

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Pipe Couplings, Bite and Compression Type**with type designation(s)
Cutting ring fitting

Issued to

EXMAR GmbH
Bad Nauheim, Hessen, Germany

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints**Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****Temperature range:** see page 2
Max. working press.: 800 bar
Sizes: 6 mm up to 42 mmIssued at **Hamburg** on **2020-01-31**for **DNV GL**This Certificate is valid until **2025-01-30**.DNV GL local station: **Essen**Approval Engineer: **Christian Kaemmer**.....
Olaf Drews
Head of Section

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.



Product description

Cutting ring fitting for stainless steel tubes;
consisting of basic component, connecting nut and cutting ring, manufactured
acc. to DIN 2353 and EN ISO 8434-1/-4. Series **L (light)** and Series **S (heavy)**.

Types:

Stud couplings

GEV, GEV-WD, GEV-NPT, GEV-UNF/UN, GAV, WEV, WEV-NPT, TEV, LEV

Tube to tube couplings

GV, WV, TV, KV, GSV, WSV

Adjustable couplings

ESS, EGKO, EWV, EWKO, WEE, ETV, ETKO, ELV, ELKO, ESWV, GRKO

Welding couplings

GAS, WAS, ESV

Reduction couplings

RS, RS-WD

Materials:

Cutting ring fitting: (basic component, cutting ring, connecting nut):

Stainless Steel: X 6 CrNiMoTi 17 12 2 / 1.4571 /
DIN EN 10088-3 / AISI 316 Ti
Sealing: FKM or NBR

Tubes:

Seamless, cold drawn, high precision stainless steel tubes (acc. to DIN EN 10216-5 / EN ISO 1127, tolerance class D4/T4) with clean, smooth surface.

Application/Limitation

The cutting ring fitting system is type approved for application in pipe class I, II and III-piping systems, fire resistant type, as listed in DNV GL Ship-Rules Pt. 4, Ch. 6, Sec. 9 Table 8, 9 & 10 / Bite-type.

Series	Pipe O.D. mm	Nominal Pressure PN
L	6 – 10	500
	12 – 18	400
	22 – 42	250
S	6 – 10	800
	12 – 16	630
	20 – 38	420

Temperature range	
Stainless steel (Components)	-55°C to +400°C
FKM (Sealing)	-20°C to +200°C
NBR (Sealing)	-35°C to +100°C
Metallic sealing	-55°C to +400°C

The maximum service temperature (M.A.W.T.) arise out of the tube fitting and the sealing material combination.

Pressure reduction factors:

For service temperatures above 20°C the operating pressure is to be reduced in accordance with the pressure reduction factors:

20°C up to 50°C:	-4.5%
up to 100°C:	-11%
up to 200°C:	-20%
up to 300°C:	-29%
up to 400°C:	-33%

Fittings with BSP threads that seal on the thread are limited in the application.
Fittings with parallel thread are not approved for pipe class I and II and tapered or parallel thread is not approved for toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.
Tube to tube couplings of type GSV and WSV are not approved through fire-resisting divisions and watertight bulkhead and decks.

Fittings made of stainless steel 1.4571 are not permitted in seawater systems.
A tube grade suitable for cold bending and flaring is to be used.
For the assembly and the installation of the joints manufacturer's instructions are to be observed.
The wall thickness of the tubes is to be selected acc. to DNVGL Rules Part 4 Chapter 6 Section 9 Table 3.
Bulkhead connections are not approved through tank walls , fire divisions, watertight deck and bulkheads.

Type Approval documentation

Test report from IMA No. C 080/11 dated 08.08.2011
Fire resistance tests IHA No: 044-11; 045-11; 046-11; 047-11; 048-11; 049-11.
Manufacturer's catalogue Edition 16/2017
Burst pressure test reports dated 2020-01-14
Type Approval Assessment Report dated
Authorization letter Exmar dated 2020-12-11
Techn. Datasheet Rubber Gasket NBR.

Tests carried out

Burst pressure test, pressure pulsation and vibration test, fire resistance test, vacuum test. pull-out test, tightness test.

Marking of product

For traceability to this Type Approval, the tube fittings are to be marked with:

- Manufacturer's name or trade mark
- Type designation
- Size

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to the Class Programme DNVGL-CP-0338, Sec.4.