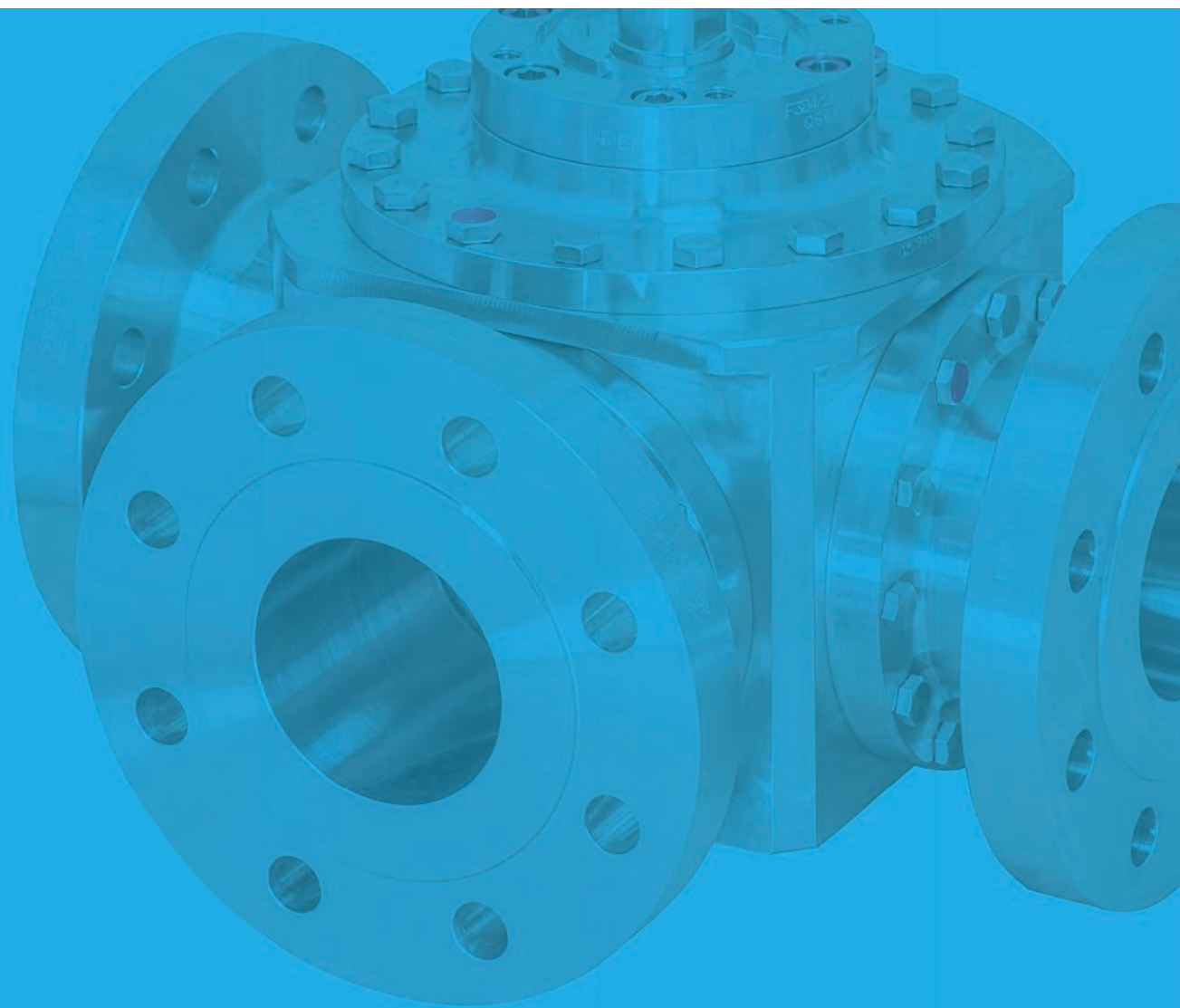




**PERRIN**  
**100%**  
**QUALITY**  
**100% MADE IN**  
**GERMANY**



# CUSTOMIZED BALL VALVES

THE PERFECT SOLUTION  
FOR YOUR APPLICATION

## PERRIN GmbH

We are a global manufacturer of Ball Valves for practically every conceivable type of industrial use. The increasing complex demand for valves requires a high level of innovation and expertise. Thanks to investments, research and the highest quality standards, our company is always prepared for the highest demands of our valued customers.

For many years now, the successful implementation of solutions by our professional engineers and technicians has been reflected in the safety and reliability of our Ball Valves.

We quickly transform the many valuable insights we gain from customers into new, user-oriented concepts. National and international standards are always taken into account as well as specific customer requirements.

Your satisfaction constantly motivates us every day and is the foundation of our corporate philosophy.





# AN ORGANISATION YOU CAN TRUST

For more than 50 years, PERRIN, a subsidiary of the KITZ Corporation, has been THE manufacturer of Ball Valves for industrial use.

With two manufacturing facilities in Germany and about 180 employees we develop and produce valves for almost any application.



## **KITZ Corporation**

- > Headquarters in Tokyo
- > Approx. 5,000 employees

## **PERRIN GMBH**

### **Nidderau | near Frankfurt**

- > Management
- > Sales
- > Design and development
- > Supply chain Management
- > Quality assurance and planning
- > Hardfacing / Machining
- > Assembly and testing

## **PERRIN GMBH**

### **Prenzlau | near Berlin**

- > Industrial Engineering
- > Warehouse raw materials
- > Quality inspection
- > Machining of main components

## **PERRIN Beijing**

- > Maintenance & Service Center
- > Warehouse for spare parts







# PRODUCTION, ASSEMBLY AND TESTING. PRECISION AT THE HIGHEST LEVEL!

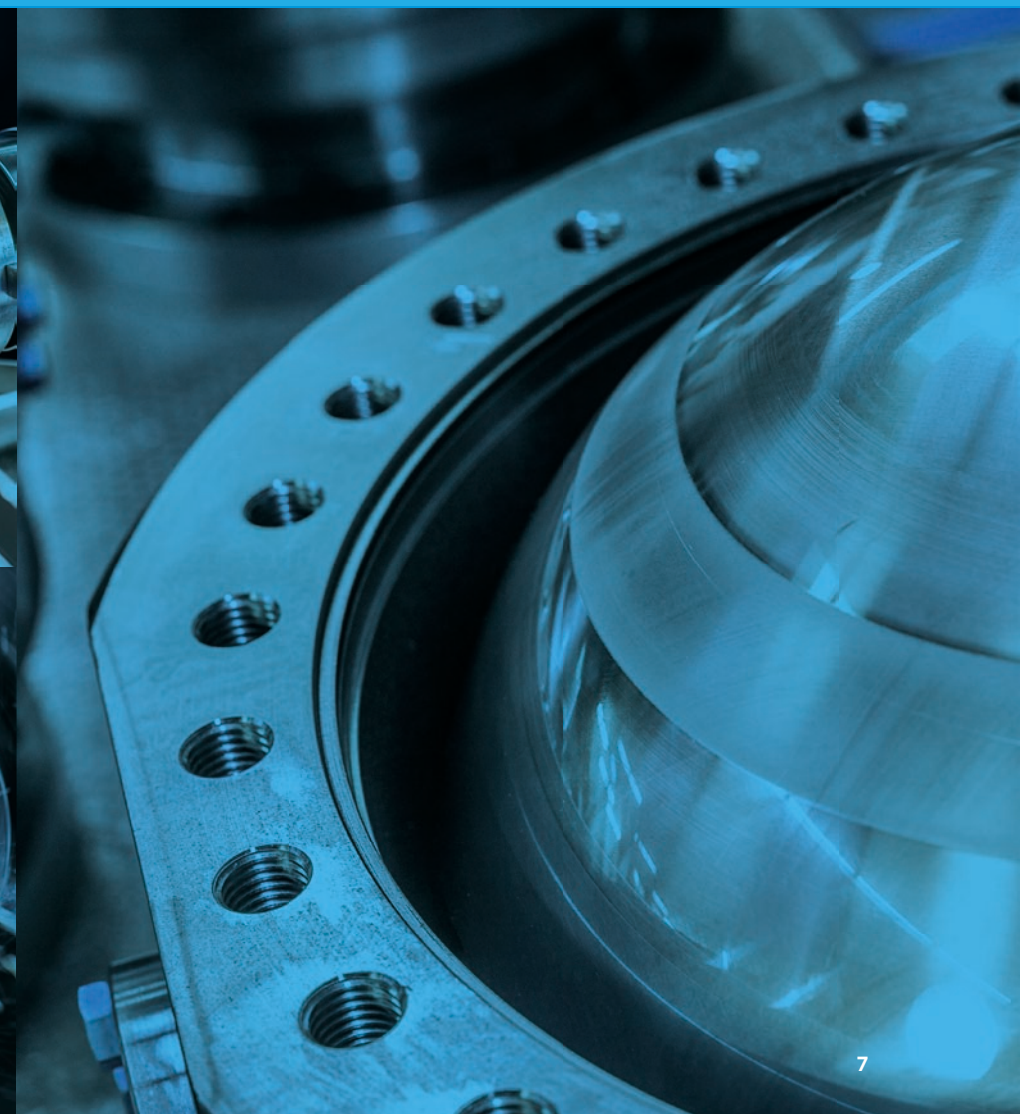
## STATE-OF-THE-ART MACHINERY ENSURES ACCURACY AND PRECISION!

PERRIN design, produce and test with own in-house hardfacing systems and state-of-the-art machine centers. Flat hierarchies, high flexibility and continuous communication lead to sustainable customer satisfaction.


**Constant investments ensure quality and competitiveness of our two German production locations.**

At the **Prenzlau** plant, valve components are produced on modern CNC machines which ensure an extremely high standard of quality. The existing DNC network provides the necessary flexibility.

In **Nidderau** key components are hardfaced with HFOV or thermal spray. Precise grinding and lapping leads to highest sustainable quality of our ball valves. Assembling and 100% testing according international standards or individuell customer requirements follows the "make/engineered to order" process.

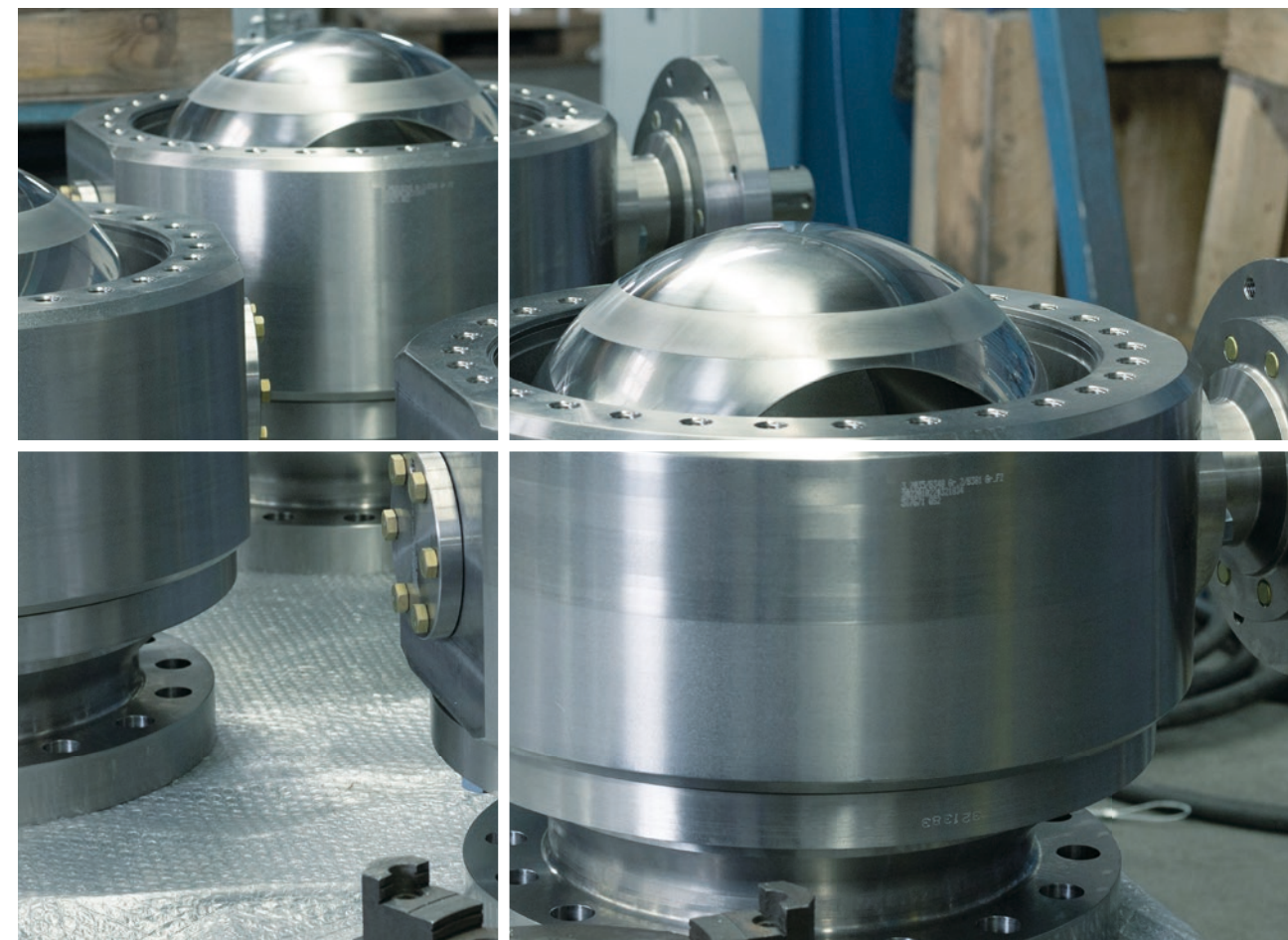






# PERFECTION IN CONSTRUCTION & DEVELOPMENT

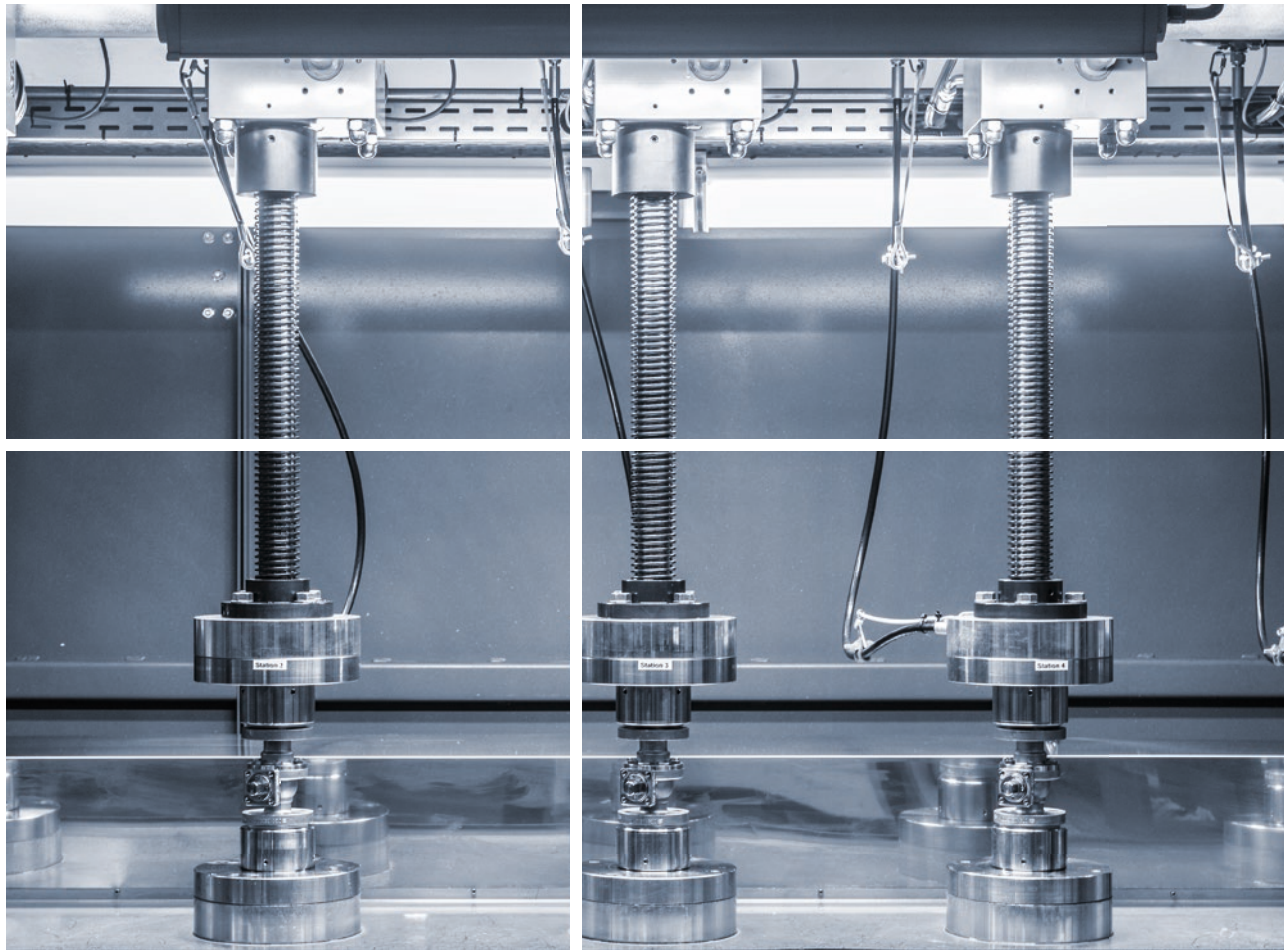
We concentrate on high quality special products and have the customer's needs always in mind. Based on customer specification we designed and produced more than 80,000 different Ball Valves.



## DEVELOPMENT AND DESIGN DETERMINE THE QUALITY OF A PRODUCT

PERRIN Ball Valves guarantee highest reliability and a long life cycle. Either extreme temperatures, critical applications or high pressure levels, we have the solution. Each valve is unique, individual and always manufactured according to customer specification and demand. PERRIN Ball Valves require extremely low-maintenance and guarantee maximum reliability even with high frequency cycles. Refurbishing PERRIN Ball Valves that have been 30 years in service is no big deal for us.





## 100% INSPECTION - GUARANTEED QUALITY FOR ALL YOUR APPLICATIONS UP TO ZERO LEAKAGE FOR METAL SEATED BALL VALVES!

### Tests and inspections

- > Automatic test bench for smaller nominal sizes up to DN 100 / DN 4"
- > Simultaneous testing of up to 5 Ball Valves
- > Visual and electronic recording of results (bubble count) and evaluation

- > **100 t** automatic test bench for nominal sizes up to DN 600 / DN 24"
- > Visual and electronic recording of results (bubble count) and evaluation

- > **600 t** automatic test bench for nominal sizes up to DN 600 (24") to PN 100 (CL 600)
- > High pressure gas test possible
- > Visual and electronic recording of results (bubble count) and evaluation

- > 3-dimensional coordinate measuring machine for measuring, for example, the roundness of balls
- > PMI (positive material identification), test device for material identification
- > Special testing, for example: cryogenic-, fire-safe, helium leak tests, high temperature tests

### Standard acceptance testing

- > 100% quantity pressure and tightness test
- > 100% quantity strength test at 1.5 x PN
- > 100% quantity functional test
- > All tests in accordance with international or customer standards
- > Visual inspection prior to shipping
- > On request: oil and grease free assembly

THE CENTRAL OBJECTIVE OF PERRIN IS TO MAINTAIN A LEADING POSITION IN THE PRODUCTION OF BALL VALVES AND TO ENSURE SUSTAINABLE GROWTH.

## CERTIFIED QUALITY

Management in accordance with **DIN EN ISO 9001** helps us to achieve this goal.

The production and inspection of the valves is in accordance with national and international regulations such as **PED 2014/68/EU, ASME B 16.34, DIN EN 1983, EN ISO 17292, NACE, DVGW, KTA 1401, SIL, China TSG, Canadian Registration, PE(S)R (UKCA)** etc.





# A PASSION FOR BALL VALVES

PERRIN Ball Valves are primarily designed to meet the requirements of the chemical and petrochemical industries as well as those of the plant construction sector. Our decades of experience in design, production and processing, and our state-of-the-art machinery form the basis for the outstanding quality and reliability of our products.

No matter whether it's special materials, special Ball Valve connectors, flush ports, heating or cooling jackets, high or low-temperature applications, automation or special solutions of any kind: We develop individual customer solutions for a wide range of applications.

For our key products – Metal-Seated Ball Valves – we produce high-quality metal coatings in our own coating plants. These are made of a wide range of materials depending on the individual case. The subsequent processing using the latest grinding and lapping technology excellent results can be achieved up to leakage rate A of the Metal-Seated Valves.

## DN

DN 15 to DN 600  
DN 1/2" to DN 24"

## PN

PN 10 to PN 420  
ANSI Class 150 to  
Class 2500

## °C

-196°C to +800°C  
In Future:  
-253°C to +850°C

## Materials

Carbon steel, stainless steel  
Titanium, Hastelloy, Inconel,  
Monel Special materials

**Accessories:** Actuators: pneumatic, electric and hydraulic  
Heating and cooling jackets, stem extensions, and locking and snap-in locking devices

## 2-WAY BALL VALVES

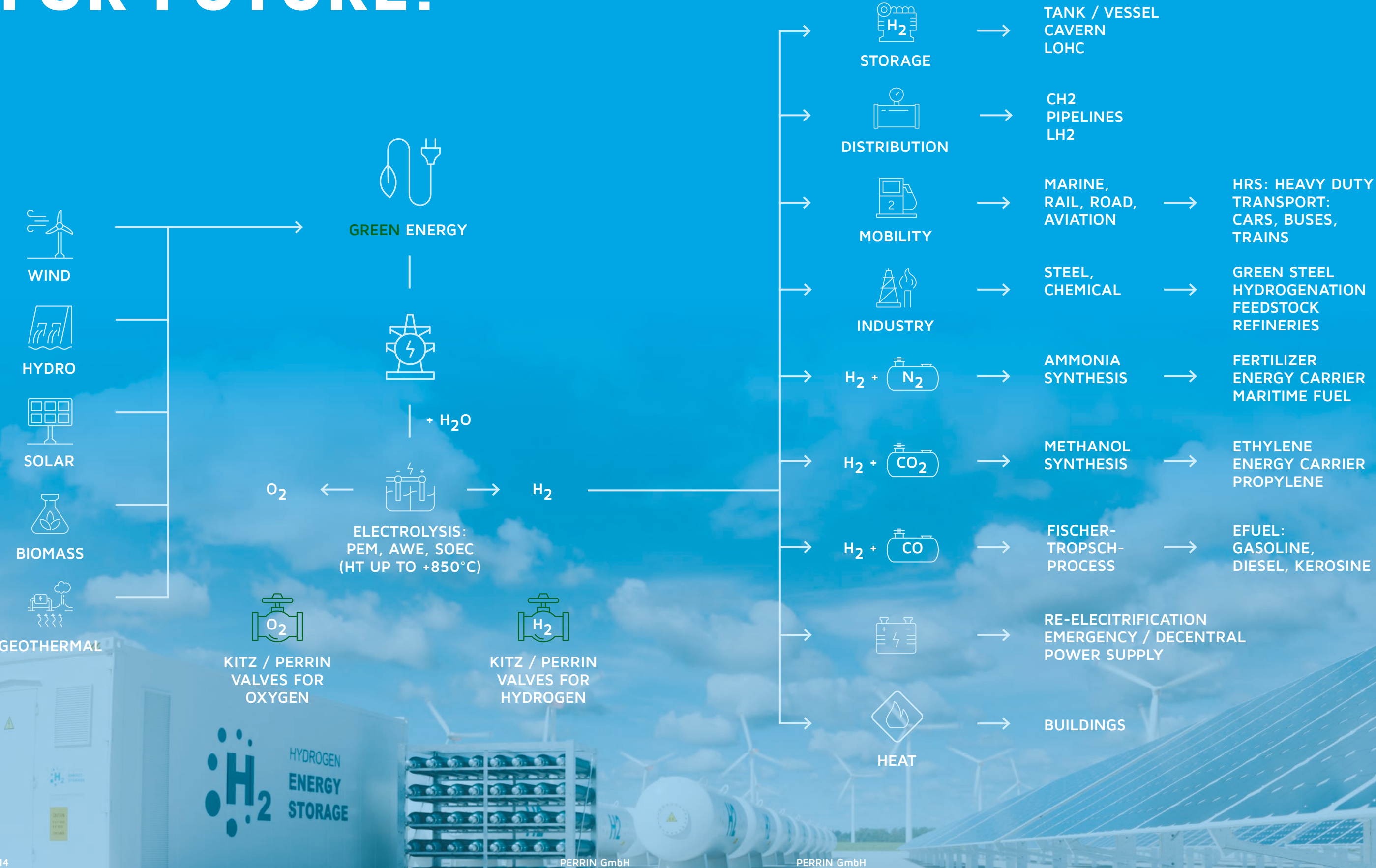
## MULTI-PORT, DIVERTER AND TOP ENTRY BALL VALVES

## BALL VALVE ACCESSORIES





# GREEN HYDROGEN – FOR FUTURE!





# CLEAN ENERGY – OUR CONTRIBUTION TO A MORE SUSTAINABLE SOCIETY



## Decarbonization



## Green Steel Direct Iron Reduction



## Fertilizer



## Valves for high pressure storage



## H<sub>2</sub>-Readiness

- > Customised product solutions with „H<sub>2</sub>-Readiness“
- > Application of existing regulations:
- > Material selection
- > Design
- > Testing of hydrogen resistance taking into account a wide range of framework conditions (material compatibility, pressure, temperature, fluctuations, application...)
- > Highest quality in production
- > Acceptance test according to strict criteria, especially internal and external tightness, e.g. DIN EN ISO 15848



## LH<sub>2</sub>

- > Supply chain for liquefied Hydrogen -253°C
- > Pipeline Valve in collaboration with KC Japan, Top entry design
- > Loading arm ERS-Valve  
Emergency Release System



## HRS-hydrogen refueling stations

- > our CLESTEC-Series (ball/needle-valves, filter, check and excess flow)
- > Maximum Flow up to trucks, buses and trains
- > Use case: hydrogen supply trailer ISO 23826
- > High pressure up to 103 MPa / 1030 bar



## Cavern for underground storage

- > Backbone for green hydrogen – important fact for sector coupling
- > experienced from Oil Cavern



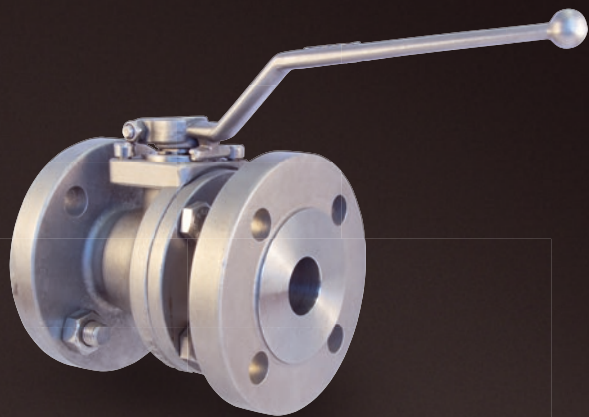


# 2-WAY BALL VALVES

## FLOATING BALL

soft sealing | metal sealing | carbon sealing

**DN:** 15 (1/2") to DN 600 (24")  
**PN (Class):** 10 (150) to 420 (2500)  
**Temp.:** min. -196°C to max.+600°C



The 2-way Ball Valves with a floating ball are designed with a 2 or 3 piece body. The floating ball design creates tightness on the downstream side, which keeps increasing as the up-stream pressure continues to rise.

→ DIN

Type	DN	PN	Body mat.	Spring seats	Temperature	Application examples
11	15 - 150	10 - 40	as required	n.a.	-60°C to +200°C	nuclear power, general chemical
70	15 - 300	10 - 420	as required	n.a.	-160°C to +450°C	PTA / pharma, general chemical
75	15 - 150	10 - 40	precision casting	n.a.	-60°C to +450°C	general chemical
80	15 - 300	10 - 420	as required	on one side	-196°C to +600°C	vacuum, general chemical
85	15 - 150	10 - 40	precision casting	on one side	-60°C to +450°C	vacuum, general chemical
88	50 - 600	16 - 420	as required	on both sides	-60°C to +450°C	mining / media containing solids

→ ANSI

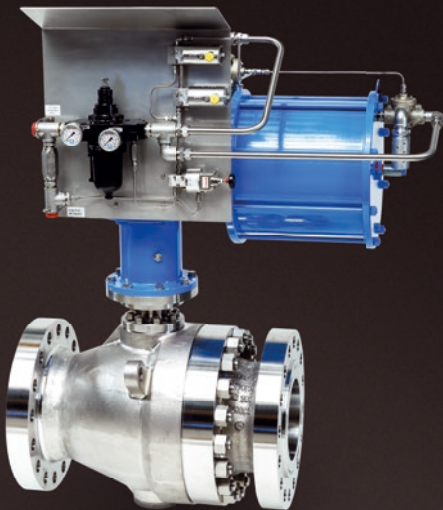
Type	DN	Cl.	Body mat.	Spring seats	Temperature	Application examples
11	15 - 150	150 - 300	as required	n.a.	-60°C to +200°C	nuclear power, general chemical
70	1/2" - 12"	150 - 2500	as required	n.a.	-160°C to +450°C	PTA / pharma, general chemical
75	1/2" - 6"	150 - 300	precision casting	n.a.	-60°C to +450°C	general chemical
80	1/2" - 12"	150 - 2500	as required	on one side	-196°C to +600°C	vacuum, general chemical
85	1/2" - 6"	150 - 300	precision casting	on one side	-60°C to +450°C	vacuum, general chemical
88	2" - 24"	150 - 2500	as required	on both sides	-60°C to +450°C	mining / media containing solids

# 2-WAY BALL VALVES

## TRUNNION MOUNTED BALL

soft sealing | metal sealing | metering Ball Valve

**DN:** 15 (1/2") to DN 600 (24")  
**PN (Class):** 10 (150) to 420 (2500)  
**Temp.:** min. -196°C to max.+800°C



The trunnion mounted 2-way Ball Valves are equipped with 2 or 3-component body. Spring-loaded seats are used for sealing. Due to the absorption of force by the trunnion and stem the trunnion mounted Ball Valve not only has less torque than the floating versions, but is also suitable for larger sizes and higher pressure levels. In the standard version these are sealed on the upstream side and if required can be supplied as a „double block and bleed (DBB)“ or „double insulation and bleed (DIB)“ version.

→ DIN

Type	DN	PN	Body mat.	Spring seats	Temperature	Application examples
14	25 - 600	10 - 420	as required	on both sides	-196°C to +800°C	general chemical
15	15 - 300	10 - 40	as required	on one side	-60°C to +450°C	tank bottom valve
16	15 - 300	10 - 250	as required	on both sides	-60°C to +450°C	high switching frequency, dosing of solids (1 million / year)
17	15 - 500	10 - 100	as required	also on both sides possible	-196°C to +450°C	LNG, general chemical
CTB	1/4" - 9/16"	max. 103 Mpa	stainless steel	on both sides	-50°C to +85°C	hydrogen

→ ANSI

Type	DN	Cl.	Body mat.	Spring seats	Temperature	Application examples
14	1" - 24"	150 - 2500	as required	on both sides	-196°C to +800°C	allround
15	1/2" - 12"	150 - 300	as required	on one side	-60°C to +450°C	tank bottom valve
16	1/2" - 12"	150 - 1500	as required	on both sides	-60°C to +450°C	high switching frequency, dosing of solids (1 million / year)
17	1/2" - 20"	150 - 600	as required	also on both sides possible	-196°C to +450°C	LNG, general chemical
CTB	1/4" - 9/16"	max. 103 Mpa	stainless steel	on both sides	-50°C to +85°C	hydrogen



# MULTI-PORT BALL VALVES

## FLOATING BALL

soft sealing | metal sealing | carbon sealing

**DN:** 15 (1/2") to DN 150 (6")  
**PN (Class):** 10 (150) to 40 (300)  
**Temp.:** min. -60°C to max.+200°C



The 3-way Ball Valves with a floating ball are designed with a 2-component or multi-component body. The floating ball design creates tightness on the downstream side, increases as the up-stream pressure continues to rise. The valve is available with an L or T bore.

→ DIN

Type	DN	PN	Body material	Ways	Angle	Bore	spring seats	Temperature range	Application examples
20	15 - 100	10 - 40	as required	3		L or T	n.a.	-60°C to + 200°C	general chemical

→ ANSI

Type	DN	Cl.	Body material	Ways	Angle	Bore	spring seats	Temperature range	Application examples
20	1/2" - 4"	150 - 300	as required	3		L or T	n.a.	-60°C to + 200°C	general chemical
27	1" - 6"	150 - 300	investment casting	3		L	n.a.	-60°C to + 200°C	general chemical

# MULTI-WAY BALL VALVES

## TRUNNION MOUNTED BALL

soft sealing | metal sealing | metering Ball Valve

**DN:** 15 (1/2") to DN 500 (20")  
**PN (Class):** 10 (150) to 250 (1500)  
**Temp.:** min. -60°C to max.+550°C



The trunnion mounted multi-way Ball Valves are equipped with a 2-component or 3-component body. Spring-loaded seats are used for sealing. Due to the absorption of force by the trunnion and stem the trunnion mounted Ball Valve not only has less torque than the floating versions, but is also suitable for larger sizes and higher pressure levels. The ball and stem are made in one piece, so that even with a high switching frequency, no slackness and resulting wear can occur on these components' connectors. The balls can be equipped with different bores (e.g. L, T or X) depending on the model, so customized solutions for the distribution of media are available.

→ DIN

Type	DN	PN	Body material	Ways	Angle	Bore	spring seats	Temperature range	Application examples
21	15 - 500	15 - 250	as required	3		L or T	Spring-loaded	-60°C to +550°C	general chemical
22	15 - 500	15 - 250	as required	3		120° L	Spring-loaded	-60°C to +550°C	Solids-containing and viscous medium (PP/PE)
23	15 - 500	15 - 250	as required	4		X	Spring-loaded	-60°C to +550°C	general chemical
24	15 - 500	15 - 250	as required	3 - 5		L or T	Spring-loaded	-60°C to +550°C	general chemical
25	15 - 250	10 - 40	as required	3		150° L	Spring-loaded	-60°C to +550°C	Solids-containing and viscous medium (PP/PE)

→ ANSI

Type	DN	Cl.	Body material	Ways	Angle	Bore	spring seats	Temperature range	Application examples
21	1/2" - 20"	150 - 1500	as required	3		L or T	Spring-loaded	-60°C to +550°C	general chemical
22	1/2" - 20"	150 - 1500	as required	3		120° L	Spring-loaded	-60°C to +550°C	Solids-containing and viscous medium (PP/PE)
23	1/2" - 20"	150 - 1500	as required	4		X	Spring-loaded	-60°C to +550°C	general chemical
24	1/2" - 20"	150 - 1500	as required	3 - 5		L or T	Spring-loaded	-60°C to +550°C	general chemical
25	1/2" - 10"	150 - 300	as required	3		150° L	Spring-loaded	-60°C to +550°C	Solids-containing and viscous medium (PP/PE)



CLESTEC BALL VALVE  
LEVER HANDLE (CTB)

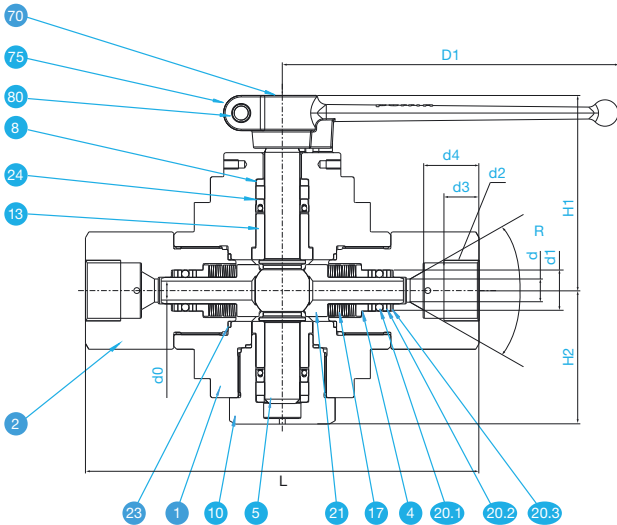
– also available with actuator

MPa: 103  
bar: 1030  
PSI.: 15.000



CLESTEC BALL VALVE  
WITH HANDLE (CTB-TS)

MPa: 50  
bar: 500  
PSI.: 7.000



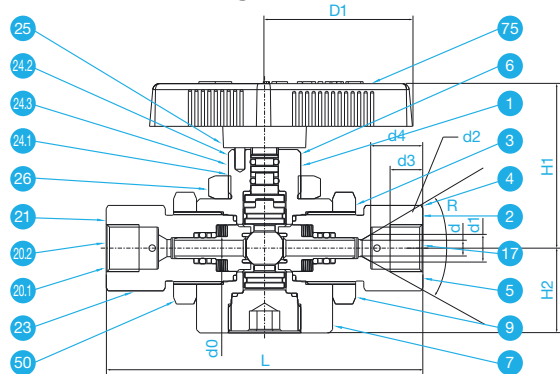
→ Component List

PN	Parts Name	Material
1	Body	F316/F316L-1.4401/04
2	Body Cap	F316/F316L-1.4401/04
4	Retainer Ring	F316/F316L-1.4401/04
5	Ball	2.4856 + DLC
8	Spacer Ring	2.0936
10	Bottom Cover	F316/F316L-1.4401/04
13	Bearing	2.0936
17	Disk Spring	A167 TYPE316
20.1	O-Ring	EPDM
20.2	Back-Up Ring	PTFE-25% GLAS
20.3	Back-Up Ring	PEEK
21	Seat Retainer	2.1247 + DLC
23	Gasket	2.0090
24	Stern Sealing	KITZ Standart
70	Lever	1.4308
75	Hex. Screw M6x25	A2.70
80	Hex. Nut M6	A4

FEATURES

1 Ball valve incorporates non-rotational structure  
The adopted non-rotational structure secures an excellent sealing performance by preventing galling or scratching due to the up/down sealing motion of a valve body while rotating.

2 Secure shaft sealing structure



→ Specifications of Ball Valve with Handle

Maximum Allowable Pressure	50 MPa: 85 °C
Fluid Temperature Range	-30~+85 °C
Cv-Value	1.2 (9/16" 20,000 psi)
Body Material	SUS 316
Fitting	Coned & Thread
Actuator	Manual
Flow Direction	Uni-Directional

→ Component List

PN	Parts Name	Material
1	Body	F316/F316L-1.4401/04
2	Body Cap	F316/F316L-1.4401/04
3	Seat Retainer	2.1247
4	Collar	F316/F316L-1.4401/04
5	Ball	SUS316 (JIS)
6	Stem	SUS316 (JIS)
7	Plug	F316/F316L-1.4401/04
9	Bearing	PEEK
17	Disk Spring	A167 TYPE316
20.1	O-Ring	EPDM
20.2	Back-Up Ring	PTFE+25% GLAS
21	Ball Seat	PEEK
23	Gasket	PTFE
24.1	O-Ring	EPDM
24.2	O-Ring	H-NBR
24.3	Back-Up Ring	PTFE+25% GLAS
25	Bearing	PEEK
26	Bearing	PEEK
50	Nut	1.4301
75	Handle	PPS

→ Dimension Table All dimensions in mm

Nominal Size	Inch Tubing End	d0	d	d1	d2	d3	d4	R	H1	H2	D1	L	Weight
9/16"	9/16" 40,000 psi	6.4	4.8	11.4	1-1/8" - 12UNF	15.7	19.1	60	66.5	45.5	114.5	134.2	2.8 kg
1/4"	1/4" 20,000 psi	6.4	2.8	4.8	7/16" - 20UNF	7.1	12.7	60	66.5	45.5	114.5	134.2	
1/4"	1/4" 60,000 psi	6.4	2.4	4.3	9/16" - 18UNF	9.7	11.2	60	66.5	45.5	114.5	134.2	
3/8"	3/8" 20,000 psi	6.4	5.2	7.9	9/16" - 18UNF	9.7	15.7	60	66.5	45.5	114.5	134.2	
3/8"	3/8" 60,000 psi	6.4	3.2	6.6	3/4" - 16UNF	13.5	15.7	60	66.5	45.5	114.5	134.2	
9/16"	9/16" 20,000 psi	6.4	7.9	12.7	13/16" - 16UNF	11.2	19.1	60	66.5	45.5	114.5	134.2	
9/16"	9/16" 60,000 psi	6.4	4.8	9.7	1-1/8" - 12UNF	15.7	19.1	60	66.5	45.5	114.5	134.2	

→ Dimension Table All dimensions in mm

Nominal Size	Inch Tubing End	d0	d	d1	d2	d3	d4	R	H1	H2	D1	L	Weight
9/16"	9/16" 20,000 psi	4.8	7.9	12.7	13/16" - 16UNF	11.2	19.1	60	51	32	45	122	1.0 kg
1/4"	1/4" 20,000 psi	4.8	2.8	4.8	7/16" - 20UNF	7.1	12.7	60	51	32	45	122	
1/4"	1/4" 60,000 psi	4.8	2.4	4.3	9/16" - 18UNF	9.7	11.2	60	51	32	45	122	
3/8"	3/8" 20,000 psi	4.8	5.2	7.9	9/16" - 18UNF	9.7	15.7	60	51	32	45	122	
3/8"	3/8" 60,000 psi	4.8	3.2	6.6	3/4" - 16UNF	13.5	15.7	60	51	32	45	122	
9/16"	9/16" 40,000 psi	4.8	6.4	11.4	1-1/8" - 12UNF	15.7	19.1	60	51	32	45	122	
9/16"	9/16" 60,000 psi	4.8	4.8	9.7	1-1/8" - 12UNF	15.7	19.1	60	51	32	45	122	



# TOP ENTRY BALL VALVE

for cryogenic applications

**DN:** Up to 16" / DN 400  
**PN (Class):** Up to 250 (1500)  
**Temp.:** From -196°C up to +100°C



**Advantages:**

- > Easy assembling / disassembling
- > Fully Bidirectional
- > Inhouse Cryogenic Testing
- > With Cavity Pressure Relief
- > Live loaded packing
- > Blowout-proof stem
- > Inline maintenance
- > ISO connection for actuators

**Certifications:**

- > Fire Safe acc. ISO 10497
- > Fugitive Emission acc. ISO 15848-1

→ **Features**

Type, Design	Floating and trunnion mounted design
Valve Connection	Butt weld, socket weld, flanged, other connections on request
Sizes	Up to 16" / DN 400
Pressure Class	Up to Class 1500 / PN 250
Sealing system	Soft Seated
Temperature range	-196°C up to +100°C
Operation	Manual (lever / gear), pneum. / electr. / hydr. Actuator

# HIGH TEMPERATURE

- High Pressure

**DN:** Up to 24" / DN 600  
**PN (Class):** Up to 420 (2500)  
**Temp.:** Up to +800°C



**High Temperature:**

- > Direct reduced iron
- > SOEC / SOFC
- > Pyrolyse
- > Silicone Fines
- > Pulverised Coal
- > Molten Salt
- > Solarthermal energy
- > Geothermal energy
- > Delayed Coker
- > steel blast furnace

**Certifications:**

- > Fire Safe acc. ISO 10497
- > Fugitive Emission acc. ISO 15848-1

→ **Features**

Type, Design	Split body double or single seat design
Valve Connection	Butt weld, socket weld, flanged, other connections on request
Sizes	Up to 24" / DN 600
Pressure Class	Up to Class 2500 / PN 420
Sealing system	Soft Seated or Metal Seated
Temperature range	Up to +800°C
Operation	Manual (lever / gear), pneum. / electr. / hydr. Actuator

**High Pressure:**

- > H2 storage
- > High pressure water cutting
- > Cavern

**Transportation of Solids:**

- > Slurry
- > Severe service
- > Powder/Nitrogen



# WORLDWIDE SERVICE - THANKS TO THE GLOBAL PRESENCE OF PERRIN AND KITZ

**PERRIN GmbH**  
Siemensstraße 1  
61130 Nidderau - Germany  
Fon: + 49 (0) 6187-928 250  
E-mail: [postoffice@perrin.de](mailto:postoffice@perrin.de)  
[www.perrin.de/en](http://www.perrin.de/en)



## You can find our ball valves in various industries

### General:

- > Flexibility in Engineering and Production through Experienced engineers in the design department
- > 100% German „In house“ production
- > Own Facilities for production of metal hard facings Know-how and up state of the art machinery park for the machining of the hard faced parts (Turning / Grinding / Lapping)
- > Short delivery times even for specials possible
- > Production of customized products

### Industries:

- > Clean Energy (hydrogen, ammonia, methanol, efuels)
- > Chemical Industry
- > Petrochemical Industry, Refineries
- > Coal Gasification Industry
- > Iron & Steel and Aluminum Industries
- > Power and Waste Industries
- > Mechanical Engineering for Plant Construction
- > Loading Technology
- > Transportation of Solids
- > Liquefied Gas (LNG, LN2, LH2)
- > Cement Industry
- > Nuclear Power Plants

### Applications we are focused on:

- > Cold / Cryogenic application (up to -253°C)
- > Application above 200°C
- > Application for metal seated ball valves
- > For High Temperature (up to 850°C)
- > For Solid medium or stickily Medium (Tar, Bitumen)
- > Application with high frequency of cyclings up to 1 Mio cycles
- > Vacuum application
- > High Pressure application up to 420 bar (Cl.2500)
- > Multiport Application - 3-way application
- > L-port, T-port, 90° and 120°connections)
- > 120°- 4-way application
- > Diverter valves
- > Tank bottom ball valves (closing from tanks and reactors)
- > Application with special materials: - Body / Trim from Titanium / Hastelloy / Duplex / Inconel / Monel...
- > Special metal hard facings
- > Special paintings
- > Application with heating jackets
- > Application in the nuclear industry
- > Dosing Applications e.g.catalyst injection:
  - Continuous dosing
  - Discontinuous dosing



