



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: **M1 - 425 hp (317 kW) @ 1800 rpm**

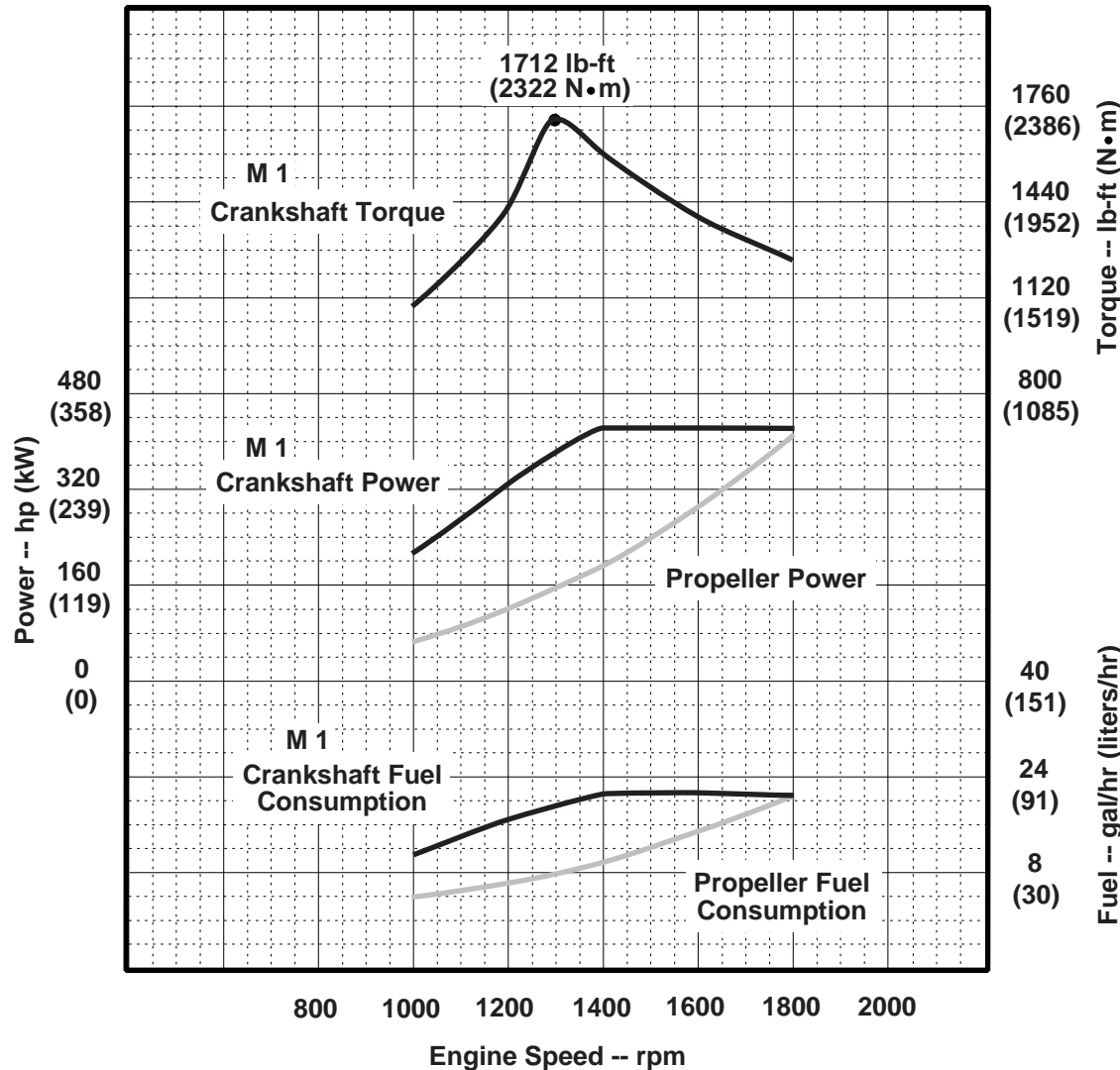
Application: Marine

**PowerTech™ 13.5 L Engine**

Model: **6135SFM75**

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

\* Revised Data  
 Curve: 6135SFM75425M1..... Sheet 1 of 2  
 July 2009

## Engine Installation Criteria

### General Data

Model ..... 6135SFM75  
 Number of Cylinders ..... 6  
 Bore and Stroke--in.(mm)..... 5.20 x 6.50 (132 x 165)  
 Displacement--in<sup>3</sup> (L) .....824 (13.5)  
 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

Length--in.(mm) .....52.6 (1335)  
 Width--in.(mm) .....40.2 (1022)  
 Height (centerline to top)--in.(mm) .....32.6 (829)  
 Height (centerline to bottom)--in.(mm) ..... 14.4 (365)  
 Weight, dry--lb (kg) ++ .....3362 (1525)  
 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)  
 ++ Engine with Flywheel Housing, Flywheel and Electrics.

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--in<sup>2</sup> (m<sup>2</sup>).....237 (0.153)  
 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) .....876 (24.8)  
 Intake Manifold Pressure--psi (kPa)..... 18 (121)  
 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) .....000 (000)

### Cooling System

Coolant Flow--gal/min (L/min)..... 80 (303)  
 Minimum Coolant Fill Rate--gal/min (L/min) ..... 3 (12)  
 Thermostat Start to Open--°F (°C) ..... 180 (82)  
 Thermostat Fully Open--°F (°C) ..... 197 (92)  
 Max. Seawater Temperature--°F (°C) ..... 90 (32)  
 Recommended Pressure Cap--psi (kPa) ..... 16 (110)  
 Engine Coolant Capacity--qt (L) ..... 42 (40)

### Electrical System

**12 Volt 24 Volt**

Recommended Battery Capacity  
     Cold Cranking Amps @ 32 °F (0 °C)--amp.1900 ..... 925  
 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) .....813 (434)  
 Exhaust Gas Flow--ft<sup>3</sup>/min (m<sup>3</sup>/min) .....1966 (56)  
 Minimum Exhaust Pipe Diameter - Dry--in.(mm) ..... 6 (152)  
 Minimum Exhaust Pipe Diameter - Wet--in.(mm) .... 8 (204)  
 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 .....L15 Controller  
 Fuel Injection Pump .....Unit Injection  
 Governor Type .....Electronic  
 Total Fuel Flow--lb/hr (kg/hr)..... 303 (137.5)  
 Total Fuel Flow--gal/hr (L/hr)..... 43 (162)  
 Fuel Consumption--lb/hr (kg/hr)..... 148 (67.3)  
 Fuel Consumption--gal/hr (L/hr)..... 21 (79.2)  
 Max. Fuel Inlet Restriction--in. H<sub>2</sub>O (kPa) ..... 40 (10)  
 Max. Fuel Inlet Temperature--°F (°C) ..... 212 (100)  
 Minimum Rec'd. Fuel Line ID--in.(mm) .....0.31 (8)  
 Minimum Rec'd. Fuel Line Size .....6

### Lubrication System

Oil Pressure @ Rated Speed--psi (kPa)..... 49 (340)  
 Oil Pressure @ Low Idle--psi (kPa) ..... 17.4 (120)

### Sea Water System

Sea Water Pump Flow--gal/min (L/min)..... 90 (341)  
 Maximum Inlet Restriction---in. H<sub>2</sub>O (kPa) ..... 120 (30)  
 Maximum Outlet Pressure--psi (kPa)..... 20 (140)  
 Maximum Suction Lift--ft (m)..... 10 (3)

### Performance Data

Rated Power--hp (kW) ..... 425 (317)  
 Rated Power (Metric), Fuel @ 77 °F (25 °C)--PS ..... 431  
 Rated Speed--rpm ..... 1800  
 Rated Torque--lb-ft (N•m)..... 1240 (1682)  
 Peak Torque--lb-ft (N•m) ..... 1712 (2322)  
 Peak Torque Speed--rpm..... 1300  
 Low Idle Speed--rpm ..... 600  
 BMEP--psi (kPa) ..... 226 (1560)  
 Smoke @ Rated Speed--Bosch No. ....<0.5

### 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)
1800	425 (317)	1240 (1682)	412 (307)	21.9 (79.7)
1700	425 (317)	1313 (1781)	347 (259)	17.7 (67.0)
1600	425 (317)	1395 (1892)	290 (216)	15.0 (56.6)
1500	425 (317)	1488 (2018)	239 (178)	12.4 (46.8)
1400	425 (317)	1595 (2162)	194 (145)	10.2 (38.7)
1300	424 (316)	1712 (2322)	155 (116)	8.4 (31.8)
1200	324 (242)	1419 (1925)	122 (91)	6.6 (24.8)
1100	263 (196)	1255 (1701)	93 (70)	5.2 (19.5)
1000	208 (155)	1094 (1484)	71 (53)	3.9 (14.7)

# 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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 July 2009