



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **P-14472**

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

with type designation(s)
811 according to SAE 100R4

Manufactured by
PARKER HANNIFIN MANUFACTURING SRL
Veniano CO, Italy

is found to comply with
Det Norske Veritas' Rules for Classification of Ships
Det Norske Veritas' Offshore Standards
Det Norske Veritas' Standards for Certification 2.9 No. 5-791.70

Application

Temperature range: -40°C to +100°C +70°C for air, +85°C for air
Max. working press.: 21 bar
Sizes: DN20, 25, 32, 40, 50, 62 and 75

This Certificate is valid until **2017-06-30**.

Issued at **Høvik** on **2013-06-04**

DNV local station: **Milan**

Approval Engineer: **Tom Berg-Nielsen**

for **Det Norske Veritas AS**

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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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

Inner tube of synthetic rubber reinforced by 2 textile braids. A steel wire spiraled throughout the textile reinforcement to maintain vacuum properties. Synthetic rubber cover.

A fire sleeve type FS-F is to be fitted for applications where fire resistance is required.

Couplings: Designated Parker Couplings from Parker Catalogue 4400/UK

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 is to be burst tested and the testing is to be witnessed by DNV as prototype test.
- A copy of the authorization shall follow each delivery of hoses.

The hose may be used for the following application :

Petroleum base hydraulic fluids, water glycol and water oil emulsion hydraulic fluids, fuel oil, lubricating oil, compressed air, fresh and sea water.

Max working pressure:

Part no	Hose inner diameter				MAWP	
	DN	Inch	Dash size	mm	MPa	psi
811-12	20	¾"	-12	19.1	2.1	300
811-16	25	1"	-16	25.4	1.7	250
811-20	32	1 ¼"	-20	31.8	1.4	200
811-24	40	1 ½"	-24	38.1	1.0	150
811-32	50	2"	-32	50.8	0.7	100
811-40	62	2 ½"	-40	62.3	0.4	62
811-48	75	3"	-48	74.6	0.4	62

Temperature range: -40°C to +100°C, +70°C for air, +85°C for water

For compressed air or gases above 1.6 MPa 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. They are not to be used where fixed 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.

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

The approval is based on the following documentation :

- Extracts from Parker catalogue 4400/UK
- Parker inhouse test reports dated 26-07-2012
- Fire test reports from LAPI dated 05/09/2012

Tests carried out

Adhesion cover test, adhesion tube test, leakage test, change in length test, burst test Cold flex test, Ozone resistance test, Fire test, vacuum test (17kPa), oil resistance test on cover and on inner tube.

Marking of product

For traceability to this type approval the hoses are to be marked with:

- Manufacturers name or trade mark
- Type designation

Certificate Retention Survey

For retention of the Type Approval, DNV 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