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# DET NORSKE VERITAS

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## MANUFACTURING SURVEY

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### ARRANGEMENT

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MSA NO. R-3397  
The MSA consists of 5 pages

*Between*

**Ellwood Crankshaft and Machine Co.**

Hermitage, PA  
United States of America

*and*

**Det Norske Veritas AS**

MAHWAH OFFICE

*Extent*

This Manufacturing Survey Arrangement (MSA) is applicable for testing and inspection of Finish Machined Crankshafts in accordance with the requirements of DNV Rules for Classification of Ships, as stated herein.

The MSA implies that the Manufacturer is authorised to perform the testing and inspection without the attendance of the Surveyor and to prepare the Crankshaft Certificates which will be endorsed by DNV.

*Validity*

The MSA is valid until 2015-12-31  
The MSA will, however, be invalid if the Manufacturer's Quality Management System Certificate No. 30960 has expired or is cancelled.

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.



# DET NORSKE VERITAS

## APPROVAL OF MANUFACTURER

### CERTIFICATE

CERTIFICATE NO. AMM-5401

*This is to certify that*

**Ellwood National Forge**  
Irvine, PA 16329, United States

*is an approved manufacturer of*  
**Steel Forgings**

*in accordance with*  
Det Norske Veritas' Rules for Classification Pt. 2

*and the following particulars:*

Steel types	Carbon and carbon-manganese, Alloy
Max. weight	5 000 kg
Remarks	Including solid forged continuous grain flow crankshafts

*Place and date*  
Høvik, 2011-11-21  
for DET NORSKE VERITAS AS

  
Astrid Holmsen Kjesbu  
Head of Section



*Local Office*  
DNV New York

*This Certificate is valid until*  
2015-12-31

  
Sastry Yagnanna Kandukuri  
Surveyor

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 the 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.