The MAN 51/60G gas engine is a perfect component for power plants, achieving an efficiency of approximately 50% in single cycle and up to 95% in cogeneration (CHP). The engine is not only highly efficient but dynamic, which gives it a fast starting time. Building on the experience of its predecessors, the MAN 51/60G with two-stage turbocharging is even more efficient and powerful.

Benefits at a glance
- Excellent efficiency of > 50%
- High reliability
- No derating due to high altitude or high temperatures thanks to two-stage turbocharging
- High fuel flexibility
- High efficiency even in part load
MAN V51/60G

High efficiency and high power

Dimensions

<table>
<thead>
<tr>
<th>Cyl. No.</th>
<th>L (mm)</th>
<th>H (mm)</th>
<th>W (mm)</th>
<th>Engine weight (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>13,148</td>
<td>6,530</td>
<td>4,700</td>
<td>310</td>
</tr>
</tbody>
</table>

High efficiency and high power with two-stage turbocharging

Dimensions

<table>
<thead>
<tr>
<th>Cyl. No.</th>
<th>L (mm)</th>
<th>H (mm)</th>
<th>W (mm)</th>
<th>Engine weight (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>19,100</td>
<td>9,023</td>
<td>4,700</td>
<td>345</td>
</tr>
</tbody>
</table>

Output

<table>
<thead>
<tr>
<th>Engine model</th>
<th>MAN 18V51/60G and MAN 18V51/60G with two-stage turbocharging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High efficiency</td>
</tr>
<tr>
<td>Output mech. (kW)</td>
<td>18,900</td>
</tr>
<tr>
<td>Speed (rpm)</td>
<td>500/514</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>50/60</td>
</tr>
</tbody>
</table>


Engine Features

General data
- Engine cycle: four-stroke
- No. of cylinders: 18V
- Bore: 510 mm - Stroke: 600 mm

Engine automation and control
- MAN SaCoSone Safety and control system on engine, developed in-house at MAN

Turbocharging system
- High efficiency constant pressure
- MAN TCA series exhaust turbocharging system
- Individual engine/turbocharger optimization matching

Fuel efficiency comparison

- High power
- High efficiency
- High power with two-stage turbocharging
- High efficiency with two-stage turbocharging

Fuel & gas system
- Individual cylinder low pressure gas admission system (5 bar(g) at inlet of gas valve unit)
- Automatic adjustment of engine operation to variable gas qualities

Starting system
- Starting air valves in the cylinder head

Applications
- Various gaseous fuels, like natural gas, hydrogen-enriched natural gas
- LNG, biogas
- CHP plants
- Base load and peaking plants
- Hybrid power plants

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