**Detroit Diesel**

**1063-7305**

**330 HP @ 1800 rpm**

**289 HP @ 1500 rpm**

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### Basic Technical Data

- **Number of Cylinders:** 6.
- **Cylinder Arrangement:** In line.
- **Cycle:** 2 stroke.
- **Induction System:** Turbocharged.
- **Combustion System:** Direct injection.
- **Bore:** 4.25 in (108 mm).
- **Stroke:** 5.0 in (127.0 mm).
- **Compression Ratio:** 17:1.
- **Cubic Capacity:** 426 in³ (6.99 liters).
- **Direction of Rotation:** Clockwise, viewed from the front.
- **Firing Order:** 1, 5, 3, 6, 2, 4.
- **Total Weight (dry):** 2240 lbs (1016 kg).
- **Total Weight (wet):** 2339 lbs (1061 kg).
- **Overall Dimensions:** Height 46.2 in (1116 mm); Length 55.9 in (1412 mm); Width 36.5 (927 mm).
- **Moment of Inertia (w²):** Engine 3.19 lb-in-s² (0.36 kg m²); Flywheel 27.13 lb-in-s² (3.65 kg m²).
- **Governed:** Electronic, speed control.
- **Speed Variation at Constant Load:** ± 0.25%
- **Engine Performance Curve, Standby Rating:** E4-1065-32-8.
- **Prime Rating:** E4-1065-32-9.
- **Engine Installation Drawing:** 2SA397 (5147477).

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### Performance

- **Maximum Overspeed Limit:** 2300 rpm.
- **Average Sound Pressure Level for Bare Engine (Without Inlet and Exhaust) at 1 meter:** 1800 rpm 99.2 dBA; 1500 rpm 100 dBA.
- **Note:** All data based on operation under ISO 3046, BS 5514, or SAE J1349.
- **Test Conditions:** Rated prime power output shown represents engine performance capabilities at ambient conditions equivalent to ISO 3046, BS 5514: 70°F (25°C) air inlet temperature; 29.5 in. Hg (100 kPa) total barometric pressure; 30% relative humidity. Rated standby power shown represents engine performance capabilities at ambient conditions equivalent to SAE J1349: 70°F (25°C) air inlet temperature; 29.31 in. Hg (99 kPa) dry barometer.
- **Indicated performance is based on minimum intake and exhaust restrictions.**
- **All ratings certified within ±5%.**
- **If the engine is to operate in ambient conditions other than the test conditions then suitable adjustments must be made for any change in intake air temperature, barometric pressure or humidity. For details refer to Detroit Diesel.**

**Diesel Fuel:** To conform to ASTM D975 96T Number 2D or BS 2869: 1983 Class A2.

**Lubricating Oil:** A monograde SAE 40 lubricating oil must be used which conforms with specification MIL-L-2104D or API-CD-II.
### Technical Data

<table>
<thead>
<tr>
<th>Item</th>
<th>Type of operation and application</th>
<th>Prime</th>
<th>Standby</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>50 Hz</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Engine speed</td>
<td>rpm</td>
<td>1500</td>
<td>3000</td>
</tr>
<tr>
<td>Rated engine power</td>
<td>bhp (kW)</td>
<td>250</td>
<td>226 (24)</td>
</tr>
<tr>
<td>Brake mean effective pressure</td>
<td>lb/in² (kPa)</td>
<td>155.1</td>
<td>147.8</td>
</tr>
<tr>
<td>Piston speed</td>
<td>ft/min (m/min)</td>
<td>1250</td>
<td>381</td>
</tr>
<tr>
<td>Engine coolant flow</td>
<td>US gal/min [L/min]</td>
<td>7.5</td>
<td>284</td>
</tr>
<tr>
<td>Combustion air flow</td>
<td>ft/min (m³/min)</td>
<td>640</td>
<td>238</td>
</tr>
<tr>
<td>Exhaust gas flow</td>
<td>ft/min (m³/min)</td>
<td>1770</td>
<td>56.9</td>
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<tr>
<td>Exhaust gas temperature</td>
<td>℉ (℃)</td>
<td>670</td>
<td>354</td>
</tr>
<tr>
<td>Fan power</td>
<td>bhp (kW)</td>
<td>4.0</td>
<td>6.7</td>
</tr>
<tr>
<td>Cooling fan airflow</td>
<td>ft³/min (m³/min)</td>
<td>13000</td>
<td>368</td>
</tr>
<tr>
<td>Heat from fuel</td>
<td>Btu/min (kW)</td>
<td>2721</td>
<td>479</td>
</tr>
<tr>
<td>Heat to power</td>
<td>Btu/min (kW)</td>
<td>10600</td>
<td>186</td>
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<tr>
<td>Heat to coolant</td>
<td>Btu/min (kW)</td>
<td>7630</td>
<td>134</td>
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<tr>
<td>Heat to exhaust</td>
<td>Btu/min (kW)</td>
<td>7699</td>
<td>138</td>
</tr>
<tr>
<td>Heat to radiation</td>
<td>Btu/min (kW)</td>
<td>1090</td>
<td>19.2</td>
</tr>
</tbody>
</table>

1. Equivalent to ISO-3046 Continuous Power
2. Based on LHV of Fuel = 18370 BTU/lb
3. It is recommended that all ancillary engine systems be designed for maximum engine capability.

### Cooling System

- **Coolant**
  - Maximum static pressure head at pump: 50 ft. H2O (149 kPa).
  - Minimum temperature to engine: 160°F (71°C).
  - Temperature rise across engine: 10°F (5.5°C).
- **Standard Option Fan**
  - Diameter: 36" (914 mm).
  - Drive Ratio: 0.77:1
  - Number of Blades: 8
- **Thermostat**
  - Operation range: 170-185°F (78-86°C).

### Electrical System

- **Battery Charging System**
  - Type: Negative ground.
  - Alternator: Delco-Remy.
  - Starter motor: Delco-Remy.

### Mountings

- **Maximum Bending Moment at Rear Face of Engine Block**: 0 lb ft (0 Nm).
- **Position of Center of Gravity (dry engine)**:
  - Forward from rear face of block, 22.9 in. (582 mm).
  - Above crankshaft center line, 2.1 in. (129.5 mm).
  - Left of center line, 1.5 in. (38.1 mm).

### Fuel System

- **Type of Injection System**: Direct.
- **Fuel Injection Pump**: Not Applicable.
- **Fuel Injector**
  - Type: Unit Injector.
- **Fuel Lift Pump**
  - Delivery hour:
    - 1800 rpm, 88.1 gal. (333.4 liters);
    - 1500 rpm, 81.8 gal. (309.8 liters).
  - Pressure: 45 psi (310 kPa).
  - Maximum pump suction:
    - Clean System 6.0 in Hg (20 kPa);
    - Dirty System 12.0 in Hg (41 kPa).
- **Fuel Filter Micron Size**
  - Primary Micron: 30
  - Secondary Micron: 12
- **Governor Type**: Barber-Colman 8000. Electronic.

### Induction System

- **Maximum Air Intake Restriction at Engine**:
  - 1000 rpm: Clean filter 8.7 in H2O (2.16 kPa);
  - Dirty filter 14.5 in H2O (3.6 kPa).
  - 1500 rpm: Clean filter 6.2 in H2O (1.54 kPa);
  - Dirty filter 10.5 in H2O (2.6 kPa).

### Lubrication System

- **Lubricating Oil Capacity**
  - Total system: 28 qt (26.5 liters);
  - Sump only: 26 qt (24.6 liters).
- **Normal Operation Angles**
  - Front up 13°.
  - Front down 4°.
  - Side to side: 13°.

### Exhaust System

- **Maximum Back Pressure for Total System**: 1800 rpm, 2.0 in Hg (6.8 kPa);
  - 1500 rpm, 1.4 in Hg (4.7 kPa).
- **Inside Diameter of Engine Exhaust Outlet**: 5.0 in. (127 mm).

### API Symbol

- **SAE Viscosity Grade**: 40.
- **API Classification**: CD-II.
- **Military Spec.**: MIL-L-2104D.
- **Sulfated Ash**: Less Than 1.0%.

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