

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Quick Connecting Coupling for LNG / LPG**with type designation(s)
ASK-TT and ASK-TTi Dry Break couplings

Issued to

ARTA GmbH & Co. KG
Diez, Rheinland-Pfalz, Germanyis found to comply with
DNV GL rules for classification – Ships Pt.5 Ch.7 Liquefied gas tankers**Application :****Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.****Max. working temp.:** -160°C to +50°C**Max. working press.:** 10 bar**Sizes:** 1" - 2" - 3" - 4" - 6"Issued at **Høvik** on **2020-01-08**This Certificate is valid until **2024-09-29**.DNV GL local station: **Netherlands FIS**for **DNV GL**Approval Engineer: **Adel Samiei**

Zeinab Sharifi
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.



Job Id: **262.1-029665-1**
Certificate No: **TAP00001XH**

Product description

Dry Break coupling tested according to ISO16904:2016, minimum body thickness according to ASME B16.34, made of 1.4401/1.4404 (316/316L) stainless steel with flanged connections (according to EN1092 (PN25) or ANSI B16.5 (Class 150 and 300)).

Sizes and pressure classes covered by this certificate:

Type	Size	Pressure class of the flange	Type	Size	Pressure class of the flange
Male	1"	ANSI 150 & 300	Female	1"	ANSI 150 & 300 / PN25
Male	2"	ANSI 150 & 300	Female	2"	PN25
Male	3"	ANSI 150 & 300	Female	3"	ANSI 150 & 300 / PN25
Male	4"	ANSI 150	Female	4"	ANSI 150 & 300 / PN25
Male	6"	ANSI 150	Female	6"	ANSI 150 & 300 / PN25

Application/Limitation

Components covered by this certificate may be used for transfer of LNG/LPG into tanks within limits of maximum working pressure and temperature range mentioned on the front page.

Components covered by this certificate shall not be installed where fire safe applications are required.

The couplings shall not be installed in systems where vibration may occur.

Production testing

Each coupling is before delivery to be hydraulic pressure tested to 1.5 times the maximum working pressure. In addition, seat leakage test at a pressure equal to 1.1 times the maximum working pressure on each component shall be performed before each delivery.

Furthermore cryogenic testing consisting of functionality and leakage verification for a minimum of 10% of each type and size of couplings intended to be used at a working temperature below -55°C have to be carried out.

Certification

Material of body shall be delivered with a material certificate issued by Society (VL) from an approved manufacturer of DNV GL, when the design temperature is less than -55°C and size is greater than 4" (just for size 6"). Otherwise material certificate issued by manufacturer (W) from an approved manufacturer of DNV GL would be acceptable.

Certification of product shall follow the requirement of the ship class notation.

In any case, whenever the product is covered by the classification, as minimum, each coupling shall be delivered with a product certificate when the minimum design temperature is less than -55°C or for sizes 4" or 6".

Type Approval documentation

Tests carried out

Hydrostatic pressure test, Pneumatic pressure test, Strength test, Emergency leakage test, Release performances test

Marking of product

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

- Manufacturer's name
- Maximum working pressure
- 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 approval are complied with. Reference is made to DNVGL-CP-0338.