Certificate No:
TAP00002RH

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Vent Head for Tank

with type designation(s)
53P (WITHOUT SCREEN), 53PW (WITH SCREEN)

Issued to
Niikura Kogyo Co., Ltd.
Gotenba, Shizuoka Pref., Japan

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0187 – Type approval – Air vent heads

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Type:	Sizes:
53P (WITHOUT SCREEN)	DN50, 65, 80, 100, 125, 150, 200 and 250
53PW (WITH SCREEN)	DN50, 65, 80, 100, 125, 150, 200 and 250

Issued at **Høvik** on **2023-07-12**
This Certificate is valid until **2028-07-11**.
DNV local unit: **Japan CMC**

Approval Engineer: **Maheshraja Venkatesan**

for **DNV**

Zeinab Sharifi
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Air Vent Head with polypropylene ball floats:

1. **Type 53 PW** with screen and sizes DN50, 65, 80, 100, 125, 150, 200 & 250
2. **Type 53 P** without screen and sizes DN50, 65, 80, 100, 125, 150, 200 & 250

Material of construction:

Part	***Type 53P***	***Type 53PW***
Body	FCD450	FCD450
Cover	Carbon steel SS400 (hot dip galvanized)	Carbon steel SS400 (hot dip galvanized)
Ball Float	Polypropylene	Polypropylene
Screen	-	Carbon steel SS400 (hot dip galvanized)
Seat packing	NBR/EVM	NBR/EVM
Bolting	SS400	SS400

Application/Limitation

The certificate covers design assessment of air vent heads. Installation and other additional requirements related to installation are out of scope of this certificate.

The air vent heads are not considered as devices to prevent the passage of flame into cargo tanks of tankers and combination carriers carrying crude oil and petroleum products having a flashpoint of 60°C (closed cup) or less, and a reid vapour pressure below atmospheric pressure and other products having a similar fire hazard. Flame arresting function related to the models involving flame screen is excluded from the scope of approval.

Air vent heads made of galvanized steels shall be protected by hot dip galvanizing. The zinc layer shall be 70 to 100 microns.

Results of Discharge test (blocking velocity) & flow test on vent heads:

Type-size	***Result of discharge test***	***Result of flow test***	
	80% of blocking velocity (m/s)	***ΔP (mmWG)***	***Dynamic loss coefficient (ζ)***
53P-50	21.6	2000	4.97
53P-65	32	2000	4.79
53P-80	23.1	2000	6.24
53P-100	25	2000	5.76
53P-125	27.9	2000	6.05
53P-150	25.0	1000	6.73
53P-200	27.2	500	6.42
53P-250	20.0	2000	9.55
53PW-50	22.0	2000	5.28
53PW-65	28.5	2000	5.86
53PW-80	23.0	2000	6.18
53PW-100	24.2	2000	6.47
53PW-125	25.8	2000	6.21
53PW-150	24.3	1000	7.45
53PW-200	24.8	500	7.83
53PW-250	19.2	2000	11.84

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Type Approval documentation

Tests carried out

Flow Characteristics test, Tightness test, Discharge/reverse flow test, Compression test of float, Float impact test.

Marking of product

For traceability to this type approval the products are to be marked with:

- Manufacturer's name or trademark

- Type designation
- Size

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.