



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00002H8
Revision No:
3

This is to certify:

That

Hammerschmiede Jäckel Essen GmbH
Ripshorster Strasse 460,
45357 Essen,
Germany

is an approved manufacturer of
Steel Forgings

in accordance with
DNV rules for classification – Ships
DNV-OS-B101 – Metallic materials

and the following particulars:

Application area	Stainless steel forgings
Steel type	Austenitic stainless, Ferritic-austenitic (duplex) stainless, Nickel-base alloys, see page 2
Forging method	Open die forging / closed die forging
Max. weight	See page 2
Max. diameter / section	See page 2
Heat treatment condition	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 **2022-09-22**

for **DNV**

This Certificate is valid until **2025-02-25**.

DNV local station: **Essen**

Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



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Particulars of the approval

Stainless steel forgings

Steel type ³⁾	Grade	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Austenitic stainless	CrNiMo	OD, CD	500	SHT
Ferritic-austenitic (duplex) stainless	22Cr-duplex	OD, CD	500	SHT
	25Cr-duplex			

Nickel base forgings

Alloy type ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Ni-base alloy	OD, CD	500	SHT

Remarks:

- 1) OD: Open die forging
CD: Closed die forging
- 2) SHT: Solution Heat Treated (Solution Annealing)
- 3) Stainless steel forgings shall be in accordance with recognized standards, e.g. EN 10222, ASTM A473, ASTM A965, ASTM A1049 and JIS G 3214, provided that supplementary requirements contained herein are also met. Recognition of other standards is subject to submission to the Society for evaluation.
- 4) Ni-base alloys as per recognized standards, e.g. ASTM B462, ASTM B564, ASME SB462, ASME SB564, DIN 17742, DIN 17743, DIN 17744, DIN 17752.
- 5) Possible application and certification of any material to classed object is subject to case by case approval