

Project References

Ship Owner	Type of Ships	Shipyard	Valve Type	Classification Society
German Hamonia Shipping	175K LNGC	Jiangsu Yangzi Xinfu Shipbuilding	Butterfly	BV
ENNI	2400K Ton per Year FLNG Floating Liquefied Natural Gas	Wison (Nantong) Heavy Industries	Butterfly,Ball,Globe,Check	ABS
Pacific International Lines (PTE)	14000TEU H2785-H2788	Jiangnan Shipbuilding (Group)	Cryo-Ball, Globe	ABS
Pacific International Lines (PTE)	14000TEU H2785 FGSS-H2788 FGSS	Institute of China Shipbuilding	Butterfly,Ball,Globe,Check	ABS
Cosco Shipping	N1071 / N1072-16000TEU	COSCO Shipping Heavy Industry	Needle, Check Valve	ABS + CCS
Golar LNG	KHANNUR FSRU	Keppel Singapore	Cryo-Ball	DNV
Petronas Floating LNG	FLNG1	Technip-DSME	Cryo-Ball, Globe	DNV
Shell-Prelude	Prelude LNG	Technip-Samsung	Cryo-GGC	LR
Dalian Cosco Shipping	28000M³ LNG Carrier	Dalian Cosco Shipping	Cryo-Ball	CCS
Petroliam Nasional Berhad (Petronas)	Petronas Floating LNG 2	JGC Corporation	Cryo-Globe, Check	ABS
Zhejiang Huaxiang Shipping	14000M³ LNG Carrier	MARIC	Cryo-Butterfly, Ball, Globe, Check	CCS
Dalian Inteh Group	28000M³ LNG Carrier	Dalian Cosco Shipping	Cryo-Butterfly, Ball, Globe, Check	CCS
Shanghai Liche Ocean Technology	LNG-FSRU	Sinopacific	Cryo-Butterfly, Ball, Globe, Check	CCS
Cssc Wartsila Engine (Shanghai)	Cssc Wartsila Engine Construction	Cssc Wartsila Engine (Shanghai)	Ball,Butterfly	CCS
Hongkong Taikie Technology	FSP Project	Honghua Offshore Oil & Gas Equipment	Cryo-Ball, Needle Valve	BV
Keppel Singmarine Pte. Ltd.	Shipping NO.:H395	NanTong Zhongji Shitai New Energy Technology	Cryo-Ball	ABS
CORAL FLNG SA	Coral South Development Project	TP JGC CORAL France	Cryo-Ball	LR
Winson (NanTong) Heavy Industry	S363b FSRU FLNG Power	Winson (Nantong) Heavy Industry	Cryo-Butterfly, Ball, Globe, Check	BV
ENI East Africa SPA	Coral South Development Project	Technip France	Ball	BV
Taixing Tongda Navigation	4000M³ LPG Carrier	TaiZhou Taichuan Heavy Industry Technology	Ball, Globe, Check	CCS
Germany IT LINE	TL866P-1#ROPAX FGSS	China Merchants JinLing SHIPYARD	Cryo-Ball,check	DNV
ENLINK Trading FZE	CPP CYPRUS FSRU	Cosco (Shanghai) Shipyard	Cryo-Butterfly	LR
Avenir LNG	7500M³ Semi-pressurised LNG Carrier H400	Keppel (Nantong)	Cryo-Ball, Stop Check	DNV
CMA CGM SA	LNG FGSS	JiangNan Shipyard	Cryo-Ball, Stop Check	DNV

NEWAY
NEWAY VALVE (SUZHOU) CO., LTD.

No.666 Taishan Road, Suzhou New District, P.R. China
Post Code:215129
Tel:86-512-666-15637
E-mail: overseas.sales@neway.com.cn
http://www.newayvalve.com



LinkedIn



Website



Wechat

Cryogenic System

LNG FPSO



LNG/LPG Carrier



SHELL PRELUDE FLNG



Bunker Vessel



FGSS Ship



LNG FSRU



Application Characteristics of Low Temperature Valve in System

Valve type	Characteristics	Advantage
Butterfly Valve	<ul style="list-style-type: none">It has approximate equal percentage flow characteristics and is suitable for pipelines with low flow regulation and pressure loss requirements.Suitable for frequent or emergency operation conditions.Bi-directional.	<ul style="list-style-type: none">Because of its compact structure, it is suitable for the occasion of limited installation and operation space, usually it's the first choice for large size piping.
Ball Valve	<ul style="list-style-type: none">Mainly used for guiding and isolation in pipelines.Suitable for quick open and close conditions.	<ul style="list-style-type: none">It is an ideal valve for cryogenic condition with good flow performance, reliable sealing and easy operation.
Globe Valve	<ul style="list-style-type: none">Mainly used in isolation, drain and throttling conditions.	<ul style="list-style-type: none">The stroke is short and the height space required is smaller than gate valve.Low maintenance.
Check Valve	<ul style="list-style-type: none">Mainly used on non-return pipeline and protect important equipments.	<ul style="list-style-type: none">It is an ideal valve for cryogenic condition with good flow performance and easy operation.
Gate Valve	<ul style="list-style-type: none">It is mainly used for fluid flow or isolation in pipeline, usually not used as flow regulation.Low flow resistance and reliable sealing.Quick open and close conditions are not recommended.	<ul style="list-style-type: none">It is more suitable for space-constrained installations since of its short structure length.

Valve of Shipping Application

Cryogenic valve are mainly used in FLNG, LNG/LEG/LPG carrier, Bunker vessel, FGSS Ship (gas handling system of cargo tank, off - loading piping, boiled off gas unit, Re-liquefaction unit etc.), FSRU.

LNG Liquefying Area

Valve type: Butterfly Valve, Trunnion Mounted and Floating Ball Valve, Globe Valve and Check Valve



LNG Loading Area

Valve type: Cryogenic Ball Valve and Control Valve, Globe Valve, Check Valve and Safety Valve



BOG Unit and LNG Storage Tank

Valve type: Cryogenic Ball Valve, Butterfly Valve and Control Valve



SINOTECH High vacuum adiabatic film liquid hydrogen storage simulation chamber



Cryogenic Valve for Shipping

As a leading international valve manufacturer, Neway is dedicated to the research, development, and production and of industrial valves. Neway is committed to providing complete valve solutions to all industries through advanced engineering and innovation. Neway utilizes advanced design technology and internally controls production processes, making cryogenic valves with many outstanding advantages including reliable sealing, low operating torque, high stability at low temperatures, and long lifetime. Neway cryogenic valves are available in minus 253℃ application (Liquefied Hydrogen).

http://www.newayvalve.com

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Product Range

Cryogenic Triple Offset Butterfly Valve(Top Entry)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
6"~48"	150~600	BW	~196°C~400°C	Manual/Pneumatic/Hydraulic	Frontal Top Entry
4"~64"	150~1500	BW	~196°C~400°C	Manual/Pneumatic/Hydraulic	Side Top Entry

- Low emission design, certified by ISO 15848-1 Class A (Co2).
- Disc spring preload is available to choose.
- Bi-directional sealing.
- Exchangeable parts between different valves in same position, with specialized process control.
- On-line maintenance can be achieved for top-entry type.

Cryogenic Butterfly Valve(Triple Offset)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
3"~72"	150~1500	Wafer,Lug,BW,RF	~196°C~400°C	Manual/Pneumatic/Hydraulic	Triple offset butterfly

- Low emission design, certified by ISO 15848-1 Class A (CO2).
- Disc spring preload is available to choose.
- Bi-directional sealing.
- Exchangeable parts between different valves in same position, with specialized process control.

Cryogenic Globe Valve					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
1/2"~28"	150~2500	SW,BW,RF	~196°C~400°C	Manual/Pneumatic/Hydraulic	L&Y Globe Lifting Type

- Extended bonnet and extended stuffing box to protect packing effectively.
- Use PCTFE shaft sleeve at the middle of stem to keep stem stable.
- Cryogenic Globe valve use integrated seat.
- Harding facing with Stellite on sealing surface of both sides.

Cryogenic Trunnion Mounted Ball Valve(Side Entry)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
2"~40"	150~1500	BW,RF	~196°C~150°C	Manual/Pneumatic/Hydraulic	Side Entry

- To ensure the stable sealing performance, the lipseal is supplied by international high-quality supplier.
- Adopt the design patent of seat sealing.
- Multiple seat structures are available to satisfy different service conditions.
- Cavity pressure relief is available, through several options of structure.
- Dual sealing (Lipseal + Graphite) is available to choose for stem seal and body-bonnet seal, meanwhile to meet low emission and fire safe requirement.

Cryogenic Floating Ball Valve(Top Entry)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
3/8"~4"	150~1500	SW,BW,RF	~196°C~150°C	Manual/Pneumatic/Hydraulic	Top Entry

- Spring-preloaded seat structure is designed to effectively avoid conflict between sealing and torque.
- Hole drilling on yoke or stem, to keep connection between stem extension and cavity to achieve pressure relief of cavity.
- Hole drilling on the ball's upstream side, to achieve pressure relief of cavity.
- Fire-safe & anti-static design.
- High quality PCTFE, which has excellent stability in low temperature, or other high-strength seat, is chosen as seat material.
- On-line maintenance can be achieved in top-entry series.

Cryogenic Floating Ball Valve(Side Entry)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
3/8"~8"	150~1500	SW,BW,RF	~196°C~150°C	Manual/Pneumatic/Hydraulic	Side Entry

- Spring-preloaded seat structure is designed to effectively avoid conflict between sealing and torque.
- Hole drilling on yoke or stem, to keep connection between stem extension and cavity to achieve pressure relief of cavity.
- Hole drilling on the ball's upstream side, to achieve pressure relief of cavity.
- Fire-safe & anti-static design.
- High quality PCTFE, which has excellent stability in low temperature, or other high-strength seat, is chosen as seat material.

Cryogenic Valve for Hydrogen					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
1/2"~6"	150~600	BW,RF	~253°C~400°C	Manual	Globe, Check

- Stricter control of Cr, S, P and other elements, also higher mechanical properties than standard ASTM;
- 316L double Bellow seal for globe with over 10000 cycles, minimize the gasification to packing area;
- Full extraction design to allow online maintenance;
- Vacuum jacket design available for better heat insulation;
- 2 times cryogenic treatment for valve parts; Shell test could undertake 4 times delta full pressure.

Cryogenic Trunnion Mounted Ball Valve(Top Entry)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
2"~28"	150~1500	BW,RF	~196°C~150°C	Manual/Pneumatic/Hydraulic	Top Entry

- To ensure the sealing performance ,the Imported lipseal is used for primary sealing.
- To ensure the seal capability, the design of unique patent was adopted.
- To fulfill low leakage requirements, double-sealing configuration is applied for high-pressure-class products.
- Multiple seat structures are available to satisfy different service conditions.
- A plenty of pressure relief structures are available for service conditions to ensure cavity relief.
- On-line maintenance could be achieved for top-entry construction.

Cryogenic Check Valve (Swing Type)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
1/2"~48"	150~2500	SW,BW,RF	~196°C~400°C	—	Swing Type

- Ball-like pin could achieve self-alignment, which makes it easier to seal at low temperature.
- Ensure the optimal flow design & the maximum flow capacity by fluid analysis software calculation.
- Metal-seat structure, with sealing surface subject to hard-alloy weld overlay, which performs well in scouring & particle resistance and improves service life.
- Dedicated accurate and match grinding to influence the sealing performance in low temperature.
- Internally assembled hinge pin design.

Cryogenic Check Valve (Dual-plate Type)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
2"~40"	150~1500	SW,BW,RF	~196°C~400°C	—	Dual-plate Type

- Short length, light weight and compact structure.
- Low flow resistance with desirable flow capacity, without water hammer.
- One-piece body, without external leaking point.
- Ensure superior sealing capability via specialized production process.

Cryogenic Check Valve (Axial Flow Type)					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
2"~42"	150~900	BW,RF	~196°C~150°C	—	Axial Flow Type

- Venturi streamline design, low flow resistance, without impact;
- Dual sealing (Lipseal + Graphite) between body and seat;
- One-piece body, without external leaking point;
- Ensure minimum flow resistance and best dynamic characteristics by fluid analysis software calculation;
- Specialized machining & grinding process to achieve good sealing performance.

Cryogenic Gate Valve					
Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
1/2"~56"	150~2500	SW,BW,RF	~196°C~400°C	Manual/Pneumatic/Hydraulic	OS & Y Flexible Wedge

- Extended bonnet and extended stuffing box to protect packing effectively.
- Use PCTFE shaft sleeve at the middle of stem to keep stem stable.
- Cryogenic Gate valve use welded seat.
- Harding facing with Stellite on sealing surface of both sides.

Technical Features

Universal Characteristics

Body Material Selection

BrITTLENESS occurs in Common steel at low temperature, the body material should meet the requirements of working conditions.
Temp Range: ~110°C ~253°C ; Recommended Material: CF3M/CF3/CF8M/CF8 F316L/F304L/F316/F304/Dual Certified

Stem Extension Structure (Not applicable to check valve)

Lengthen the valve bonnet to keep the packing working at room temperature and ensure the good sealing performance of the packing.
Extending height of valve bonnet by default meets the requirements of BS6364, SPE 77/200, MSS-SP-134, and also can be designed according to customer requirements.
The valve bonnet with lengthening structure is more convenient for winding the insulation layer to prevent the loss of cold energy.

End Connection

RF, RTJ, BW, SW, WAFER etc.

Prevention of Overpressure in Valve Cavity

To avoid the risk of overpressure, following designs are recommended: self-relief seat, drilling holes in the ball or the gate (High Pressure Side).

Fire Safe, Anti-static

Neway meet the requirement with appropriate fire and anti-static design, and the corresponding qualification certificate are available.

Fugitive Emission

All cryogenic valves are low emission designed and meet ISO15848, SHELL 77/312 requirements, and have corresponding qualification certificates.

Certificates of Neway Cryogenic Valve

(including but not limited to the following certificates)

■ ABS Low Temperature Type Approval Certificate

■ Classification Society Cert. of CCS / ABS / BV / DNV / LR / SR

■ Fugitive Emissions Cert. of Cryogenic Valve (ISO 15848-1 / TA-Luft)

■ Fire Safe Cert. of Cryogenic Butterfly / Ball / Gate / Globe etc.

Complete Solutions for Industrial Valves

About Neway

Neway is a global valve manufacturer committed to the research/development, production, and sale of high-quality industrial valves. Our product scope includes Gate, Globe, Check, Ball, Butterfly, Nuclear, Control, Subsea, Safety valves and Well-Head equipment. Our valves are widely supplied to industries including Oil & Gas, Refining, Chemical/Petrochemical, Pipeline, LNG, On/Offshore Exploration & Production, Power, and Renewable/Green Energy applications. Neway's owned and vertically integrated R & D center, forging/casting plants, and production/assembly bases allow us to control all business processes to ensure a stable supply chain, rigorous quality control standards, and competitive pricing/delivery options. Approximately 3,500 employees all over the world strive to provide Neway's superior products and excellent service to our customers

Neway Factory

Neway adopts the group multi-factory management model and has one major valve assembly plant in China with 230,000m² coverage , one API 6A valve plant, three casting foundries, one forging factory and new plant for Butterfly valve. Neway also has a joint venture factory in Saudi Arabia.

R&D Capability

In order to meet the application requirements of valves in different fields, Neway applies advanced software (ANSYS, CFD FE-SAFE, MathCAD, Autodesk Simulation CFO, NX, etc.) for product research and development, and has established professional material laboratory and special engineering test, which can simulate various extreme conditions and lay a solid foundation for the research and development of high-end valves.

Factory Capability

Neway owns high-tech facilities to ensure high precision and high performance of the engineering valves. Such as MAZAK CNC, HVOF Equipment, Automatic Welding Robot, Integrated Machining & Grinding equipment for TOV valve, three coordinate measuring machine etc.

Quality Guarantee

Neway is committed to providing zero defects valves to our customers and controls quality from order input, production process, final test to on-site service.