ECO Polishing FOR PROPELLER BLADES

The fuel efficiency of the ship begins to fall immediately after going on service. This is caused by secular distortion of main engine and bigger resistance caused by rougher surface on hull and propeller.
In some vessel types, its speed downs abt. 0.3-0.5 knot in 10 years after going on service.

The propeller efficiency recovers about 3.5% with Nakashima’s own developed ECO Polishing. Using our special polishing tool, roughness of propeller surface can be improved from 50 μ Rz to 15 μ Rz. Consequently approx. 0.2 knots can be expected.

Propeller surface is roughened by adhesion of shellfish and seaweed. By these, propeller performance deteriorates.
However, by polishing the propeller surface, surface roughness will be smoothed and propeller efficiency can be recovered and Vs so fuel cost can be improved.

通过我公司的特殊工具 ECOPolishing，可以使螺旋桨表面粗度从50μ Rz 降到 15 μ Rz，使桨的效率约恢复 3.5%。可以提高船速约 0.2 节。
**Working Plan**

ECO Polishing can be constructed wherever propeller turning is possible and with staging. So propeller removal is not necessary. Work time will depend on propeller size and working condition, though work can be done in about 2 days. We can arrange ECO Polishing in South East Asian shipyard.

ECO Polishing作业只要桨可以旋转，即使桨不要拆卸下来，也可以施工，但没有办法在水中研磨。作业天数根据桨的尺寸，入坞状态会有差异，大约需要2天。施工区域在东南亚。

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**Estimated Price**

<table>
<thead>
<tr>
<th>Propeller diameter</th>
<th>Estimated Price</th>
<th>螺旋桨直径</th>
<th>预计价格</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0 ~ 4.99m</td>
<td>JPY 100,000 / blade</td>
<td>3.0 ~ 4.99米</td>
<td>10万日元/翼</td>
</tr>
<tr>
<td>5.0 ~ 6.99m</td>
<td>JPY 150,000 / blade</td>
<td>5.0 ~ 6.99米</td>
<td>15万日元/翼</td>
</tr>
<tr>
<td>7.0 ~ 7.99m</td>
<td>JPY 200,000 / blade</td>
<td>7.0 ~ 7.99米</td>
<td>20万日元/翼</td>
</tr>
<tr>
<td>8.0 ~ 8.99m</td>
<td>JPY 250,000 / blade *</td>
<td>8.0 ~ 8.99米</td>
<td>25万日元/翼 *</td>
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<tr>
<td>9.0 ~ 9.99m</td>
<td>JPY 300,000 / blade *</td>
<td>9.0 ~ 9.99米</td>
<td>30万日元/翼 *</td>
</tr>
<tr>
<td>10.0 ~ 10.99m</td>
<td>JPY 400,000 / blade *</td>
<td>10.0 ~ 10.99米</td>
<td>40万日元/翼 *</td>
</tr>
</tbody>
</table>

*Indicated price applies to ECO Polishing during dry docking. In-water ECO Polishing will be quoted individually.*

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**Inquiry**

Kindly fill in the form and send to us by 1 month before planned docking.

**Fax:** +81-86-279-3107 or e-mail: ecopolish@nakashima.co.jp

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**NAKASHIMA PROPELLER CO., LTD.**

688-1 Joto-kitagata, Higashi-Ku, Okayama, 709-0625, Japan

Tel: 81-86-279-5117, Fax: 81-86-279-3107
www.nakashima.co.jp