



MARINE DIVISION

Certificate number: 14459/B0 BV

File number: ACM 135/2209/03

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

VOSSFormSQR 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 will expire on: 20 May 2015

For BUREAU VERITAS,

At BV HAMBURG, on 20 May 2010,

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 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

VOSSFormSQR Tube Couplings

1.1 Design

- The VOSSFormSQR Tube Coupling comprise the following main components:
Connection body, Nut, Form tube end, Sealing ring and Clamping ring.
- A 24° taper contour is formed on at the end of a standard hydraulic tube in the VOSSForm100 pre-assembly machine.

1.2 Identification and Technical data:

- Identification: **ACM 0135/2209/03**
- Technical data:

SERIE L (Light gauge)		SERIE S (Heavy gauge)	
Tube Diameter (mm)	Nominal Pressure PN (bar)	Tube Diameter (mm)	Nominal Pressure PN (bar)
6 - 18	315	6 - 14	640
22 - 42	160	16 - 30	400
		38	315

Temperature range: -20 °C/120°C

1.3 Tube dimension:

SERIE L (Light gauge)		SERIE S (Heavy gauge)	
Tube Diameter (mm)	Wall-thickness (mm)	Tube Diameter (mm)	Wall-thickness (mm)
6	1/1.5/2	6	1/1.5/2
8	1/1.5/2/2.5	8	1/1.5/2/2.5
10	1/1.5/2	10	1.5/2/2.5
12	1.5/2/2.5	12	1.5/2/2.5/3
15	1.5/2/2.5	14	1.5/2/2.5/3
18	1.5/2/2.5/3	16	1.5/2/2.5/3
22	1.5/2/2.5/3	20	2/2.5/3/3.5/4
28	2/2.5/3	25	2/2.5/3/4
35	2/2.5/3/4	30	2/2.5/3/4/5
42	2/2.5/3/4	38	2.5/3/4/5/6

1.4 Material:

Tube	Steel according to DIN 2391 standard quality St.37.4
Coupling	Steel as per manufacturer's catalogue
Seal	FPM/FKM (Viton)

2. DOCUMENTS AND DRAWINGS

2.1 Manufacturer's catalogue and CD- Rom, chapter 5

2.2 Drawings

3. TEST REPORTS

3.1 Qualification tests performed in the presence of a Classification Society Surveyor:

- Assembly test, static pressure test, vacuum test, impulse and vibration tests, pull-out test, burst test, fire test.

3.2 Test reports:

- N° C114/03 dated 08/07/2004 issued by IMA Dresden
- N° AEL 008/04 dated 15/01/2004 and N° AEL 093/04 dated 09/06/2004 issued by Voss test laboratory.

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 Tube Couplings are to be manufactured, examined and tested by the manufacturer in accordance with the approved type described in this certificate and in accordance with BUREAU VERITAS Rules stated on the front page of this certificate.
- 5.2 The Production site is to be recognized by BUREAU VERITAS as per NR 320 for HBV products. To this end, the manufacturer has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production site.
- 5.3 **VOSS Fluid GmbH** has declared to BUREAU VERITAS that the products detailed in this certificate are manufactured at the production site stated on the front page of this certificate.

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 This approval is given on the understanding that the Society reserves the right to require check test to be carried out on the units at any time and that **VOSS Fluid GmbH, Wipperführt/GERMANY** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of fitting and general maintenance of the Pipe Screw-Joints and of the conditions of this approval.
- 7.2 This certificate supersedes Type Approval Certificate N° 14459/A0 BV issued on 09/06/2005 by the Society.

*** END OF CERTIFICATE ***