Approval Certificate

This is to certify, that the undernoted company has been granted the approval of

Insitu Crankshaft Annealing

This approval is based on a respective procedure test.

Certificate No.	12-24250 HH
GL reference	12-058711
Company	Metalock Engineering Germany GmbH Gutenbergring 64 DE-22848 Norderstedt
Description	In situ crankshaft annealing of medium speed 4-stroke engines with installed crankshaft
Procedure/Details	The procedure has been developed in order to reduce the hardness of a damaged/heat affected crankpin on side with installed crankshaft. Annealing treatment corresponds and described in the Metalock Engineering Germany GmbH work procedure "Heat treatment process description". Further prerequisite for permission of complete crankshaft repair is a succesfull surface crack test and true running test, dimension, surface roughness and crank web deflection confirmation
Range of Application	This procedure is limited to crankpins of one piece forged crankshafts made of tempering steel of medium speed 4-stroke engines.
Remarks	Every repair case remains a single case decision by Germansicher Lloyd. Every repair case requires a detailed repair procedure which has to be submitted to Germanischer Lloyd Head Office for approval prior the beginning of the repair.
Valid until	The approval is valid until cancelled, in writing, by the society or the company. Cancellation can be given by the society with immediate effect, if the conditions of the approval are no longer adhered to.
Attachment	Approval-Letter with reference 12-058711

Germanischer Lloyd
Hamburg, 2012-08-07

i.V. Tim de Bruyne-Ludwig

i.A. Matthias Meyer

Place of performance and jurisdiction is Hamburg.
The latest edition of the General Terms and Conditions of Germanischer Lloyd is applicable. German law applies.