



Certificate number: 14034/E0 BV
File number: ACM 135/2630/01 and 02
Product code: 2161H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

DK-LOK CORPORATION
 Gimhae (Gyeongnam) - KOREA (REPUBLIC OF)

for the type of product

MECHANICAL JOINTS - COMPRESSION COUPLINGS - TYPICAL COMPRESSION TYPE

Dk-Lok tube fittings and Bite Type tube fittings

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 26 Sep 2030

For Bureau Veritas Marine & Offshore,

At BV PUSAN, on 26 Sep 2025,
 Seungbeom HONG

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Dk-Lok tube fittings and Bite Type tube fittings

1.1 - Models

- The construction of Dk-Lok tube fittings consists of a body, a nut, a front ferrule and a back ferrule
- The construction of Bite Type tube fittings consists of a body, a sleeve and a nut

1.2 - Rating

Range depending on tube wall-thickness per the manufacturer's catalogue.

- Dk-Lok tube fittings made of stainless steel (imperial tubing)

Tube O.D. (inches)	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"	1-1/2"	2"
Max. working pressure (psi)	10,90	10,20	10,20	8,00	6,50	6,700	6,00	5,80	4,80	4,70	4,90	4,90	3,60

- Dk-Lok tube fittings made of stainless steel (metric tubing)

Tube O.D. (mm)	6	8	10	12	14	15	16	18	20	22	25	28	30	32	38
Max. working pressure (bar)	710	520	400	470	430	400	370	370	380	340	320	330	310	330	310

- Dk-Lok tube fittings made of brass

Tube O.D. (mm)	6	8	10	12	14	16	18	22	25
Max. working pressure (bar)	293	195	195	159	210	181	159	126	109

- Bite Type tube fittings made of stainless steel

Tube O.D (inches)	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"	1-1/2"	2"
Max. working pressure (bar)	766	717	717	562	457	436	422	408	330	330	337	345	253

- Bite Type tube fittings made of cast steel

Tube O.D. (mm)	6-15	16-22	25-28	30-38	40-50
Max. working pressure (bar)	500	400	350	250	210

- Bite Type tube fittings made of brass

Tube O.D. (mm)	4-5	6-22	25-28	30-38	40-50
Max. working pressure (bar)	250	210	170	150	120

When elastomer seal is used in the fitting, care must be taken according to the manufacturer's recommendations.

NBR (eg Perbunan ®)	-40 °C to +100 °C
FKM (eg Viton ®)	-20 °C to +200 °C
PTFE (eg Teflon ®)	-60 °C to +240 °C

The maximum allowable working pressure at high temperature is to be in accordance with the manufacturer's de-rating factors.

1.3 - Materials

Raw material	Bar stock body	Forged body	Tubing
Stainless Steel 316	ASTM A479, ASTM A276, JIS G4303	ASTM A182, F316, JIS G3214	ASTM A269, ASTM A213, ASTM A249
Cast steel	JIS G4051, S20C-S48C	JIS G4051, S20C-S48C	ASTM A161, ASTM A179, DIN 2391
Brass	ASTM B16, ASTM B453, JIS H3250, C3604	ASTM B124, JIS H3250, C3771	ASTM B68, ASTM B75, ASTM B88, DIN 1786

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Manufacturer's catalogue N° 01-05 "DK-LOK Tube Fittings" dated 02/2025
- Manufacturer's catalogue N° 04-03 "Bite Type Tube Fittings" dated 06/2015

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 - Qualification tests according to classification societies' program were carried out at the manufacturer's workshop:

- Assembly and leak test, bursting test, vacuum test, pull-out test, pressure pulsation test and vibration test

- Bite type fittings made of stainless steel 316 test reports dated 2000:

DK-20000418-053, -055	DK-20000413-058	DK-20000327-054
DK-20000414-056	DK-20000419-057	DK-010411-002, -003
DK-010523-001	DK-010601-002, -003, -004	DK-010511-002
DK-010521-004	DK-010604-002	DK-010531-002
DK-010608-001	DK-010511-001	DK-010430-002
DK-010504-002	DKQ-010525-001	DKQ-010518-003

- Dk-Lok fittings made of stainless steel 316 test reports dated 2000: DK-20000418-047, -048, -049, -050, -051, -052.

- Bite type fittings made of cast steel S45C test reports dated 2000:

DKQ-010608-002	DK-010411-001	DKQ-010518-004
DK-010523-002	DK-010601-001	DK-010511-003
DK-010521-003	DK-010604-001	DK-010525-002
DK-010531-001	DK-010507-002	DK-20000418-041, -042, -043, -044, -045
DK-010504-001	DK-010430-001	

- Bite type fittings made of brass test reports dated 2000:

DKQ-030708-001	DK-030707-003	DKQ-030703-001, -003
DKQ-030711-002	DKQ-030806-003	DKQ-030813-003
DKQ-030726-002	DKQ-030806-001	DKQ-030813-001
DKQ-030730-001		

- Dk-Lok fittings made of brass test reports dated 2000:

DKQ-030711-001	DKQ-030806-004	DKQ-030730-002
DKQ-030813-004	DKQ-030726-001	DKQ-030707-002, -004
DKQ-030806-002	DKQ-030813-002	DKQ-030703-002, -004

3.2 - No fire endurance test has been performed.

4. APPLICATION / LIMITATION

4.1 - May be used on board for services of Class I (OD ≤ 60.3 mm), class II (OD ≤ 60.3 mm), & class III:

- **Flammable fluids (flash point ≤ 60°C)** – cargo oil lines (1), crude oil washing lines (1), vent lines (2)
- **Inert gas** – main lines (1), distribution lines (1)
- **Flammable fluids (flash point > 60°C)** – cargo oil (1), fuel oil (2), lubricating oil (2), hydraulic oil (2), thermal oil lines (2)
- **Sea water** – bilge/ballast/cooling water (3), tank cleaning, non-essential systems, permanent water filled fire extinguishing systems (2), non-permanent water filled fire extinguishing systems (2)
- **Fresh water** - cooling water (3), condensate return (3), non-essential systems
- **Sanitary/Drains/Scuppers** - sanitary drains, scuppers and discharge (overboard)
- **Sounding and venting** - water tanks/dry spaces, oil tanks (flash point > 60°C) (2)
- **Miscellaneous** – starting/control air (3), service air (non-essential), brine, steam,

(1)- Not to be used in pump rooms and open decks.

(2)- May be used only in cases where such mechanical joints are installed on open decks, as defined in NR 467, Pt C, Ch 4, Sec5, [1.4.3] item b) 2) (10) and not used for fuel oil lines.

(3)- Not to be used inside machinery spaces of category A.

4.2 - Not to be used for:

- **Inert gas** – water seal effluent, scrubber effluent lines
- **Miscellaneous** – CO2 Systems

4.3 - The wall thickness and the material of the tubes are to be in accordance with the applicable Society's Rules.

4.4 - The selection of pipes, fittings and seals must be compatible with the fluid to be conveyed and the maximum working temperature according to the manufacturer's recommendations.

- 4.5 - The Dk-Lok and bite type fittings made of brass are not accepted where pressure pulsation is expected.
- 4.6 - The Dk-Lok and bite type fittings with elastomer seals are not approved within machinery spaces for the use in flammable fluids, sea water and bilge lines. Only approved fire resistant types are accepted.
- 4.7 - Threaded bulkhead unions are not to be used on watertight bulkheads.
- 4.8 - In case of welded tube is used for manufacturing of fittings, the welded tubes are to be type approved by the Society.
- 4.9 - Assembly instructions given by the manufacturer are to be complied with.
- 4.10 - In all cases, the associated pipes are to be suitable supported and anchored. The joints are to be at any time accessible, excepting inside tanks where permitted by the Bureau Veritas Rules.
- 4.11 - The mechanical joints are to be installed according to the manufacturer's instructions and Society's Rule requirements.
- 4.12 - The use of stainless steel and/or grey cast iron is restricted according to Bureau Veritas Rules *NR 467, Pt C, Ch 1, Sec 10, Table 5* and corresponding requirements in *NR 445*.
- 4.13 - Tapered threaded end fittings are not to be used in engine rooms, nor in any place containing an ignition source unless otherwise suitably screened at the Society's Surveyor satisfaction.

5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 - The products are to be supplied by **DK-LOK CORPORATION** in compliance with the type described in this certificate and in compliance with the requirements stated on the front page of this certificate.
- 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note *NR 320* and as such does not require a BV product certificate.
- 5.3 - **DK-LOK CORPORATION** has to make the necessary arrangements to have its works recognized by Bureau Veritas in compliance with the requirements of *NR 320* for HBV products.
- 5.4 - For information, **DK-LOK CORPORATION** has declared to Bureau Veritas the following production site:

DK-LOK CORPORATION
Golden root-ro 129 beon-gil, 7
Juchon-myeon, Gimhae (Gyeongnam)
KOREA (REPUBLIC OF)

6. MARKING OF PRODUCT

The product shall be marked with at least:

- Manufacturer' name or logo
- Pipe size
- Material

7. OTHERS

It is **DK-LOK CORPORATION's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

This certificate supersedes the Type Approval Certificate No. 14034/D0 BV issued by the Society.

*** END OF CERTIFICATE ***