



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **P-14748**

This is to certify that the
Flexible Hoses of Metallic Material with permanently fitted couplings

with type designation(s)

F010-2020-M, F015-2020-M, F020-2020-M, F025-2020-M, F032-2020-M, F040-2020-M, F010-2062-M, F015-2062-M, F020-2062-M, F025-2062-M, F032-2062-M, F040-2062-M, F010-6262-M, F015-6262-M, F020-6262-M, F025-6262-M, F032-6262-M, F040-6262-M

Issued to

KatsuraTec Corporation
Tokyo, Japan

is found to comply with

Det Norske Veritas' Rules for Classification of Ships
Det Norske Veritas' Offshore Standards
Det Norske Veritas' Standards for Certification 2.9 No. 5-791.80

Application

May be used for the following: Compressed air, fresh water, Fuel oil, hydraulic oil, thermal oil, nitrogen

Type:	Temperature range:	Max. working press.:	Sizes:
F010-2020-M, F015-2020-M, F020-2020-M, F025-2020-M, F032-2020-M, F040-2020-M F010-2062-M, F015-2062-M, F020-2062-M, F025-2062-M, F032-2062-M, F040-2062-M	-20 to +50°C for sizes up to 1", +60°C for sizes above	8 bar, 3.2 bar for sizes 1", 1 1/4" and 1 1/2"	3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2"
F010-2062-M, F015-2062-M, F020-2062-M, F025-2062-M, F032-2062-M, F040-2062-M	-20 to +50°C for sizes up to 1" +60°C for sizes above	8 bar, 3.2 bar for sizes 1", 1 1/4" and 1 1/2"	3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2"
F010-6262-M, F015-6262-M, F020-6262-M, F025-6262-M, F032-6262-M, F040-6262-M	-20 to +50°C for sizes up to 1", +60°C for sizes above.	8 bar, 3.2 bar for sizes 1", 1 1/4" and 1 1/2"	3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2"

This Certificate is valid until **2018-06-30**.

Issued at **Høvik** on **2014-02-01**

DNV local station: **Yokohama**

Approval Engineer: **Tom Berg-Nielsen**

for **Det Norske Veritas AS**

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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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

Corrugated flexible hoses of metallic material covered with a single wire braid.
Couplings are welded to the hose and are an adapter type

Model no criteria:

F010 – 2063 – M

F010: Nominal diameter
20: End fitting A (adapter)
62: End fitting B (flange)
M: Length class S:<501 mm M: 501 – 1000 L: >1000 mm

Materials:

Corrugation: SUS316L

Braid: SUS304

Couplings:

Coupling adapter: Plated SS400

Flange: SUSF304 DIN 2501 PN 10

Hose and coupling manufacturer: KatsuraTec Corporation, Tokyo, Japan

Application/Limitation

The hoses may be used for the media listed on the front page.

Max working pressure:

As given on the front page.

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

The hoses are not to be used in systems where pressure pulsations may occur.

Temperatures and minimum bend radius to be in accordance with the manufacturer's specifications.

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 on places where they are always accessible.

It must be possible to shut off from the system all flexible hoses used in lubricating oil and compressed air systems.

Each flexible hose is to be hydraulically pressure tested to 1.5 times the maximum working pressure.

Type Approval documentation

The approval is based on the following document :

- "Documents for Det Norske Veritas AS" Issue no 001 dated Nov/28/2013

Tests carried out

Burst test, type B static bend test, type B bending fatigue test

Marking of product

For traceability to this type approval each hose is to be marked with:

- Manufacturer's name or trade mark
- Type designation

Periodical assessment

For retention of the Type Approval, DNV Surveyor shall perform a survey - every second year and before the expiry date of this certificate - to verify that the conditions for the type approval are complied with and to witness a burst test on a selection of sizes.

Obtained burst pressure shall at least be 4 times the maximum design pressure.

The tests are to be performed with the type of couplings fitted that is Type Approved with the hoses.

END OF CERTIFICATE