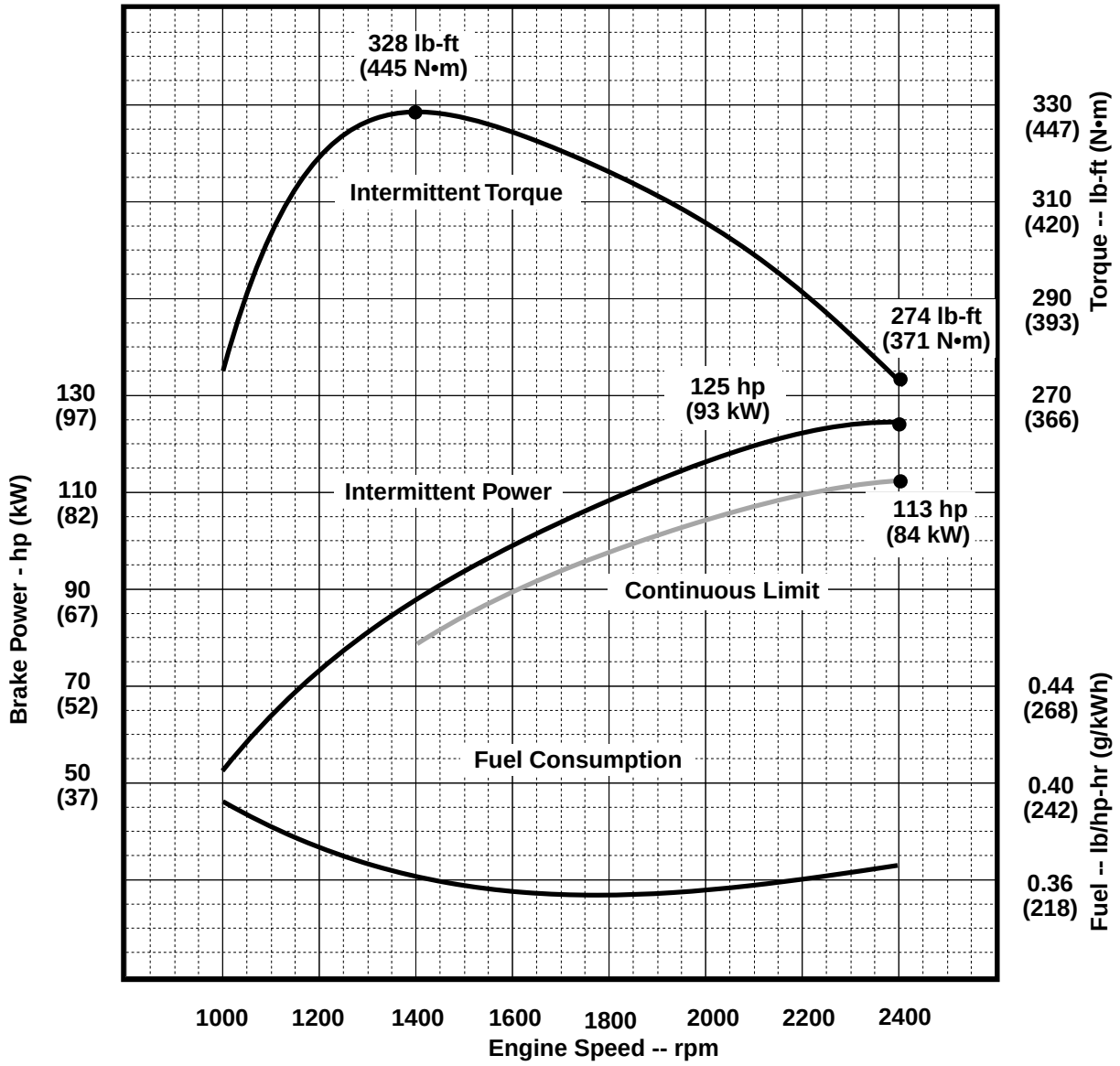
JOHN DEERE

Engine Performance Curve

Rating: Gross Power

Application: Industrial
Intermittent / Continuous

POWERTECH 4.5L Engine
Model: **4045T2**
125 hp @ 2400 rpm
93 kW @ 2400 rpm



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: Nm = lb-ft x 1.356

Emission Certifications:
CARB; EEC; EPA
Ref: Engine Emission Label

Certified by:
Neal Leppel
15 Dec 95

Curve:
4045TF250125I
Source Factory:
Dubuque/ Saran
Date: 12-95
Sheet 1 of 2

* Revised Data

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

Engine Specification Data

General Data

Model 4045TF250
Number of Cylinders 4
Bore and Stroke--in. (mm) ..... 4.19 x 5.00 (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
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)*
Maximum Allowable 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) [I] ..... 900 (4003)*
[C] ..... 500 (2224)*

Fuel System

Fuel Injection Pump ..... Lucas
Governor Regulation ..... 7-10 %
Governor Type ..... Mechanical
Fuel Consumption--lb/hr (kg/hr) [I] 46.0 (20.9)
[C] 41.6 (18.9)
Total Fuel Flow--lb/hr (kg/hr) ..... 228 (104)*
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) 13 (12.3)
Oil Pan Capacity, Low--qt (L) 12 (11.3)
Total Engine Oil Capacity with Filters--qt (L) 14 (13.3)
Engine Angularity Limits, Any Direction--Degrees [I] 30
[C] 20

Air System

Maximum Allowable Temp Rise--Ambient Air to
Engine Inlet--°F (°C) 15 (8)
Maximum Air Intake Restriction
Dirty Air Cleaner--in. H_2O (kPa) 25 (6.25)
Clean Air Cleaner--in. H_2O (kPa) 12 (3)
Engine Air Flow--ft^3/min (m^3/min) [I] 300 (8.5)
[C] 289 (8.2)
Intake Manifold Pressure--psi (kPa) [I] 16.7 (115)
[C] 14.6 (101)
Recommended Intake Pipe Diameter--in. (mm) 3 (76.2)

Cooling System

Engine Heat Rejection--BTU/min (kW) [I] 3128 (55)
[C] 2900 (51)
Coolant Flow--gal/min (L/min) 51 (192)
Thermostat Start to Open--°F (°C) 180 (82)
Thermostat Fully Open--°F (°C) 202 (94)
Maximum Water Pump Inlet Restriction--in. H_2O (kPa) 40 (10)
Engine Coolant Capacity--qt (L) 9 (8.5)
Recommended Pressure Cap--psi (kPa) 10 (69)
Maximum Top Tank Temp--°F (°C) 221 (105)
Minimum Coolant Fill Rate--gal/min (L/min) 3 (11)
Minimum Air-to-Boil Temperature--°F (°C) 117 (47)

Exhaust System

Exhaust Flow--ft^3/min (m^3/min) [I] 741 (21)
[C] 695 (19.7)
Exhaust Temperature--°F (°C) [I] 923 (495)
[C] 889 (476)
Maximum Allowable Back Pressure--in. H_2O (kPa) 30 (7.5)
Recommended Exhaust Pipe Diameter--in. (mm) 4.0 (102)

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

Performance Data

Rated Power--hp (kW) [I] 125 (93)
[C] 113 (84)
Rated Speed--rpm 2400
Peak Torque--lb-ft (N•m) [I] 328 (445)
[C] 296 (401)
Peak Torque Speed--rpm 1400
Low Idle Speed--rpm 850
BMEP--psi (kPa) [I] 149 (1030)
[C] 135 (930)
Friction Power @ Rated Speed--hp (kW) 28 (21)
Altitude Capability--ft (m) 7500 (2250)
Ratio--Air : Fuel [I] 28.4:1
[C] 29.4:1
Smoke @ Rated Speed--Bosch No. [I] ..... < 2
[C] ..... < 2
Noise--dB(A) @ 1 m [I] 96.5*
[C] 95.5*

Engine Speed rpm	Contin. Limit hp(kW)	Intermit. Power hp(kW)	Intermit. Torque lb-ft(N•m)	BSFC lb/hp-hr (g/kWh)
2400	113 (84)	125 (93)	274 (371)	0.367 (224)
2200	110 (82)	122 (91)	292 (396)	0.361 (220)
2000	105 (78)	117 (87)	306 (415)	0.357 (218)
1800	98 (73)	109 (81)	316 (428)	0.356 (217)
1600	90 (67)	99 (74)	325 (440)	0.356 (217)
1400	79 (59)	87 (65)	328 (445)	0.361 (220)
1200	--- ---	74 (55)	320 (434)	0.376 (229)
1000	--- ---	52 (39)	277 (375)	0.392 (239)

[I] = Intermittent Data [C] = Continuous Data
Unless noted, all other values pertain to both.

Curve No. 4045TF250125I
Sheet 2 of 2 (12-95)

* Revised Data

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