JOHN DEERE

ENGINE PERFORMANCE CURVE

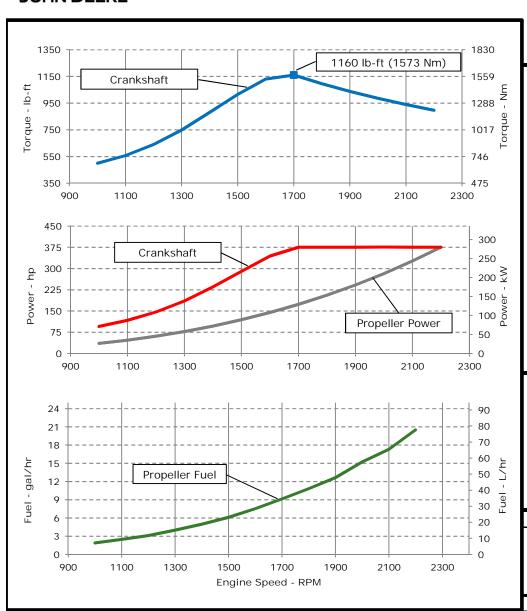


PowerTechTM 9.0L Engine

Model: 6090SFM85

Rating: M2 - 375hp (280kW) @ 2200 RPM

Application: Marine



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 $\pm 5\%$ 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: $kW = hp \times 0.746$ Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg

Torque: $N \cdot m = \text{Ib-ft x } 1.356$

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:

M2: The M2 rating is for marine propulsion applications that typically operate between 3,000-5,000 hours per year and have load factors up to 65 percent. This rating is for applications that are in continuous use and use full power for no more than 16 hours of each 24 hours of operation. The remaining time of operation is at or below cruising speed.

Possible applications: Short-range tugs and towboats long-range ferryboats, large passenger vessels and offshore displacement hull fishing boats

Designed/Calibrated to meet:	Certified by:
EPA Commercial Marine Tier 3	10

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

Ref: Engine Emission Label

4-Oct-16

Performance Curve: 6090SFM85_B

Engine Installation Criteria

mm L 16 2 Direct i 1-5-3 In line, harged	SFM85 6 4.66 5.35 549 3.3:1 2/2 injection 8-6-2-4 4 Cycle and Afterder cooled	in in in ³	Physical Data Length to rear face of block Length to rear face of flywheel housing (SAE #2) Length maximum Width maximum Height, crank centerline to top Height, crank centerline to bottom Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face of Block	1297 1415 1712 974 664 319 1056	mm mm mm mm mm mm	51.1 55.7 67.4 38.3 26.1 12.6 2327	in in in in
mm L 16 2 Direct i 1-5-3 In line, harged	4.66 5.35 549 3:1 2/2 injection 3-6-2-4 4 Cycle and Afterd	in in ³	Length to rear face of block Length to rear face of flywheel housing (SAE #2) Length maximum Width maximum Height, crank centerline to top Height, crank centerline to bottom Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face	1415 1712 974 664 319 1056	mm mm mm mm	55.7 67.4 38.3 26.1 12.6	in in in in
mm L 16 2 Direct i 1-5-3 In line, harged	4.66 5.35 549 3:1 2/2 injection 3-6-2-4 4 Cycle and Afterd	in in ³	Length to rear face of flywheel housing (SAE #2) Length maximum Width maximum Height, crank centerline to top Height, crank centerline to bottom Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face	1415 1712 974 664 319 1056	mm mm mm mm	55.7 67.4 38.3 26.1 12.6	ir ir ir ir
mm L 16 2 Direct i 1-5-3 In line, narged	4.66 5.35 549 3.3:1 2/2 injection 3-6-2-4 4 Cycle and Afterd	in in ³	Length maximum Width maximum Height, crank centerline to top Height, crank centerline to bottom Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face	1712 974 664 319 1056	mm mm mm	67.4 38.3 26.1 12.6	ir ir ir
mm L 16 2 Direct i 1-5-3 In line, parged	5.35 549 .3:1 2/2 injection 3-6-2-4 , 4 Cycle and Aftero	in in ³	Width maximum Height, crank centerline to top Height, crank centerline to bottom Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face	974 664 319 1056	mm mm mm	38.3 26.1 12.6	ir ir ir
L 16 2 Direct i 1-5-3 In line, narged Seawate	549 .3:1 2/2 injection 3-6-2-4 , 4 Cycle and Aftero	in ³	Height, crank centerline to top Height, crank centerline to bottom Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face	664 319 1056	mm mm	26.1 12.6	ir ir
Direct i 1-5-3 In line, narged Seawate	3:1 2/2 injection 3-6-2-4 , 4 Cycle and Aftero		Height, crank centerline to bottom Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face	319 1056	mm	12.6	ir
Direct i 1-5-3 In line, narged Seawate	2/2 injection 3-6-2-4 , 4 Cycle and Aftero		Weight, with oil, no coolant (includes engine, flywheel housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face	1056			
Direct i 1-5-3 In line, narged Seawate	injection 3-6-2-4 , 4 Cycle and Aftero		housing, flywheel, and electronics) Center of Gravity Location, X-axis From Rear Face		kg	2327	lb
1-5-3 In line, arged Seawate	3-6-2-4 , 4 Cycle and Aftero		Center of Gravity Location, X-axis From Rear Face	408			
In line, narged Seawate	, 4 Cycle and Aftero			408			
narged Seawate	and After		OI BIOCK		mm	16.1	ir
Seawate		noled	Center of Gravity Location, Y-axis Right of Crankshaft	-38	mm	-1.5	ir
		cooled	Center of Gravity Location, Z-axis Above Crankshaft	200	mm	7.9	
010	osed		Max. Allowable Static Bending Moment At Rear Face	200	111111	7.7	
	3300		of Flywheel Housing (for installations up to 5-G)	814	Nm	600	lb-
			Thrust Bearing Load Limit, Forward Continuous	8.6	kN	1933	lh
kW	12010	BTU/min	Thrust Bearing Load Limit, Forward Intermittent	13	kN	2923	
kW		BTU/min	Thrust Bearing Load Limit, Rearward Continuous	4	kN	899	
L/min		gal/min	Thrust Bearing Load Limit, Rearward Intermittent	6	kN	1349	
		_	must bearing Load Limit, Real ward intermittent	O	IXI V	1347	110
		•	Flectrical System				
			· · · · · · · · · · · · · · · · · · ·	°C)	1100	amps	
			2 1 2				
L/min		J		-,		•	
kPa	16						
		•				•	
°C		°F	, , , , , , , , , , , , , , , , , , ,				
			Max. Allowable Start Circuit Resistance, 12V				
-C	212-230	*F	·				
°C	230	°F	Electrical Component Maximum Temperature Limit	125	°C	257	°F
	204 I		·	105	°C	221	°F
	kPa °C °C L L/min kPa kPa °C °C kW	kPa 4.4 °C 180 °C 202 L 10 L/min 3.2 kPa 16 kPa 5.8 °C 212 °C 212-230 °C 230 kW 204	kPa 4.4 psi °C 180 °F °C 202 °F L 10 gal L/min 3.2 gal/min kPa 16 psi kPa 5.8 psi °C 212 °F °C 212-230 °F kW 204 BTU/min	kPa 4.4 psi °C 180 °F °C 202 °F Min. Recommended Battery Capacity, 12V @32 °F (0 L 10 gal L/min 3.2 gal/min kPa 16 psi kPa 5.8 psi °C 212 °F Min. Voltage at ECU during Cranking, 12V Max. Allowable Start Circuit Resistance, 12V Max. Allowable Start Circuit Resistance, 24V C 230 °F KW 204 BTU/min Electrical System Min. Recommended Battery Capacity, 12V @32 °F (0 C C C C C C C C C C C C C C C C C C C	kPa 4.4 psi °C 180 °F °C 202 °F Min. Recommended Battery Capacity, 12V @32 °F (0 °C) L 10 gal L/min 3.2 gal/min kPa 16 psi kPa 5.8 psi °C 212 °F Min. Voltage at ECU during Cranking, 12V Max. Allowable Start Circuit Resistance, 12V Max. Allowable Start Circuit Resistance, 24V C 230 °F KW 204 BTU/min Maximum ECU Temperature Min. Voltage at ECU Temperature Electrical System Min. Recommended Battery Capacity, 12V @32 °F (0 °C) Starter Rolling Current, 12V @32 °F (0 °C) Min. Voltage at ECU during Cranking, 12V Max. Allowable Start Circuit Resistance, 12V Max. Allowable Start Circuit Resistance, 24V Electrical Component Maximum Temperature Limit 125 Maximum ECU Temperature 105	kPa 4.4 psi °C 180 °F °C 202 °F Min. Recommended Battery Capacity, 12V @32 °F (0 °C) 1100 L 10 gal Min. Recommended Battery Capacity, 24V @32 °F (0 °C) 750 L/min 3.2 gal/min Starter Rolling Current, 12V @32 °F (0 °C) 500 kPa 16 psi Starter Rolling Current, 24V @32 °F (0 °C) 300 kPa 5.8 psi Min. Voltage at ECU during Cranking, 12V 6 °C 212 °F Min. Voltage at ECU during Cranking, 24V 10 °C 212-230 °F Max. Allowable Start Circuit Resistance, 12V 0.002 Max. Allowable Start Circuit Resistance, 24V 0.0012 C kW 204 BTU/min Maximum ECU Temperature 105 °C	kPa 4.4 psi °C 180 °F °C 202 °F Min. Recommended Battery Capacity, 12V @32 °F (0 °C) 1100 amps L 10 gal L/min 3.2 gal/min Starter Rolling Current, 12V @32 °F (0 °C) 500 amps kPa 16 psi Starter Rolling Current, 24V @32 °F (0 °C) 300 amps kPa 5.8 psi Min. Voltage at ECU during Cranking, 12V 6 volts °C 212 °F 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 kW 204 BTU/min Maximum ECU Temperature 105 °C 221

^{*} 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

Performance Curve: 6090SFM85_B



Volumetric Fuel Consumption 7.7, 1/hr 20.5 gal/hr Max											
Equil plecting Pump	Fuel System					Air Intaka System					
Fuel Injection Pump							26.5	$26.5 \text{ m}^3/\text{min } 935.8 \text{ ft}^3/\text{s}$			
Second Part	· · · · · · · · · · · · · · · · · · ·										
Volumetric Fuel Consumption 7.7, 1/hr 20.5 gal/hr Max. Max										°F	
Max Fuel Consumption	<u> </u>	77.7	L/hr	20.5	gal/hr	·				°F	
Total Fuel Volumetric Flow 251 L/hr 66.3 gal/hr Total Fuel Mass Flow 213 kg/hr 470 lb/hr Max. Fuel Intel Restriction* 20 kPa 80 in. H2O Max. Fuel Intel Restriction* 20 kPa 80 in. H2O Max. Fuel Intel Restriction Fuel Fressure 20 kPa 80 in. H2O Max. Fuel Intel Temperature 40 °C 212 °F Max. Fuel Intel Restriction, Ditry Air Cleaner 41 °C		66				·					
Total Fuel Mass Flow 213 kg/hr 470 lb/hr Max. Fuel Inlet Restriction* 20 kPa 80 in.H2O Max. Fuel Inlet Pressure 20 kPa 80 in.H2O Max. Fuel Inlet Pressure 20 kPa 80 in.H2O Max Fuel Return Pressure 20 kPa 80 in.H2O Max. Fuel Inlet Temperature 40 °C 104 °F Max. Fuel Inlet Temperature 100 °C 212 °F Max. Fuel Inlet Temperature 100 °C 212 °F Min. Recommended Fuel Line Inside Diameter 8.3 mm 0.34 in. Min. Recommended Fuel Line Size 10 mic. Performance Data 170 Rated Power 20 kW 375 Np Primary Fuel Filter 10 mic. Low Ide Speed 170 Rated Power 170 Rm 170 Rm 170 Rm 170 Rm 170 Rm 170 Pm 170						·	17	°C	30	řЕ	
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 Max Fuel Return Pressure 20 kPa 80 in-H2O Morrial Operation Fuel Temperature 40 °C 104 °F Min. Recommended Fuel Line Inside Diameter 8.53 mm 0.34 in Min. Recommended Fuel Line Inside Diameter 8.53 mm 0.34 in Min. Recommended Fuel Line Size 10 mm	Total Fuel Mass Flow	213	kg/hr		•	_	3	kPa	12	in.H ₂	
Max Fuel Return Pressure 20 kPa 80 in.H2O Normal Operation Fuel Temperature 40 °C 104 °F Max. Fuel Inlet Temperature 100 °C 121 °F Min. Recommended Fuel Line Inside Diameter 8.53 mm 0.34 in Min. Recommended Fuel Line Size 6 (-) All orders 100 mic 46 40 0 40 9 40 8 40 37 Mm 40 0 6 -> All orders 9 40 9 40 9 8 8 8 8 10 9 4 9 8 8 8 10 9 4 9 8 9 8 10 9 10 9 10 9 11 9 11 9 9 11 9 11 9 9 9 10 10 9 10 9 9 9 10 10 9 9 9 10	Max. Fuel Inlet Restriction*	20		80	in.H2O	Max. Air Intake Restriction, Dirty Air Cleaner	6.25	kPa	25	in.H ₂	
Normal Operation Fuel Temperature Max. Fuel Inlet Temperature 100 °C 212 °F Min. Recommended Fuel Line Inside Diameter 8.53 mm 0.34 in 0.34 vin Min. Recommended Fuel Line Inside Diameter 8.53 mm 0.34 vin 8.64 (-) All VIII VIII VIII VIII VIII VIII VIII	Max. Fuel Inlet Pressure	20	kPa	80	in.H2O	Min. Ventilation Area	0.163	m^2	253	in ²	
Max. Fuel Inlet Temperature 100 °C 212 °F Performance Data Bested Power 280 kW 375 hg Mm Min. Recommended Fuel Line Inside Diameter 8.53 mm 0.34 in Rated Power Rated Speed 280 kW 375 hg region of the peak Torque Speed 170 RB 200 RB Peak Torque Speed 170 RB 650 RB FE Peak Torque Speed 170 RB 650 RB FE Peak Torque 121 Mm 960 FI Peak Torque 1215 Nm 180 951 Peak Torque Rated Torque 1215 Nm 180 951 Peak Torque Peak Torque 1215 Nm 180 951 Peak Torque Peak Torque 1215 Nm 180 951 Peak Torque Peak Torque 181 Nm 180 951 Peak Torque	Max Fuel Return Pressure	20	kPa	80	in.H2O	Max. CAC Delta Pressure	11.1	kPa	44.6	in.H2	
Min. Recommended Fuel Line Inside Diameter 8.5 s mm 0.34 in Min. Recommended Fuel Line Size 6 (-) AN	Normal Operation Fuel Temperature	40	°C	104	°F						
Min. Recommended Fuel Line Size 6 c · AN Rated Speed 200 RPM Promary Fuel Filter 200 RPM Peak Torque Speed 1700 Peak Torque Speed 1	Max. Fuel Inlet Temperature	100	°C	212	°F	Performance Data					
Primary Fuel Filter 10 mic Peak Torque Speed 170 RM Feak Torque 170 RM Feak Torque 170 RM 870 Feak Torque 120 RM 170 RM 870 Feak Torque 1215 Nm 870 Feak Torque 1215 Nm 870 Feak Torque 1216 Nm 120 Feak Torque 120 Read Torque 1216 Nm 120 Feak Torque 120 Read Torque 1216 Read Torque	Min. Recommended Fuel Line Inside Diameter	8.53	mm	0.34	in	Rated Power	280	kW	375	hp	
Secondary Fuel Filter 2 mic Low Idle Speed 1215 Nm 896 February 1215 Nm 1416 Peak Torque 1215 Nm 896 February 1215 Nm 896	Min. Recommended Fuel Line Size		6	(-) AN		Rated Speed		2200	RPM		
Rated Torque 1215	Primary Fuel Filter		10	mic		Peak Torque Speed		1700	RPM		
Lubrication System Peak Torque 1573 Nm 1160 ff. off. Oil Pressure at Rated Speed 270 kPa 39 psi BMEP, Rated 1697 kPa 246 psi Oil Pressure at Low Idle (650rpm)** 145 kPa 21 psi Rated Pferdestärke (metric hp) 329 ps 167 Mm 704 lb- Max. Crankcase Pressure 2 kPa 8 in-H2O Front Drive Capacity, Intermittent 955 Nm 704 lb- Maximum Installed Angle, Front Down 0 deg Front Drive Capacity, Continuous 955 Nm 704 lb- Maximum Installed Angle, Front Up 12 deg Front Drive Capacity, Continuous 955 Nm 704 lb- Engine Angularity Limits Any Direction, Intermittent*** 30 deg Exhaust Flow 55.5 m³m 1960 ft² Exhaust Flow 55.5 m³m 1960 ft² scauser Flow 55.5 m³m 1960 ft² scauser Flow Exhaust Flow 25.4 m	Secondary Fuel Filter		2	mic		Low Idle Speed		650	RPM		
Oil Pressure at Rated Speed 270 kPa 39 psi Oil Pressure at Rated Speed 270 kPa 39 psi Oil Pressure at Low Idle (650rpm)** 145 kPa 21 psi Max. Crankcase Pressure 2 kPa 8 in.H2O Maximum Installed Angle, Front Down 0 deg Engine Angularity Limits Any Direction, Continuous*** 20 deg Engine Angularity Limits Any Direction, Intermittent*** 30 deg Exhaust Flow @ gas STP 25.4 m³/min 1960 ft³/m Exhaust Flow @ gas STP 25.4 m³/min 1960 ft³/m Exhaust Flow @ gas STP 25.4 m³/min 1960 ft³/m Exhaust Flow @ gas STP 25.4 m³/min 1960 ft³/m Max. Suction Lift 3 m 9.8 ft Max. Outlet Pressure 140 kPa 20 psi Max. Inlet Restriction 30 kPa 4 psi Min. Exhaust Pipe Diameter, Dry 114.3 mm 4.5 in Min. Exhaust Pipe Diameter,						Rated Torque	1215	Nm	896	ft-l	
Oil Pressure at Low Idle (650rpm)** 145 kPa 21 psi Rated Pferdestärke (metric hp) 329 ps Max. Crankcase Pressure 2 kPa 8 in.H2O Front Drive Capacity, Intermittent 955 Nm 704 lb- Maximum Installed Angle, Front Down 0 deg Front Drive Capacity, Intermittent 955 Nm 704 lb- Maximum Installed Angle, Front Up 12 deg Exhaust Inlet Restriction Front Drive Capacity, Continuous 955 Nm 704 lb- Front Drive Capacity, Intermittent 955 Nm 704 lb- Front Drive Capacity, Intermittent 955 Nm 704 lb- Front Drive Capacity, Continuous 955 Nm 704 lb- Exhaust Flow @ gas STP Exhaust Flow @ gas STP Exhaust Temperature 369.6 °C 697 °F Seawater Pump Flow 371 L/min 98 gal/min Max. Allowable Exhaust Restriction 7.5 kPa 30 in.H Max. Outlet Pressure 140 kPa 20 psi Max. Bending Moment on	<u>Lubrication System</u>					Peak Torque	1573	Nm	1160	ft-l	
Max. Crankcase Pressure 2 kPa 8 in.H2O Maximum Installed Angle, Front Down 3 deg Engine Angularity Limits Any Direction, Continuous*** Engine Angularity Limits Any Direction, Intermittent*** Seawater Pump System Seawater Pump Flow 371 L/min Max. Suction Lift Max. Outlet Pressure 140 kPa 20 psi Max. Inlet Restriction 30 kPa 4 psi Front Drive Capacity, Intermittent 955 Nm 704 lb- Front Drive Capacity, Intermittent Front Drive Capacity, Intermittent 955 Nm 704 lb- Front Drive Capacity, Intermittent Front Drive Capacity, Intermitent Front Drive Capacity	Oil Pressure at Rated Speed	270	kPa	39	psi	BMEP, Rated	1697	kPa	246	ps	
Maximum Installed Angle, Front Down O deg Maximum Installed Angle, Front Up Engine Angularity Limits Any Direction, Continuous*** Seawater Pump System Seawater Pump Flow Any. Suction Lift Max. Outlet Pressure Inlet Restriction O deg Front Drive Capacity, Continuous Front Drive Capacity, Continuous 955 Nm 704 lb- Front Drive Capacity, Continuous Front Drive Capacity Fro	Oil Pressure at Low Idle (650rpm)**	145	kPa	21	psi	Rated Pferdestärke (metric hp)		329	ps		
Maximum Installed Angle, Front Up Engine Angularity Limits Any Direction, Continuous*** Engine Angularity Limits Any Direction, Intermittent*** Seawater Pump System Seawater Pump Flow Seawater Pump Flow Angularity Limits Any Direction, Intermittent*** Seawater Pump Flow Seawater Pump Flow Angularity Limits Any Direction, Intermittent*** Seawater Pump System Seawater Pump Flow Angularity Limits Any Direction, Continuous*** Seawater Pump System Seawater Pump Flow Angularity Limits Any Direction, Continuous*** Seawater Pump System Seawater Pump Flow Angularity Limits Any Direction, Continuous*** 30 deg Exhaust Flow Seas STP Exhaust Temperature 369.6 °C 697 °F Exhaust Temperature 369.6 °C 697 °F Max. Allowable Exhaust Restriction 7.5 kPa 30 in.H Max. Shear on Turbocharger Exhaust Outlet 11 kg 24.3 lb Max. Bending Moment on Turbocharger Exhaust Outlet Min. Exhaust Pipe Diameter, Dry 114.3 mm 4.5 in	Max. Crankcase Pressure	2	kPa	8	in.H2O	Front Drive Capacity, Intermittent	955	Nm	704	lb-f	
Engine Angularity Limits Any Direction, Continuous*** 20 deg Engine Angularity Limits Any Direction, Intermittent*** 30 deg Exhaust Flow @ gas STP	Maximum Installed Angle, Front Down		0	deg		Front Drive Capacity, Continuous	955	Nm	704	lb-f	
Engine Angularity Limits Any Direction, Intermittent*** 30 deg Seawater Pump System Seawater Pump Flow Angularity Limits Any Direction, Intermittent*** 30 deg Exhaust Flow @ gas STP Exhaust Flow @ gas STP Exhaust Temperature 369.6 °C 697 °F Max. Allowable Exhaust Restriction 7.5 kPa 30 in.H Max. Outlet Pressure 140 kPa 20 psi Max. Inlet Restriction 30 kPa 4 psi Min. Exhaust Plow @ gas STP Exhaust Flow @ gas STP Exhaust Flow @ gas STP Exhaust Temperature 369.6 °C 697 °F Max. Allowable Exhaust Restriction 7.5 kPa 30 in.H Max. Shear on Turbocharger Exhaust Outlet 11 kg 24.3 lb- Outlet Min. Exhaust Plipe Diameter, Dry 114.3 mm 4.5 in	Maximum Installed Angle, Front Up		12	deg							
Exhaust Flow @ gas STP 25.4 m³/min 897 ft³/m Seawater Pump Flow 371 L/min 98 gal/min Max. Suction Lift 3 m 9.8 ft Max. Outlet Pressure 140 kPa 20 psi Max. Inlet Restriction 30 kPa 4 psi Exhaust Flow @ gas STP 25.4 m³/min 897 ft³/m Exhaust Temperature 369.6 °C 697 °F Max. Allowable Exhaust Restriction 7.5 kPa 30 in.H Max. Shear on Turbocharger Exhaust Outlet 11 kg 24.3 lb Max. Bending Moment on Turbocharger Exhaust 7 Nm 15.4 lb- Outlet Min. Exhaust Flow @ gas STP 25.4 m³/min 897 ft³/m Max. Allowable Exhaust Restriction 7.5 kPa 30 in.H Max. Bending Moment on Turbocharger Exhaust 7 Nm 15.4 lb- Outlet Min. Exhaust Pipe Diameter, Dry 114.3 mm 4.5 in	Engine Angularity Limits Any Direction, Continuou	S***	20	deg							
Seawater Pump SystemExhaust Temperature369.6 °C697 °FSeawater Pump Flow371 L/min98 gal/minMax. Allowable Exhaust Restriction7.5 kPa30 in.HMax. Suction Lift3 m9.8 ftMax. Shear on Turbocharger Exhaust Outlet11 kg24.3 lbMax. Outlet Pressure140 kPa20 psiMax. Bending Moment on Turbocharger Exhaust7 Nm15.4 lbMax. Inlet Restriction30 kPa4 psiOutletMin. Exhaust Pipe Diameter, Dry114.3 mm4.5 in	Engine Angularity Limits Any Direction, Intermitte	nt***	30	deg							
Seawater Pump Flow 371 L/min 98 gal/min Max. Allowable Exhaust Restriction 7.5 kPa 30 in.H Max. Suction Lift 3 m 9.8 ft Max. Shear on Turbocharger Exhaust Outlet 11 kg 24.3 lb Max. Outlet Pressure 140 kPa 20 psi Max. Bending Moment on Turbocharger Exhaust 7 Nm 15.4 lb-Outlet Min. Exhaust Pipe Diameter, Dry 114.3 mm 4.5 in						5					
Max. Suction Lift3m9.8ftMax. Shear on Turbocharger Exhaust Outlet11kg24.3lbMax. Outlet Pressure140kPa20psiMax. Bending Moment on Turbocharger Exhaust7Nm15.4lbMax. Inlet Restriction30kPa4psiMin. Exhaust Pipe Diameter, Dry114.3mm4.5in	•					Exhaust Temperature	369.6				
Max. Outlet Pressure 140 kPa 20 psi Max. Bending Moment on Turbocharger Exhaust 7 Nm 15.4 lb-Outlet Max. Inlet Restriction 30 kPa 4 psi Min. Exhaust Pipe Diameter, Dry 114.3 mm 4.5 in			L/min								
Max. Inlet Restriction 30 kPa 4 psi Outlet Min. Exhaust Pipe Diameter, Dry 114.3 mm 4.5 in											
Min. Exhaust Pipe Diameter, Dry 114.3 mm 4.5 in							7	Nm	15.4	lb-f	
	Max. Inlet Restriction	30	kPa	4	psi						
Min. Exhaust Pipe Diameter, Wet 127 mm 5.0 in						·					
						Min. Exhaust Pipe Diameter, Wet	127	mm	5.0	in	

^{*} With clean filters

Performance Curve: 6090SFM85_B

^{**} With John Deere Plus-50 IITM 15w-40, not applicable with break in oil.

^{***} With 1932 option

Engine Installation Criteria

Engine Performance Data Table

Engine Speed	Crank	Power	Crank	Torque	* Prop	Power	* Pro	p Fuel	* Prop BSFC
RPM	kW	hp	Nm	lb-ft	kW	hp	L/hr	gal/hr	g/kW-hr
2200	280	375	1215	896	280	375	78	21	236
2100	280	375	1273	939	243	326	65	17	229
2000	280	376	1337	986	210	282	58	15	233
1900	280	375	1407	1038	180	242	48	13	225
1800	280	375	1485	1095	153	206	41	11	227
1700	280	375	1573	1160	129	173	35	9	228
1600	257	344	1532	1130	108	144	29	8	225
1500	216	290	1375	1014	89	119	23	6	221
1400	175	235	1195	881	72	97	19	5	222
1300	138	185	1014	748	58	77	15	4	222
1200	109	146	868	640	45	61	12	3	220
1100	87	117	755	557	35	47	9	2	226
1000	71	95	678	500	26	35	7	2	230

^{*} Theoretical 3.0 exponent propeller curve , measured at flywheel

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