TOTAL PLANT CLEANLINESS
Requirements for minimal environmental impact and low emissions are not restricted just to the exhaust gas system and stacks. Cleaning the oil mist – the oil droplets from the crankcase ventilation pipe – will eliminate the problem of areas close to the ventilation pipe getting dirty.

Cleaning the crankcase gases also eliminates the problem of oil mist being sucked into the engine air inlet filter, which clogs the turbocharger and the charge air cooler.

More stringent environmental legislation, such as VOC emission regulations, regarding crankcase ventilation is also likely to be imposed in the near future. Why not deal with the problem now and install the only solution that effectively eliminates the oil mist?

WORKING PRINCIPLE
The Oil Mist Separator removes more than 98% of the oil mist in the crankcase ventilation gas. The system is safe and easy-to-install and enables plant owners to avoid problems with oil mist. The oil mist looks like smoke because the droplets are very small in size, between 0.1 and 2 µm, which is why till now it has been difficult to remove them effectively.

The key component in the module is an electrically driven separator. The engine crankcase ventilation gas is fed into the separator where the oil particles are centrifuged and collected in a small container. The oil is then fed back via a drain pipe to the engine. A frequency converter boosts the speed of the electric motor to improve separation efficiency. The separator unit is regulated by a throttle valve on its inlet pipe to match the gas flow from the engine or engines.

INSTALLATION
The flexible mounted separator, the throttle valves and a safety switch are mounted on a steel frame module. Since the processed gas may be explosive, all components inside the separator are made of spark-proof material.

Installation is a straightforward procedure for all engine types and has no impact on crankcase pressure.

PRODUCT AT A GLANCE
Removal of oil particles from the engine crankcase ventilation gas on diesel and gas engines. The purified gas is released into the open air.

The Oil Mist Separator module can be fitted at installations with the following engine types: Wärtsilä Vasa 32 and 32LN engines; Wärtsilä 20, 32, 32DF, 34SG, 46 and 50DF engines.

See overleaf for technical data.
**TECHNICAL DATA**

**Frequency converter**
- Controlled electric motor

**Separator**
- Disc stack
- Housing

**Flexible mounting**

**Crankcase gas inlet**

**Clean gas outlet**

**Drain oil outlet**

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### Performance

<table>
<thead>
<tr>
<th>Metric</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td>Up to 400 m³N/h per unit</td>
</tr>
<tr>
<td><strong>Inlet gas temperature</strong></td>
<td>20°C - 80°C</td>
</tr>
<tr>
<td><strong>Cleaning efficiency</strong></td>
<td>About 90% at a flow rate of 150 m³N/h (20V34SG)</td>
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<tr>
<td></td>
<td>About 85% at a flow rate of 210 m³N/h (9L46)</td>
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<tr>
<td></td>
<td>About 82% at a flow rate of 322 m³N/h (12V46)</td>
</tr>
<tr>
<td></td>
<td>About 83% at a flow rate of 420 m³N/h (18V46)</td>
</tr>
</tbody>
</table>

### Standards and protection classes

- **Safety standard**: EN 292, Safety of machinery
- **Piping standard**: EN 13480
- **Enclosure class**: IP54 + drip water safe

### Emissions

- **Heat dissipation**: About 2 kW
- **Noise**: Max. 80 dB(A)
- **Vibration**: Less than 28 mm/s (RMS)

### Site requirements

- **Space requirements**: About 2 m total height (i.e. about 0.8 m service space above the module)
- **Flatness tolerance**: 10 mm
- **Vibration resistance**: Max. 20 mm/s
- **Temperature**:
  - Separator: 0°C – 65°C
  - Electrical cabinet: 0°C – 30°C
- **Humidity**: Must not be exposed to water

### Electrical system

- **Operating voltage**: Three phase 380 - 480 VAC
- **Frequency**: 50 or 60 Hz
- **Power consumption**: Max. 1.5 kW
- **Frequency converter**: ABB ACS 140 2.2 kW
- **Cabling**: 4 wires, L1, L2, L3, PE

### Separator

- **Power**: 1.5 kW electric motor with heavy duty bearing and bearing housing
- **Speed**: 7200 rpm
- **Number of discs**: 185
- **Housing**: Aluminum casting

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**Recommended operating window for a separator unit**

**Cleaning efficiency vs. Crankcase ventilation gas flow**

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**WÄRTSILÄ®** is a registered trademark. Specifications are subject to change without prior notice.

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