

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Pipe Couplings, Bite and Compression Type**

with type designation(s)  
**EO-DPR / PSR, EO-2 and EO2-Form**

Issued to

**Parker Hannifin Manufacturing Germany GmbH & Co KG**  
**BIELEFELD, Germany**

is found to comply with

**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**  
**DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints**

## Application :

**The pipe couplings are type approved for application in pipe class I, II and III-piping systems under consideration of the DNV GL Ship Rules Pt. 4, Ch. 6, Sec. 1 and 9.**  
**Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

**Temperature range:** -55 °C up to +400°C (refer to certificate)

**Max. working press.:** 250 bar up to 800 bar (refer to certificate)

**Sizes:** 6 mm up to 42 mm

This Certificate is valid until **2017-09-30**.

Issued at **Hamburg** on **2017-01-27**

DNV GL local station: **Magdeburg**

for **DNV GL**

Approval Engineer: **Hagen Markus**

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**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.

Job Id: **262.1-022084-1**  
Certificate No: **TAP00000TA**

## Product description

DPR – metallic sealing, progressive cutting ring (stainless steel)  
PSR – metallic sealing, progressive cutting ring, over-tightening protection (steel)  
EO-2 – Soft sealing (steel + stainless steel)  
EO-2 Form (steel + stainless steel)  
Sealing – EO2 soft sealing ring (metal ring with NBR or FKM cover)

Material according to catalogue no 4100, DIN 3859-1, equivalent or higher material

## Manufactured by

This certificate is also valid for products manufactured at:

Parker Hannifin Sp.z.o.o.  
Ul. E. Kwiatkowskiego 16  
PL- 55011 Siechnice  
Poland

Parker Hannifin Fluid connectors (Qingdao) Co. Ltd.  
East of Huojo branch road,  
South of Xinye road, Qingdao National high-tech.  
Industrial development zone  
Qingdao  
China

## Responsibility

Parker Hannifin Manufacturing Germany GmbH & Co., KG  
Tube Fittings Division Europe  
Bielefeld, GERMANY

## Application/Limitation

Rating (bar) for DPR/PSR, EO-2 Series L, EO-2 Form

| Size range<br>(mm) | Series | Material in tube and/or coupling |              |
|--------------------|--------|----------------------------------|--------------|
|                    |        | Stainless Steel                  | Carbon steel |
| 06 to 10           | L      | 500*                             | 500*         |
| 12 to 18           | L      | 400*                             | 400*         |
| 22 to 42           | L      | 250*                             | 250*         |
| 06 to 10           | S      | 800*                             | 800*         |
| 12 to 16           | S      | 630*                             | 630*         |
| 20 to 38           | S      | 420*                             | 420*         |

EO-2 S-Series Rating (bar)

| Sizes (mm)         | Series | Bite<br>type | Stud ends (soft<br>seal) |
|--------------------|--------|--------------|--------------------------|
| 6, 8, 10 and<br>12 | S      | 800          | 800                      |
| 16 and 20          | S      | 530          | 530                      |
| 25, 30 and 38      | S      | 420          | 420                      |

## Temperature range

Carbon steel: -40°C to 120°C  
Stainless steel: -60°C to 400°C

Where elastomers are used the temperature is not to exceed the following:

NBR: -35°C to 100°C  
FKM: -25°C to 200°C  
PTFE: -60°C to 200°C

\*: Max working pressure depend on pipe material and thickness.  
Pressure reductions depending on design temperature are to be observed according to performance data of catalogue 4100. Tube preparation and final installation must be conducted by personel which is trained and currently certified by Parker.  
All assemblies must be made with machines that are approved by Parker

The wall thickness and the material of the tubes are to be in accordance with the current Rules of Det Norske Veritas.

The approval is only valid when the couplings are assembled with tubing of correct temper and tolerances as recommended by the manufacturer.

These couplings should not be used on tubes in cold fabricated (hard temper) conditions.

These couplings should not be used in high pressure fuel injection systems.

## Type Approval documentation

## Tests carried out

Combined impulse and vibration test, fire resistance test, pull out test, vacuumtest, leakage test and burst test.

## Marking of product

For traceability to this type approval the products are marked with:

- EO/P on nut side

## Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places.

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.

## END OF CERTIFICATE