

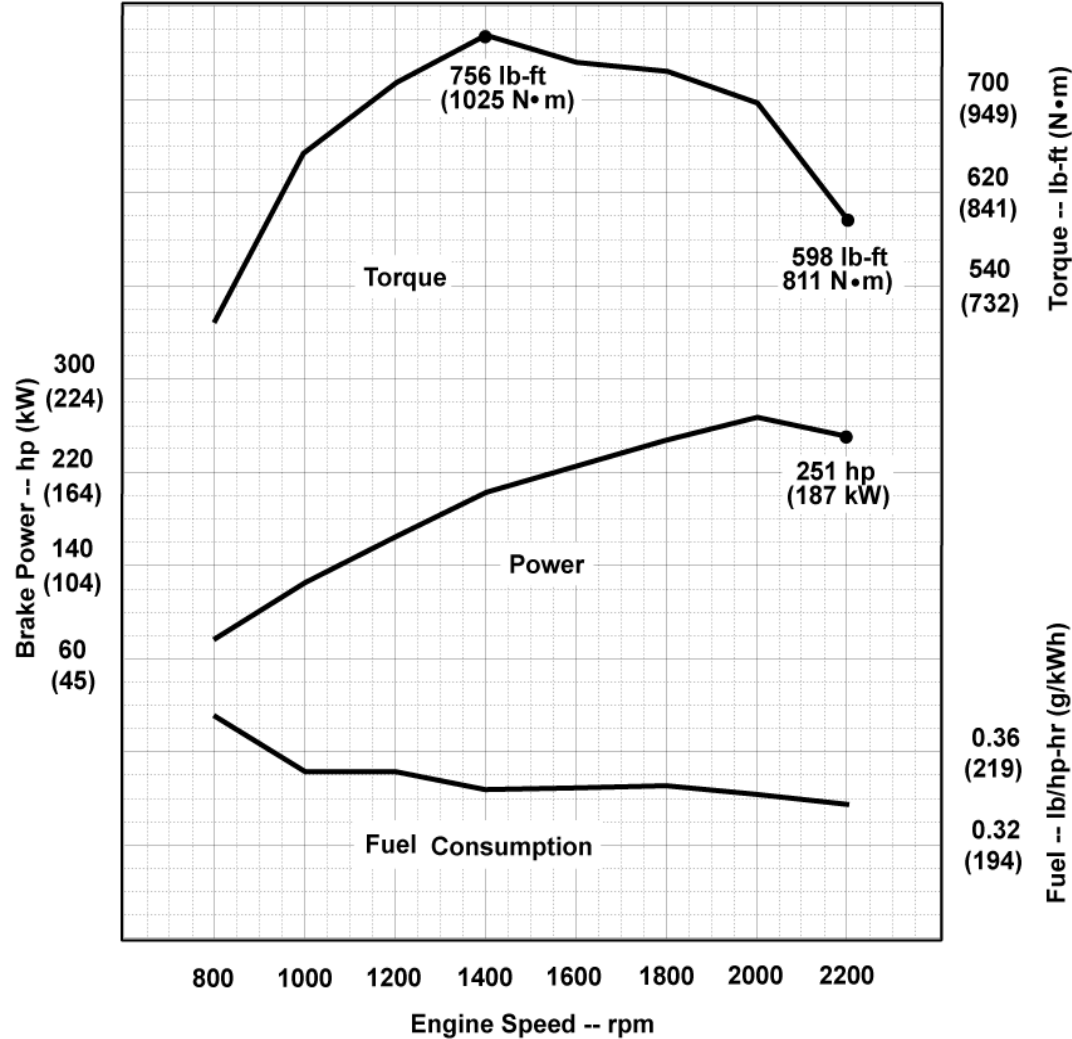


**JOHN DEERE**

**ENGINE PERFORMANCE CURVE**

Rating: Gross Power  
 Application: Intermittent  
 EPA Marine Tier 3  
 Power Bulge - 6%  
 Torque Rise - 26%

**PowerTech™ Plus 6.8L Engine**  
**Model: 6068HF485**  
 JD Electronic Control  
 251 hp @ 2200 rpm  
 187 kW @ 2200 rpm



**STANDARD CONDITIONS**

Air Intake Restriction.....12 in.H<sub>2</sub>O (3 kPa)  
 Exhaust Back Pressure.....30 in.H<sub>2</sub>O (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: Industrial Based Auxiliary - The Marine Emissions Labeled Industrial Engine ratings are for applications that require variable speed and load operation and do not run on a propeller curve. Additionally, these engines are for applications that do not require marinized components (such as wet manifold/turbocharger, blue hose, etc.) or marine classification society approval. See John Deere Industrial Diesel Engine Documentation and Application Guidelines for further information. Possible applications: Barge pumps, deck winches, hydraulic power units.

Designed/Calibrated to meet: \_\_\_\_\_ Certified by: \_\_\_\_\_

• US EPA Marine Tier 3 Compliant

Ref: Engine Emission Label

*[Signature]*  
02/10/14

Performance Curve: 6068HF485\_V

## Engine Installation Criteria

### General Data

Model	6068HF485	
Number of Cylinders	6	
Bore	106 mm	4.2 in.
Stroke	127 mm	5.0 in.
Displacement	6.8 L	415 in. <sup>3</sup>
Compression Ratio	17.0 : 1	
Valves per Cylinder, Intake/Exhaust	2/2	
Firing Order	1-5-3-6-2-4	
Engine Type	In-line, 4-Cycle	
Aspiration	Turbocharged and air-to-air aftercooled	
Charge Air Cooling System	Air-to-Air	
Engine Crankcase Vent System	Open	

### Physical Data

Length	1161 mm	45.7 in.
Width	616 mm	24.3 in.
Height	1128 mm	44.4 in.
Weight, with oil & no coolant (Includes engine, flywheel housing, flywheel & electrics)	678 kg	1495 lb
Center of Gravity Location, X-axis From Rear Face of Block	395 mm	15.6 in.
Center of Gravity Location, Y-axis Right of Crankshaft	-2.24 mm	-0.1 in.
Center of Gravity Location, Z-axis Above Crankshaft	189 mm	7.4 in.
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
Max. Torsional Vibration, Front of Crank	0.25 DDA	

### Electrical System

Recommended Battery Capacity, 12V @32 °F (0 °C)	800 amps	
Recommended Battery Capacity, 24V @32 °F (0 °C)	570 amps	
Starter Rolling Current, 12V @32 °F (0 °C)	920 amps	
Starter Rolling Current, 24V @32 °F (0 °C)	600 amps	
Starter Rolling Current, 12V @-22 °F (-30 °C)	1300 amps	
Starter Rolling Current, 24V @-22 °F (-30 °C)	700 amps	
Min. Voltage at ECU during Cranking, 12V	6 volts	
Min. Voltage at ECU during Cranking, 24V	10 volts	
Max. Allowable Start Circuit Resistance, 24V	0.002 Ohm	
Max. Allowable Start Circuit Resistance, 12V	0.0012 Ohm	
Max. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp	180 °C	356 °F
Max. Harness Temperature	120 °C	248 °F

### Charge Air Cooling System

Air-to-Air Heat Rejection	43 kW	2448 BTU/min
Intake Manifold Pressure	177 kPa	25.7 psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air	194 °C	381 °F
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barametric pressure	221 °C	430 °F
Max. Temperature Out of Charge Air Cooler @All Ambient Conditions	88 °C	190 °F
Intake Manifold Temperature at which Power De-rate Occurs	88 °C	190 °F
Max. Pressure Drop through CAC	16 kPa	64.0 in. H <sub>2</sub> O
Min. Pressure Drop through CAC	8 kPa	32.0 in. H <sub>2</sub> O
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	43 °C	109 °F

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## Engine Installation Criteria

### Cooling System

Engine Heat Rejection	84 kW	4781 BTU/min
Coolant Flow	321 L/min	85 gal/min
Thermostat Start to Open	82 °C	180 °F
Thermostat Fully Open	95 °C	203 °F
Engine Coolant Capacity	11.9 Liter	12.6 quart
Min. Pressure Cap	100 kPa	15 psi
Max. Water Pump Inlet Pressure	235 kPa	34 psia
Min. Pump Inlet Pressure	30 kPa	4.4 psi
Max. Top Tank Temperature	110 °C	230 °F
Min. Coolant Fill Rate	11 L/min	2.9 gal/min

### Exhaust System

Exhaust Flow	33 m <sup>3</sup> /min	1165 ft. <sup>3</sup> /min
Exhaust Temperature	396 °C	745 °F
Max. Allowable Exhaust Restriction	10 kPa	40 in. H <sub>2</sub> O
Min. Allowable Exhaust Restriction	4 kPa	16 in. H <sub>2</sub> O
Max. Bending Moment on Turbo Outlet	7 N-m	5.2 lb-ft
Max. Shear on Turbine Outlet	11 kg	24 lb

### Fuel System

ECU Description	L14 Controller	
Fuel Injection Pump	Denso HP3	
Governor Type	Electronic	
Total Fuel Flow	80.4 kg/hr	177 lb/hr
Fuel Consumption	38 kg/hr	83.8 lb/hr
Fuel Temperature Rise, Inlet to Return	50 Δ°C	90 Δ°F
Max. Fuel Inlet Restriction	20 kPa	80 in. H <sub>2</sub> O
Max. Fuel Inlet Pressure	NA	
Max. Fuel Return Pressure	20 kPa	80 in. H <sub>2</sub> O
Max. Fuel Inlet Temperature	80 °C	176 °F

### Lubrication System

Oil Pressure at Rated Speed	392 kPa	57 psi
Oil Pressure at Low Idle	105 kPa	15 psi
Max. Oil Carryover in Blow-By	1.0 g/hr	0.002 lb/hr
Max. Airflow in Blow-By	85 L/min	22.5 gal/min
Max. Crankcase Pressure	0.5 kPa	2 in. H <sub>2</sub> O

### Air Intake System

Engine Air Flow	15.3 m <sup>3</sup> /min	540 ft. <sup>3</sup> /min
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 <sub>2</sub> O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25 kPa	25.0 in. H <sub>2</sub> O
Air Cleaner Efficiency	99.9 %	

### Performance Data

Rated Power	187 kW	251 HP
Rated Speed	2200 rpm	
Max. Fast Idle Speed	2400 rpm	
Breakaway Speed	2270 rpm	
Power Bulge Speed	2000 rpm	
Peak Torque Speed	1400 rpm	
Low Idle Speed	800 rpm	
Rated Torque	812 N·m	599 lb-ft
Peak Torque	1025 N·m	756 lb-ft
Torque Rise	26 %	
BMEP, Rated	1498 kPa	217 psi
Altitude Capability	2286 m	7500 ft
Friction Power @Rated Speed	27 kW	36 HP
Air:Fuel Ratio	26.5:1	
Smoke @Rated Speed	0.23 Bosch No.	
Noise @1 m	NA	
Power Bulge	6 %	

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## Engine Installation Criteria

Engine Speed	Power		Torque		BSFC	
	rpm	kW	hp	N-M	lb-ft	g/kWh
2200	187	251	811	598	206	0.338
2000	198	266	946	698	208	0.341
1800	185	248	979	722	211	0.346
1600	167	224	995	734	210	0.344
1400	150	201	1025	756	209	0.343
1200	122	164	970	715	214	0.351
1000	93	125	890	656	214	0.351
800	58	78	690	509	230	0.377

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