



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM000003Y
Revision No:
4

This is to certify:

That

Componenta Manufacturing Oy / Takomo
Onkapannu 4, 40700 Jyväskylä,
Finland

is an approved manufacturer of
Steel Forgings

in accordance with
DNV rules for classification – Ships

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for gearing
Steel type	Alloy
Forging method	Open die forging
Max. weight	5 000 kg
Heat treatment condition	See page 2
Additional approval conditions	Including forgings of “CrNiMo steels with approved process” for gears, see details on 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 **2022-06-24**

for **DNV**

This Certificate is valid until **2025-06-30**.

DNV local station: **Tampere**

Approval Engineer: **Stefan Röhr**

Thorsten Lohmann
Head of Section

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Form code: AM 311

Revision: 2021-03

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Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Alloy	NV F550AW, NV F600AW, NV F650AW	OD	5 000	NT, QT (+FP)

Forgings for shafting and machinery

Forgings for gearing

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Alloy	NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A	OD	5 000	NT, QT (+FP)

Remarks:

- 1) OD: Open die forging
- 2) QT: Quenched and tempered
NT: Normalized and tempered
+FP: Ferrite-Pearlite treatment
- 3) Incl. equivalent grades in acc. to other standards

Additional approval conditions

Separate forgings forged according to a specially approved process, are qualified as "CrNiMo steels with approved process" with respect to fatigue endurance limits for gears. Ref. DNV Classification Notes No. 41.2, and ref. DNV rules Pt. 4, Ch. 2, Sec. 3, and Pt. 4, Ch. 4, Sec. 2.