



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **P-13934**

This is to certify that the
Pipe Couplings, Bite and Compression Type

with type designation(s)
EXMAR Schneidring- and klemmring couplings

Manufactured by
EXMAR GmbH
Ober-Mörlen, Germany

is found to comply with
Det Norske Veritas' Rules for Classification of Ships
Offshore Standard DNV-OS-D101, Marine and Machinery Systems and Equipment
Det Norske Veritas' Standards for Certification 2.9 No. 5-792.20

Application

The couplings may be used for fuel, lubrication, hydraulic, fresh water, compressed air, sanitary, steam and condensate systems. Klemmring couplings are not allowed for fuel-, hydraulic- or lubrication oil, or for any system where pressure impulses occur.

Temperature range: -40°C to +600°C (type dependant)
Max. working press.: 250 to 800 bar (size and type dependant)
Sizes: 6 to 42 mm

Høvik, 2011-10-11
for Det Norske Veritas AS



This Certificate is valid until
2015-12-31


Marianne Spæren
Head of Section

DNV local office:
Essen


Tom Berg-Nielsen
Surveyor

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: P-13934
 File No.: 792.21
 Job Id.: 262.1-003470-3

Product description

Configurations: Straight, Elbows, Tee's, Crosses, and L's (90° elbows).

Ranges: L (light), S (strong).

Material: AISI 316TI or equivalent.

Application/Limitation

The couplings may be used for fuel-, lubrication- and hydraulic oil, fresh water, compressed air, sanitary, steam and condensate, and instrument systems, for the following max. working pressures:

Schneidring:

Size	Max. working pressure (bar)	Size	Max. working pressure (bar)
06L	500	06S	800
08L	500	08S	800
10L	500	10S	800
12L	400	12S	630
15L	400	14S	630
18L	400	16S	630
22L	250	20S	420
28L	250	25S	420
35L	250	30S	420
42L	250	38S	420

Temperature range: - 40°C to + 600°C for couplings where all parts are made from stainless steel. For couplings with artificial packing elements, the temperature range will depend on type of packing material.

The working pressure is equal to the max. nominal static pressure for working temperatures below 120 °C. For higher temperature approval has to be considered in each case.

Klemmring:

Type	Tube dia. [mm]	Maximum operating pressure for installation types		
		Type B [bar]	Type E [bar]	Type C [bar]
L	6-22	250	40	5
S	6-25	250	40	5

Type A and B shall not be used in installations where TRGI or TRF is applicable.

Klemmring couplings temperature range: -20°C to +70°C.

Klemmring couplings are not allowed for systems with fuel-, lubrication- or hydraulic oil, and for systems where pressure impulses occur.

The type approval does not cover different chemicals, and such applications will have to be evaluated in each separate case.

The couplings are not approved for high-pressure fuel injection systems.

The wall thickness and the material of the tubes are to be in accordance with the current Rules of Det Norske Veritas.

The approval is only valid when the couplings are assembled with tubing of correct temper and tolerances as recommended by the manufacturer.

These couplings should not be used on tubes in cold fabricated (hard temper) conditions.

Tapered threads should be specified on stud ends in high-pressure systems (above 250 bar).

The couplings shall be fitted according to the manufacturer's instructions.

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Type Approval documentation

The type approval is based on the following documentation:

- Actual Version of the Manufacturer's Assembly Instructions
- DIN Specifications 2352, 3852 Teil 1 & 2, 3853, 3861, 3870, 3901, 3902, 3955 and
DIN EN ISO 8434.
- Manufacturer's Catalogue (Price List) Edition 11 (04/2009)

EZ_706_0021_060_13 Schneidring 6L/S dated 19.06.2007
EZ_706_0021_080_13 Schneidring 8L/S dated 19.06.2007
EZ_706_0021_100_13 Schneidring 10L/S dated 19.06.2007
EZ_706_0021_120_13 Schneidring 12L/S dated 19.06.2007
EZ_706_0021_140_30 Schneidring 14S dated 19.06.2007
EZ_706_0021_150_20 Schneidring 15L dated 19.06.2007
EZ_706_0021_160_30 Schneidring 16S dated 19.06.2007
EZ_706_0021_180_20 Schneidring 18L dated 19.06.2007
EZ_706_0021_200_30 Schneidring 20S dated 19.06.2007
EZ_706_0021_220_20 Schneidring 22L dated 19.06.2007
EZ_706_0021_250_30 Schneidring 25S dated 19.06.2007
EZ_706_0021_280_20 Schneidring 28L dated 19.06.2007
EZ_706_0021_300_30 Schneidring 30S dated 19.06.2007
EZ_706_0021_350_20 Schneidring 35L dated 14.07.2008
EZ_706_0021_380_30 Schneidring 38S dated 28.04.2011
EZ_706_0021_420_20 Schneidring 42L dated 14.07.2008

- Test report from IMA Dresden dated Octobe 2011

EZ_716_0010_060_13 A NC-Klemmring 6L/S dated 22.12.2006
EZ_716_0010_080_13 A NC-Klemmring 8L/S dated 22.12.2006
EZ_716_0010_100_13 A NC-Klemmring 10L/S dated 22.12.2006
EZ_716_0010_120_13 A NC-Klemmring 12L/S dated 05.02.2007
EZ_716_0010_140_30 A NC-Klemmring 14S dated 06.02.2007
EZ_716_0010_150_20 A NC-Klemmring 15L dated 22.12.2006
EZ_716_0010_160_30 A NC-Klemmring 16S dated 05.02.2007
EZ_716_0010_180_20 A NC-Klemmring 18L dated 06.02.2007
EZ_716_0010_200_30 A NC-Klemmring 20S dated 06.02.2007
EZ_716_0010_220_20 A NC-Klemmring 22L dated 22.12.2006
EZ_716_0010_250_30 A NC-Klemmring 25S dated 22.12.2006

-Test report from DVGW dated 28.02.2007

Tests carried out

Schneidring: Sealing-, assembly/disassembly-, burst-, pull-out-, pressure pulsation and oscillation-, fire- and gas vacuum test.

Klemmring: Leakage-, pull-out-, vibration-, assembly/disassembly- and burst test.

Marking of product

For identification to this approval the products are to be marked with:

- Manufacturers name or trade mark
- Type designation
- Additional marking at manufacturer's option.



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Certificate retention survey

For retention of the Type Approval, a DNV Surveyor shall perform a survey – every second year and before the expiry date of this certificate - to verify that the conditions for the type approval are complied with. The Surveyor shall perform the following tasks on samples selected at random from stock or from the running production:

- Verify that the dimensions of the couplings comply with Type Approved documentation.
- Verify that the material composition complies with Type Approved documentation.
- Witness burst testing.

The burst testing may be omitted at the Surveyor's discretion.

END OF CERTIFICATE

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