

# APPROVAL OF MANUFACTURER CERTIFICATE

**This is to certify:**

That

**König + Co. GmbH**  
**Obere Industriestraße 24-26, 57250 Netphen,**  
**Germany**is an approved manufacturer of  
**Pressed Parts**in accordance with  
**DNV GL rules for classification – Ships**

and the following particulars:

<b>Application area</b>	<b>Pressed parts (dished and conical heads)</b>
<b>Steel type</b>	<b>Carbon and Carbon-Manganese</b> <b>Austenitic stainless</b> <b>Austenitic-ferritic (duplex) stainless</b> <b>Nickel alloy</b>
<b>Manufacturing method</b>	<b>Hot and cold forming</b>
<b>Max. thickness</b>	<b>See page 2</b>
<b>Heat treatment condition</b>	<b>See page 2</b>
<b>Additional approval conditions</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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2020-01-16**for **DNV GL**This Certificate is valid until **2022-08-31**.DNV GL local station: **Essen**Approval Engineer: **Christian Wildhagen**

---

**Thorsten Lohmann**  
**Head of Section**

Job Id: **263.11-006642-2**  
 Certificate No: **AMMM0000100**  
 Revision No: **2**

## Particulars of the approval

### Pressed parts

Grade <sup>3)</sup>	Manufacturing method <sup>1)</sup>	Max. thickness [mm]	Diameter [mm]	Delivery condition <sup>2)</sup>
Steel acc. to EN 10025-2				
S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2, S355K2	CF	90	8 000	N
	HF	120	2 000	N
Steel acc. to EN 10025-3				
S275N, S275NL, S355N, S355NL	CF	90	8 000	N
	HF	120	2 000	N
Steel acc. to EN 10028-2				
P235GH, P265GH, P295GH, P355GH, 16Mo	CF	90	8 000	N
	HF	120	2 000	N
Steel acc. to EN 10028-3				
P275NH, P275NL1, P275NL2, P355N, P355NL1, P355NL2,	CF	90	8 000	N
	HF	120	2 000	N
Austenitic stainless steel acc. EN 10028-7				
1.4301, 1.4306, 1.4307, 1.4311, 1.4401, 1.4404, 1.4435, 1.4436, 1.4541, 1.4550, 1.4571	CF	90	8 000	SHT
	HF	120	2 000	SHT
Austenitic-ferritic (duplex) stainless steel acc. EN 10028-7				
1.4462	CF	35	8 000	SHT
	HF	60	2 000	SHT
Nickel alloy steel acc. EN 10028-4				
X8Ni9	CF	35	8 000	QT
	HF	50	2 000	QT

#### Remarks:

- 1) CF: cold forming; HF: hot formed
- 2) N: Normalized; SHT: Solution Heat Treated (solution annealing); QT: Quenched and tempered
- 3) Incl. equivalent grades in acc. to other standards (e.g. 304 LN acc. ASTM SA-240, Gr.60 acc. SA 516)

#### Special remarks:

- Pre-material supplier: manufacturers approved by DNVGL for the applicable grades of semi-finished products
- Welding is permitted according to procedures approved by DNVGL