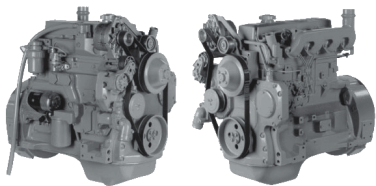


PowerTech

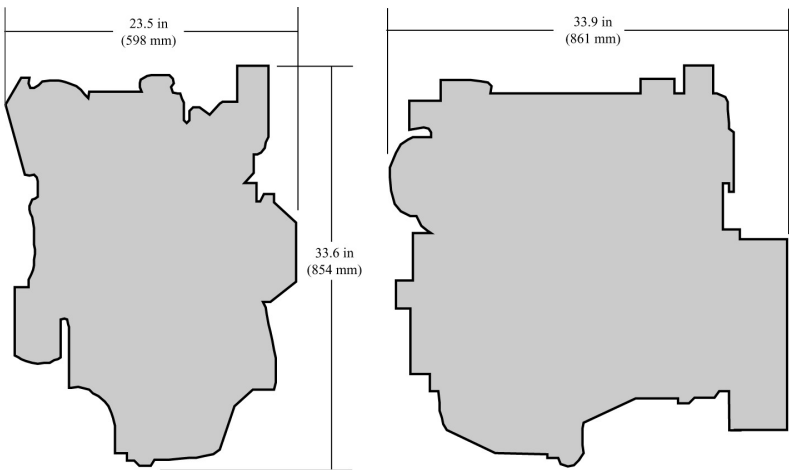
4045D Diesel Engine

Generator Drive Engine Specifications



4045D shown

Dimensions



Certifications

CARB
EPA Tier 1

General data

Model	4045DF150
Number of cylinders	4
Displacement - L (cu in)	4.5 (275)
Bore and Stroke-- mm (in)	106 x 127 (4.17 x 5.00)
Compression Ratio	17.6:1
Engine Type	In-line, 4-Cycle

Aspiration	Naturally aspirated
Length - mm (in)	861 (33.9)
Width - mm (in)	598 (23.5)
Height-- mm (in)	854 (33.6)
Weight, dry-- kg (lb)	387 (853)

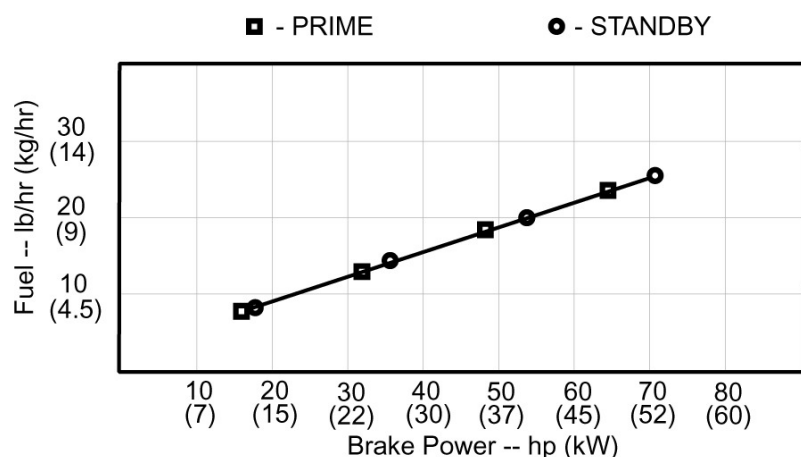
Performance data

Prime power at 60 Hz (1800 rpm)	48 kW (64 hp)
Standby power at 60 Hz (1800 rpm)	53 kW (71 hp)

The prime power gen-set engine rating is the nominal power an engine is capable of delivering with a variable load for an unlimited number of hours per year with normal maintenance intervals observed. This rating incorporates a 10% overload capability which is available for up to 2 hours at a time. Operating time between 100% and 110% of the prime power rating is not to exceed 8% of the total engine operating time. This rating conforms to ISO 8528-1 "prime power (PRP)". The permissible average power for the prime or PRP rating is not to exceed 70% of rated prime power when calculated per ISO 8528-1.

The standby gen-set engine rating is the nominal engine power available at varying load factors for up to 200 hours per year with normal maintenance intervals observed. No overload capability is available for this rating. This rating conforms to ISO 8528-1 "Emergency Standby Power (ESP)". The permissible average power for the standby or ESP rating is calculated per ISO 8528-1.

Performance curve



Performance data

Hz (rpm)	Generator efficiency %	Rated fan power		Power factor	Calculated generator set output			
		kW	hp		Prime		Standby	
					kWe	kVa	kWe	kVa
60 (1800)	88-92	2.6	3.5	0.8	40-42	50-52	44-46	55-58

Features and benefits

Dynamically Balanced Crankshaft

- Induction-hardened journals for long hours of reliable service
- Robust design to drive machinery from the front of the crankshaft
- Supported by five main bearings

Forged-steel Connecting Rods

- 45-degree connecting rod/cap-joint design allows the use of large connecting rod bearings for increased durability

Replaceable Wet-type Cylinder Liners

- Provide excellent heat dissipation
- Precision machined for long life
- Rebuild to original specifications

Smooth Operation

- Smooth vibration with full length engine balancers

Easy to Apply, Easy to Install

- Front and rear engine mounting pads on the side of the block facilitates installation
- Either side service for filters and service points
- All connection points in common locations make it easy to install or package

Compact Size

- Short length is ideal for both skid and packaged installations

World-class performance

- Excellent fuel economy and low oil consumption

Fuel System Controls

- Proven and Reliable Mechanical Governor
- 3-5% Droop Governing
- 12V or 24V Electric Shutoff

Emissions

- CARB & EPA Certified

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3801 W. Ridgeway Ave.
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Phone: 1-800-533-6446
Fax: 319.292.5075

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*All values at rated speed and power with standard options unless otherwise noted.
Specifications and design subject to change without notice.*

Litho in U.S.A. (10-03) © 2010 JOHN DEERE



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		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.*

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

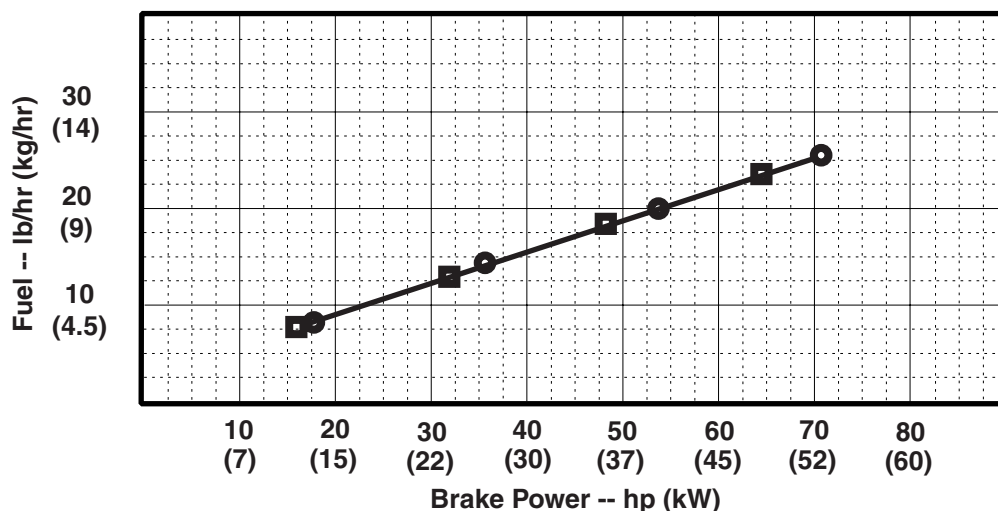
Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg

Torque: N•m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.

■ - PRIME

● - STANDBY



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

Ref: Engine Emission Label

Kevin J. Bailey
31 May 1999

* 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 x5 (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.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)107 (3) ... 117 (3.3)
 Intake Manifold Pressure--psi (kPa) Ambient Ambient
 Recm'd Intake Pipe Dia--in.(mm).....3 (76.2) 3 (76.2)

Exhaust System

Prime Standby

Exhaust Flow--ft³/min (m³/min).....318 (9) 318 (9)
 Exhaust Temperature--°F (°C)1060 (571) 1103 (595)
 Max. Allow. Back Press.--in.H₂O (kPa).30 (7.5) 30 (7.5)
 Recm'd Exhaust Pipe Dia--in.(mm) ...2.5 (63.5) .. 2.5 (63.5)

Cooling System

Prime Standby

Eng. Heat Rejection--BTU/min (kW) ..1649 (29) .. 1820 (32)
 Coolant Flow--gal/min (L/min).....38 (144) 38 (144)
 Thermostat Start to Open--°F (°C)180 (82) 180 (82)
 Thermostat Fully Open--°F (°C).....202 (94) 202 (94)
 Maximum Water Pump
 Inlet Restriction--in.H₂O (kPa)27 (7) 27 (7)
 Engine Coolant Capacity--qt (L)9(8.5) 9 (8.5)
 Recm'd Pressure Cap--psi (kPa)10 (69) 10 (69)
 Maximum 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).....23.5(10.7) . 25.7(11.7)
 Total Fuel Flow--lb/hr (kg/hr)212 (96) 212 (96)
 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) 64 (48) 71 (53)
 Rated Speed--rpm 1800 1800
 Low Idle Speed--rpm 1400* 1400*
 BMEP--psi (kPa) 103 (707) .. 113 (781)
 Friction Power @ Rated Speed--hp (kW)17 (13)..... 17 (13)
 Altitude Capability--ft (m) 5000 (1525) 5000 (1525)
 Ratio--Air : Fuel.....19.5:1 19.1:1
 Noise--dB(A) @ 1 m 94 94

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

Prime Standby

25 % Power 7.7 (3.5) 8.1 (3.7)
 50 % Power 13 (5.9) 14.3(6.5)
 75 % Power 18.3 (8.3) 20 (9.1)
 100 % Power 23.5 (10.7) ... 25.7 (11.7)

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

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