



ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Generator
 1800 RPM (60 Hz)

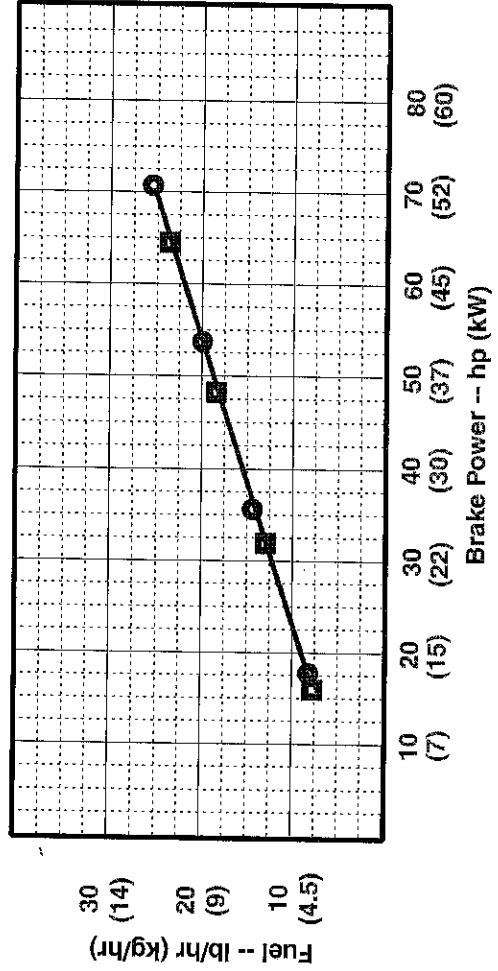
POWERTECH 4.5L Engine
Model: 4045DF150
64 hp (48 kW) Prime
71 hp (53 kW) Standby
 [Option 1603 / 1673 / 1674]*

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	KW	HP	KW
64	48	71	53

Generator Efficiency %	Fan Power		Power Factor		Prime Rating		Standby Rating 1		4 sec Standby Block Load Capability
	hp	kW	kVA	kW	kVA	kW	kVA		
88-92	3.5	2.6	0.8	40-42	50-52	44-46	55-58	100%*	

Note 1: Based on nominal engine power.*

■ - PRIME ● - STANDBY



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:
 All OEM Gen Set Engine Applications must be pre-screened for torsional vibration compatibility with the respective alternator end hardware.

OEM Engine Application Engineering will perform this computer-based analysis work upon request. *

Emission Certifications: Certified by:

CARB; EPA

Kevin J Bailey
 31 MAY 1999

Ref: Engine Emission Label

* Revised Data
 Curve 4045DF180071 Sheet 1 of 2
 June 1999

Engine Specification Data

General Data

Model	4045DF150
Number of Cylinders	4
Bore and Stroke-in. (mm)	4.19 x 5 (106 x 127)
Displacement-in. ³ (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. H ₂ O (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 Flywheel 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

Maximum Allowable Temp Rise-Ambient Air to Engine Inlet-°F (°C)	15 (8)
Maximum Air Intake Restriction	
Dirty Air Cleaner-In. H ₂ O (kPa)	25 (6.25)
Clean Air Flow-In. H ₂ O (kPa)	12 (3)
Engine Air Flow-ft ³ /min (m ³ /min)	107 (3)
Intake Manifold Pressure-psi (kPa)	Ambient
Recm'd Intake Pipe Dia-in. (mm)	3 (76.2)

Exhaust System

Exhaust Flow-ft ³ /min (m ³ /min)	318 (9)
Exhaust Temperature-°F (°C)	1060 (571)
Max. Allow. Back Press.-in. H ₂ O (kPa)	30 (7.5)
Recm'd Exhaust Pipe Dia-in. (mm)	2.5 (63.5)

Cooling System

Eng. Heat Rejection-BTU/min (kW)	1649 (29)
Coolant Flow-gal/min (L/min)	38 (144)
Thermostat Start to Open-°F (°C)	180 (82)
Thermostat Fully Open-°F (°C)	202 (94)
Maximum Water Pump	
Inlet Restriction-in. H ₂ O (kPa)	27 (7)
Engine Coolant Capacity-qt (L)	9 (8.5)
Recm'd Pressure Cap-psi (kPa)	10 (69)
Maximum Top Tank Temp-°F (°C)	221 (105)
Min. Coolant Fill Rate-gal/min (L/min)	3 (11)
Min. Air-to-Boil Temperature-°F (°C)	117 (47)

Fuel System

Fuel Injection Pump	Stanadyne
Governor Regulation	5 %
Governor Type	Mechanical
Fuel Consumption-lb/hr (kg/hr)	23.5 (10.7)
Total Fuel Flow-lb/hr (kg/hr)	212 (96)
Maximum Fuel Transfer Pump Suction-ft (m) fuel	3 (0.9)
Fuel Filter Micron Size @ 98 % Efficiency	8

Lubrication System

Oil Pressure at Rated Speed-psi (kPa)	50 (345)
Oil Pressure at Low Idle-psi (kPa)	15 (105)
In Pan Oil Temperature-°F (°C)	240 (115)
Oil Pan Capacity, High-qt (L)	8 (7.5)
Oil Pan Capacity, Low-qt (L)	7 (6.5)
Total Engine Oil Capacity With Filters-qt (L)	9 (8.5)
Engine Angularity Limits (Continuous)	
Any Direction-degrees	20

Performance Data

Rated Power-hp (kW)	64 (48)
Rated Speed-rpm	1800
Low Idle Speed-rpm	1400*
BMEP-psi (kPa)	103 (707)
Friction Power @ Rated Speed-hp (kW)	17 (13)
Altitude Capability-ft (m)	5000 (1525)
Ratio-Air : Fuel	19.5:1
Noise-dB(A) @ 1 m	94

Fuel Consumption - lb/hr (kg/h)

25 % Power	7.7 (3.5)
50 % Power	13 (5.9)
75 % Power	18.3 (8.3)
100 % Power	23.5 (10.7)

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

* Revised Data

Curve 4045DF180071 Sheet 2 of 2
June 1999