JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power

Application: Generator
1800 RPM (60 Hz)

POWERTECH 4.5L Engine
Model: **4045HF150**

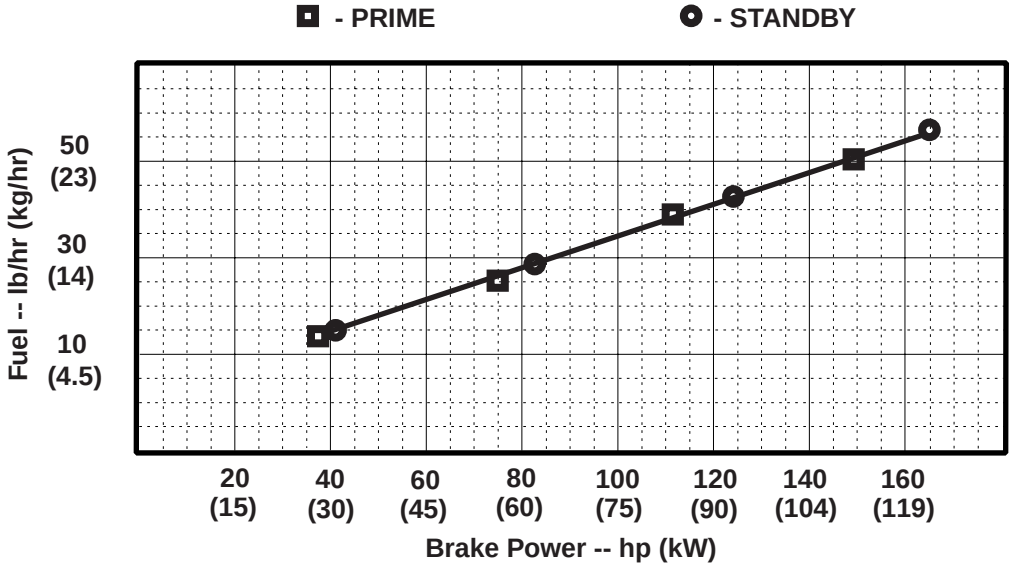
149 hp (111 kW) Prime
165 hp (123 kW) Standby

[Option 16ME / 16MF]

Nominal Engine Power @ 1800 RPM			
Prime		**Standby**	
HP	kW	HP	kW
149	111	165	123

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	8.5	6	0.8	92-96	115-120	103-107	129-134	70%

Note 1: Based on nominal engine power. Derate 30% for 100% block load capability.



Air Intake Restriction ..... 12 in.H_2O (3 kPa)
Exhaust Back Pressure ..... 30 in.H_2O (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:
CARB; EPA Ref: Engine Emission Label	Kevin V. Bailey 8 March 2001

* Revised Data
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Engine Specification Data

General Data

Model	4045HF150
Number of Cylinders	4
Bore and Stroke--in. (mm)	4.19 x5 (106 x 127)
Displacement--in.^{3} (L)	276 (4.5)
Compression Ratio	17.0:1
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
Charge Air Cooling System	Air-to-Air
Engine Crankcase Vent System	Open
Maximum Crankcase Pressure--in.H_2O (kPa)	2 (0.5)

Physical Data

Length--in. (mm)	33.9 (861)
Width--in. (mm)	23.5 (598)
Height--in. (mm)	38.6 (980)
Weight, dry--lb (kg)	872 (396)
(Includes flywheel housing, flywheel & electrics)	
Center of Gravity Location	
From Rear Face of Block (X-axis)--in. (mm)	10.6 (269)
Right of Crankshaft (Y-axis)--in. (mm)	-0.3 (-8)
Above Crankshaft (Z-axis)--in. (mm)	5.9 (151)
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.H_2O (kPa)	25 (6.25)	25 (6.25)
Clean Air Cleaner--in.H_2O (kPa)	12 (3)	12 (3)
Engine Air Flow--ft^3/min (m^3/min)	286 (8.1)	304 (8.6)
Intake Manifold Pressure--psi (kPa)	18.0 (124)	20.0 (138)
Rec'd. Intake Pipe Dia--in. (mm)	3 (76.2)	3 (76.2)
Compress. Discharge Temp--		
°F (°C)	286 (141)	307 (153)
Max. Press. Drop Through		
Charge Air Cooler--in.H_2O (kPa)	52 (13)	52 (13)
Max. Temp. Out of Charge Air Cooler		
@ 77°F (25°C) Ambient Air--°F (°C)	140 (60)	140 (60)

Exhaust System

	Prime	Standby
Exhaust Flow--ft^3/min (m^3/min)	763 (21.6)	826 (23.4)
Exhaust Temperature--°F (°C)	997 (536)	1047 (564)
Max. Allow. Back Pressure		
--in.H_2O (kPa)	30 (7.5)	30 (7.5)
Rec'd. Exhaust Pipe Dia--in. (mm)	4 (101.6)	4 (101.6)

Cooling System

	Prime	Standby
Engine Heat Reject.--BTU/min (kW)	2561 (45)	2788 (49)
Air/Air Exchanger Heat Rejection--		
BTU/min (kW)	847 (15)	1044 (18)
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)
Engine Coolant Capacity--qt (L)	9(8.5)	9 (8.5)
Rec'd. Pressure Cap--psi (kPa)	15 (103)	15 (103)
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)	50.6 (23.0)	56.3 (25.6)
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)	17 (16)	17 (16)
Oil Pan Capacity, Low--qt (L)	16 (15)	16 (15)
Total Engine Oil Capacity		
With Filters--qt (L)	18 (17)	18 (17)
Engine Angularity Limits (Continuous)		
Any Direction--degrees	20	20

Performance Data

	Prime	Standby
Rated Power--hp (kW)	149 (111)	165 (123)
Rated Speed--rpm	1800	1800
Low Idle Speed--rpm	1400	1400
BMEP--psi (kPa)	237 (1635)	263 (1812)
Friction Power		
@ Rated Speed--hp (kW)	17 (13)	17 (13)
Altitude Capability--ft (m)	7500 (2300)	5000(1500)
Ratio--Air : Fuel	24.0:1	22.8:1
Noise--dB(A) @ 1 m	N/A	N/A

Fuel Consumption -- lb/hr (kg/h)	**Prime**	**Standby**
25 % Power	13.9 (6.3)	15.0 (6.8)
50 % Power	25.5 (11.6)	28.2 (12.8)
75 % Power	38.7 (17.6)	42.5 (19.3)
100 % Power	50.6 (23.0)	56.3 (25.6)

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

* Revised Data

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March 2001