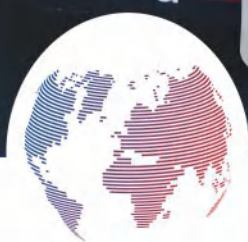
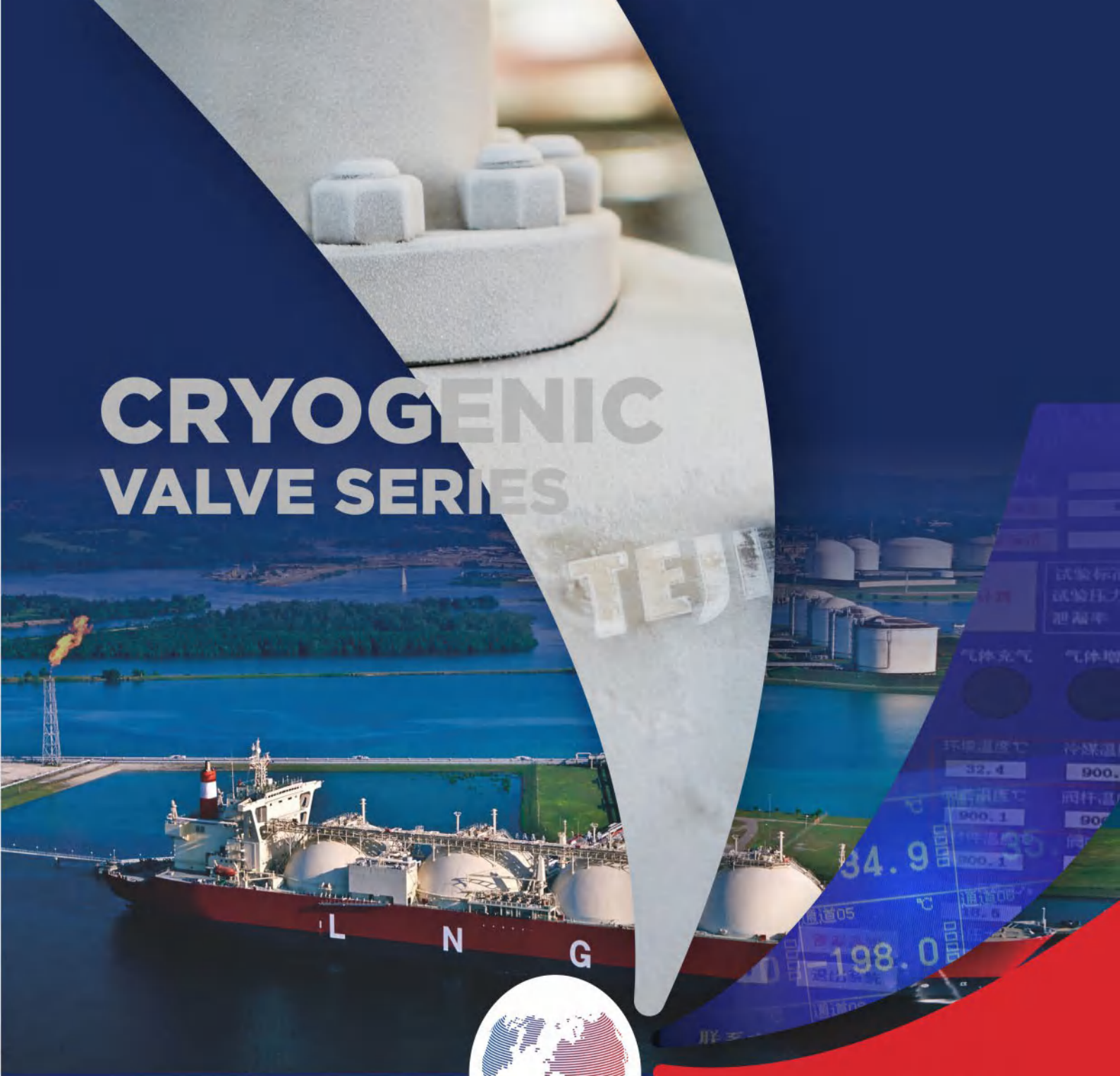


# CRYOGENIC VALVE SERIES



Leading the Global Valve Industry.



**TEJI**®



# COMPANY PROFILE

Leading The Global Valve Industry

TEJI VALVE GROUP, focusing on manufacturing valves since 1980, with recent expansion of the factory, TEJI now has about 68,000m<sup>2</sup> of covered workshop, with facilities both in Wenzhou and Shanghai.

Certified by API 6D, API 600, API 602, API 607, ISO9001, ISO 14001, OHSAS 18001, EAC (GOST-R), TS, TEJI has developed an excellent quality control and management system to ensure its excellent quality and service, and equipped with more than 300 sets of metal processing cutting, machining and testing equipments. Devoted to providing the best quality products and services to meet customer's needs, TEJI has become an important leader in the global valve industry.

The enterprise is orientated towards clients' satisfaction, which prompts TEJI GROUP to adjust the valves according to their requirements and deliver them within a strictly prescribed period. Our high-quality technical teams could be your best backup to provide with the most innovative solutions and make a commitment to our customers with the best service.



## TEJI'S CORE PRODUCTS:

### LNG Area:

Cryogenic Top Entry Ball Valve Maintain online.  
Cryogenic Butterfly Valve Maintain online.  
Cryogenic Split Body Ball Valve.  
Cryogenic Gate,Globe, Check Valve  
Cryogenic Axial Check Valve, etc.

### Oil & Gas Industry Area:

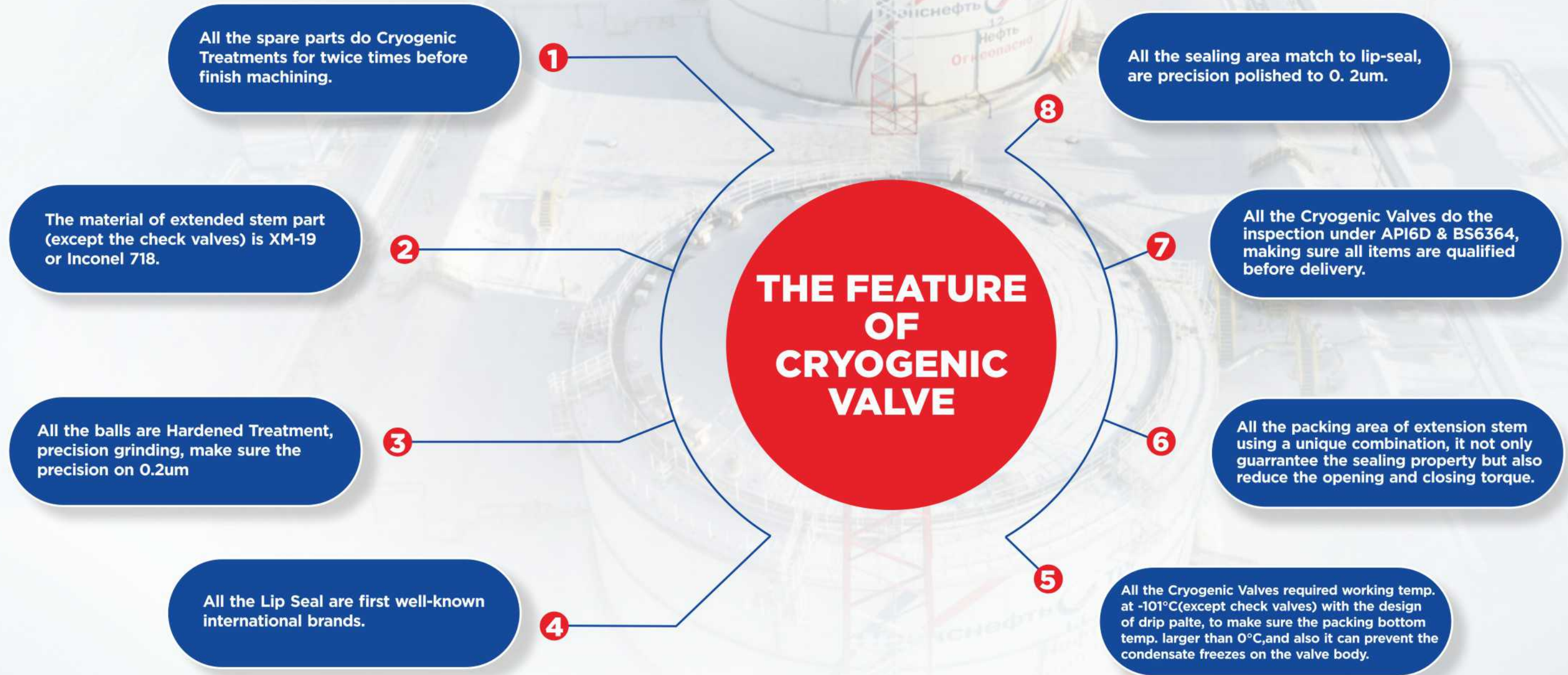
Fully Welded Ball Valve, Gate Valve, Globe Valve,  
Check Valve, Butterfly Valve etc.

TEJI not only has full experience in design and manufacture, but also takes the lead in valve technical solution and maintain service, from the outdoor platform to underground factory.

We orientating for mutual benefits, common progress, aiming to be the technical leader in cryogenic valve industry. your needs are what we work hard for. Every day in every way, we at TEJI evolve ourselves to be a better supplier and partner when comes to your valves requirements and solutions.

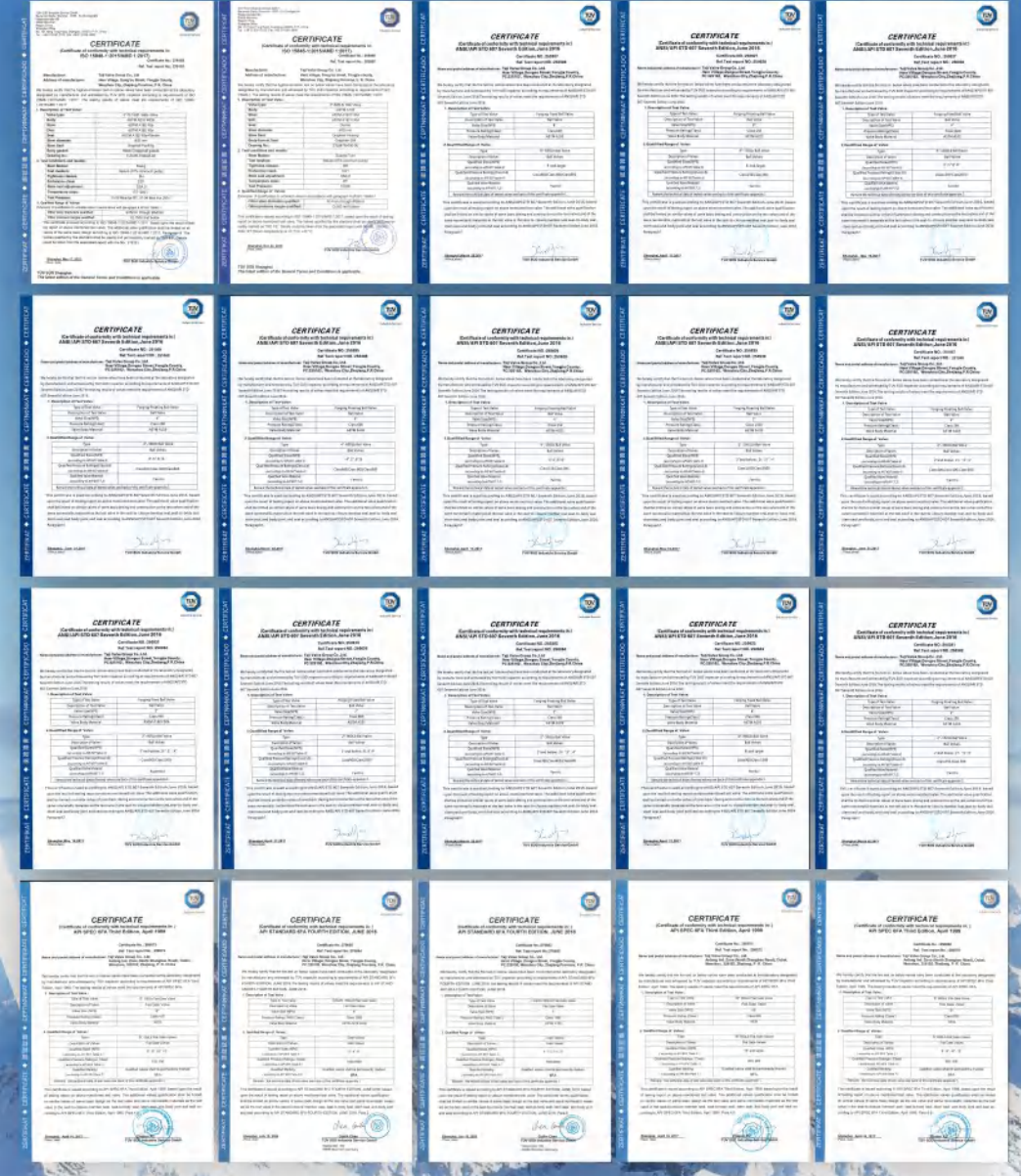
# PRODUCT ADVANTAGES

Leading The  
Global Valve Industry



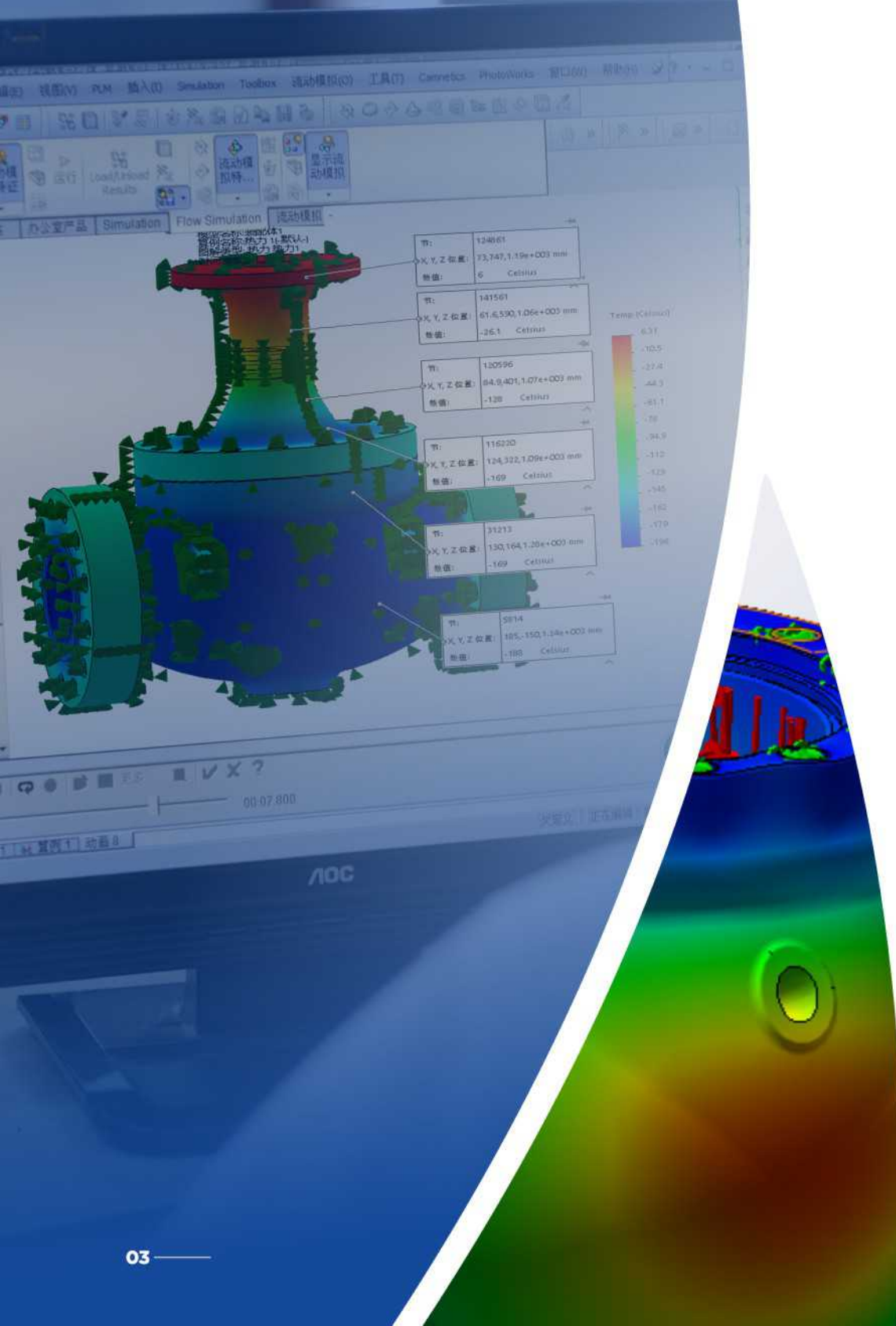
# QUALIFICATION CERTIFICATE

Leading The Global Valve Industry

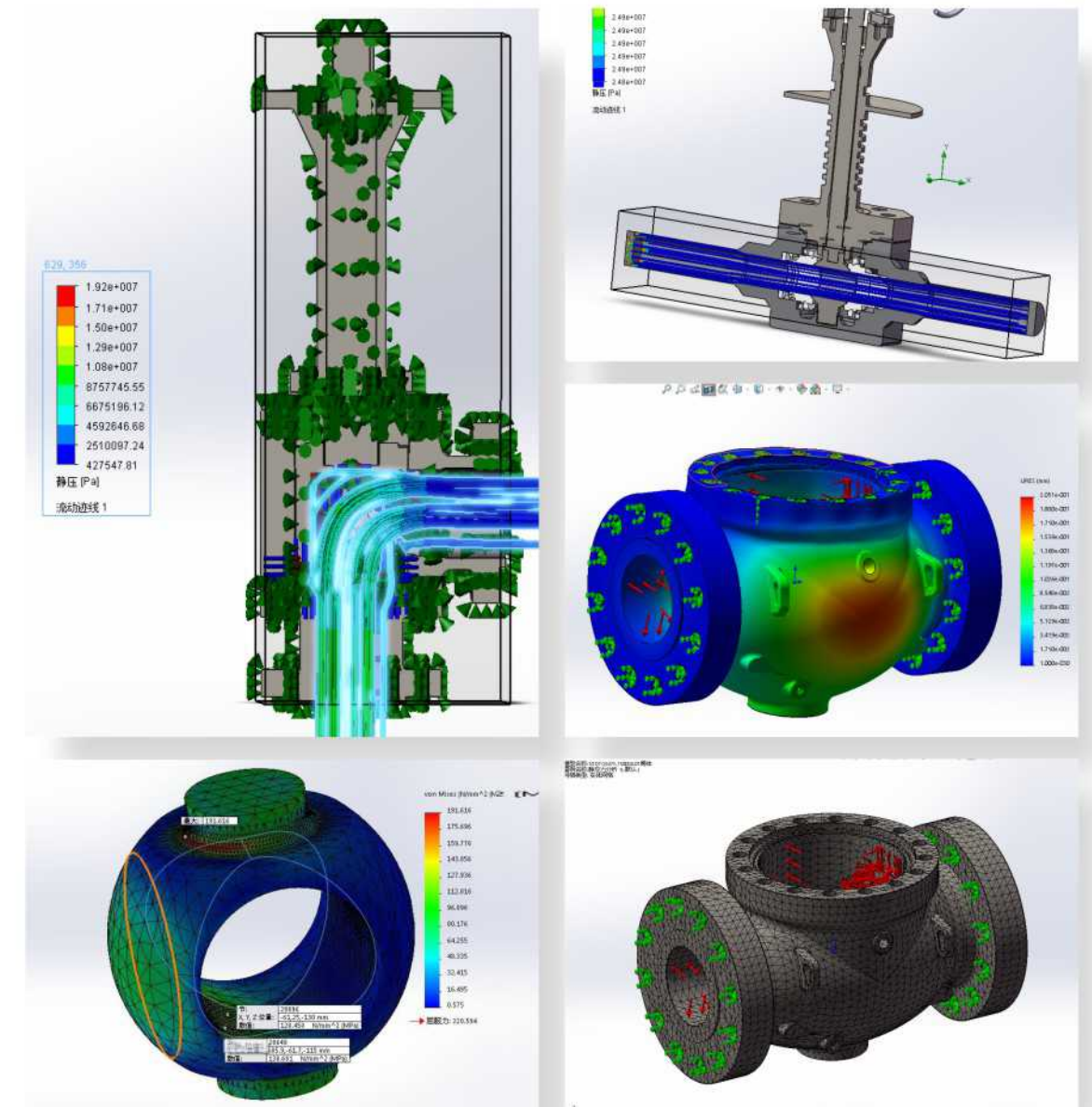


# TECHNOLOGICAL INNOVATION

Leading The Global Valve Industry



Advanced computer simulation and analysis technology used for analyzing stress of valves and temperature flow; it can calculate the estimated valve life, solve the corresponding problems in valve application, guaranteeing the products quality.



# QUALITY ASSURANCE

Leading The Global Valve Industry

## IMPROVEMENTS:

1. Set up a trained and standardized Quality Control Technician Team.
2. With our computer managements system to analyze the data, find out the weak link of management, improve the quality and efficiency, and reduce the waste in the process.
3. Through the computer system to make information transparent to customers, customers can master the order status and product related information in real time
4. Advance Machines: take advanced technology and reliable equipment to ensure machining accuracy and long-term stable production capability



Compact Test



Tensile Test



Three-coordinates Measuring Machine



Spectro Test

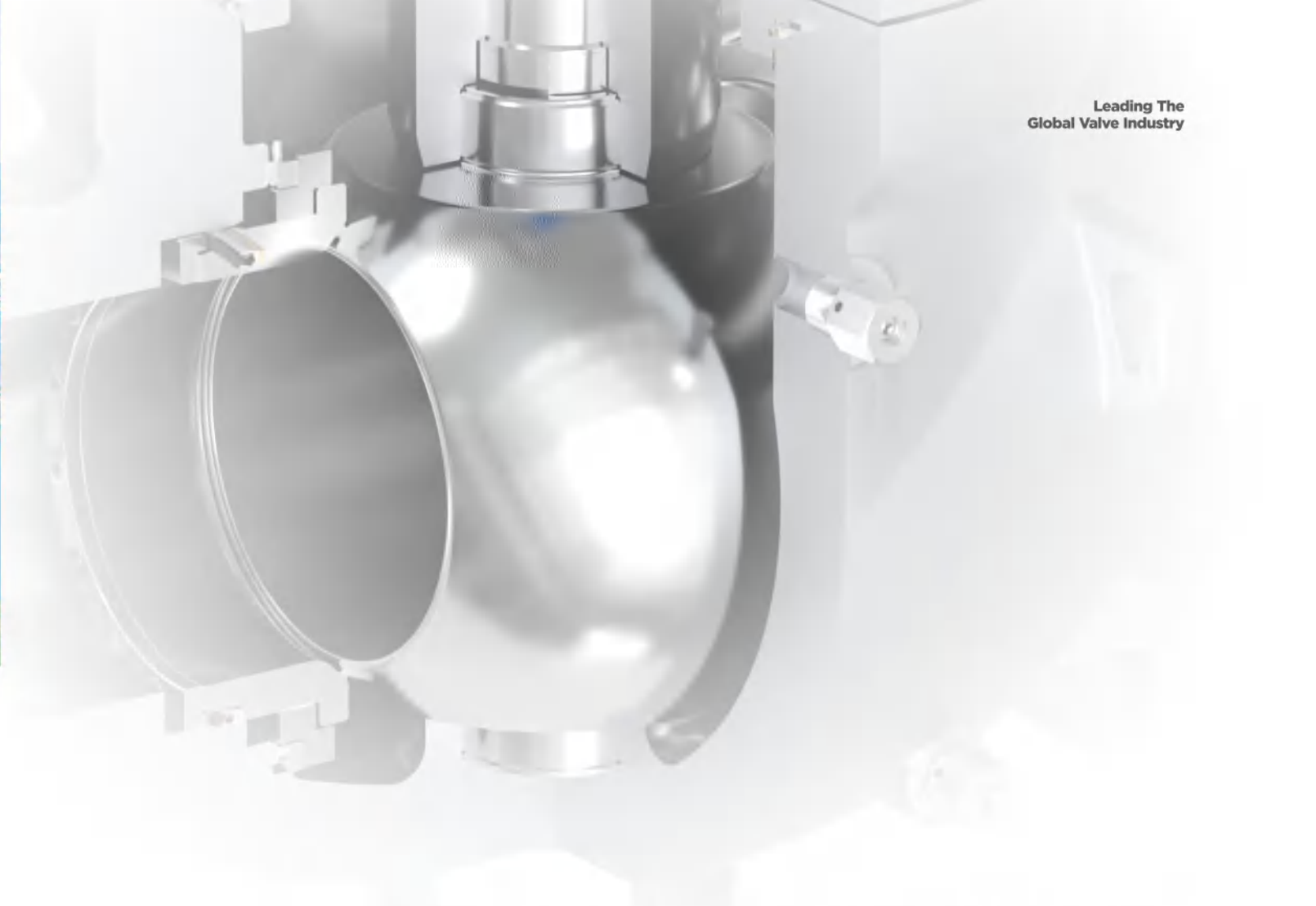


Spectrograph



# APPLICATION FIELD

Leading The Global Valve Industry



## APPLIED SOLUTIONS OUR CRYOGENIC VALVES OFFERED



# PRODUCT RANGE

Leading The Global Valve Industry

TYPE	Floating/Trunnion	Soft/Metal Seat	Size Range(inch)					
			150LB	300LB	600LB	900LB	1500LB	2500LB
Cryogenic Side Entry Ball Valve	Trunnion	Soft Seated	48	36	30	20	14	10
		Metal Seated						
	Floating	Soft Seated	6	4	4	3	/	/
		Metal Seated						
Cryogenic Top Entry Ball Valve	Trunnion	Soft Seated	40	36	30	20	14	10
		Metal Seated						
	Floating	Soft Seated	3	2	2	/	/	/
		Metal Seated						
Cryogenic Side Entry Ball Valve	Trunnion	Soft Seated	40	36	30	20	14	10
		Metal Seated						
	Floating	Soft Seated	6	4	4	3	/	/
		Metal Seated						
Cryogenic Top Entry Ball Valve	Trunnion	Soft Seated	40	36	30	20	14	10
		Metal Seated						
	Floating	Soft Seated	3	2	2	/	/	/
		Metal Seated						
Cryogenic Gate Valve	Rising	Soft Seated	/	/	/	/	/	/
		Metal Seated	48	48	36	20	16	12
Cryogenic Globe Valve	Rising	Soft Seated	12	10	4	/	/	/
		Metal Seated	20	12	10	10	10	10
Cryogenic Check Valve	Swing	Soft Seated	12	10	4	/	/	/
		Metal Seated	24	16	12	10	10	10
	Piston	Soft Seated	12	10	4	/	/	/
		Metal Seated	16	12	10	10	10	10
	Axis Flow	Soft Seated	/	/	/	/	/	/
		Metal Seated	20	12	10	10	10	10
Cryogenic Butterfly Valve	Side Entry	Soft Seated	48	40	30	12	10	/
		Metal Seated						
	Top Entry	Soft Seated	42	42	30	12	10	/
		Metal Seated						
Cryogenic Plunger Valve	Angle	Metal Seated	40	40	36	30	24	12
	Straight Pattern							

Soft Seat Material: PCTFE  
Metal Seat Material: STL/NI55/TCC

# SEALING MATERIAL

Leading the Global valve industry

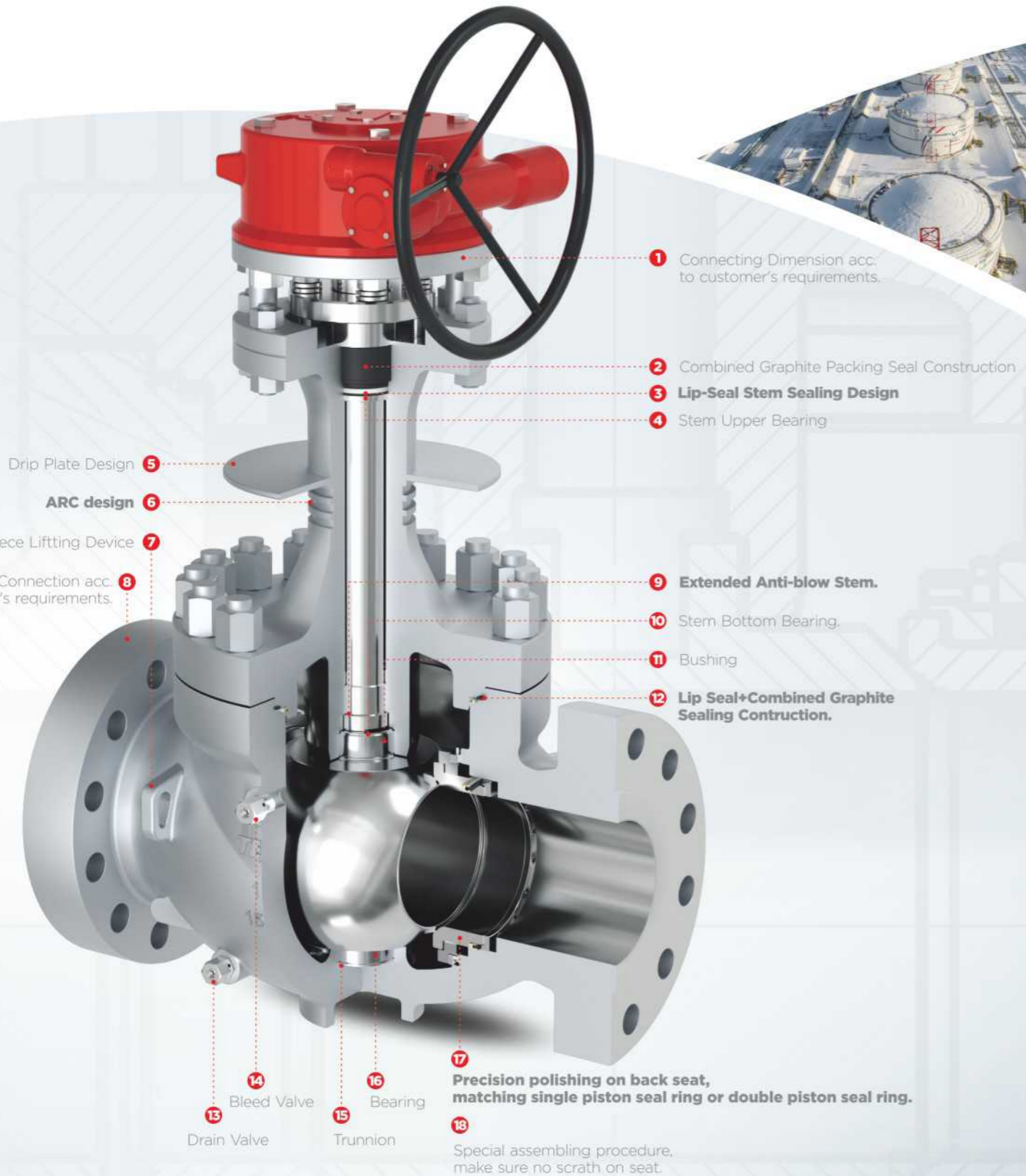


Sealing Type	Technical Parameter		
	Pressure Range (Mpa)	Spring Material	Main Applications
	150-900	SS316 Elgiloy Inconel 718	Static Service, Cryogenic Service, Vacuum Medium, Higher sealing requirements.
	150-2500		Static Service, bi-directional sealing requirements, Higher sealing requirements and Cryogenic Service.
	150-900		Static Service, bi-directional sealing requirements, Non-Cryogenic or Cryogenic Service.
	150-2500		Static Service, Higher Pressure Service.
	150-2500		Static Service, Higher Pressure Service.
	150-900		Static Cryogenic Service, Cryogenic Rotating Service
	150-900		Suitable for valves without back pressure
	150-1500		Bottom thickening, available for no back pressure condition, or higher pressure.
	150-2500		Retaining ring added in bottom, available for no back pressure condition, or higher pressure.
	150-900		Add supporting for back pressure ones
	150-2500		Add front support and retaining ring in bottom, available for no back pressure condition and larger gap or higher pressure conditions.



# CRYOGENIC TOP ENTRY BALL VALVE

Leading The Global Valve Industry



1 Connecting Dimension acc. to customer's requirements.

2 Combined Graphite Packing Seal Construction

3 Lip-Seal Stem Sealing Design

4 Stem Upper Bearing

Drip Plate Design 5

ARC design 6

One Piece Lifting Device 7

Different End Connection acc. to customer's requirements. 8

9 Extended Anti-blow Stem.

10 Stem Bottom Bearing.

11 Bushing

12 Lip Seal+Combined Graphite Sealing Construction.

13 Drain Valve

14 Bleed Valve

15 Trunnion

16 Bearing

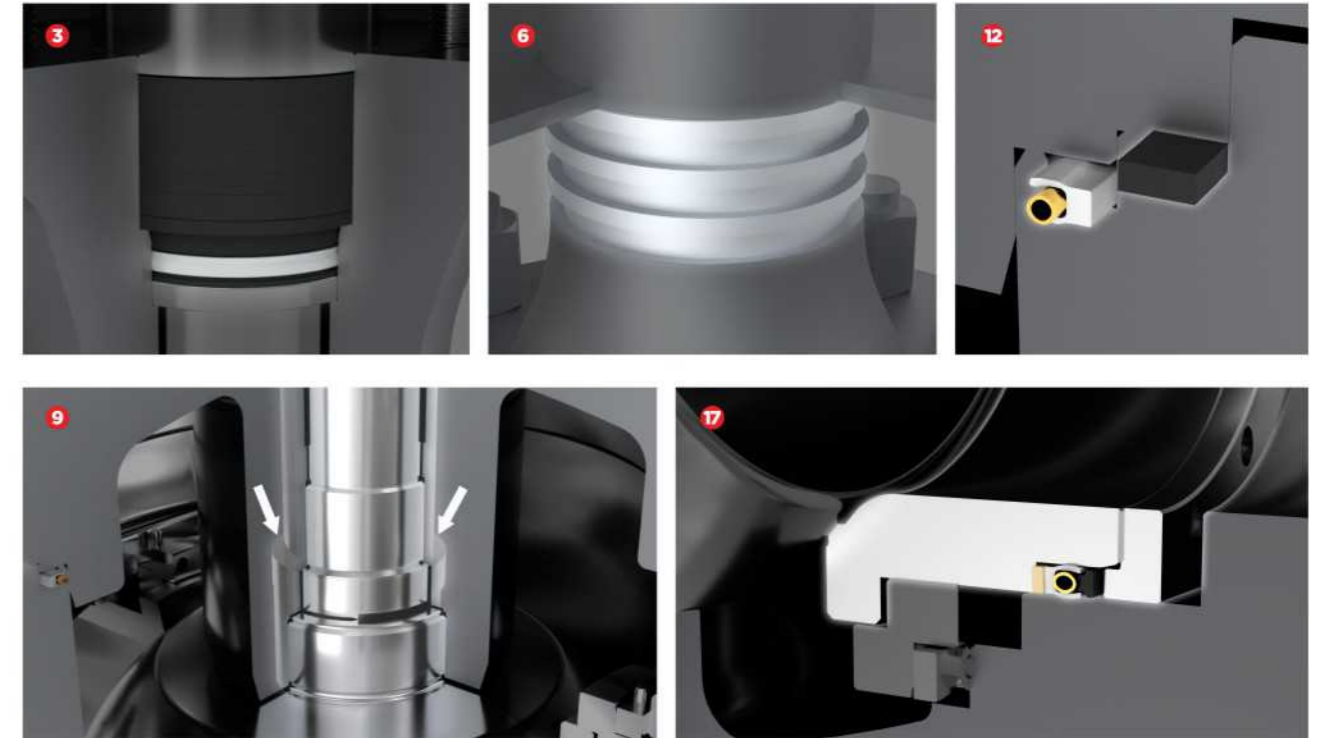
17 Precision polishing on back seat, matching single piston seal ring or double piston seal ring.

18 Special assembling procedure, make sure no scratch on seat.

## PRODUCT INTRODUCTION

- Precision machining procedure, controlling the gap of stem and extended bonnet below 1mm, guaranteeing the smooth turning of stem, and also reduced the possibility of freezing and lossing caused by cryogenic service.
- The Lip-Seal is not only have the Flexible compensation function as Spring, but also excellent sealing as PTFE. Excellent Sealing under Cryogenic Temp., fire safe design as the secondary sealing of graphite.
- All the fastners is full threaded construction for Cryogenic Temp., it is effectively avoid fastners long deformation and sealing failed.

## DESIGN FEATURE

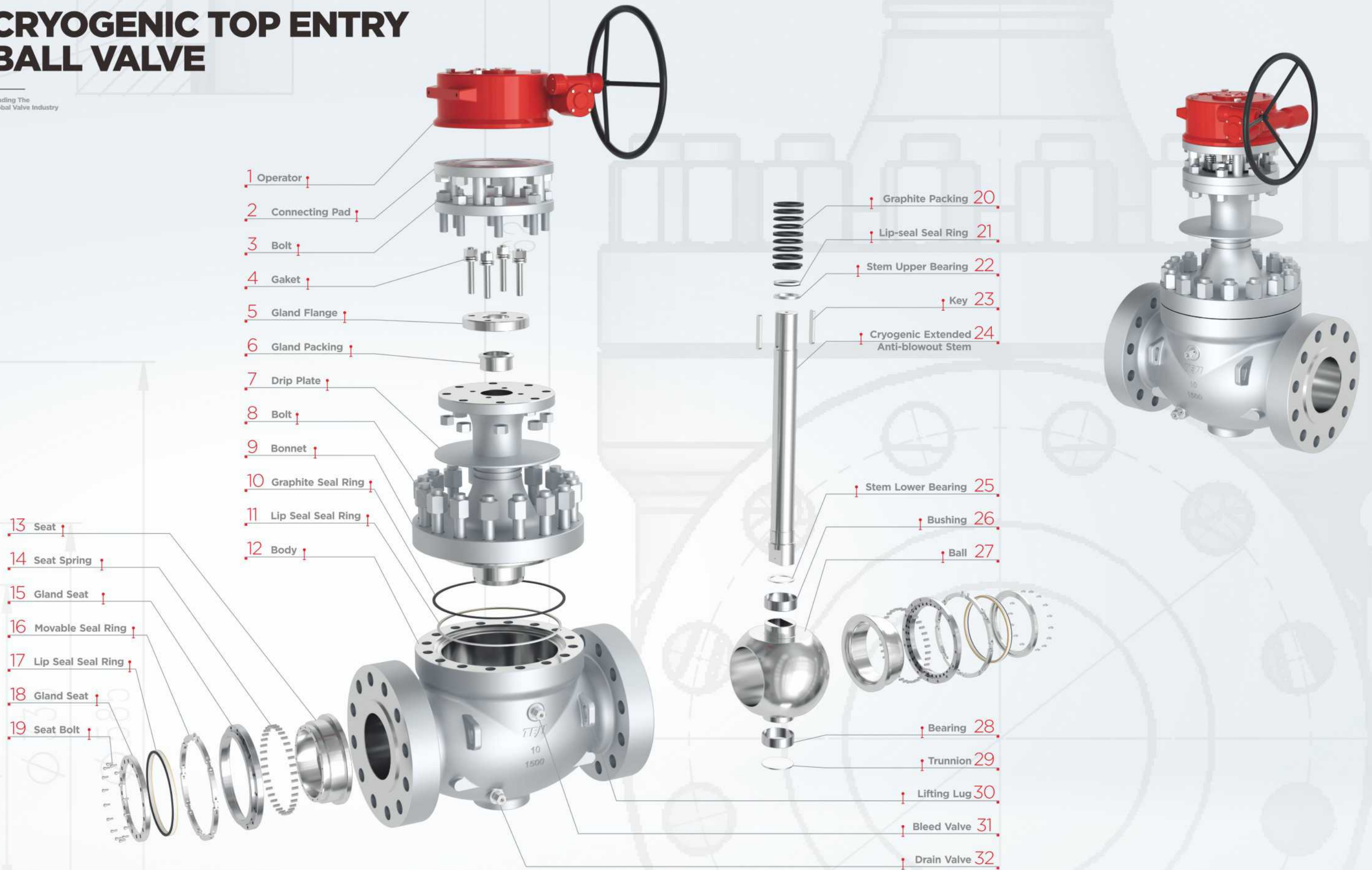


## TECHINIAL PROPERTY

- Stem: double sealing design, the primary sealing is lip seal, secondary sealing is packing, which can reduce the amount of packing usage.
- Extended bonnet design: the gap between stem and extension parts is strictly controlled, which reduced the cryogenic service crossing up, avoiding packing freezing and torque larger to make stem scatched.
- Self centering design on gland flange and gland packing to avoid stress imbalance
- By FEA design, best thickness of extended bonnet is calculated, it would guarantee the best cooling effect.
- Extended bonnet with ARC design, enlarged the cooling area, strengthen the cooling results.
- The design of drip plate, it firstly enlarged the effective cooling area, avoid the freezing problem of stem and packing dynamic sealing area resulted larger torque; secondly, it effectively stop the condensate water drop into body resulted in body double sealing on connection of body bonnet.
- It's primary sealing is Lip-Seal, it's secondary sealing is gasket.
- DIB-2 seat construction, which can guarantee the body pressure would be released to another without any danger.
- Lip-seal sealing construction, the lip-seal is not only have the flex. compensation as spring, but also have excellent flexible. sealing property as PTFE, this combined using can promise the effective sealing under cryogenic condition.
- Imported PCTFE used as seat sealing, it has good flexible function under cryogenic condition, promising it's sealing.
- Extended stem design, make sure the better self-centering of bushing. stem and bonnet, opening smoothly.
- The ball hardened to make sure no scratching under cryogenic temperture.
- Trim top entry construction for online maintain.

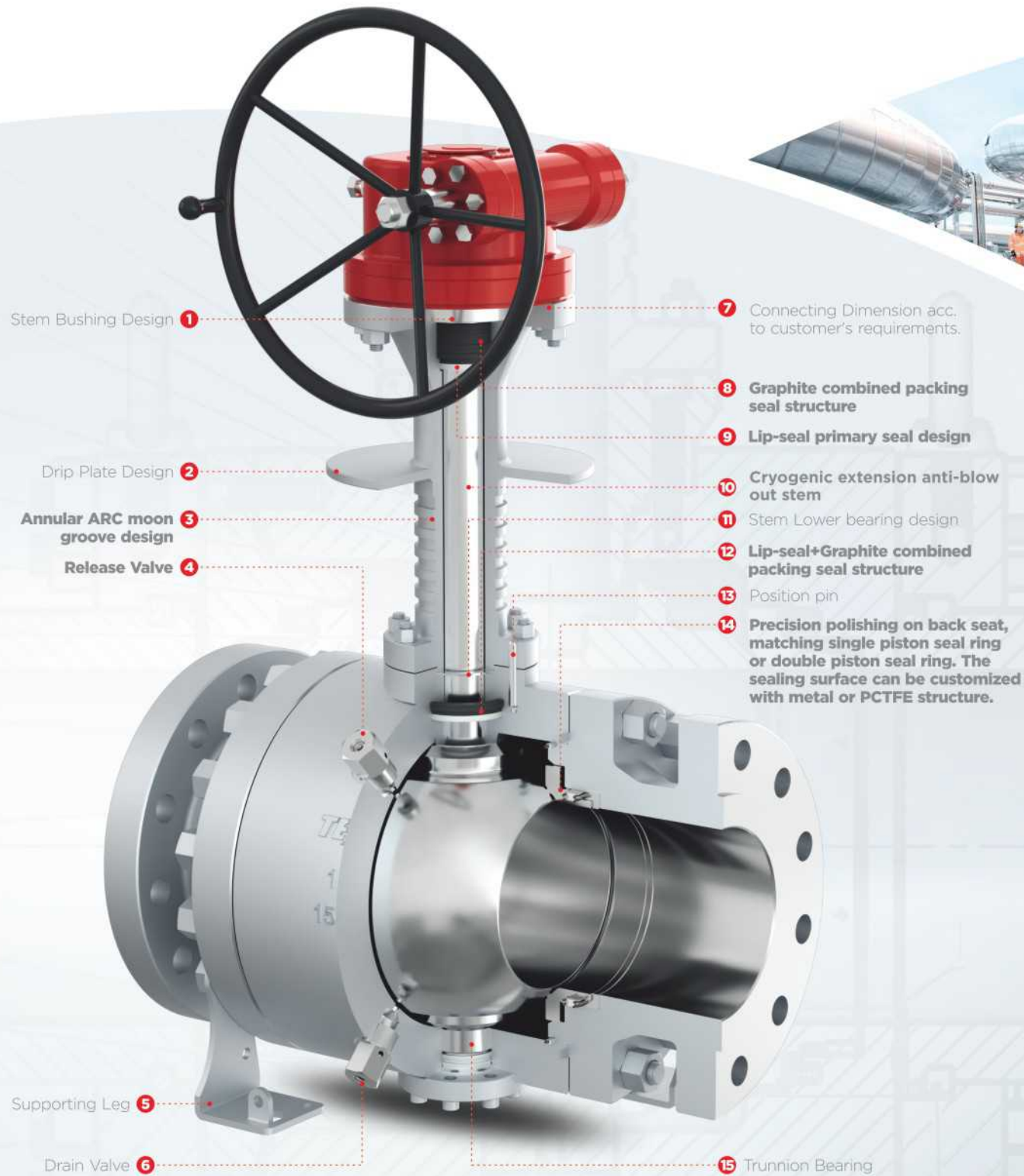
# CRYOGENIC TOP ENTRY BALL VALVE

Leading The Global Valve Industry



# CRYOGENIC TRUNNION BALL VALVE

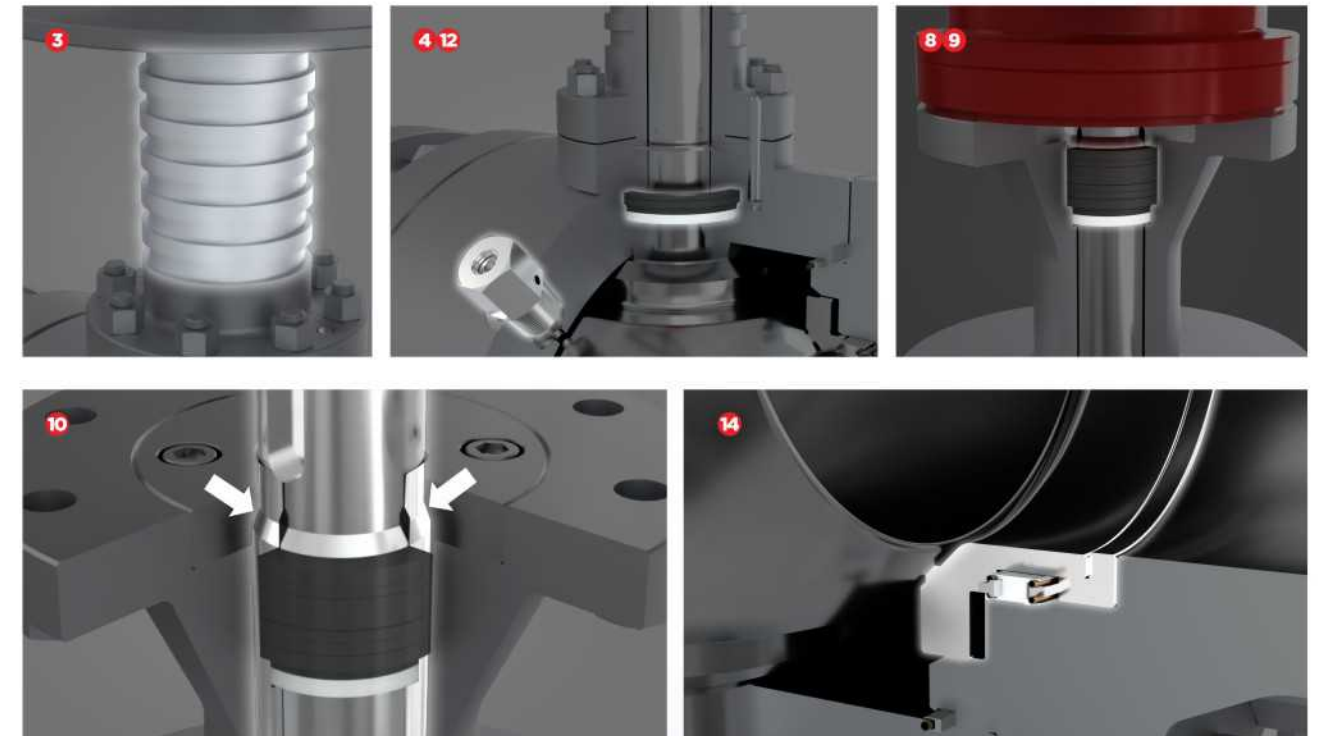
Leading The Global Valve Industry



## — PRODUCT INTRODUCTION

- Precision machining procedure, controlling the gap of stem and extened bonnet below 1mm, guarranting the smooth turning of stem, and also reduced the possibility of freezing and lossing caused by cryogenic service.
- Lip-seal(Elgiloy+PTFE)
  - The Lip-Seal not only have the flexible compensation function as spring, but also excellent sealing as PTFE. Excellent sealing under cryogenic temp., fire safe design as the secondary sealing of graphite.
- All the fastners are full threaded construction for cryogenic temp., it is effectively avoid fastners long deformation and sealing failed.

## — DESIGN FEATURE

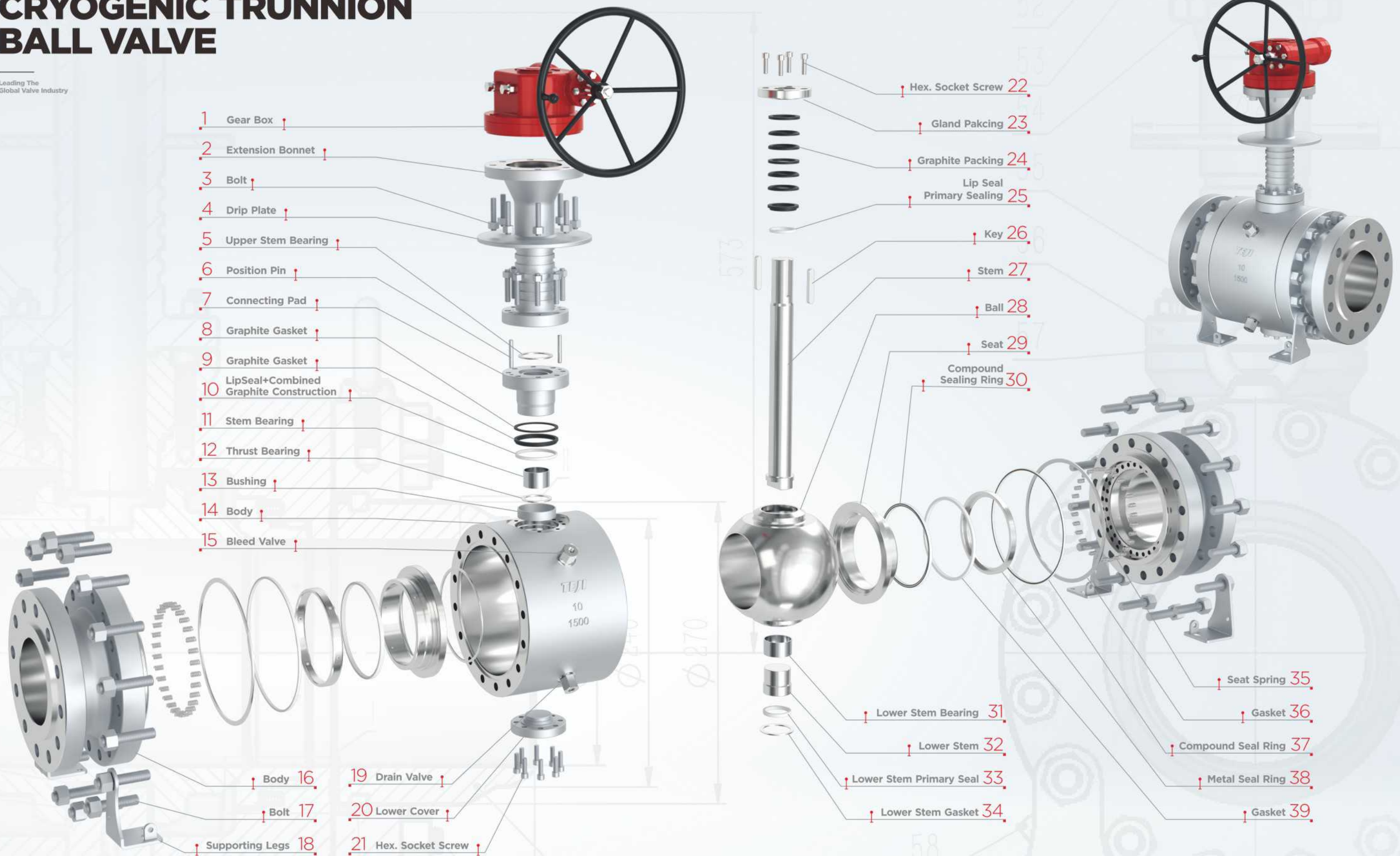


## — TEACHNICAL PROPERTY

- Stem: double sealing design, the primary sealing is lip seal, secondary sealing is packing, which can reduce the amount of packing usage.
- By FEA design, best thickness of extended bonnet is calculated, it would guarrantee the best cooling effect.
- The design of drip plate, it firstly enlarged the effective cooling area, avoid the freezing problem of stem and packing dynamic sealing area, resulted larger torque; secondly, it effectively stop the condensate water drop into body.
- Double sealing on connection of body bonnet, the primary flexible. sealing is Lip-Seal, it's secondary sealing is gasket.
- Imported PCTFE used as seat sealing, it has good flexible function under cryogenic condition, promising it's sealing. The ball hardened to make sure no scratching under cryogenic temperature.

# CRYOGENIC TRUNNION BALL VALVE

Leading The Global Valve Industry



- 1 Gear Box
- 2 Extension Bonnet
- 3 Bolt
- 4 Drip Plate
- 5 Upper Stem Bearing
- 6 Position Pin
- 7 Connecting Pad
- 8 Graphite Gasket
- 9 Graphite Gasket
- 10 LipSeal+Combined Graphite Construction
- 11 Stem Bearing
- 12 Thrust Bearing
- 13 Bushing
- 14 Body
- 15 Bleed Valve

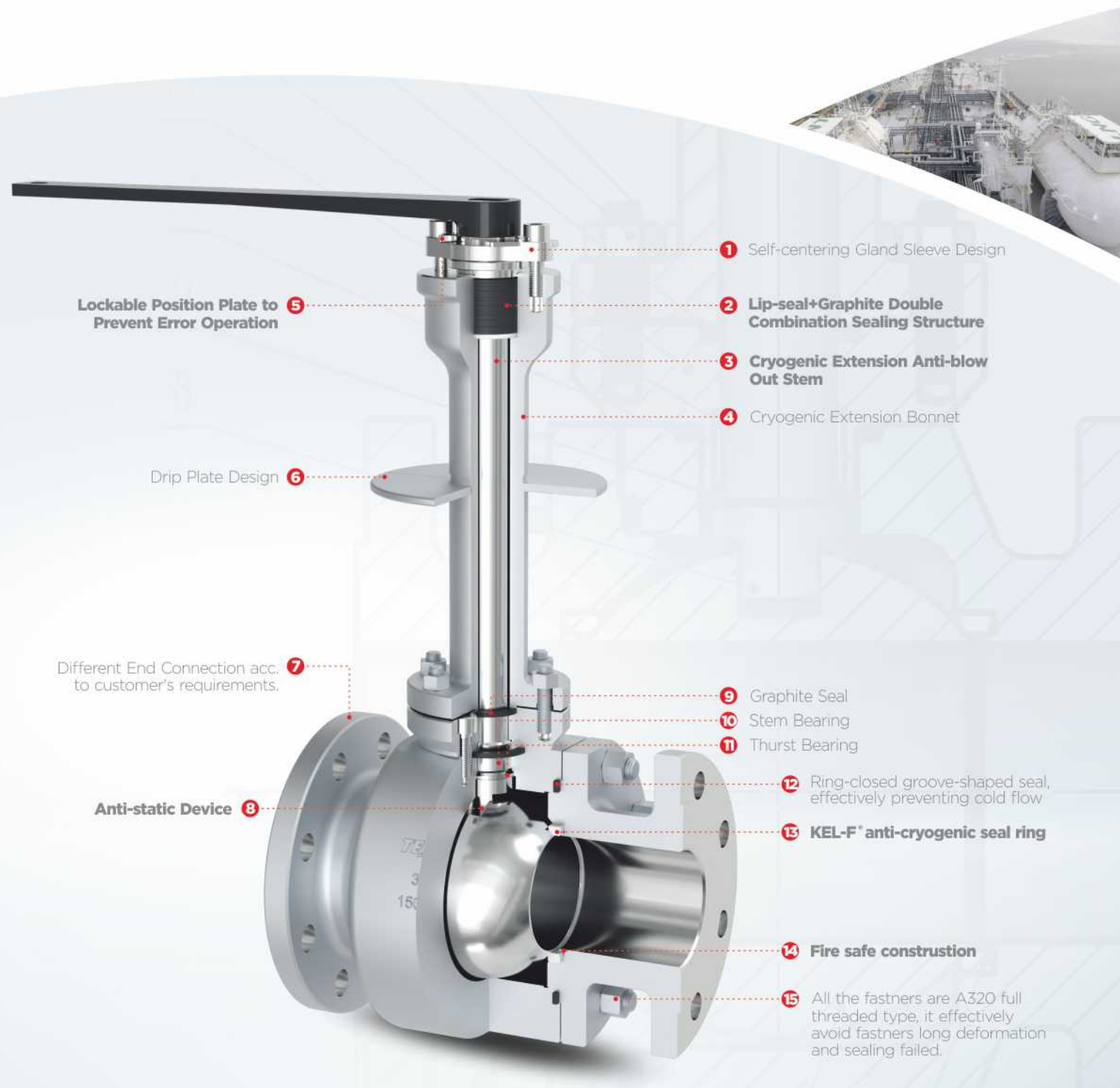
- 16 Body
- 17 Bolt
- 18 Supporting Legs
- 19 Drain Valve
- 20 Lower Cover
- 21 Hex. Socket Screw

- 22 Hex. Socket Screw
- 23 Gland Pakcing
- 24 Graphite Packing
- 25 Lip Seal Primary Sealing
- 26 Key
- 27 Stem
- 28 Ball
- 29 Seat
- 30 Compound Sealing Ring

- 31 Lower Stem Bearing
- 32 Lower Stem
- 33 Lower Stem Primary Seal
- 34 Lower Stem Gasket
- 35 Seat Spring
- 36 Gasket
- 37 Compound Seal Ring
- 38 Metal Seal Ring
- 39 Gasket

# CRYOGENIC FLOATING BALL VALVE

Leading The Global Valve Industry



1 Self-centering Gland Sleeve Design

2 Lip-seal+Graphite Double Combination Sealing Structure

3 Cryogenic Extension Anti-blow Out Stem

4 Cryogenic Extension Bonnet

Lockable Position Plate to Prevent Error Operation 5

Drip Plate Design 6

Different End Connection acc. to customer's requirements. 7

Anti-static Device 8

9 Graphite Seal

10 Stem Bearing

11 Thrust Bearing

12 Ring-closed groove-shaped seal, effectively preventing cold flow

13 KEL-F<sup>®</sup> anti-cryogenic seal ring

14 Fire safe construction

15 All the fasteners are A320 full threaded type, it effectively avoid fasteners long deformation and sealing failed.

## PRODUCT INTRODUCTION

- Precision machining procedure, controlling the gap of stem and extended bonnet below 1mm, guaranteeing the smooth turning of stem, and also reduced the possibility of freezing and lossing caused by cryogenic service.
- Lip-seal(Elgiloy+PTFE)  
The Lip-Seal not only have the flexible compensation function as spring, but also excellent sealing as PTFE. Excellent sealing under cryogenic temp., fire safe design as the secondary sealing of graphite.
- All the fastners are full threaded construction for cryogenic temp., it is effectively avoid fastners long deformation and sealing failed.

## DESIGN FEATURE



## TECHNICAL PROPERTY

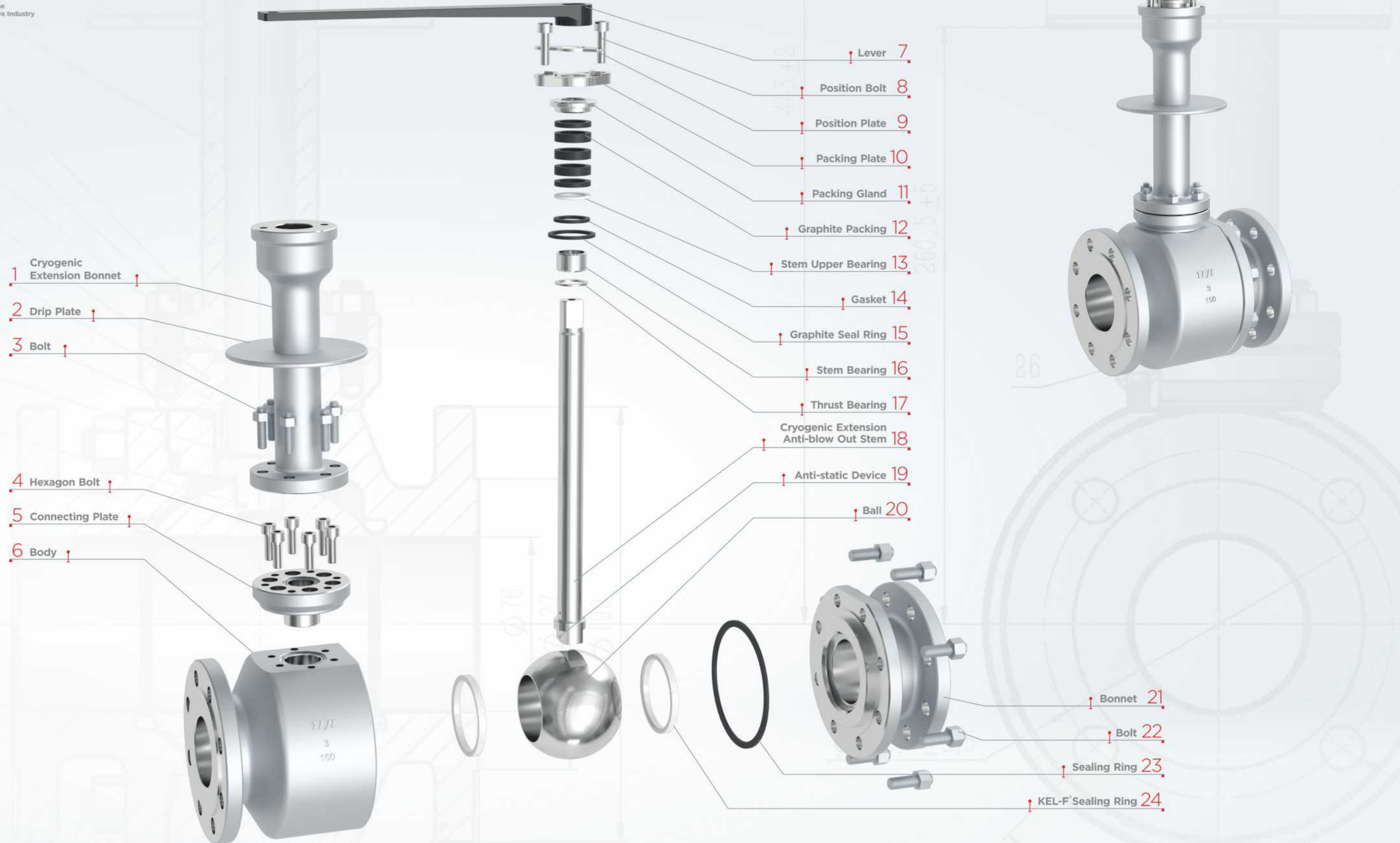
- Pressure Range: 150Lb-2500Lb (PN10-PN420)
- Size Range: 1/2"-8" (DN15-DN200)
- Product Type: Floating
- Thickness Standard: ASME B16.34
- Sealing Type: PTFE, TFM, PCTFE (KEL-F) and metal seat. valves oil degreased before shipment.
- Face to face dimension can be done as per customer's requirements.
- The Operator: Handwheel. Electric Actuator. Pneumatic or Hydraulic Actuator.
- Construction: Forging or Casting.
- Cryogenic Temp.: -196°C
- Fire Safe to API607
- Full Bore Design.
- Anti-blowout stem, low torque design.
- Fire Safe, Anti-Static Device.
- Fugitive Emission Standard: ISO15848.

### Related Certificate or Specification.

- Fire Safe Test: API607, API6FA.
- Products Inspection: API6D, API598, ISO5208, BS6364, MEDC SPE 77/200
- Marking: API6D, MSS-SP-55, PED, etc.
- Others: API6D, API607, API602, API600, SIL, NACE, MR0175, Fugitive Emission Testing.

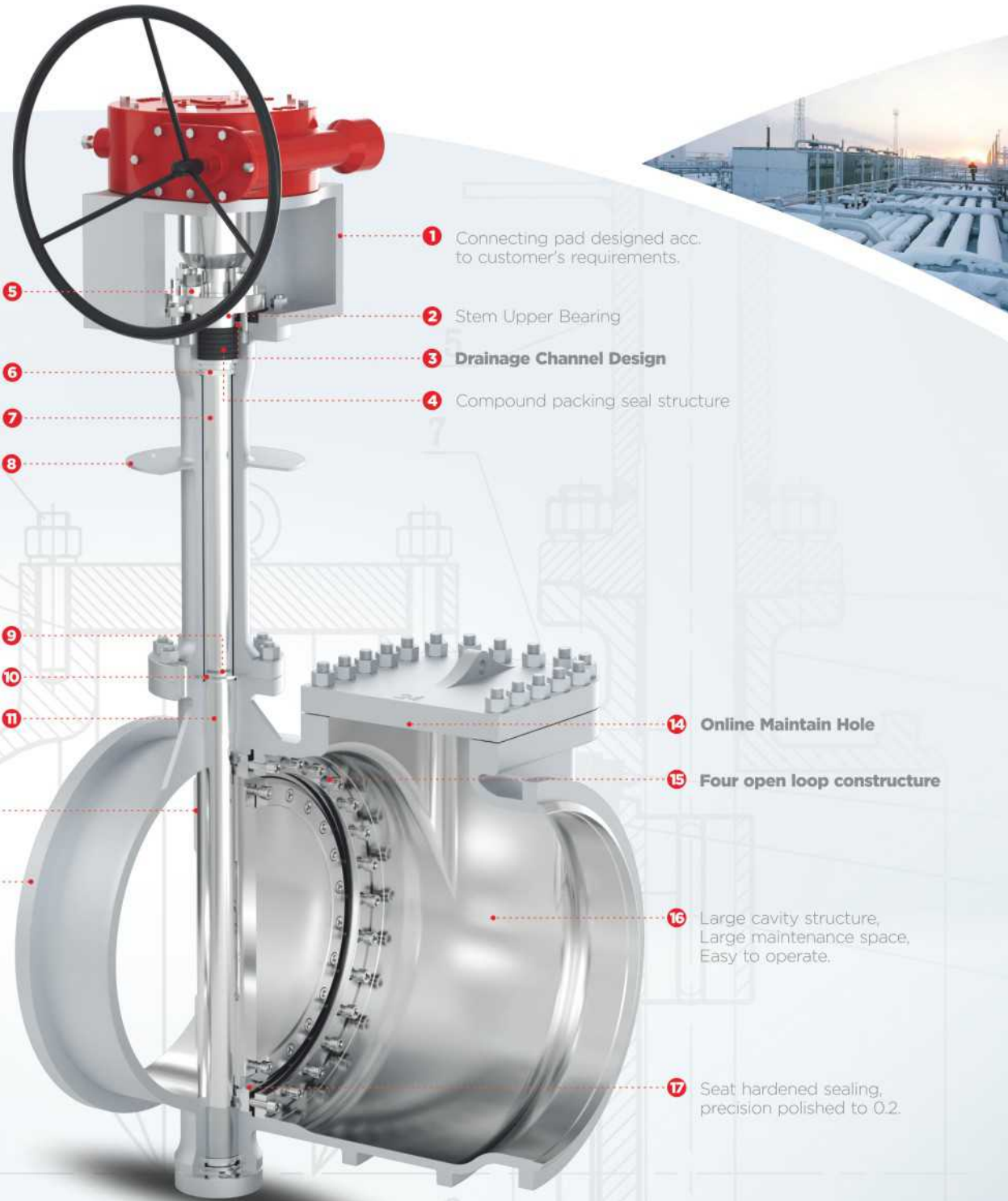
# CRYOGENIC FLOATING BALL VALVE

Leading The Global Valve Industry



# CRYOGENIC BUTTERFLY VALVE

Leading The Global Valve Industry

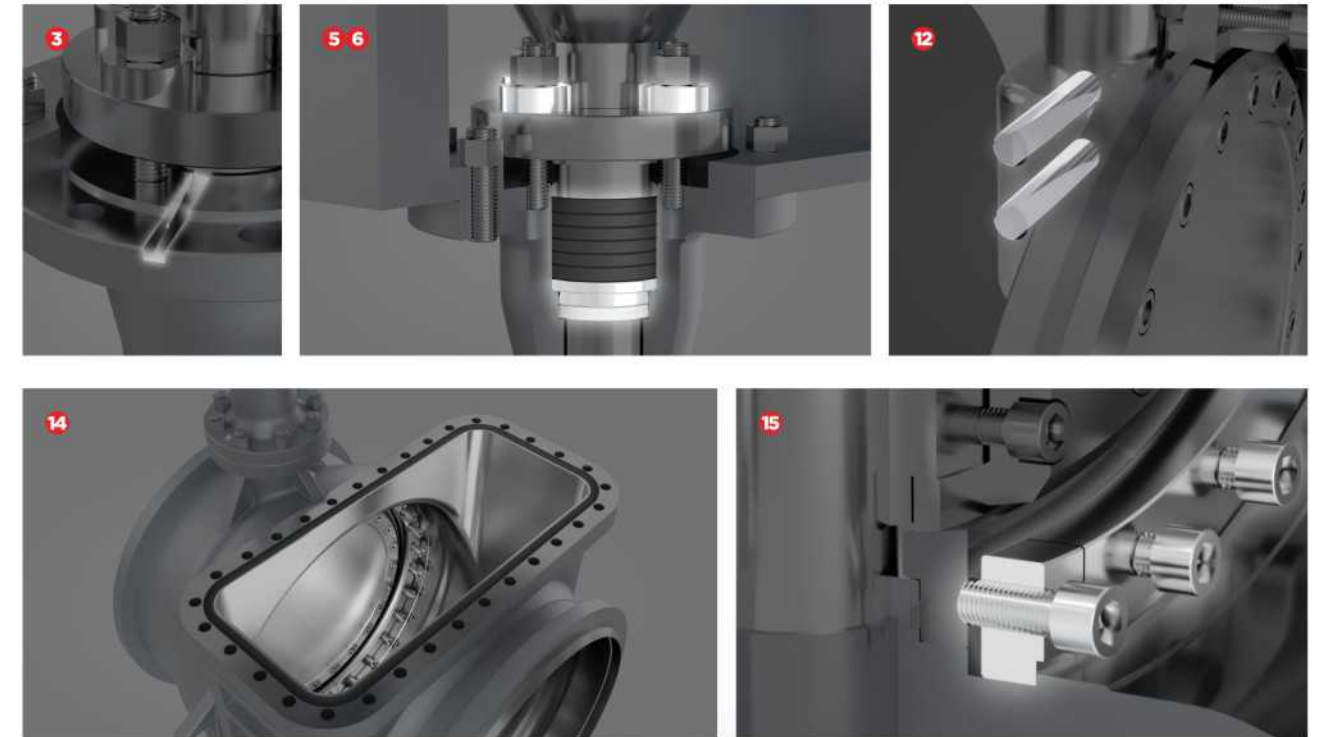


- 82
- 84
- 9
- 10
- 23
- 2
- 3
- 5 Disc Spring Preloaded & Dust-proof Structure Bolt Design
- 6 Lip-seal Stem Primary Seal Design
- 7 Integral Cryogenic Extension Stem Drip Plate Design
- 9 Anti-blow Out Design
- 10 Closed Groove Gasket
- 11 Middle Bearing
- 12 Tapered Bevel Pin
- 13 Pup Pieces-dual-grade Austenitic Pipe
- 1 Connecting pad designed acc. to customer's requirements.
- 2 Stem Upper Bearing
- 3 Drainage Channel Design
- 4 Compound packing seal structure
- 14 Online Maintain Hole
- 15 Four open loop constructure
- 16 Large cavity structure, Large maintenance space, Easy to operate.
- 17 Seat hardened sealing, precision polished to 0.2.

## PRODUCT INTRODUCTION

- Precision machining procedure, controlling the gap of stem and extened bonnet below 1mm, guarranting the smooth turning of stem, and also reduced the possibility of freezing and lossing caused by cryogenic service.
- Lip-seal(Elgiloy+PTFE)  
The Lip-Seal not only have the flexible compensation function as spring, but also excellent sealing as PTFE. Excellent sealing under cryogenic temp., fire safe design as the secondary sealing of graphite.
- All the fastners are full threaded construction for cryogenic temp., it is effectively avoid fastners long deformation and sealing failed.

## DESIGN FEATURE



## TECHNICAL PROPERTY

- Stem: double sealing design, the primary sealing is lip seal, secondary sealing is packing, which can reduce the amount of packing usage.
- Extended bonnet design: the gap between stem and extention parts is strictly controlled, which reduced the cryogenic service crossing up, avoid packing freezing makes the torque larger, resulted in stem scatched.
- Self-centering on gland flange and gland packing, avoiding unbalance caused by uneven pressure.
- By FEA design, best thickness of extended bonnet is calculated, it would guarrantee the best cooling effect.
- The design of drip plate, it firstly enlarged the effective cooling area, avoid the freezing problem of stem and packing dynamic sealing area, resulted in larger torque; secondly, it effectively stop the condensate water drop into body.
- The seat hardened to make sure no scratching under cryogenic temperture.
- There are drainage channel designed on packing postion in extended stem, which effectively stop condensate water flow into packing bore. Four open loop construction.
- Trim top entry construction for online maintain.
- Multiple sealing ring for customer's larger chosen range.
- Disassembling deputy sealing design, it is complement function under cryogenic, lower leakage, better property.
- Taper bevel pin fixed between disc and stem, which can avoid anti-turning under differential pressure, occur leakage.

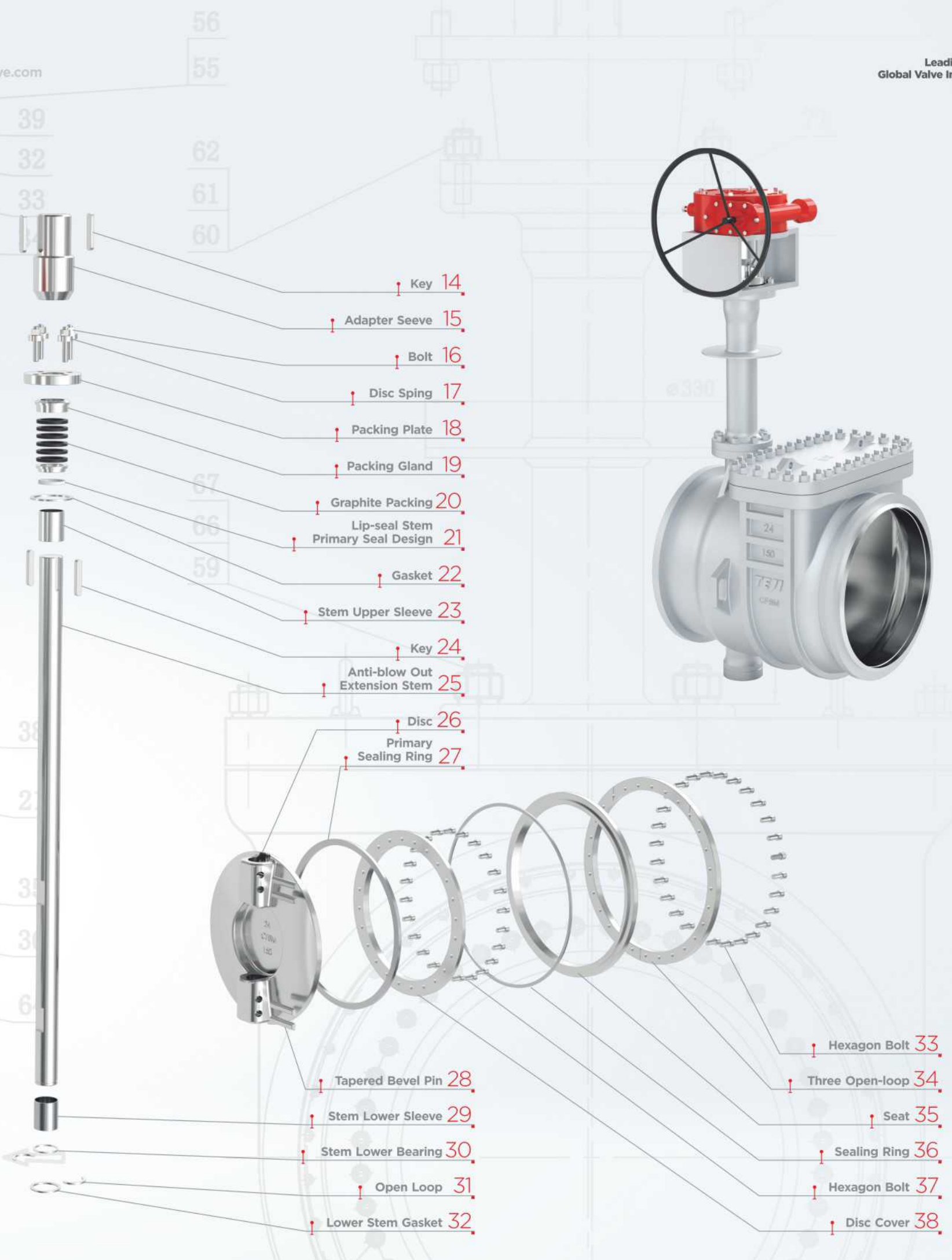
# CRYOGENIC BUTTERFLY VALVE

Leading The  
Global Valve Industry

- 1 Gear Box
- 2 Yoke
- 3 Bolt
- 4 Cryogenic Extension Bonnet
- 5 Maintenance Port Bolt
- 6 Drip Plate
- 7 Maintenance Port Cover
- 8 Bonnet Bolt
- 9 Maintenance Port Gasket
- 10 Body
- 11 Lifting Lug
- 12 Lower Cover
- 13 Hex. Socket Screw

- 14 Key
- 15 Adapter Sleeve
- 16 Bolt
- 17 Disc Spring
- 18 Packing Plate
- 19 Packing Gland
- 20 Graphite Packing
- 21 Lip-seal Stem Primary Seal Design
- 22 Gasket
- 23 Stem Upper Sleeve
- 24 Key
- 25 Anti-blow Out Extension Stem
- 26 Disc
- 27 Primary Sealing Ring
- 28 Tapered Bevel Pin
- 29 Stem Lower Sleeve
- 30 Stem Lower Bearing
- 31 Open Loop
- 32 Lower Stem Gasket

- 33 Hexagon Bolt
- 34 Three Open-loop
- 35 Seat
- 36 Sealing Ring
- 37 Hexagon Bolt
- 38 Disc Cover



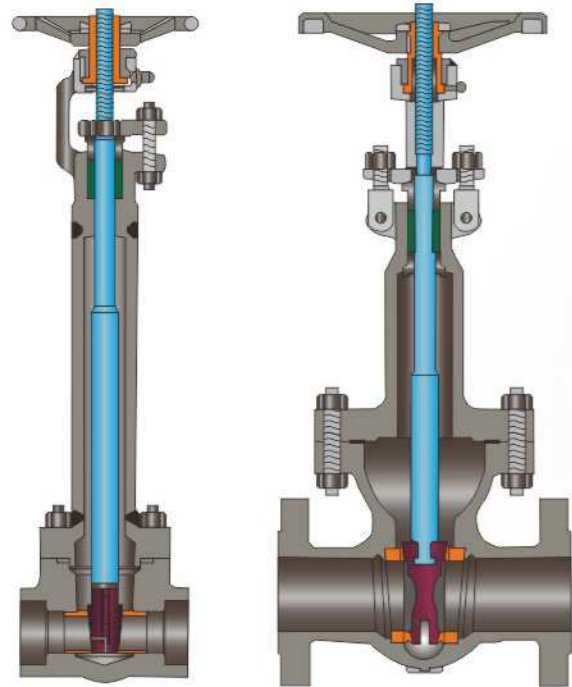


# CRYOGENIC GATE/GLOBE/CHECK VALVE

Leading The Global Valve Industry

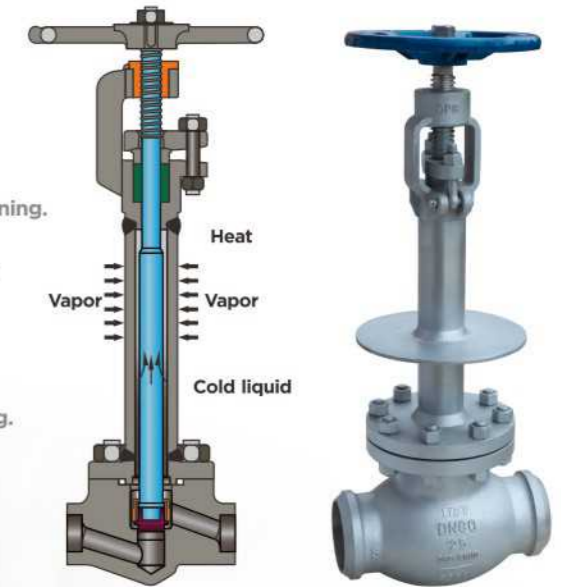
## CRYOGENIC GATE VALVE

- Body & Bonnet: integrated stainless steel forging or casting, with excellent strength and anti-cryogenic property.
- Stem: forging XM-19 or Inconel 718 material, it was anti-abrasive and anti-scuffing after nitrating treatment.
- Sealing: STL material, with the property of anti-abrasive, anti-rusty and anti-cryogenic.
- Drip Plate: effectively stop the condensate water flow into insulating layer.
- Stem Nut: C95200, with better chemical property and smooth turning.
- Fastners: all the fastners are fully threaded type under cryogenic temp., it is effectively avoid fastners long deformation and sealing failed .
- Back Seat: all back seat are designed near to the packing bottom.
- Packing: compound packing sealing construction, effectively reduced the torque of opening and closing.
- Uni-directional flow: vent hole in disc, to avoid cavity pressure rising.
- Clean: all the cryogenic valves are oil-degreased before assembling.



## Cryogenic Globe Valve

- Body & Bonnet: integrated stainless steel forging or casting, with excellent strength and anti-cryogenic property.
- Stem: forging XM-19 or Inconel 718 material used to reduce it's abrasive, make sure no any deformation when larger torque.
- Disc: forging type with heat treatment and cryogenic treatments, STL overlay on seat sealing.
- As for soft seate construction, the seat overlay STL, disc material with PCTFE insert, guaranting the good sealing.
- Stem Nut: C95200, with better chemical property and smooth turning.
- Fastners: all the fastners are fully threaded type under cryogenic temp., it is effectively avoid fastners long deformation and sealing failed . Back Seat: All back seat are designed near to the packing bottom.
- Packing: compound packing sealing construction, effectively reduced the torque of opening and closing.
- Clean: all the cryogenic valves are oil-degreased before assembling.



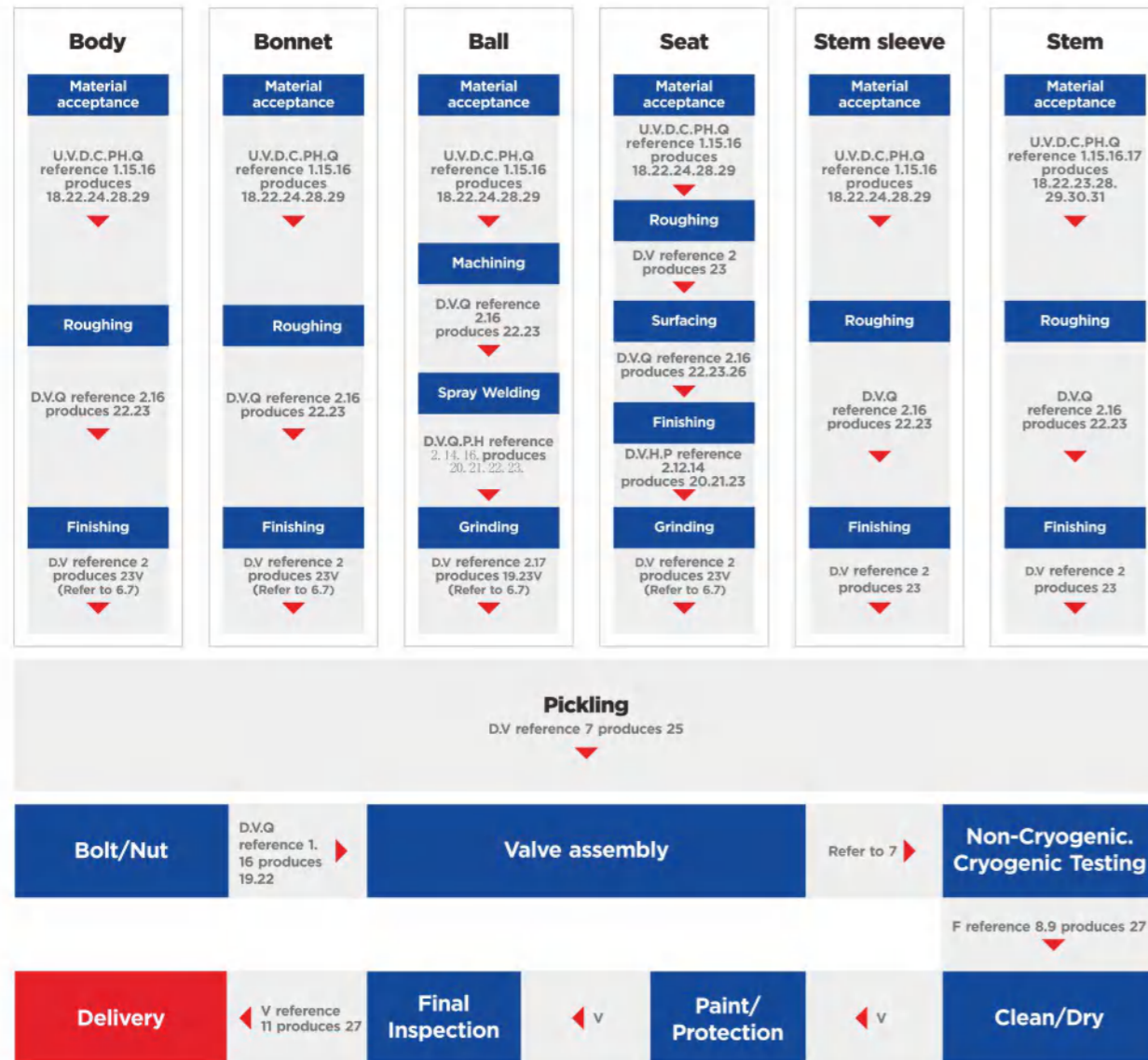
## Cryogenic Check Valve

- Body & Bonnet: integrated stainless steel forging or casting, with excellent strength and anti-cryogenic property.
- Disc: forging type with heat treatment and cryogenic treatments, STL overlay on seat sealing.
- As for soft seate construction, the seat overlay STL, disc material with PCTFE insert, guaranting the good sealing.
- Stem Nut: C95200, with better chemical property and smooth turning.
- Fastners: all the fastners are fully threaded type under cryogenic temp., it is effectively avoid fastners long deformation and sealing failed .
- Clean: all the cryogenic valves are oil-degreased before assembling.



# THE MANUFACTURING PROCEDURE OF CRYOGENIC VALVE PARTS.

Leading The Global Valve Industry



## Reference document:

(1) Incoming inspection procedures	TJV/J-02-2019
(2) Parts machining process inspection specification	TJV/J-03-2019
(3) Plasma surfacing process specification	TJV/J-06-2019
(4) Heat treatment process regulations	TJV/J-10-2019
(5) Welding procedure qualification procedures	TJV/J-05-2019
(6) Cleaning process regulations	TJV/J-46-2019
(7) Assembly process and inspection procedures	TJV/J-16-2019
(8) Final inspection and test procedures	TJV/J-21-2019
(9) Pressure test procedure	TJV/J-19-2019
(10) Painting process regulations	TJV/J-20-2019
(11) Packing and handling procedures	TJV/J-45-2019
(12) Operation rules for sealing surface grinding	TJV/J-11-2019
(13) Welding operating procedures	TJV/J-08-2019
(14) General Process Regulations for Penetration Testing	TJV/J-12-2019
(15) General Process Regulations for Ultrasonic Testing	TJV/J-14-2019
(16) Cryogenic treatment and test procedures	TJV/J-17-2019
(17) Inspection procedures for subcontracted parts	TJV/J-04-2019

## Control Method:

- The method of product identification and labeling is in accordance with "Control of production and service provision Implementation of the provisions of the Procedure;
- Inspection and test status and control methods are in accordance with "Production and Service Provision Implementation of the provisions of the Control Procedure;
- The control method of non-conforming product is in accordance with the "nonconforming product control procedure" Regulation execution;
- The processing method in the product process is in accordance with the corresponding process card regulations carried out.

## Quality Records:

(18) Rough purchase inspection record	TJV/R12-02
(19) Inspection records of parts purchase	TJV/R12-01
(20) Penetration test records	TJV/R09-02
(21) Penetration test report	TJV/R09-05
(22) Cryogenic treatment record	TJV/R08-04
(23) Valve process flow card	TJV/R12-03
(24) Shell wall thickness test record	TJV/R12-09
(25) Assembly process card	TJV/R12-04
(26) Welding operation record sheet	TJV/R07-03
(27) Product inspection records	TJV/R12-06
(28) Ultrasonic testing records	TJV/R09-04
(29) Ultrasonic test report	TJV/R09-07
(30) Heat treatment order	TJV/R08-01
(31) Heat treatment report	TJV/R08-02

## Writing instructions:

V	Visual inspection
D	Dimensional inspection
H	Hardness check
C	Chemical analysis
PH	Mechanical properties
F	Final Inspection
R	RT-ray inspection
U	UT Ultrasonic inspection
M	MT magnetic particle inspection
P	PT penetration test
Q	Cryogenic treatment/testing
G	Solution treatment

**Technical Service Hotline**  
**0086-577-6735 4000**



## **TEJI VALVE GROUP**

### **Group Headquarters**

**Add:** Anfeng Industry Zone(North Zhangbao Rd.,)Oubei  
Wenzhou China.

**Tel.:** 0086-577-6735400

**Email:**teji@teji-valve.com

### **Shanghai Facility**

**Add:** Gaoshi Rd., Huating, Jiading District, Shanghai.

**Tel.:** 0086-021-6605 9111

**Email:**teji@teji-valve.com



All rights are reserved by TEJI VALVE GROUP CO., LTD. The products are protected by patents, legal liability must be investigated for infringement. This catalogue only introduces some products, if there are any changes, please contact our company for latest version.