

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings

with type designation(s)

MATWVXX-XBXX (Marine Tape Wrap Convoluted Lined Hose), MATWLXX-XBXX (Marine Tape Wrap Conductive Lined Convoluted Hose)

Issued to

**Kongsberg Actuation Systems Limited | Kongsberg
Automotive
Normanton, West Yorkshire, United Kingdom**

is found to comply with

**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses**

Application :

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

**Temperature range: -40°C to +150°C
Max. working press.: 35 to 125 bar
Sizes: 3/8", 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2"**

Issued at **Høvik** on **2019-09-30**

for **DNV GL**

This Certificate is valid until **2024-09-29**.

DNV GL local station: **Manchester**

Approval Engineer: **Adel Samiei**

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**Zeinab Sharifi
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.



Job Id: **262.1-030956-1**
Certificate No: **TAP00001X4**

Product description

Non-metallic flexible hoses with helical tape wrap convolutes tubing made of PTFE tape + PTFE impregnated glass fibre tape composite, and AISI 304 stainless steel braid).

Coupling designation:

Part Code		inch	Insert		Ferrule
MATWV09-7B01	MATWL09-7B01	3/8	05-923-06-06-XX	05-927-06-06-XX	01-104-06-06-XX-S
MATWV13-5B01	MATWL13-5B01	1/2	05-923-08-08-XX	05-927-08-08-XX	01-104-08-08-XX-S
MATWV16-5B01	MATWL16-5B01	5/8	05-923-10-10-XX	05-927-10-10-XX	01-104-10-10-XX
MATWV19-8B01	MATWL19-8B01	3/4	05-923-12-12-XX	05-927-12-12-XX	01-104-12-12-XX
MATWV25-9B01	MATWL25-9B01	1	05-923-16-16-XX	05-927-16-16-XX	01-104-16-16-XX
MATWV32-3B01	MATWL32-3B01	1 1/4	05-923-20-20-XX	05-927-20-20-XX	01-104-20-20-XX
MATWV38-8B01	MATWL38-8B01	1 1/2	05-923-24-24-XX	05-927-24-24-XX	01-104-24-24-XX
MATWV51-2B01	MATWL51-2B01	2	05-923-32-32-XX	05-927-32-32-XX	01-104-32-32-XX

Couplings are made of Stainless steel grades 304,316,316L and 321 or carbon steel 1.0737 (EN 10277-3)

Hose manufacturer: Kongsberg Automotive, Normanton, West Yorkshire, WF6 1TN, UK

Coupling manufacturer: DISTRIBUIDORA INTERNACIONAL CARMEN, S.A., Zaragoza, Spain

Application/Limitation

This 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 conveying petroleum based hydraulic fluid, water based Hydraulic fluids, fuel oil, lubricating oil, fresh water, air and steam in the temperature range mentioned on the front page.

Part Code		Hose size			Maximum working pressure (bar)
		inch	DN	Dash	
MATWV09-7B01	MATWL09-7B01	3/8	10	-6	125
MATWV13-5B01	MATWL13-5B01	1/2	12	-8	105
MATWV16-5B01	MATWL16-5B01	5/8	16	-10	100
MATWV19-8B01	MATWL19-8B01	3/4	19	-12	90
MATWV25-9B01	MATWL25-9B01	1	25	-16	80
MATWV32-3B01	MATWL32-3B01	1 1/4	31	-20	64
MATWV38-8B01	MATWL38-8B01	1 1/2	38	-24	53
MATWV51-2B01	MATWL51-2B01	2	51	-32	35

Flexible hoses are only to be used in short lengths 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 hose assemblies must only be fitted in places where they are always accessible. Flexible hoses of these types are not to be used on boiler fronts.

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

Production testing

All hose assemblies delivered under the DNV GL type approval scheme shall be subject to a pressure test at 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to this type approval certificate.

Type Approval documentation

Drawings MATWVXX-XB01 version 1, MATWLXX-XB01 version 1, 01-104-XX-XX-XX version 7, 05-923-XX-XX-50 version 1, 05-923-XX-XX-54 version 1, 05-927-XX-XX-50 version 1, 05-927-XX-XX-54 version 1

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KONGSBERG AUTOMOTIVE test reports (Leakage, change in length, dimensional check, cold flexibility, vacuum test reports) dated 2019-07-12
Burst pressure test report stamped by DNV GL as witnessed dated 2019-04-30 and 2019-05-24
LAPI fire test report numbers 1082.0IS0110/19, 1083.0IS0110/19, 1084.0IS0110/19
Impulse test report (from SMITHERS RAPRA) F41059JA2-00448 (dated 2019-04-02), F41059JAR-00448 (dated 2019-03-13), F41059JA2-00448 (dated 2019-06-14)

Tests carried out

Dimensional Check Test, Change in Length Test, Leakage test, Vacuum test, Burst Test, Cold Flexibility Test, Impulse Test and Fire Test.

Marking of product

For traceability to this Type Approval, the products are at least to be marked with:

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

Periodical assessment

For retention of the Type Approval, a DNV GL 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 DNVGL-CP-0338.