



Steering gear of a container ship

Shipbuilding

Kuhn Special Steel stainless steel is supplied in the form of bushes, tubes and rings for use all over the world in all types of ships and for greater demands e.g. Ice Class. Here we work closely with engineering offices, shipyards and consultants on providing advice on materials for particular applications. The aim of this advice is to achieve improvements in the resistance of our products to combat the destructive effects of salt water. Our stainless steel is used for drive shafts, transmission shafts, stern tubes, seals, shaft brackets, rudder spindles and other applications such as manoeuvring systems. Our stainless steel centrifugal casting is used for this in e.g. bow thrusters or transverse thrusters. Kuhn Special Steel supplies products for new builds, repairs and conversions.

In submarines, finished tubes of up to 7 metres long are used as guide shafts for periscopes and aerials. Kuhn Special Steel produces these tubes using ferrite-free, highly corrosion-resistant alloys. Here too, the products are finished ready for installation including welding, deep drilling, turning and honing.



Kuhn shaft covers in steering gear: use in a car transporter

Aerial and periscope shafts for submarine building



Use our core competences!

- Over 45 years' experience in centrifugal casting across the entire range of dimensions up to a diameter of 1,300 mm
- Very great materials skills, especially in the area of corrosion and wear-resistant alloys including customer-specific development
- Comprehensive range of machinery, in particular large lathes, for efficient machining of difficult to work materials



Steering gear with drive



Large shaft

Materials:

Rust-proof and acid-resistant steels:

ferrites and martensites

- Standard alloys
- Soft martensites
- Soft martensites – can be precipitation hardened

Duplex steels

- Lean duplex steel
- Standard duplex steel
- High-carbon duplex steel
- Super duplex steel

Austenites

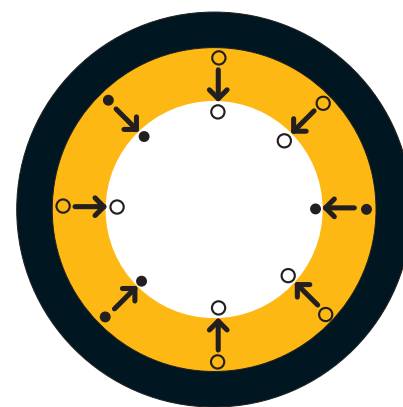
- Standard alloys with and without Mo

Possible size range:

Maximum external diameter 1,100 mm (in exceptional cases up to about 1,300 mm) and 3.3 tonnes cast weight depending on the wall thickness.



Joint rings, large shaft cover and bearing bushes



The centrifugal casting technique

Our core competence is in the centrifugal casting technique with subsequent finishing. We have mastered the application of this production technique for the most varied stainless steels and alloys. The range varies from low-alloy steels to iron-free alloys. We contribute our materials know-how as early as the development phase so as to produce a perfect product at the end.

We manufacture over 70 % of our products as finished products individually and precisely to customers' drawings. And individual parts and small runs represent no problem for us. Moreover we manufacture each one in materials that can be cast reliably with the centrifugal casting technique and we are also happy to manufacture special materials to your particular specifications.

In centrifugal casting, the steel is cast via the axis of rotation into a rotating canister and it solidifies at up to 120 times the acceleration due to gravity. These great rotation forces and the solidification in an inward direction create a particularly dense and pure structure. Impurities and gas inclusions are driven to the surface and can be removed in subsequent processing.

The products manufactured with this technique therefore have outstanding technological properties that are greatly superior in many areas to conventional static casting.

Our varied options for the preparation and finishing of rotationally condensed stainless steel meet our customers' most varied requirements. Whether it's lathes, finishing and polishing machines or our CNC processing centres – our great strength as a specialist in centrifugal casting is also matched in finishing.

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