Replaces:
RN 68-2:2023-06-16

Welded constructions

Housings for type yacht premium

Content

Page

Changes

2025-02-17:
The following changed in comparison to RN 68-2:2023-06-16:

a) updated references
b) Appendix A: Figure 19 for radii design added
c) editorially revised

1 Scope

This factory standard applies along with RN 68-1 to welded housings for gearboxes of the yacht premium type. It contains additional requirements for the condition of all external surfaces (visible surfaces, including welding) and is intended to ensure that the housings meet both the functional and the advanced visual requirements of the yacht premium type.

2 References

The following documents, cited in part or in whole, shall apply for the use of this standard. In the case of dated references, only the referenced edition applies; in the case of undated references, the latest edition of the referenced document (including all amendments) applies. The applicable version of the standards listed below shall apply to all contents not covered by this factory standard.

DIN EN 1792	Welding - Multilingual list of terms for welding and related processes
DIN EN ISO 5817	Welding - Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) - Quality levels for imperfections
DIN EN ISO 17637	Non-destructive testing of welds - Visual testing of fusion-welded joints
DIN EN ISO 12944-4	Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 4: Types of surface and surface preparation
RN 68-1	Welded constructions; Steel housings
RN 79	Colour Coatings

3 Terms and definitions

For the application of this document, the terminology of DIN EN 1792 applies.

4 Requirements

4.1 General surface requirements

The described characteristic values are valid for visual testing of approx. 1 m distance without any tools (except usual glasses).

Please contact REINTJES to implement appropriate remedial actions, if any requirements could not be fulfilled.

a) no tool indentations or impact marks

b) no noticeable tarnish, grooves, unevenness or machining marks

c) smooth, homogeneous surface;
permissible: isolated incompletions with H ≤ 0,5 mm and L ≤ 1,0 mm (max. 2 / area with app. Ø 150 mm, H: maximum depth or height perpendicular to the surface, L: maximum length)

d) surface treatment for visible surfaces:
- preparation level Sa 2 ½ acc. to DIN EN ISO 12944-4
- degree of roughness comparable "middle (G)" or "middle (S)" acc. ISO 8503-1

e) primed according to RN 79

f) flame cuts (bunt-out surfaces) are to be worked up to yacht premium (see pictures 7 and 9)

g) labels of sub suppliers (e.g. rolling mill) have to be removed respectively are only allowed in not visible areas. Allowed are traceability markings (see picture 8)

h) a necessary regrinding with a ‘fine’ grinding wheel, e.g. a notched washer, has to be done large-scale to generate homogeneous transitions

4.2 Welding

a) maximum permissible values for imperfections according to DIN EN ISO 5817, quality level B

b) no slag residues, blowholes, notches, cracks or porosities

c) no visually disturbing flash points, ignition points or welding spatter

d) smooth transition between weld metal and base metal, without undercutting for fillet and butt welds to be machined evenly

e) consistently shaped surface of the weld seam

f) consistent weld seam width over the entire weld seam length

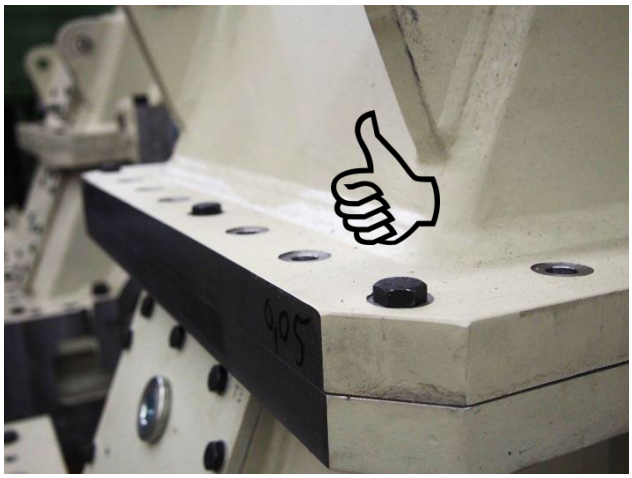
g) complete filling of the prepared weld joint for butt welds

h) visual examination of the finished weld according to DIN EN ISO 17637

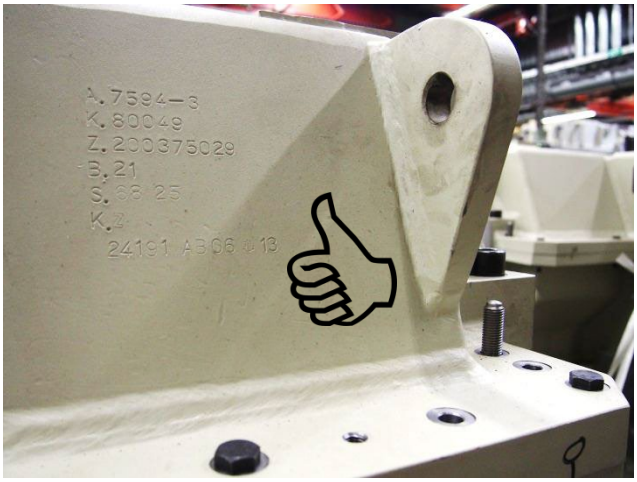
Appendix A (informative) Examples of finalized welded connections

Table 1 Welded connections meeting the requirements

Picture 1 Even welds

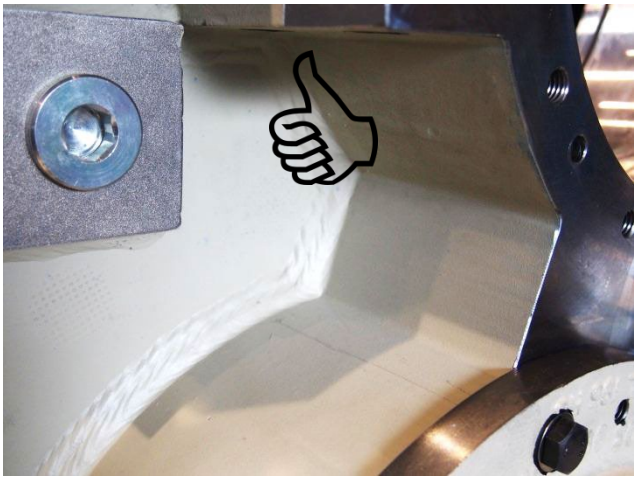


Picture 2 Aligned surfaces, smooth transitions



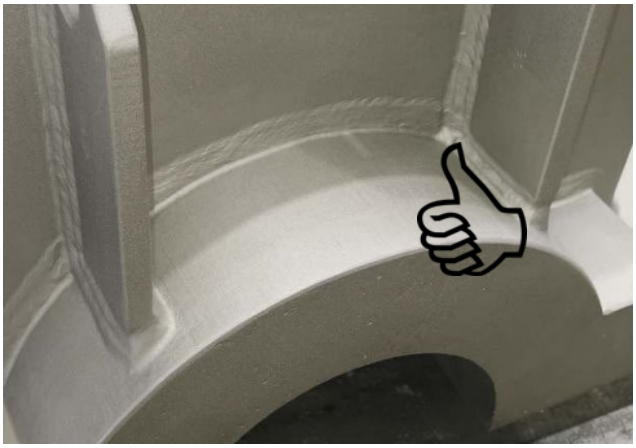
Picture 3 Accurately aligned markings

Picture 4 Ribbing and hub evenly connected



Picture 5 Even weld

Picture 6 Even transitions

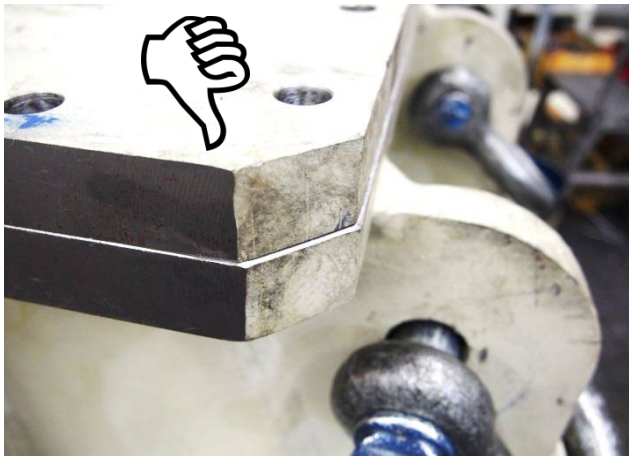


Picture 7 Processed flame cuts

Picture 8 Marking for traceability

Table 2 Welded connections not meeting the requirements

Picture 9 Noticeable grooves / machining marks / flame cut surfaces



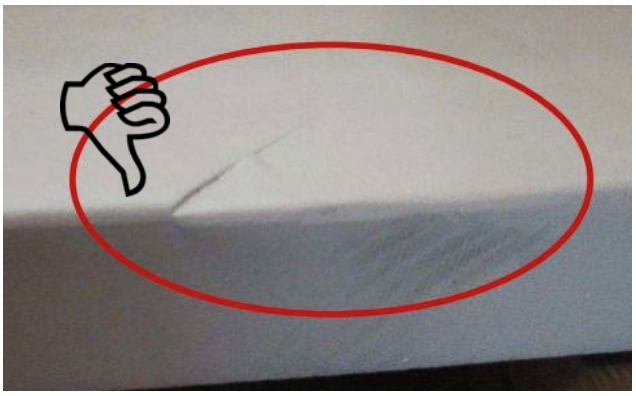
Picture 10 Misaligned surfaces

Picture 11 Irregular weld joint geometry

Picture 12 Poor start / fillet weld too narrow

Picture 13 Contact burn, poor constructive connection of the hub

Picture 14 Unnecessary markings



Picture 15 Material imprints or defects

Picture 16 Uneven weld transitions

Picture 17 Grinding marks

Picture 18 Grinding marks

Picture 19 Inhomogeneous radii design