



Marine & Offshore
Division

Certificate number: 10197/D0 BV

File number: ACM 135/2209/002

Product code: 2130H

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

VOSS Fluid GmbH

Wipperfürth - GERMANY

for the type of product

SCREW COUPLINGS

ES-4 TUBE COUPLINGS

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate is a renewal of certificate N° 10197/C0 BV expiring on 30/01/2017

This certificate will expire on: 30 Jan 2022

For BUREAU VERITAS,

At BV HAMBURG, on 11 Nov 2016,

Adama Diene



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. 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 Division 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 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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

ES-4 Tube couplings

1.1 Product range:
as per VOSS Catalogue 9177003102

1.2 Rating:

Series	Tube OD [mm]	Nominal Pressure [bar]
L	6, 8, 10	500
L	12, 15, 18	400
L	22, 28, 35, 42	250
S	6, 8, 10	800
S	12, 14, 16	630
S	20, 25, 30, 38	420

1.3 Material specification:

Tubes	Seamless precision steel DIN 2391 C
Couplings	Steel
Sealing	NBR (-35 °C to +100 °C) / FPM (-25 °C to +200 °C)

2. DOCUMENTS AND DRAWINGS

According to VOSS catalogue 9177003102, edition 2011.

3. TEST REPORTS

- 3.1 Qualification tests performed in the manufacturer's own laboratory in the presence of a Society's surveyor.
- Test report 12000412 (MPA-NRW) dated 28/01/2000
 - Test report UB: AEV 001/00/1 (VOSS)
- 3.2 Examination report no. AEL 214/06/1, tests performed at VOSS Automotive GmbH, Wipperfürth/GERMANY:
- Leakage test
 - Bursting pressure test
 - Vacuum test
 - Pull-off test
- 3.3 Test report no. C101/06, tests performed at IMA, Dresden / GERMANY:
- Pressure pulsation test
 - Vibration test
- 3.4 Fire resistance tests performed at WTD 71, Kiel / GERMANY. Tests reports no. 61070/105 – 108

4. APPLICATION / LIMITATION

- 4.1 May be used for piping systems on board ships.
- 4.2 The VOSS pipe and flange couplings are to be at any time accessible.
- 4.3 Couplings with soft component are not to be used for "fire-safe" systems.

- 4.4 For bulkhead unions, the requirements given in BUREAU VERITAS Rules Part C, Ch. 1, Sec 10, [5.3] have to be complied with. When using soft seals, it must be ensured that water, oil or fire cannot penetrate through the watertight bulkheads or decks.
- 4.5 Assembly instructions given by the manufacturer are to be complied with.

5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 The tube couplings are to be supplied by the manufacturer in compliance with the type described in this certificate.
- 5.2 This type of product is within the category HBV of BUREAU VERITAS Rule Note NR320.
- 5.3 **VOSS Fluid GmbH** has to make the necessary arrangements to have its works recognised by BUREAU VERITAS in compliance with the requirements of NR320 for HBV products:
VOSS Fluid GmbH, Wipperfürth / GERMANY
- 5.4 Water pressure test should be carried out through watertight bulkhead for bulkhead unions.

6. MARKING OF PRODUCT

The products are to be marked with at least:

- Manufacturer's name or logo
- Model
- Size
- Nominal pressure

7. OTHERS

- 7.1 This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the products at any time and that **VOSS Fluid GmbH, Wipperfürth / GERMANY** will accept full responsibility for informing shipbuilders, ship owners or their subcontractors of the proper methods of use and general maintenance of the products and the conditions of this approval.
- 7.2 This certificate supersedes the Type Approval Certificate N° 10197/C0 BV issued on 30 Jan 2012 by the Society.

*** END OF CERTIFICATE ***