



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Marine
 Application: Generator
 Prime Power

POWERTECH 4.5 L Engine
 Model: **4045TFM75**

98 hp (73 kW) @ 1800 rpm
74 hp (55 kW) @ 1500 rpm

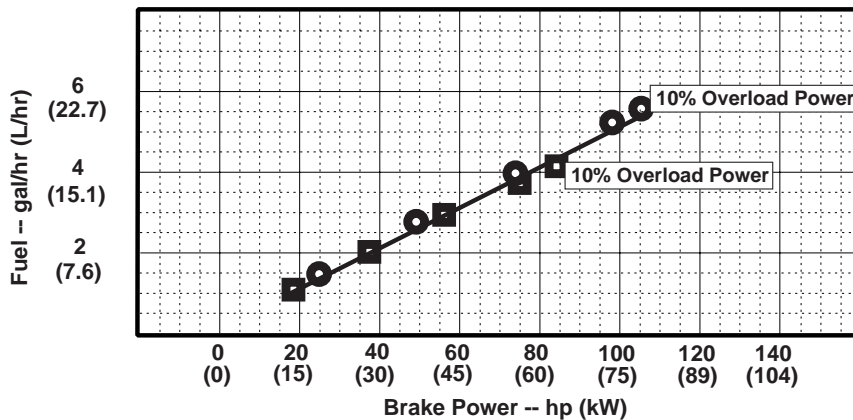
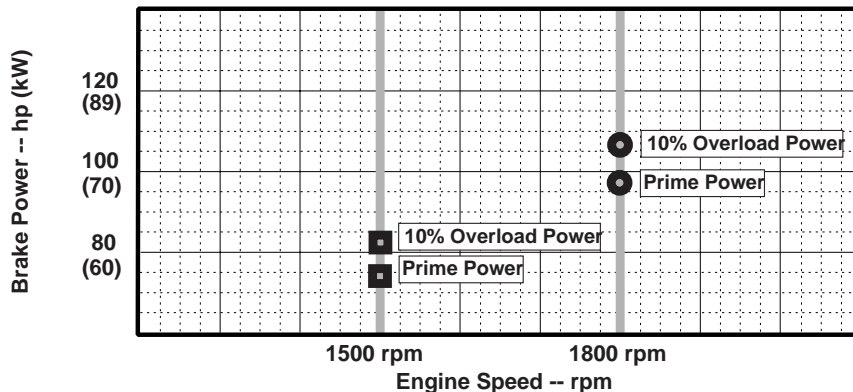
Speed rpm (Hz)	Generator Efficiency %	Keel Cooled		Power Factor	Calculated Gen-Set Rating	
		(no fan)			kW	kVA
1500 (50)	88-92	--	--	0.8	48-51	60-64
1800 (60)	88-92	--	--	0.8	64-67	80-84

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:

1800 RPM Emission Certifications:	1500 RPM Emission Certifications:
<ul style="list-style-type: none"> EPA Commercial Marine (40 CFR Part 94) IMO Exempt* 	<ul style="list-style-type: none"> ¥ IMO Exempt*
Ref: Engine Emission Label	Ref: Engine Emission Label

Certified by:

NEAL CEEPER 1 Apr 2004

* Revised Data
 Curve 4045TFM7598MG Sheet 1 of 2
 April 2004

Engine Specification Data

General Data

Model4045TFM75
 Number of Cylinders 4
 Bore and Stroke--in. (mm)..... 4.2 x 5.0 (106.5 x 127)
 Displacement--in.³ (L)275 (4.5)
 Compression Ratio 17.6 : 1
 Valves per Cylinder--Intake/Exhaust..... 1 / 1
 Firing Order..... 1-3-4-2
 Combustion System..... Direct Injection
 Engine Type In-line, 4-Cycle
 Aspiration Turbocharged
 Engine Crankcase Vent System Open
 Max. Crankcase Pressure--in. H₂O (kPa)2 (0.5)

Physical Data

Length--in. (mm)34.8 (885)
 Width--in. (mm)28.0 (712)
 Height, Crank Center to Top--in. (mm).....24.4 (620)
 Height, Crank Center to Bottom--in. (mm) 11.5 (292)
 Weight, dry--lb (kg).....1019 (462)
 (Includes flywheel housing, flywheel & electrics)
 Center of Gravity Location From
 Rear Face of Block (X-axis)--in. (mm) 10.6 (270)
 Right of Crankshaft (Y-axis)--in. (mm) -1.0 (-25)
 Above Crankshaft (Z-axis)--in. (mm) 7.9 (200)
 Max. Allow. Static Bending Moment at Rear Face
 of Flywhl Hsg w/ 5-G Load--lb-ft (N•m)600 (814)
 Thrust Brng. Load Limit (Forward)--lb (N).....900 (4003)
 Maximum Installation Angle
 Front up--degrees12*
 Front down--degrees.....0

Air System

1800 rpm 1500 rpm

Min. Ventilation Area--in.² (m²)49.6(0.032) .34.1(0.022)
 Maximum Allowable Air Temperature Rise,
 Ambient to Engine Inlet--°F (°C)30 (17) 30 (17)
 Engine Air Flow--ft³/min (m³/min)184 (5.2) 124 (3.5)
 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)
 Intake Manifold Pressure--psi (kPa)* 9.7 (67)* 4.6 (32)*

Cooling System

1800 rpm 1500 rpm

Eng. Heat Reject--BTU/min (kW).....3523 (62) ...2681 (47)
 Eng. Radiated Heat--BTU/min (kW) ..564 (9.9) 404 (7.1)
 Coolant Flow--gal/min (L/min).....32* (125*) .. 30* (116*)
 Min. Coolant Fill Rate--gal/min (L/min)3.2 (12)
 Thermostat Start to Open--°F (°C) 180 (82)
 Thermostat Fully Open--°F (°C).....203 (95)
 Maximum Top Tank Temp--°F (°C)212 (100)
 Minimum Sea Water-to-Boil--°F (°C) 90 (32)
 Min. Water Pump In. Press.--in. H₂O (kPa) ...00 (00)
 Rec'd. Pressure Cap--psi (kPa)10 (70)
 Max. Pressure Drop

 Across Keel Cooler--psi (kPa).....4 (30) 3 (20)
 Engine Coolant Capacity--qt (L) 15 (14) 15 (14)

Electrical System

12 Volts 24 Volts

Recommended Battery Capacity
 CCA @ 32 °F (0 °C)--amp 640 570
 Max. Starting Circuit Resist.--Ohm 0.0012 0.002
 Starter Rolling Current
 @ 32 °F (0 °C)--amp 780 600

Exhaust System

1800 rpm 1500 rpm

Exhaust Gas Flow--ft³/min (m³/min) 463 (13.1) 300 (9.0)
 Exhaust Temperature--°F (°C)889 (476) ... 851 (455)
 Min. Exhaust Pipe Dia. Dry--in. (mm) ..2.5 (65) 2.0 (50)
 Min. Exhaust Pipe Dia. Wet--in. (mm) .3.0 (75) 2.5 (65)
 Max. Allow. Back Press.--in. H₂O (kPa).....30 (7.5)
 Max. Weight on Turbo--lb (kg)26.5 (12.0)

Fuel System

1800 rpm 1500 rpm

Fuel Injection Pump--Stanadyne..... DE-10
 Governor Type Electronic
 Governor Regulation--percent 0 to 5 0 to 6
 Total Fuel Flow--lb/hr (kg/hr).....212 (96) 205 (93)
 Total Fuel Flow--gal/hr (L/hr).....30 (113) 29 (109)
 Min. Rec'd. Fuel Line ID--in. (mm).....0.25 (6)
 Min. Rec'd. Fuel Line Size -5
 Fuel Cons. 'Prime' --lb/hr (kg/hr)....36.8 (16.7) .. 26.5 (12.0)
 Fuel Cons. 'Prime' --gal/hr (L/hr)5.2 (19.7) 3.7 (14.1)
 Max Leak-off Line Press.--psi (kPa)3 (20)
 Max Leak-off Return Height--ft (m)8 (2.5)
 Max. Fuel Trans. Pump Suction--ft (m)..... 10 (3.0)
 Max. Fuel Ht. Above Inj.Pump--ft (m) 10 (3.0)
 Max. Fuel Inlet Temp. w/o derate--°F (°C) .212 (100)
 Fuel Filter @ 98% Efficiency--Microns..... 2

Lubrication System

1800 rpm 1500 rpm

Oil Press. at Rated Speed--psi (kPa) ..50 (345) 45 (311)
 Oil Pressure at Low Idle--psi (kPa) 15 (105) 15 (105)

Sea Water System

1800 rpm 1500 rpm

Sea Water Pump Flow--gal/min (L/min)22 (84) 18 (70)
 Max. Inlet Restriction--in. H₂O (kPa) ..120 (30) 100 (25)
 Max. Outlet Press--psi (kPa).....20 (135) 20 (135)
 Max. Suction Lift--ft (m)10 (3.0) 10 (3.0)

Performance Data

1800 rpm 1500 rpm

Rated 'Prime' Power--hp (kW)98 (73) 74 (55)
 10% Overload Engine Power--hp (kW)107 (80) 82 (61)
 Low Idle Speed--rpm 11501150
 Rated Torque--ft-lb (N•m).....285 (386) 260 (353)
 BMEP--psi (kPa) 155 (1071) 142 (980)
 Friction Power @ Rated Speed--hp (kW)17 (13) 13 (10)
 Smoke @ Rated Speed--Bosch No. NA NA

Fuel Consumption

1800 rpm 1500 rpm

Prime:
 25 % Power-- gal/hr (L/hr)1.5 (5.8) 1.2 (4.6)
 50 % Power-- gal/hr (L/hr)2.8 (10.7) 2.0 (7.6)
 75 % Power-- gal/hr (L/hr)4.0 (15.3) 2.9 (10.8)
 100 % Power-- gal/hr (L/hr)5.2 (19.7) 3.7 (14.1)
 10% Overload Power-- gal/hr (L/hr) .5.6 (21.1) 4.1 (15.7)

Data based on keel-cooled engine.
 All values at rated speed and power with standard options unless otherwise noted.

* Revised Data
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 April 2004