

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Tank Washing Machine**with type designation(s)
Twin Nozzle NPM-50;

Issued to

Tanktech Co., Ltd.
Busan, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships**MARPOL 73/78 Annex 1, Reg. 13 B (2) and IMO Revised Spec. Res. A. 446 (XI) 4.2****DNV GL class programme DNVGL-CP-0211 – Type approval – Crude oil washing machines****Application :****NPM-50 Tank Washing Machine is approved for installation on deck.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Type:****Twin Nozzle NPM-50****Design:****Nozzle diameters:****13/14/15/16/17/18****Performance data:****See next page**Issued at **Høvik** on **2019-01-25**This Certificate is valid until **2024-01-24**.for **DNV GL**DNV GL local station: **Gimhae Station**Approval Engineer: **Erik Istad****Torill Grimstad Osberg**
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

Tank Cleaning Machine NPM-50 twin nozzle non-programmable tank washing machine.

The NPM-50 is approved for deck installation on chemical tankers and crude oil tankers.

Application/Limitation

Performance data Model NPM-50:

Nozzle Diameter (mm)	Pressure [Bar]	Flow [m3/h]	Max effective Jetlength [m]
13	6	14.9	10.0
	8	17.4	11.5
	10	19.4	14.5
	12	20.9	15.5
14	6	17.0	11.5
	8	18.9	13.0
	10	21.6	15.0
	12	23.7	16.0
15	6	18.4	12.5
	8	21.4	14.5
	10	24.0	15.5
	12	26.2	16.5
16	6	22.3	12.5
	8	25.6	15.5
	10	28.5	17.0
	12	31.6	19.0
17	6	24.4	14.5
	8	28.0	17.5
	10	31.3	19.5
	12	34.8	21.5
18	6	26.5	15.5
	8	30.6	17.5
	10	34.3	19.0
	12	37.3	20.0

Performance is based upon test requirements that meet DNVGL-CP-0211, item 3.2.

This type approval is based on examination of drawings and tests carried out. Drawings showing number, location and supporting arrangement of the tank washing machines are to be submitted for each installation on board.

Type Approval documentation

Tests carried out

Washing machine jet performance testing carried out under survey by DNV Surveyor, dated 2008-11-17. Performance is based upon test requirements that meets Type approval programme DNVGL-CP-0211, item 3.2.

Marking of product

For identification to this certificate the products are to be marked with:

- Manufacturers name or trade mark.
- Type designation.
- Serial No.
- Additional marking at manufacturers' option.



Job Id: **262.1-007366-4**
Certificate No: **TAP00001NM**

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Programme DNVGL-CP-0338, Section 4.