MAN EPLO
for the MAN 32/40 engine family

Engine Part Load Optimization

EPLO introduces a novel functionality integrated into the latest hydraulic VIT system. A prerequisite for EPLO is the installation of the new pneumatic VIT actuator. The primary advantage of VIT lies in its ability to conserve fuel when operating below 50% of MCR in 32/40 Genset engines, achieved through timing adjustments along with the engine load spectrum. The VIT controller’s timing is calibrated to modify the fuel cam timing.

EPLO further enhances efficiency by reducing SFOC within the 50%-70% MCR range. This is facilitated by the implementation of four distinct injection timings, as opposed to the conventional three. Additionally, EPLO contributes to improved combustion at low loads (<25% MCR), resulting in cleaner combustion and reduced soot emissions.

Benefits at a glance

- Ideal for 32/40 GenSet running at low-medium load
- Rapid return on investment realized with fuelsavings (3-4 g/kWh ΔSFOC at 50%-70% MCR)
- Positive effect on CII rating and CO₂ emissions
- Utilization of the installed hydraulic VIT
- Opportunity to retrofit together the new pneumatic VIT+EPLO with the same service
MAN EPLO
Engine Part Load Optimization for the MAN 32/40 engine family

Certified technical files for 32/40 engine family (IMO Tier II)

- **Rated speed**: 720 rpm
- **Cylinder output power**: 500 kW/cyl
- **IMF ID**

<table>
<thead>
<tr>
<th>Cylinder variant</th>
<th>6L</th>
<th>7L</th>
<th>8L</th>
<th>9L</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMo-0720</td>
<td>IMo-0720</td>
<td>IMo-0721</td>
<td>IMo-0721</td>
<td></td>
</tr>
<tr>
<td>NR29/S145</td>
<td>NR29/S154</td>
<td>NR34/S177</td>
<td>NR34/S144</td>
<td></td>
</tr>
<tr>
<td>IMo-2844</td>
<td>IMo-2848</td>
<td>IMo-2866</td>
<td>IMo-2965</td>
<td></td>
</tr>
<tr>
<td>IMo-0937</td>
<td>IMo-0945</td>
<td>IMo-1227</td>
<td>IMo-1226</td>
<td></td>
</tr>
<tr>
<td>IMo-4441</td>
<td>IMo-4433</td>
<td>IMo-4522</td>
<td>IMo-4514</td>
<td></td>
</tr>
<tr>
<td>IMo-1921</td>
<td>IMo-1920</td>
<td>IMo-1938</td>
<td>IMo-1937</td>
<td></td>
</tr>
</tbody>
</table>

**Scope of supply**

- Adjustment of the plunger lift of the fuel pump to the value permitted in the technical files (*)
- Adjustment of the pneumatic VIT setting for the early and late position
- Software update (SaCoS) on the Control Module Small (CMS) depending on the built release: check the Display Module
- The system will be changed from a three-injection-timing to a four-injection-timing configuration

**Competition**

- Unmatched product – no similar solutions from competitors.

**Restrictions**

- This retrofit is available for engines within NO\(_x\) Tier II emission level

**Case study**

**9L32/40, engine power = 4500 kW**

- Load considered = 50% MCR
- Annual running time = 7000 hrs
- Fuel savings: 53 mt/a i.e. 26,200$ with HFO at 500$/mt
- CO\(_2\) savings: approx. 170 ton/a

In addition, 70 installations have already been delivered within Q2/2024

(*) a new emission certificate included in the scope