

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

STI Deutschland GmbH
Mühlackerstraße 10, 75447 Sternenfels,
Germanyis approved in accordance with
DNV GL rules for classification – Ships

and the following particulars:

Process	Reconditioning of surfaces by applying hard chrome plating, electroless nickel plating and grinding
Particulars of the approval	See page 2
Remarks	Approval issued as a voluntary class service

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 **2019-03-06**for **DNV GL**This Certificate is valid until **2022-01-31**.DNV GL local station: **Augsburg**Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section

Particulars of the approval

Process	Max. dimension [mm]
Hard chrome plating	Ø 1200 x 5000 x 12000
Electroless nickel plating	1000 x 1500 x 2500

Products:

- Large-bore engine components for two- and four-stroke engines, e.g. piston crowns, piston skirts, piston rings and valves
- Drilling and pumping equipment for exploration, e.g. drilling shafts, rotors and mud motors

Manufacturing process:

Incoming inspection, pre-treatment process (e.g. degreasing), dimension check, grinding of the surfaces to the nominal size under consideration of the applied hard chrome or nickel plating, abrasive blast cleaning (if necessary), check of dimension, manual grinding and cleaning, hard chrome plating / nickel plating, dimension check, final grinding / machining / polishing to nominal size, non-destructive testing (NDT): dimension inspection, magnetic particle inspection (MT), penetrant testing (PT) and visual inspection (VT), tightness test, microstructural investigation, roughness measurement

Note: renewal of initial approval PZ 2596 HH