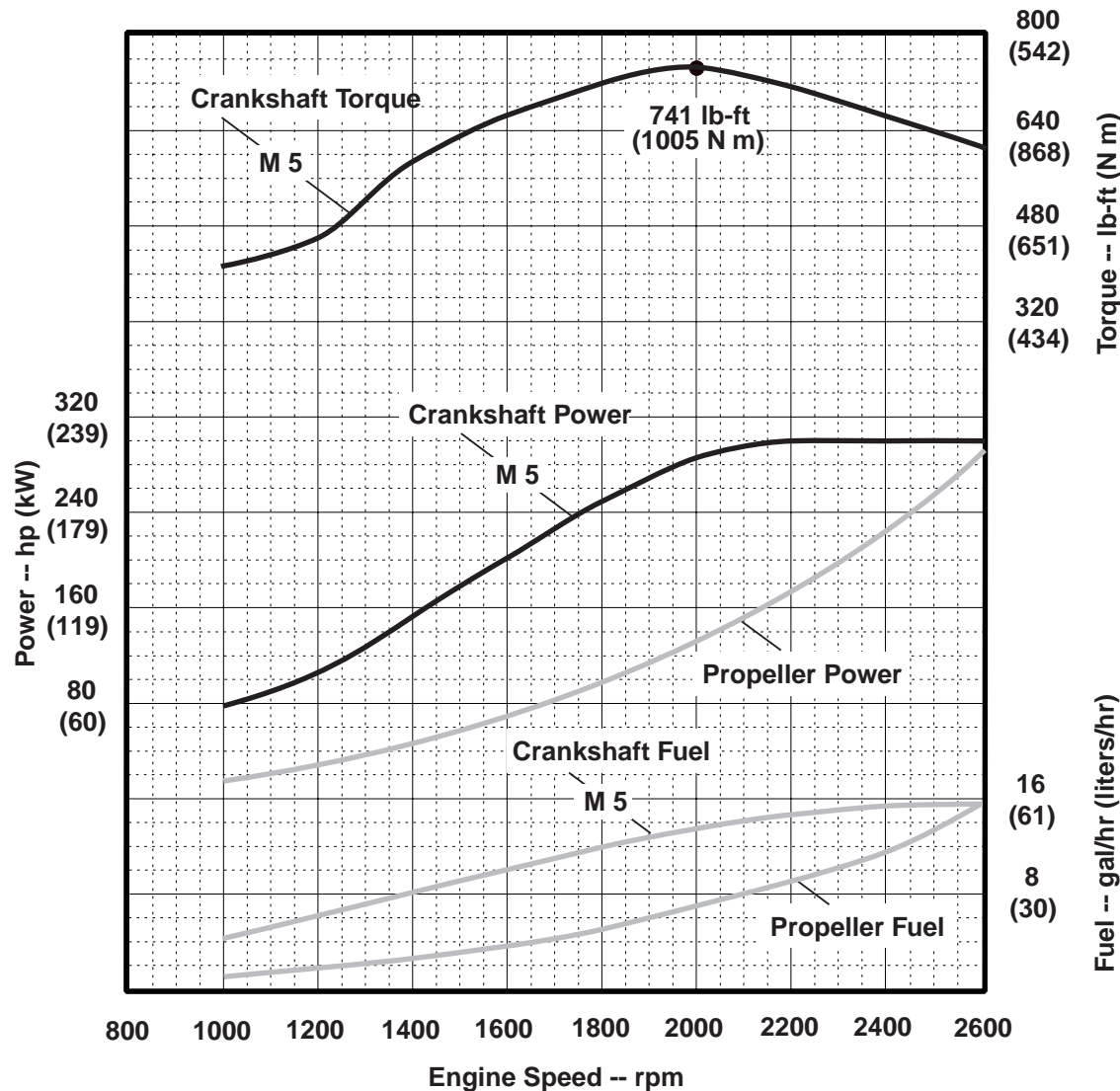
Application: Marine

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:

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|---|--|
| Tier-2 Emission Certifications: | Certified by: |
| <ul style="list-style-type: none"> EPA Commercial Marine (40 CFR Part 94) IMO Annex VI Ref: Engine Emission Label | <i>NEAL LEEPER</i> <i>22 APR 2004</i> |

* Revised Data
 Curve: 6068SFM50300M5..... Sheet 1 of 2
 April 2004

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).....1399 (636)
 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..... 15
 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)667 (18.9)
 Intake Manifold Pressure--psi (kPa).....24 (163)
 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) 30 (28)

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) 1438 (40.7)
 Exhaust Temperature--°F (°C) 741 (394)
 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 PumpBosch VP44
 Governor TypeElectronic
 Governor Regulation--percent 4
 Total Fuel Flow--gal/hr (L/hr)..... 47 (179.1)
 Minimum Hose ID--in. (mm).....0.27 (7)
 Minimum Fuel Supply and Return Hose Size-5
 Fuel Consumption--gal/hr (L/hr)..... 15.6 (59.1)
 Maximum Leak Off Line Pressure--psi (kPa)2 (14)
 Max. Fuel Transfer Pump Suction Lift--ft (m) fuel 3 (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)..... 61 (232)
 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 72FV / 72FW
 Rated Power--hp (kW) 300 (224)
 Rated Power (Metric), Fuel @ 77 °F (25 °C)--PS 305
 Rated Speed--rpm 2600
 Rated Torque--lb-ft (N•m)..... 607 (823)
 Peak Torque--lb-ft (N•m)..... 741 (1005)
 Peak Torque Speed--rpm..... 2000
 Torque Rise--percent 22.2
 Low Idle Speed--rpm 650
 BMEP--psi (kPa) 221 (1520)

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 | 300 (224) | 607 (823) | 291 (217) | 15.6 (59.1) |
| 2500 | 300 (224) | 631 (855) | 259 (193) | 13.3 (50.2) |
| 2400 | 300 (224) | 656 (890) | 229 (171) | 11.6 (43.9) |
| 2300 | 300 (224) | 685 (929) | 202 (150) | 10.1 (38.2) |
| 2200 | 300 (224) | 716 (971) | 177 (132) | 8.7 (32.9) |
| 2100 | 294 (219) | 735 (996) | 154 (115) | 7.7 (29.2) |
| 2000 | 282 (210) | 741 (1005) | 133 (99) | 6.7 (25.3) |
| 1800 | 246 (184) | 719 (975) | 97 (72) | 5.0 (18.9) |
| 1600 | 203 (152) | 667 (905) | 68 (51) | 3.5 (13.4) |
| 1400 | 158 (118) | 592 (802) | 46 (34) | 2.5 (9.3) |
| 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 keel-cooled engine.
 All values at rated speed and power with standard options unless otherwise noted.

* Revised Data
 Curve: 6068SFM50300M5 Sheet 2 of 2
 April 2004