

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Ball Valve

with type designation(s)
KH - 2-way

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
Offshore Standard DNV-OS-D101, Marine and Machinery Systems and Equipment
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves

Application :

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

Temperature range: Refer to certificate.

Max. working press.: up to 500bar

Sizes: DN4 up to DN90

Issued at **Hamburg** on **2018-10-01**

This Certificate is valid until **2023-09-30**.

DNV GL local station: **Hamburg**

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.



Product description

Refer to Parker Hannifin Catalogue 4100-11, Section P.

Ball valves – Series KH 2/2 – way ball valves

Valve type	Connection
KH 2-way ball valve	EO 24° cone end / EO 24° cone end
	BSPP
	Female – NPT
KHBLOCK 2-way manifold ball valve	Port connections

Ball Valves – Series SAE

Valve type	Connection
KH-B	Flange connection drilled and tapped for SAE 3000/6000 PSI
KH-A	SAE Split flange connection ISO 6162 (1/2)
KH-T	SAE Flange connection ISO 6162 (1/2)
KH	Flange connection drilled and tapped for SAE 3000/6000 PSI and ISO 6164
KH-R	SAE Flange connection ISO 6162 (1/2) and ISO6164

Materials¹

The tables below specify the standard types of materials.

For detailed material designation refer to Parker Hannifin Catalogue 4100, Section C.

Component	Material designation
Valve body, Stem	Steel, zinc plated, Cr(VI)-free
	Steel
	Stainless steel
Ball	Steel hard chromated, Stainless steel
Sealing material	POM, NBR

Notes

¹ Special materials acc. to Parker Hannifin Catalogue 4100-11- Section P and Catalogue 4162-7- Technical Data.

Application/Limitation

The Parker Hannifin ball valves are type approved for application in machinery piping systems included pipe class I, II and III on board ships and offshore installations.

Service media fuel -, lubricating - and hydraulic oil, water mist fire extinguishing system.
Further service media and applications to be confirmed by Parker Hannifin in each case.

The valves are not approved:

- for application in high pressure fuel injection systems of combustion engines.
- for applications where seat tightness is required under fire conditions, e.g. "fire-safe" applications.

Ball valves with threaded sealing connections are limited in the application as follows:

- Not approved for toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur;
- For class I piping system limited up to OD of 33.7 mm, up to OD of 60.3 mm for class II and III piping systems.

This is applicable to KH-2-way ball valves with Female – NPT connection (SAE 476). For all other connection types no limitation are applicable.

Refer to DNVGL Rules, Pt.4, Ch.6 – Section 9 – 5.2.6.

Selection of materials

It shall be noted that the selection of the materials considers the applicable service condition with respect to type of media, flow velocity, media temperature and installation area of the piping system. In particular, the resistance to corrosion, erosion, oxidation and other deterioration during projected service life are to be considered.

For application in sea water systems and unprotected installation against green sea on open deck stainless steel grades with a minimum pitting resistance equivalent number (PREN) of > 33 shall be used. Reference is made to Parker Hannifin overview "List of material grades".

Reference is made to DNVGL Rules Pt.4, Ch.6 – Section 2 – Materials.

Sizes and pressure range

KH 2/2 – way ball valves

			Nominal pressure PN	
Type	DN	Series	Steel	Stainless steel
KH 2-way ball valve	4 up to 12/13	L	500	500
	16 up to 40		420	400
	4/5 up to 12/13	S	500	500
	16 up to 50		420	400
	6, 10	Block	500	500
	12 up to 50		420	420

SAE ball valves / Ball valves for block structure

		Nominal pressure PN	
Type	DN	Steel	Stainless steel
KH-B (3000 PSI)	13, 20	350	350
	25	320	320
	32, 38	210	210
KH-B (6000 PSI)	13 up to 38	420	420
KH-A (3000 PSI)	13, 20	350	350
	25	315	315
	32	280	280
	38, 48	210	210
KH-A (6000 PSI)	13 up to 48	420	420
KH-T (3000PSI)	13	350	350
	20, 25	315	315
	32	280	280
	40, 50	210	210
	65	175	175
KH-T (6000PSI)	13 up to 50	420	420
KH (3000 PSI)	15, 20	350	350
	25	320	320
	32	280	280
	40, 50	210	210
	65	175	175
	80	160	160
KH (6000 PSI)	15 up tp 80	420	420
KH-R (3000 PSI)	20, 25	315	315
	32 up to 48	280	280
KH-R (6000 PSI)	20	420	420
	25	315	315
	32 up to 48	420	420
KH (ISO 6164)	50, 56	400	400
	65	350	350
	80	400	400
	90	350	350
KH-R (ISO 6164)	48	400	400

Temperature range

Standard range: -10°C to 100°C.

For extended range refer to detailed information in Parker Hannifin Catalogue 4100, Section P 36-38.

Assembling and Installation

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

Production testing

All valves intended to be installed on DNV GL classed Ships and Offshore installations shall undergo pressure tests according to DIN EN 12266-1 – P10 / P11 and P12 and valve certification.

Valve certification

Each valve / delivery is to be accompanied by the following documents:

Valve size > DN 100 and PN ≥ 16

- DNV GL Product certificate (PC), confirming hydrostatic pressure tests
- Material certificate type W (3.1 acc. to EN 10204) for valve body
- Instruction manual/specification sheet

Valve size < DN 100 and PN < 16

- Works certificate (W, EN 10204, 3.1), confirming hydrostatic pressure tests
- Material certificate type TR (2.2 acc. to EN 10204) for valve body
- Instruction manual/specification sheet

For installation on Offshore units the requirements specified in the applicable DNV GL rules for classification of Offshore units (RU-OU) are 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:

Scope	Example
Manufacturers name or trade mark	Parker
Valve type designation	KH25SCFX
Maximum design pressure	PN420
Heat number of body material	518G

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

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- 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