



Confirmation of Product Type Approval 16/SEP/2009

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

This is to certify that, 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 28/JAN/2014. 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 31/OCT/2011 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.

RYCO HYDRAULICS PTY LTD

Model Name(s): Avenger T1A Diehard AS1D, Diehard T1D Survivor RQP1

Presented to:

RYCO HYDRAULICS PTY LTD
19 WHITEHALL STREET
FOOTSCRAY
Australia

Intended Service:

For use on ships and offshore installations Classed with American Bureau of Shipping, as short lengths in fresh water, seawater, water based hydraulic, and compressed air systems. For Avenger T1A also included hydraulic oil systems.

Description:

Flexible hoses of non-metallic material with permanently fitted couplings.

Ratings:

Nominal Sizes: ¼ inch to 2 inch [see Service Restrictions] Maximum Working Pressure: 580 to 3250 psi (see Service Restrictions) Service Temperature: -40 deg. F to +250 deg. F (see Service Restrictions) Coupling Material: Carbon Steel AISI / SAE 12L14, Electroplated Fe / Zn12c per AS1789.

Service Restrictions:

<<Unit Certification is required for this product.>> <<Unit Certification is not required for this product. If the manufacturer or purchaser's request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. >> AVENGER T1A Temperature Range -40 deg. F to +212 deg. F Maximum Working Pressure AVENGER T1A NB (inch) Max. Pressure (psi) T14A ¼ 3250 T16A 3/8 2600 T18A ½ 2300 T110A 5/8 1900 T112A ¾ 1500 T116A 1 1300 T120A 1 ¼ 945 T124A 1 ½ 725 T132A 2 580 DIEHARD T1D Temperature Range -40 deg. F to +212 deg. F Maximum Working Pressure DIEHARD T1D NB (inch) Max. Pressure (psi) T14D ¼ 3250 T16D 3/8 2600 T18D ½ 2300 T112D ¾ 1500 T116D 1 1300 T120D 1 ¼ 945 T124D 1 ½ 725 T132D 2 580 SURVIVOR RQP1 Temperature Range: Petroleum based fluids: -40 deg. F to +302 deg. F Water/ Oil Emulsions: -40 deg. F to +250 deg. F Diesel Fuels: -40 deg. F to +200 deg. F Air: -40 deg. F to +250 deg. F [Maximum Working Pressure 70% of tabulated value, Cover of Hose to be Perforated] Maximum Working Pressure SURVIVOR RQP1

NB (inch) Max. Pressure (psi) RQP14 ¼ 3250 RQP16 3/8 2600 RQP18 ½ 2300
RQP110 5/8 1880 RQP112 ¾ 1740 RQP116 1 1300

Comments:

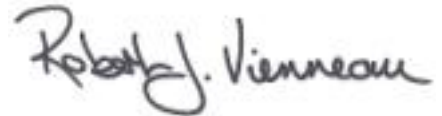
The hoses are to be installed in accordance with the manufacturer's procedures and tested to the satisfaction of the attending Surveyor. Carbon steel couplings are to be normalized for temperatures below +140F. To prevent danger of flooding due to failure of the hoses, the hoses in seawater systems are to be enclosed. In case of continuous operation at temperatures higher than 212F, more frequent inspections and changes may be necessary. Not to be used in hydraulic and pneumatic systems for steering gear or boiler fronts. Hose clamps are not permitted except for cooling water systems for engines with a cylinder bore not exceeding 11.8 inches (300 mm).

Notes / Documentation:**Term of Validity:**

Certificate 06-SG416935-PDA/1, dated 01/Nov/2006 is valid as noted from date of issue or until the applicable Rules or standards are revised (whichever occurs first). Product use on or after 1 January 2007, will be subject to compliance with the ABS Rules or specifications in effect when the vessel, MODU or facility is contracted.

ABS Rules:

2006 Steel Vessel Rules 1-1-4/3.7 2004 Steel Vessels Rules 4-6-2 / 5.7.1 2001 MODU Rules 4-2-1 / 9.25

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


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.