



**TYPE APPROVAL CERTIFICATE**  
**No. MAC040823CS/001**

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

|                             |                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------|
| <i>Description</i>          | <b>Non metallic flexible hoses</b>                                                                |
| <i>Type</i>                 | <b>462 - 462TC - 462ST</b>                                                                        |
| <i>Applicant</i>            | <b>PARKER HANNIFIN MANUFACTURING SRL<br/>VIA G.B. PIRELLI, 6<br/>22070 Veniano (CO)<br/>ITALY</b> |
| <i>Manufacturer</i>         | <b>PARKER HANNIFIN MANUFACTURING SRL</b>                                                          |
| <i>Place of manufacture</i> | <b>VIA G.B. PIRELLI, 6<br/>22070 Veniano (CO)<br/>ITALY</b>                                       |
| <i>Reference standards</i>  | <b>RINA Rules for the Type Approval of Flexible Hoses and<br/>Expansion Joints</b>                |

*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/001

Enclosure - Page 1 of 2

462 - 462TC - 462ST

### Reference documents

Parker Hannifin specifications nos. HS-462 dated 31/01/2001 and HS-K46 dated 03/03/1995.  
Parker Catalogue No. 4400.

Technical datasheet from Parkera catalogue 4400 filed with Document PPVT-42061.

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.

Test report filed with letter PPVT/2023/567/CRLVA

### Reference Standard

EN 857 - 2SC ( Up to DN 25 )

### Materials/components

Lining:

Nitrile polymer, oil resistant.

Reinforcement:

Two braids 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:

Carbon and Stainless Steel (46 and 48 series).

### Technical characteristics

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

| Item | Nominal Diameter<br>(mm) | Inside Diameter<br>(mm) | Max. working<br>pressure<br>(MPa) |
|------|--------------------------|-------------------------|-----------------------------------|
| -4   | 6                        | 6,2 - 6,7               | 40 (42.5)*                        |
| -5   | 8                        | 7,7 - 8,3               | 35 (40)*                          |
| -6   | 10                       | 9,3 - 10,1              | 33 (35)*                          |
| -8   | 12                       | 12,5 - 13,3             | 27,5 (31)*                        |
| -10  | 16                       | 15,7 - 16,6             | 25 (28)*                          |
| -12  | 19                       | 18,8 - 19,8             | 21,5 (28)*                        |
| -16  | 25                       | 25,3 - 26,4             | 16,5 (21)*                        |
| -20  | 32                       | 31,4-33                 | 17,2                              |
| -24  | 38                       | 37,7-39,3               | 14,6                              |
| -32  | 51                       | 50,4-52                 | 11,2                              |
| -40  | 63,5                     | 62,3-64,7               | 7                                 |
| -48  | 76                       | 74,6-77,4               | 7                                 |

\* 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. **MAC337517CS/001**

**Enclosure - Page 2 of 2**

**462 - 462TC - 462ST**

***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.

***Remarks***

This certificate annuls and replaces the previous certificate No. MAC171511CS/004 issued on 15 November 2012.

**Genoa January 15, 2018**