



JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross Power

Application: Industrial
Intermittent / Continuous

PowerTech M™ 2.4 L Engine

Model: 4024TF281

49 hp @ 2800 rpm

36 kW @ 2800 rpm

STANDARD CONDITIONS

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

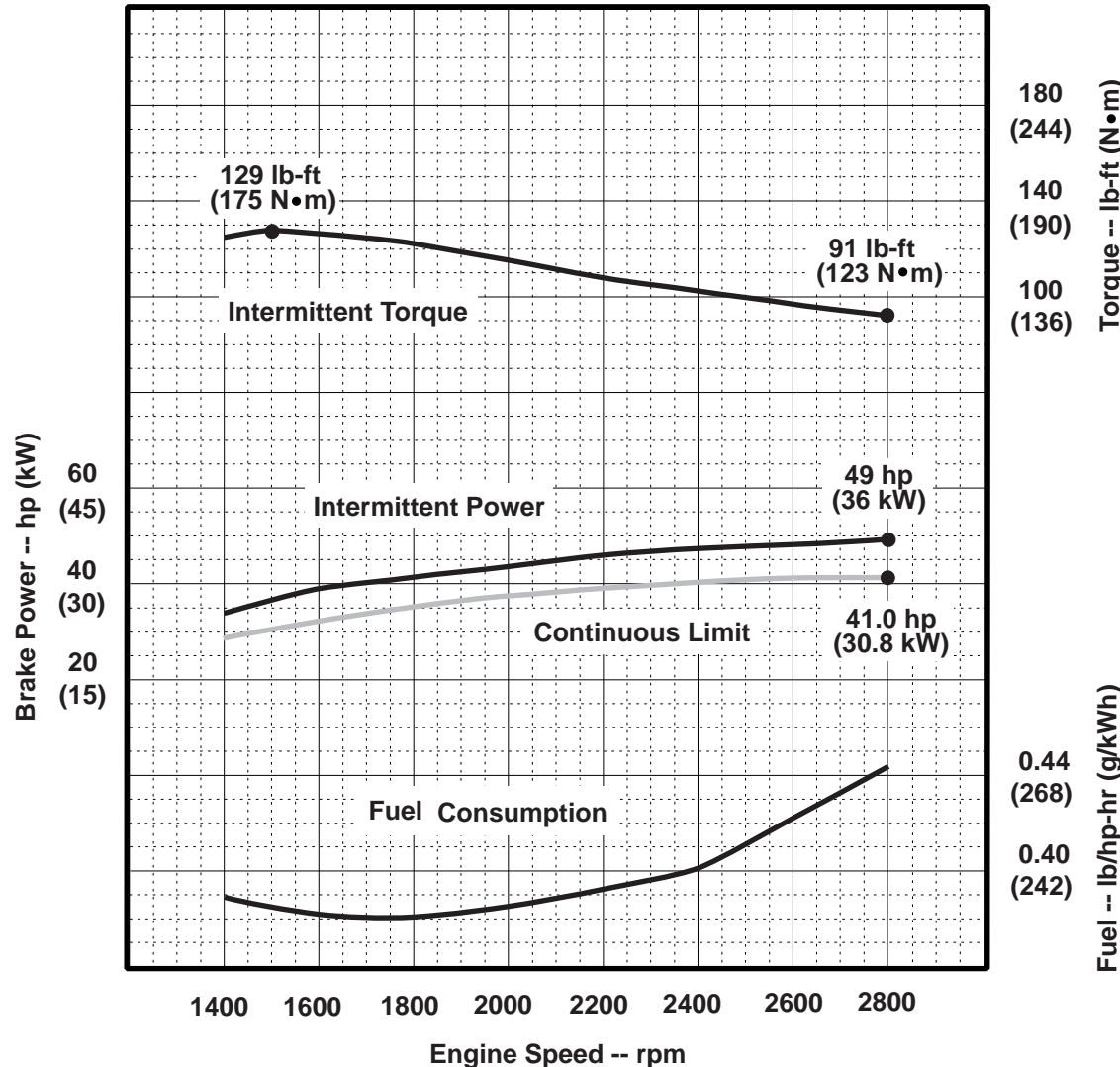
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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:

Interim Tier-4 Certifications:

Certified by:

CARB; EPA; EU
Ref: Engine Emission Label

Vincent Funder
11-27-2007

* Revised Data

Curve: 4024TF28149 Sheet 1 of 2
November 2007

General Data

Model4024TF281
 Number of Cylinders 4
 Bore and Stroke--in. (mm)..... 3.4 x 4.1 (86 x 105)
 Displacement--in.³ (L) 149 (2.44)
 Compression Ratio 19.1 : 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. H₂O (kPa)2 (0.5)

Physical Data

Length--in. (mm)26.1 (662)
 Width--in. (mm)22.3 (566)
 Height--in. (mm)30.4 (772)
 Weight, dry--lb (kg)554 (251)
 (Includes flywheel housing, flywheel and electrics.)
 Center of Gravity Location
 From Rear Face of Block (X-axis)--in. (mm) 7.6 (194)
 Right of Crankshaft (Y-axis)--in. (mm).....0.6 (14)
 Above Crankshaft (Z-axis)--in. (mm)4.3 (108)
 Max. Allow. Static Bending Moment at Rear
 Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m)....369 (500)
 Thrust Brng. Load Limit (Forward)--lb (N) [I] 1147 (5100)
 [C]629 (2800)

Air System

Maximum Allowable Temp Rise--Ambient Air to
 Engine Inlet--°F (°C) 15 (8)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in. H₂O (kPa)25 (6.25)
 Clean Air Cleaner--in. H₂O (kPa) 12 (3)
 Engine Air Flow--ft³/min (m³/min) [I].....166 (4.7)
 [C] NA
 Intake Manifold Pressure--psi (kPa) [I].....12 (84)
 [C] NA

Engine Specification Data

Cooling System

Engine Heat Rejection--BTU/min (kW) [I] ... 1508 (26.5)
 [C] NA
 Coolant Flow--gal/min (L/min).....23 (88.9)
 Thermostat Start to Open--°F (°C) 192 (89)
 Thermostat Fully Open--°F (°C).....212 (100)
 Engine Coolant Capacity--qt (L) 2.7 (2.6)
 Recommended Pressure Cap--psi (kPa) 15 (103)
 Maximum Top Tank Temp--°F (°C) 221 (105)
 Minimum Coolant Fill Rate--gal/min (L/min) 2.5 (9.5)
 Minimum Air-to-Boil Temperature--°F (°C)..... 117 (47)

Electrical System

12 Volt 24 Volt

Rec'md. Battery Capacity (CCA)--amp750 NA
 Max. Allow. Start. Circuit Resist.--Ohm.....0.0012 NA
 Starter Rolling Current
 At 32 °F (0 °C)--amp290 NA
 At -22 °F (-30 °C)--amp370 NA

Exhaust System

Exhaust Flow--ft³/min (m³/min) [I] 396 (11.2)
 [C] NA
 Exhaust Temperature--°F (°C) [I]878 (470)
 [C] NA
 Max. Allowable Back Pressure--in. H₂O (kPa) 30 (7.5)

Fuel System

Fuel Injection PumpUnit Pump
 Governor Regulation..... 7-10 %
 Governor Type Mechanical
 Total Fuel Flow--lb/hr (kg/hr) [I].....154 (70)
 Fuel Consumption--lb/hr (kg/hr) [I].....22 (10)
 [C] NA
 Maximum Fuel Transfer Pump Suction--ft (m) fuel.... 10 (3)
 Max. Fuel Inlet Temperature--°F (°C) 185 (85)
 Fuel Filter Micron Size @ 98% Efficiency 5

Lubrication System

Oil Pressure at Rated Speed--psi (kPa) 52 (360)
 Oil Pressure at Low Idle-psi (kPa) 22 (150)
 Oil Pan Capacity, High--qt (L) 7.6 (7.2)
 Oil Pan Capacity, Low--qt (L) 6.6 (6.2)
 Total Engine Oil Capacity with Filters--qt (L)..... 8.5 (8.0)
 Engine Angularity Limits, Any Direction--Degrees [I]..... 35
 [C] 30

Performance Data

Rated Power--hp (kW) [I] 49 (36.0)
 [C] 41 (30.8)
 Rated Speed--rpm 2800
 Peak Torque--lb-ft (N•m) [I] 129 (175)
 [C] 110 (149)
 Peak Torque Speed--rpm 1500
 Low Idle Speed--rpm 900
 BMEP--psi (kPa) [I] 95 (654)
 [C] 78 (541)
 Friction Power @ Rated Speed--hp (kW) 23 (17.1)
 Altitude Capability -- ft (m) 5000 (1524)
 Ratio--Air : Fuel [I] 32 : 1
 [C] NA
 Smoke @ Rated Speed--Bosch No [I] 0.8
 [C] NA
 Noise--dB(A) @ 1 m [I] 89.0
 [C] NA

Engine Speed rpm	Contin. Limit hp(kW)	Intermit. Power hp(kW)	Intermit. Torque lb-ft (N•m)	BSFC lb/hp-hr (g/kWh)
2800	41 (30.8)	49 (36.0)	91 (123)	0.443 (270)
2600	41 (30.3)	48 (35.7)	97 (131)	0.422 (257)
2400	40 (29.7)	47 (34.9)	102 (139)	0.405 (247)
2200	39 (29.0)	46 (34.1)	109 (148)	0.392 (239)
2000	37 (27.7)	44 (32.5)	115 (155)	0.386 (235)
1800	35 (26.5)	42 (31.1)	122 (165)	0.381 (232)
1600	33 (24.6)	39 (28.9)	127 (173)	0.382 (233)
1500	31 (23.3)	37 (27.5)	129 (175)	0.386 (236)
1400	29 (21.7)	34 (25.5)	128 (174)	0.389 (237)
1200	23 (17.0)	27 (20.0)	118 (160)	0.391 (238)
1000	16 (12.1)	19 (14.3)	100 (136)	0.397 (242)

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

* Revised Data
 Curve: 4024TF28149 Sheet 2 of 2
 November 2007

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