



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Marine
 Application: Generator
 Prime Power

POWERTECH 9.0 L Engine
 Model: **6090SFM75**

373 hp (278 kW) @ 1800 rpm
298 hp (222 kW) @ 1500 rpm

Speed rpm (Hz)	Generator Efficiency %	Keel Cooled		Power Factor	Calculated Gen-Set Rating	
		(no fan)			kW	kVA
1500 (50)	88-92	--	--	0.8	195-204	244-255
1800 (60)	88-92	--	--	0.8	245-256	306-320

Air Intake Restriction 12 in.H₂O (3 kPa)
 Exhaust Back Pressure 30 in.H₂O (7.5 kPa)

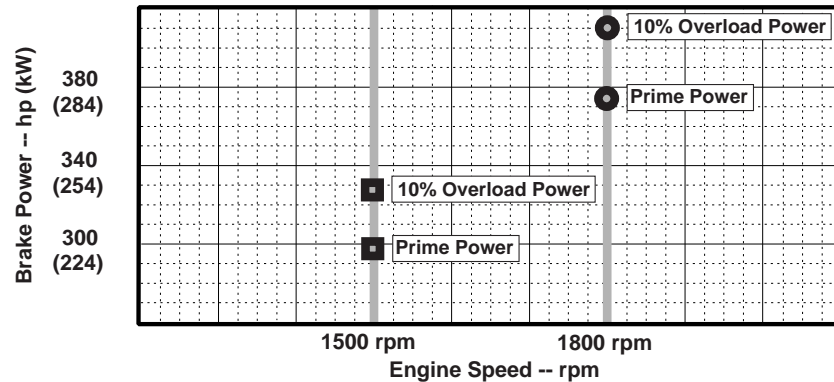
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 8665 conditions:

- 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)

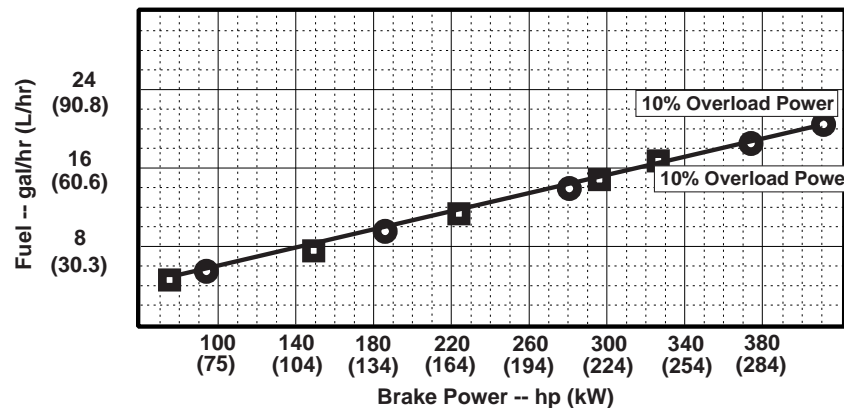
Conversion factors:

- 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.



■ - 1500 rpm ● - 1800 rpm



Notes:

**1800 RPM / 1500 RPM
 Emission Certifications:**

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

Ref: Engine Emission Label

Certified by:

**ADVANCE
 INFORMATION**

* Revised Data
 Curve 6090SFM75373MG Sheet 1 of 2
 March 2009

Engine Specification Data

General Data

Model 6090SFM75
 Number of Cylinders 6
 Bore and Stroke--in. (mm)..... 4.65 x 5.0 (118 x 127)
 Displacement--in.³ (L)548 (9.0)
 Compression Ratio 16.0 : 1
 Valves per Cylinder--Intake/Exhaust..... 2 / 2
 Firing Order..... 1-5-3-6-2-4
 Combustion System..... Direct Injection
 Engine Type..... In-line, 4-Cycle
 Aspiration..... Turbocharged and Aftercooled
 Aftercooler..... Sea Water
 Engine Crankcase Vent System Closed

Physical Data

Length--in. (mm)000 (000)
 Width--in. (mm)36.1 (917)
 Height, Crank Center to Top--in. (mm).....25.9 (658)
 Height, Crank Center to Bottom--in. (mm)12.6 (319)
 Weight, dry--lb (kg).....2350 (1066)
 (Includes flywheel housing, flywheel & electrics)
 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 Installation Angle
 Front up--degrees 000
 Front down--degrees..... 0

Air System

1800 rpm 1500 rpm

Min. Ventilation Area--in.² (m²)226(0.146) ..145(0.094)
 Maximum Allowable Air Temperature Rise,
 Ambient to Engine Inlet--°F (°C)30 (17)30 (17)
 Engine Air Flow--ft³/min (m³/min) ...837 (23.7) ...537 (15.2)
 Intake Manifold Pressure--psi (kPa)....32 (217)21 (145)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in. H₂O (kPa)....25 (6.25)25 (6.25)
 Clean Air Cleaner--in. H₂O (kPa)....12 (3.0) 12 (3.0)

Cooling System

1800 rpm 1500 rpm

Coolant Flow--gal/min (L/min).....66 (250) 57 (216)
 Min. 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 Temp--°F (°C)212 (100)
 Minimum Sea Water-to-Boil--°F (°C)90 (32)
 Rec'd. Pressure Cap--psi (kPa)16 (110)
 Engine Coolant Capacity--qt (L)31 (30)

Electrical System

12 Volts 24 Volts

Recommended Battery Capacity
 CCA @ 32 °F (0 °C)--amp 1100 750
 Max. Starting Circuit Resist.--Ohm 0.001 0.002
 Starter Rolling Current
 @ 32 °F (0 °C)--amp920 600

Exhaust System

1800 rpm 1500 rpm

Exhaust Gas Flow--ft³/min (m³/min) . 1900(53.8) ... 1349(38.2)
 Exhaust Temperature--°F (°C)808 (431) ... 937 (503)
 Min. Exhaust Pipe Dia. Dry--in. (mm)6.0 (152)
 Min. Exhaust Pipe Dia. Wet--in. (mm)6.0 (152)
 Max. Allow. Back Press.--in. H₂O (kPa).....30 (7.5)
 Max. Weight on Turbo--lb (kg)55 (25.0)

Fuel System

1800 rpm 1500 rpm

ECU DescriptionJohn Deere Electronic Controls
 Fuel Injection PumpDenso HP4
 Governor Type Electronic
 Governor Regulation--percentIsochronous or Droop
 Total Fuel Flow--lb/hr (kg/hr).....450 (204) 000 (000)
 Total Fuel Flow--gal/hr (L/hr).....63.4 (240)000 (000)
 Min. Rec'd. Fuel Line ID--in. (mm).....0.31 (8)
 Min. Rec'd. Fuel Line Size-6
 Fuel Cons. 'Prime' --lb/hr (kg/hr)....130 (59.0) ... 103 (47.6)
 Fuel Cons. 'Prime' --gal/hr (L/hr) ...18.4 (69.7) .. 14.8 (56.0)
 Max. Fuel Inlet Restrict.--in. H₂O (kPa)80 (20)
 Max. Fuel Inlet Temp. w/o derate--°F (°C) ...176 (80)
 Fuel Filter @ 98% Efficiency--Microns..... 2

Lubrication System

1800 rpm 1500 rpm

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

Sea Water System

1800 rpm 1500 rpm

Sea Water Pump Flow--gal/min (L/min)73 (276) ... 61 (231)
 Max. Inlet Restriction--in. H₂O (kPa) 120 (30)
 Max. Outlet Press--psi (kPa).....24 (165)
 Max. Suction Lift--ft (m) 10 (3.0)

Performance Data

1800 rpm 1500 rpm

Rated 'Prime' Power--hp (kW)373 (278) 297 (222)
 10% Overload Eng. Power--hp (kW)410 (306) 327 (244)
 Low Idle Speed--rpm 1000 1000
 Rated Torque--ft-lb (N•m).....1197 (1623) ... 1145 (1553)
 BMEP--psi (kPa)329 (2267) .. 315 (2169)
 Smoke @ Rated Speed--Bosch No.<1.5..... <1.5

Fuel Consumption

1800 rpm 1500 rpm

Prime:
 25 % Power-- gal/hr (L/hr)5.3 (20.1) 4.3 (16.3)
 50 % Power-- gal/hr (L/hr)9.6 (36.3) 7.8 (29.5)
 75 % Power-- gal/hr (L/hr) ...14.0 (53.0) .. 11.3 (42.8)
 100 % Power-- gal/hr (L/hr) ...18.4 (69.7) .. 14.8 (56.0)
 10% Overload
 Power-- gal/hr (L/hr).....20.2 (76.5) .. 16.3 (61.7)

ADVANCE
INFORMATION

Data based on heat exchanged engine.
 All values at rated speed and power with standard options unless otherwise noted.

* Revised Data
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