**CATERPILLAR**

**Industrial Engine 3306**

125-325 bhp/93-243 kW
2000-2200 rpm

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### SPECIFICATIONS

- **In-Line, 6 Cylinder, 4-Stroke-Cycle Diesel**
- **Bore—In (mm)**: 4.75 (121)
- **Stroke—in (mm)**: 6.00 (152)
- **Displacement—cu in (L)**: 638 (10.5)
- **Combustion System**: Direct injection
- **Rotation (from flywheel end)**: Counterclockwise
- **Capacity for Liquids—U.S. Gal (L)**:
  - **DITA**: 4.6 (18.2)
  - **DINA & DIT**: 4.2 (15.9)
  - **Lube Oil System (refill)**: 7.3 (27.4)
- **Engine Weight, Net Dry (approx)—lb (kg)**:
  - Turbocharged (T): 2160 (980)
  - Turbocharged-Aftercooled <TA>: 2220 (1007)
  - Naturally Aspirated (NA): 2050 (930)

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### FEATURES

- **FUEL ECONOMY**
  Consistent performance ... variable-timed fuel injection ... broad rpm turbocharger match ... excellent fuel economy over entire operating range.

- **RELIABILITY AND DIESEL DURABILITY**
  Diesel tough components ... precise balance and conservative speed for smooth operation and long engine life.

- **FLEXIBLE APPLICATION RANGE**
  High torque rise... big displacement... convenient installation ... more performance for your money.

- **WORLDWIDE PRODUCT SUPPORT AND PARTS AVAILABILITY**

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### STANDARD EQUIPMENT

- Air intake: single stage, dry air cleaner
- Cooling: lube oil, jacket water pump, thermostats
- Exhaust: dry, flanged outlet
- Fuel: priming and transfer pumps, filter
- Instruments and Gauges: instrument panel, fuel pressure and lube oil pressure gauges, service meter
- Lubricating: oil cooler, oil filter
- Flywheel and Flywheel Housing, SAE No.1

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### OPTIONAL EQUIPMENT

- Alternator
- Cooling: radiator, fan drive, belt tightener, Vee belt
- Exhaust: flexible fittings, mufflers, watercooled manifolds
- Instruments and Gauges: electric gauges, tachometer
- Lubricating: dipstick, oil filler, oil filter
- Power Takeoffs: auxiliary drive pulleys, front and rear enclosed clutches, hydraulic pump
- Protection Devices: electrical and mechanical shutoffs, oil pressure and water temperature alarm switches
- Starting: air, electric

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Manuals and specifications from: https://barringtondieselclub.co.za/
## PERFORMANCE DATA

### Turbocharged- Aftercooled

<table>
<thead>
<tr>
<th>Rating Level</th>
<th>E</th>
<th>D</th>
<th>C</th>
<th>B</th>
<th>A</th>
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</thead>
<tbody>
<tr>
<td>Rated rpm</td>
<td>2200</td>
<td>2200</td>
<td>2200</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>Engine Power@ rpm</td>
<td>335 bhp (250 kW)</td>
<td>330 bhp (249 kW)</td>
<td>325 bhp (242 kW)</td>
<td>295 bhp (220 kW)</td>
<td>275 bhp (194 kW)</td>
</tr>
<tr>
<td>rpm</td>
<td>2200</td>
<td>1800</td>
<td>1500</td>
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<td>318</td>
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<tr>
<td>kW</td>
<td>250</td>
<td>247</td>
<td>236</td>
<td>249</td>
<td>240</td>
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<tr>
<td>q/kW-hr</td>
<td>231</td>
<td>218</td>
<td>206</td>
<td>237</td>
<td>217</td>
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<tr>
<td>L/hr</td>
<td>68.8</td>
<td>64.1</td>
<td>58.0</td>
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### Turbocharged-Aftercooled

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<td>2200</td>
<td>2200</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>Engine Power@ rpm</td>
<td>325 bhp (243 kW)</td>
<td>310 bhp (231 kW)</td>
<td>300 bhp (224 kW)</td>
<td>275 bhp (205 kW)</td>
<td>260 bhp (&lt;194 kW)</td>
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<tr>
<td>rpm</td>
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<td>gal/hr</td>
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<td>241</td>
<td>231</td>
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<tr>
<td>q/kW-hr</td>
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<td>73</td>
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### Turbocharged

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<td>2200</td>
<td>2000</td>
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<tr>
<td>Engine Power@ rpm</td>
<td>275 bhp (205 kW)</td>
<td>268 bhp (200 kW)</td>
<td>249 bhp (186 kW)</td>
<td>225 bhp (168 kW)</td>
<td>190 bhp (&lt;142 kW)</td>
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<td>275</td>
<td>255</td>
<td>219</td>
<td>268</td>
<td>244</td>
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<tr>
<td>gal/hr</td>
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<td>13.5</td>
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<td>163</td>
<td>200</td>
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<td>q/kW-hr</td>
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<td>226</td>
<td>227</td>
<td>233</td>
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### NA

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<td>Rated rpm</td>
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<td>2200</td>
<td>2200</td>
<td>2000</td>
</tr>
<tr>
<td>Engine Power@ rpm</td>
<td>170 bhp (127 kW)</td>
<td>160 bhp (120 kW)</td>
<td>150 bhp (112 kW)</td>
<td>135 bhp (101 kW)</td>
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<td>rpm</td>
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<td>1800</td>
<td>1500</td>
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</tr>
<tr>
<td>bhp</td>
<td>170</td>
<td>156</td>
<td>140</td>
<td>160</td>
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<tr>
<td>lb/hp-hr</td>
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<td>.381</td>
<td>.386</td>
<td>.401</td>
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<tr>
<td>gal/hr</td>
<td>9.9</td>
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<td>kW</td>
<td>127</td>
<td>116</td>
<td>104</td>
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<td>q/kW-hr</td>
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<td>232</td>
<td>236</td>
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<td>37.3</td>
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</table>

Manuals and specifications from: https://barringtondieselclub.co.za/
INDUSTRIAL RATINGS ______________________

IND-E

IND-E ratings are for service where speed and power are required for a short time for initial starting or sudden overload. For emergency service where standard power is unavailable. The maximum horsepower and speed capability of the engine can be utilized for a maximum of 15 uninterrupted minutes followed by one hour at intermittent or duration of the emergency.

Operating limits are:
1. Time at full load not to exceed 5% of the duty cycle or 15 minutes max.
2. Load factor limited to 35%.
3. The maximum horsepower and speed capability of the engine can be utilized for a maximum of 15 minutes followed by one hour at intermittent or duration of the emergency.
4. Typical operating hours per year is 500.

Examples of an IND-E industrial application are:
1. Standby centrifugal water pumps
2. Oil field well servicing
3. Crash trucks
4. Gas turbine starters

Manuals and specifications from: https://barringtondieselclub.co.za/
INDUSTRIAL ENGINE

RATING CURVES

IND-D

IND-D ratings are for service where rated power is required by period overloads. The maximum horse-power and speed capability of the engine can be utilized for a minimum of 30 uninterrupted minutes followed by one hour at intermittent.

Operating limits are:
1. Time at full load not to exceed 10% of the duty cycle or 30 min max
2. Load factor limited to 50%.
3. Full load operation to a maximum of 30 minutes followed by one hour at intermittent.
4. Typical operating hours per year is 1500.

Examples of an IND-D industrial application are:
1. Offshore cranes
2. Runway snowblowers
3. Water well drills
4. Portable air compressors
5. Fire pump certification power (advertised power)

IND-C (INTERMITTENT)

IND-C ratings are for service where power and/or speed are cyclic. The horsepower and speed of the engine which can be utilized for one uninterrupted hour followed by one hour of operation at or below the continuous rating. Operating limits are:
1. Time at full load not to exceed 50% of the duty cycle or one hour max.
2. Load factor limited to 70%.
3. Full load operation limited to one uninterrupted hour followed by one hour of operation at or below the continuous rating.
4. Typical operating hours per year is 3000 hours.

Examples of an IND-C industrial application are:
1. Agricultural tractors, harvesters, and combines
2. Truck - off highway
3. Fire pump application power (90% of certified power)
4. Blast hole drills
5. Rock crushers and wood chippers with high torque rise
6. Oil field hoisting

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INDUSTRIAL RATINGS

IND-B

IND-B ratings are for moderate-duty service where power and/or speed are cyclic. Operating limits are:

1. Time at full load not to exceed 80% of the duty cycle.
2. Load factor limited to 85%.
3. Typical operating hours per year is 4000 hours.

Examples of an IND-B industrial application are:

1. Irrigation where normal pump demand is 85% of engine rating
2. Oil field mechanical pumping/drilling
3. Stationary/plant air compressors

IND-A (CONTINUOUS!)

Continuous ratings are for heavy-duty service when the engine is operated at rated load and speed up to 100% of the time without interruption or load cycling. Operating limits are:

1. No hour or load factor limitation.
2. Continuous operation at full load.
3. Average load factor to approach 100%.
4. Typical operating hours per year is over 4000 hours.

Examples of an IND-A industrial application are:

1. Pipeline pumping
2. Ventilation
3. Customer specs
Match a Reliable Cat® Diesel to Your Application

RATING DEFINITIONS & CONDITIONS

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions.

Additional ratings are available for specific customer requirements. Consult your Caterpillar dealer.

Fuel rates are based on ISO3046 and on fuel oil of 35° API (<80° F or 16° C) gravity having an LHV of 18 390 Btu/lb (<42 780 kJ/kg) when used at 85° F (<29° C) and weighing 7.001 lbs U.S. gal. (838.9 g/L).

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