



DET NORSKE VERITAS

TYPE EXAMINATION CERTIFICATE

CERTIFICATE NO. P-13981
This Certificate consists of 3 pages


This is to certify that the
Pipe System with Couplings
with type designation(s)
KaMOS Leak Indicator

Manufactured by
Karmsund Maritime Offshore Supply AS
KOPERVIK, Norway

is found to comply with
ASME B16.5, Pipe Flanges and Flanged Fittings, 2009

Application
May be used as sealing in combination with leak detection and testing of standard ASME 16.5-B flanges. Design limitations are given by ASME B16.5 for the considered flange rating.


Place and date
Høvik, 2011-12-09
for DET NORSKE VERITAS AS


Morten Bentzon
Head of Section



Local Office
Haugesund

This Certificate is valid until
2015-12-31


Maxat Tleshev
Surveyor

Notice: 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 Examination Certificate and not to the approval of equipment/systems installed.

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Cert. No.: P-13981
File No.: 791.10
Project ID: 262.1-003480

Product description

The Karmsund Maritime Offshore supply (KaMOS) patented Ring Type Joint (RTJ) provides sealing in combination with leak detection and testing of standard ASME 16.5-B flanges. The KaMOS RTJ enables leak monitoring/testing of the standard ASME 16.5-B flanges locally within each flange, either before the pressurization of the complete pipe with the flange connection or alternatively as leak indicator during operation.

Two alternative leak indicator methods are offered:

- The void above and below RTJ in seal the groove of the flange is pressurised through test port through the flange. The pressurised volume is isolated and the pressure monitored by a pressure gauge. Leak is identified by drop in pressure.
- The void above and below RTJ in seal the groove of the flange is pressurised through test port through the RTJ. The test port consists of a pipe connected to the RTJ, located within the raised face gap between the two flange halves. The test port is connected to a pressure supply and a leak indicator. The leak indicator consists of a piston which will be activated in case of leak.

Application/Limitation

The KaMOS RTJ uses standard “ANSI 16.20” RTJ. The test ports either through the standard ASME 16.5-B flange or into the RTJ itself causes only local recesses not affecting the structural capacity of neither the flange nor the RTJ. The indicator piston equipment to be connected directly to the RTJ has a design pressure of 200 bar.

Type Approval documentation

- Letter from DNV Haugesund, ref. HGS-0406/jave dated 16. April 1999, with:
 - DNV survey report, ref. “jave”, Ord. No, 990113, dated 16.04.99.
 - Prototype test for KaMOS patented ring joint
 - Material certificates
 - Strength calculations
- Statoil FOU report 92013 “Lekkasjetesting av flenser, Laboratorietest”
- Statoil FOU report GFT 94023 “Lekkasjetesting for flenser med ring joints”
- SINTEF report STF20 F92053 “Vurdering av ny lekkasjemetode for flenser med linsetetning (“RingJoints”)
- Kongeriket Norge patentbrev 175832 “Anordning for testing av flensforbindelser”



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Tests carried out

- DNV survey report, dated 2011-12-05.
- Statoil FOU report 92013 “Lekkasjetesting av flenser, Laboratorietest”

Marking of product

Not Applicable – Type examination covers the methodology applied.

Certificate retention survey

For retention of the type examination, a DNV surveyor shall perform a survey every 2nd year and before expiry date of this certificate to verify that the type examination is complied with.

This certificate replaces previous Type Approval Certificate No. P-12539 dated 2007-08-10.

END OF CERTIFICATE