



JOHN DEERE

ENGINE PERFORMANCE CURVE

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

PowerTech™ EWX 2.9L Engine
Model: 3029HFG03

67 hp (50 kW) Prime
 74 hp (55 kW) Standby

Dual Frequency

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
67	50	74	55

Generator Efficiency %	Fan Power (% of Standby)		Power Factor	Prime Rating		Standby Rating	
	hp	kW		kWe	kVA	kWe	kVA
88-92	2.9502484	2.2	0.8	42-44	53-55	46-49	58-61

Note 1: Based on nominal engine power; Fan Power is 4% of Standby Power.

STANDARD CONDITIONS

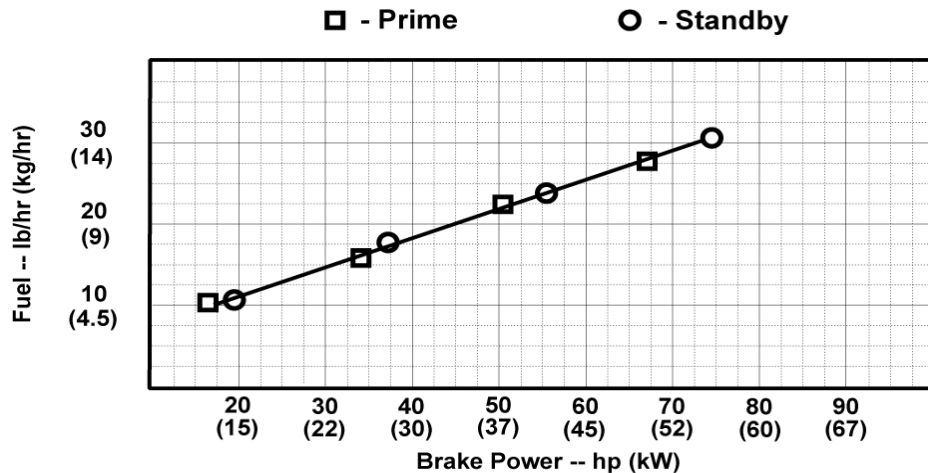
Air Intake Restriction.....12 in.H₂O (3 kPa)
 Exhaust Back Pressure.....30 in.H₂O (7.5 kPa)

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 L = 0.85kg , 1 gal = 7.1 lb
 Torque: N·m = lb·ft x 1.356

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

Notes: 1) This Performance Curve provides installation requirements necessary for the engine to emit at its certified emission levels. For additional information necessary to meet applicable regulatory requirements, refer to the John Deere Emissions-related Installation Instructions (AG01):
<https://power.deere.com/wps/myportal/jdps/products/engines/apguidelines>.
 2) A crankshaft Torsional Vibration Analysis is required on all Gen Set applications.



Designed/Calibrated to meet:	Certified by:
<ul style="list-style-type: none"> CARB EPA Tier 4 	 22 Oct 2015
Ref: Engine Emission Label	

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Engine Installation Criteria

General Data

Model	3029HFG03	
Number of Cylinders	3	
Bore	106.5 mm	4.2 in.
Stroke	110 mm	4.3 in.
Displacement	2.9 L	177 in. ³
Compression Ratio	16.9	
Valves per Cylinder, Intake/Exhaust	1 / 1	
Firing Order	1-2-3	
Combustion System	HPCR	
Engine Type	In-line, 4-Cycle	
Aspiration	Turbocharged and air-to-air aftercooled	
Engine Crankcase Vent System	Open	

Physical Data

Length	715 mm	28.1 in.
Width	596 mm	23.5 in.
Height	956 mm	37.6 in.
Weight, with oil & no coolant (Includes engine, flywheel housing, flywheel & electrics)	400 kg	882 lb
Center of Gravity Location, X-axis From Rear Face of Block	184.1 mm	7.2 in.
Center of Gravity Location, Y-axis Right of Crankshaft	7.6 mm	0.3 in.
Center of Gravity Location, Z-axis Above Crankshaft	147.2 mm	5.8 in.
Max. Bending Moment about Main Bearings Front and Rear	530 N·m	391 lb-ft
Max. Allowable Static Bending Moment At Rear Face of Flywheel Housing with 5-G Load	814 N·m	600 lb-ft
Thrust Bearing Load Limit Forward, Intermittent	4000 N	899 lb
Thrust Bearing Load Limit Forward, Continuous	2200 N	495 lb
Thrust Bearing Load Limit Rearward, Intermittent	2000 N	450 lb
Thrust Bearing Load Limit Rearward, Continuous	1100 N	247 lb
Max. Continuous Damper Temp	NA	
Max. ECU Vibration, All Axis	9.00 gRMS	
Max. Torsional Vibration, Front of Crank	0.30 DDA	
Max. Engine Torsional Vibration in Overspeed	0.40 DDA	

Electrical System

Min. Instantaneous Cranking	50 rpm	
Min. Steady State Cranking	120 rpm	
Starter Rolling Current, 12V @32 °F (0 °C)	450 amps	
Starter Rolling Current, 24V @32 °F (0 °C)	250 amps	
Starter Rolling Current, 12V @-22 °F (-30 °C)	700 amps	
Starter Rolling Current, 24V @-22 °F (-30 °C)	400 amps	
Min. Voltage at ECU during Cranking, 12V	6 volts	
Min. Voltage at ECU during Cranking, 24V	10 volts	
Max. Voltage Drop, Battery to Starter	0.8 volts	
Max. Allowable Start Circuit Resistance, 12V	0.0012 Ohm	
Max. Allowable Start Circuit Resistance, 24V	0.002 Ohm	
Max. Voltage From Engine to Crankshaft, 12V	15 volts	
Max. Voltage From Engine to Crankshaft, 24V	30 volts	
Max. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp	NA	
Max. Air Throttle Electrical Actuator Temperature	NA	
Max. Harness Temperature	125 °C	257 °F
Max. Alternator Temperature	105 °C	221 °F
Max. Starter Temperature	120 °C	248 °F
Max. Temperature, All Other Electronics	125 °C	257 °F

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Engine Installation Criteria

Charge Air Cooling System

Air-to-Air Heat Rejection	11.2 kW	638 BTU/min
Compressor Discharge Temperature @77°F(25°C) Ambient Air	157 °C	315 °F
Intake Manifold Pressure	133 kPa	19.3 psi
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barometric pressure	188 °C	370 °F
Max. Temperature Out of Charge Air Cooler @All Ambient Conditions	88 °C	190 °F
Intake Manifold Temperature at which Power De-rate Occurs	90 °C	194 °F
Intake Manifold Temperature at which Severe Power De-rate Occurs	93 °C	199.4 °F
Max. CAC System Volume	9 Liter	10 quart
Max. Pressure Drop through CAC	12 kPa	48.0 in. H ₂ O
Min. Pressure Drop through CAC	7 kPa	28.0 in. H ₂ O
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air	56 °C	133 °F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air	39 °C	102 °F
Max. Bending Moment on Compressor Outlet	0 N-m	0 lb-ft
Max. Shear on Compressor Outlet	0 kg	0 lb

Cooling System

Engine Heat Rejection	30.1 kW	1713 BTU/min
Coolant Flow @10 kPa External Restriction	100 L/min	26 gal/min
Coolant Flow @40 kPa External Restriction	67 L/min	18 gal/min
Thermostat Start to Open	83 °C	181 °F
Thermostat Fully Open	95 °C	203 °F
Engine Coolant Capacity	5 Liter	5.3 quart
Min. Coolant Fill Rate	12 L/min	3.2 gal/min
Max. Water Pump Inlet Pressure	235 kPa	34 psia
Min. Pump Inlet Pressure @203°F (95°C) Coolant	103 kPa	15 psia
Min. Pump Inlet Pressure @Max. Top Tank Temperature	148 kPa	21 psia
Max. External Coolant Restriction	40 kPa	6 psi
Max. Top Tank Temperature	113 °C	235 °F
Max. Top Tank Temperature 95% of Operating Hours	103 °C	217 °F

Exhaust System

Exhaust Flow	13.1 m ³ /min	463 ft. ³ /min
Exhaust Temperature	562 °C	1044 °F
Max. Allowable Exhaust Restriction	11.0 kPa	44 in. H ₂ O
Max. Bending Moment on Turbo Outlet	1.3 N-m	1.0 lb-ft
Max. Shear on Turbine Outlet	10 kg	22 lb
Exhaust Filter Size		2
Exhaust Filter Pressure Drop (Clean)	5.6 kPa	22 in. H ₂ O
Min. Mixing Length, Outlet to Exhaust Filter		NA
Max. Bending Moment on Exhaust Filter Inlet	25 N-m	18 lb-ft
Max. Bending Moment on Exhaust Filter Outlet	25 N-m	18 lb-ft
Max. Exhaust Leakage Rate, Engine to Exhaust Filter @30kPa	5 L/min	1.3 gal/min
Max. Temperature Drop, Engine to Exhaust Filter	30 Δ°C	54 Δ°F

Fuel System

ECU Description	L23 Controller	
Fuel Injection Pump	Denso HP3	
Governor Type	Electronic	
Total Fuel Flow	27 kg/hr	60 lb/hr
Fuel Consumption, Prime	12.5 kg/hr	28 lb/hr
Fuel Consumption, Standby	13.7 kg/hr	30 lb/hr
Fuel Temperature Rise, Inlet to Return	21 Δ°C	38 Δ°F
Min. Fuel Inlet Pressure	-30 kPa	-120 in. H ₂ O
Max. Fuel Inlet Pressure	20 kPa	80 in. H ₂ O
Max. Fuel Return Pressure	20 kPa	80 in. H ₂ O
Min. Fuel Return Pressure	0 kPa	0 in. H ₂ O
Max. Fuel Inlet Temperature	75 °C	167 °F
Fuel Filter @98% Efficiency		5 mic

Lubrication System

Oil Pressure at Rated Speed	330 kPa	48 psi
Oil Pressure at Low Idle	300 kPa	44 psi
Max. In-Pan Oil Temperature	135 °C	275 °F
Max. Crankcase Pressure	3 kPa	12 in. H ₂ O

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Engine Installation Criteria

Air Intake System

Engine Air Flow	5.0 m ³ /min	177 ft. ³ /min
Air Mass Flow	343 kg/hr	756 lb/hr
Maximum Allowable Temperature Rise, Ambient Air to Engine Inlet	8 Δ°C	15 Δ°F
Max. Air Intake Restriction, Clean Air Cleaner	3.0 kPa	12.0 in. H ₂ O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25 kPa	25.0 in. H ₂ O
Air Cleaner Efficiency	99.9 %	

Performance Data

Rated Power, Prime	50 kW	67 HP
Rated Power, Standby	55 kW	74 HP
Rated Speed	1800 rpm	
Low Idle Speed	1200 rpm	
Rated Torque, Prime	265 N·m	215 lb·ft
Rated Torque, Standby	292 N·m	215 lb·ft
BMEP, Prime	1154 kPa	215 psi
BMEP, Standby	1264 kPa	215 psi
Altitude Capability, Prime	2743 m	9000 ft
Altitude Capability, Standby	2438 m	8000 ft
Friction Power @Rated Speed	10.0 kW	13 HP
Air:Fuel Ratio, Prime	26.6 : 1	
Air:Fuel Ratio, Standby	24.5 : 1	
Noise @1 m Prime	86.7 dB(A)	
Noise @1 m Standby	86.7 dB(A)	
0-100% Standby Load Acceptance	3.0 sec	
Load Acceptance, ISO 8528-5	G3	

Fuel Consumption	Prime		Standby	
	lb/hr	kg/h	lb/hr	kg/h
25 % Power	10.4	4.7	10.8	4.9
50 % Power	16.1	7.3	17.6	8.0
75 % Power	22.5	10.2	23.8	10.8
100 % Power	27.6	12.5	30.2	13.7

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