



ENGINE PERFORMANCE CURVE

Rating: Marine
 Application: Generator
 Prime Power

POWERTECH 6.8 L Engine
 Model: **6068TFM50**
 [Option 16FE / 16FF]*

154 hp (115 kW) @ 1800 rpm
119 hp (89 kW) @ 1500 rpm

Factory pump must be adjusted from 1800 rpm to 1500 rpm.*

Speed rpm (Hz)	Generator Efficiency %	Keel Cooled (no fan)		Power Factor	Calculated Gen-Set Rating	
					kW	kVA
1500 (50)	88-92	--	--	0.8	78-82	98-102
1800 (60)	88-92	--	--	0.8	99-106	124-132

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

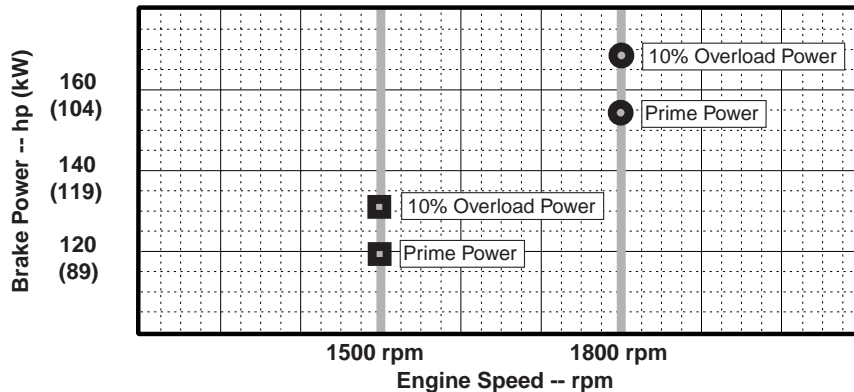
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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)

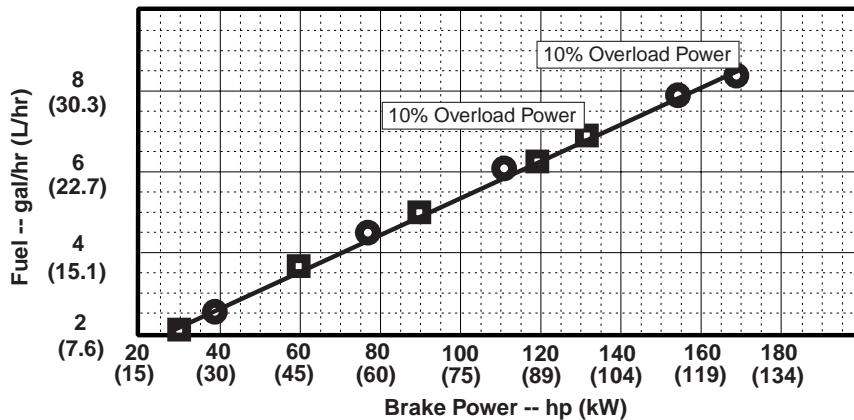
Conversion factors:

- 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:

Emission Certifications:

Certified by:

NONE

Ref: Engine Emission Label

Neal Seeger
 8 FEB 99

* Revised Data

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 February 1999

Engine Specification Data

General Data

Model 6068TFM50
 Number of Cylinders 6
 Bore and Stroke--in. (mm)..... 4.19 x 5.00 (106 x 127)
 Displacement--in.³ (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

Physical Data

Length--in. (mm) 51* (1300)*
 Width--in. (mm) 28 (703)
 Height--in. (mm) 35 (882)
 Weight, dry--lb (kg) 1298 (590)
 (Includes flywheel housing, flywheel & electrics)
 Center of Gravity Location From
 Rear Face of Block (X-axis)--in. (mm)..... 16.9 (430)
 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 Bearing Load Limit (Forward)--lb (N) 900 (4003)
 Maximum Installation Angle
 Front up--degrees 15
 Front down--degrees 0

Fuel System

1800 rpm 1500 rpm

Fuel Injection Pump--Stanadyne..... DB-4 DB-4
 Governor Type..... Mech. Mech.
 Governor Regulation 5 % 5 %
 'Prime' Fuel Consump.--gal/hr (L/hr) 8.4 (31.7) 6.9 (26.1)
 Total Fuel Flow--gal/hr (L/hr) 23 (87) 19 (73)
 Max. Leak-off Line Pressure--psi (kPa) .. 2 (14) 2 (14)
 Max. Fuel Transfer Pump Suction--
 ft (m) fuel 3 (0.9) 3 (0.9)
 Max. Fuel Height
 Above Inj. Pump--ft (m) 4.5 (1.4) 4.5 (1.4)
 Fuel Filter @ 98% Efficiency--Microns 8 8

Lubrication System

1800 rpm 1500 rpm

Oil Press. at Rated Speed--psi (kPa) .. 50 (345) 50 (345)
 Oil Pressure at Low Idle--psi (kPa) 15 (105) 15 (105)
 In Pan Oil Temperature--°F (°C) 240 (115) 240 (115)
 Oil Pan Capacity, High--qt (L) 25 (23.7) 25 (23.7)
 Oil Pan Capacity, Low--qt (L) 24 (22.7) 24 (22.7)
 Total Eng. Oil Cap. w/filters--qt (L) 26 (24.6) 26 (24.6)
 Oper. Angularity Limit, Any Direction--deg... 30 30
 Max. Crank. Pressure--in. H₂O (kPa) 2 (0.5) 2 (0.5)
 Engine Crankcase Vent System open open

Exhaust System

1800 rpm 1500 rpm

Exhaust Temperature--°F (°C) 698 (370) 752 (400)
 Exhaust Flow--ft³/min (m³/min) 600 (17) 450 (12.7)
 Maximum Allowable Back Pressure--
 in. H₂O (kPa) 30 (7.5) 30 (7.5)
 Maximum Weight on Turbo--lb (kg) 55 (25) 55 (25)
 Rec'd. Min. Exhaust Outlet Diameter
 Dry--in. (mm) 4.0 (100) 4.0 (100)
 Wet--in. (mm) 4.5 (113) 4.5 (113)

Cooling System

1800 rpm 1500 rpm

Eng. Heat Rejection--BTU/min (kW) . 5575 (98) .. 4275 (75)
 Eng. Radiated Heat--BTU/min (kW) . 900(15.9) .. 750(13.1)
 Coolant Flow--gal/min (L/min) 33*(125)* .. 31*(116)*
 Min. Coolant Fill Rate--gal/min (L/min) ... 3 (11) 3 (11)
 Thermostat Start to Open--°F (°C) 176 (80) 176 (80)
 Thermostat Fully Open--°F (°C) 201 (94) 201 (94)
 Maximum Top Tank Temp--°F (°C)..... 212 (100) .. 212 (100)
 Minimum Water-to-Boil--°F (°C) 90 (32) 90 (32)
 Min. Top Tank Press--in. H₂O (kPa) 24 (6) 24 (6)
 Rec'd. Pressure Cap--psi (kPa) 7 (48) 7 (48)
 Max. Pres. Drop
 Across Keel Cooler--psi (kPa) 6 (41) 6 (41)
 Engine Coolant Capacity--qt (L) 30 (28) 30 (28)

Sea Water System

1800 rpm 1500 rpm

Sea Water Pump Flow--gal/min (L/min) 22 (83) 18 (68)
 Maximum Inlet Restriction--in. H₂O (kPa) 120 (30) 120 (30)
 Maximum Outlet Press--psi (kPa) 10 (69) 10 (69)
 Maximum Suction Lift--ft (m) 10 (3) 10 (3)

Air System

1800 rpm 1500 rpm

Min. Ventilation Area--in.² (m²) 74 (0.048) ... 54 (0.035)
 Max. Allow. Temp Rise, Ambient Air to
 Engine Inlet--°F (°C) 30 (17) 30 (17)
 Engine Air Flow--ft³/min (m³/min) 275 (8) 200 (6)
 Intake Manifold Pressure--psi (kPa) .. 15 (103) 10 (67)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in. H₂O (kPa) 25 (6.3) 25 (6.3)
 Clean Air Cleaner--in. H₂O (kPa) ... 12 (3.0) 12 (3.0)

Electrical System

12 Volts 24 Volts

Recommended Battery Capacity
 CCA @ 32 °F (0 °C)--amp 800 570
 Max. Starting Circuit Resist.--Ohm 0.0012 0.002
 Starter Rolling Current
 @ 32 °F (0 °C)--amp 920 600

Performance Data

1800 rpm 1500 rpm

10% Overload Eng. Power--hp (kW) . 168 (125) 131 (98)
 Prime Engine Power--hp (kW) 154 (115) 119 (89)
 Rated Torque--ft-lb (N*m) 490 (665) ... 459 (623)
 Low Idle Speed--rpm 1000 1000
 BMEP--psi (kPa) 179(1232) .. 167(1154)

Fuel Consumption

1800 rpm 1500 rpm

Prime:
 25 % Power-- gal/hr (L/hr) 2.6 (9.9) 2.1 (8.1)
 50 % Power-- gal/hr (L/hr) 4.5 (17.0) 3.7 (14.0)
 75 % Power-- gal/hr (L/hr) 6.1 (23.0) 5.0 (18.9)
 100 % Power-- gal/hr (L/hr) 7.7 (29.0) 6.3 (23.9)
 10% Overload Power-- gal/hr (L/hr) . 8.4 (31.7) 6.9 (26.1)

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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