



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 07/JAN/2020. 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 09/DEC/2019 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: Tube Fittings

Model Name(s): Tube Fittings for DIN 2353 & ISO 8434

Presented to:

HY-LOK CORPORATION
#1467-1, SONGJEONG-DONG
KANGSEO-KU
Korea, Republic of

Intended Service:

Hydraulic Fluid Systems

Description:

Models - DU, DL, DUR, DT, DC, DTR, DBU, DBUW, DBL, DOM-U/M, DMC-R, DMC-G, DMC-M, DMC-GED, DMC-MED, DMC-N, DLM-R/M, DFC-G/M, DLA, DBTA, DRTA, DEW, DET, DEL, DKOR, DR, DRED, DA-GED/MED, DEGE-G/M, DUE, DSWVE-G/M, DWH-G/M, DTH-GM, DSVW-G/M, DSVT-G/M, DGC-G, DGE-G, DGA-G, DGMA, DEMA, DAS, DASK, DAK, DCVU, DCV-GED,-L/S, DCV-L/S-GED/MED, H-MFAD, H-MFAE, H-MFAD-ED, H-MFAE-ED, DVSTI-GED/MED, DVSTI, DVKA and DCA; Bite type and compression type hydraulic tube fittings. Fittings include unions, tees, 90 degree elbows, connectors, crosses, banjo fittings, caps, plugs and non-return valves. Materials: Carbon Steel, Stainless Steel and Brass

Tier:

3

Ratings:

1. Temperature - Carbon Steel : -40# to 120#, - Stainless Steel : -60# to 400#, - Brass : -60# to 175# 2. Pressure - LL Series : up to 100 bar, - L Series : up to 500 bar, - S Series : up to 800 bar

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.

Comments: 1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 2) For Group I Hydraulics Systems, straight thread O-ring fittings are not to be used for joining sections of pipe. 3) Bulkhead unions are not considered watertight or fire-tight penetrations without separate approval of penetration detail. 4) For Group I Steering Gear, Controllable Pitch Propeller, Propulsion or Propulsion Control Systems and for connections joining sections of pipe, tapered threaded connections are limited to a temperature not exceeding 496C (925F) and the following: - Maximum Pressures: Pipe Size mm O.D. (in N.P.S.): above 33 (1) through 60 (2); - Maximum Pressure Bar (PSI): 41.4 (600); Pipe Size mm O.D. (in N.P.S.): above 27 (0.75) through 33 (1); - Maximum Pressure Bar (PSI): 82.8 (1200); Pipe Size mm O.D. (in N.P.S.): 27 (0.75) and smaller; - Maximum Pressure Bar (PSI): 103 1500 5) Trademark of the manufacturer, pressure rating and size are to be legibly stamped or cast on the exterior of the fitting.

Notes / Documentation: This type approval is based upon Manufacturer's Drawing (Doc. No. WG-DIN2353-14K03, Drawing for Tube Fittings for DIN 2353 & ISO 8434 part1), new version Catalog of Tube Fittings for DIN 2353 & ISO 8434 part1_Aug. 2011) and Manufacturer's test report witnessed by IACS Members.

Term of Validity: This Product Design Assessment (PDA) Certificate 14-BK1286810-PDA, dated 10/Dec/2014 remains valid until 09/Dec/2019 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 applicable to this assessment are: 2014 Steel Vessel Rules 1-1-4/7.7, 1-1-Appendix 3 & 4, 4-1-1/Table 6, 4-6-2/5.9, 4-6-2/5.15, 4-6-2/5.17, 4-6-7/3.5.1, 2014 Steel Vessels Under 90 Meters (295 Feet) in Length 1-1-4/7.7, 1-1-Appendix 3 & 4, 2014 Mobile Offshore Drilling Units Rules 1-1-4/9.7, 1-1-Appendix 2 & 3, 2014 Facilities on Offshore Installations 1-1-4/9.7, 1-1-Appendix 2 & 3.

National Standards: ASME B16.11(2011), ASME B1.20.1(2013), ASME B31.3(2012), DIN 2353(2012)

International Standards: ISO 8434 part1(2007)

Government Authority:

EUMED:

Others:

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	14-BK1286810-PDA	10/DEC/2014	09/DEC/2019



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.