

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00000AV
Revision No:
2

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Materials other than steel for pipes conveying oil or fuel oil

with type designation(s)

301SN, 372, 372TC, 387, 387TC, 387ST, 421SN, 462, 462TC, 462ST, 462CIF, 487, 487TC, 487ST, 492, 492TC, 492ST, 722CIF, 722TC, 787, 787TC, 787ST, 797, 797TC, 797ST, 811, 811S, H29, H29TC, H29ST, H31, H31TC, H31ST, R35TC, RS35TC, R35ST, R42, R42TC, R42ST

Issued to

Parker Hannifin Manufacturing S.r.l.
Veniano CO, Italy

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2020/1170,**

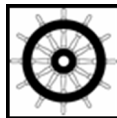
item No. MED/3.15c. SOLAS 74 as amended, Regulation II-2/4 & X/3 and 2000 HSC Code 7 & 10 and IMO MSC/Circ.1120

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-09-28.**

Issued at **Høvik** on **2020-09-29**

DNV GL local station:
Italy/Malta CMC



for **DNV GL AS**

Approval Engineer:
Maheshraja Venkatesan

Notified Body
No.: **0575**

Roald Vårheim
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **344.1-005082-3**
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Product description

15 different types of Flexible hoses with permanently fitted couplings with the following design:-

722TC:

Nitrile (NBR) inner tube with four braid steel wires and
TC (Tough Cover): highly abrasion resistant synthetic rubber cover.

787/787TC/787ST

Proprietary synthetic rubber inner tube with four/six spirals high-tensile steel wires and synthetic rubber cover
TC (Tough Cover): highly abrasion resistant synthetic rubber cover.
ST (Super Tough Cover): with a synthetic rubber cover and a special polyethylene coating

797/797TC/797ST

Proprietary synthetic rubber inner tube with four/six spirals high-tensile steel wires and synthetic rubber cover
TC (Tough Cover): highly abrasion resistant synthetic rubber cover.
ST (Super Tough Cover): with a synthetic rubber cover and a special polyethylene coating

387/387TC/387ST

Synthetic rubber inner tube with one or two braid steel wires and synthetic rubber cover.
TC (Tough Cover): highly abrasion resistant cover
ST (Super Tough Cover): with a cover of special polyethylene coating

487/487TC/487ST

Synthetic rubber inner tube with one or two braid steel wires and synthetic rubber cover.
TC (Tough Cover): highly abrasion resistant cover
ST (Super Tough Cover): with a cover of special polyethylene coating

R35/R35TC/R35ST

Synthetic rubber inner tube with four or six braid steel wires and synthetic rubber cover.
TC (Tough Cover): highly abrasion resistant cover
ST (Super Tough Cover): with a cover of special polyethylene coating

301SN according to EN 853 2SN – ISO 1436 2SN

Synthetic rubber inner tube, two braids of high tensile steel wire reinforcement separated by a synthetic rubber layer. Oil, weather fire and abrasion resistant synthetic rubber black outer cover.

421SN according to EN 853 1SN – ISO 1436 1SN

Synthetic rubber inner tube - one braid of high tensile steel wire reinforcement. Oil, weather, fire and abrasion resistant synthetic rubber black outer cover.

372/372TC according to EN 856 4SP

Synthetic rubber inner tube, three braids of high tensile steel wire reinforcement separated by a synthetic rubber layer. Oil, weather, fire and abrasion resistant synthetic black rubber cover.
TC (Tough Cover): highly abrasion resistant cover

R42/R42TC/R42ST according to SAE J517 R15 - ISO 3862 R15

Synthetic rubber inner tube, four or six spirals of high tensile steel wire reinforcement separated by a synthetic rubber layer. Oil, weather, fire and abrasion resistant synthetic black rubber cover.
(TC = Tough Cover, ST = Super Tough Cover)

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H29/H29TC/H29ST constructed according to EN 856 4SH - ISO 3862 4SH

Oil resistant synthetic rubber inner tube, four spirals of high tensile steel wire reinforcement separated by a synthetic rubber layer. Oil, weather, fire and abrasion resistant synthetic black rubber cover.
(TC = Tough Cover, ST = Super Tough Cover)

H31/H31TC/H31ST constructed according to EN 856 4SP - ISO 3862 4SP

Oil resistant synthetic rubber inner tube, four spirals of high tensile steel wire reinforcement separated by a synthetic rubber layer. Oil, weather, fire and abrasion resistant synthetic black rubber cover.
(TC = Tough Cover, ST = Super Tough Cover)

492/492TC/492ST according to EN 857 1SC - ISO 11237 1SC

Nitrile (NBR) inner tube, one high-tensile steel wire braid reinforcement and highly abrasion resistant synthetic rubber cover

462, 462TC and 462ST according to EN 857 2SC - ISO 11237 2SC

Nitrile (NBR) inner tube, two layers of high-tensile steel wire braid reinforcement and highly abrasion resistant synthetic rubber cover

811/811S

Synthetic rubber inner tube, two fibre spiral along with one helical wire reinforcement and oil & weather resistant synthetic rubber with fire sleeve of Type FS-F

Couplings:

722TC/722ST:	Parker series 43
787/787TC/787ST:	Parker series 43/48 (-6) and Parker series 77 (-8 to -32)
797/797TC/797ST:	Parker series 43 (-6) and Parker series 77 (-8 to -32)
387/387TC/387ST:	Parker series 43 and 48
487/487TC/487ST:	Parker series 43 and 48
R35/R35TC/R35ST:	Parker series V4 for sizes -12,-16,-20 and V6 for sizes -24,-32,-40,-48
301SN and 421SN:	Parker series 48
372/372TC:	Parker series 70
R42/R42TC/R42ST:	Parker series V4/V6
H29/H29TC/H29ST:	Parker series V4
H31/H31TC/H31ST:	Parker series VS- V4
492/492TC/492ST:	Parker series 46
462/462TC/462ST:	Parker series 46/48 (for all sizes) & 43 (for sizes up to DN51)
811/811S:	Parker type 48 for sizes -12,-16,-20,-24,-32 and Parker type IF for sizes -40,-48,-64,-80

Coupling materials: Carbon Steel: 1.0718,1.0715,SAE1137(35SMnPb14),1.07665,1.0581,1.0255,1.0303, 1.0504, 1.7225,1.7131
Stainless Steel: 1.4404, 1.4401, 1.4571

Hose manufacturer: Parker Hannifin Manufacturing Srl, Italy

Coupling manufacturer: Parker Hannifin GmbH, Germany
Parker Hannifin, Manitowa, WI, US

Application/Limitation

Hose assemblies covered by this certificate are tested according to the following standards for use in piping systems conveying oil or fuel oil:

- 1) EN ISO 15540:2016 - Fire resistance of hose assemblies- Test methods
- 2) EN ISO 15541:2016 - Fire resistance of hose assemblies - Requirements for the test bench

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Hose type	Temperature range	Medium
301SN, 372/TC/ST, 421SN, 462/TC/ST, 492/TC/ST, 811/S, H29/TC/ST, H31/TC/ST	-40°C to 100°C	Petroleum base hydraulic fluids and lubrication oil
R42, 387/TC/ST, 487/TC/ST, 722TC, 787/TC/ST, 797/TC/ST	-40°C to +125°C	
R35/TC/ST	-40°C to +120°C	

Maximum working pressure:

Hose size			722TC (bar)	787/TC/ST (bar)	797/TC/ST (bar)	387/TC/ST (bar)	487/TC/ST (bar)
inch	DN	Dash					
¼	6	-4	-	350	420	210	280
3/8	10	-6	280	350	420	210	280
½	12	-8	280	350	420	210	280
5/8	16	-10	280	350	420	210	280
¾	19	-12	280	350	420	210	280
1	25	-16	280	350	420	210	280

Hose size			R35/TC/ST (bar)	301SN (bar)	421SN (bar)	372/372TC (bar)	R42/TC/ST (bar)
inch	DN	Dash					
¼	6	-4	-	400	225	-	-
5/16	8	-5	-	350	215	-	-
3/8	10	-6	-	330	180	445	-
½	12	-8	-	275	160	415	-
5/8	16	-10	-	250	130	350	420
¾	19	-12	350	215	105	350	420
1	25	-16	350	165	88	280	420
1¼	31	-20	350	125	63	210	420
1½	38	-24	350	90	50	-	420
2	51	-32	350	80	40	-	420
2½	63	-40	350	-	-	-	-
3	76	-48	210	-	-	-	-

Hose size			H29/TC/ST (bar)	H31/TC/ST (bar)	492/TC/ST (bar)	462/TC/ST (bar)
inch	DN	Dash				
¼	6	-4	-	500	280	425
5/16	8	-5	-	-	250	400
3/8	10	-6	-	445	225	350
½	12	-8	-	415	190	310
5/8	16	-10	-	390	150	280
¾	19	-12	430	350	150	280
1	25	-16	400	310	110	210
1¼	31	-20	350	-	75	172
1½	38	-24	310	-	-	146
2	51	-32	280	-	-	112
2½	63	-40	-	-	-	70
3	76	-48	-	-	-	70

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Hose size			811 (bar)	811S (bar)
inch	DN	Dash		
¾	19	-12	21	-
1	25	-16	17	-
1¼	31	-20	14	-
1½	38	-24	10	-
2	51	-32	7	-
2½	63	-40	4	-
3	76	-48	4	-
4	100	-64	-	10
5	125	-80	-	10

Type Examination documentation

Manufacturer's hose specification no GHS-722TC, GHS-722CIF, GHS-787TC and GHS-797TC

Manufacturer's hose specification no GHS-387TC and GHS-487TC

Manufacturer's hose specification no GHS-R35TC, GHS-RS35TC

Parker catalogue 4400/UK (Hydraulic hoses, Fittings & equipment) April 2017

Drawing of the 46 series coupling.

Parker document HS-K46, Crimp standard 46 series dated 1995-03-03.

Parker Hannifin Crimp Standard dated 1993-09-09.

Manufacturer's crimping tables: Bulletin 4480-B28-1/UK.

Parker Hannifin dimension fittings series 43, 48, 77

Drawing of the 70 series coupling

Drawings of the V4 and VS-V4 couplings.

Drawings of the V6 series coupling.


Crimping spec. with code no. PRM003 Rev.02 dated 2012-09-12

LAPI Fire test reports (Parker Veniano CO,Italy):

- DNV GL TA certificate TAP00001N7: 361,362,363.0IS0110/14, 355,356,357.0IS0110/14, 358,359,360.0IS0110/14 and 2598&2599.0IS0110/18
- DNV GL TA certificate TAP00001N6: 352,353,354.0IS0100/14 & 246,247,248.0IS0100/14
- DNV GL TA certificate TAP00001N8: 594,595,596,623.0IS0110/14
- DNV GL TA certificate TAP000013G: 452.0IS0110/04, 487.0IS0110/04, 449.0IS0110/04, 450.0IS0110/04, 486.0IS0110/04 and 451.0IS0110/04, dated 2004-05-1
- DNV GL TA certificate TAP000016X: 769.0IS0110/04 and 770.0IS0110/04 dated 2004-07-19
- DNV GL TA certificate TAP000016Z: 630.0IS0110/04, 767.0IS0110/04 and 768.0IS0110/04 dated 2004-06-18 and 2004-07-19.
- DNV GL TA certificate TAP000016Y: 583.0IS0110/04, 629.0IS0110/04, 584.0IS0110/04, 766.0IS0110/04, 631.0IS0110/04, 632.0IS0110/04 and 633.0IS0110/04 dated 2004-06-7/18 and 2004-07-19.
- DNV GL TA certificate TAP000000E Rev.1:
- 560.0IS0110/14, 561.0IS0110/14 & 562.0IS0110/14
- 735.0IS0110/04, 736.0IS0110/04, 737.0IS0110/04, 738.0IS0110/04 and 739.0IS0110/04
- DNV GL TA certificate TAP0000158: 871.0IS0110/12, 1154.0IS0110/12, 1155.0IS0110/12, 364.0IS0110/14

Tests carried out

Fire test according to ISO 15540/ISO 15541



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Marking of product

For traceability to this Type Approval, each hose shall be marked with at least the following information:

- Manufacturers name or trademark
- Date of manufacture (month/ year)
- Type designation and size
- Maximum allowable working pressure and temperature