ENGINE PERFORMANCE CURVE

Rating: Gross Power
Application: Generator
125kWe Standby Market
1800 RPM (60 Hz)

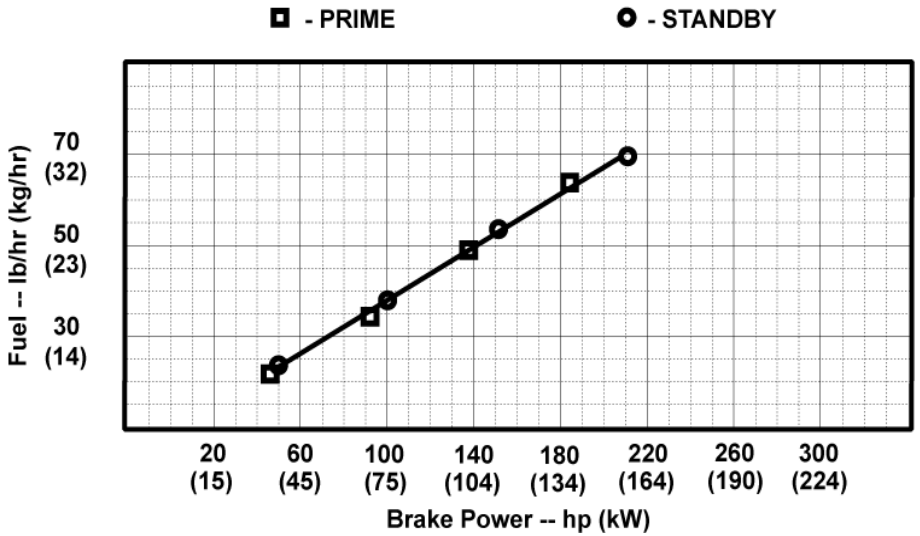
PowerTech™ PVX 6.8L Engine
Model:6068HFG94
JD Electronic Control

183 hp (137 kW) Prime
201 hp (150 kW) Standby

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
183	137	201	150

Generator Efficiency %	Fan Power (% of Standby)		Power Factor	Prime Rating		Standby Rating	
	hp	kW		kWe	kVA	kWe	kVA
89-93	12.1	9.0	0.8	114-119	143-149	125-131	157-164

Note 1: Based on nominal engine power.
Note 2: kWe / kVA rating assumes 90% efficiency. "Generator Efficiency %" will vary.



STANDARD CONDITIONS

Air Intake Restriction.....12 in.H_2O (3 kPa)
Exhaust Back Pressure.....60 in.H_2O (15 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 = 0.85kg
- 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:
• CARB • EPA Interim Tier 4 • EU Stage III B Ref: Engine Emission Label	6 Aug 2012

Performance Curve: 6068HFG94_Q

Engine Installation Criteria

General Data

Model			6068HFG94	
Number of Cylinders			6	
Bore	106	mm	4.2	in.
Stroke	127	mm	5.0	in.
Displacement	6.8	L	415	$in.^3$
Compression Ratio			17.2 : 1	
Valves per Cylinder, Intake/Exhaust			2 \ 2	
Firing Order			1-5-3-6-2-4	
Combustion System			HPCR	
Engine Type			In-line, 4-cycle	
Aspiration			Turbocharged and air-to-air aftercooled	
Engine Crankcase Vent System			Open	

Physical Data

Length	1161	mm	45.7	in.
Width	716	mm	28.2	in.
Height	1147	mm	45.2	in.
Weight, with oil &no coolant (Includes engine, flywheel housing, flywheel &electrics)	767	kg	1691	lb
Center of Gravity Location, X-axis From Rear Face of Block	404	mm	15.9	in.
Center of Gravity Location, Y-axis Right of Crankshaft	0.43	mm	0.0	in.
Center of Gravity Location, Z-axis Above Crankshaft	218	mm	8.6	in.
Max. Bending Moment about Main Bearings Front and Rear	480	N·m	354	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	1000	N	225	lb
Max. Continuous Damper Temp	82	°C	180	°F
Min. Natural Frequency, Rear Face Flywheel Housing			150	Hz
Max. ECU Vibration, All Axis			9.00	gRMS
Max. Torsional Vibration, Front of Crank			0.25	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			0.15	volts
Max. Voltage From Engine to Crankshaft, 24V			0.15	volts
Max. ECU Temperature	105	°C	221	°F
Max. VTG Actuator Surface Temp	125	°C	257	°F
Max. Air Throttle Electrical Actuator Temperature	125	°C	257	°F
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	23.4	kW	1332	BTU/min
Intake Manifold Pressure	161.9	kPa	23.5	psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air	175.0	°C	347	°F
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barametric pressure	209.0	°C	408	°F
Max. Temperature Out of Charge Air Cooler @All Ambient Conditions	88	°C	190	°F
Intake Manifold Temperature at which Power De-rate Occurs	121.5	°C	251	°F
Intake Manifold Temperature at which Severe Power De-rate Occurs	123	°C	253.4	°F
Max. CAC System Volume	20.4	Liter	22	quart
Max. Pressure Drop through CAC	16	kPa	64.0	in. H_2O
Min. Pressure Drop through CAC	8	kPa	32.0	in. H_2O
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air	52	°C	126	°F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air	44	°C	111	°F
Max. Bending Moment on Compressor Outlet	0.6	N·m	0	lb-ft
Max. Shear on Compressor Outlet	0.4	kg	1	lb

Cooling System

Engine Heat Rejection	105	kW	5977	BTU/min
Coolant Flow @10 kPa External Restriction	468	L/min	124	gal/min
Coolant Flow @40 kPa External Restriction	420	L/min	111	gal/min
Thermostat Start to Open	85	°C	185	°F
Thermostat Fully Open	97	°C	207	°F
Engine Coolant Capacity	11.9	Liter	12.6	quart
Min. Coolant Fill Rate	12	L/min	3.2	gal/min
Max. Water Pump Inlet Pressure	235	kPaa	34	psia
Min. Pump Inlet Pressure @203°F (95°C) Coolant	110	kPaa	16	psia
Min. Pump Inlet Pressure @Max. Top Tank Temperature	173	kPaa	25	psia
Max. External Coolant Restriction	50	kPa	7	psi
Max. Top Tank Temperature	113	°C	235	°F
Max. Top Tank Temperature 95% of Operating Hours	103	°C	217	°F
Min. Limiting Ambient Temperature	47	°C	117	°F

Exhaust System

Exhaust Flow	19.3	m³/min	682	ft.³/min
Exhaust Temperature	415	°C	779	°F
Max. Allowable Exhaust Restriction	17	kPa	68	in. H_2O
Max. Bending Moment on Turbo Outlet	7.4	N·m	5.5	lb-ft
Max. Shear on Turbine Outlet	2.5	kg	6	lb
Exhaust Filter Size			5	
Exhaust Filter Pressure Drop (Clean)	4.2	kPa	17	in. H_2O
Min. Mixing Length, Outlet to Exhaust Filter	700	mm	28	in.
Max. Bending Moment on Exhaust Filter Inlet	110	N·m	81	lb-ft
Max. Bending Moment on Exhaust Filter Outlet	110	N·m	81	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	°C	86	°F

Fuel System

ECU Description			L21 Controller	
Fuel Injection Pump			Denso HP4	
Governor Type			Electronic	
Total Fuel Flow	136	kg/hr	300	lb/hr
Fuel Consumption, Prime	28.9	kg/hr	64	lb/hr
Fuel Consumption, Standby	31.6	kg/hr	70	lb/hr
Fuel Temperature Rise, Inlet to Return	60	Δ°C	108	Δ°F
Min. Fuel Inlet Pressure	-30	kPa	-120	in. H_2O
Max. Fuel Inlet Pressure			NA	
Max. Fuel Return Pressure	20	kPa	80	in. H_2O
Min. Fuel Return Pressure	0	kPa	0	in. H_2O
Max. Fuel Inlet Temperature	75	°C	167	°F
Fuel Filter @98% Efficiency			2	mic

Lubrication System

Oil Pressure at Rated Speed	401	kPa	58	psi
Oil Pressure at Low Idle	380	kPa	55	psi
Max. In-Pan Oil Temperature	138	°C	280	°F
Max. Crankcase Pressure	2	kPa	8	in. H_2O

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Engine Installation Criteria

Air Intake System

Engine Air Flow	9.3	m^3/min	328	$ft.^3$/min
Air Mass Flow	645	kg/hr	1422	lb/hr
Maximum Allowable Temperature Rise, Ambient Air to Engine Inlet	8	Δ°C	15	Δ°F
Max. Air Intake Restriction, Clean Air Cleaner	3.75	kPa	15.0	in. H_2O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25	kPa	25.0	in. H_2O
Air Cleaner Efficiency			99.9	%

Performance Data

Rated Power, Prime	183	HP	137	kW
Rated Power, Standby	201	HP	150	kW
Rated Speed			1800	rpm
Low Idle Speed			NA	
Rated Torque, Prime	724	N·m	534	lb-ft
Rated Torque, Standby	796	N·m	587	lb-ft
BMEP, Prime	1482	kPa	215	psi
BMEP, Standby	1489	kPa	216	psi
Altitude Capability	3048	m	10000	ft
Friction Power @Rated Speed	21	kW	28	HP
Air:Fuel Ratio, Prime			21.2 : 1	
Air:Fuel Ratio, Standby			20.2 : 1	
Noise @1 m Prime			90.9	dB(A)
Noise @1 m Standby			90.8	dB(A)
0-100% Standby Load Acceptance			3.8	sec
Load Acceptance, ISO 8528-5			G3	

Fuel Consumption	Prime		Standby	
	lb/hr	kg/h	lb/hr	kg/h
25 % Power	21.4	9.7	22.7	10.3
50 % Power	34.8	15.8	37.7	17.1
75 % Power	48.9	22.2	53.4	24.2
100 % Power	63.7	28.9	69.7	31.6

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