

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible hoses of metallic material with permanently fitted couplings

with type designation(s)
10A

Issued to

Daidoh Tokushu Kogyo Co., Ltd.
Konohana-ku, Osaka Pref., Japan

is found to comply with

DNV class programme DNV-CP-0184 – Type approval – Flexible hoses with permanently fitted couplings
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Temperature range: -20°C to +100°C
Max. working press.: 10 bar(g)
Sizes: DN10

Issued at **Høvik** on **2022-10-06**

This Certificate is valid until **2027-10-05**.

for **DNV**

DNV local station: **Kobe**

Approval Engineer: **Thomas Wilhelm Juell**

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Sinisa Sedlan
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

One types of metallic flexible hoses with U-formed corrugations, reinforced with one layer of wire braid, and permanently fitted couplings with front and back ferrules (Swagelok).

Materials:

Flexible hose:	SUS316L
Wire braid:	SUS304
End fitting	SUS316

This

Application/Limitation

certificate is valid for the specific assembly of hose and coupling type as specified, assembled, and delivered by the holder (named as manufacturer) of this certificate.

Hose assemblies covered by this certificate may be used in systems for: Lubricating oil, fresh water, steam, and compressed air. (They are not approved to be used in seawater systems.)

Maximum working pressure at temperatures higher than 20°C shall be reduced with reduction factor as given in ISO 10380 Table A4.

Welding shall fulfil requirements in governing rules for the intended application, listed on the front page of this certificate
All hoses assemblies delivered under this type approval certificate shall be in compliance with an assembly procedure issued by the certificate holder.

Hose assemblies covered by this certificate shall not be used in systems subject to pressure below atmospheric or systems where pressure pulsation may occur.

The approval does not cover use of these hoses in LNG/LPG applications.

Production testing

Each hose assembly shall be hydrostatically tested at a pressure of 1.5 times the maximum working pressure and be delivered with the pressure test report with reference to the type approval certificate.

Type Approval documentation

Tests carried out

Burst, pliability, and fatigue test.

Marking of product

For identification purposes the hoses are to be marked with:

- hose manufacturer's name or trademark
- date of manufacture (month and year)
- designation type reference
- nominal diameter
- pressure rating
- temperature rating

Periodical assessment

For retention of the type approval, a DNV surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338