

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**with type designation(s)
FC736

Issued to

Eaton Aeroquip Inc
VAN WERT OH, United States

is found to comply with

Det Norske Veritas' Rules for Classification of Ships Pt.4, Ch.6 "Piping Systems"
Det Norske Veritas' Standards for Certification 2.9 No. 5-791.70**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Temperature range:** -40°C to +121°C
Max. working press.: dependent on size, see certificate
Sizes: -6, -8, -10, -12, -16, -20, -24, -32This Certificate is valid until **2019-12-31**.Issued at **Høvik** on **2015-10-30**for **DNV GL**

DNV GL local station:

Approval Engineer: **Tom Berg-Nielsen**-----
Marianne Spæren Marveng
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.

Product description

Hose is a Eaton proprietary hose

Design: Inner tube of synthetic rubber reinforced by 4 spiral wire layers with intermediate layers of rubber. Outer cover of BRUISER (TM)

Couplings: Eaton series TTC12 crimp fittings

Application/Limitation

May be used for hydraulic systems with petroleum base or water base fluids

Working pressures

Dash size	Inches	Max operating pressure	
		psi	Bar
-06	3/8	5500	380
-08	1/2	5000	345
-10	5/8	5000	345
-12	3/4	4050	280
-16	1	4050	280
-20	1 1/4	3050	210
-24	1 1/2	2550	175
-32	2	2550	175

All hose assemblies delivered under this type approval certificate shall be in compliance with an assembly procedure issued by the certificate holder.

Each hose assembly is before delivery to be hydraulic pressure tested to 1.5 times the maximum working pressure and shall be delivered with manufacturer's pressure test certificate..

The hose assemblies covered by this type approval may be assembled and delivered by other than the certificate holder under the following conditions:

- The assembler is authorized by a written authorization from the certificate holder. The certificate holder shall keep record of all assembler authorizations.
- Hose assemblies are in accordance with an assembly procedure issued by the certificate holder and the assembler has proved their qualifications by burst testing of a selection of hose/coupling combinations.
- One sample of each hose type is to be burst tested and the testing is to be witnessed by DNV.

Flexible hoses are only to be used where it is necessary due to vibrations or flexible mounting of the machinery. The hoses shall not replace/be used where permanent piping is possible/required.

The hoses must only be fitted in places where they are always accessible.

The hoses are not to be used for suction.

Flexible hoses of these types are not to be used in boiler fronts.

The hoses are to be mounted in accordance with the manufacturer's instructions.

It must be possible to shut off from the system all flexible hoses used in systems for petroleum base hydraulic oil.

Hose assemblies with couplings made of carbon steel are not to be used at temperatures below -10°C unless the material is normalized.

Job Id: **262.1-020609-1**
Certificate No: **TAP000005U**

Type Approval documentation

Tests carried out

Proof pressure test, Change in length test, Burst test, Pressure pulsation test, Fire test, Dimensional Check test, Cold Flexibility test, Oil Resistance test, Cover Adhesion test, Ozone resistance test

Marking of product

For traceability to this type approval the products are to be marked with:

- Manufacturers name or trade mark
- Type designation

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform a survey every second year, to verify that the conditions for the type approval are complied with and to witness the following tests on a selection of sizes:

- Dimensional check.
- Change in length
- Leakage test
- Burst test

The tests shall be performed in accordance with procedures given in DNV Type Approval Program no. 2.9 5-791.70 "Type Approval of Flexible Hoses of Non-Metallic Material" or another recognized standard. The tests are to be performed with the type of couplings fitted that are Type Approved with the hoses.

END OF CERTIFICATE