

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM0000004
Revision No:
1

This is to certify:

That

Ringmill S.p.A.
Via Valeriana 103,
23015 Nuova Olonio di Dubino SO,
Italy

is an approved manufacturer of
Steel Forgings

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

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for gearing
Steel type	Stainless steel forgings Carbon and carbon-manganese, Alloy, Austenitic stainless, Ferritic-austenitic (duplex) stainless
Forging method	See page 2 Open die forging / ring rolling, See page 2
Max. weight	40 000 kg
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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2019-05-22**

for **DNV GL**

This Certificate is valid until **2022-06-21.**

DNV GL local station: **Milan**

Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section



Job Id: **263.11-003081-3**
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Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD, RR	40 000	N, NT, QT
Alloy	VL F550AW, VL F600AW, VL F650AW	OD, RR	40 000	QT

Forgings for shafting and machinery

Forgings for gearing

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	VL F400U, VL F440U, VL F480U, VL F520U, VL F560U, VL F600U, VL F640U, VL F680U, VL F720U, VL F760U	OD, RR	40 000	N, NT, QT
Alloy	VL F600A, VL F700A, VL F800A, VL F900A, VL F1000A, VL F1100A	OD, RR	40 000	QT

Stainless steel forgings

Steel type ⁴⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Austenitic	OD, RR	40 000	SHT
22 Cr Duplex	OD, RR	40 000	SHT
25 Cr Duplex	OD, RR	40 000	SHT

Remarks:

- 1) OD: Open die forging
RR: Ring Rolling
- 2) QT: Quenched and tempered
N: Normalized
NT: Normalized and tempered
SHT: Solution Heat Treated (Solution Annealing)
- 3) Incl. equivalent grades in acc. to other standards
- 4) Stainless steel forgings shall be in accordance with recognized standards, e.g. EN 10222, ASTM A473/A965/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.