



**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF
MATERIALS
No. FAB025221XG**

This is to certify that the manufacture of the product identified below is in compliance with the applicable requirements of the RINA Rules for the Approval of Manufacturers of Materials.

<i>Description</i>	Steel forgings
<i>Type</i>	crankshafts for ship-engines, power-stations, pumps, compressors and seamless rolled rings
<i>Applicant</i>	Schmiedewerke Gröditz GmbH Riesaer Strasse 1 01609 Groeditz GERMANY
<i>Reference standards</i>	RINA Rules for the approval of manufacturers of materials

Issued in **RINA Hamburg Marine** on **February 23, 2021**. *This Certificate is valid until* **February 16, 2026**



Dr. H. Brunk

**RINA Services S.p.A.
Henning Brunk**

This certificate consists of this page and 1 enclosure



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Enclosure - Page 1 of 1

**crankshafts for ship-engines power-stations
pumps, compressors and seamless rolled rings**

Product:	crankshafts for ship-engines, power-stations, pumps and compressors, seamless rolled rings		
Steel Making:	Electric arc furnace Ingot casting Steel ingots for forgings with a single weight up to 75 tons		
Forging Process:	open die forging, ring rolling		
Forging Weight:	Max. 45 tons		
Grades:			

Material group	Rules	Examples
Steels for quenching and tempering / non-alloy quality and special steels	EN 10083-2 / EN 10250-2 / SEW 550	Ck 35 (1.1181) Ck 45 (1.1191)
Steels for quenching and tempering / alloy special steels	EN 10083-3 / EN 10250-3 / SEW 550	30 CrNiMo 8 (1.6580) 34 CrNiMo 6 (1.6582) 33 NiCrMoV 14-5 (1.6956) 25 CrMo 4 (1.7218) 42 CrMo 4 / 42 CrMoNi 4 (1.7225) 50 CrMo 4 (1.7228) 32 CrMo 12 (1.7361) 30 CrMoV 9 / 31 CrMoV 9 (1.7707)
Nitriding Steels	EN 10085	31 CrMoV 9 (1.8519)

This Manufacturer Approval implies that the Manufacturer is given the opportunity to perform transfer of stamps for open die forgings

General conditions for the approval

-The approval is granted on condition that the RINA Rules for the approval, manufacture, testing and certification of materials are complied with in all respects.

-RINA is to be notified of any change of materials, manufacturing process, quality control routines that may affect the validity of this certificate.

RINA Hamburg Marine
February 23, 2021

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