



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 02-NOV-2021. 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: Brake, Stearns Spring-Set Disc
Model Name(s): 33X, 35X, 36X

Presented to:

REXNORD INDUSTRIES, LLC STEARNS DIVISION
5150 S. INTERNATIONAL DR.
WI 53110
United States

Intended Service:

Marine and Offshore Applications - Stop and/or hold loads typically driven by an Electric Motor.

Description:

Spring-Set Electrically-Released Disc Brakes, Fail-Safe Brakes; Armature actuated, Direct Acting Brakes; Series 33X: 330 Series - No manual release, no torque adjust, no housing; 331 Series - Manual release, no torque adjust, no housing; 333 Series - Manual release, torque adjust, no housing; 33A through 33Z Series - Sheet steel housing, C-face mounting, optional manual release. Series 35X: 351 Series - Ductile iron housing, no torque adjust; 353 Series - Aluminum housing, torque adjust; 355 Series - Aluminum housing, no torque adjust; 356 Series - Ductile iron housing, torque adjust. Series 36X: 361 Series - Ductile iron housing, no torque adjust; 363 Series - Aluminum housing, torque adjust; 365 Series - Aluminum housing, no torque adjust; 366 Series - Ductile iron housing, torque adjust.

Tier:

3

Ratings:

Ratings as tabulated in Series 33X, 35X, and 36X Tables. See attached "pdf" for ratings. Design Ambient Temperature Range: -30 °C (-22 °F) through 55 °C (131 °F).

Service Restrictions:

Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be

clearly defined. 1) Series 33X, 35X, and 36X Brakes are not designed for Hazardous Location use. 2) Motor Shaft End Float should not exceed 0.020". Shaft runout should be within 0.002" TIR. Motor mounting surface should be flat and perpendicular to within 0.004" of Motor Shaft;

Comments:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 1) Brakes to be installed in accordance with the Installation and Service Instructions shipped with each Brake. Friction Discs to be replaced per the Manufacturer's Minimum Thickness listed in the Installation and Service Instructions. 2) During construction or after installation, performance test may be required to the satisfaction of the attending Surveyor as applicable. 3) For low temperature applications, Charpy Testing of the enclosure may be required as applicable. 4) Operation at ambient temperatures above 22 °C (72 °F) requires derating of the thermal capacity rating. See Derating Thermal capacity Chart. 5) Heat developed during normal operation (135 °C) of the Brake may be hot enough to be painful or cause injury. Be careful when touching exterior surfaces. Allow sufficient time for the Brake to cool before servicing.

Notes / Documentation:

33X Series Brakes: Catalog Cut Sheets, Series 330 NEMA and Series 330 Metric;
 35X Series Brakes: Catalog Cut Sheets, Series 350 Armature Actuated Brakes;
 36X Series Brakes: Catalog Cut Sheets, Series 360 Armature Actuated Brakes;

Term of Validity:

This Product Design Assessment (PDA) Certificate 16-HS1577613-PDA, dated 03/Nov/2016 remains valid until 02/Nov/2021 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:

Rules for Conditions of Classification, Part 1- 2016 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: 2016 Steel Vessels 4-8-3/1.11, 4-8-3/13.3.2; The Rules for Conditions of Classification, Part 1 - 2016 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following: 2016 Mobile Offshore Drilling Units 4-1-1/3.; 4-3-3/1.5, 4-3-3/3.1, 4-3-3/9, 4-3-6;

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

Manufacturer's standards and practices. Coil construction conforms exactly to the Class 180 (H) coil insulation system designated H181 as per UL File E125303.

| Model Certificate | Model Certificate No | Issue Date | Expiry Date |
|-------------------|----------------------|-------------|-------------|
| PDA | 16-HS1577613-PDA | 03-NOV-2016 | 02-NOV-2021 |



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.