

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP000016Y
Revision No:
1

This is to certify:

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

with type designation(s)
H29/H29TC/H29ST, H31/H31TC/H31ST

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

is found to comply with
DNV class programme DNV-CP-0183 – Type approval – Flexible non-metallic hoses
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

Application :

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

Type:	Temperature range:	Max. working press.:	Sizes:
H29/H29TC/H29ST	-40°C to +100°C (dependent on medium)	280 to 430 bar (dependent on size)	DN19 to DN51
H31/H31TC/H31ST	-40°C to +100°C (dependent on medium)	310 to 500 bar (dependent on size)	DN6 to DN25

Issued at **Høvik** on **2022-10-14**

for **DNV**

This Certificate is valid until **2027-06-30**.

DNV local station: **Italy/Malta CMC**

Approval Engineer: **Jane Lozanov**

Sinisa Sedlan
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.

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



Product description

Hose 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)

Hose 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)

Couplings:

Hose H29/-TC/-ST : Parker coupling series V4 made of carbon steel or 316 stainless steel
 Hose H31/-TC/-ST : Parker coupling series VS- V4 made of carbon steel or 316 stainless steel
 Hoses made by: Parker Hannifin, Italy
 Couplings made by: Parker Hannifin, Germany

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.

The hose may be used for the following application: Petroleum base hydraulic fluids, water glycol and water oil emulsion hydraulic fluids, compressed air & fresh water.

Maximum working pressure:

Type			Hose size (DN)	Max working pressure (bar)
H29-12	H29TC-12	H29ST-12	19	430
H29-16	H29TC-16	H29ST-16	25	400
H29-20	H29TC-20	H29ST-20	31	350
H29-24	H29TC-24	H29ST-24	38	310
H29-32	H29TC-32	H29ST-32	51	280
H31-4	H31TC-4	H31ST-4	6	500
H31-6	H31TC-6	H31ST-6	10	445
H31-8	H31TC-8	H31ST-8	12	415
H31-10	H31TC-10	H31ST-10	16	390
H31-12	H31TC-12	H31ST-12	19	350
H31-16	H31TC-16	H31ST-16	25	310

Temperature range:

Medium	Temperature range
Petroleum base hydraulic fluids	-40 °C to 100 °C
Water and water based hydraulic fluids	-40 °C to 85 °C
Compressed air	-40 °C to 70 °C

Each hose assembly is before delivery to be hydraulic pressure tested to 1.5 times the maximum working pressure and to be delivered with the pressure test report with reference to this type approval certificate.

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

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.

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

Hose assemblies covered by this certificate shall not be installed in systems subject to pressure below atmospheric or vacuum conditions.

Type Approval documentation

Parker catalogue 4400/UK (Hydraulic hoses, Fittings & equipment) April 2017 pages Cab37, Cab38, Eb-17
Manufacturer's test reports No: 1411, 1412, 1413, 1414, 1415, 1415, 1417, 1418, 1419, 1420, 1421, 1422 and 1423 dated 2004-08-10

Manufacturer's burst test report witnessed by DNV 1416, 1411, 1414, 1419 and 1422 dated 2004-08-10.

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

LAPI Fire test reports No: 583.OIS0110/04, 629.OIS0110/04, 584.OIS0110/04, 766.OIS0110/04, 631.OIS0110/04, 632.OIS0110/04 and 633.OIS0110/04 dated 2004-06-7/18 and 2004-07-19

Burst pressure test and leakage test reports N°3310-11-12-13 dated 2017-07-24

Renewal burst pressure tests, reports no. 3544, 3545, 3546, 3547 and 3548

Tests carried out

Fire, Burst, Impulse, Change in length, Abrasion, Adhesion, Oil resistance, Cold flexibility, Ozone resistance, Dimensional check.

Marking of product

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

- manufacturer's name or trade mark
- type designation
- maximum working pressure
- size

Periodical assessment

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