



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. M-11259
This Certificate consists of 2 pages

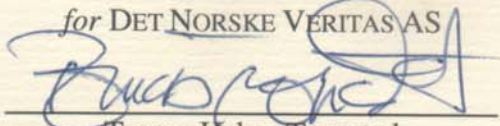
This is to certify that the
Elastic Couplings
with type designation
ROTEX

Manufactured by
KTR Kupplungstechnik GmbH
RHEINE, Germany

is found to comply with
Det Norske Veritas' Rules for Classification of Ships/High Speed and Light Craft

Application
The couplings are approved for auxiliary purpose not including reciprocating machinery as diesel engine or piston compressor, and with rating/technical data according to ROTEX company catalogue edition 2009 chapter ROTEX.

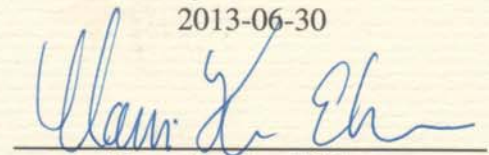
Place and date
Høvik, 2009-08-06
for DET NORSKE VERITAS AS


Tomas Heber Tronstad
Head of Section



Local Office
DNV Essen

This Certificate is valid until
2013-06-30


Hans-Kristian Eriksen
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 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.



Cert. No.: M-11259
File No.: 714.30
Case No.: 262.1-007890

Product description

Flexible rubber coupling

Application/Limitation

Production tolerance on torsional stiffness: $\pm 20\%$
Technical data according to Technical Data , page 25 of catalogue edition 2009
Permissible power loss P_{KW} given in the catalogue is valid for ambient temperature $30^{\circ} C$.
At higher ambient temperature a linear decrease to 0 at $100^{\circ} C$ should be used.

Coupling hub material to be either nodular cast iron or steel.

Type Approval documentation

ROTEX company catalogue edition 2009 chapter ROTEX.

Tests carried out

Tests for coupling size 125:
Versuch Nr. 90200017-027, -024, -004, - 005, - 011, and -014

Tests for coupling size 160:
Versuch Nr. 90200017-051, -061 and -062

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification.

Certificate retention survey

For retention of the Type Approval, DNV surveyor shall perform a survey every second year and before expiry date of this certificate to verify that the conditions of the type approval are complied with.

Other conditions

DNV product certificate is not required for power ratings up to 500 kW or rated torque less than 5 kNm for auxiliary duty where torsional vibration calculations is not required.

The type approval does not cover connection to external shaft.
END OF CERTIFICATE