

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Trident Thin Shackle**with type designation(s)
KJTT70.152.3S.4-17TA

Issued to

Schmiedestück-Vertrieb Feuerstein GmbH
Hattingen, Nordrhein-Westfalen, Germanyis found to comply with
DNVGL-OS-E302 – Offshore mooring chain, Edition July 2018**Application :****To be used for Temporary and Mobile Mooring**
as defined in DNVGL-OS-E301, Position Mooring, July 2018Issued at **Høvik** on **2018-08-21**This Certificate is valid until **2023-08-20**.DNV GL local station: **Essen**for **DNV GL**Approval Engineer: **Pierre-Eric Moulia**

Inger-Helene Hals
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.



Job Id: **262.1-018961-3**
Certificate No: **TAS00001M4**

TAS00001M4 replaces S-8583: Annihilation of the 2-year inspection interval requirement and extension to available sizes/grades.

Product description

Non-standard slim Kenter Shackles, with 3 tooth locking mechanism and locking stone with 2 or 4 noses, to connect mooring lines.

This approval covers sizes 70, 73, 76, 84, 89, 90, 92, 95, 98, 100, 102, 105, 108, 114, 117, 120, 127, 133, 146 and 152 mm in R3, R3S and R4 grades.

Application/Limitation

The approval is conditional that the manufacturer is approved by DNVGL to make R3, R3S and R4 grade material of designations given in the type approval drawings.

The shackles are to be used in connection with mooring lines for Temporary and Mobile Mooring as defined in Offshore Standard DNVGL-OS-E301 "Position Mooring" July 2018.

The shackles shall be manufactured and tested in accordance with Offshore Standard DNVGL-OS-E302 "Offshore Mooring Chain" July 2018.

Individual Product Certificate is to be issued for each delivery.

Type Approval documentation



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Tests carried out

Fatigue tests with DNVGL or IACS surveyors were performed for this type approval.
For every order, testing shall be carried out according to DNVGL-OS-E302 July 2018.

Marking of product

Each shackle shall be marked according to Offshore Standard DNVGL-OS-E302 "Mooring Chain" July 2018 Ch2 Sec2 §1.4 & §3.9

Periodical assessment

For retention of the Type Approval, a DNVGL surveyor shall perform a survey after 2 years and another one after 3,5 years (+/- 90 days), to verify that the type approval is complied with.