



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00001K9**  
Revision No:  
**2**

This is to certify:

That

**VITKOVICE HAMMERING, a.s.**  
Ruská 2887/101, 703 00, Ostrava - Vítkovice,  
Czech Republic

is an approved manufacturer of  
**Steel Forgings**

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

and the following particulars:

<b>Application area</b>	<b>Forgings for hull structures and equipment, Forgings for shafting and machinery, Bolts and nuts</b>
<b>Steel type</b>	<b>Carbon and carbon-manganese, Alloy, See page 2</b>
<b>Forging method</b>	<b>Open die forging</b>
<b>Max. weight</b>	<b>See page 2</b>
<b>Max. diameter</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 **2023-09-14**

for **DNV**

This Certificate is valid until **2026-06-30**.

DNV local unit: **Prague CMC**

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.



## Particulars of the approval

### Forgings for hull structures and equipment

#### Bolts and nuts

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F400UW, NV F440UW, NV F480UW, NV F520UW, NV F560UW, NV F600UW	OD	8 000	500	N, NT, QT
Alloy	NV F550AW, NV F600AW, NV F650AW	OD	8 000	500	QT

### Forgings for shafting and machinery

#### Bolts and nuts

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Max. diameter [mm]	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	8 000	500	N, NT, QT
Alloy	NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A	OD	8 000	500	QT

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

#### Bolts and nuts

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F450H, NV F490H	OD	8 000	500	N, NT, QT
Alloy	NV F0.5Mo, NV F1Cr0.5Mo	OD	8 000	500	NT, QT
	NV F2.25Cr1Mo	OD	8 000	500	N, QT

#### Remarks:

- <sup>1)</sup> OD: Open die forging
- <sup>2)</sup> QT: Quenched and tempered  
 N: Normalised  
 NT: Normalised and tempered
- <sup>3)</sup> Incl. equivalent grades in acc. to other standards