

Cryogenic Butterfly Valve

超低温蝶阀

五偏心 无故障 无摩擦 全金属 硬密封



lotoke® 络科

CRYOGENIC BUTTERFLY VALVE

超低温蝶阀

无故障结构

阀腔无销键设计
无任何可能脱落的螺丝等配件
保障用户设备安全

1 次采购
终身降本

5 年质保
管阀同寿命

30 年
设计30年

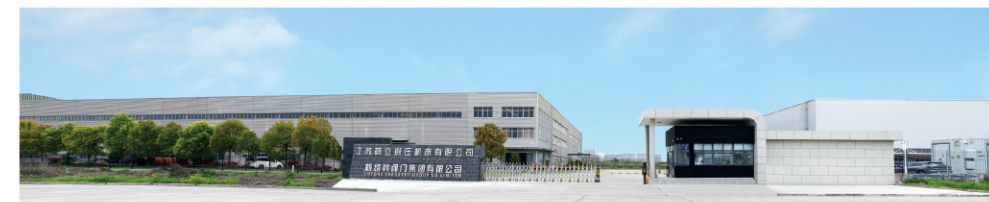


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COMPANY PROFILE

企业简介



新络科阀门集团有限公司，注册资本1.13亿元人民币，集团厂区占地面积25000余平米，建筑面积约20000 平米。集团拥有200多套高精度加工中心和数控机床、理化试验、机械性能试验、低泄漏试验 (FE Test)、超高温试验、超低温试验、产品寿命试验、密封试验、光谱检测、无损检测等各类完备的加工和试验检测设备。

新络科主导产品五偏心球蝶阀：全金属密封、双重密封、双向密封；百万次带压开关、超大口径、普材&特材；超高温 (1200°C)、超低温 (-196°C)、超高压 (2500LB) 等高端球蝶阀产品。

新络科拥有完善的质量管理体系和第三方蝶阀产品认证，产品远销欧美，部分产品填补国内空白替代进口。目前拥有20多项专利，掌握球蝶阀核心技术。

承袭20世纪80年代至今，父辈两代优秀阀门设计制造人的智慧结晶，新络科五偏心超低温蝶阀，结合了球阀的高密封性能优点和蝶阀的体积小、重量轻、易安装等优点。新络科五偏心超低温蝶阀具有扭矩低、无摩擦异型球面密封、双向零泄漏、管阀同寿命、可完全在线维护等突出优点，广泛应用于各种液态低温介质或超低温介质，如：LNG的输送、制冷工程、空气分离低温工段等工况。

New Lotoke Industry Group Co., Limited, with a registered capital of 113 million yuan, covers an area of more than 25000 square meters and a building area of about 20000 square meters. The group has more than 200 sets of high-precision machining centers and CNC machine tools, physical and chemical tests, mechanical performance tests, Fugitive emission tests (FE Tests), ultra-high temperature tests, ultra-low temperature tests, product life tests, sealing tests, spectral tests, non-destructive testing and other complete processing and testing equipment.

New Lotoke's leading product is quintuple offset butterfly valves, such as metal to metal sealing butterfly valves, double seals butterfly valves, bi-directional sealing butterfly valves, butterfly valves with millions of on pressure switch cycles, ultra-large diameter butterfly valves, butterfly valves of common and special materials, including high-grade butterfly valves for special working condition of ultra-high temperature (1200 ° C), ultra-low temperature (-196 ° C) and ultra-high pressure (2500LB).



New Lotoke has a complete quality management system and series of third-party butterfly valve certification. Its products are widely exported to US, EU and many other countries and districts. Some of our products have filled the domestic gap to replace imports. At present, it has more than 20 patents and master the key technology of manufacturing butterfly valves.

Inheriting the wisdom of two generations of excellent valve designers and manufacturers from the 1980s, New Lotoke's quintuple offset cryogenic butterfly valve combines the advantages of high sealing performance of ball valves with the advantages of small size, light weight, and easy installation of butterfly valves. New Lotoke's quintuple offset cryogenic butterfly valve has outstanding advantages such as low torque, completely friction free with spherical sealing, bi-directional zero leakage, the same lifespan as it of pipelines (design life of 30 years), and complete on-line maintenance. It is widely used in pipeline transportation for various low-temperature and ultra-low-temperature liquid media (such as LNG transportation), refrigeration engineering, low-temperature section of air separation, and other cryogenic conditions.

TS A级(行业最高级)
SIL 安全认证
ISO15848-1 低泄漏认证
API 607 防火认证
ISO 9001认证
ISO 14001认证
ISO 45001认证



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QUALITY CONTROL

质量控制

lotoke® 络科

公司拥有高精度的数控机床和加工中心，
先进的检测设备、精良的工艺以及严格完善的质量管理体系，
并聚集拥有专业技术和领先水平的精英科技队伍，
充分利用新技术、新工艺、新材料
保证产品的稳定性和可靠性。

The company has high-precision CNC machine tools and machining centers, advanced test equipments, sophisticated technology and strict quality management system. It also gathers professional and technical elites and leading-edge scientific and technological teams to make full use of new technologies, new processes and new materials. Product stability and reliability.

新技术 新工艺 新材料

New Technologies New Processes New Materials.



TECHNOLOGY INTRODUCTION

技术介绍

五偏心、换代产品 颠覆性的阀门密封结构

Quintuple Offset Design
New Generation Products
Revolutionary Sealing Structure

父辈两代人技术传承, 专注蝶阀和球阀研发制造。
全球首创球蝶阀: 五偏心、无摩擦、密封自清洁。
集球阀的自清洁、稳定的密封性能, 和蝶阀的重量轻、易安装于一体。

Inheriting rich experience of butterfly valve manufacturing for more than 20 years.
Innovative design with quintuple offset, friction free, self-cleaning seals.
Combines advantages of non-friction, low torque and high sealing performance, small size, light weight, easy for installation and maintenance.

技术叠代 Technology Iteration



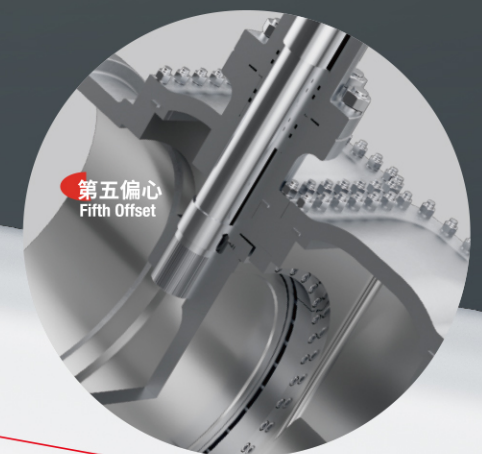
正圆锥斜切椭圆
密封系统
Conical beveled ellipse
Sealing system



椭圆锥斜切正圆
密封系统
Elliptical cone oblique tangent circle
Sealing system



异型球面
密封系统
Heteromorphic sphere
Sealing system



第四偏心
Forth Offset

第三偏心
Third Offset

STRUCTURAL CHARACTERISTICS

结构特点

管阀同寿命

所有的零配件可全部在线更换，
达到与管道同寿命的功能。

SAME SERVICE LIFE OF PIPE AND VALVE

ALL SPARE PARTS CAN BE REPLACED ONLINE TO ACHIEVE THE SAME LIFESPAN AS THE PIPELINE.

lotoke 络科



STRUCTURAL CHARACTERISTICS

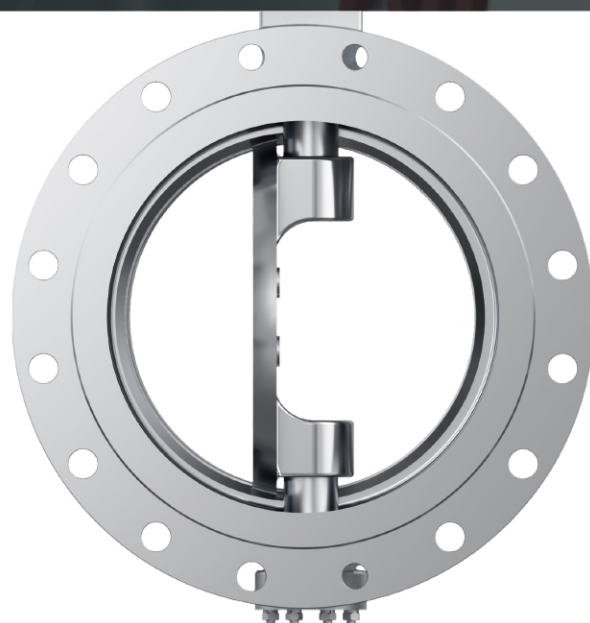
结构特点

lotoke® 络科

永不脱落螺栓设计 Never drop bolt design

光板阀板及吊环螺栓永不脱落设计, 无隐患结构。

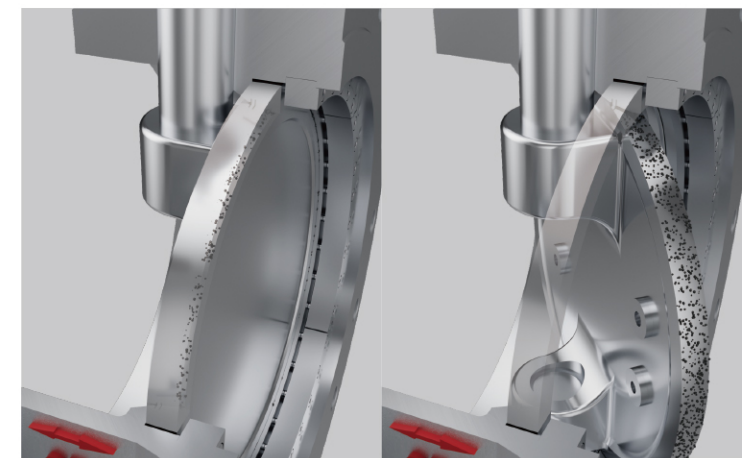
Integral screwless valve disc and never-drop screws and bolts for retainers.No hidden danger structure



密封自清洁环 Self-cleaning function

阀座金属硬密封圈前置自清洁环, 不仅有独立的密封效果, 阀门关闭时可提前清洁附作于阀板上的颗粒状异物, 避免异物进入密封部位之间, 保护了阀门的密封副。增加了阀门密封的使用寿命, 降低使用成本。

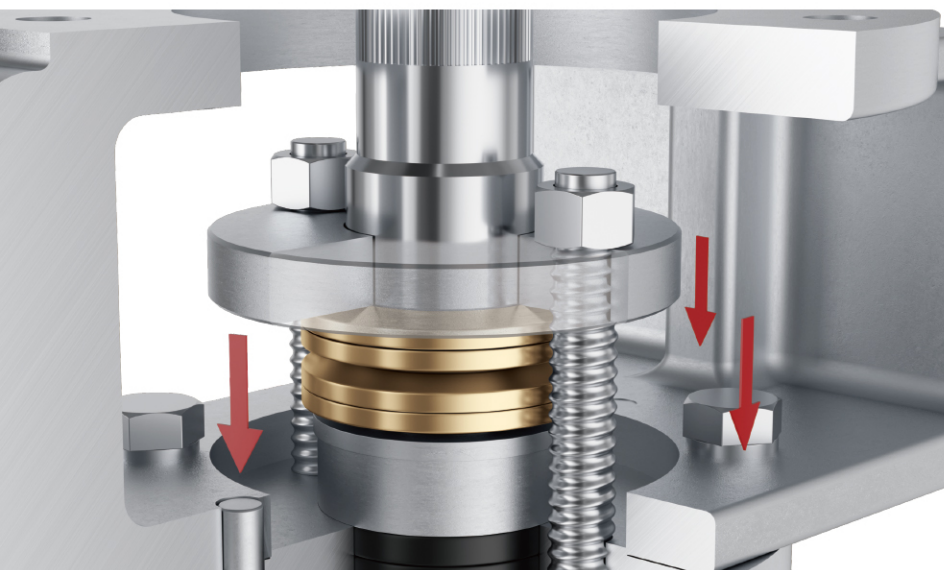
Designed with two valve seats. A non-metallic valve seat is preceded in front of the metallic sealing seat. The non-metallic seat which not only has an independent sealing effect, but also can clean the granular foreign matters attached to the valve plate in advance when the valve is closed, so as to prevent foreign matters from entering between the sealing parts and protect the sealing pair of the valve. The service life of the valve seat is increased and the service cost is reduced.



动平衡填料系统 Unique constant pressure packing system

动平衡填料系统, 自动调节填料磨损带来的填料函空间和压力损失, 使填料函保持恒压状态, 无需人工调节。降低了阀门维护成本。

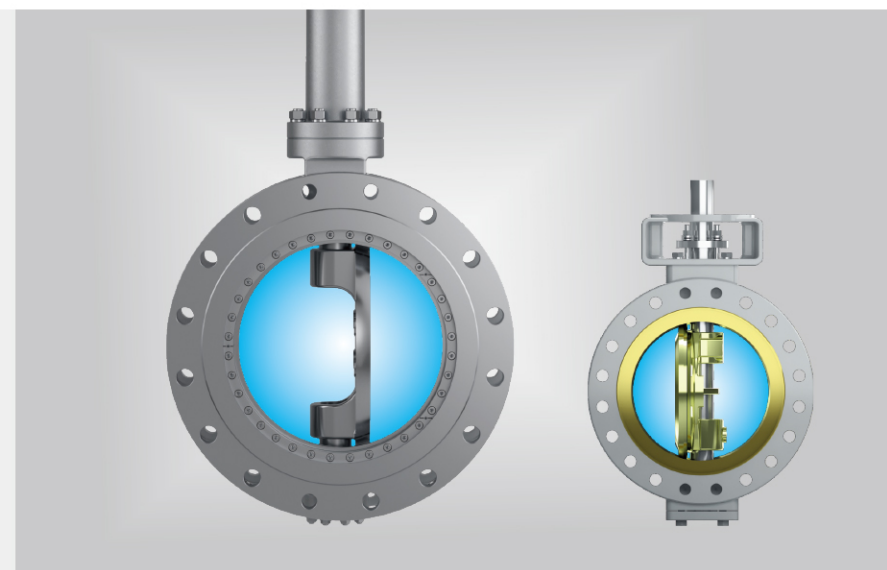
Unique constant pressure packing structure with disc spring washer automatically compensates packing loss and effectively prevents medium outer leakage. Fugitive emission test meets ISO15848 A grade. No manual maintenance is required.



上下双阀杆设计 Split-type stem design

上下双阀杆设计, 提供更大流通空间。相对整体阀杆设计, 同规格介质流通效率提升约10%。节能降耗并降低了系统运行成本。

The valve stem is designed as upper stem and lower stem. The design offers better flow capacity for the valve. At same DN and PN, split-type stem design brings 10% higher flow rate than unitary stem design.



IMPORTANT PROCESSES

工艺介绍



阀座密封件工艺 Process Of Valve Seat Sealing Parts

新络科超低温蝶阀的阀座采用堆焊工艺提高密封面表面硬度，阀座选用不锈钢F316L，密封面堆焊司太立硬质合金，精加工至镜面光洁度，经精加工后的硬质合金有效厚度高达3毫米。

The valve seat of New Lotoke cryogenic butterfly valve adopts a surfacing welding process to improve the surface hardness of the sealing surface. The valve seat is made of stainless steel F316L, and the sealing surface is overlaid with Stellite hard alloy. After finishing, the effective thickness of the hard alloy can reach 3mm.



蝶板密封件工艺 Valve Plate Seal Process

新络科超低温蝶阀的蝶板密封面采用司太立堆焊工艺，提高硬度和耐磨性能，提升使用寿命，司太立焊层厚度超过3mm。

The sealing surface of the valve disc of New Lotoke cryogenic butterfly valve adopts the Stellite surfacing welding process, improving hardness and wear resistance, and extending service life. The Stellite welding layer thickness exceeds 3mm.



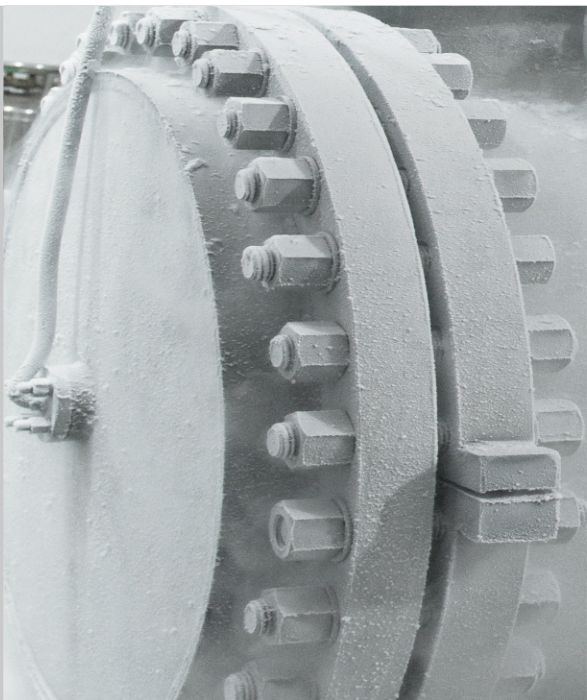
深冷处理 与 超低温测试 Cryogenic Treatment & Ultra Low Temperature Testing

奥氏体不锈钢作为超低温阀门主要承压件的材料在常温下处于亚稳定状态，当温度降低到相变点Ms点以下时，部分奥氏体会变成体心立方晶格的马氏体，阀门密封结构会有一定的变形，低于阀门工作温度深冷处理时间2至6h、2至4次，消除材料相变和塑性变形的影响，保证超低温阀门的密封性能。

在选择低温条件下使用材料，考虑以下两个方面的要求：承受持久或瞬间温差应力承受压力和温度交变的各种载荷，无明显弹塑性变形超低温条件下的韧性，以防止脆性断裂超低温条件下材料要有足够的组织稳定性，以保证密封性具备耐压、耐磨、耐腐蚀和可焊接性防止因填料函部分过冷出现填料以及阀盖上部的零件结露或冷冻现象。防止金属材料与非金属材料的低温收缩性的不一致导致阀门的操作扭矩增大和填料的磨损阀盖颈部的长度尺寸根据中石化、BS 6364或MSS SP-134标准要求确定；根据试验或用户要求有限元分析的方法验证确定。

Austenitic stainless steel, as the material of the main pressure bearing part of the ultra-low temperature valve, is in a metastable state at room temperature. When the temperature drops below the transformation point Ms, part of the austenite will become body centered cubic lattice Martensite, and the valve sealing structure will have some deformation. The cryogenic treatment time is 2 to 6h, 2 to 4 times lower than the valve operating temperature, to eliminate the impact of material transformation and plastic deformation, and ensure the sealing performance of the ultra-low temperature valve.

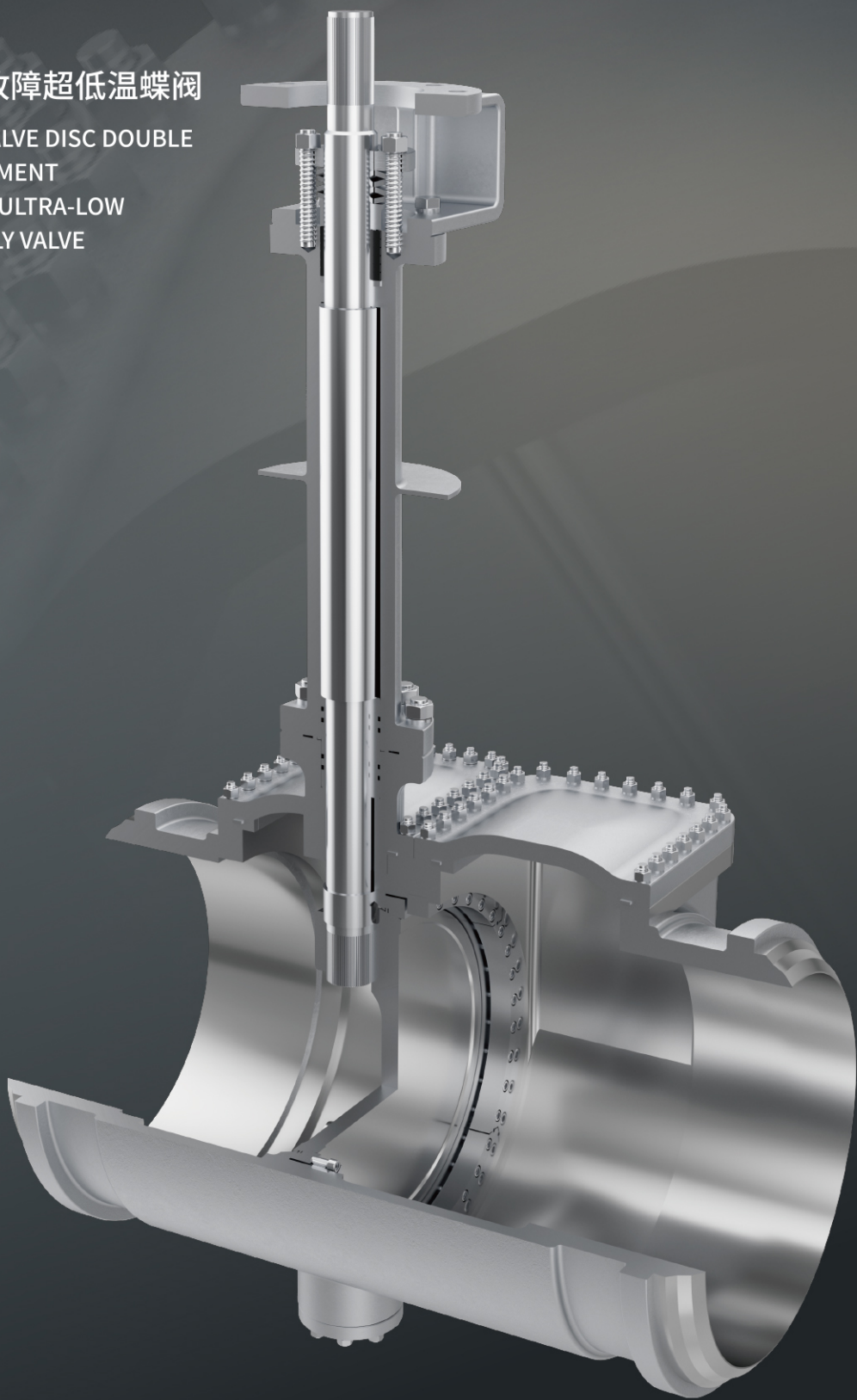
When selecting materials for use under low temperature conditions, the following two requirements should be considered: to withstand long-term or instantaneous temperature difference stress, to withstand various loads of pressure and temperature alternation, and to have no obvious elastic-plastic deformation. The toughness under ultra-low temperature conditions should be sufficient to prevent brittle fracture. Under ultra-low temperature conditions, the material should have sufficient organizational stability to ensure sealing performance with pressure resistance, wear resistance Corrosion resistance and weldability prevent misting or freezing of the packing and upper parts of the valve cover due to overcooling of the packing box. To prevent the inconsistency between the low-temperature shrinkage of metal materials and non-metallic materials from causing an increase in valve operating torque and wear of the packing, the length and size of the valve cover neck shall be determined according to the requirements of Sinopec, BS 6364 or MSS SP-134 standards; Confirmed based on experimental or user requested finite element analysis method validation.



ULTRA-LOW TEMPERATURE

超低温蝶阀

光板双检修仓永无故障超低温蝶阀
INTEGRAL SCREWLESS VALVE DISC DOUBLE
MAINTENANCE COMPARTMENT
PERMANENT FAULT FREE ULTRA-LOW
TEMPERATURE BUTTERFLY VALVE



设计标准 Design Standards	微泄漏试验 FE Test
API 609, BS6364, ISO5752	ISO15848, API 622, SHELL77-312, TA-LUFT
连接标准 Connection Standards	强度和密封试验标准 Strength And Sealing Test Standards
ASME B16. 25	API 598, BS6364, EN12266 / ISO5208
防火测试 Fire Test	
API 607, BS6755, ISO/FDIS10497	

供货范围 Scope Of Supply

连接型式 Connection Type	密封 Sealing	供货范围 Supply Sco	
对焊 Butt Weld	双向 (可选) Bi-directional is optional	150LB - 300LB 600LB - 900LB 1500LB - 2500LB	NPS8 - NPS64 NPS8 - NPS48 NPS10 - NPS40

材料配置 Material Configuration

部件名称 Component Name	材料配置 A Material configuration A	材料配置 B Material configuration B
阀体 valve body	CF3	CF3M
阀板 Valve disc	CF3	CF3M
阀杆 Valve stem	XM-19	XM-19
金属阀座 Metal valve seat	F304L堆焊司太立 F304L Surfacing Welding Stellite	F316L堆焊司太立 F316L Surfacing Welding Stellite
非金属自清洁密封环 Non metallic self-cleaning sealing ring	PCTFE	PCTFE
阀板密封围 Valve plate sealing ring	F304L堆焊司太立 F304L Surfacing Welding Stellite	F316L堆焊司太立 F316L Surfacing Welding Stellite
阀座三开环 Valve seat retainer	F304L	F316L
填料 Packing	低泄漏填料组合 Low Leakage Packing Combination	低泄漏填料组合 Low Leakage Packing Combination
轴套 Shaft sleeve	SS304渗氮 SS304 Nitriding	SS316渗氮 SS316 Nitriding
加长支架 (带滴水盘) Extended bracket (with drip tray)	CF3	CF3M
螺栓 (内) Bolt	B8M	B8M
螺栓螺母 Bolt and Nuts	B8M & 8M	B8M & 8M

ULTRA-LOW TEMPERATURE

超低温蝶阀

法兰连接超低温蝶阀

FLANGE CONNECTED
ULTRA-LOW TEMPERATURE
BUTTERFLY VALVE



设计标准 Design Standards	微泄漏试验 FE Test
API 609, BS6364, ISO5211	ISO15848, API 622, SHELL77-312, TA-LUFT
连接标准 Connection Standards	强度和密封试验标准 Strength And Sealing Test Standards
ASME B.16.5	API 598, BS6364, EN12266 / ISO5208
防火测试 Fire Test	
API 607, BS6755, ISO/FDIS10497	

供货范围 Scope Of Supply

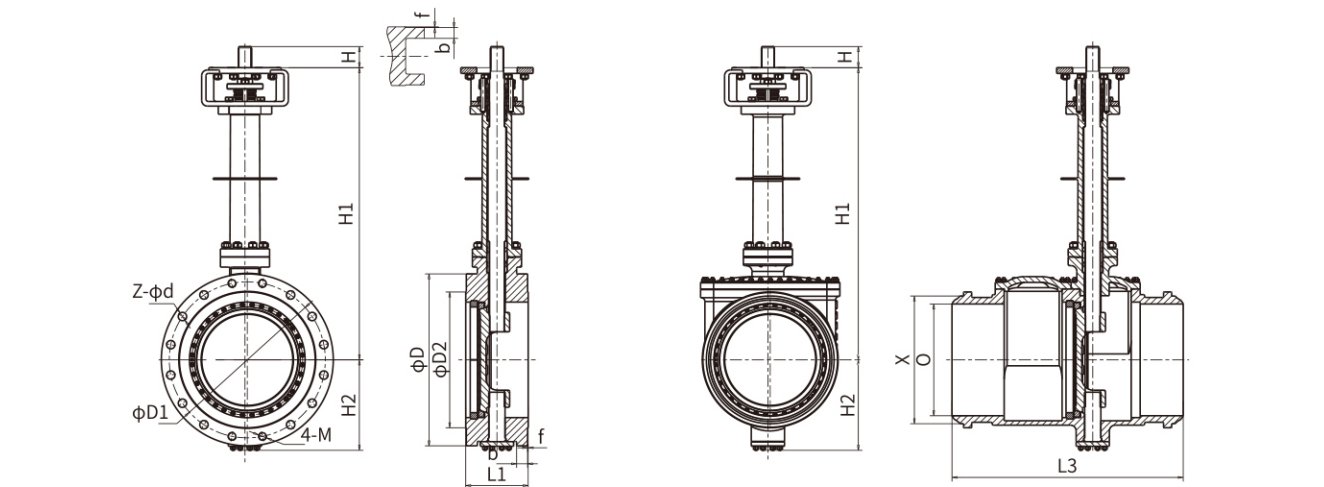
连接型式 Connection Type	密封 Sealing	供货范围 Supply Sco	
法兰 Flange	双向 (可选) Bi-directional is optional	150LB - 300LB 600LB - 900LB 1500LB - 2500LB	NPS8 - NPS64 NPS8 - NPS48 NPS10 - NPS40

材料配置 Material Configuration

部件名称 Component Name	材料配置 A Material configuration A	材料配置 B Material configuration B
阀体 valve body	CF3	CF3M
阀板 Valve disc	CF3	CF3M
阀杆 Valve stem	XM-19	XM-19
金属阀座 Metal valve seat	F304L堆焊司太立 F304L Surfacing Welding Stellite	F316L堆焊司太立 F316L Surfacing Welding Stellite
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填料 Packing	低泄漏填料组合 Low Leakage Packing Combination	低泄漏填料组合 Low Leakage Packing Combination
轴套 Shaft sleeve	SS304渗氮 SS304 Nitriding	SS316渗氮 SS316 Nitriding
加长支架 (带滴水盘) Extended bracket (with drip tray)	CF3	CF3M
螺栓 (内) Bolt	B8M	B8M
螺栓螺母 Bolt and Nuts	B8M & 8M	B8M & 8M

外形尺寸

OVERALL DIMENSIONS

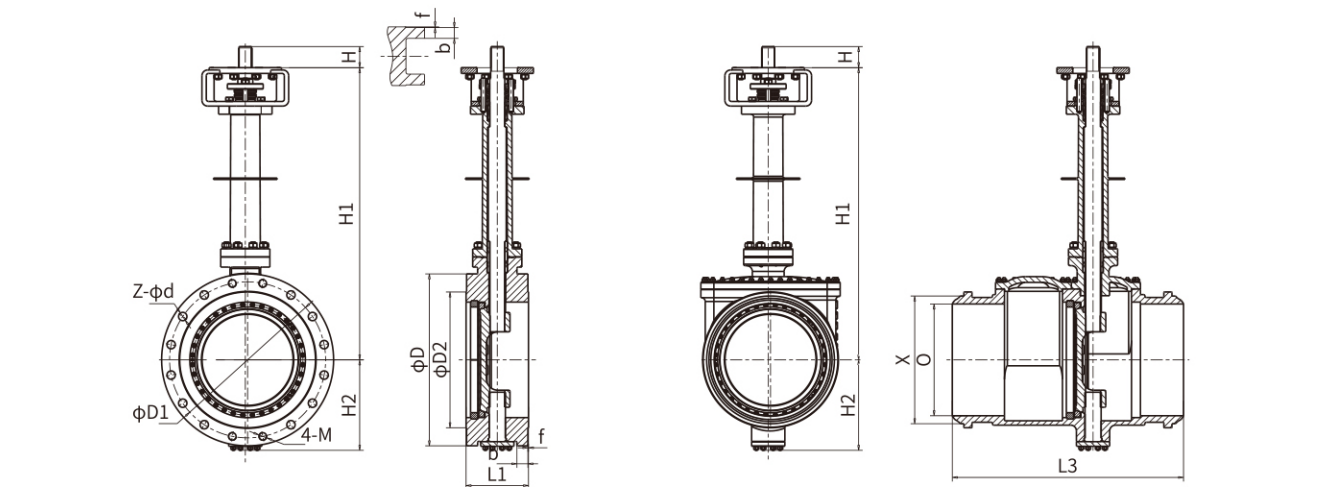


150LB 主要连接尺寸/Main connection dimensions

公称通径 Nominal Diameter		L1	L3	D	D1	D2	b(Min)	f	N	Z-φd	M(In)	O	X	H1	H2	H
Inch	mm															
8	DN200	152	410	345	298.5	269.9	27	2	8	4-22	3/4-10UNC-2B	202.7	219.1	640	198	45
10	DN250	165	455	405	362	323.8	28.6	2	12	8-26	7/8-9UNC-2B	254.5	273	665	235	50
12	DN300	178	485	485	431.8	381	30.2	2	12	8-26	7/8-9UNC-2B	304.8	323.9	715	274.5	67
14	DN350	190	530	535	476.3	412.8	33.4	2	12	8-29	1-8UNC-2B	336.6	355.6	760	314	81
16	DN400	216	555	595	539.8	469.9	35	2	16	12-29	1-8UNC-2B	387.4	406.4	807	344	87
18	DN450	222	590	635	577.9	533.4	38.1	2	16	12-32	1-1/8-8UNC-28	434.9	457	855	369	98
20	DN500	229	625	700	635	584.2	41.3	2	20	16-32	1-1/8-8UNC--2B	482.6	508	932	410.5	105
24	DN600	267	680	815	749.3	692.2	46.1	2	20	16-35	1-1/4-8UNC-2B	581.1	610	1050	472.5	117
28	DN700	292	770	925	863.6	800	69.9	2	28	24-35	1-1/4-8UNC-2B	672.7	711.2	1170	529.5	117
32	DN800	318	830	1060	977.9	914	79.4	2	28	24-42	1-1/2-8UNC-2B	770.7	812.8	1240	648	120
36	DN900	330	900	1170	1085.8	1022	88.9	2	32	28-42	1-1/2-8UNC-2B	869.3	914.4	1295	708.2	128
40	DN1000	410	1100	1290	1200.2	1124	88.9	2	36	32-42	1-1/2-8UNC-2B	967.3	1016	1590	766.2	170
48	DN1200	470	1260	1510	1422.4	1359	106.4	2	44	40-42	1-1/2-8UNC-2B	1164	1219.2	1725	884	182

300LB 主要连接尺寸/Main connection dimensions

公称通径 Nominal Diameter		L1	L3	D	D1	D2	b(Min)	f	N	Z-φd	M(In)	O	X	H1	H2	H
Inch	mm															
8	DN200	152	410	345	298.5	269.9	27	2	8	4-22	3/4-10UNC-2B	202.7	219.1	640	198	45
10	DN250	165	455	405	362	323.8	28.6	2	12	8-26	7/8-9UNC-2B	254.5	273	665	235	50
12	DN300	178	485	485	431.8	381	30.2	2	12	8-26	7/8-9UNC-2B	304.8	323.9	715	274.5	67
14	DN350	190	530	535	476.3	412.8	33.4	2	12	8-29	1-8UNC-2B	336.6	355.6	760	314	81
16	DN400	216	555	595	539.8	469.9	35	2	16	12-29	1-8UNC-2B	387.4	406.4	807	344	87
18	DN450	222	590	635	577.9	533.4	38.1	2	16	12-32	1-1/8-8UNC-28	434.9	457	855	369	98
20	DN500	229	625	700	635	584.2	41.3	2	20	16-32	1-1/8-8UNC--2B	482.6	508	932	410.5	105
24	DN600	267	680	815	749.3	692.2	46.1	2	20	16-35	1-1/4-8UNC-2B	581.1	610	1050	472.5	117
28	DN700	292	770	925	863.6	800	69.9	2	28	24-35	1-1/4-8UNC-2B	672.7	711.2	1170	529.5	117
32	DN800	318	830	1060	977.9	914	79.4	2	28	24-42	1-1/2-8UNC-2B	770.7	812.8	1240	648	120
36	DN900	330	900	1170	1085.8	1022	88.9	2	32	28-42	1-1/2-8UNC-2B	869.3	914.4	1295	708.2	128
40	DN1000	410	1100	1290	1200.2	1124	88.9	2	36	32-42	1-1/2-8UNC-2B	967.3	1016	1590	766.2	170
48	DN1200	470	1260	1510	1422.4	1359	106.4	2	44	40-42	1-1/2-8UNC-2B	1164	1219.2	1725	884	182



600LB 主要连接尺寸/Main connection dimensions

公称通径 Nominal Diameter		L1	L3	D	D1	D2	b(Min)	f	N	Z-φd	M(In)	O	X	H1	H2	H
Inch	mm															
8	DN200	152	410	345	298.5	269.9	27	2	8	4-22	3/4-10UNC-2B	202.7	219.1	640	198	45
10	DN250	165	455	405	362	323.8	28.6	2	12	8-26	7/8-9UNC-2B	254.5	273	665	235	50
12	DN300	178	485	485	431.8	381	30.2	2	12	8-26	7/8-9UNC-2B	304.8	323.9	715	274.5	67
14	DN350	190	530	535	476.3	412.8	33.4	2	12	8-29	1-8UNC-2B	336.6	355.6	760	314	81
16	DN400	216	555	595	539.8	469.9	35	2	16	12-29	1-8UNC-2B	387.4	406.4	807	344	87
18	DN450	222	590	635	577.9	533.4	38.1	2	16	12-32	1-1/8-8UNC-28	434.9	457	855	369	98
20	DN500	229	625	700	635	584.2	41.3	2	20	16-32	1-1/8-8UNC--2B	482.6	508	932	410.5	105
24	DN600	267	680	815	749.3	692.2	46.1	2	20	16-35	1-1/4-8UNC-2B	581.1	610	1050	472.5	117
28	DN700	292	770	925	863.6	800	69.9	2	28	24-35	1-1/4-8UNC-2B	672.7	711.2	1170	529.5	117
32	DN800	318	830	1060	977.9	914	79.4	2	28	24-42	1-1/2-8UNC-2B	770.7	812.8	1240	648	120
36	DN900	330	900	1170	1085.8	1022	88.9	2	32	28-42	1-1/2-8UNC-2B	869.3	914.4	1295	708.2	128
40	DN1000	410	1100	1290	1200.2	1124	88.9	2	36	32-42	1-1/2-8UNC-2B	967.3	1016	1590	766.2	170
48	DN1200	470	1260	1510	1422.4	1359	106.4	2	44	40-42	1-1/2-8UNC-2B	1164	1219.2	1725	884	182

900LB 主要连接尺寸/Main connection dimensions

公称通径 Nominal Diameter		L1	L3	D	D1	D2	b(Min)	f	N	Z-φd	M(In)	O	X	H1	H2	H
Inch	mm															
8	DN200	152	410	345	298.5	269.9	27	2	8	4-22	3/4-10UNC-2B	202.7	219.1	640	198	45
10	DN250	165	455	405	362	323.8	28.6	2	12	8-26	7/8-9UNC-2B	254.5	273	665	235	50
12	DN300	178	485	485	431.8	381	30.2	2	12	8-26	7/8-9UNC-2B	304.8	323.9	715	274.5	67
14	DN350	190	530	535	476.3	412.8	33.4	2	12	8-29	1-8UNC-2B	336.6	355.6	760	314	81
16	DN400	216	555	595	539.8	469.9	35	2	16	12-29	1-8UNC-2B	387.4	406.4	807	344	87
18	DN450	222	590	635	577.9	533.4	38.1	2	16	12-32	1-1/8-8UNC-28	434.9	457	855	369	98
20	DN500	229	625	700	635	584.2	41.3	2	20	16-32	1-1/8-8UNC--2B	482.6	508	932	410.5	105
24	DN600	267	680	815	749.3	692.2	46.1	2	20	16-35	1-1/4-8UNC-2B	581.1	610	1050	472.5	117
28	DN700	292	770	925	863.6	800	69.9	2	28	24-35	1-1/4-8UNC-2B	672.7	711.2	1170	529.5	117
32	DN800	318	830	1060	977.9	914	79.4	2	28	24-42	1-1/2-8UNC-2B	770.7	812.8	1240	648	120
36	DN900	330	900	1170	1085.8	1022	88.9	2	32	28-42	1-1/2-8UNC-2B	869.3	914.4	1295	708.2	128
40	DN1000	410	1100	1290	1200.2	1124	88.9	2	36	32-42	1-1/2-8UNC-2B	967.3	1016	1590	766.2	170
48	DN1200	470	1260	1510	1422.4	1359	106.4	2	44	40-42	1-1/2-8UNC-2B	1164	1219.2	1725	884	182