



Marine &amp; Offshore

Certificate number: 10197/E0 BV

File number: ACM 135/2209/2

Product code: 2130H

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

www.veristar.com

## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**VOSS Fluid GmbH**

Wipperfürth - GERMANY

*for the type of product*

**MECHANICAL JOINTS - COMPRESSION COUPLINGS - SCREW TYPE**

ES-4 TUBE COUPLINGS

**Requirements:**

BUREAU VERITAS Rules for the Classification of Steel Ships

*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 is a renewal of certificate N° 10197/D0 BV expiring on 30/01/2022*

**This certificate will expire on: 30 Jan 2027**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 30 Sep 2021,

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 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](http://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.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

#### ES-4 tube couplings

##### 1.1 Design:

The ES-4 tube coupling comprise the following main components:  
stud couplings, union nuts and VOSS ES-4 cutting rings.

##### 1.2 Identification and technical data:

Identification: **ACM 0135/2209/2**

Technical data:

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 Union nuts:

SERIE L (light gauge)		SERIE S (heavy gauge)	
Tube diameter [mm]	Union nut	Tube diameter [mm]	Union nut
6	M 12 x 1.5	6	M 14 x 1.5
8	M 14 x 1.5	8	M 16 x 1.5
10	M 16 x 1.5	10	M 18 x 1.5
12	M 18 x 1.5	12	M 20 x 1.5
15	M 22 x 1.5	14	M 22 x 1.5
18	M 26 x 1.5	16	M 24 x 1.5
22	M 30 x 2	20	M 30 x 2
28	M 36 x 2	25	M 36 x 2
35	M 45 x 2	30	M 42 x 2
42	M 52 x 2	38	M 52 x 2

##### 1.4 Material specification:

<b>Tubes</b>	Seamless precision steel DIN EN 10305-4
<b>Couplings</b>	Steel
<b>Sealing</b>	NBR (-35 °C to +100 °C) / FKM (-25 °C to +200 °C)

### 2. DOCUMENTS AND DRAWINGS:

According to following documents:

Designation	Dokument no.	Edition
Manufacturer's catalogue: Hydraulic connection technology	7004695700/201812/01	2018

### 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 Mounting trials, leak, bursting pressure, vacuum and extraction tests performed at VOSS Automotive GmbH Testing Laboratory, Wipperfürth / GERMANY.

Test report no.: AEL 214/06/1 dd. November 27, 2006.

- 3.3 Pressure pulsation and vibration tests performed at IMA, Dresden / GERMANY.  
Test report no.: C101/06 dd. 07.12.2006.
- 3.4 Fire resistance tests performed at WTD 71, Kiel / GERMANY.  
Tests reports no.: 61070/105 dd. 21.09.2006, 61070/106 dd. 21.09.2006, 61070/107 dd. 21.09.2006 and 61070/108 dd. 21.09.2006.

#### **4. APPLICATION / LIMITATION:**

- 4.1 Tube couplings intended to be used for hydraulic oil piping and other piping systems on board ships.
- 4.2 The tube couplings are to be at any time accessible.
- 4.3 The bulkhead unions are not to be used as fittings in way of watertight or oil tight bulkheads or decks.
- 4.4 In all cases, the associated pipes are to be suitably adjusted, aligned and anchored.
- 4.5 The manufacturer's assembly instructions are to be complied with.
- 4.6 The wall thickness and the material of the used tubes are to be in accordance with the Rules of BUREAU VERITAS.

#### **5. PRODUCTION SURVEY REQUIREMENTS:**

- 5.1 The products are to be supplied by **VOSS Fluid GmbH** 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 and as such does not require a BUREAU VERITAS product certificate.
- 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.
- 5.4 For information, **VOSS Fluid GmbH** has declared to BUREAU VERITAS the following production sites:  
**VOSS Fluid GmbH, Wipperfürth / GERMANY**

#### **6. MARKING OF PRODUCT:**

Each tube coupling is to be clearly marked to avoid any wrong utilization as per manufacturer's instructions:

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

#### **7. OTHERS:**

- 7.1 It is **VOSS Fluid GmbH'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.
- 7.2 This certificate supersedes the Type Approval Certificate No. 10197/D0 BV issued on 11 Nov 2016 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*