

# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-13799

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

with type designation(s)  
**BITE TYPE COMPRESSION TUBE FITTING**

Manufactured by  
**BMT Co., Ltd.**  
Kyungnam, Republic of Korea


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

### Application

The couplings may be used in the following systems: Hydraulic, fuel oil (not high pressure fuel oil injection), lubrication oil, compressed air, steam and condensate, sanitary systems, fresh and sea water cooling.

Temperature range:	-55 °C to + 400 °C (see cert.)
Max. working press.:	Depending on size, see certificate.
Sizes:	See certificate


Høvik, 2011-04-04  
for Det Norske Veritas AS

  
Marianne Spæren  
Head of Section



DNV local office:  
Pusan

This Certificate is valid until  
2014-12-31

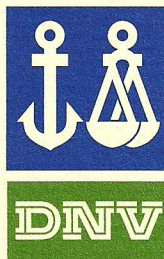
  
Øyvind Skåra  
Surveyor

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-13799  
File No.: 792.21  
Job Id.: 262.1-011527-1

## Product description

Bite type tube fittings for DIN2353 LL, L and S series

Materials:

Stainless steel SUS316, ASTM A276 and JIS G4303

## Application/Limitation

Maximum working pressure and sizes:

Series	Tube O.D [mm]	Working pressure [bar]
LL	4	100
	6	
	8	
	10	
	12	
L	6	250
	8	
	10	
	12	
	15	
	18	160
	22	
	28	100
	35	
	42	
S	6	630
	8	
	10	
	12	
	14	
	16	400
	20	
	25	
	30	315
	38	

For couplings at elevated temperatures, the maximum working pressure has to be reduced with the following factors:

Temp.	-55 °C to 20 °C	50 °C	100 °C	150 °C	200 °C	250 °C	300 °C	350 °C	400 °C
Stainless Steel	1	0,95	0,85	0,77	0,71	0,67	0,63	0,6	0,58

The wall thickness and 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 on tubing with Rockwell Hardness HRC ≤ 80.

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

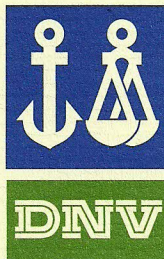
## Type Approval documentation

Manufacturer's product catalogue BMT Co., Ltd DIN2353

Manufacturer's drawings:

Dwg No	Date	Dwg No	Date	Dwg No	Date	Dwg No	Date
DU-06L	05-05-22	DU-06S	05-05-23	DMC-06L-2N	05-08-03	DMC-06S-4N	05-08-08
DUT-06L	05-08-11	DUT-06S	05-08-11	DN-06L	05-07-02	DN-06S	05-05-23
DS-06L	05-05-23	DS-06S	05-05-23	DME-06S-4R	05-08-13	DME-06-2R	05-08-13





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DUE-06L	05-08-09	DUE-06S	05-08-09
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**Manufacturer's test reports:**

BTR-D060613-01/02/03/04/05/06 dated 2006-06-14

BTR-D060327-03/06 dated 2006-03-27

BTR-D060912-01 dated 2006-09-12

DNV retention survey report dated 2011-03-23

Product test report No.: BTR-110323-02 witnessed by DNV

**Tests carried out**

Leakage test, repeated assembly test, burst pressure test, pull-out test, vibration test and pressure pulsation test.

**Marking of product**

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

- Manufacturer's name:
- Type designation
- Size

**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 witness burst testing of samples (from each pressure series) of couplings selected at random from stock or from the running production as a part of this survey.