



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP000003E
Revision No:
2

This is to certify:

that the **Pipe Couplings, Flared or Welded Nipple Type**

with type designation(s)
37° flare couplings acc. to ISO8434-2 and SAE J514. JIC fittings

issued to

Volz Gruppe GmbH
Deilingen, Germany

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV class programme DNV-CP-0185 – Type approval – Mechanical joints

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Temperature range: Up to 400°C (see certificate)
Max. working press.: Up to 600 bar (see certificate)
Sizes: 6 mm (1/4") up to 38 mm (1 1/2")

Issued at **Hamburg** on **2024-12-16**

This Certificate is valid until **2029-12-15**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Christof Kotzmann-Bendrien**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Flared tube fittings of type ISO 8434-2 / SAE J 514 consists of mechanically shaped 37° flared tube end, connector body, sleeve, O-ring (optionally) and nut.

Fittings

The Type Approval includes fittings as specified in the Volz Stainless Steel Catalogue “JIC Flared Tube Fittings” edition 04/2024.

The following couplings are excluded from the certificate:

Designation	Coupling type
AGJ – DKJ – mit Messanschluss (Test 20)	Straight connector with test point
VKA - DKJ - mit Messanschluss (Test 20)	Straight connector with test point

For the following tube fittings limitation as specified in the RU-SHIP Rules Pt.4 Ch.6 are to be observed:

Bulkhead fittings

Bulkhead connections of types AGJS and GSV are not approved for penetration through tank walls, watertight deck and bulkheads.

For application through fire divisions a separate type approval is required.

Pipe connectors where pressure -tight joints are made on the threads are limited in the application as follows:

Pipe connector design	Range of application ¹	
..with tapered or parallel thread	not approved for toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur	
..with parallel thread	approved for pipe class III	up to outside diameter 60.3mm
..with tapered thread	approved for pipe class I	up to outside diameter 33.7mm
	approved for pipe class II, III	up to outside diameter 60.3mm

Note

¹ Refer to DNV RU SHIP Rules Pt.4 Ch.6 – Section 9 – 5.2.6.

Designation	Coupling type
DKJ – AGN	straight connector with thread UNF/UN-NPT
DKJ – BSPT	straight connector with thread UNF/UN-BSPT
AGJ – AGN	straight connector with thread UNF/UN-NPT
AGJ – BSPT	straight connector with thread UNF/UN-BSPT
T – AGJ – AGN – AGJ	branch tee with thread UNF/UN-NPT
L – AGJ – AGJ – AGN	run tee with thread UNF/UN-NPT
AGJ – NPT-female	straight female connector with thread UNF/UN-NPT

All other tube fittings with thread connection not listed in the above table may be used without limitations.

Materials

Connector body, JIC sleeve and nut are made of stainless steel with material no. 1.4571 / ANSI 316Ti.

Selection of materials

It shall be noted that the selection of the materials considers the applicable service condition with respect to type of media, flow velocity, media temperature and installation area of the piping system. In particular, the resistance to corrosion, erosion, oxidation and other deterioration during projected service life are to be considered.

Sea water application

The stainless steel with material number 1.4571 / ANSI316Ti is approved for application conveying sea water and for unprotected installation on the open deck.

Even stainless-steel grade 1.4571 / ANSI316Ti cannot be considered immune to attack under all situations, avoidance of stagnant seawater conditions and removal of oxides after welding are some of the important factors to the successful use of the material in piping systems for sea water and installation on open deck.

Reference: DNV-RU-SHIP Pt.4 Ch.6, Sec.2. – Materials

The couplings are not approved for gases having an oxygen content exceeding 25% as per DNV CP-0185 Sec 5, 8.

Tubes

Tubes according to EN 10305-4 or equivalent are to be used.

Volz Assembly instruction: MA-SS 02.2 “Tube Assembly” to be observed.

In addition, the following DNV RU SHIP Rules are to be observed

- Pt.2 Ch.2 Metallic material, Sec. 5, Steel pipes and fittings, Para. 2 Pipes for pressure systems
- Pt.4 Ch.6 Piping systems Sec. 9, Minimum wall thickness - Table 2 (carbon steel)
- Sec. 2, Materials - Table 3 Material certificates

Application/Limitation

The Volz flare tube fitting system is type approved for application in pipe systems of pipe class I, II and III as per DNV-RU-SHIP Pt. 4 Ch. 6, Sec. 9, Table 9 and 10 - Compression couplings - Flared type - Fire resistant type.

Approved applications according to Table 9 Application of mechanical joints. Connectors with elastomeric seals are approved for pipe systems classified “wet” or “fire endurance test not required.”

For installation in pipe systems classified “dry” or dry/wet” limitation according to “Footnotes – Fire resistance capability” of table 9 are to be observed.

For selection of the minimum wall thickness for pipes refer to DNV RU-SHIP Pt.4, Ch.6 Sec. 9, Tables 1 and 2. Requirements on material certificates are defined in Sec. 2, Table 3.

In general, mechanical joints are not approved for application in high pressure fuel injection systems of combustion engines.

Nominal working pressure PN^{1,2}

Tube OD		PN (bar)
mm	inch	
6	1/4	600
8	5/16	600
10	3/8	600
12	1/2	490
16	5/8	350
20	3/4	350
25	1	250
30	1 1/4	250
38	1 1/2	250

Notes

¹ Individual nominal pressures of the fittings in accordance with Volz Stainless Steel Catalogue “JIC Flared Tube Fittings” edition 04/2024 has to be observed.

² Max working pressure depends on pipe material and wall thickness.

At elevated temperatures, the maximum pressures are to be reduced as follows:

Temperature, [°C]	20	50	100	150	200	250
Pressure reduction [-]	1	0.95	0.85	0,77	0,71	0.67

- see DNV CP-0185 – Sec. 2 – Table 1

Temperature range

Material	Temperature range
Stainless steel	-55°C up to +400°C
FPM	-25°C up to +200°C
NBR	-30°C up to +100°C
PTFE	-60°C up to +200°C

Temperature range example

Tube fittings with FPM sealing	Media: -25°C up to +200°C
--------------------------------	---------------------------

Type Approval documentation

Tests carried out

DNV CP-0185

Repeated Assembly Test, Tightness Test, Burst Pressure Test, Pull-out Test, Vacuum Test, Combined Impulse and Vibration Test, Fire resistance Tests (wet condition).

Assembling

For the assembling and installation, the instructions specified in VOLZ Catalogue “JIC Flared Tube Fittings” are to be observed.

This certificate is valid for pipe connections using Volz pipe couplings and tube flared according to ISO 8434-2 / SAE J 514.

Marking of product

For traceability to this type approval, each coupling is at least to be marked with:

Element	Marking scope	Example
Connector body	Manufacturer sign	☒ or V71
Nut	Manufacturer sign	☒ or V71
Sleeve	Manufacturer sign	☒ or V71



Job ID: **262.1-007489-7**
Certificate no.: **TAP000003E**
Revision No: **2**

Periodical assessment

For retention of the Type Approval, a DNV 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 DNV-CP-0338, Sec.4.

The certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE