



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: **M4 - 500 hp (373 kW) @ 2400 rpm**

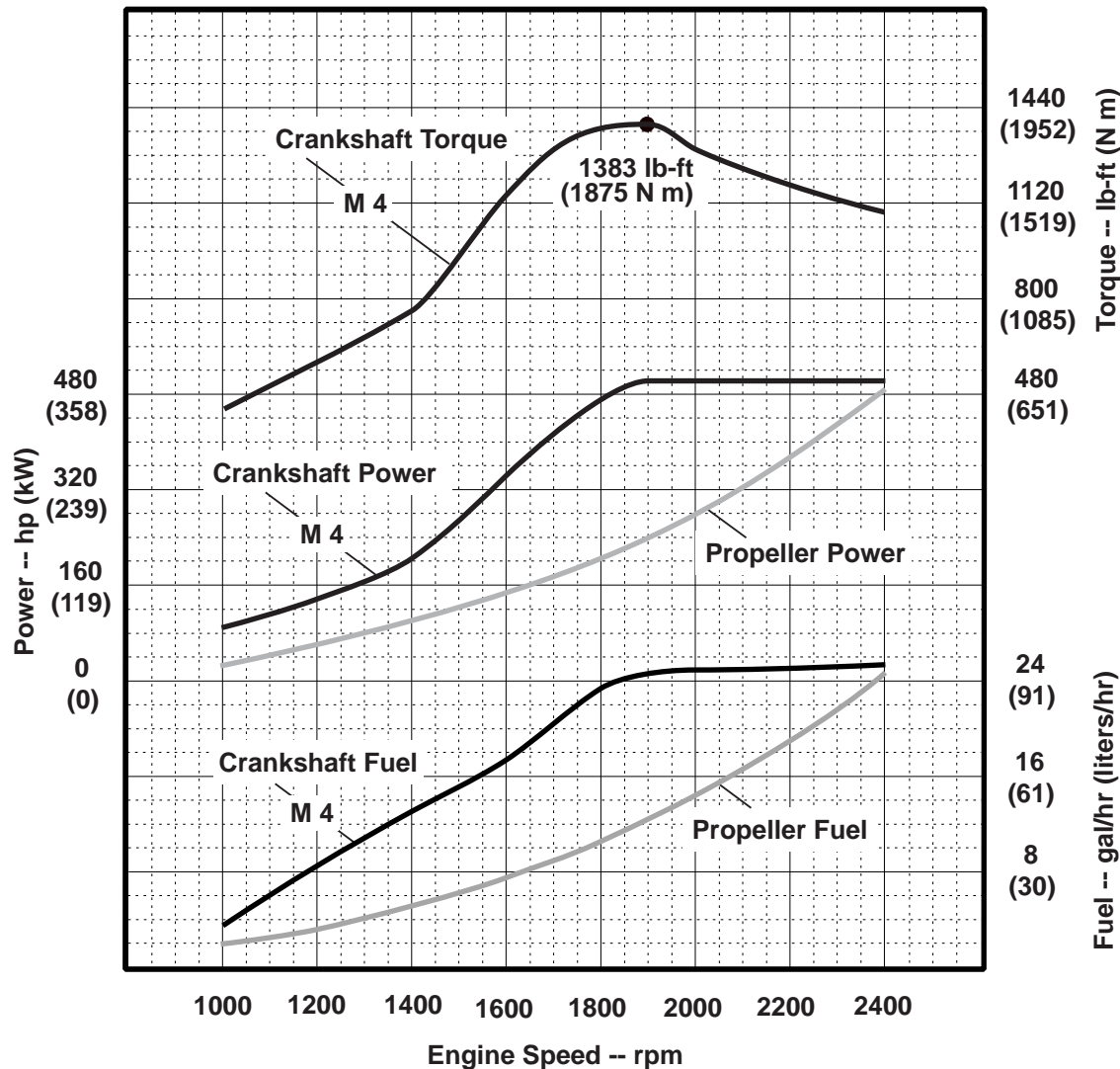
Application: Marine

PowerTech™ 9.0 L Engine

Model: **6090SFM75**

[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:
<ul style="list-style-type: none"> EPA Commercial Marine (40 CFR Part 94) IMO Annex VI EU 2004/26/EC Ref: Engine Emission Label	<h2 style="color: red; margin: 0;">Advance Information</h2>

* Revised Data
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Engine Installation Criteria

General Data

Model 6090SFM75
 Number of Cylinders 6
 Bore and Stroke--in.(mm)..... 4.65 x 5.00 (118 x 127)
 Displacement--in³ (L)548 (9.0)
 Compression Ratio 16.0 : 1
 Valves per Cylinder -- Intake / Exhaust 2 / 2
 Firing Order 1-5-3-6-2-4
 Engine Type In-line, 4-Cycle
 Aspiration Turbocharged and Aftercooled
 Aftercooling System Seawater
 Engine Crankcase Vent System Closed

Physical Data

(Includes Engine, Flywheel Housing, Flywheel & Electrics)
 Length--in.(mm)67.5 (1714)
 Width--in.(mm)36.1 (917)
 Height (centerline to top)--in.(mm)25.9 (658)
 Height (centerline to bottom)--in.(mm) 12.6 (319)
 Weight, dry--lb (kg).....2350.1 (1066)
 Center of Gravity Location
 From Rear Face of Block (X-axis)--in.(mm)000 (000)
 Right of Crankshaft (Y-axis)--in.(mm)..... 000 (000)
 Above Crankshaft (Z-axis)--in.(mm).....000 (000)
 Max. Allow. Static Bending Moment at Rear Face
 of Flywhl Hsg w/5-G Load--lb-ft (N•m)600 (814)
 Maximum Installed Angle
 Front Up--degrees..... 12
 Front Down--degrees 0

Air System

Minimum Ventilation Area--in² (m²).....296 (0.149)
 Maximum Allowable Air Temperature Rise
 Ambient to Engine Inlet--°F (°C)30 (17)
 Engine Air Flow--ft³/min (m³/min) 1098 (31.1)
 Intake Manifold Pressure--psi (kPa).....34 (232)
 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) 110 (44)

Cooling System

Coolant Flow--gal/min (L/min)..... 113 (425)
 Minimum Coolant Fill Rate--gal/min (L/min) 3 (12)
 Thermostat Start to Open--°F (°C) 180 (82)
 Thermostat Fully Open--°F (°C)202 (94)
 Max. Seawater Temperature--°F (°C) 90 (32)
 Recommended Pressure Cap--psi (kPa) 16 (110)
 Engine Coolant Capacity--qt (L) 32 (30)

Electrical System

12 Volt 24 Volt

Recommended Battery Capacity
 Cold Cranking Amps @ 32 °F (0 °C)--amp.1100 750
 Max. Starting Circuit Resistance--Ohms0.0012 .. 0.002
 Starter Rolling Current @ 32 °F (0 °C)--amp920 600

Exhaust System

Exhaust Temperature--°F (°C)730 (388)
 Exhaust Gas Flow--ft³/min (m³/min)2363 (66.9)
 Minimum Exhaust Pipe Diameter - Dry--in.(mm) .000 (000)
 Minimum Exhaust Pipe Diameter - Wet--in.(mm) 000 (000)
 Maximum Back Pressure--in. H₂O (kPa) 30 (7.5)
 Maximum Weight on Turbocharger--lb (kg) 55 (25)

Fuel System

ECU DescriptionL14 Controller
 Fuel Injection Pump Denso HP4
 Governor TypeElectronic
 Total Fuel Flow--lb/hr (kg/hr)..... 450 (204)
 Total Fuel Flow--gal/hr (L/hr)..... 63 (240)
 Fuel Consumption--lb/hr (kg/hr)..... 176 (80.0)
 Fuel Consumption--gal/hr (L/hr).....24.9 (94.1)
 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 Size6

Lubrication System

Oil Pressure @ Rated Speed--psi (kPa)..... 000 (000)
 Oil Pressure @ Low Idle--psi (kPa) 000 (000)

Sea Water System

Sea Water Pump Flow--gal/min (L/min)..... 97.5 (369)
 Maximum Inlet Restriction---in. H₂O (kPa) 120 (30)
 Maximum Outlet Pressure--psi (kPa).....20 (140)
 Maximum Suction Lift--ft (m)..... 10 (3)

Performance Data

Performance Option Codes
 Rated Power--hp (kW) 500 (373)
 Rated Power (Metric), Fuel @ 77 °F (25 °C)--PS 507
 Rated Speed--rpm 2400
 Rated Torque--lb-ft (N•m)..... 1095 (1484)
 Peak Torque--lb-ft (N•m) 1383 (1875)
 Peak Torque Speed--rpm..... 1900
 Low Idle Speed--rpm 600
 BMEP--psi (kPa) 301 (2072)
 Smoke @ Rated Speed--Bosch No. 00

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	500 (373)	1095 (1484)	485 (362)	24.7 (93.3)
2300	500 (373)	1143 (1549)	427 (318)	21.5 (81.3)
2200	500 (373)	1194 (1619)	374 (279)	18.7 (70.7)
2100	500 (373)	1251 (1696)	325 (242)	16.2 (61.5)
2000	500 (373)	1314 (1781)	281 (209)	14.2 (53.6)
1900	500 (373)	1383 (1875)	241 (179)	12.2 (46.0)
1800	472 (352)	1377 (1867)	205 (153)	10.5 (39.7)
1700	413 (308)	1276 (1730)	172 (129)	9.0 (33.9)
1600	344 (257)	1130 (1532)	144 (107)	7.7 (29.3)
1400	202 (151)	758 (1027)	96 (72)	5.2 (19.8)
1200	132 (98)	578 (783)	61 (45)	3.3 (12.5)
1000	85 (64)	449 (608)	35 (26)	2.0 (7.5)

Advance Information

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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