

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**

with type designation(s)

**492, 492TC and 492ST according to EN 857 1SC - ISO 11237 1SC, 462, 462TC and 462ST
according to EN 857 2SC - ISO 11237 2SC**

Issued to

**PARKER HANNIFIN MANUFACTURING SRL
Veniano CO, Italy**

is found to comply with

**Det Norske Veritas' Rules for Classification of Ships Pt.4, Ch.6 "Piping Systems"
Offshore Standard DNV-OS-D101, Marine and Machinery Systems and Equipment
Det Norske Veritas' Standards for Certification 2.9 No. 5-791.70****Application :****The hoses may be used for: Petroleum base hydraulic fluids, water glycol and water oil
emulsion hydraulic fluids, fuel oil, lubrication oil, compressed air and fresh water.**

Type:	Temperature range:	Max. working press.:	Sizes:
492, 492TC and 492ST according to EN 857 1SC - ISO 11237 1SC	-40°C to +100°C dependent on medium	Size dependent, see certificate	See certificate
462, 462TC and 462ST according to EN 857 2SC - ISO 11237 2SC	-40°C to +100°C dependent on medium	Size dependent see certificate	See certificate

This Certificate is valid until **2017-06-30**.Issued at **Høvik** on **2015-07-01**DNV GL local station: **Milan**for **DNV GL**Approval Engineer: **Tom Berg-Nielsen**

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.

Product description

Hose design:

Hoses 492, 492TC and 492ST:

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

Hoses 462, 462TC and 462ST:

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 black rubber cover.

Couplings:

Hose 492, 492TC, 492ST Parker coupling series 46 made from carbon steel or 316 stainless steel

Hose 462, 462TC, 462ST Parker coupling series 43/46/48 made from carbon steel or 316 stainless steel

Manufacturing plants :

Hose : Parker Hannifin Manufacturing SRL, Veniano, Italy

Couplings : Parker Hannifin GmbH & Co., KG, Mücke & Erfurt, Germany

Application/Limitation

- This type approval is valid also for Parker Service Centres world-wide and distributors and other companies authorised by Parker Hannifin to fit the couplings to the hoses.
- Same specifications, tolerances and quality control procedures shall be followed.
- The hose assemblies covered by this type approval may be assembled and delivered by other than the certificate holder and Parker Service Centers world wide under the following conditions:
- The assembler is authorised by a written authorization from the certificate holder. The certificate holder shall keep record of all assembler authorisations.
- Hose assemblies are in accordance with an assembly procedure issued by the certificate holder and the assembler has proved their qualifications by burst testing of a selection of hose/coupling combinations.
- One sample of each hose type from each authorized hose assembler is to be burst tested and the testing is to be witnessed by DNV GL. This testing is to be performed every 4 years.

Maximum working pressure:

Type			Coupling series	Hose size	Max working pressure
			46	mm	bar
492-4	492TC-4	492ST-4	X	6.3	280
492-5	492TC-5	492ST-5	X	8.0	250
492-6	492TC-6	492ST-6	X	10.0	225
492-8	492TC-8	492ST-8	X	12.5	190
492-10	492TC-10	492ST-10	X	16.0	150
492-12	492TC-12	492ST-12	X	19.0	150
492-16	492TC-16	492ST-16	X	25.0	110
492-20	492TC-20	492ST-20	X	31.5	75

Type			Coupling series		Hose size	Max working pressure
			46/48	43	mm	bar
462-4	462TC-4	462ST-4	X	X	6.3	425
462-5	462TC-5	462ST-5	X	X	8.0	400
462-6	462TC-6	462ST-6	X	X	10.0	350
462-8	462TC-8	462ST-8	X	X	12.5	310
462-10	462TC-10	462ST-10	X	X	16.0	280
462-12	462TC-12	462ST-12	X	X	19.0	280
462-16	462TC-16	462ST-16	X	X	25.0	210
462-20	462TC-20	462ST-20	X	X	31.5	172
462-24	462TC-24	462ST-24	X	X	38.0	146
462-32	462TC-32	462ST-32	X	X	51.0	112
462-40	462TC-40	462ST-40	X	N/A	63.5	70
462-48	462TC-48	462ST-48	X	N/A	76.0	70

Temperature range:

Hose	Medium:	Temperature range:
492/ 462	Petroleum base hydraulic fluids and lubrication oil	-40°C to +100°C
	Polyol ester fluids	-40°C to +65°C
	Water, water/oil emulsion, water/glycol hydraulic fluids	-40°C to +85°C
	Compressed air	-40°C to +70°C

The hoses may not be used in vacuum systems.

For compressed air or gases above 16 bar the cover is to be pin pricked.

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.

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

The hoses are to be mounted in accordance with the manufacturer's instructions.

Job Id: **262.1-017480-3**
Certificate No: **TAP000000E**

It must be possible to shut off from the system all flexible hoses used in systems for compressed air, lube oil, fuel oil and petroleum base hydraulic oil.

Each hose is to be hydraulic pressure tested to 1.5 times the working pressure, and to be delivered with the manufacturer's pressure test certificate.

Hose assemblies with couplings made of carbon steel are not to be used at temperatures below – 10 °C unless the material is normalized.

Type Approval documentation

Tests carried out

Dimensional Check, Proof Pressure, Change in Length, Burst, Cold Flex, Oil Resistance, Ozone Resistance, Cover- and Tube- Adhesion Test, Impulse and Fire Test.

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

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform a survey every second year, to verify that the conditions for the type approval are complied with and to witness the following tests on a selection of sizes from all bulk hose manufacturing plants:

- Dimensional check
- Change in length
- Leakage test
- Burst test

The tests shall be performed in accordance with procedures given in Det Norske Veritas' Standard for Certification no. 2.9 – Program 5-791.70, "Type Approval of Flexible Hoses of Non-Metallic Material", or another recognized standard.

The tests are to be performed with the type of couplings fitted that are Type Approved with the hoses.

END OF CERTIFICATE