DNV·GL

Certificate No:
TAP00001KB

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
INTERPUMP MARATHON, INTERPUMP HYPRESS R17, INTERPUMP HYPRESS 2SC, INTERPUMP HIPAC 2SC

Issued to
I.M.M. Hydraulics S.p.A.
Atessa CH, Italy

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.

Type:	Temperature range:	Max. working press.:	Sizes:
INTERPUMP MARATHON	-40°C to +120°C	250 bar to 450 bar	DN6,8,10,12,16,19,25
INTERPUMP HYPRESS R17	-40°C to +100°C	210 bar	DN6,8,10,12,16,19,25
INTERPUMP HYPRESS 2SC	-40°C to +120°C	165 bar to 400 bar	DN6,8,10,12,16,19,25
INTERPUMP HIPAC 2SC	-40°C to +120°C	65 bar to 430 bar	DN6,8,10,12,16,19,25,31,38,51,63,76

Issued at **Høvik** on **2018-12-21**
This Certificate is valid until **2023-12-20**.
DNV GL local station: **Milan**

Approval Engineer: **Adel Samiei**

for **DNV GL**

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.

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Job Id: **262.1-029018-1**
Certificate No: **TAP00001KB**

Product description

Four types of hose assemblies:

Designation	MARATHON	HIPAC 2SC	HYPRESS 2SC	HYPRESS R17
Code	THEMM2K	THEM02K	TFEM02K	TFSM017
Tube	Oil resistant synthetic rubber			
Reinforcement: High Tensile Steel Wire				
Braid	Sizes: -04 to -16	Sizes: -04 to -48	Sizes: -04 to -16	Sizes: -04 to -16
Cover	Oil, abrasion and weather resistant synthetic rubber, MSHA			

Hose Manufacturer: I.M.M. Hydraulics S.p.A.Atessa(CH) , ASCOLI SATRIANO (FG)

Hose Size			MARATHON	HIPAC 2SC	HYPRESS 2SC	HYPRESS R17
DASH	DN	inch	Ferrule/One Piece	Ferrule	Ferrule	Ferrule
-04	6	¼"	001C / G series	001C / G series	001C / G series	001C / G series
-05	8	5/16"	001C / G series	001C / G series	001C / G series	001C / G series
-06	10	3/8"	001C / G series	001C / G series	001C / G series	001C / G series
-08	12	½"	001C / G series	001C / G series	001C / G series	001C / G series
-10	16	5/8"	001C / G series	001C / G series	001C / G series	001C / G series
-12	19	¾"	001C / G series	001C / G series	001C / G series	001C / G series
-16	25	1"	0022 / G series	001C / G series	001C / G series	001C / G series
-20	31	1 ¼"	-	001C / G series	-	-
-24	38	1 ½"	-	001C / G series	-	-
-32	51	2"	-	001C / G series	-	-
-40	63	2 ½"	-	001C	-	-
-48	76	3"	-	001C	-	-

Couplings Material: Two pieces (Ferrule 001C, X001C, 0022 & X0022 with related standard tail fittings): Carbon Steel (11SMnPb37/C4C) or Stainless Steel (AISI 316L); One Piece (G Series): Carbon Steel (11SMnPb37/C4C)
Coupling manufacturer: I.M.M. Hydraulics S.p.A.Atessa(CH) , ASCOLI SATRIANO (FG)

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 and below assembly locations:

I.M.M. Hydraulics S.p.A. - Atessa, Italy
I.M.M. Hydraulics S.p.A. - Genova, Italy
GS-Hydro AB - Kista Suecia, Sweden
GS-Hydro AB - Sundsvall Suecia, Sweden
GS-Hydro Austria GmbH -Pasching, Austria
GS-Hydro Danmark A/S - Kolding, Denmark
GS-Hydro Korea Ltd. - Busan, Korea
GS-Hydro Piping Systems Co. Ltd. - Shanghai, China
GS-Hydro S.A.U. - Abanto y Zierbena, Spain
GS-Hydro S.A.U. - Madrid, Spain
GS-Hydro Singapore Pte. Ltd – Singapore
GS-Hydro System GmbH - Hagen, Germany
GS-Hydro U.S. Inc. - Houston, USA
GS-Hydro UK Ltd. - Aberdeen, UK
GS-Hydro UK Ltd. - Branch office Wakefield, UK
GS-Hydro UK Ltd. - Sunderland, UK
GS-Hydro Sp. z o.o. - Gdynia, Poland
GS-Hydro Benelux B.V. - Barendrecht, Netherlands
GS Hydro do Brasil Sistemas Hidraulicos Ltda - Bairro Imperial, Brazil

Hose assemblies covered by this certificate may be used in:

- Petroleum based fluids (Mineral oils) and Biological Oils (temperature as stated on the front page);
- Water Based Fluids and compressed air (-40°C to +70 °C);
- Water (0°C to 70°C).

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 cover of hoses for gaseous applications shall be pin-pricked.

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

Tests carried out

Dimensional Check Test, Change in Length Test, Burst Test, Cold Flexibility Test, Ozone Resistance Test, Impulse Test, Oil Resistance Test, fire resistance 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.