MAN Energy Solutions has developed reliable and cost-efficient dual-fuel (DF) gensets, based on a proven reference base. L23/30S-DF and L28/32S-DF are derived from the proven classic “H” genset designs, recognized worldwide as ultra-reliable and robust engines. These gensets can switch seamlessly between gas and liquid fuel mode, depending on current availability or fuel price.

The dual-fuel gensets running on gas possess inherent advantages in terms of reducing emissions, yielding high efficiency and sustain full fuel flexibility. They round off the lower end of the power range of MAN dual fuel engines with proven quality and reliability.

**Benefits at a glance**

- Competitive CAPEX, e.g only one system for liquid fuel (main and pilot)
- Low maintenance costs due to extended TBOs
- Excellent load step performance in dual fuel mode
- Flexible installation
- Safe & reliable operation – design is based on engine types with decades of service experience
# MAN small-bore DF engines

## L28/32S-DF

**Engine cycle**: Four-stroke  
**Bore/ stroke**: 280/320

<table>
<thead>
<tr>
<th>Cyl. No.</th>
<th>Output genset elect. kW</th>
<th>Speed rpm</th>
<th>Frequency Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>5L</td>
<td>960</td>
<td>750/720</td>
<td>50/60</td>
</tr>
<tr>
<td>6L</td>
<td>1,152</td>
<td>750/720</td>
<td>50/60</td>
</tr>
<tr>
<td>7L</td>
<td>1,344</td>
<td>750/720</td>
<td>50/60</td>
</tr>
<tr>
<td>8L</td>
<td>1,552</td>
<td>750/720</td>
<td>50/60</td>
</tr>
<tr>
<td>9L</td>
<td>1,746</td>
<td>750/720</td>
<td>50/60</td>
</tr>
</tbody>
</table>

## L23/30S-DF

**Engine cycle**: Four-stroke  
**Bore/ stroke**: 225/300

<table>
<thead>
<tr>
<th>Cyl. No.</th>
<th>Output genset elect. kW</th>
<th>Speed rpm</th>
<th>Frequency Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>5L</td>
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<td>750</td>
<td>50</td>
</tr>
<tr>
<td>6L</td>
<td>600</td>
<td>720</td>
<td>60</td>
</tr>
<tr>
<td>7L</td>
<td>720</td>
<td>864</td>
<td>60</td>
</tr>
<tr>
<td>8L</td>
<td>840</td>
<td>900</td>
<td>60</td>
</tr>
<tr>
<td>9L</td>
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<td>750</td>
<td>60</td>
</tr>
<tr>
<td>9L</td>
<td>1,152</td>
<td>720</td>
<td>60</td>
</tr>
</tbody>
</table>

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## Engine features

### General data
- Engine cycle: four-stroke  
- Engine type: L23/30S-DF and L28/32S-DF  
- Fuel: dual fuel (gas and pilot fuel)

### Turbocharging system
- Constant pressure system and intercooling  
- TCR series exhaust turbocharging system

### Injection system
- Engine is equipped with one injector for liquid fuel (main and pilot)

### Engine functionality
- The engine starts on MGO  
- Gas injection starts from 20% load and stops at 10% load  
- The engine can run 110% load in liquid fuel mode and gas mode  
- Uninterrupted change-over from gas mode to liquid fuel mode in whole load range  
- Excellent load step performance in dual-fuel mode operation

### Engine fuel options
- Main fuel: natural gas with MN ≥ 80  
- Pilot fuel: DMA and DMZ according ISO 8217-2010  
- Dual fuel engine  
- Liquid engine, dual-fuel ready; most DF components preinstalled

### Applications
- Base load: High load on grid applications with high reliability  
- Island mode: Best in class load-step and dynamic genset performance


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