

TYPE APPROVAL CERTIFICATE

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 GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition July 2015
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:
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 **2017-12-28**This Certificate is valid until **2022-12-27**.for **DNV GL**DNV GL local station: **Milan**Approval Engineer: **Adel Samiei**

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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.



Job Id: **262.1-016585-2**
Certificate No: **TAP000016Y**

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.

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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

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 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.