



JOHN DEERE

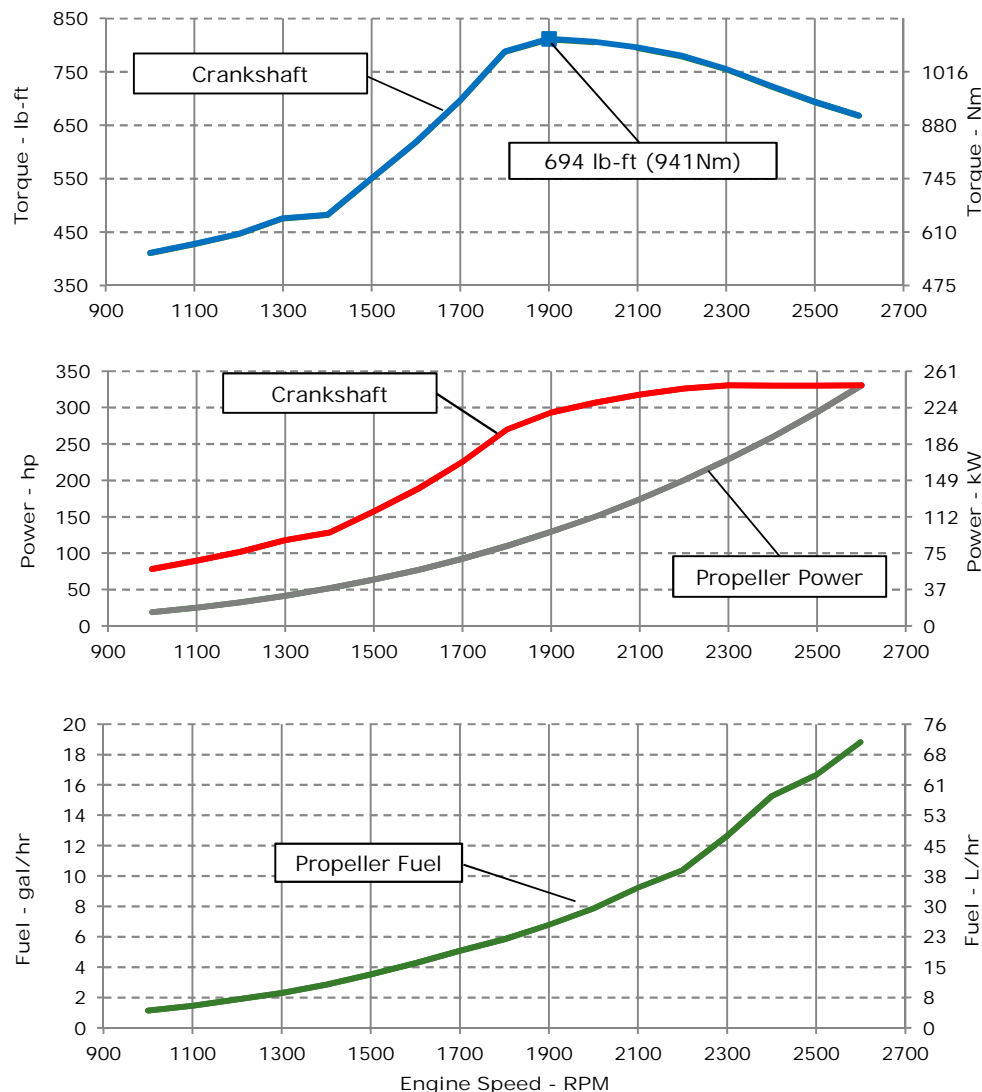
ENGINE PERFORMANCE CURVE

Rating: M4 - 330hp (246kW) @ 2600 RPM
Application: Marine

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

PowerTech™ 6.8L Engine

Model: 6068AFM85



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 typically operate between 1,000-3,000 hours per year and have load factors below 40 percent. This rating is for applications that use full power no more than 1 hour out of each 12 hours of operation. The remaining time of operation is at or below cruising speed.

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: 6068AFM85_D

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

Engine Installation Criteria

General Data

Model	6068AFM85			
Number of Cylinders	6			
Bore	107	mm	4.21	in
Stroke	127	mm	5.00	in
Displacement	6.8	L	415	in ³
Compression Ratio	16.7:1			
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	Engine coolant			
Engine Crankcase Vent System	Closed			

Cooling System*

Engine Coolant Heat Rejection**	264	kW	15044	BTU/min
Max. Pressure Drop Across Keel Cooler	40	kPa	5.8	psi
Coolant Flow	282	L/min	74	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	34	L	9.0	gal
Engine Coolant Capacity, KC	33.5	L	8.8	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
Recommended Fuel Cooler	2	kW	142	BTU/min
Engine Radiated Heat	36	kW	2034	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 #2)	1172	mm	46.1	in
Length maximum	1489	mm	58.6	in
Width maximum	862	mm	33.9	in
Height, crank centerline to top	644	mm	25.4	in
Height, crank centerline to bottom	291	mm	11.5	in
Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics)	787	kg	1735	lb
Center of Gravity Location, X-axis From Rear Face of Block	390	mm	15.3	in
Center of Gravity Location, Y-axis Right of Crankshaft	-14	mm	-0.6	in
Center of Gravity Location, Z-axis Above Crankshaft	186	mm	7.3	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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Engine Installation Criteria

Fuel System

ECU Description	L14			
Fuel Injection Pump	HPCR			
Governor Type	Electronic			
Volumetric Fuel Consumption	71.2	L/hr	18.8	gal/hr
Mass Fuel Consumption	60.5	kg/hr	133	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.H ₂ O
Max. Fuel Inlet Pressure	20	kPa	80	in.H ₂ O
Max Fuel Return Pressure	20	kPa	80	in.H ₂ O
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	310	kPa	45	psi
Oil Pressure at Low Idle (800rpm)**	150	kPa	22	psi
Max. Crankcase Pressure	2	kPa	8	in.H ₂ O
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	266	L/min	70	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	19.9	m ³ /min	701	ft ³ /min
Intake Manifold Pressure	210	kPa	30.5	psi
Manifold Air Temperature	107	°C	225	°F
Maximum Manifold Air Temperature	130	°C	266	°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.H ₂ O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25	kPa	25	in.H ₂ O
Min. Ventilation Area	0.122	m ²	189	in ²

Performance Data

Rated Power	246	kW	330	hp
Rated Speed	2600 RPM			
Peak Torque Speed	1900 RPM			
Low Idle Speed	600 RPM			
Rated Torque	904	Nm	666	ft-lb
Peak Torque	1099	Nm	811	ft-lb
BMEP, Rated	1670	kPa	242	psi
Rated Pferdestärke (metric hp)	334 ps			
Front Drive Capacity, Intermittent	907	Nm	669	lb-ft
Front Drive Capacity, Continuous	907	Nm	669	lb-ft

Exhaust System

Exhaust Flow	48	m ³ /min	1695	ft ³ /min
Exhaust Flow @ gas STP	18.9	m ³ /min	666	ft ³ /min
Exhaust Temperature	481	°C	898	°F
Max. Allowable Exhaust Restriction	7.5	kPa	30	in.H ₂ O
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	114.3	mm	4.5	in
Min. Exhaust Pipe Diameter, Wet	127	mm	5.0	in

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Engine Installation Criteria

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
2600	246	330	905	667	246	330	71	19	246
2500	246	330	940	693	219	294	63	17	244
2400	246	330	980	723	194	260	58	15	253
2300	246	330	1023	755	171	229	48	13	238
2200	243	326	1056	779	149	200	39	10	224
2100	237	318	1077	795	130	174	35	9	229
2000	229	307	1092	805	112	150	30	8	226
1900	219	293	1099	811	96	129	26	7	227
1800	201	270	1067	787	82	110	22	6	229
1700	168	225	944	696	69	92	19	5	237
1600	140	188	838	618	57	77	16	4	238
1500	117	157	746	550	47	63	13	4	239
1400	96	128	653	482	38	52	11	3	238
1300	88	118	644	475	31	41	9	2	239
1200	76	102	605	446	24	32	7	2	250
1100	67	90	579	427	19	25	6	1	251
1000	58	78	557	411	14	19	4	1	261

* Theoretical 3.0 exponent propeller curve , measured at flywheel

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