

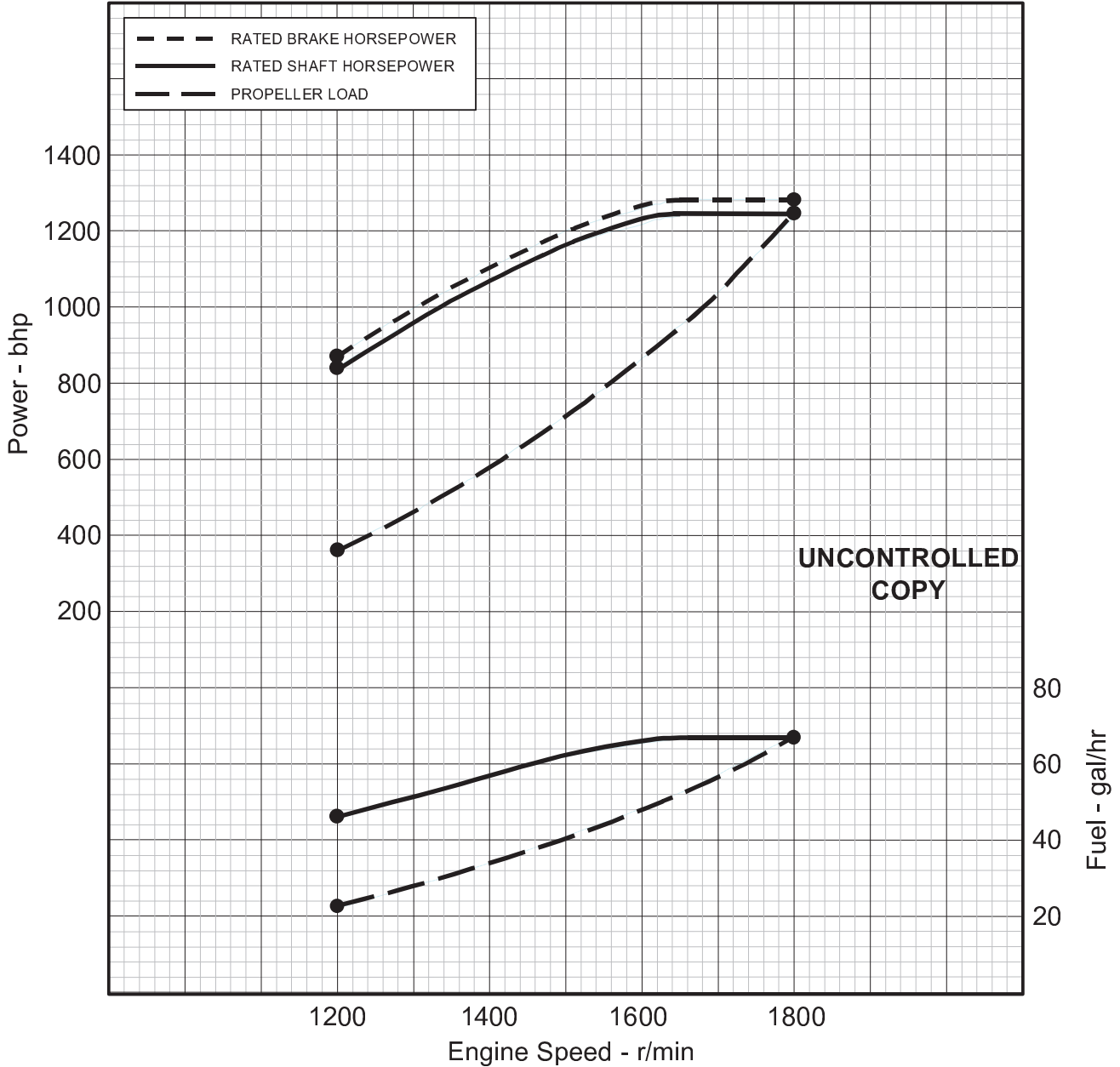


## Marine Power

**Model:** 16V-149TI DDEC®

**Rating:** 1280 bhp (955 kW) @ 1800 r/min  
1240 shp (925 kW) @ 1800 r/min

Continuous  
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><i>Conversion Factors:</i><br/>Power: kW = hp x 0.746<br/>Fuel: L/hr = gal/hr x 3.785</p> | <p><b>Turbo:</b> TV8405 (1.23 A/R)<br/><b>Injector:</b> 5234920<br/><b>Accessories:</b> Gear 3% loss<br/><b>Alternator:</b> 24V, 100A<br/><b>Raw Water Pump:</b> keel cooled</p> |
|--|--|--|

Certified by: Caley Edgerly

**Curve No.** E4-9162-32-42  
**Rev. / Date:** 1 / 12-15-97  
**Sheet No.** 1 of 2

## Performance Curve

# MARINE SPECIFICATION SHEET

## General Data

|                                       |                         |
|---------------------------------------|-------------------------|
| Model                                 | 9162-7K20, 7K21         |
| Number of Cylinders                   | 16                      |
| Bore and Stroke – in. x in. (mm x mm) | 5.75 x 5.75 (146 x 146) |
| Displacement – in. <sup>3</sup> (L)   | 2389 (39.15)            |
| Compression Ratio                     | 14.0:1                  |
| Piston Speed – ft/min (m/min)         | 1725 (526)              |
| Exhaust Valves                        | 4                       |
| Combustion System                     | DIRECT INJECTION        |
| Engine Type                           | 63.5° VEE – 2 Cycle     |
| Aspiration                            | TURBOCHARGED            |

## Configuration

|                               |                        |
|-------------------------------|------------------------|
| Injection Device              | EUI                    |
| Turbocharger                  | TV8405 (1.23 A/R)      |
| Charge Air Cooling System     | JWIC                   |
| Blower Type                   | Standard (Ext. Bypass) |
| Blower Drive Ratio            | 2.26:1                 |
| Low Idle Speed – r/min        | 650                    |
| Maximum No Load Speed – r/min | 1810                   |
| Engine Crankcase Vent System  | Closed                 |

## Physical Data

| Size:                                   | WITH GEAR | WITHOUT GEAR |
|---|-----------|--------------|
| Length – in. (mm)                       | †         | 106.0 (2692) |
| Width – in. (mm)                        | †         | 64.0 (1626)  |
| Height – in. (mm)                       | †         | 68.0 (1727)  |
| Weight, dry – lb (kg)                   | †         | 11950 (5421) |
| Weight, wet – lb (kg)                   | †         | 13020 (5906) |
| Center of Gravity Distance:             |           |              |
| From R.F.O.B. (x axis) – in. (mm)       | †         | 37.4 (950)   |
| Above Crankshaft (y axis) – in. (mm)    | †         | 14.5 (368)   |
| Right of Crankshaft (z axis) – in. (mm) | †         | 0.9 (23)     |
| Installation Drawing                    | SK-10701  |              |

## Mechanical Data

E4-9000-00-1

## Marine Gear

|   |                   |
|---|-------------------|
| Type  | Customer Supplied |
| Reduction Ratio                               | †                 |
| Lube Oil Capacity – qt (L)                    | †                 |
| (marine gear must use straight viscosity oil) |                   |
| Gear Weight, Dry – lb (kg)                    | †                 |
| Center of Gravity Distance:                   |                   |
| From Mounting Face (x axis) – in. (mm)        | †                 |
| Above Output Shaft (y axis) – in. (mm)        | †                 |
| Right of Output Shaft (z axis) – in. (mm)     | †                 |

## Fuel System

|  |                |
|--|----------------|
| Fuel Injector Part Number                | 5234920        |
| Injection Timing Height – in.            | 2.524          |
| Fuel Consumption – lb/hr (kg/hr)         | 467.7 (212.1)  |
| Fuel Spill Rate gal/hr (L/hr)            | 259 (980.4)    |
| Total Fuel Flow gal/hr (L/hr)            | 325.9 (1233.7) |
| 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)  | 1.0 (25.4)     |

## Lubrication System

|   |                         |
|---|-------------------------|
| Oil Pressure at Rated Speed – lb/in. <sup>2</sup> (kPa) | 48-70 (338-483)         |
| Oil Pressure at Low Idle – lb/in. <sup>2</sup> (kPa)    | 20 (138)                |
| In Pan Oil Temperature – °F (°C)                        | 230 (108)               |
| Oil Flow – gal/min (L/min)                              | 147 (556)               |
| Oil Pan Capacity at Installation Angle                  | 0° 12°                  |
| High Limit – qt (L)                                     | 160 (151.4) 160 (151.4) |
| Low Limit – qt (L)                                      | 114 (107.9) 114 (107.9) |
| Total Engine Oil Capacity with Filters – qt (L)         | 200 (189.3) 200 (189.3) |
| Maximum Installation Angle – Degrees                    | 12.0                    |

## Electrical System

|   |                |
|---|----------------|
| Recommended Battery Capacity (CCA @ 0°F): |                |
| 12 Volt System, Above 32°                 | 950*           |
| 12 Volt System, Below 32°                 | Not Applicable |
| 24 Volt System, Above 32°                 | Not Applicable |
| 24 Volt System, Below 32°                 | Not Applicable |
| Maximum Resistance of Starting Circuit:   |                |
| 12 Volt System – ohms                     | Not Applicable |
| 24 Volt System – ohms                     | Not Applicable |

\* DDEC System Only

† Values will vary depending on customer selection.  
All values are at rated speed and power and with

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

## Cooling System

|   |                              |
|---|------------------------------|
| Engine Heat Rejection – Btu/min (kW)                        | 37000 (650.6)                |
| Engine Radiated Heat – Btu/min (kW)                         | 5010 (88.1)                  |
| Coolant Flow:   |                              |
| Fresh Water Flow – gal/min (L/min)                          | 489 (1851)                   |
| Raw Water Flow – gal/min (L/min)                            | 230 (871)                    |
| Maximum Water Pump:   | <b>Fresh Water Raw Water</b> |
| Inlet Restriction – in. Hg (kPa)                            | 3.0 (10.2) 5.0 (17.0)        |
| Fresh Water Capacity – qt (L)                               | 340 (321.8)                  |
| Maximum Coolant Pressure                                    |                              |
| (Exclusive of Pressure Cap) – lb/in. <sup>2</sup> (kPa)     | 25 (172.4)                   |
| Maximum Raw Water Pump Pressure – lb/in. <sup>2</sup> (kPa) | 10 (69)                      |
| Maximum Top Tank Temperature – °F (°C)                      | 195 (91)                     |
| Recommended Raw Water Pipe I.D.                             |                              |
| Inlet – in. (mm)  | 4.0 (152)                    |
| Outlet – in. (mm)   | 3.0 (76)                     |
| Recommended Sea Strainer Size:                              |                              |
| (Max. Screen Opening – 2.0 mm)                              |                              |
| Simplex – in. (mm)  | 4.0 (102)                    |
| Duplex – in. (mm)   | 3.0 (76)                     |

## Air System

|   |              |
|---|--------------|
| Maximum Temperature Rise  |              |
| (Ambient 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)                | 4210 (119.2) |
| Air Box Pressure – in. Hg (kPa)   | 40.3 (136.1) |
| Recommended Intake Pipe Outer Diameter:                                     |              |
| Single – in. (mm)   | 14 (355.6)   |
| Double – in. (mm)   | 10 (254)     |
| Minimum Net Engine Room Vent Area:  |              |
| Depression at 0.2 in. H <sub>2</sub> O – in <sup>2</sup> (cm <sup>2</sup> ) | 404 (2608)   |
| Maximum Crankcase Pressure – in. H <sub>2</sub> O (kPa)                     | 2.5 (0.62)   |

## Exhaust System

|   |                   |
|---|-------------------|
| Exhaust Flow – ft <sup>3</sup> /min (m <sup>3</sup> /min) | 9000 (254.9)      |
| Exhaust Temperature – °F (°C)                             | 670 (354)         |
| Maximum Back Pressure – in. Hg (kPa)                      | 2.0 (6.8)         |
| Recommended Exhaust Pipe Diameter:                        | <b>Dry Wet</b>    |
| Single – in. (mm)   | 14 (356) 16 (406) |
| Dual – in. (mm)   | 10 (254) 12 (305) |

## Performance Data

|                                  |             |
|----------------------------------|-------------|
| BMEP – lb/in. <sup>2</sup> (kPa) | 117.9 (813) |
| Friction Power – fhp (kW)        | 350 (261)   |

| 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/bsp-hr (g/kW-hr) |
|-----------------------|-------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 1800                  | 1280 (955)              | 1240 (925)              | 66.9 (253.4)                      | 0.365 (222)                       |
| 1650                  | 1280 (955)              | 1240 (925)              | 66.5 (251.6)                      | 0.363 (221)                       |
| 1500                  | 1200 (895)              | 1162 (867)              | 61.9 (234.2)                      | 0.360 (219)                       |
| 1350                  | 1050 (783)              | 1017 (758)              | 54.1 (205.0)                      | 0.360 (219)                       |
| 1200                  | 870 (649)               | 842 (628)               | 46.0174.1                         | 0.369 (225)                       |

| 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) |
|-----------------------|-----------------------|----------------------------------|----------------------------------|
| 1800                  | 1240 (925)            | 66.9 (253.4)                     | 0.365 (222)                      |
| 1650                  | 955 (713)             | 52.1 (197.3)                     | 0.369 (225)                      |
| 1500                  | 718 (535)             | 40.9 (154.8)                     | 0.385 (234)                      |
| 1350                  | 523 (390)             | 31.0 (117.2)                     | 0.399 (243)                      |
| 1200                  | 367 (274)             | 22.5 (85.1)                      | 0.412 (250)                      |

## Emissions Data

|                                   |               |
|-----------------------------------|---------------|
| Smoke, Rated Speed – Bosch Number | 0.2           |
| Noise – dB(A) @ 1                 | 106.3         |
| Additional Noise Data             | Not Available |
| NO <sub>x</sub> – g/hr            | 24130         |
| CO – g/hr                         | 1460          |
| HC – gh/r                         | 704           |
| SO <sub>2</sub> – g/hr            | 2121          |

**UNCONTROLLED  
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Sheet No. 2 of 2

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