MARINE DUAL FUEL ENGINE

Propulsion engine: 1533–4240kW
Auxiliary engine: 1470–4080kW

World first for single-engine-single-shaft vessels

Compatible with natural gas in any region

Comply with environmental regulations by using both diesel and gas fuels.

The use of natural gas is now attracting attention within the marine engine sector, both as a means of addressing fluctuating fuel costs, and as a way of reducing the burden on the environment. Basing on our reliable engines that will improve life cycle value for our customers, YANMAR have developed a dual fuel engine that can use both diesel and gas, which complies with IMO NOx Tier3 regulations as well as SOx Emission Control Area.

* Where diesel is 100
1 Safe System for use in single-engine -single-shaft vessels

YANMAR has developed a unique control system. Through multiplexing of devices, this system achieves safety and redundancy even with single-engine-single-shaft vessels, allowing you to navigate with peace of mind.

Note: Vessel classification currently pending

2 Can operate with natural gas in any region

Through real-time analysis of cylinder internal pressure together with high-speed control, this system avoids abnormal combustion (knocking) even when running on natural gases with a low methane number. Offering superior combustion stability, this engine can operate with natural gas in any region and with no output restrictions.

3 Switch fuels even at 100% output

Freely select which fuel to use. The system makes it possible to switch from diesel mode to gas mode during navigation, with no output restrictions. Furthermore, during emergencies the system can shift safely and instantaneously from gas mode back to diesel mode.

Main specifications

<table>
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<tr>
<th>Engine Model</th>
<th>Propulsion engine</th>
<th>Auxiliary engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of ignition</td>
<td>Micro-pilot fuel compression</td>
<td>Micro-pilot fuel compression</td>
</tr>
<tr>
<td>No. of cylinders</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Cylinder borestroke</td>
<td>260x385</td>
<td>350x440</td>
</tr>
<tr>
<td>Displacement</td>
<td>122.6</td>
<td>163.5</td>
</tr>
<tr>
<td>Engine speed</td>
<td>750</td>
<td>kW</td>
</tr>
<tr>
<td>Output [shaft]</td>
<td>1533</td>
<td>2444</td>
</tr>
<tr>
<td>Mean effective pressure</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td>Natural gas / Fuel oil A / Fuel oil C</td>
<td>Natural gas / Fuel oil A / Fuel oil C</td>
</tr>
</tbody>
</table>

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Safety Precautions

- Use this product correctly, and only after thoroughly reading and understanding the contents of the instruction manual.
- Inappropriate use of this product will result in reduced product lifetime, and may cause failures and/or accidents.
- Carry out periodic maintenance so as to prevent failures and/or accidents.