

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Miscellaneous Fittings for Pressurised Equipment

with type designation(s)
Rotary Fittings

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

ISO 19879:2010 – Metallic tube connections for fluid power and general use – Test methods for hydraulic fluid power connections

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature range: Refer to certificate.

Design pressure: up to 350bar. Refer to certificate.

Operating media: Hydraulic oil and lubricants. Hydraulic fluids HETG and HEES.

Issued at **Hamburg** on **2018-09-19**

This Certificate is valid until **2023-09-18**.

for **DNV GL**

DNV GL local station: **Hamburg**

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.



Product description

Connection a fixed point to a rotating, swinging or moving part via hoses.

To prevent torsion and to avoid small hose radius. Combined ball and plain bearing with constant lubrication.

For further details refer to Parker Hannifin Catalogue 4100-11/DE – Section Q.

Types	Tube connection
DG Ball bearing rotary fittings	DIN 2353, series S
DV Plain bearing rotary fittings	DIN 2353, series L

Materials¹

The tables below specify the standard types of materials.

For detailed standard material designation refer to Parker Hannifin Catalogue 4100-11/DE, Section C.

Component	Material designation
Body	Carbon steel
Sealing material	NBR, FKM, POM, PTFE, PUR, PK

Notes

¹ Special materials acc. to Parker Hannifin overview "List of material grades".

Material certificates

Component	Pipe class	Design temperature $\leq 400^{\circ}\text{C}$
Body	I, II, III	Material test report TR ¹

Note

¹ Type 2.2 inspection certificate acc. to ISO 10474 is accepted.

Application/Limitation

The Parker Hannifin Rotary Fittings are type approved for application in machinery piping systems included in pipe class I, II and III installed on board ships.

Service medias

Hydraulic oils and lubricants on mineral oil base including hydraulic fluids HETG and HEES.

The fittings are not approved for application in:

- Corrosive and HFC-fluids or gases.
- steam, combustible / explosive gas, oxygen piping systems
- high pressure fuel injection systems of combustion engines

Selection of materials

It shall be noted that the selection of the materials considers the applicable service condition and service life with respect to type of media, flow velocity, media temperature etc. and installation area of the piping system. For application in sea water piping systems or unprotected installation, e.g. open deck special materials stainless steel grades with a minimum pitting resistance equivalent number (PREN) of > 33 shall be used.

Refer to Parker Hannifin overview "List of material grades" and DNVGL Rules Pt.4, Ch.6 – Section 2 – Materials.

Size and pressure range DG Ball bearing rotary union

		Permissible number of revolutions (rpm) at working pressure of						
Tube OD (mm)	DN Nominal diameter (mm)	25 bar	64 bar	100 bar	160 bar	250 bar	350 bar	Initial torque at 250bar/Nm
06	5.0	1500	750	400	200	85	85	0.08
08	5.0	1500	750	400	200	85	85	0.08
12	9.5	800	400	200	100	45	45	0.24
16	9.5	800	400	200	100	45	45	0.24
20	16.0	300	150	75	38	15	15	0.8
25	16.0	300	150	75	38	15	15	0.8
30	26.0	200	100	50	25	10	10	2.0
38	26.0	200	100	50	25	10	10	2.0

Size and pressure range DVGE/DVWE

Size range (mm)	DN Nominal diameter (mm)	Permissible number of revolutions (rpm)	Series	PN
06	4	28	L	40
08	5	28		
10	6	21		
12	8	17		
15	10	13		
18	16	10		
22	16	10		
28	22	7		
35	25	7		
06	4	11	S	100
08	5	11		
10	6	9		
12	8	7		
14 ¹	10	5		
16	10	5		
20	16	4		
25	16	4		
30	22	3		
38	25	3		

Note

¹ DVGE-R and DVWE-R only

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Certificate No: **TAP00001H8**

Temperature range

Type of rotary union	Lowest allowable temperature	Maximum allowable temperature
Ball bearing rotary union	- 14°C	+ 80°C
Plain bearing rotary union with NBR seal	- 35°C / - 40°C ¹	+ 100°C / + 120°C ¹
Plain bearing rotary union with FKM seal	- 25°C / - 35°C ¹	+ 100°C / + 120°C ¹

Notes

¹ Applicable to ambient temperature of hydraulic and pneumatic applications.
Refer to "Parker Hannifin Catalogue 4100-10/UK", Section C2.

Assembling and Installation

For assembly and installation, the Parker Hannifin Catalogue 4100-11/DE, section F is to be observed.

Type Approval documentation

Tests carried out

Marking of product

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

Component	Marking / Identification criteria	Example
Body	Parker identification sign of manufacturer	"P" inside of a circle
	Date	"0618"

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
- witness of burst testing on selected sizes from production.

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, burst pressure tests on test assemblies are to be carried out in the presence of the DNV GL surveyor.

The test assemblies shall consist of two pieces of tubing connected with a mechanical joint of straight type. Selection of joint sizes and quantity of test assemblies is to be determined prior to the assessment.

At least one of the test assemblies is to be manufactured in the presence of the surveyor according to the manufacturers specification.

End of certificate