



ENGINE PERFORMANCE

Rating: Gross Power
 Application: Generator
 1500 RPM (50 Hz)

POWERTECH 4.5L Engine
 Model: **4045DF150**

54 hp (40 kW) Prime
59 hp (44 kW) Standby

[Option 1603 / 1673 / 1674]

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

Nominal Engine Power @ 1500 RPM			
Prime		Standby	
HP	kW	HP	kW
54	40	59	44

Generator Efficiency %	Fan Power		Power Factor	Prime Rating		Standby Rating ¹		4 sec Standby Block Load Capability
	hp	kW		kW	kVA	kW	kVA	
88-92	2.7	2	0.8	33-35	41-44	37-39	46-49	90%

Note 1: Based on nominal engine power. Derate 10% for 100% block load capability.

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

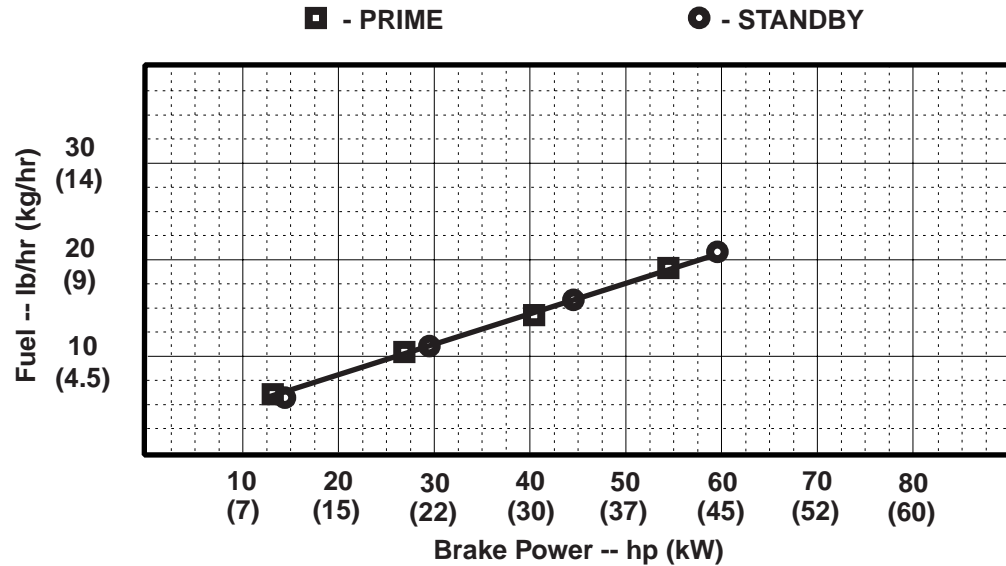
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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.



Notes:

Emission Certifications:

Certified by:

NONE

Ref: Engine Emission Label

Kevin J. Bailey
 31 May 1999

* Revised Data

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 June 1999

Engine Specification Data

General Data

Model 4045DF150
 Number of Cylinders 4
 Bore and Stroke--in.(mm)..... 4.19 x5 (106 x 127)
 Displacement--in³ (L)276 (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 Natural
 Engine Crankcase Vent System..... Open
 Maximum Crankcase Pressure--in.H₂O (kPa)2 (0.5)

Physical Data

Length--in.(mm)33.9 (861)
 Width--in.(mm)23.5 (598)
 Height--in.(mm)33.6 (854)
 Weight, dry--lb (kg)851 (387)
 (Includes flywheel housing, flywheel & electrics)
 Center of Gravity Location
 From Rear Face of Block (X-axis)--in.(mm)9.3 (235)
 Right of Crankshaft (Y-axis)--in.(mm)0.3 (7)
 Above Crankshaft (Z-axis)--in.(mm)5.7 (144)
 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)
 Continuous--lb (N).....500 (2224)
 Intermittent--lb (N).....900 (4003)

Electrical System

Recommended Battery Capacity (CCA)
 12 Volt System--amp 640
 24 Volt System--amp 570
 Maximum Allowable Starting Circuit Resistance
 12 Volt System--Ohm 0.0012
 24 Volt System--Ohm 0.002
 Starter Rolling Current--12 Volt System
 At 32 °F (0 °C)--amp 780
 At -22 °F (-30 °C)--amp 1000
 Starter Rolling Current--24 Volt System
 At 32 °F (0 °C)--amp 600
 At -22 °F (-30 °C)--amp 700

Air System

Prime Standby
 Maximum Allowable Temp Rise--
 Ambient Air to Engine Inlet--°F (°C) 15 (8) 15 (8)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in.H₂O (kPa) ... 25 (6.25) ... 25 (6.25)
 Clean Air Cleaner--in.H₂O (kPa)..... 12 (3) 12 (3)
 Engine Air Flow--ft³/min (m³/min)85 (24) 93 (2.6)
 Intake Manifold Pressure--psi (kPa)..... Ambient Ambient
 Rec'd. Intake Pipe Dia--in. (mm).....3 (76.2) 3 (76.2)

Exhaust System

Prime Standby
 Exhaust Flow--ft³/min (m³/min).....251 (7.1)...258 (7.3)
 Exhaust Temperature--°F (°C)999 (537) 1049 (565)
 Max. Allowable Back Pressure--
 in.H₂O (kPa) 30 (7.5)..... 30 (7.5)
 Rec'd. Exhaust Pipe Dia--in.(mm).....2.5 (63.5)..2.5 (63.5)

Cooling System

Prime Standby
 Engine Heat Reject.--BTU/min (kW). 1365 (24) .. 1535 (27)
 Coolant Flow--gal/min (L/min)..... 32 (120) 32 (120)
 Thermostat Start to Open--°F (°C) 180 (82) 180 (82)
 Thermostat Fully Open--°F (°C)..... 202 (94) 202 (94)
 Max Water Pump Inlet
 Restriction--in.H₂O (kPa) 20 (5) 20 (5)
 Engine Coolant Capacity--qt (L) 9 (8.5) 9 (8.5)
 Rec'd. Pressure Cap--psi (kPa) 10 (69) 10 (69)
 Max. Top Tank Temp--°F (°C) 221 (105) .. 221 (105)
 Min. Coolant Fill Rate--gal/min (L/min) ... 3 (11) 3 (11)
 Min. Air-to-Boil Temperature--°F (°C).. 117 (47) 117 (47)

Fuel System

Prime Standby
 Fuel Injection Pump Stanadyne... Stanadyne
 Governor Regulation..... 5 %..... 5 %
 Governor Type Mechanical.. Mechanical
 Fuel Consumption--lb/hr (kg/hr) 18.9 (8.6) 21.1 (9.6)
 Total Fuel Flow--lb/hr (kg/hr)205 (93) 205 (93)
 Maximum Fuel Transfer Pump Suction--
 ft (m) fuel 3 (0.9)..... 3 (0.9)
 Fuel Filter Micron Size @ 98 % Efficiency... 8..... 8

Lubrication System

Prime Standby
 Oil Pressure 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)8 (7.5) 8 (7.5)
 Oil Pan Capacity, Low--qt (L)7 (6.5) 7 (6.5)
 Total Engine Oil Capacity
 With Filters--qt (L)9 (8.5) 9 (8.5)
 Engine Angularity Limits (Continuous)
 Any Direction--degrees 20 20

Performance Data

Prime Standby
 Rated Power--hp (kW) 54 (40) 59 (44)
 Rated Speed--rpm 1500 1500
 Low Idle Speed--rpm 1400* 1400*
 BMEP--psi (kPa) 103 (707) 113 (778)
 Friction Power @ Rated Speed--hp (kW)13 (10) 13 (10)
 Altitude Capability--ft (m) 3000 (900) .1000 (300)*
 Ratio--Air : Fuel..... 18.6:1 18.3:1
 Noise--dB(A) @ 1 m91.5 91.5

Fuel Consumption -- lb/hr (kg/h) Prime Standby

25 % Power.....6.4 (2.9) 5.7 (2.6)
 50 % Power.....10.3 (4.7) 11.2 (5.1)
 75 % Power.....14.5 (6.6) 15.8 (7.2)
 100 % Power.....18.9 (8.6) 21.1 (9.6)

All values at rated speed and power with standard options unless otherwise noted.

* Revised Data
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 June 1999