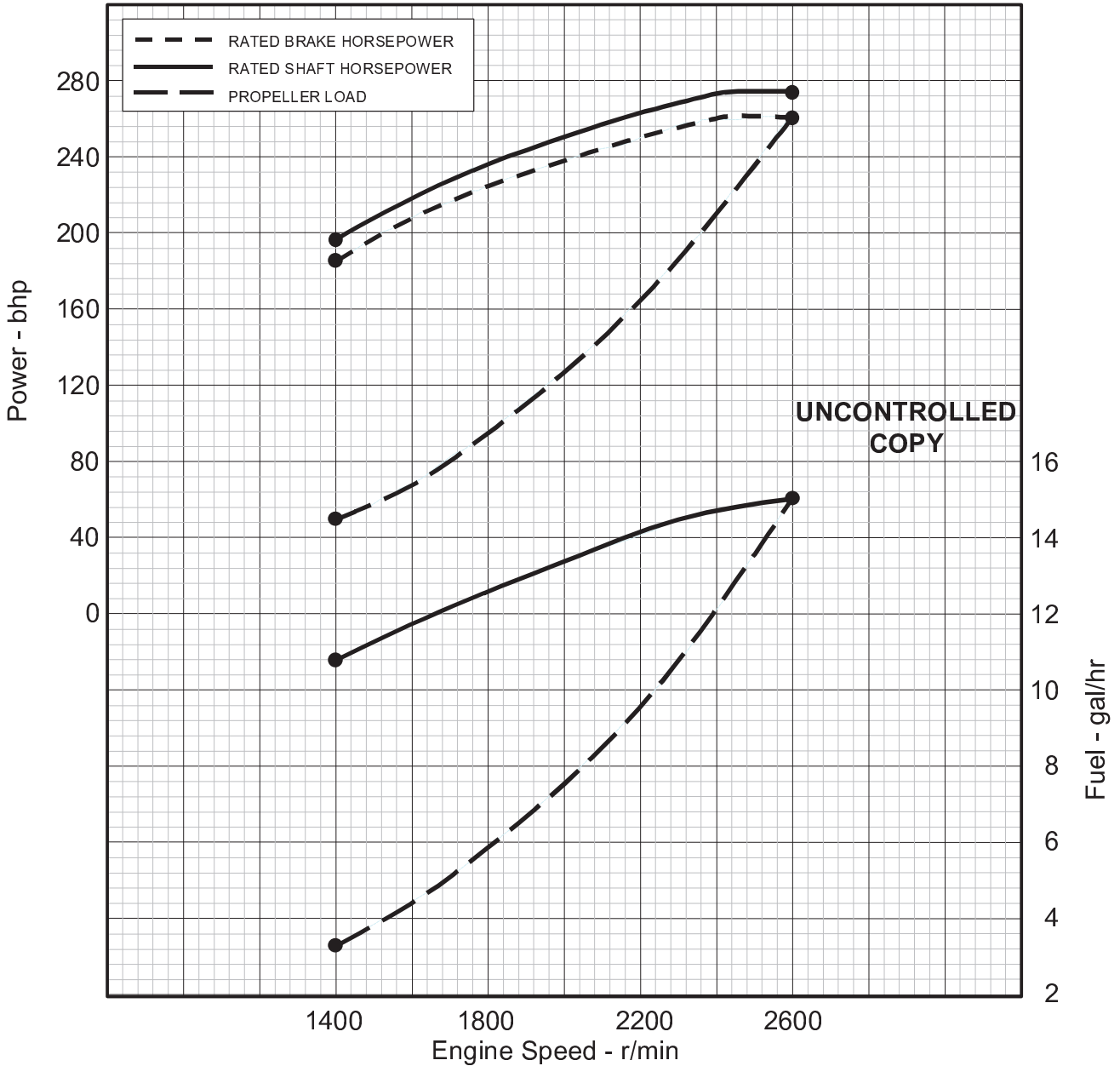




## Marine Power

**Model:** 6V-53T  
**Rating:** 275 bhp (205 kW) @ 2800 r/min  
 261 shp (195 kW) @ 2600 r/min

Intermittent  
 Maximum  
 Net Power



|   |   |  |
|---|---|--|
| <p>Power output guaranteed within 5% SAE J1228 conditions:<br/>                 77°F (25°C) air inlet temperature; 29.31 in. Hg (99kPa) dry barometer;<br/>                 100°F (38°C) fuel inlet temperature; .853 specific gravity at 60°F.<br/>                 Power rated in accordance with NMMA Procedure<br/>                 Air intake restriction: 10 in. H<sub>2</sub>O (2.5 kPa)<br/>                 Exhaust Back Pressure: 15 in. H<sub>2</sub>O (3.7 kPa)</p> | <p>Conversion Factors:<br/>                 Power: kW = hp x 0.746<br/>                 Fuel: L/hr = gal/hr x 3.785</p> | <p><b>Turbo:</b> T04E02 (0.68 A/R)<br/> <b>Injector:</b> 5C60<br/> <b>Accessories:</b> DD-506-1 Gear<br/> <b>Alternator:</b> 12V, 90A<br/> <b>Raw Water Pump:</b> Included</p> |
|---|---|--|

Certified by:  T.J. MOORE

**Curve No.** E4-5062-32-5  
**Rev. / Date:** 4 / 11-14-98  
**Sheet No.** 1 of 2

### Performance Curve

# MARINE SPECIFICATION SHEET

## General Data

|  |                        |
|--|------------------------|
| Model.....                                 | 5062-7301              |
| Number of Cylinders.....                   | 6                      |
| Bore and Stroke – in. x in. (mm x mm)..... | 3.875 x 4.5 (98 x 114) |
| Displacement – in. <sup>3</sup> (L).....   | 318 (5.22)             |
| Compression Ratio.....                     | 18.0:1                 |
| Piston Speed – ft/min (m/min).....         | 2100 (640)             |
| Exhaust Valves.....                        | 4                      |
| Combustion System.....                     | Direct Injection       |
| Engine Type.....                           | 66.7° VEE 2 Cycle      |
| Aspiration.....                            | Turbocharged           |

## Configuration

|                                    |                   |
|------------------------------------|-------------------|
| Injection Device.....              | MUI               |
| Turbocharger.....                  | T04E02 (0.68 A/R) |
| Charge Air Cooling System.....     | None              |
| Blower Type.....                   | Bypass            |
| Blower Drive Ratio.....            | 2.49:1            |
| Low Idle Speed – r/min.....        | 550               |
| Maximum No Load Speed – r/min..... | 3050              |
| Engine Crankcase Vent System.....  | Closed            |

## Physical Data

| Size:  | WITH<br>GEAR | WITHOUT<br>GEAR |
|--|--------------|-----------------|
| Length – in. (mm).....                       | 53.46 (1358) | 48.0 (1219)     |
| Width – in. (mm).....                        | 35.62 (905)  | 35.62 (905)     |
| Height – in. (mm).....                       | 40.6 (1098)  | 40.6 (1098)     |
| Weight, dry – lb (kg).....                   | 2200 (998)   | 1980 (898)      |
| Weight, wet – lb (kg).....                   | 2382 (1081)  | 2032 (922)      |
| Center of Gravity Distance:                  |              |                 |
| From R.F.O.B. (x axis) – in. (mm).....       | 22.9 (581)   | 6.92 (176)      |
| Above Crankshaft (y axis) – in. (mm).....    | 6.4 (162)    | 7.26 (184)      |
| Right of Crankshaft (z axis) – in. (mm)..... | 0.9 (23)     | 1.25 (31.8)     |
| Installation Drawing.....                    | 5108072      |                 |

## Mechanical Data

E4-5000-32-1

## Marine Gear

|   |               |
|---|---------------|
| Type.....                                     | DD506-1       |
| Reduction Ratio.....                          | 1.50:1        |
| Lube Oil Capacity – qt (L).....               | 4.8 (4.5)     |
| (marine gear must use straight viscosity oil) |               |
| Gear Weight, Dry – lb (kg).....               | 220 (99.8)    |
| Center of Gravity Distance:                   |               |
| From Mounting Face (x axis) in. (mm).....     | 6.68 (170)    |
| Above Output Shaft (y axis) in. (mm).....     | 1.50 (38.1)   |
| Right of Output Shaft (z axis) in. (mm).....  | -1.08 (-27.4) |

## Fuel System

|   |              |
|---|--------------|
| Fuel Injector.....                            | 5C60         |
| Injector Timing.....                          | 1.475        |
| Fuel Consumption – lb/hr (kg/hr).....         | 104.8 (47.6) |
| Fuel Spill Rate gal/hr (L/hr).....            | 56.9 (215.5) |
| Total Fuel Flow gal/hr (L/hr).....            | 71.9 (272)   |
| Maximum Fuel Inlet Temperature – °F (°C)..... | 140 (60)     |
| Maximum Fuel Pump Suction:                    |              |
| Clean System – in. Hg (kPa).....              | 6 (20.3)     |
| Dirty System – in. Hg (kPa).....              | 12 (41)      |
| Fuel Filter Size, Primary – microns.....      | 30           |
| Fuel Filter Size, Secondary – microns.....    | 12           |
| Recommended Supply Line I.D. – in.(mm).....   | 0.5 (12.7)   |

## Lubrication System

|  |                       |
|--|-----------------------|
| Oil Pressure at Rated Speed – lb/in. <sup>2</sup> (kPa)..... | 40-60 (275-414)       |
| Oil Pressure at Low Idle – lb/in. <sup>2</sup> (kPa).....    | 5.0 (34)              |
| In Pan Oil Temperature – °F (°C).....                        | 200 – 250 (93 – 121)  |
| Oil Flow – gal/min (L/min).....                              | 34 (129)              |
| Oil Pan Capacity at Installation Angle                       | 0° 17°                |
| High Limit – qt (L).....                                     | 14 (13.2) 10.0 (9.5)  |
| Low Limit – qt (L).....                                      | 10 (9.5) 6.0 (5.7)    |
| Total Engine Oil Capacity with Filters – qt (L).....         | 16 (15.1) 12.0 (11.4) |
| Maximum Installation Angle – Degrees.....                    | 17.0                  |

## Electrical System

|   |        |
|---|--------|
| Recommended Battery Capacity (CCA @ 0°F): |        |
| 12 Volt System, Above 32°.....            | 900    |
| 12 Volt System, Below 32°.....            | 1250   |
| 24 Volt System, Above 32°.....            | 475    |
| 24 Volt System, Below 32°.....            | 625    |
| Maximum Resistance of Starting Circuit:   |        |
| 12 Volt System – ohms.....                | 0.0012 |
| 24 Volt System – ohms.....                | 0.002  |

## Cooling System

|  |               |
|--|---------------|
| Engine Heat Rejection – Btu/min (kW).....                        | 10260 (181.0) |
| Engine Radiated Heat – Btu/min (kW).....                         | 1280 (22.6)   |
| Coolant Flow:  |               |
| Fresh Water Flow – gal/min (L/min).....                          | 84 (320)      |
| Raw Water Flow – gal/min (L/min).....                            | 77 (291)      |
| Maximum Water Pump:  |               |
| Inlet Restriction – in. Hg (kPa).....                            | 3.0 (10.2)    |
| Fresh Water Capacity – qt (L).....                               | 30 (28.4)     |
| Maximum Coolant Pressure   |               |
| (Exclusive of Pressure Cap) – lb/in. <sup>2</sup> (kPa).....     | 18 (124)      |
| Maximum Raw Water Pump Pressure – lb/in. <sup>2</sup> (kPa)..... | 10 (6.9)      |
| Maximum Top Tank Temperature – °F (°C).....                      | 210 (99)      |
| Recommended Raw Water Pipe I.D.:                                 |               |
| Inlet – in. (mm).....  | 2.5 (63.5)    |
| Outlet – in. (mm).....   | 2.0 (50.8)    |
| Recommended Sea Strainer Size:                                   |               |
| (Max. Screen Opening – 2.0 mm)                                   |               |
| Simplex – in. (mm).....  | 2.5 (63.5)    |
| Duplex – in. (mm).....   | 3.0 (76.2)    |

## Air System

|   |              |
|---|--------------|
| Maximum Temperature Rise  |              |
| (Outside Air to Engine Inlet) – °F (°C).....                                  | 30 (16.7)    |
| Maximum Air Intake Restriction:   |              |
| Clean Air Cleaner – in. H <sub>2</sub> O (kPa).....                           | 12 (3.0)     |
| Dirty Air Cleaner – in. H <sub>2</sub> O (kPa).....                           | 20 (5.0)     |
| Engine Air Flow – ft <sup>3</sup> /min (m <sup>3</sup> /min).....             | 950 (27.0)   |
| Air Box Pressure – in. Hg (kPa).....  | 43.5 (146.4) |
| Recommended Intake Pipe Dia. – in. (mm).....                                  | 4.0 (102)    |
| Minimum Net Engine Room Vent Area, – in. <sup>2</sup> (cm <sup>2</sup> )..... | 91.2 (588)   |
| Maximum Crankcase Pressure – in. H <sub>2</sub> O (kPa).....                  | 4.0 (1.00)   |

## Exhaust System

|  |                   |
|--|-------------------|
| Exhaust Flow – ft <sup>3</sup> /min (m <sup>3</sup> /min)..... | 2110 (59.8)       |
| Exhaust Temperature – °F (°C).....                             | 730 (388)         |
| Maximum Back Pressure – in. Hg (kPa).....                      | 2.5 (8.4)         |
| Recommended Exhaust Pipe Diameter:                             |                   |
| Single – in. (mm).....   | 5.0 (127) 6 (152) |
| Dual – in. (mm).....   | Not Applicable    |

## Performance Data

|                                       |             |
|---------------------------------------|-------------|
| BMEP – lb/in. <sup>2</sup> (kPa)..... | 122.0 (841) |
| Friction Power – fhp (kW).....        | 75 (56)     |

| Engine Speed<br>r/min | Brake Power<br>bhp (kW) | Shaft Power<br>shp (kW) | Rated Fuel Usage<br>gal/hr(L/hr) | Rated BSFC<br>lb/bhp·hr (g/kW·hr) |
|-----------------------|-------------------------|-------------------------|----------------------------------|-----------------------------------|
| 2800                  | 275 (205)               | 261 (195)               | 15.0 (56.8)                      | 0.381 (232)                       |
| 2500                  | 269 (201)               | 256 (191)               | 14.4 (54.7)                      | 0.375 (228)                       |
| 2200                  | 250 (187)               | 238 (177)               | 13.3 (50.5)                      | 0.373 (227)                       |
| 1900                  | 228 (170)               | 217 (162)               | 12.2 (46.0)                      | 0.372 (227)                       |
| 1600                  | 196 (146)               | 186 (139)               | 10.8 (40.8)                      | 0.384 (234)                       |

| Engine Speed<br>r/min | Prop Load<br>shp (kW) | Prop Fuel Usage<br>gal/hr (L/hr) | Prop BSFC<br>lb/bhp·hr (g/kW·hr) |
|-----------------------|-----------------------|----------------------------------|----------------------------------|
| 2800                  | 261 (195)             | 15.0 (56.8)                      | 0.381 (232)                      |
| 2500                  | 186 (239)             | 10.7 (40.5)                      | 0.379 (230)                      |
| 2200                  | 127 (94)              | 7.6 (28.6)                       | 0.387 (235)                      |
| 1900                  | 82 (61)               | 5.1 (19.3)                       | 0.402 (244)                      |
| 1600                  | 49 (36)               | 3.3 (12.5)                       | 0.422 (257)                      |

## Emissions Data

|  |               |
|--|---------------|
| Smoke, Rated Speed – Bosch Number..... | 2.0           |
| Noise – dB(A) @ 1.....                 | 102.5         |
| Additional Noise Data.....             | Not Available |
| NO <sub>x</sub> – g/hr.....            | 2390          |
| CO – g/hr.....                         | 740           |
| HC – g/hr.....                         | 220           |
| SO <sub>2</sub> – g/hr.....            | 480           |

**UNCONTROLLED  
COPY**

All values are at rated speed and power at SAE J1228 with standard engine hardware, unless otherwise noted.

Curve No. E4-5062-32-5  
Rev. / Date: 4 / 11-14-98  
Sheet No. 2 of 2

All information subject to change without notice.  
Detroit Diesel and Spinning Arrows Design © are registered trademarks of Detroit Diesel Corporation.  
© 1998 DETROIT DIESEL CORPORATION