



JOHN DEERE

ENGINE PERFORMANCE CURVE

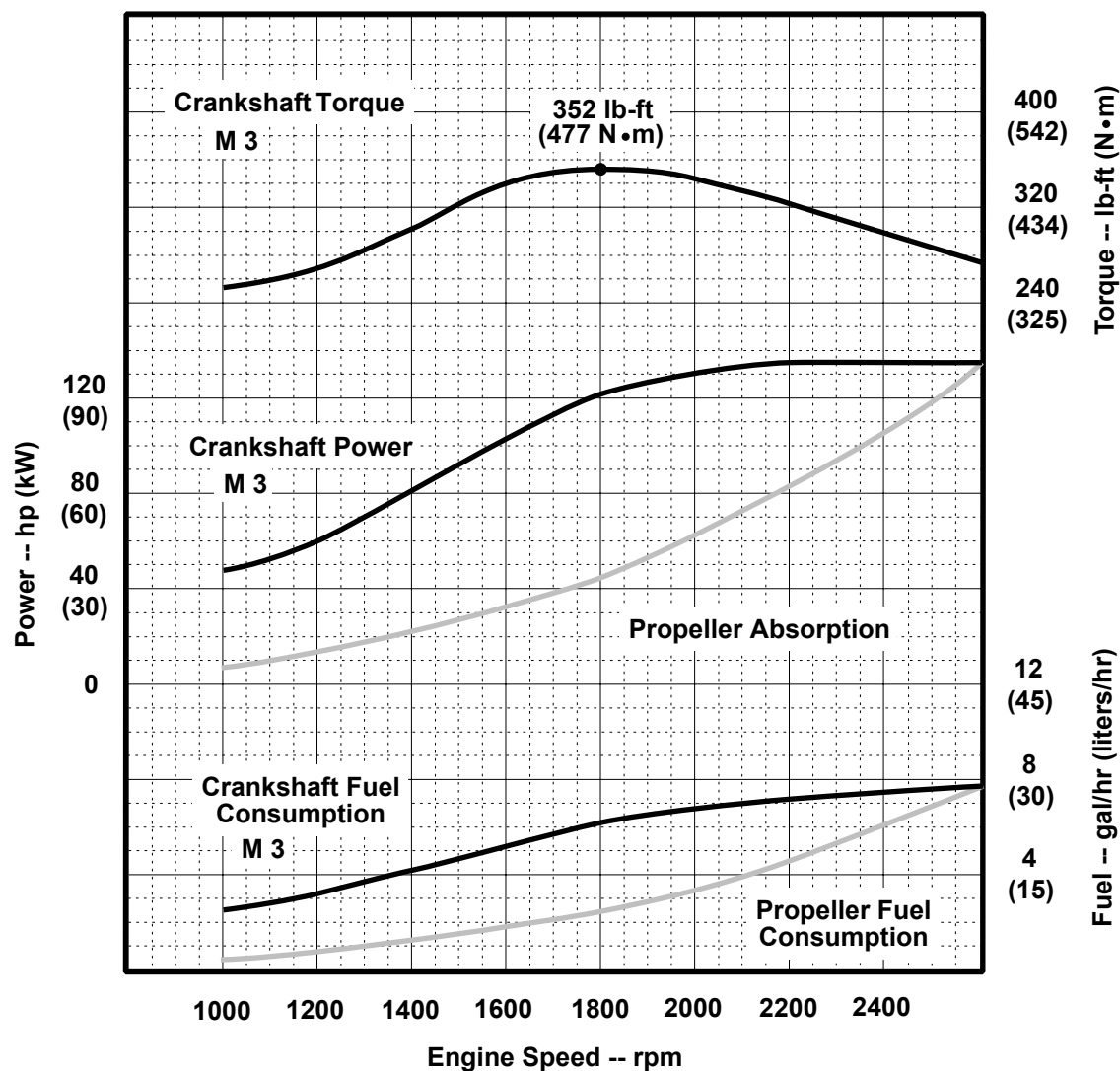
Rating: M3 - 135 hp (101 kW) @ 2600 rpm

PowerTech 4.5 L Engine

Model: **4045TFM75**

(Propeller Power is approximately
97% of Crankshaft Power)

Application: Marine



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

Gross power guaranteed within + or - 5% at SAE J1995 and ISO 8665 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 gal = 7.1 lb, 1 L = 0.85 kg

Torque: N·m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.

Notes:

Tier-2 Emission Certifications:

Certified by:

• EPA Commercial Marine
• IMO Exempt

Ref: Engine Emission Label

NEAL LEEPER
22 APR 2004

* Revised Data

Curve: 4045TFM75135M3 Sheet 1 of 2
April 2004

Common Specifications:

General Data

Model	4045TFM75
Number of Cylinders	4
Bore and Stroke--in.(mm)	4.2 x 5.0 (107 x 127)
Displacement--in ³ (L)	276 (4.5)
Compression Ratio	17.6 : 1
Valves per Cylinder -- Intake / Exhaust	1 / 1
Firing Order	1-3-4-2
Combustion System	Direct Injection
Engine Type	In-line, 4-Cycle
Aspiration	Turbocharged
Aftercooling System	none
Engine Crankcase Vent System	Open
Maximum Crankcase Pressure--in. H ₂ O (kPa)	2 (0.5)

Physical Data

(Includes Engine, Flywheel Housing, Flywheel & Electrics)	
Length--in.(mm)	34.8 (885)
Width--in.(mm)	28.0 (712)
Height (centerline to top)--in.(mm)	24.4 (620)
Height (centerline to bottom)--in.(mm)	11.5 (292)
Weight, dry--lb (kg)	1019 (462)
Center of Gravity Location	
From Rear Face of Block (X-axis)--in.(mm)	10.6 (270)
Right of Crankshaft (Y-axis)--in.(mm)	-1.0 (-25)
Above Crankshaft (Z-axis)--in.(mm)	7.9 (200)
Max. Allow. Static Bending Moment at Rear Face of Flywhl Hsg w/5-G Load--lb-ft (N•m)	600 (814)
Thrust Bearing Load Limit (Forward)--lb (N)	900 (4003)
Maximum Installed Angle	
Front Up--degrees	12*
Front Down--degrees	0

Air System

Minimum Ventilation Area--in ² (m ²)	93 (0.06)
Maximum Allowable Air Temperature Rise	
Ambient to Engine Inlet--°F (°C)	30 (17)
Engine Air Flow--ft ³ /min (m ³ /min)	346 (9.8)
Intake Manifold Pressure--psi (kPa)	21 (143)
Maximum Air Intake Restriction	
Dirty Air Cleaner--in. H ₂ O (kPa)	25 (6.25)
Clean Air Cleaner--in. H ₂ O (kPa)	12 (3.0)

Engine Specification Data

Cooling System

Engine Heat Rejection--BTU/min (kW)	6147 (108)
Engine Radiated Heat--BTU/min (kW)	842 (14.8)
Coolant Flow--gal/min (L/min)	50 (189)
Minimum Coolant Fill Rate--gal/min (L/min)	3.2 (12)
Thermostat Start to Open--°F (°C)	180 (82)
Thermostat Fully Open--°F (°C)	203 (95)
Maximum Top Tank Temperature--°F (°C)	212 (100)
Minimum Water-to-Boil Temperature--°F (°C)	90 (32)
Max. Water Pump Inlet Restriction--in. H ₂ O (kPa) ...	0 (0.0)
Recommended Pressure Cap--psi (kPa)	10 (70)
Max. Pressure Drop Across Keel Cooler--psi (kPa) ..	6 (40)
Engine Coolant Capacity--qt (L)	15* (14*)

Electrical System

12 Volt 24 Volt

Recommended Battery Capacity	
Cold Cranking Amps @ 32 °F (0 °C)--amp..	640 570
Max. Starting Circuit Resistance--Ohms	0.0012 ... 0.002
Starter Rolling Current @ 32 °F (0 °C)--amp ...	780 600

Exhaust System

Exhaust Temperature--°F (°C)	795 (424)
Exhaust Gas Flow--ft ³ /min (m ³ /min)	809 (23)
Min. Exhaust Pipe Diameter, Dry--in.(mm)	3.0 (75)
Min. Exhaust Pipe Diameter, Wet--in.(mm)	3.5 (90)
Max. Allowable Back Pressure--in. H ₂ O (kPa)	30 (7.5)
Max. Weight on Turbocharger--lb (kg)	27 (12)

Fuel System

ECU Description	John Deere Electronic Control
Fuel Injection Pump	Stanadyne DE-10
Governor Type	Electronic
Governor Regulation--percent	0 to 5
Total Fuel Flow--lb/hr (kg/hr)	234 (106)
Total Fuel Flow--gal/hr (L/hr)	33 (125)
Min. Rec'd. Fuel Line ID--in.(mm)	0.25 (6.0)
Min. Rec'd. Fuel Line Size	4
Fuel Consumption--lb/hr (kg/hr)	55.1 (25.0)
Fuel Consumption--gal/hr (L/hr)	7.8 (29.4)
Maximum Leak Off Line Pressure--psi (kPa)	2.9 (20)
Maximum Leak Off Line Height--ft (m)	8 (2.5)
Max. Fuel Transfer Pump Suction Lift--ft (m) fuel ...	10 (3.0)
Max. Fuel Inlet Restrict., Clean--in. H ₂ O (kPa) ..	120 (-30.0)
Max. Fuel Inlet Restrict., Dirty--in. H ₂ O (kPa) ...	160 (-40.0)
Max. Fuel Height Above Transfer Pump--ft (m)	7 (2.0)
Max. Fuel Inlet Temperature--°F (°C)	212 (100)
Fuel Filter Size @98% Efficiency--Micron	2

Lubrication System

Oil Pressure @ Rated Speed--psi (kPa)	51 (350)
Oil Pressure @ Low Idle--psi (kPa)	15 (100)

Sea Water System

Sea Water Pump Flow--gal/min (L/min)	32 (121)
Maximum Inlet Restriction---in. H ₂ O (kPa)	120 (30)
Maximum Outlet Pressure--psi (kPa)	20 (135)
Maximum Suction Lift--ft (m)	10 (3.0)

Performance Data

Performance Option Codes	72EF / 72EG
Rated Power--hp (kW)	135 (101)
Rated Power (Metric) Fuel @ 77 °F (25 °C)--PS	137
Rated Speed--rpm	2600
Rated Torque--lb-ft (N•m)	274 (371)
Peak Torque--lb-ft (N•m)	352 (477)
Peak Torque Speed--rpm	1800
Torque Rise--percent	28
Low Idle Speed--rpm	650
BMEP--psi (kPa)	149 (1030)
Smoke @ Rated Speed--Bosch No.	<1.6

Fuel Consumption for Typical Propeller Curve

Engine rpm	Crank. Power hp (kW)	Crank. Torque lb-ft (N•m)	Prop. Absorption hp (kW)	Prop. Fuel gal/hr(L/hr)
2600	135 (101)	274 (371)	135 (101)	7.8 (29.4)
2400	135 (101)	296 (402)	107 (79)	6.2 (23.6)
2200	135 (101)	323 (438)	82 (61)	4.6 (17.4)
2000	130 (97)	342 (463)	62 (46)	3.5 (13.1)
1800	121 (90)	352 (477)	45 (34)	2.5 (9.6)
1600	103 (77)	339 (460)	32 (24)	1.8 (6.7)
1400	80 (60)	302 (409)	21 (16)	1.2 (4.5)
1200	60 (45)	264 (358)	13 (10)	0.7 (2.8)
1000	48 (36)	254 (344)	8 (6)	0.4 (1.6)

Data based on keel-cooled engine.
All values at rated speed and power with standard options unless otherwise noted.

* Revised Data

Curve: 4045TFM75135M3 Sheet 2 of 2
April 2004