

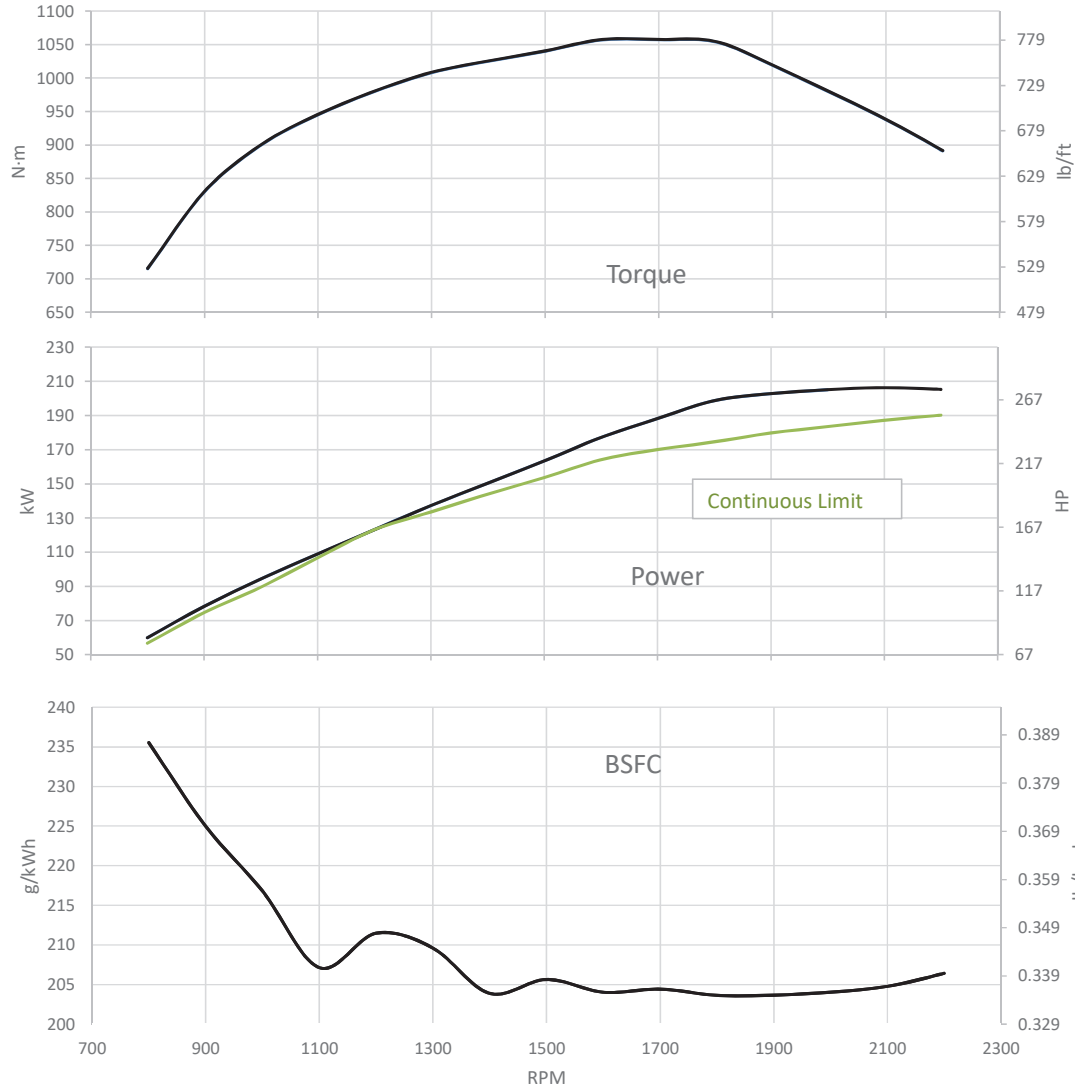


JOHN DEERE

ENGINE PERFORMANCE CURVE

Rating: Gross power
 Application: Heavy Duty
 Power Bulge 0%
 Torque Rise 19%

PowerTech™ PSS 6.8L Engine
Model: 6068CI550
 275 hp @2200 rpm
 205 kW @2200 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 SAEJ1995 and ISO 3046 conditions:
 Air Inlet Temperature = 77°F (25°C)
 Barometer = 29.31 in. Hg (99 kPa)
 Fuel Inlet Temperature = 104°F (40°C)
 Fuel Specific Gravity @ 60 °F (15.5 °C) = 0.853

CONVERSION FACTORS:

Power: kW = HP x 0.746
 Fuel: 1 Gal = 7.1 lb, 1 L = .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>.

Designed/Calibrated to meet:	Certified By:
-CARB -EPA Tier 4 -EU Stage V	 4-Feb-19
Ref: Engine Emission Label	
Performance Curve: 6068CI550_D	

Engine Installation Criteria

General Data

Engine Model	6068CI550	
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	16.7:1	
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 & air-to-air aftercooled	
Engine Crankcase Vent System	Open	

Physical Data

Length	1160 mm	45.7 in.
Width	780 mm	30.7 in.
Height	1205 mm	47.4 in.
Weight, with oil&no coolant (Includes engine, flywheel housing, flywheel&electronics)	785 kg	1731 lb
Center of Gravity Location, X-axis From Rear Face of Block	420 mm	16.5 in.
Center of Gravity Location, Y-axis Right of Crankshaft	-10 mm	-0.4 in.
Center of Gravity Location, Z-axis Above Crankshaft	215 mm	8.5 in.
Max. Bending Moment about Main Bearings Front and Rear	480 N·m	355 lb-ft
Max. Allowable Static Bending Moment At Rear Face of Flywheel Housing with 5-G Load	814 N·m	602 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
Max. ECU Vibration, All Axis	6.00 gRMS	
Max. Torisonal Vibration, Front of Crank	0.25 DDA	
Max. Engine Torisonal 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. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp	130 °C	266 °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

Charge Air Cooling System

Air-to-Air Heat Rejection	42.0 kW	2389 BTU/min
Compressor Discharge Temperature @ 77°F (25°C) Ambient Air	197 °C	386 °F
Intake Manifold Pressure	225 kPa	32.6 psi
Compressor Discharge Temperature @ 117°F (47°C) 80 kPa Barometric pressure	#N/A °C	#N/A °F
Max. Temperature Out of Charge Air Cooler @ All Ambient Conditions	88 °C	190 °F
Max. CAC System Volume	#N/A L	#N/A Qt
Max. Pressure Drop through CAC	16 kPa	64 in. H ₂ O
Min. Pressure Drop through CAC	8 kPa	32 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	47 °C	117 °F
Max. Bending Moment on Compressor Outlet	3.5 N·m	3 lb-ft
Max. Shear on Compressor Outlet	2.5 kg	6 lb

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Engine Installation Criteria

Cooling System

Engine Heat Rejection	135.6 kW	7712 BTU/min
Coolant Flow @ 10 kPa External Restriction	522 L/min	138 gal/min
Coolant Flow @ 40 kPa External Restriction	498 L/min	132 gal/min
Max. Auxiliary Coolant Flow	30 L/min	8 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	12.0 L/min	3.2 gal/min
Max. Water Pump Inlet Pressure	235 kPa	34 psia
Min. Pump Inlet Pressure @ 203°F (95°C) Coolant	110 kPa	16 psia
Min. Pump Inlet Pressure @ Max. Top Tank Temperature	159 kPa	23 psia
Min. External Coolant Restriction	#N/A kPa	#N/A psi
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

Exhaust System

Exhaust Flow	26.7 m ³ /min	942 ft ³ /min
Exhaust Temperature	379 °C	713 °F
Max. Allowable Exhaust Restriction	20 kPa	82 in. H ₂ O
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 DOC/DPF-SCR Gen 1.5	
Exhaust Filter Pressure Drop (Clean)	13.0 kPa	52 in. H ₂ O
Min. Mixing Length, Outlet to Exhaust Filter	#N/A	
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	5.0 L/min	1.3 gal/min
Max. Temperature Drop, Engine to exhaust Filter	30 Δ°C	54 Δ°F

Fuel System

ECU Description	L33 Controller	
Fuel Injection Pump	Denso HP6	
Governor Type	Electronic	
Total Fuel Flow	132 kg/hr	290 lb/hr
Fuel Consumption	42.4 kg/hr	94 lb/hr
Fuel Temperature Rise, Inlet to Return	25 Δ°C	45 Δ°F
Min. Fuel Inlet Pressure	-30 kPa	-121 in. H ₂ O
Max. Fuel Inlet Pressure	#N/A kPa	#N/A in. H ₂ O
Max. Fuel Return Pressure	40 kPa	161 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	2 mic	

Lubrication System

Oil Pressure at Rated Speed	310 kPa	45 psi
Oil Pressure at Low Idle	160 kPa	23 psi
Max. In-Pan Oil temperature	138 °C	280 °F
Max. Crankcase Pressure	2 kPa	8 in. H ₂ O

Air Intake System

Engine Air Flow	14.1 m ³ /min	498 ft. ³ /min
Air Mass Flow	977 kg/hr	2153 lb/hr
Maximum Allowable Temperature Rise, Ambient Air to Engine Inlet	8 Δ°C	15 Δ°F
Max. Air Intake Restriction, Clean Air Clearer	3.75 kPa	15 in. H ₂ O
Max. Air Intake Restriction, Dirty Air Clearer	6.25 kPa	25 in. H ₂ O
Air Cleaner Efficiency	99.9 %	

Performance Curve: 6068CI550_D

Engine Installation Criteria

Performance Data

Rated Power	205 kW	275 HP
Rated Speed		2200 rpm
Max. Fast Idle Speed		2400 rpm
Breakway Speed		2250 rpm
Power Bulge Speed		n/a rpm
Peak Torque Speed		1600 rpm
Low Idle Speed		800 rpm
Rated Torque	891 N·m	659 lb-ft
Peak Torque	1057 N·m	782 lb-ft
Power Bulge		0 %
Torque Rise		19 %
BMEP, Rated	1655 kPa	240 psi
BMEP, Peak Torque	1950 kPa	283 psi
Attitude Capability	0 m	0 ft
Friction Power @Rated Speed	30 kW	40 HP
Air Fuel Ratio		22.6:1
Noise @1 m		96 dB(A)

Curved Data

Engine Speed	Power		Torque		BSFC	
	rpm	kW	hp	N·M	lb-ft	g/kWh
800	60	80	715	528	236	0.387
900	78	105	830	613	225	0.370
1000	94	126	900	664	217	0.356
1100	109	146	945	697	207	0.341
1200	123	165	980	723	211	0.348
1300	137	184	1008	744	210	0.345
1400	150	202	1025	756	204	0.335
1500	163	219	1040	768	206	0.338
1600	177	237	1057	780	204	0.335
1700	188	252	1057	780	204	0.336
1800	199	266	1054	778	204	0.335
1900	203	272	1019	752	204	0.335
2000	205	275	979	723	204	0.335
2100	206	277	938	692	205	0.337
2200	205	275	891	658	206	0.339

DEF Data

Load Factor	Engine Speed	DEF Consumption*		Percent of Diesel Consumption**
		g/kWh	lb/hp-hr	
%	RPM			%
100	2200	6.2	0.0101	2.4
Peak Torque	1600	7.3	0.0120	2.8

*DEF conversion factor: 1.087 kg/l (9.071 lb/gal)

**Percent of diesel consumption by volume at 100% load and peak torque

Performance Curve: 6068CI1550_D