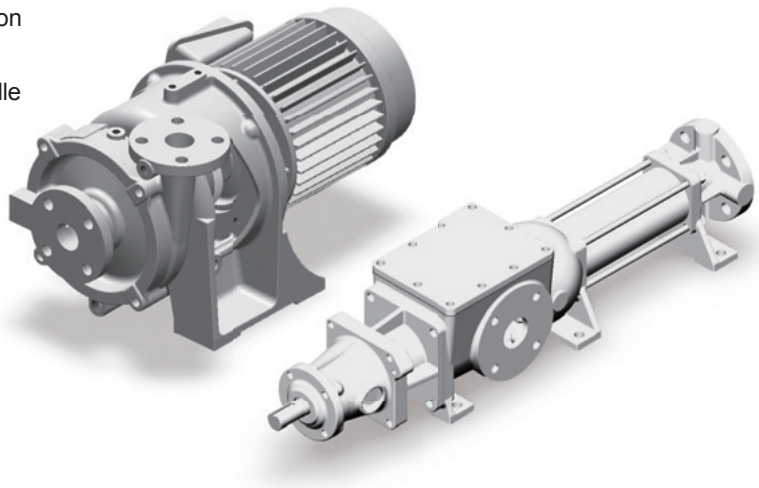
Urea Water Transfer Pump for SCR System

TMC/HNP

This pump is suitable for a use of transfer urea water to use as a reducing agent of a selective catalytic reduction (SCR system) to meet IMO NOx regulation (Tier 3).
For main components, stainless steel are used to handle urea water.



TAIKO KIKAI INDUSTRIES CO., LTD.

Member of TAIKO HOLDINGS

Urea Water Transfer Pump for SCR System

TMC/HNP

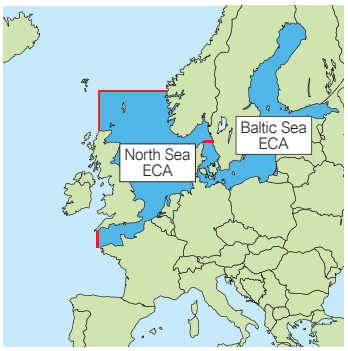
Outline

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.

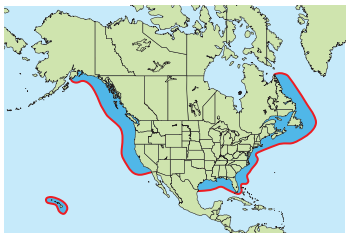
Apply Tier 3 Regulation

Tier 3 applies for vessels built after Jan. 2016 operate at ECA (emission control area, North American ECA, within 200 nm., and the United States Caribbean Sea ECA).
For vessels built after Jan. 2021, Tier3 applies to North Sea ECA and Baltic ECA.
It is necessary to reduce NOx for 80% compared to tier 1. Thus, in general, after treatment unit on the engine is necessary.

Emission Control Area (ECA)



Baltic Sea and North Sea (SOx only)


North American 200 nm ECA (NOx and SOx)

*SOxECA and NOxECA can be specified separately.

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 (N_2) and water (H_2O).

Specification

Centrifugal	TMC-32M TMCE-32M (with priming unit)
Screw	HNP-201 HNP-301 HNP-401
Material	Pars in contact with fluid is stainless steel
Shaft seal	Mechanical seal, gland packing

	Capacity (m^3/h)	T. Head (m)	Temperature (°C)
Centrifugal	to 5	40	−10 to 40
Screw	to 5	40	

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

TAIKO KIKAI INDUSTRIES CO., LTD.

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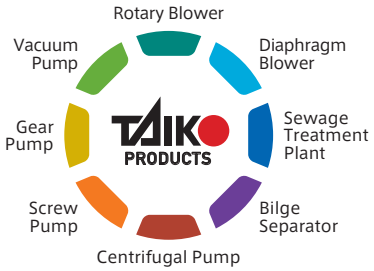

• The sizes and specifications of the products in this catalog are subject to improvement.