

# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00002H8**  
Revision No:  
**4**

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**  
**DNV class programme – DNV-CP-0247 Steel forgings**

and the following particulars:

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

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 **2025-01-09**

This Certificate is valid until **2028-02-25**.

DNV local unit: **Essen**

Approval Engineer: **Christian Wildhagen**



for **DNV**

This document has been digitally signed and will  
therefore not have handwritten signature

Stefan Röhr

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.

## Particulars of the approval

### Stainless steel forgings

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

### Nickel base forgings

Alloy type <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
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