Certificate No:
TAS00003AX

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Lifting Gear

with type designation(s)
MK-2

Issued to
Container Technics NV
Wijnegem, Antwerpen, Belgium

is found to comply with
DNV GL standard DNVGL-ST-0377 – Standard for shipboard lifting appliances
ISO 3874:2017 Series 1 freight containers – Handling and securing

Application :

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

Issued at **Hamburg** on **2022-02-17**
This Certificate is valid until **2027-02-16**.
DNV local station: **Belgium CMC**

Approval Engineer: **Stefan Heuer**

for **DNV**

Jörg Kallies
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

Lugs for top lifts of series 1 freight containers (ISO 1496-1 to ISO 1496-5)

Application/Limitation

Working conditions:
- Design temperature: -10°C
- SWL 15t
- Hoist load coefficient (psi): max. 1.4
- Load cycles: maximum 2000 load cycles
- 4 lugs have to be used, one in each top container corner
- If the security is broken or missing, no lifting operation shall be done
- Lifting operation 1 “Top lift spreader”
    - loaded containers, MGW (max. gross weight) 30.48t, type 1AAA, 1AA, 1A, 1BBB, 1BB, 1 BB, 1CCC, 1CC, 1C
    - eccentricity of the centre of gravity: max. 10% of the length and breadth away from geometrical centre point
    - wires vertical, max. load on one lug 15t
- Lifting operation 2 “Top lift sling”
    - empty containers, WT (self-weight) max. 5t, type 1AAA, 1AA, 1A, 1BBB, 1BB, 1 BB, 1CCC, 1CC, 1C
    - top wire angle max. 90°

Material
- Material 40Cr (forged) or better with 3.1 certificate according to ISO 10474
- Impact energy min. 27J at test temperature 0°C

Workshop test (each piece):
- Load test with 2 x SWL and function test in presence of DNV

Periodical quality inspection
- One lug per annum shall be destructive tested
- Non-destructive material test (liquid penetration) each 50th piece

Maintenance:
Each single lifting lug shall be inspected by a qualified person before every use and shall be subjected to a thorough examination every 5 years in presence of our Surveyor. Non-destructive material tests (e.g. dye penetration) shall be carried out at 5 yearly inspections.

Manufacturer

Kunshan Lucky Sea Industrial Co., Ltd., P.R. CHINA

Type Approval documentation

Tests carried out

- Prototype test report witnessed by GL dated 2014-01-15 & DNV dated 2021-07-27
- NDT test report witnessed by GL dated 2014-01-15

Marking of product

Each lifting lug shall be marked by the manufacturer with at least:
- Name or trademark
- Type of loose gear
- Serial number
- Year of construction
- Nominal load(s) “SWL” in t or kg

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results.
To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

End of Certificate