



JOHN DEERE

ENGINE PERFORMANCE CURVE

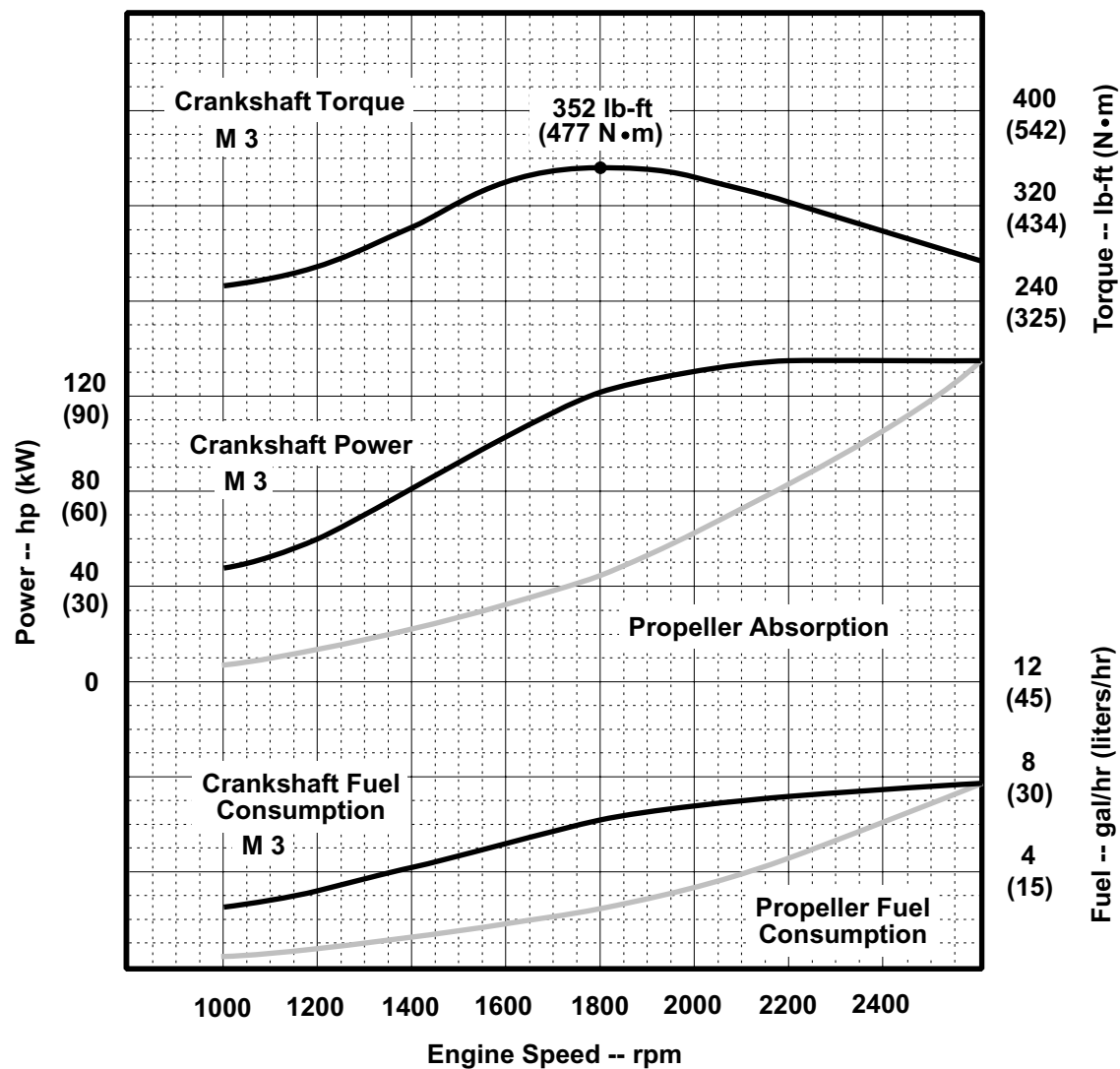
Rating: M3 - 135 hp (101 kW) @ 2600 rpm

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:

- EPA Commercial Marine
- IMO Exempt

Ref: Engine Emission Label

Certified by:

NEAL LEEPER
22 APR 2004

* Revised Data

Curve: 4045TFM75135M3..... Sheet 1 of 2
April 2004

Common Specifications:

General Data

Model4045TFM75
 Number of Cylinders 4
 Bore and Stroke--in.(mm)..... 4.2 x 5.0 (107 x 127)
 Displacement--in³ (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. H₂O (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 15
 Front Down--degrees 0

Air System

Minimum Ventilation Area--in² (m²).....93 (0.06)
 Maximum Allowable Air Temperature Rise
 Ambient to Engine Inlet--°F (°C)30 (17)
 Engine Air Flow--ft³/min (m³/min)346 (9.8)
 Intake Manifold Pressure--psi (kPa)......21 (143)
 Maximum Air Intake Restriction
 Dirty Air Cleaner--in. H₂O (kPa).....25 (6.25)
 Clean Air Cleaner--in. H₂O (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. H₂O (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) 31.7 (30)

Electrical System

Recommended Battery Capacity **12 Volt 24 Volt**
 Cold Cranking Amps @ 32 °F (0 °C)--amp..640 570
 Max. Starting Circuit Resistance--Ohms0.0012 ... 0.002
 Starter Rolling Current @ 32 °F (0 °C)--amp ...780 600

Exhaust System

Exhaust Temperature--°F (°C)795 (424)
 Exhaust Gas Flow--ft³/min (m³/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. H₂O (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 TypeElectronic
 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. H₂O (kPa).....-120 (-30.0)
 Max. Fuel Inlet Restrict., Dirty--in. H₂O (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. H₂O (kPa) 120 (30)
 Maximum Outlet Pressure--psi (kPa)..... 20 (135)
 Maximum Suction Lift--ft (m)..... 10 (3.0)

Performance Data

Performance Option Codes72EF / 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