



Type Approval Certificate

[Mechanical Joints]

Initial Approval 21st October, 2016

Manufacturer VOSS Fluid GmbH

Ludenscheider Str.52-54 D-51688 Wipperfurth , Germany

Product Description Model : VOSSRingM Cutting Ring Couplings
 - Kind : Bite Type Compression Tube Couplings
 - Temperature Range
 . Carbon Steel : -20 °C ~ +120 °C
 . Stainless Steel : -60 °C ~ +200 °C
 - Max. Working Pressure : 250 bar ~ 800 bar (size and type dependent)
 - Size : 6 mm ~ 42 mm
 - Material
 . Fitting Body and Nut : Carbon Steel and Stainless Steel
 (DIN 3859-1 table 2 or higher grades)

" See Appendix 1 "

Approval Condition " See Appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 5, Ch. 6, Sec. 1 of the Rules for Classification of Steel Ships.

This Certificate is valid until 20th October, 2026

Issued at Busan, Korea on 3rd November, 2021



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME21027137674) and certificate No.(HMB33980-PE001).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
 2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
 3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
 4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 3rd November, 2021

A. Product Description

1. Product Specification

- 1) Mechanical Joints Specification
* L series (Light)

Size range(OD) (mm)	Design Pressure (bar)
6 ~ 10	500
12 ~ 18	400
22 ~ 42	250

* S series (Heavy)

Size range(OD) (mm)	Design Pressure (bar)
6 ~ 10	800
12 ~ 16	630
20 ~ 38	420

2. Approved Drawings and Documents

0019000000, 0019250000, 0019450000, 0019750000, 0019950000, 1758250080, 1758450080,
1758750080, 1758950080, 1758520000, 0720250000, 0720450000, 0720000000, 0720750000,
0720750000, 0720500000, 0784240000, 0784280000, 1784080000, 0784340000, 0784380000,
0784290000, 0782900000, 0782400000, 0782750000, 0782830000, 0782640000, 1760250080,
1760950080, 1760520000, 0734450000, 0734006000, 0734750000, 0004250000, 0004450000,
0004000000, 0004750000, 0004950000, 0004500000, 1758010000

3. Test Reports, etc.

- 1) Tightness test, Burst Pressure test, Repeat assembly test, Pull out test, Vacuum test :
Report No. 2014_466/1 issued by VOSS lab dated 12 June 2015
- 2) Vibration test, Pressure pulsation test :
Report No. K057/14 issued by IMA DRESDEN dated 5 December 2014
- 3) Fire resistance test : Reports issued by Dr. Baumer test laboratory dated 22 October 2014

B. Approval Condition

1. Application & Limitation

- 1) Application

① Flammable fluids (Flash point ≤ 60 °C) NOTES

- Cargo oil lines
- Crude oil washing lines
- Vent lines

② Inert gas

- Water seal effluent lines
- Scrubber effluent lines
- Main lines
- Distributions lines

③ Flammable fluids (Flash point > 60 °C)

- Cargo oil lines
- Fuel oil lines
- Lubricating oil lines
- Hydraulic oil
- Thermal oil

Product Description and/or Approval Condition

Date of Issue : 3rd November, 2021

④ Sea Water

- Bilge lines
- Water filled fire extinguishing systems (e.g. sprinkler systems)
- Non water filled fire extinguishing systems (e.g. foam, drencher systems)
- Fire main (not permanently filled)
- Ballast / Cooling water system
- Tank cleaning services / Non-essential systems

⑤ Fresh water

- Cooling water system
- Condensate return
- Non-essential system

⑥ Sanitary / Drains / Scuppers

- Deck drains (internal) (1)
- Sanitary drains / Scuppers and discharge (overboard)

⑦ Sounding / Vent

- Water tanks / Dry spaces
- Oil tanks (flash point > 60 °C)

⑧ Miscellaneous

- Starting / Control air
- Service air (non-essential)
- Brine
- CO2 system
- Steam

※ NOTES

(1) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

2) Limitation

- These mechanical joints are to be mounted in accordance with the manufacturer's instructions.
- These mechanical joints are not to include any components which readily deteriorate in case of fire, they are to be of approved fire resistant type as required for slip-on joints.
- These mechanical joints, which in the event of damage could cause fire or flooding, are not to be used in piping sections directly connected to the sea openings or tanks containing flammable fluids.
- Piping in which these mechanical joints are fitted is to be adequately adjusted, aligned and supported. Supports or hangers are not to be used to force alignment of piping at the point of connection.
- These mechanical joints are not used in those systems where pulsation other than water hammer is expected.
- The number of mechanical joints in flammable fluid systems is to be kept to a minimum.

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual Product Certification is required where the mechanical joints are used for Class I or II piping system.

3. Marking

- 1) For traceability to this type approval, the couplings are at least to be marked with
 - Manufacturer's name of trade mark
 - Type designation / size

4. Others

- N/A

< End of Certificate >