



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 24/SEP/2018. 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 17/OCT/2021 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: Actuator, Pneumatic and Hydraulic for Quarter-Turn Valves
Model Name(s): S-, B- C & HP Series

Presented to:
PENTAIR VALVES & CONTROLS - PELHAM
110 COMMERCE DRIVE
United States

Intended Service: For Operating Quarter-Turn Valves; Model S and Models B, C, and HP Actuators with Epoxy Coating for Underwater (100 feet depth) and Splash Zone Service.

Description: Actuators for Quarter-Turn Valves - Model S-Pneumatic/Hydraulic (Water) Cylinder Actuators; Model B-Pneumatic Cylinder Actuators; Model HP- Hydraulic (Oil) Cylinder Actuators. Model S-Stainless Steel Construction; Model B-Ductile Iron/Stainless Steel Construction; Model C-Ductile Iron/Carbon Steel Construction; Model HP-Carbon Steel/Stainless Steel Construction; Double Acting: S-xxxX-D000, B-xxxX-D000, C-xxxX-D000 & HPx-DA; Single Acting with Spring Return: S-xxxX-S040/S060/S080, B-xxxX-S040/S060/S080, C-xxxX-S040/S060/S080 & HPx-xxxSR-xx.

Ratings: The actual valve break torque is not to exceed the manufacturer's recommended valve demand break torque shown in Tables A and B1 as indicated on the attached PDF pages. For additional rating data and maximum allowable working pressures (MAWPs), see Tables A, B1 and B2 on the attached PDF pages. Also, see manufacturer's catalogue and recommendations for actuator's performance data.

Service Restrictions: Unit Certification is not required for this product. 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. Model S- : Service Temperature Range: (-) 20°F to 210°F; Model B & C- : Service Temperature: 0°F to 210°F; Model HP- ; Service Temperature Range: 0°F to 210°F; Type approval of this equipment is based on compliance, in

Comments: all respects, with the ABS Rules in association with the intended service and is limited to the rating as indicated above.
 (1). For Class I & II Piping Pressure (see 4-6-1/5 and 4-6-1/Table 1 of the Rules), copies of certified Mill Test Reports of the Materials entering into the construction of Hydraulic and Pneumatic Cylinder powered Actuators are to be made available to the Surveyor upon request. Ordinary Cast Iron or similar Materials (elongation less than 12%) are not to be used for Cylinder Actuators (see 4-6-7/3.5.5 and 4-6-7/5.3.3 of the Steel Vessel Rules); (2). For Class I & II Piping Pressure (see 4-6-1/5 and 4-6-1/Table 1 of the Rules), Cylinders are to be subjected to a Hydrostatic Test Pressure of 1.5 times the MAWP for Steel Cylinders and 2 times the MAWP for Cast Iron and Nodular Iron Cylinder (4-6-7/3.5.5 and 4-6-7/5.3.3 of the Steel Vessel Rules. (3) Cylinder is to be affixed with a permanent nameplate or marking bearing the manufacturer's name or trade mark and the maximum allowable working pressure and temperature(4-6-7/3.5.5 and 4-6-7/5.3.3 of the Steel Vessel Rules). The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes / Documentation: Document Name: Email 29-Sep-2016 subj: ABS Revalidation Review of PDA No. 01-HS134211-8-PDA Document Name: Declaration of Conformity Document Name: Request-Type-Approval-Application Supporting Documentation (previous task 794032/ T1002162): Drawing Package (251 shts), List of new/revised drawings (9 shts).

Term of Validity: This Product Design Assessment (PDA) Certificate 16-HS1569483-PDA, dated 18/Oct/2016 remains valid until 17/Oct/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: 2016 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 2-3-13, 4-6-2/3.1.6, 4-6-1/5 & Table 1, 4-6-7/3.5.5 & 5.3.3; 2016 Mobile Offshore Drilling Unit Rules 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-2-1/1.11 & 4-2-2/19

National Standards: 2013 ASME BPVC Section VIII Division 1 and Section II Part D

International Standards:

Government Authority:

EUMED:

Others: Manufacturer's Standards

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	16-HS1569483-PDA	18/OCT/2016	17/OCT/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.