



JOHN DEERE

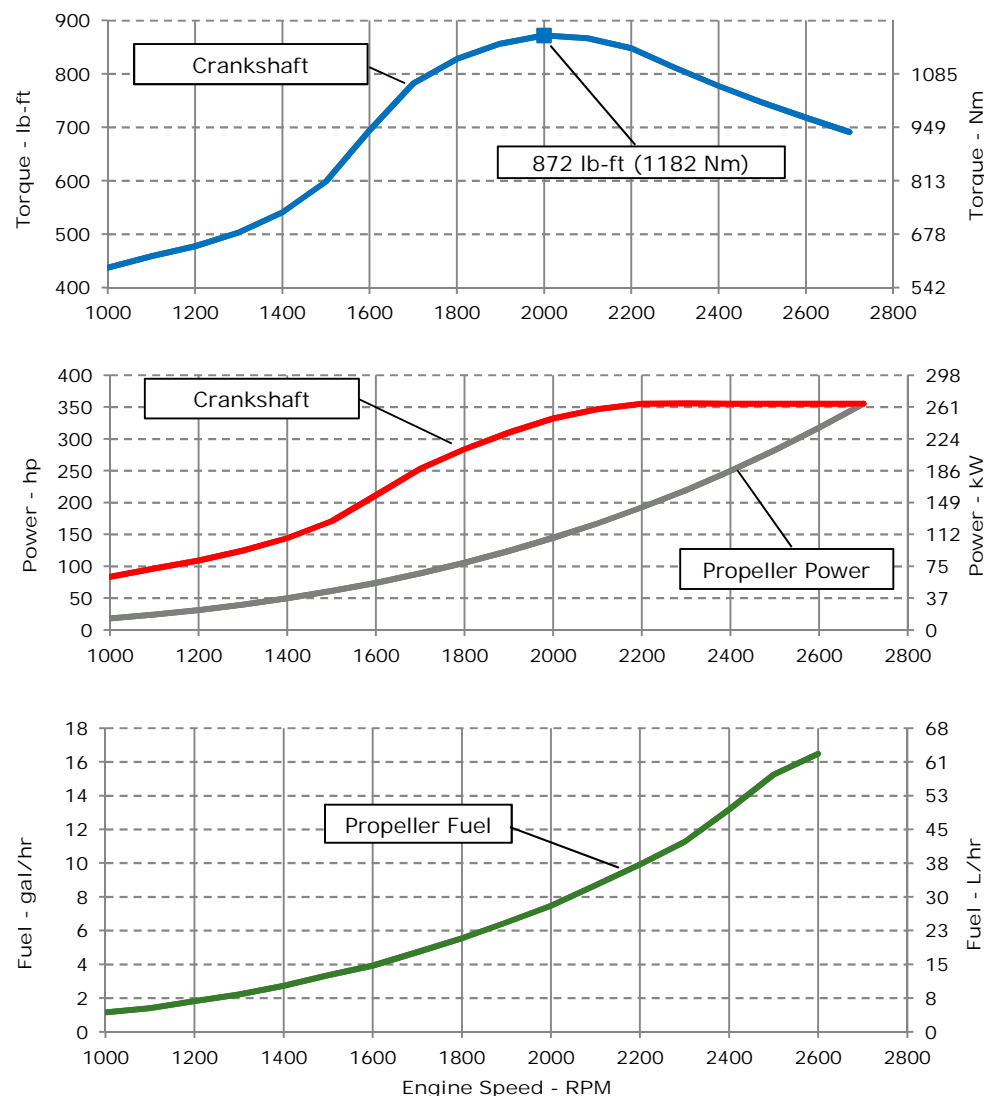
ENGINE PERFORMANCE CURVE

Rating: M4 - 355 HP (265 kW) @ 2700 rpm
Application: Marine

www.silniki.info.pl **TECHBUD**

PowerTech™ 6.8L Engine

Model: 6068SFM85



REFERENCE CONDITIONS

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

Rated speed and power
Gross power guaranteed within ±5% at SAE J1995 and ISO 3046
J1995 and ISO 3046 conditions:

77 °F (25 °C) air inlet temperature
29.31 in.Hg (99 kPa) barometric pressure
104 °F (40 °C) fuel inlet temperature
0.853 fuel specific gravity @ 60 °F (15.5 °C)

Ambient air temperature is defined to be the temperature of ambient air close to operating vessel that is not influenced in any manner by operating characteristics of the vessel (free field temp).

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 from currently available data. Subject to manufacturing and measurement variations and to change without notice.
Actual performance is subject to application and operation conditions outside of John Deere control.

Notes:

M4: The M4 rating is for marine propulsion applications that operate up to 800 hours per year and have load factors below 40%. This rating is for applications that use full power for no more than 1 hour out of each 12 hours of operation. The remaining time of operation must be at cruising speeds.

Possible applications: Inshore crew boats, charter fishing boats, pilot boats, dive boats, and planning hull commercial fishing boats.

Designed/Calibrated to meet:

- EPA Commercial Marine Tier 3
- IMO MARPOL Annex VI Tier II Compliant
- NRMM (97/68/EC), as amended

Ref: Engine Emission Label

Certified by:

3-Oct-16

Performance Curve: 6068SFM85_D

All values at rated speed, power, and standard conditions, per SAE J1995 unless otherwise noted.

Engine Installation Criteria

General Data

Model	6068SFM85			
Number of Cylinders	6			
Bore	106	mm	4.17	in
Stroke	127	mm	5.00	in
Displacement	6.8	L	415	in ³
Compression Ratio	16.3:1			
Valves per Cylinder, Intake/Exhaust	2/2			
Combustion System	Direct injection			
Firing Order	1-5-3-6-2-4			
Engine Type	In line, 4 Cycle			
Aspiration	Turbocharged and Aftercooled			
Aftercooling System	Seawater cooled			
Engine Crankcase Vent System	Closed			

Cooling System*

Jacket Water Heat Rejection**	197.77	kW	11257	BTU/min
Aftercooler Heat Rejection	57.2	kW	3256	BTU/min
Coolant Flow	262	L/min	69	gal/min
Min. Coolant Pump Inlet Pressure	30.3	kPa	4.4	psi
Thermostat Start to Open	81	°C	178	°F
Thermostat Fully Open	95	°C	203	°F
Engine Coolant Capacity, HE	31.5	L	8.3	gal
Min. Coolant Fill Rate	12	L/min	3.2	gal/min
Min. Pressure Cap	110.3	kPa	16	psi
Max. External Coolant Restriction	40	kPa	5.8	psi
Normal Operation Max Top Tank Temperature	100	°C	212	°F
≤ 5% of Total Operating Time Top	100-110	°C	212-230	°F
Tank Temperature				
Absolute Max Top Tank Temperature	110	°C	230	°F
Return Fuel Heat Rejection	3	kW	144	BTU/min
Engine Radiated Heat	35	kW	1979	BTU/min

* The cooling system should be capable of typical at ambient up to the maximum conditions in which the vessel will operate.

Typical operation is defined as the average load sustainable in the vessel over 10 min.

** Reference 32 °C Sea Water Temperature

Physical Data

Length to rear face of block	1034	mm	40.7	in
Length to rear face of flywheel housing (SAE #3)	1172	mm	46.1	in
Length maximum	1489	mm	58.6	in
Width maximum	872	mm	34.3	in
Height, crank centerline to top	640	mm	25.2	in
Height, crank centerline to bottom	291	mm	11.5	in
Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics)	763	kg	1682	lb
Center of Gravity Location, X-axis From Rear Face of Block	407	mm	16.0	in
Center of Gravity Location, Y-axis Right of Crankshaft	-23	mm	-0.9	in
Center of Gravity Location, Z-axis Above Crankshaft	187	mm	7.4	in
Max. Allowable Static Bending Moment At Rear Face of Flywheel Housing (for installations up to 5-G)	814	Nm	600	lb-ft
Thrust Bearing Load Limit, Forward Continuous	2.2	kN	495	lbf
Thrust Bearing Load Limit, Forward Intermittent	4	kN	899	lbf
Thrust Bearing Load Limit, Rearward Continuous	1	kN	225	lbf
Thrust Bearing Load Limit, Rearward Intermittent	2	kN	450	lbf

Electrical System

Min. Recommended Battery Capacity, 12V @32 °F (0 °C)	925	amps
Min. Recommended Battery Capacity, 24V @32 °F (0 °C)	625	amps
Starter Rolling Current, 12V @32 °F (0 °C)	920	amps
Starter Rolling Current, 24V @32 °F (0 °C)	600	amps
Min. Voltage at ECU during Cranking, 12V	6	volts
Min. Voltage at ECU during Cranking, 24V	10	volts
Max. Allowable Start Circuit Resistance, 12V	0.002	ohms
Max. Allowable Start Circuit Resistance, 24V	0.0012	ohms
Electrical Component Maximum Temperature Limit	125	°C 257 °F
Maximum ECU Temperature	105	°C 221 °F

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Fuel System

ECU Description	L14			
Fuel Injection Pump	HPCR			
Governor Type	Electronic			
Volumetric Fuel Consumption	69.3	L/hr	18.3	gal/hr
Mass Fuel Consumption	58.9	kg/hr	130	lb/hr
Total Fuel Volumetric Flow	192	L/hr	50.7	gal/hr
Total Fuel Mass Flow	163	kg/hr	360	lb/hr
Max. Fuel Inlet Restriction*	20	kPa	80	in.H2O
Max. Fuel Inlet Pressure	20	kPa	80	in.H2O
Max Fuel Return Pressure	20	kPa	80	in.H2O
Normal Operation Fuel Temperature	40	°C	104	°F
Max. Fuel Inlet Temperature	100	°C	212	°F
Min. Recommended Fuel Line Inside Diameter	7.46	mm	0.29	in
Min. Recommended Fuel Line Size	5 (-) AN			
Primary Fuel Filter	10 mic			
Secondary Fuel Filter	2 mic			

Lubrication System

Oil Pressure at Rated Speed	415	kPa	60	psi
Oil Pressure at Low Idle (800rpm)**	180	kPa	26	psi
Max. Crankcase Pressure	2	kPa	8	in.H2O
Maximum Installed Angle, Front Down	0 deg			
Maximum Installed Angle, Front Up	12 deg			
Engine Angularity Limits Any Direction, Continuous***	25 deg			
Engine Angularity Limits Any Direction, Intermittent***	35 deg			

Seawater Pump System

Seawater Pump Flow	375	L/min	99	gal/min
Max. Suction Lift	3	m	9.8	ft
Max. Outlet Pressure	140	kPa	20	psi
Max. Inlet Restriction	30	kPa	4	psi

* With clean filters

** With John Deere Plus-50 II™ 15w-40, not applicable with break in oil.

*** With 19BP option

Air Intake System

Engine Air Flow	20.6	m³/min	727	ft³/min
Intake Manifold Pressure	262.6	kPa	38.1	psi
Manifold Air Temperature	34	°C	93	°F
Maximum Manifold Air Temperature	67	°C	153	°F
Max. Allowable Temperature Rise, Ambient	17	°C	30	°F
Air to Engine Inlet				
Max. Air Intake Restriction, Clean Air Cleaner	3	kPa	12	in.H2O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25	kPa	25	in.H2O
Min. Ventilation Area	0.127	m²	196	in²

Performance Data

Rated Power	265	kW	355	hp
Rated Speed	2700 RPM			
Peak Torque Speed	2000 RPM			
Low Idle Speed	600 RPM			
Rated Torque	937	Nm	691	ft-lb
Peak Torque	1182	Nm	872	ft-lb
BMEP, Rated	1732	kPa	251	psi
Rated Pferdestärke (metric hp)	360 ps			
Front Drive Capacity, Intermittent	907	Nm	669	lb-ft
Front Drive Capacity, Continuous	907	Nm	669	lb-ft

Exhaust System

Exhaust Flow	48	m³/min	1695	ft³/min
Exhaust Flow @ gas STP	21.67	m³/min	765	ft³/min
Exhaust Temperature	436	°C	817	°F
Max. Allowable Exhaust Restriction	7.5	kPa	30	in.H2O
Max. Shear on Turbocharger Exhaust Outlet	11	kg	24.3	lb
Max. Bending Moment on Turbocharger Exhaust Outlet	7	Nm	15.4	lb-ft
Min. Exhaust Pipe Diameter, Dry	127	mm	5.0	in
Min. Exhaust Pipe Diameter, Wet	139.7	mm	5.5	in

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Engine Performance Data Table

Engine Speed	Crank Power		Crank Torque		* Prop Power		* Prop Fuel		* Prop BSFC
RPM	kW	hp	Nm	lb-ft	kW	hp	L/hr	gal/hr	g/kW-hr
2700	265	355	937	691	265	355	69	18	222
2600	265	355	973	718	237	317	62	16	224
2500	265	355	1012	746	210	282	58	15	233
2400	265	355	1054	778	186	250	50	13	228
2300	265	355	1100	812	164	220	43	11	221
2200	265	355	1150	848	143	192	38	10	223
2100	258	347	1175	867	125	167	33	9	224
2000	248	332	1182	872	108	144	28	7	223
1900	231	310	1161	857	92	124	25	6	226
1800	212	284	1122	828	79	105	21	6	227
1700	189	253	1060	782	66	89	18	5	230
1600	158	211	941	694	55	74	15	4	229
1500	127	171	811	598	45	61	13	3	237
1400	108	144	733	541	37	50	10	3	237
1300	93	124	682	503	30	40	8	2	241
1200	81	109	647	477	23	31	7	2	252
1100	72	96	622	459	18	24	5	1	250
1000	62	83	593	437	13	18	4	1	275

* Theoretical 3.0 exponent propeller curve , measured at flywheel

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