

Project References

Overseas

BONNY ISLAND TRAIN 7 PROJECT
 LNG BLOCK CALCASIEUS PROJECT
 PLAQUEMINES LNG FACILITY PROJECT
 ORBIT LNG PROJECT
 FILLING FACILITY OF LNG ISO TANK PROJECT
 GOLDEN PASS LNG EXPORT PROJECT
 REPLACEMENT WORK OF MANUAL SCAFFOLDING VALVES PROJECT
 NIGERIA LNG PROJECT
 LNG CANADA PROJECT
 CALCASIEU LNG PROJECT
 FREEPORT LNG PROJECT

China Domestic

JIANGSU BINHAI LNG TERMINAL PROJECT
 ZHEJIANG ZHOUSHAN LNG TERMINAL PROJECT
 SHANDONG QINGDAO LNG TERMINAL PROJECT
 TIANJIN LNG TERMINAL PROJECT
 YANGLING LNG PROJECT
 SHANGGU LNG PROJECT
 YULIN YUANHENG LNG PROJECT
 LNG-FSRU REGASIFICATION MODULE PROJECT
 FSRU FLOATING FLNG GENERATOR SHIP PROJECT
 14000 M³ LIQUEFIED GAS CARRIER PROJECT
 28000 M³ LIQUEFIED GAS CARRIER PROJECT
 H395 LNG TRANSPORT SHIP PROJECT



Cryogenic System

■ LNG Carrier



■ LNG Terminal



Application Characteristics of Low Temperature Valve in System

Valve type	Characteristics	Advantage
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.
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.
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.
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.

Application

Cryogenic valve mainly used in ethylene, liquefied natural gas LNG, air separation equipment, Petrochemical tail gas separation equipment, liquid hydrogen, liquid oxygen, liquid nitrogen, liquid argon, carbon dioxide low temperature tank and lorry, psa oxygen generator. Applicable temperature of cryogenic is from -46°C to -253°C. The medium is a liquefied gas with the characteristics of volume expansion at elevated temperatures.

■ 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



Liquefied Natural Gas

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 used in many LNG terminals and liquefaction stations around the world.

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NW NEWAY

Product Range

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.

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 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 (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 Check Valve (Lifting Type)

Size(IN)	Pressure Range(CLASS)	End Connection	Temperature Range	Operation	Design
1/2"-2"	150-1500	SW,BW,RF	-196°C-400°C	-	Lifting Type

- Integral closed die forging is used for body, without welded flange.
- With disc guided & spring return structure, the valve is closed without jamming and can be installed vertically or horizontally.
- To prolong the service life, the seat surface is made of cobalt-based alloy by weld overlay.

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 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 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 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 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 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
5"-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.



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, WAFR 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)

- Special Equipment Manufacturing License in People's Republic of China
- TA-Luft FE cert
- ISO 15848 FE of Cryogenic Gate Valve
- ISO 15848 FE of Cryogenic Globe Valve
- ISO 15848 FE of Cryogenic Ball Valve
- ISO 15848 FE of Cryogenic Butterfly Valve
- Fire Safe cert of Cryogenic Butterfly / Ball / Gate / Globe Etc.
- SIL 2, SIL 3 cert
- Shell Cryogenic Valve Approval cert



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

In order to meet the application requirements of valves in different fields, Neway applies advanced software (ANSYS, FE-SAFE, MathCAD, Autodesk Simulation CFD, Foxpro, 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.



Sales Network

Neway implements global marketing and sales strategy, has established sales companies and offices subordinate to China HQ in China and overseas, such as America, Netherlands, Italy, Singapore UAE and Nigeria, and established strategic partnership with more than 80 overseas agents and distributors around the world.

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. Neway products obtained all major industrial qualifications including ISO9001, API 6A, API 6D, UKCA, CE/PED, CU-TR, ASME N & NPT, TA-Luft, ABS, Norsok and fire safe, FE certificate, etc. by our continuous efforts. Moreover, Neway has been approved as a qualified supplier by many world famous energy users. With its high-quality products and services, Neway has also been awarded the title of strategic supplier or "Best partner" by many customers.

