Confirmation of Product Type Approval

Company Name: HY-LOK CORPORATION

Address: 97, NOKSANSANDAN 27-RO, GANGSEO-GU, BUSAN, Korea, Republic of, 46751

Product: Instrumentation Tube Fittings

Model(s): Two Ferrule Tube Fittings

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	21-2166160-PDA	13-SEP-2021	12-SEP-2026
Manufacturing Assessment (MA)	19-BK3756133	07-NOV-2019	07-JAN-2025
Product Quality Assurance (PQA)	NA	NA	NA

Tier
3 - Type Approved, unit certification not required

Intended Service
Hydraulic Fluids, Gas, Lubricant and Fuel Oil Systems

Description
CUA (STRAIGHT UNION), CUR (REDUCING UNION), CLA (UNION ELBOW), CTA (UNION TEE), CXA (UNION CROSS), CBU (BULKHEAD UNION), CMC-N (MALE CONNECTOR(NPT)), CMC-R (MALE CONNECTOR(PT)), CMC-G (MALE CONNECTO

R(PF)), CMCT (THERMOCOUPLE MALE CONNECTOR), COM (MALE CONNECTOR FOR METAL GASKET SEAL), CBMC (BULKHEAD MALE CONNECTOR), CLMA (MALE ELBOW), CLMB (45 DEGREE MALE ELBOW), CRTM (MALE RUN TEE), CBTM (MALE BRANCH TEE), CFC (FEMALE CONNECTOR), CGC (GAUGE CONNECTOR), CBFC (BULKHEAD FEMALE CONNECTOR), CLF (FEMALE ELBOW), CRTF (FEMALE RUN TEE), CBTF (FEMALE BRANCH TEE), CR (REDUCER), CBR (BULKHEAD REDUCER), CAL (ADJUSTABLE ELBOW), CRTA (ADJUSTABLE RUN TEE), CBTA (ADJUSTABLE BRANCH TEE), CAM (MALE ADAPTER), CAF (FEMALE ADAPTER), CAM-G (MALE ADAPTER), CAM-U (MALE ADAPTER), CAMOS-U (O-SEAL STRAIGHT THREAD MALE ADAPTER), CAMF (AN ADAPTER), SAPW (WELD ADAPTER), CPC (PORT CONNECTOR), CPR (REDUCING PORT CONNECTOR), CSRA (SWIVEL REDUCING ADAPTER), CSL (SWIVEL ELBOW), CBST (SWIVEL BRANCH TEE), CRST (SWIVEL RUN TEE), CFTC (LAPPED FLANGE CONNECTOR), CIAF (INTEGRAL ANSI FLANGE CONNECTOR), CFU (AN UNION), CBFU (AN BULKHEAD UNION), CFA (AN ADAPTER), CSC (SAE/MS MALE CONNECTOR), CSLA (POSITIONABLE MALE ELBOW), CSLA (POSITIONABLE MALE ELBOW(PF)), CSRT (POSITIONABLE MALE RUN TEE), CSBT (POSITIONABLE MALE BRANCH TEE), CSLB (POSITIONABLE 45 DEGREE MALE ELBOW), COS (O-SEAL STRAIGHT THREAD CONNECTOR), COP (O-SEAL PIPE THREAD CONNECTOR), CWC (MALE PIPE WELD CONNECTOR), CLW (MALE PIPE WELD ELBOW), CSWC (TUBE SOCKET WELD CONNECTOR), CLSW (TUBE SOCKET WELD ELBOW), CBUW (WELD UNION), CHBUW (WELD HALF UNION), CPA (PLUG FOR HY-LOK PORT), CCA (CAP), CRMTT (UNION TEE), CCFF (FEMALE UNION), CCEUR (REDUCING UNION), CDF (DIELECTRIC FITTING), CSFC (SANITARY FLANGE FITTING), CN (NUT), CFF (FRONT FERRULE), CFB (BACK FERRULE)

Ratings
1. Temperature

Stainless Steel Type 316: -196# to 649#

Brass: -54# to 204#

Alloy 400: -54# to 427#

2. Pressure: Maximum up to 950 bar as per Manufacturer Catalog (H-200TF)

Service Restrictions
1. 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.

2. Not to be used if fittings are required to be fire resistant types in accordance with 4-6-2/Table 10 of the Marine Vessels Rules.

Comments
1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2. Not to be used for flammable fluid systems when tubing is of copper or copper-zinc alloys.

3. Brass (copper) fittings are not to be used in systems with temperatures greater than 208C (406F).

4. Bulkhead connectors, bulkhead reducers and bulkhead unions are not considered watertight or fire-tight penetrations without separate approval of penetration detail.

5. Threaded joints having tapered pipe threads complying with a recognized stand are not to be used for toxic and corrosive fluid services and for all services of temperatures exceeding 495 degree Celsius (923F). They may be used for Classes I and II piping subject to limitations indicated in the table of 4-6-2/5.5.5 (a) of the Marine Vessels Rules.

6. Taper-thread joints up to 80 mm (3 in.) nominal diameter may be used without pressure limitation for connection to equipment only, such as pumps, valves, cylinders, accumulators, gauges and hoses. When such fittings are used solely to join sections of pipe, they are to be in accordance with 4-6-2/5.5.5 (a) of the Marine Vessels Rules. However, hydraulic systems for the following services are to comply with 4-6-2/5.5.5 (a) of the Marine Vessels Rules.

- Steering gear hydraulic system,

- Controllable pitch propeller hydraulic system,

- Hydraulic systems associated with population or Propulsion Control

7. For hydraulic oil piping, straight thread 'o'-ring type fittings may also be used for connections to equipment, without pressure and service limitation, but are not to be used for joining sections of pipe in accordance with 4-6-2/5.5.5 (c) of the Marine Vessels Rules.

8. The compression couplings may be used for Classes I and II piping up to 60 mm (2.4 inches) OD and below in accordance with 4-6-7/3.5.1 table 1 of the Marine Vessels Rules.

Notes, Drawings and Documentation
Drawing No. DW-TFTF-14K03, Drawing for Two Ferrule Tube Fittings, Revision: -

Drawing No. H-200TF, Catalog of Two Ferrule Tube Fittings, Revision: -

Test Report Nos. TR-GLTT-TW/TG-070123, TR-GLTT-RAT-070202, TR-GLTT-BT-070205, TR-GLTT-PO-070214, TR-GLTT-VT-070216, TR-GLTT-VPPT-071009-01/02, TR-GLTT-VPPT-071026, TR-LR-HYLOK-TT/BPT-111018-2 and TR-DNV-HYLOK-BPT-131118-1

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 12/Sep/2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules
2021 Marine Vessels Rules: 1-1-4/7.7, 1-1/A3, 1-1/A4, 4-6-2/5.5.5, 4-6-2/5.9, 4-6-2/5.15, 4-6-7/3.5.1 Table 1

International Standards
ASME B16.11 (2016)

ASME B1.20.1 (2013)

ASME B31.3 (2020)

EU-MED Standards
NA

National Standards
NA

Government Standards
NA

Other Standards
NA

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 13-Sep-2021 6:52

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 is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the “Intended Service” details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. 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.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

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.

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.