

Approval Certificate

This is to certify that company Metalock Engineering Germany GmbH has been granted the approval of

Crankshaft Straightening

This approval is based on a respective procedure test. The procedure test has been documented by the Metalock Engineering Germany GmbH document "Technical Report No. 12/2016 – Crankshaft repair by means of cold straightening".

DNVGL Project No.	10345488
DNVGL Reference	NPS Doc No.22339833
Company	Metalock Engineering Germany GmbH Gutenbergring 64 DE-22848 Norderstedt
Description	Straightening of crankshafts of medium speed 4-stroke engines
Procedure/Details	The procedure has been developed in order to reduce true run deviations mainly caused by a damaged/heat affected crankpin. Cold straightening described in the Metalock Engineering Germany GmbH report No. 12/2016 - Crankshaft repair by means of cold straightening.
Range of Application	This procedure is limited to one piece forged crankshafts made of tempering steel of medium speed 4-stroke engines.
Remarks	Every repair case remains a single case evaluation by DNVGL. True run measurement report to be submitted to DNVGL for review prior the beginning of the straightening process.
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	Statement by Ruhruniversität Bochum, Institut für Werkstoffe, Prof. Dr.-Ing. M. Pohl. Statement by DNVGL SE, Machinery & Systems, Hamburg

DNVGL SE
Hamburg, 2017-06-08



Meyer