



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00001CM
Revision No:
3

This is to certify:

That

Wildauer Schmiede- und Kurbelwellentechnik GmbH
Schmiedestraße, 15745 Wildau,
Germany

is an approved manufacturer of
Steel Forgings

in accordance with

DNV rules for classification – Ships
DNV-OS-B101 – Metallic materials
DNV class programme – DNV-CP-0247 Steel forgings

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for crankshafts Stainless steel forgings
Steel type(s)	Carbon, Carbon-Manganese, Alloy, Martensitic Stainless
Forging method	Open die, closed die, continuous grain flow (CGF)
Max. weight	See page 2
Heat treatment condition	See page 2
Additional approval conditions	See page 2

Manufacturer(s) approved by this certificate is/are accepted to deliver according to DNV GL, DNV and GL rules. Materials to be applied to DNV classed object shall fulfill the material requirements in the applicable DNV class rules.

Issued at **Hamburg** on **2023-06-22**

for **DNV**

This Certificate is valid until **2026-05-31**.

DNV local unit: **Magdeburg**

Approval Engineer: **Stefan Röhr**

Thorsten Lohmann
Head of Section

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Page 1 of 2

Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ⁴⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	NV F400UW, NV F440UW, NV F480UW, NV F520UW, NV F560UW, NV F600UW	OD, CD	5 000	N, NT, QT
Alloy	NV F550AW, NV F620AW, NV F650AW	OD, CD	5 000	N, NT, QT

Forgings for shafting and machinery

Steel type	Grade ⁴⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	NV F400U, NV F440U, NV F480U, NV F520U, NV F560U, NV F600U, NV F640U, NV F680U, NV F720U, NV F760U	OD, CD	5 000	N, NT, QT
Alloy	NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A	OD, CD	5 000	N, NT, QT

Forgings for crankshafts

Steel type / grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Alloy	CFG	5 000	QT

Stainless steel forgings

Steel type / grade ⁵⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Martensitic Stainless	OD, CD	5 000	QT

Remarks:

- 1) OD: Open die forging; CD: Closed die forging; CFG: continuous grain flow forging according to the TR-method
- 2) QT: Quenched and tempered; N: Normalised; NT: Normalised and tempered
- 3) Steel grades acc. to customer spec. and DNV approved drawings
- 4) Including equivalent grades in acc. to other standards
- 5) Stainless steel forgings shall be in accordance with recognized standards, e.g. EN 10222, ASTM A473/A965/A1049 and JIS G 3214. Recognition of other standards is subject to submission to the Society for evaluation

Additional approval conditions:

Test piece sampling for connecting rods according to document 137003-07/Poh dated on 2007-11-20