DNV·GL

Certificate No:
**TAP000026W**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Pipe Couplings, Bite and Compression Type**

with type designation(s)
**24° cone connectors acc. to ISO 8434-1, Series L**

Issued to
**Zhejiang Stronger Hydraulic Co., Ltd**
**Zhejiang, China**

is found to comply with
**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**
**DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints**
**ISO 8434-1:2018 – Metallic tube connections for fluid power and general use – Part 1: 24° cone connectors**

## Application :

**Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

| | |
|---|---|
| **Temperature range:** | **-55°C- up to 400°C** |
| **Max. working press.:** | **25 MPa** |
| **Sizes:** | **6mm up to 42mm** |

Issued at **Hamburg** on **2020-11-03**

This Certificate is valid until **2025-11-02**.

for **DNV GL**

DNV GL local station: **Ningbo FIS**

Approval Engineer: **Ana Cristina Do Carmo Insfran**

**Olaf Drews**
**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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



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## Product description

Mechanical Joints, compression coupling, bite type (24° cone connectors according to ISO 8434-1), Light series (L) made of stainless steel with metallic sealings.

| Component | Material designation |
|---|---|
| Single edge cutting ring - Compression ring | Stainless Steel: 316L acc. to ASTM A276 |
| Nuts | |
| Fittings body | |
| Tubes[1,2] | DIN EN 10305 |

Notes:
[1] Tube wall thickness acc. to DNV GL Ship Rules Pt.4, Ch.6 - Section 9, Tables 3. Regarding material certificates refer Section 2, Table 3.
[2] Stainless steel tubes must be cold drawn seamless and heat treated.

### Overview of mechanical joints

| Type | Type designation |
|---|---|
| S1C, S1D (P118) | Tube to tube joining |
| SNL, SNS (P152) | Nuts |

## Application/Limitation

The Zhejiang Stronger Hydraulic Co., Ltd. Mechanical joints , series L are type approved for class I, II and III-piping systems for application: mechanical connecting for marine piping, as specified in the Rules Pt. 4, Ch. 6, Sec. 9 Table 12 and 13 – pipe union, bite type, fire resistant type.

**Selection of materials**
It shall be noted that the selection of the materials considers the applicable service condition with respect to type of media, flow velocity, media temperature etc. and installation area of the piping system. In particular, the resistance to corrosion, erosion, oxidation and other deterioration during projected service life are to be taken into account.
Reference is made to Rules Pt.4, Ch.6 – Section 2 – Materials.

**Temperature range**

-55°C up to +400 °C

**Size and pressure range[1]**

| Pressure class | Tube outside diameter [mm] | Maximum working pressure[2] [MPa] |
|---|---|---|
| Series L | 6-15 | 25 |
| | 18-22 | 16 |
| | 28-42 | 10 |

Notes
[1] Max working pressure of the piping system depend on the selected pipe material and wall thickness
[2] For service temperatures above 120° pressure reduction factors specified by the manufacturer are to be observed.

## Type Approval documentation

## Tests carried out

Tightness test, repeated assembly test, burst pressure test, pull-out test, vibration test, pressure pulsation test, fire resistance test.

## Marking of product

For traceability to this type approval each mechanical joint is to be marked with:

| Component | Scope | Example |
|---|---|---|
| Fittings body | Manufacturer trademark, size, identification number | , DNL6, L5UR0116 |
| Compression ring | | |
| Nut | | |

## Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment as per DNVGL-CP-0338, Sec.4 to verify that the conditions for the Type Approval are complied with.

To check the validity of this certificate, please look it up in https://approvalfinder.dnvgl.com.

## Ende of Certificate