



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00000TH**  
Revision No:  
**2**

This is to certify:

That

**Gesens Schmiede Schneider GmbH**  
**Ulmer Straße 112, 73431 Aalen,**  
**Germany**

is an approved manufacturer of  
**Steel Forgings**

in accordance with  
**DNV rules for classification – Ships**

and the following particulars:

<b>Application area</b>	<b>Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for gearing Forgings for boilers, pressure vessels and piping systems</b>
<b>Steel type</b>	<b>Carbon and carbon-manganese, Alloy, Austenitic stainless, Martensitic stainless</b>
<b>Forging method</b>	<b>Open die forging/closed die forging</b>
<b>Max. weight</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 **2022-05-19**

for **DNV**

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

DNV local station: **Essen**

Approval Engineer: **Stefan Röhr**

**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.



## Particulars of the approval

### Forgings for hull structures and equipment

Steel Type	Grade <sup>4)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F400UW, NV F440UW, NV F480UW, NV F520UW, NV F560UW, NV F600UW	OD, CD	120	N, NT, QT
Alloy	NV F550AW, NV F620AW, NV F650AW	OD, CD	120	N, NT, QT

### Forgings for shafting and machinery Forgings for gearing

Steel type	Grade <sup>4)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
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	120	N, NT, QT
Alloy	NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A	OD, CD	120	N, NT, QT

### Forgings for boilers, pressure vessels and piping systems

Steel type	Grade <sup>4)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F450H	OD, CD	120	N, NT, QT
	NV F490H	OD, CD	120	N, NT, QT
Alloy	NV F0.5Mo	OD, CD	120	NT, QT
	NV F1Cr0.5Mo	OD, CD	120	NT, QT
	NV F2.25Cr1MoN	OD, CD	120	N
	NV F2.25Cr1MoQT	OD, CD	120	QT

**Stainless steel forgings**

Steel type / grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
Austenitic stainless	OD, CD	120	SHT
Martensitic stainless	OD, CD	120	QT

Remarks:

- 1) OD: Open die forging; CD: Closed die forging
- 2) QT: Quenched and tempered; N: Normalised; NT: Normalised and tempered  
 N+QT: Normalized followed by quenched and tempered;  
 SHT: Solution Heat Treated (Solution Annealing)
- 3) 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
- 4) Including equivalent grades to other standards