



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 15-MAY-2024. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Bearing, Water Lubricated Bearings
Model Name(s): Brass Sleeve Type, Non-Metallic Sleeve Type and Brass Flanged Type Rubber Bearings, Water Lubricated

Presented to:

DURAMAX MARINE LLC
17990 Great Lakes Parkway
OH 44234
United States

Intended Service:

Marine Applications - Support of Propeller and Propeller Shaft, to be fitted in Vessel's Strut and Stern Tube (Johnson Cutless water lubricated bearings).

Description:

Water Lubricated Bearings based on Military Specification MIL-DTL-17901C (SH). Class II, Cylindrical Bearings, with cylindrical shaped metal backing and internally molded rubber - Fully Molded Type. Rubber-lined Naval Brass Sleeve/Non-Metallic Sleeve/ Naval Brass Flanged. Bearing Components, Bonded Synthetic Rubber.

Tier:

3

Ratings:

Brass Sleeve Type, Shaft sizes ¾" to 16"; Solid Brass Flanged Type for Strut or Aft Stern Tube, Shaft sizes 2" to 25"; Split Brass Flanged Type for Strut or Aft Stern Tube, Shaft sizes 2" to 25"; Solid Brass Flanged Type for Forward Stern Tube, Shaft sizes 2" to 25"; Split Brass Flanged Type for Forward Stern Tube, Shaft sizes 2" to 25"; Non-Metallic Sleeve Type for Shaft sizes ¾" to 16"; Metric Brass Sleeve Type for Shaft sizes 19 mm to 406 mm; Metric Non-Metallic Type for Shaft sizes 19 mm to 406 mm.

Service Restrictions:

Unit Certification is not required for this product.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 2. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or

standard, including inspection standards and tolerances, must be clearly defined.
 3. For Bearing's dimensions, material, quality inspection, tolerances, installation procedure, bearing and journal wear see Sleeve and Flanged Bearing Dimensional Catalog. 4. The length of bearing, next to and supporting the propeller, is to be not less than four times the required tail-shaft diameter as per 4-3-2/5.15.1 of the Marine Vessels Rules.

Notes / Documentation:

Drawing No. Declaration of Conformity_14-HS1206495-4-PDA, Declaration of Conformity_14-HS1206495-4-PDA, Revision: -, Pages: 1 Drawing No. Manufacturing Assessment Certificate 16-C3217077, MA Certificate 16-C3217077, Revision: -, Pages: 1 Drawing No. PO-10178615_V-294_20190409_112957817, Purchase Order 10178615 dated 9 April 2019, Revision: -, Pages: 1 Drawing No. TA Application_14-HS1206495-4-PDA, PDA Application_14-HS1206495-4-PDA, Revision: -, Pages: 1 Supporting Documentation (previous task): Drawing No. 08162016, 2016 Class II Re-Qualification TR, Revision: -, Pages: 1 Drawing No. 10167104, Purchase Order, Revision: -, Pages: 1 Drawing No. Application TA Request for Johnson Cutless Water lubricated bearings, Application TA Request for Johnson Cutless Water lubricated bearings, Revision: -, Pages: 1 Drawing No. Correspondence, Email PO 17-May-2017 subj: New Type Approvals and Current Type Approval amendment, Revision: -, Pages: - Drawing No. Correspondence, Incoming Email, Revision: -, Pages: 1 Drawing No. Duramax Marine-05S-2016-410-QT-2016-367, Corres. from US Navy, Revision: -, Pages: 1 Drawing No. Johnson Cutless Water lubricated bearings document, Johnson Cutless Water lubricated bearings document, Revision: -, Pages: 1 Drawing No. SK050117, Sleeve Bearing Details for 3/4 in Shaft, Revision: -, Pages: 1 Drawing No. SK050217, Sleeve Bearing Details for 3/4 in Shaft, Revision: -, Pages: 1 Drawing No. SK050317, Flange Bearing Details for 25 in Shaft, Revision: -, Pages: 1 Drawing No. SK050417, Flange Bearing Details for 2 in Shaft, Revision: -, Pages: 1 Drawing No. SK050517, Sleeve Bearing Details for 16 in Shaft, Revision: -, Pages: 1 Drawing No. SK050617, Sleeve Bearing Details for 16 in Shaft, Revision: -, Pages: 1

Term of Validity:

This Product Design Assessment (PDA) Certificate 19-HS1853013-PDA, dated 16/May/2019 remains valid until 15/May/2024 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules:

The Rules for Conditions of Classification, Part 1 2019, 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: 2019 Rules for Marine Vessels 4-3-2/5.15.1 2019 Rules for Building and Classing Steel Vessels 4-3-2/5.15.1 2019 Rules for Building and Classing Steel Vessels Under 90 Meters (295 feet) in Length 4-3-1/13.1

- National Standards:**
- International Standards:**
- Government Authority:**
- EUMED:**
- Others:**

MIL-DTL-17901C(SH)

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	19-HS1853013-PDA	17-MAY-2019	15-MAY-2024

ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS

cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.