Urea Water Transfer Pump for SCR System
TMC/HNP

This pump is suitable for use in transferring urea water to be used as a reducing agent in a selective catalytic reduction (SCR system) to meet IMO NOx regulation (Tier 3). For the main components, stainless steel is used to handle urea water.
Outline
NOx regulation: MARPOL Annex VI “International convention for the prevention of pollution from ships”. NOx control requirements apply to installed marine diesel engine of over 130 kW output.

Apply Tier 3 Regulation

It is necessary to reduce NOx for 80% compared to tier 1. Thus, in general, after treatment unit on the engine is necessary.

Methods and Technique to Meet NOx Tier 3 Regulation
- SCR: Selective Catalytic Reduction
- EGR: Exhaust Gas Recirculation
- Use of emulsion fuel oil
- Port water injection

Feature of SCR (Selective Catalytic Reduction)
- More than 90% of NOx can be reduced
- Less side effect on engine fuel economy
- Necessary to feed urea water

Process
Supply / spray urea water as a reducing agent for the NOx removal in exhaust gas. By catalytic action in a reactor, nitrogen oxide is dismantled in harmless nitrogen (N2) and water (H2O).

Emission Control Area (ECA)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Capacity (m³/h)</th>
<th>T. Head (m)</th>
<th>Temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centrifugal TMC-32M</td>
<td>to 5</td>
<td>40</td>
<td>0 to 40</td>
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<tr>
<td>TMCE-32M (with priming unit)</td>
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<tr>
<td>Screw</td>
<td>to 5</td>
<td>40</td>
<td>~ 10 to 40</td>
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<tr>
<td>HNP-201</td>
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<td>HNP-301</td>
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<td>HNP-401</td>
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</tbody>
</table>

*If urea water is operate/stored at 40 and above, it may deteriorate drastically.

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• The sizes and specifications of the products in this catalog are subject to improvement.