



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAP00000RW**  
Revision No:  
**1**

## This is to certify:

That the Couplings for LNG/LPG

with type designation(s)  
**Cryogenic Break-away Couplings (CBC), -196°C to +80°C**

Issued to  
**Mann Teknik AB**  
**MARIESTAD, Sweden**

is found to comply with  
**DNV 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.

Type:	Max. working temp.:	Max. working press.:	Sizes:
Cryogenic Break-away Couplings (CBC)	-196°C to +80°C	10 bar / 16 bar / 25 bar	DN 25/50/65/80/100
	-196°C to +80°C	10 bar / 16 bar	150

Issued at **Høvik** on **2023-02-24**

This Certificate is valid until **2027-01-12**.

for **DNV**

DNV local station: **Sweden Fleet In Service**

Approval Engineer: **Jane Lozanov**

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**Bosman van der Merwe**  
**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.

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

Cryogenic Break-Away Coupling

Flange Connection : Flange EN 1092 (PN10/PN16/PN25/PN40) , ANSI B16.5 (Class 150)  
Material of housing and check valve : 1.4404 EN 10272 – 1.4401+AT  
Material of spring : 1.4401 EN 10270

## 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 may be installed where fire safe applications are required.

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

The couplings shall always be assembled with tubing of correct temper and tolerances as recommended by the manufacturer.

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

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.

In addition, 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.

Products covered by this certificate shall be delivered with a product certificate when the minimum design temperature is less than -55°C or for DN150.

## Type Approval documentation

### Tests carried out

Tightness test, functionality test, burst test, fire 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 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 DNV-CP-0338.