



JOHN DEERE

**ENGINE PERFORMANCE CURVE**

Rating: Gross Power  
 Application: Generator  
 1800 RPM (60 Hz)

**PowerTech 12.5L Engine**  
 Model: **6125HF070**

**512 hp (382 kW) Prime**  
**563 hp (420 kW) Standby**

[See Option Code Table]

| Nominal Engine Power @ 1800 RPM |     |         |     |
|---------------------------------|-----|---------|-----|
| Prime                           |     | Standby |     |
| HP                              | kW  | HP      | kW  |
| 512                             | 382 | 563     | 420 |

| Generator Efficiency % | Fan Power |      | Power Factor | Prime Rating |           | Standby Rating <sup>1</sup> |           | 4 sec Standby Block Load Capability |
|------------------------|-----------|------|--------------|--------------|-----------|-----------------------------|-----------|-------------------------------------|
|                        | hp        | kW   |              | kW           | kVA       | kW                          | kVA       |                                     |
| 90*-94*                | 28        | 20.9 | 0.8          | 325*-339*    | 406*-424* | 359*-375*                   | 449*-469* | 100%                                |

Note 1: Based on nominal engine power.

Air Intake Restriction ..... 12 in.H<sub>2</sub>O (3 kPa)  
 Exhaust Back Pressure ..... 30 in.H<sub>2</sub>O (7.5 kPa)

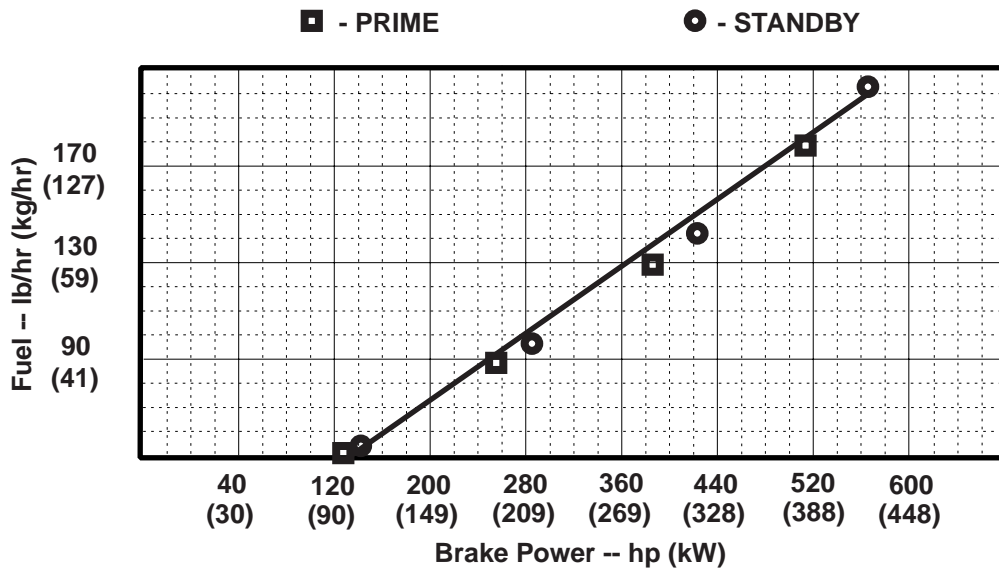
Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:

- 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:

CARB; EPA

Ref: Engine Emission Label

*Brian L. Carlson*  
 22 July 04

\* Revised Data

Curve 6125HF1800563 ..... Sheet 1 of 2  
 July 2004

## Engine Specification Data

### General Data

|   |                         |
|---|-------------------------|
| Model .....   | 6125HF070               |
| Number of Cylinders .....                                   | 6                       |
| Bore and Stroke--in. (mm).....                              | 5.00 x 6.50 (127 x 165) |
| Displacement--in. <sup>3</sup> (L) .....                    | .763 (12.5)             |
| Compression Ratio .....                                     | 17:1                    |
| Valves per Cylinder--Intake/Exhaust.....                    | 2/2                     |
| Firing Order.....   | 1-5-3-6-2-4             |
| Combustion System.....                                      | Unit Injection          |
| Engine Type .....   | In-line 4-Cycle         |
| Aspiration .....  | Turbocharged            |
| Charge Air Cooling System.....                              | Air-to-Air              |
| Engine Crankcase Vent System .....                          | Open                    |
| Maximum Crankcase Pressure--in.H <sub>2</sub> O (kPa) ..... | .2 (0.5)                |

### Physical Data

|   |             |
|---|-------------|
| Length--in. (mm) .....                            | 52.2 (1326) |
| Width--in. (mm) .....                             | 31.8 (808)  |
| Height--in. (mm) .....                            | 48.8 (1239) |
| Weight, dry--lb (kg).....                         | 2657 (1205) |
| (Includes flywheel housing, flywheel & electrics) |             |
| Center of Gravity Location                        |             |
| From Rear Face of Block (X-axis)--in. (mm) .....  | .215 (545)  |
| Right of Crankshaft (Y-axis)--in. (mm) .....      | 0.63 (16)   |
| Above Crankshaft (Z-axis)--in. (mm) .....         | 8.6 (218)   |
| 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)               |             |
| Continuous--lb (N) .....                          | 1225 (5449) |
| Intermittent--lb (N).....                         | 1835 (8162) |

### Air System

|   | <u>Prime</u> | <u>Standby</u> |
|---|--------------|----------------|
| Max. Allowable Temp Rise--Ambient Air to                      |              |                |
| Engine Inlet--°F (°C).....                                    | 15 (8)       | 15 (8)         |
| Maximum Air Intake Restriction                                |              |                |
| Dirty Air Cleaner--in.H <sub>2</sub> O (kPa) ...              | 25 (6.25)    | 25 (6.25)      |
| Clean Air Cleaner--in.H <sub>2</sub> O (kPa) .....            | 12 (3)       | 12 (3)         |
| Engine Air Flow--ft <sup>3</sup> /min (m <sup>3</sup> /min) . | 1031 (29.2)  | 1162 (32.9)    |
| Intake Manifold Press.--psi (kPa) .....                       | .31 (211)    | .36 (250)      |
| Compress. Discharge Temp.--°F (°C) .....                      | 379(193)     | 426 (219)      |
| Maximum Pressure Drop Through                                 |              |                |
| Charge Air Cooler--in.H <sub>2</sub> O (kPa) ....             | 52 (13)      | 52 (13)        |
| Max. Temp. Out of Charge Air Cooler                           |              |                |
| @ 77°F (25°C) Ambient--°F (°C) .....                          | 140 (60)     | 140 (60)       |

### Cooling System

|   | <u>Prime</u> | <u>Standby</u> |
|---|--------------|----------------|
| Engine Heat Reject.--BTU/min (kW) .....     | 8592(151)    | .9047(159)     |
| Air/Air Exchanger Heat Rejection--          |              |                |
| Btu/min (kW) .....                          | 4154 (73)    | 5462(96)       |
| Coolant Flow--gal/min (L/min).....          | 73 (276)     | 73 (276)       |
| Thermostat Start to Open--°F (°C) .....     | 180 (82)     | 180 (82)       |
| Thermostat Fully Open--°F (°C).....         | 201 (94)     | 201 (94)       |
| Engine Coolant Capacity--qt (L) .....       | 17 (16.2)    | 17 (16.2)      |
| Min. Pressure Cap--psi (kPa) .....          | 7 (48)       | 7 (48)         |
| Max. Top Tank Temp--°F (°C) .....           | 212 (100)    | 221 (105)      |
| Min. Coolant Fill Rate--gal/min (L/min) ... | 3 (11)       | 3 (11)         |
| Min. Air-to-Boil Temperature--°F (°C) .     | 117 (47)     | 117 (47)       |

### Electrical System

|   |        |
|---|--------|
| Minimum Battery Capacity (CCA)                |        |
| 12 Volt System--am .....                      | 1800   |
| 24 Volt System--am .....                      | 900    |
| Maximum Allowable Starting Circuit Resistance |        |
| 12 Volt System--Ohm .....                     | 0.0012 |
| 24 Volt System--Ohm .....                     | 0.002  |
| Starter Rolling Current--12 Volt System       |        |
| At 32 °F ( 0 °C)--amp.....                    | 1280   |
| At -22 °F (-30 °C)--a .....                   | 1500   |
| Starter Rolling Current--24 Volt System       |        |
| At 32 °F (0 °C)--amp.....                     | 600    |
| At -22 °F (-30 °C)--amp .....                 | 970    |

### Exhaust System

|   | <u>Prime</u> | <u>Standby</u> |
|---|--------------|----------------|
| Exhaust Flow--ft <sup>3</sup> /min (m <sup>3</sup> /min)..... | 2656(75.2)   | 3055(86.5)     |
| Exhaust Temperature--°F (°C) .....                            | 982 (528)    | 1015 (546)     |
| Max. Allow. Back Press.--in.H <sub>2</sub> O (kPa).....       | 30 (7.5)     | 30 (7.5)       |

### Fuel System

|   | <u>Prime</u>    | <u>Standby</u> |
|---|-----------------|----------------|
| Fuel Injection Pump .....                     | Unit/E.C.....   | Unit/E.C.      |
| Governor Type .....                           | Electronic..... | Electronic     |
| Total Fuel Flow--lb/hr (kg/hr) .....          | 313 (142)       | 337 (153)      |
| Fuel Consumption--lb/hr (kg/hr) ..            | 178.6 (81.2)    | 203.1 (92.3)   |
| Max. Fuel Trans. Pump Suction--               |                 |                |
| ft (m) fuel.....                              | 10 (3)          | 10 (3)         |
| Fuel Filter Micron Size @ 98 % Efficiency ... | 2               | 2              |

### Lubrication System

|  | <u>Prime</u> | <u>Standby</u> |
|--|--------------|----------------|
| Oil Press. at Rated Speed--psi (kPa) .   | 40 (275)     | 40 (275)       |
| Oil Pressure at Low Idle--psi (kPa) .... | 20 (138)     | 20 (138)       |
| In Pan Oil Temperature--°F (°C) .....    | 239 (115)    | 239 (115)      |

### Performance Data

|                                    | <u>Prime</u> | <u>Standby</u> |
|------------------------------------|--------------|----------------|
| Rated Power--hp (kW) .....         | 512 (382)    | 563 (420)      |
| Rated Speed--rpm .....             | 1800         | 1800           |
| Low Idle Speed--rpm .....          | 1000         | 1000           |
| BMEP--psi (kPa) .....              | 294 (2027)   | 323 (2227)     |
| Friction Power                     |              |                |
| @ Rated Speed--hp (kW).....        | 30 (22)      | 30 (22)        |
| Altitude Capability --ft (m) ..... | 9000 (2745)  | 8900 (2700)    |
| Ratio--Air : Fuel.....             | 24.5:1       | 24.0:1         |
| Noise--dB(A) @ 1 m .....           | 100.5        | 100.5          |

### Fuel Consumption -- lb/hr (kg/h)

|                   | <u>Prime</u> | <u>Standby</u> |
|-------------------|--------------|----------------|
| 25 % Power .....  | 51.5 (23.4)  | 55.4 (25.2)    |
| 50 % Power .....  | 89.3 (40.6)  | 97.2 (44.2)    |
| 75 % Power .....  | 129.6 (58.9) | 141.7 (64.4)   |
| 100 % Power ..... | 178.6 (81.2) | 203.1 (92.3)   |

All values at rated speed and power with standard options unless otherwise noted.

\* Revised Data  
Curve 6125HF1800563..... Sheet 2 of 2  
July 2004