



TYPE APPROVAL CERTIFICATE
No. MAC040823CS/003

This is to certify that the product identified below is in compliance with the regulations herewith specified.

<i>Description</i>	Non metallic flexible hoses
<i>Type</i>	H31 - H31TC - H31ST
<i>Applicant</i>	PARKER HANNIFIN MANUFACTURING SRL VIA G.B. PIRELLI, 6 22070 VENIANO (CO) ITALY
<i>Manufacturer</i>	PARKER HANNIFIN MANUFACTURING SRL
<i>Place of manufacture</i>	VIA G.B. PIRELLI, 6 22070 VENIANO (CO) ITALY
<i>Reference standards</i>	RINA Rules for the Type Approval of Flexible Hoses and Expansion Joints

Issued in **Genoa** on **May 19, 2023**. *This Certificate is valid until* **May 18, 2028**

RINA Services S.p.A.
Giovanni Carratino

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE

No. MAC040823CS/003

Enclosure - Page 1 of 1

H31 - H31TC - H31ST

Reference documents

Parker Hannifin specifications nos. HS-H31 dated 27/04/2004, HS-KV4 dated 07/11/2003 and HS-KVS dated 02/06/2004.

Parker Catalogue No. 4400.

Test Report No. 2004/CS/01/4286 of 27/12/2005 of RINA Milan Office.

Test Report No. 2012/MI/01/932 of 31/10/2012 of RINA Milan Office.

Reference Standard

EN 856 - 4SP, ISO 3862-1 - 4SP.

Materials/components

Lining:

Polychloroprene synthetic rubber, oil resistant.

Reinforcement:

Four spiral plies of high tensile steel wire.

Cover:

Synthetic rubber, resistant to oil and weathering.

TC = Tough Cover - highly abrasion resistant synthetic rubber;

ST = Super Tough Cover - extreme abrasion resistant (synthetic rubber with a special polyethylene coating).

End fittings:

Steel, VS series (for items -6 to -16) and V4 series (for items -6 to -32).

Technical characteristics

Maximum allowable working pressure at ambient temperature according to the following table:

Item	Nominal Diameter (mm)	Inside Diameter (mm)	Max. working pressure (MPa)
-6	10	9,3 - 10,1	44.5
-8	12	12,3 - 13,5	41.5
-10	16	15,5 - 16,7	35 (39)*
-12	19	18,6 - 19,8	35
-16	25	25,0 - 26,4	28 (31)*

* Note: the values in parenthesis are above the ones foreseen in the reference Standard - The maximum working pressures of hoses intended for marine applications are not to exceed the ones foreseen by the reference Standard - see acceptance conditions

Working temperature: from -40°C to +100°C.

TYPE APPROVAL CERTIFICATE

No. **MAC040823CS/003**

Enclosure - Page 2 of 2

H31 - H31TC - H31ST

Field of application

Hydraulic systems with a hydraulic oil having a flash point not less than 150°C (closed cup test).

Acceptance conditions

The installation on board of the piping system is to be carried out by qualified personnel in accordance with the manufacturer's instructions.

The flexible hoses are to be installed in order to satisfy the requirements of para. 5.9.3 of Part C, Ch 1, Sec 10 of RINA Rules.

The acceptance of the a.m. products on board ship and other units classified with RINA is subject to the satisfactory outcome of testing as per RINA Rules.

For hoses assemblies to be used at temperatures below -10°C, couplings in normalized steel are to be used.

The maximum working pressures of hoses intended for marine applications shall not exceed the ones foreseen in the reference Standard.

The product (hose and fittings) is to be marked, for traceability, with the following data: nominal diameter, design conditions, Manufacturer's name or trademark, designation type reference.

Validity of this Certificate is subject to positive outcome of periodical Audit as per Rules for Testing and Certification of Marine Materials and Equipment.

Genoa May 19, 2023