Allison 501-KB5S

**Features**

- 4 MW Power class
- 29.53% Thermal efficiency
- Core engine commonality with 501-K family
- Standard effusion cooled combustion liners
- DLE combustion system available
- Natural gas, liquid and dual fuel configurations
- Mid-BTU gas options
- Easily maintained modular design
- Competitive operating cost
- Single shaft cold end drive

**Description**

The Allison 501-KB5S is an aero-derivative of the highly successful T-56 engine with millions of hours of service in thousands of installations worldwide. The current engine design is the evolutionary result of continuous improvements since the first release in 1963. This continued product enhancement concept has improved the reliability, performance, power, and efficiency of the 501-K to better serve the needs of our customers.

The aero-derivative design of the 501-K series engine provides a lightweight, modular product that helps lower operating costs through improved fuel consumption, extended hot section life and ease of maintenance.

Rolls-Royce knows there is more to customer satisfaction than manufacturing a quality gas turbine engine. Beginning with the finest designs, the most advanced manufacturing techniques and rigid verification testing, our team continues to serve our customers with a global network of support. These power products are backed by this comprehensive service worldwide.
# Industrial gas turbine engine specification*

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Primary application</td>
<td>Genset</td>
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<td>Mech. drive</td>
<td>Mech. drive</td>
<td>Genset</td>
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<tr>
<td>Fuel type (rated)</td>
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<tr>
<td>Shaft power, kw</td>
<td>4101</td>
<td>6750</td>
<td>5518</td>
<td>4101</td>
<td>5369</td>
<td>6711</td>
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<tr>
<td>hp</td>
<td>5500</td>
<td>9050</td>
<td>7400</td>
<td>5500</td>
<td>7200</td>
<td>9000</td>
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<tr>
<td>Heat rate, KJ/kw-hr</td>
<td>11780</td>
<td>8530</td>
<td>10992</td>
<td>12018</td>
<td>11226</td>
<td>10710</td>
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<tr>
<td>Btu/hp-hr</td>
<td>8325</td>
<td>6028</td>
<td>7770</td>
<td>8495</td>
<td>7935</td>
<td>7570</td>
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<tr>
<td>SFC, lbs/hp-hr</td>
<td>0.407</td>
<td>0.300</td>
<td>0.380</td>
<td>0.416</td>
<td>0.389</td>
<td>0.370</td>
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<tr>
<td>Exhaust flow, kg/sec</td>
<td>15.4</td>
<td>18.4</td>
<td>20.8</td>
<td>15.5</td>
<td>20.8</td>
<td>24.4</td>
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<tr>
<td>lb/sec</td>
<td>33.9</td>
<td>40.6</td>
<td>45.8</td>
<td>34.2</td>
<td>45.8</td>
<td>53.9</td>
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<tr>
<td>Exhaust temp, deg. °C</td>
<td>559</td>
<td>529</td>
<td>513</td>
<td>571</td>
<td>514</td>
<td>515</td>
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<tr>
<td>deg. °F</td>
<td>1040</td>
<td>982</td>
<td>956</td>
<td>1060</td>
<td>957</td>
<td>959</td>
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<tr>
<td>Output Speed, (rpm)</td>
<td>14200</td>
<td>14600</td>
<td>14600</td>
<td>13600</td>
<td>13600</td>
<td>11500</td>
</tr>
</tbody>
</table>

* Nominal engine performance, ISO, no losses, gaseous fuel 20,400 BTU/lb
** Steam injection: 2.72 Kg/sec. @ 482°C (6.0 lb/sec @ 900°F)

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## Allison 501-KB5S

### Gas fuel - No losses - 14,200 (rpm)

#### Engine power and heat rate VS. AMB. temp

![Graph of engine power and heat rate vs. AMB. temp](image-url)

#### Exhaust flow and temp VS. AMB. temp

![Graph of exhaust flow vs. AMB. temp](image-url)

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