



ENGINE PERFORMANCE CURVE

Rating: Gross Power
 Application: Generator
 1500 RPM (50 Hz)

POWERTECH 2.9L Engine
 Model: **3029TF158**

51 hp (38 kW) Prime
56 hp (42 kW) Standby
 [Option 16TT / 16TU]

Nominal Engine Power @ 1500 RPM			
Prime		Standby	
HP	kW	HP	kW
51	38	56	42

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	2.7	2	0.8	32-33	40-41	35-37	44-46	100%

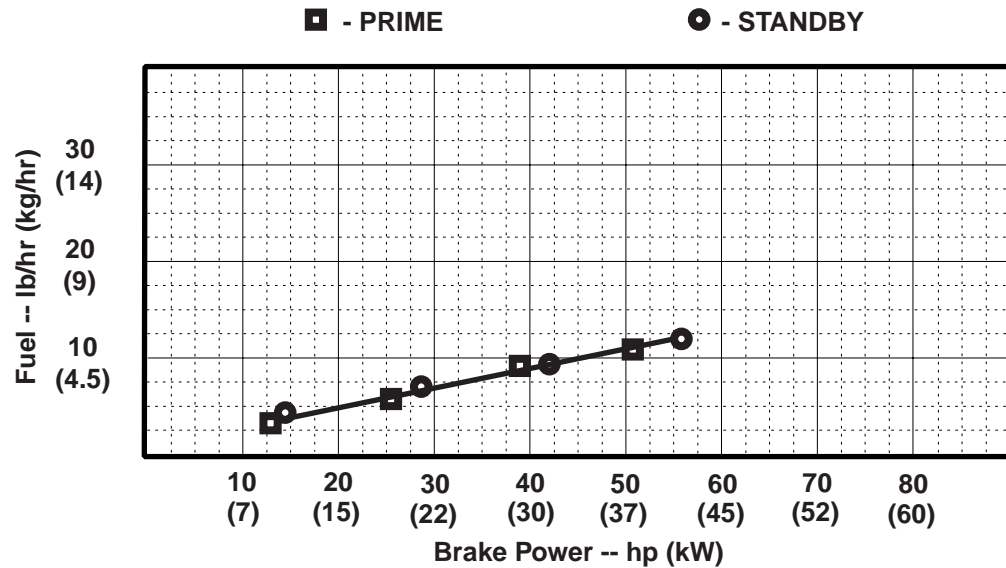
Note 1: Based on nominal engine power.

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.



Notes:

Emission Certifications:

Certified by:

NONE

Ref: Engine Emission Label

Kevin J. Bailey
 27 Nov 2000

* Revised Data
 Curve 3029TF150056..... Sheet 1 of 2
 November 2000

Engine Specification Data

General Data

Model	3029TF158
Number of Cylinders	3
Bore and Stroke--in.(mm)	4.19 x 4.33 (106 x 110)
Displacement--in. ³ (L)	177 (2.9)
Compression Ratio	17.2:1
Valves per Cylinder--Intake/Exhaust	1/1
Firing Order	1-2-3
Combustion System	Direct Injection
Engine Type	In-line, 4-Cycle
Aspiration	Turbocharged
Engine Crankcase Vent System	Open
Maximum Crankcase Pressure--in.H ₂ O (kPa)	2 (0.5)

Physical Data

Length--in.(mm)	28.2 (716)
Width--in.(mm)	20.4 (519)
Height--in.(mm)	32.2 (819)
Weight, dry--lb (kg).....	697 (316)
(Includes SAE 4 flywheel housing, RE28119 flywheel, starter and electrics.)	
Center of Gravity Location	
From Rear Face of Block (X-axis)--in.(mm)	7.8 (198)
Right of Crankshaft (Y-axis)--in.(mm)	0.4 (10)
Above Crankshaft (Z-axis)--in.(mm)	4.9 (124)
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

	<u>Prime</u>	<u>Standby</u>
Maximum Allowable Temp Rise--Ambient Air to Engine Inlet--°F (°C)	15 (8)	15 (8)
Maximum Air Intake Restriction		
Dirty Air Cleaner--in.H ₂ O (kPa)	25 (6.25)	25 (6.25)
Clean Air Cleaner--in.H ₂ O (kPa)	12 (3)	12 (3)
Engine Air Flow--ft ³ /min (m ³ /min)	106 (3)	113 (3.2)
Intake Manifold Pressure--psi (kPa)	11 (73)	12 (84)
Rec'd. Intake Pipe Dia--in.(mm).....	2.5 (63.5)	2.5 (63.5)

Exhaust System

	<u>Prime</u>	<u>Standby</u>
Exhaust Flow--ft ³ /min (m ³ /min).....	247 (7.0)	238 (7.6)
Exhaust Temperature--°F (°C)	1051(566)	1128(609)
Max. Allow. Back Press.--in.H ₂ O (kPa).....	30 (7.5)	30 (7.5)
Recm'd Exhaust Pipe Dia--in.(mm) ...	2.5 (63.5)	2.5 (63.5)

Cooling System

	<u>Prime</u>	<u>Standby</u>
Engine Heat Reject.--BTU/min (kW)..	1309(23)	1479(26)
Coolant Flow--gal/min (L/min).....	24 (91)	24 (91)
Thermostat Start to Open--°F (°C).....	180 (82)	180 (82)
Thermostat Fully Open--°F (°C).....	201 (94)	201 (94)
Maximum Water Pump		
Inlet Restriction--in.H ₂ O (kPa)	20 (5)	20 (5)
Engine Coolant Capacity--qt (L)	6 (5.7)	6 (5.7)
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

	<u>Prime</u>	<u>Standby</u>
Fuel Injection Pump	Stanadyne	Stanadyne
Governor Regulation.....	5 %	5 %
Governor Type	Mech	Mech
Total Fuel Flow--lb/hr (kg/hr).....	203 (92)	203 (92)
Fuel Consumption--lb/hr (kg/hr).....	18 (8.3)	20 (9.2)
Maximum Fuel Transfer Pump Suction--		
ft (m) fuel.....	3 (0.9)	3 (0.9)
Fuel Filter Micron Size @ 98 % Efficiency	8	8

Lubrication System

	<u>Prime</u>	<u>Standby</u>
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)	239 (115)	239 (115)
Oil Pan Capacity, High--qt (L)	8 (7.6)	8 (7.6)
Oil Pan Capacity, Low--qt (L).....	7 (6.6)	7 (6.6)
Total Engine Oil Cap. w/ Filters--qt (L) ...	9 (8.5)	9 (8.5)
Engine Angularity Limits (Continuous)		
Any Direction--degrees.....	20	20

Performance Data

	<u>Prime</u>	<u>Standby</u>
Rated Power--hp (kW)	51 (38)	56 (42)
Rated Speed--rpm	1500	1500
Low Idle Speed--rpm	1400	1400
BMEP--psi (kPa)	150 (1036)	166 (1145)
Friction Power		
@ Rated Speed--hp (kW)	17 (13)	17 (13)
Altitude Capability--ft (m)	10,500 (3200)	8500 (2590)
Ratio--Air : Fuel.....	24.8:1	23.1:1
Noise--dB(A) @ 1 m	91.1	91.8

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

	<u>Prime</u>	<u>Standby</u>
25 % Power	3 (2.6)	4 (2.8)
50 % Power	6 (4.5)	7 (4.9)
75 % Power	9 (6.4)	9 (6.9)
100 % Power	11 (8.3)	12 (9.2)

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

* Revised Data
Curve 3029TF150056 Sheet 2 of 2
November 2000