



Confirmation of Product Type Approval

Company Name: HY-LOK CORPORATION

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

Product: Tube Fittings

Model(s): Tube Fittings for DIN 2353 & ISO 8434 Part 1

Endorsements:

| Certificate Type | Certificate Number | Issue Date | Expiry Date |
|---------------------------------|--------------------|-------------|-------------|
| Product Design Assessment (PDA) | 21-2094086-PDA | 17-MAR-2021 | 16-MAR-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 Fluid Systems

Description

Models - DU, DL, DUR, DT, DC, DTR, DBU, DBUW, DBL, DOM-U/M, DMC-R, DMC-G, DMC-MK, 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-G/M, DSVW-G/M, DSVT-G/M, DGC-G, DGE-G, DGA-G, DGMA, DAS, DASK, DAK, DCVU, DCV-GED-L/S, MED-L/S, DCV-L/S-GED/MED, H-MFAD, H-MFAE, H-MFAD-ED, H-MFAE-ED, DVSTI-GED/MED, DVSTI, DVKA, DCA, DEMA3, DN and DS

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

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

- 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 the fittings with resilient and elastomeric seals are required to be approved fire-resistant in accordance with ABS Marine Vessel Rules 4-6-2/Table 10.

Comments

- 1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- 2) Straight-thread 'o'-ring joints. For hydraulic oil piping, straight thread 'o'-ring type fittings (see 4-6-2/5.5.5(c) Figure_2) 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 Vessel Rules.
- 3) Bulkhead unions are not considered watertight or fire-tight penetrations without separate approval of penetration detail.
- 4) 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 Vessel Rules.
- 5) Threaded joints having tapered pipe threads complying with a recognized standard are not to be used for toxic and corrosive fluid services and for all services of temperatures exceeding 495°C (923°F). They may be used for Classes I and II piping subject to limitations indicated in the table below. They may be used for Class III piping without limitation. For hydraulic oil system, see 4-6-7/3.5.1 Table 1 in accordance with 4-6-2/5.5.5 of the Marine Vessel Rules.
 - Maximum Pressures 103 bar, pipe size 20 mm ND and below;
 - Maximum Pressures 82.8 bar, pipe size 20 mm ND above through 25 mm ND and below;
 - Maximum Pressures 41.48 bar, pipe size 25 mm ND above through 50 mm ND and below;
 - Maximum Pressures 27.6 bar, pipe size 50 mm ND above through 80 mm ND and below
 - Not Permitted for Class I & II, pipe size 80 mm ND above.
- 6) Taper-thread joints for hydraulic oil system. 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). However, hydraulic systems for the following services are to comply with 4-6-2/5.5.5(a) in all respects in accordance with 4-6-2/5.5.5 b):
 - Steering gear hydraulic systems;
 - Controllable pitch propeller hydraulic systems;
 - Hydraulic systems associated with propulsion or propulsion control;
- 7) Trademark of the manufacturer, pressure rating and size are to be legibly stamped or cast on the exterior of the fitting.

Notes, Drawings and Documentation

- 1) Tube Fittings for DIN 2353 & ISO 8434 part 1, Doc. No.: DW-DIN2353-14K03



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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.