DNV·GL

Certificate No:
TAP00001RA

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Metallic Material with permanently fitted couplings

with type designation(s)
187TC, 187ST

Issued to
Parker Hannifin dba Hose Products Division
Wickliffe, OH, USA

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Type:	Temperature range:	Max. working press.:	Sizes:
187TC	-40°C up to +100°C	70 bar / 1000 psi	12,5 mm to 76 mm / (1/2" to 3")
187ST	-40°C up to +100°C	70 bar / 1000 psi	12,5 mm to 76 mm / (1/2" to 3")

Issued at **Hamburg** on **2019-03-25**

This Certificate is valid until **2024-03-24**.
DNV GL local station: **Certification & Inspection Services**

Approval Engineer: **Christian Kaemmer**

for **DNV GL**
Digitally Signed By: Drews, Olaf
Location: DNV GL SE Hamburg, Germany
Signing Date: 2019-03-27

Olaf Drews
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

187TC, 187ST Series:

One or two-wire braided hose design

Inner tube:	Synthetic rubber
Reinforcement:	One or two steel wire braids
Cover:	Standard Cover: Synthetic rubber
	ToughCover TC = Synthetic rubber abrasion resistant
	SuperTough Cover = Synthetic rubber abrasion resistance
Coupling:	Permanent hose fittings
	Parker Coupling Series 43 of carbon steel

Maximum working pressure:

-no	Hose I.D.		187TC		187ST	
			Working pressure		Working pressure	
	inch	mm	bar	psi	bar	psi
-8	½	12	7.0	1000	7.0	1000
-10	5/8	16	7.0	1000	7.0	1000
-12	¾	19	7.0	1000	7.0	1000
-16	1	25	7.0	1000	7.0	1000
-20	1 ¼	31	7.0	1000	7.0	1000
-24	1 ½	38	7.0	1000	7.0	1000
-32	2	51	7.0	1000	7.0	1000
-40	2 ½”	63	7.0	1000	7.0	1000
-48	3”	76	7.0	1000	7.0	1000

Production places

- Parker Hannifin dba Hose Products Division, 125 E Meadowview Rd, Greensboro, NC, USA.
- Parker Hannifin Corp., Hose Products Division, 3737 West River Drive, Davenport, IA 52802, USA.

Responsibility

Parker Hannifin, Wicklife, OH, USA, takes the responsibility that the design and production of the hoses, hose end fittings and manufacturing of hose assemblies are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Application / Limitation

Hose assemblies covered by this type approval certificate are type approved for petroleum-based hydraulic fluids and lubricating oils, water, water/oil emulsion, water based fluids, water/glycol, air.

Flexible hoses are only to be used in short lengths up to 2 m 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.

Installation

The hose assemblies must only be fitted in places where they are always accessible.
Flexible hoses of these types are not to be used on boiler fronts.
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, fresh water cooling applications, lube oil, fuel oil and petroleum base hydraulic oil.
Hose assemblies with couplings made of carbon steel are not to be used at temperatures below -10°C unless the material is normalized. The cover on hoses for gaseous applications shall be pin-pricked.

Type Approval documentation

Documents for 187ST & 187TC:
Manufacturer catalogue: “How to read the hose section”, Hose basics, Product Bulletin Hydraulic Hose “187”; Coupling and equipment, catalogue 4400 US; Parker permanent hose fitting catalogue Series 43.

Burst pressure test reports: STR # W25955 dated 2019-03-15 witnessed by DNV local station Houston.
Test Reports: 187ST-8/-10/-12/-16/-20/-24/-32/-40/-48 and 187TC-8/-10/-12/-16/-20/-24/-32/-40/-48.
Fire Test reports (done by LAPI): 1875.OISO110/18; 1876.OISO110/18; 1877.OISO110/18; 1878.OISO110/18; 1879.OISO110/18; 1880.OISO110/18 dated 2018-09-07.

Type Approval Assessment Reports Greeensboro & Davenport dated 2019-03-06.

Tests carried out

Impulse, burst, cold flexibility, oil resistance, ozone, cover adhesion, change in length, dimensional check, fire test, salt water resistance.

Production testing

All hose assemblies shall be subject to a pressure test at 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to the type approval certificate.

Marking of product

For traceability to this type approval, each hose assembly is to be marked with:

Manufacturer's name
Type, Nominal Diameter
Maximum working pressure M.A.W.P.
Date Code
Temperature Rating

Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places by DNVGL surveyor.
The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:
- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate. In connection with the renewal assessment, a surveyor shall witness / review test reports with respect to the following tests on every 3rd size appropriate test reports to be submitted:
- dimensional check, change in length test,
- pressure test with 1.5 times M.A.W.P. and burst test (witnessed by DNV GL surveyor)