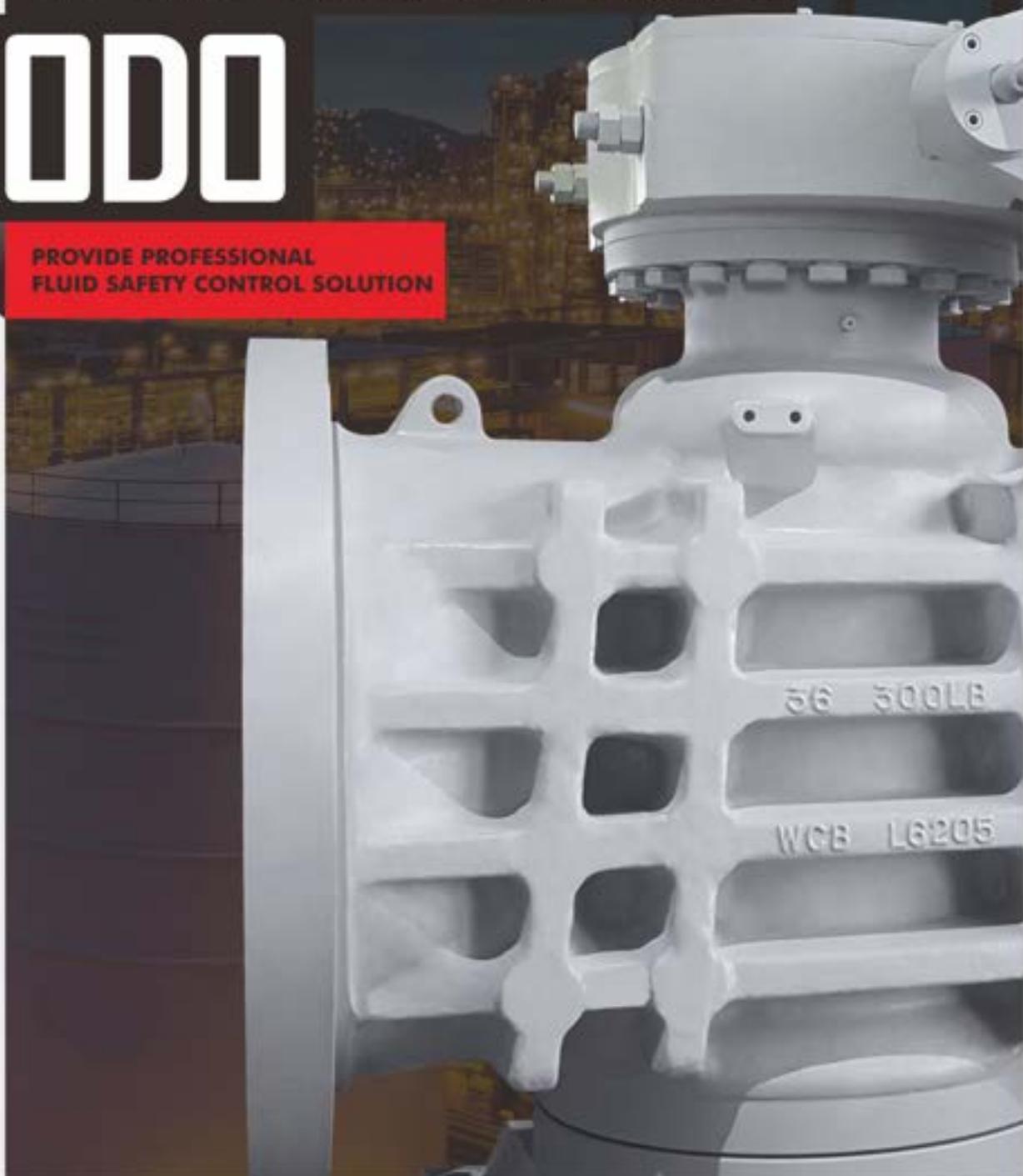


提供流体安全控制解决方案

XODO

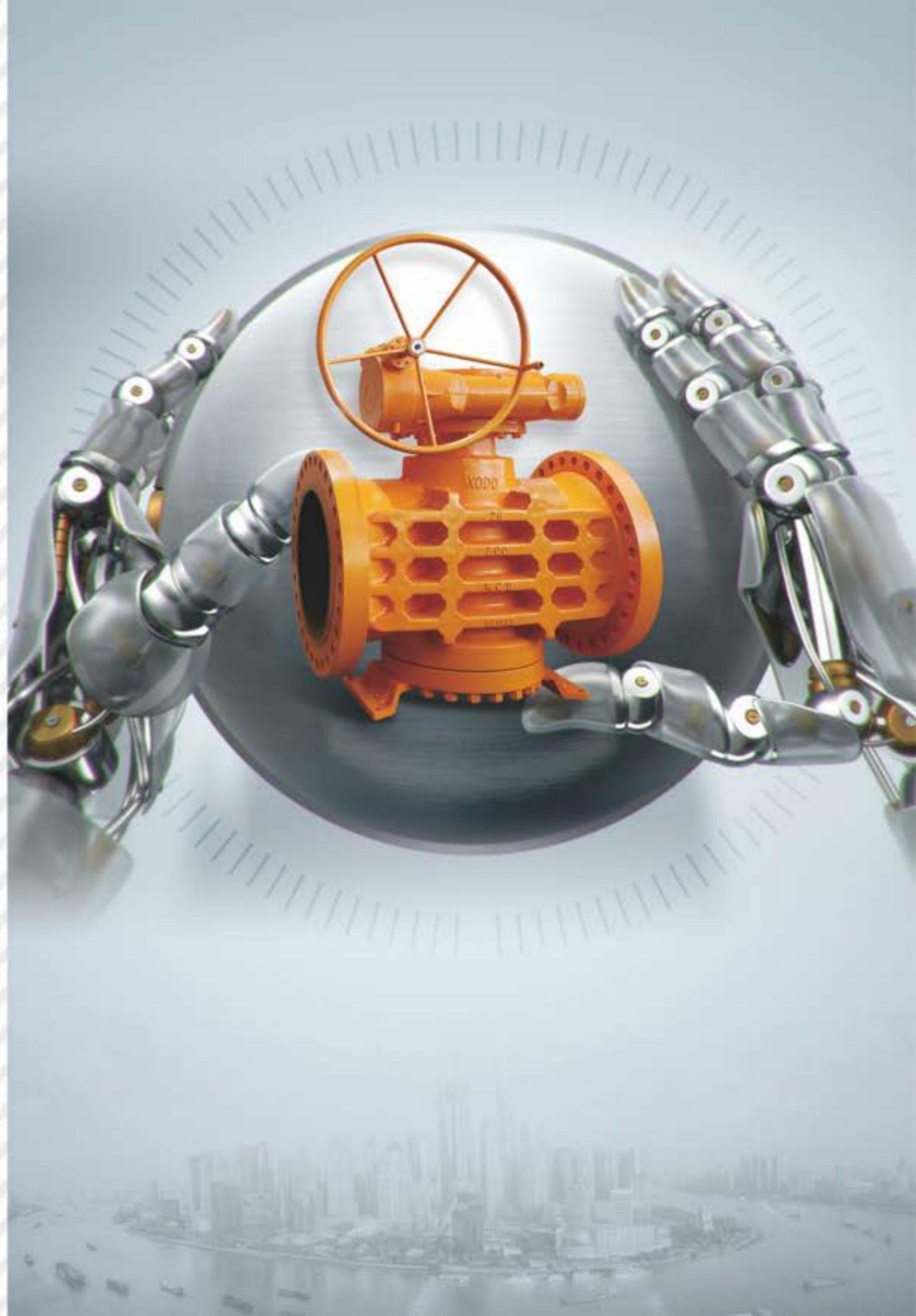
PROVIDE PROFESSIONAL
FLUID SAFETY CONTROL SOLUTION



XODO® 旋东阀门
XUANDONG VALVE

旋起东方 开启未来

XUANDONG VALVE OPEN THE FUTURE



企业简介

ENTERPRISE
PROFILE

浙江旋东阀门有限公司(原远东旋塞阀分公司)坐落于中国著名的“泵阀之乡”——温州永嘉。依山傍水，环境优美，交通便利，是一家集研发、制造、销售、服务为一体的专业生产各种旋塞阀和球阀系列的企业。本公司成立于2003年1月份，原公司建筑面积500平方米，公司员工10位。发展至今，公司现建筑面积达到5000平方米，拥有了一支高效的管理队伍，技术精湛的技术力量，专业的质量监控团队。多年来公司不断更新设备，采用专业的自动化制造设备和检测设备(带自动内外圆磨数控立车，数控机床，内外圆磨床，旋塞阀研磨机，智能万向传动机，加工中心等)，本公司设有CAD研发中心，利用三维主体模拟设计，提高了新产品开发速度和品质。拥有超声波X及R射线，磁粉等无损探伤手段，有高温高压及低温试验设备及材料化学分析仪器，光谱仪等，从而保证了产品的可靠性和安全性。公司采用现代化质量管理体系，秉承精益求精的管理理念，品质第一，服务顾客的质量方针经营管理。企业的质保体系已通过挪威船社(DNV) ISO9001认证、欧盟CE认证、TS认证、API认证等。经过多年潜心经营，公司被中国华电、大唐国际誉为合格供应商。2017年公司被认定为浙江省科技型中小企业，2019年公司研发的两项产品顺利通过省级新产品鉴定，2020年公司成功通过国家高新技术企业认定，作为主要起草单位研制了《法兰、焊接和螺纹连接铜制旋塞阀》“浙江制造”标准，2021年公司承担的永嘉县科技计划项目“倒装油密封压力平衡式旋塞阀的研发”顺利通过验收，截止目前，公司还获取了两项发明专利和十四项实用新型专利。这使公司品牌插上了腾飞的双翅，迈入中国顶级品牌的行列。

公司产品覆盖了国内近三十个省市、自治区。产品远销欧美、德国、中东、港澳台等国家和地区。公司现有员工100人左右，具有先进的生产工艺，年生产能力小口径8000件左右，大口径2000件左右。

公司以专业的队伍、严谨的管理、超卓的设备，着力打造一流产品，以激情奔放、彰显非凡、锐意革新、进取不息的精神，形成了旋东品牌语言。兼容并蓄、博采众长的虚怀纳百川之风范，形成了旋东超凡脱俗的个性与风格。于此同时公司坚持用企业文化提升企业核心竞争力，使企业在发展中树立起良好的社会形象。“行远必自逸，追求无止境”。“旋东”将一如既往的奋进不息，为建树美丽的事业奉献光热，为制造中国的阀门产业丰碑而永远向前。

提供流体安全控制解决方案

PROVIDE FLUID SAFETY
CONTROL SOLUTION

Zhejiang Xuandong Valves Co., Ltd. (the former Yuandong Plug Valves Branch Company) is located in China's famous Land of Pumps and Valves - Yongjia County of Wenzhou City. It's surrounded by mountains and rivers in a beautiful environment with a convenient transportation system. Specialized in research and development, manufacturing, sales and services. It's a professional manufacturer of all types of plug valves and ball valves. Established in January 2003, the company started with a building area of 500 square meters and 10 staff. Up till now, the company covers an area of 5,000 square meters and owns a highly efficient management team, a skilful technical force and a professional quality-control team. Over the years, the company constantly updates its equipment. It uses professional automatic manufacturing equipment and testing devices (including an automatic internal and external circular grinding CNC vertical lathes, CNC machine tools, internal and external circular grinding machine, plug valve grinding machine, an intelligent universal driving motor, machining center, etc.). The company is equipped with a CAD research and development center and uses 3D body simulation design for improving the speed and quality of new product development. It has ultrasonic X and R rays, magnetic powder and other non-destructive testing means, high-temperature, high-pressure and low-temperature testing devices as well as material, chemical analysis instruments and spectrometers so as to ensure the reliability and safety of its products.

The company adopts a modern quality management system, adheres to the management concept of constant excellence, continuous improvement, the utmost quality, and the quality policy of always putting customer service first. The company's quality assurance system has passed the DNV ISO9001 certification, European CE certification, TS certification, and API certification. After years of dedicated business operation, the company has been appointed as a qualified supplier to China Huadian Corporation and Datang International. In 2017, the company was recognized as a Science and Technology SMEs in Zhejiang Province; in 2019, two products developed by the company were successfully verified as qualified new products in the province; in 2020, the company was successfully recognized as a National High-tech Enterprise. It also worked as a main drafting body for developing the "It also worked as standard for Flanges, Welding and Plug Valves Made from Threaded Steel. In 2021, the "Research and Development of Inverted Lubricated Pressure-Balancing Plug Valves" science and technology project in Yongjia County undertaken by the company successfully passed the acceptance process. Up till now, the company has obtained two invention patents and 14 utility model patents, which further enhanced the company's brand name and helped the Company to be listed as one of the top brands in China.

The company's products cover nearly 30 provinces and autonomous regions in China. Its products are sold wide and far in Europe, America, Germany, the Middle East, Hong Kong, Macao and Taiwan and other countries and regions. The company currently employs about 100 employees, owns advanced production technologies and boasts of an annual production capacity of about 8,000 pieces of small-diameter products and about 2,000 pieces of large-diameter products.

The company, with its professional teams, rigorous management, excellent equipment, focuses on creating first-class products; through passion, determined innovation, and enterprising spirit, has formed its own distinguished Xuandong brand image; by improving compatibility, learning far and wide from others, and being highly inclusive, it has established its own extraordinary Xuandong characteristics and personalities. Meanwhile, the company insists on using corporate culture to enhance the core competitiveness of itself, so that it can build a good social image in its course of development. "To reach far, you need to start from somewhere close; and bear in mind endless pursuit of excellence." Xuandong will, as always, continue to forge ahead, dedicate itself to building a beautiful future and continuously promoting China's valve industry.

— 创新思维

CREATIVE
THINKING



斥巨资投入研发设计
在反复挑战中实现产品革新
全套个性化定制方案在
中高端的阀门市场取得骄人地位

We spent huge investment in research and development
and made the product innovations amid severe challenges
We have different sets of personalized customization solutions
which made us an outstanding manufacturer in the valve market



公司拥有高精度的数控机床和加工中心，先进的设备，精良的工艺以及严格完善的质量管理体系，并聚集具有专业技术精英和高水平的科技队伍，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 a high precision CNC machine tools and processing center, advanced equipment, sophisticated technology and strict and perfect quality management system, and gathered professional technical elite and high level of science and technology team, make full use of new technology, new technology, new materials to ensure the stability and reliability of products.

**SUPERIOR QUALITY
PRECISE CONTROL**

卓越品质 精准控制





这些年一直在走高质量发展之路，我们对产品的要求，不仅是好用，还要保持安全可靠性能。公司建立ERP信息、MES生产管控系统，为客户更精准供应需求。

Over the years, we have been taking the road of high-quality development. Our requirements for products are not only good to use, it is also necessary to maintain safe and reliable performance. The company has established ERP information and MES production control system, to provide customers with more precise demands.

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION

生产控制

PRODUCTION CONTROL



旋东自主研发全自动旋塞阀研磨机 发明专利号：ZL 2020 1 1049383.3

品质保障

QUALITY ASSURANCE

为了提供高品质产品，配备了先进的检测设备以及完善的检测手段。建立了一支严格要求品质管理团队，实现了从原材料检测，生产过程检测，产品及应用全过程质量控制。

In order to provide high-quality products, Equipped with advanced testing equipment and perfect testing methods, Established a strict quality management team, Accomplish the quality control of the whole process from raw material inspection, production process inspection, to product application.



行业应用

INDUSTRY APPLICATION



旋东阀门是一家集研发、制造、销售、服务为一体的专业生产各种旋塞阀系列的企业。产品广泛应用于石油、新能源、化工、电力、冶金、钢铁、等工程领域。

XODO valve company is specializing in the production, developing, selling and after-sales-service of various plug valves. Products of XODO Valves are widely used in petroleum industry, new energy, chemical industry, electric power, metallurgy, steel industry, and other fields.



产品现场

PRODUCT SCENE

质量是企业的生命，
信誉是企业的根本。
Quality is the life of an enterprise,
Reputation is the foundation of an enterprise.



产品现场

PRODUCT SCENE



将军阀系列

DBB PLUG VALVE SERIES



美标将军阀 API DBB Plug Valve



美标将军阀阀杆加长1.5米
API DBB Plug valve
with extension stem 1.5 m



美标将军阀 API DBB Plug Valve



美标将军阀 API DBB Plug Valve



美标将军阀 API DBB Plug Valve



德标将军阀 DIN DBB Plug Valve



美标将军阀 API DBB Plug Valve



美标将军阀 API DBB Plug Valve



美标将军阀 API DBB Plug Valve

偏心旋塞阀系列 ECCENTRIC PLUG VALVE SERIES



手动偏心旋塞阀 Manual Eccentric Plug Valve



电动偏心旋塞阀 Electric Eccentric Plug Valve



涡轮操作偏心旋塞阀
Gear Operated Eccentric Plug Valve



涡轮操作偏心旋塞阀 Gear Operated Eccentric Plug Valve



电动偏心旋塞阀 Electric Eccentric Plug Valve

涡轮操作偏心旋塞阀(阀杆延长2800mm)
Gear Operated Eccentric Plug Valve
(Stem extension 2800 mm)

软密封旋塞阀系列

SOFT SEAL PLUG VALVE SERIES



美标全径卡套旋塞阀
API Full Bore Sleeve Type Plug Valve



美标全衬旋塞阀
API Lined Plug Valve



美标卡套旋塞阀
API Sleeve Type Plug Valve



美标电动全通径卡套旋塞阀
API Motorized Full Bore Sleeve
Type Plug Valve



美标全通径全夹套保温软密封旋塞阀
API Full Bore Full Jacketed
Soft Sealing Plug Valve

专利号(PATENT NO.):
200920112638.9



美标卡套式尼龙密封旋塞阀
API Sleeve Type Nylon
Sealed Plug Valve



美标卡套旋塞阀
API Sleeve Type Plug Valve



美标三通旋塞阀
API 3-Way Plug Valve



美标四通旋塞阀
API 4-Way Plug Valve



单(双)冲洗旋塞阀
Single(Double) Flush Plug Valve



美标电动卡套旋塞阀
API Motorized Sleeve
Type Plug Valve



铝青铜四通卡套旋塞阀
4-Way Sleeve Type
Bronze Plug Valve



德标卡套软密封旋塞阀
DIN Sleeve Type Soft
Seal Plug Valve

压力平衡式旋塞系列 PRESSURE BALANCE PLUG VALVE SERIES



美标倒装油密封压力平衡式旋塞阀
API Inverted Lubricated Pressure
Balance Plug Valve



美标倒装油密封压力平衡式旋塞阀
API Inverted Lubricated Pressure
Balance Plug Valve



美标倒装油密封压力平衡式旋塞阀
API Inverted Lubricated Pressure
Balance Plug Valve



美标油密封倒装油密封压力平衡全径旋塞阀
API Full Bore Pressure Balance Plug Valve



美标自由锻钢密封压力平衡旋塞阀
API Forging Pressure Balance Plug Valve



美标倒装油密封压力平衡四通旋塞阀
API 4-Way Pressure Balance Plug Valve



美标倒装油密封压力平衡式全径电动旋塞阀
API Full Bore Pressure Balance
Electric Plug Valve



美标倒装压力平衡油密封气动旋塞阀
API Lubricated Pressure Balance
Pneumatic Plug Valve



美标倒装油密封压力平衡式旋塞阀
API Inverted Lubricated Pressure
Balance Plug Valve



美标锻钢油密封压力平衡旋塞阀
API Forging Pressure
Balance Plug Valve



全夹套倒装油密封焊接旋塞阀
Full Jacketed Welded Ends
Lubricated Plug valve



美标倒装油密封压力平衡式双联旋塞阀
API Inverted Lubricated Pressure
Balance Duplex Plug Valve

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DIN Sleeve Type Soft Sealing Plug Valve
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双关双断阀、双密封轨道式旋塞阀、将军阀(全口径)

www.xodo.com

DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (FULL BORE)



用途

双关双断阀及泄放功能阀门适用于:航空煤油、原油、轻质油、天然气、液化气、管道煤气、化工介质等管道上,作为截断介质的理想装置。

PURPOSE

Double block & bleed valve is applicable for blocking the medium in pipeline such as jet fuel, crude oil, light oil, natural gas, liquidized gas, pipelined gas and chemical medium.

特点

1. 阀门在开关过程中,阀体密封面与滑片密封面没有任何接触,因此,密封面无摩擦、磨损,阀门的使用寿命长,开关力矩小;
2. 阀门在维修时,不需将阀门从管线上拆下,只需将阀门底盖拆开,调换一对滑片即可,维修十分方便;
3. 阀体及旋塞为全口径,介质在通过阀门时无流阻,并且可通过对管道进行清洗,克服了缩径阀门的缺点;
4. 阀体内腔镀有硬铬,密封区域坚硬光滑;
5. 滑片上的弹性密封采用氟橡胶,并且模压成型在滑片表面沟槽中,具有防火功能的金属对金属的密封作为弹性密封的背衬;
6. 阀门具有自动泄放装置(备选),在阀门完全关闭后,防止阀腔异常升压并检验阀门的效果;
7. 阀门开关指示器与开关位置同步,可以准确显示阀门的开关状态。

CHARACTERISTIC

1. In the valve's opening/closing process, there is no contact between the sealing surfaces of the valve body and the vane, so the sealing surfaces suffer neither friction nor wear, contributing to the valve's long service life and small opening/closing torque.
2. For the valve's maintenance, there is no need to remove the valve from the pipeline but just remove its bottom cover to replace the vane pair, thus very easy for the maintenance.
3. The valve's body and plug are full-bore so that the medium can flow through the valve without any flow resistance, and it's also possible to clean the pipeline to overcome the shortcomings of the reduced port valve.
4. The valve's cavity is plated with hard chrome and the sealing area is hard and smooth.
5. The elastic seal on the vane is made of the fluorine rubber and molded and formed in a groove of the vane surface. The fireproof metal-to-metal seal is used as the backing of the elastic seal.
6. The valve is provided with an automatic bleed device (optional) which can prevent the abnormal pressure rise of the valve cavity and check the valve's effect after the valve is completely closed.
7. The valve's opening/closing indicator is in sync with the opening/closing position and can accurately display the valve's opening/closing status.

编制规范说明

阀门的设计与制造按API6D规定;
 法兰连接尺寸按ANSI B16.5、JB79、HG20592、GB/T9113的规定;
 阀门的结构长度按ANSI B16.10及GB12221-89、JB/T5298的规定;
 阀门的检查与试验按API598及API6D的规定。

PREPARATION OF SPECIFICATIONS

The valve is designed and manufactured as per API6D;
 The flange connection size is as per ANSI B16.5, JB79, HG20592 and GB/T9113;
 The valve's structural length is as per ANSI B16.10, GB12221-89 and JB/T5298;
 The valve is checked and tested as per API 598 and API 6D.

压力试验 PRESSURE TEST

压力级 Pressure level	150Lb	1.6MPa	300Lb	2.5MPa	600Lb	4.0MPa	900Lb	6.4MPa
强度试验 Strength test	3.0MPa	2.4MPa	7.7MPa	3.75MPa	15.4MPa	6.0MPa	23.0MPa	9.6MPa
高压密封试验 High pressure seal test	2.2MPa	1.8MPa	5.62MPa	2.75MPa	11.23MPa	4.4MPa	16.85MPa	7.1MPa
低压密封试验 Low pressure seal test	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa

双关双断阀、双密封轨道式旋塞阀、将军阀(全口径)

DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (FULL BORE)

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION

工作原理

双关双断阀及泄放功能阀门的工作原理关键是安装在旋塞上的两片密封滑片的动作。

WORKING PRINCIPLE

The action of two sealing vanes mounted on the cock is the key to the working principle of the double block and bleed valve.

阀门关闭

阀门关闭时,先旋转手轮,将旋塞及密封滑片旋转90°,然后旋塞向下移动,随着旋塞的运动时推动密封滑片向阀体内腔封面直至弹性密封圈被均匀的挤压到阀孔上下端,形成密封。

THE VALVE CLOSE

To close the valve, first rotate the hand wheel to rotate the cock and the sealing vanes by 90°, then the cock will move downwards, the moving cock drives the sealing vanes to the sealing surfaces of the valve cavity until the elastic gasket ring is uniformly pressed to the upper and lower ends of the valve bore to achieve sealing.

阀门开启

阀门开启时,先旋转手轮提升旋塞,将密封滑片从阀体两侧密封面拉回,当滑片完全收回脱离阀体密封面后,继续转动手轮,使旋塞及密封滑片旋转90°,阀门处于开启位置。

THE VALVE OPEN

To open the valve, first rotate the hand wheel to lift the cock and pull the sealing vane back from the sealing surfaces on both sides of the valve body. When the vane is completely retracted and separated from the sealing surface of the valve body, continue to turn the hand wheel to rotate the cock and the sealing vane by 90°. The valve is in the open position.

关于密封

弹性密封圈是模压成型在滑片的沟槽中,随着密封滑片向阀门的进出口移动,密封圈也逐渐被压入沟槽中,经过机械加工的滑片表面与阀体内腔形成二级金属对金属密封防止弹性密封圈继续被压,并且具有防火功能。

ABOUT SEALING

The elastic gasket ring is molded and formed in the groove of the vanes, and as the sealing vanes move to the valve's inlet and outlet, the gasket ring is also gradually pressed into the groove. The machined vane surface forms a secondary metal-to-metal seal with the valve cavity which can prevent the elastic gasket ring from being further pressed and also have a fireproof function.

双关双断阀及泄放

这是一种通过两个切断阀和一个在中间的泄入阀达到完全阻断两端管线目的的方法,关闭两主要阀门关闭泄放阀可提高被系统的安全性。如果第一个阀门泄露,漏出的介质可由开启的泄放阀导出。

DOUBLE BREAK AND BLEED VALVE AND RELEASE

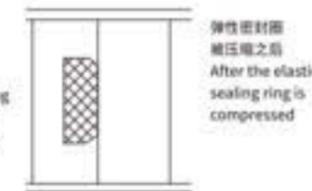
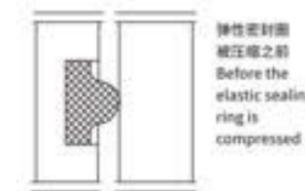
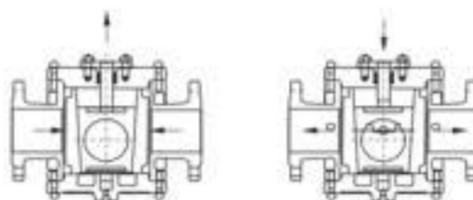
This is a way to achieve complete containment of both ends of the pipeline with two block valves and one bleed valve in between. When the two main valves are closed, closing/opening the bleed valve can improve the system's safety. If the first valve leaks, the leaked medium can be led out by the opened bleed valve.

双密封方式

两个独立的密封滑片阀孔两端压紧(双关断),当阀门关闭时,泄放阀被打开,检验密封效果(泄放)。

DOUBLE SEALING MODES

The two separate sealing vanes are compressed on upper and lower ends of the valve bore (double block), and when the valve is closed, the bleed valve will be opened to check the sealing effect (bleed).



双关双断阀、双密封轨道式旋塞阀、将军阀(全口径)

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DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (FULL BORE)

双关双断阀的功能及适用性分析(全口径)

介绍一种——双关双断阀的结构及工作原理,该阀的密封性能和使用寿命优于普通的闸阀和球阀,具备防火、在线维修、双关断及泄放、中腔泄压、内检测等功能,结合实例说明了双关双断阀在油气储运系统的功能及应用,开辟了油气储运系统的工艺设计新的发展空间,解决了管道设计中遇到的很多问题,即优化了管道设计,提高了产品质量,又节约了管道运营成本。

FUNCTION AND APPLICABILITY ANALYSIS OF DOUBLE BREAK AND BLEED VALVE (FULL BORE)

Introduce a double block and bleed valve's structure and working principle. The valve is superior to common gate and ball valves in terms of its sealing performance and service life. The valve has the functions of being fireproof, on-line maintenance, double block and bleed, cavity pressure relief, internal leak detection and others. Illustrate the double block and bleed valve's functions and applications in the oil and gas storage and transportation systems. In combination with examples, which has opened new development potential for process design of oil and gas storage and transportation systems and solved many problems encountered in pipeline design, it has not only optimized the pipeline design and improved the product quality but also saved the pipeline operation costs.

双关双断阀的结构 STRUCTURE OF DOUBLE BLOCK & BLEED VALVE

双关双断阀的基本结构主要由以下两部分组成(见图1)

The basic structure of the double block and bleed valve mainly consists of the following two parts(see Fig.1)

阀体

阀体的主要零部件有阀体、阀芯、阀瓣(嵌主密封圈)、端盖、底盘、填料等。阀芯与阀瓣是阀体部分的核心。阀芯通过上、下耳轴固定于阀体内,中间为流道口,两侧为斜楔面,在该楔面上铣有燕尾导轨左右两片阀瓣相连。阀瓣是主密封件,阀瓣的表面为圆柱面,可达到B级硬密封精度,在该圆柱面上铣有一圈沟槽,采用模压硫化法在其中永久嵌有主密封圈(氟化橡胶或丁腈橡胶等),当阀门关闭时可形成硬软密封。

VALVE BODY

The valve body includes such main parts as body, spool, discs (embedded with main gasket ring), end caps, chassis, packing, etc. The spool and the discs are the core of the body part. The spool is fixed inside the body with upper and lower trunnions, with the flow channel mouth in the middle and the wedge faces on both sides. The wedge faces are milled with dovetail guide which is connected to two discs on both sides. The discs are the main sealing element and have cylindrical surfaces which can reach a precision up to the B class hard seal. The cylindrical surfaces are milled with a groove circle, into which a main gasket ring (fluorinated rubber or nitrile rubber, etc.) is permanently embedded with the molding vulcanization method, contributing to hard and soft sealing when the valve is closed.

操纵器

操纵器的主要由指示标记牌,手轮,主轴,轴套,球头销,支架等组成,固定在端盖上,通过连接销与阀芯杆相连。操纵器部分是动作的执行机构。当阀门由开启→关闭时,按顺时针转动手轮,阀芯先作90°旋转运动,带动阀瓣转到阀体流道口位置,然后阀芯作向下直线移动,驱动阀瓣径向扩张,向阀体内壁贴近,直到软密封被压入凹槽,使阀瓣表面与阀体内壁接触,完成关闭过程。

MANIPULATOR

The manipulator mainly consists of indication sign, handwheel, main shaft, bushing, ball pin, bracket and other components, and is fixed on the end cap and connected to the spool bar with a connecting pin. The manipulator part is an actuator for actions. To close the valve from the open position, turn the handwheel clockwise, and the spool will rotate by 90° first to drive the disc to turn to the position of the flow channel mouth of the valve body. Then the spool will move straight downwards to drive the disc to expand radially and get close to the inner wall of the valve body until the soft seal is pressed into the groove so that the disc surface contacts the inner wall of the valve body to complete the closing process.

当阀门由于关闭→开启时,按逆时针转动手轮,阀芯先作向上直线移动,到一定位置后作90°旋转运动使阀门处于导通状态。

To open the valve from the closed position, turn the handwheel counterclockwise, and the spool will move straight upwards first, and after it reaches to a certain position, it will rotate by 90° so that the valve can be in a conducting state.

双关双断阀、双密封轨道式旋塞阀、将军阀(全口径)

DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (FULL BORE)

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION

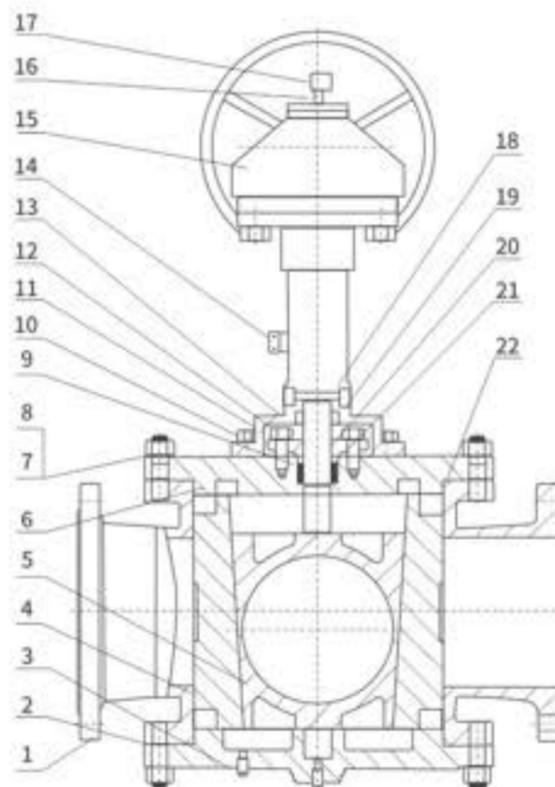


图1. 双密封轨道式旋塞阀的结构
Figure 1. Structure of double sealed rail type plug valve

主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质Material
1	阀体 Body	WCB
2	阀底盖 Valve bottom cover	WCB
3	丝堵 Plug	35#
4	滑片 Slide	QT500-7
5	旋塞 Cock	WCB
6	阀盖 Cover	WCB
7	螺栓 Stud	35#
8	螺母 Nut	45#
9	填料 Packing	柔性石墨 Flexible graphite
10	螺栓 Bolt	35#
11	填料压盖 Packing gland	WCB
12	螺栓 Bolt	35#
13	支架 Bracket	WCB
14	螺栓 Bolt	35#
15	操作器 Manipulator	组件 Component
16	指示杆 Indication rod	1Cr13
17	指示器 Indicator	21401
18	销 Pin	65Mn
19	防尘器 Dustproof device	Pvc
20	O型密封圈 O-ring	氟橡胶 Fluororubber
21	O型密封圈 O-ring	氟橡胶 Fluororubber
22	O型密封圈 O-ring	氟橡胶 Fluororubber

阀门处于关闭状态时,阀体上、下游流道口均被阀瓣密封,即双密封,同时每个阀瓣的密封面又能形成软、硬两种密封,确保了阀门的零泄漏。当阀瓣旋转时,软密封与阀体不接触,无摩擦,硬密封对软密封可起到保护作用,并具有防火功能。

从图1可以看出,阀芯与其轴(阀杆)的结构是一体的,上、下耳轴与端盖、底盘的配合部位有滑动轴承(DN>500的双关双断阀采用滚动),采用这种结构不仅可以减小摩擦阻力,而且便于实现精加工,以保证密封的旋转间隙。另外,由于阀芯整体性结构以及滑动轴承的存在,确保了阀瓣的密封免受介质压力的影响,即阀门关闭后两侧产生的压差不影响阀门的密封性,这与普通的球阀和闸阀靠压差来实现密封有所不同。

When the valve is in the closed state, both upper and lower flow channel mouths of the valve body are sealed with discs, namely double seal, and meanwhile two kinds of sealing, soft and hard, can come into being on the sealing surface of each disc, thus ensuring zero leakage of the valve. When the valve disc is rotating, the soft seal does not contact the valve body, contributing to zero friction, while the hard seal can protect the soft seal and also functions for fire prevention.

It can be seen from Fig.1 that the spool and trunnion(stem) structure is integrated, and there are sliding bearings on fitting parts between upper and lower trunnions and the end cap and the chassis(rolling bears are used for those double block and bleed valves with DN>500). Such a structure can not only reduce the friction resistance but also facilitate precision machining to ensure the seal's rotation clearance. In addition, the integrated structure of the spool and the presence of the sliding bearings ensure to protect the disc seal from the impact of the medium pressure, that is, the pressure difference generated from both sides after the valve is closed has no impact on the valve's sealing performance, which is different from the common ball and gate valves which rely on the pressure difference for sealing.

双关双断阀、双密封轨道式旋塞阀、将军阀(全口径)

www.xodo.com

DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (FULL BORE)

双关双断阀的功能 FUNCTION OF DOUBLE OFF AND DOUBLE OFF VALVE

防火功能及密封性

油气储运系统中的介质均为易燃、易爆品,防火是油气储运装置在设计选型时重点关注的功能,其装置不仅要求密封性能好,而且在现场发生火灾的情况下还具备一定的密封性能。

双关双断阀的密封形式均采用软、硬密封结合,其中包括阀瓣及端盖、或盘等结构。软密封可以保证在正常运行状态下零泄漏。当现场发生火灾时,软密封有可能遭到破坏,这时硬密封将起主密封作用,可防止介质大量泄漏。相比较而言,闸阀采用硬密封,防火功能较好,但密封性能不容易得到保证,长期使用难以保证零泄漏;球阀采用软密封,其使用寿命较长,但不具备防火功能。

具有在线维修功能

当阀瓣上的软密封因某种原因受损造成内漏或堵塞(执行机构)出现故障时,不必将阀门从管道上拆下便可进行更换或维修,操阀器的维修也可在管道不停压的状态下进行,而闸阀或球阀密封部分受损时,必须将阀门从管道上拆下才能进行维修或更换,甚至直接报废。

具有双关断及泄放功能

如图2(a)所示,采用两个闸断阀(闸阀或球阀)来阻断介质,并在两个闸断阀之间安装一排泄阀。当闸断阀发生内漏,所泄漏的介质将通过排泄阀排出,这样就不会造成两种介质的堵塞。

若采用双关双断阀,仅需一个阀就可实现上述功能(见图2(b))。双关双断阀的底部有一排泄孔,当阀门关闭后,可取出该堵塞。若有一侧堵塞产生内漏,则漏出的介质通过排泄孔排出,从而避免两种介质堵塞现象的发生。当堵塞介质较轻时,可定期通过排泄阀将堵塞物排出;当管道需要检修时,可通过排泄阀排出残存在低处的介质。在冬季,可通过排泄阀排出内腔积水,以防冻坏阀门。

FIREPROOF FUNCTION AND AIRTIGHTNESS

The media in oil and gas storage and transportation systems are all flammable and explosive. Being fire-proof is a key focus in designing and selecting an oil and gas storage and transportation unit which should not only have a good sealing performance but also can have a certain sealing performance even when there is fire on the site.

The double block and bleed valve all adopts a soft-hard sealing mode, including discs, end caps, chokes and other structures. The soft seal can ensure zero leakage in the normal working state, but when there is fire on the site, the soft seal may be destroyed, thus the hard seal will function as a primary seal to prevent massive leakage of the medium. Instead, the gate valve has an unreliable sealing performance and it's difficult to ensure zero leakage during long-term service though it has a good fireproof function with its hard seat, and the ball valve, with its soft seat, has a long service life, but it's not fireproof.

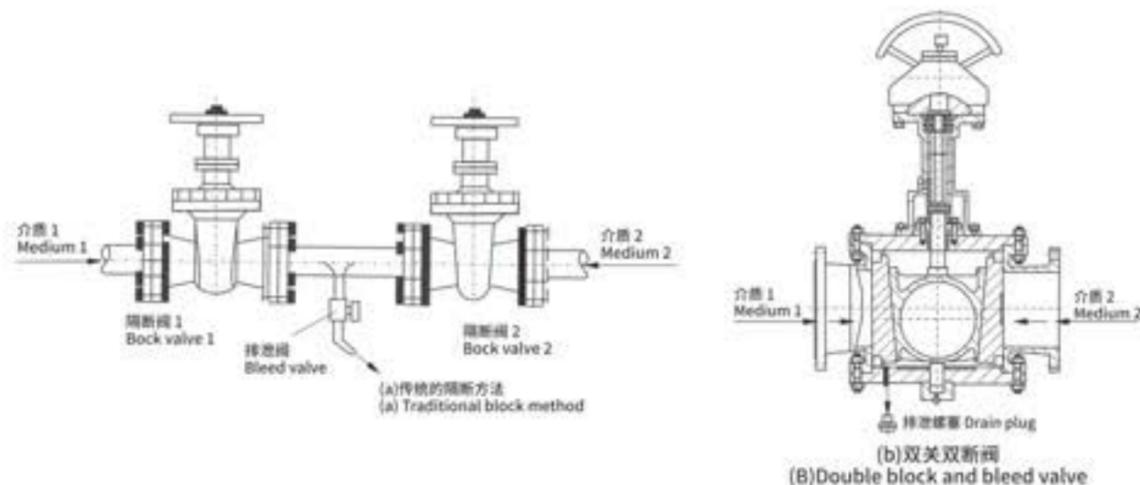
WITH ONLINE MAINTENANCE FUNCTION

When the soft seal on the disc is damaged for a certain reason, resulting in internal leakage or manipulator (actuator) malfunction, it's not necessary to remove the valve from the pipeline for replacement or maintenance; instead, the manipulator's maintenance can also be done when the pipeline pressure is not stopped. However, the gate valve or ball valve must be removed from the pipeline for maintenance or replacement and even the valve may be just scrapped.

WITH THE FUNCTION OF DOUBLE BLOCK AND BLEED

As shown in Fig 2(a), two block valves [gate or ball valve] are used to block the medium, and a bleed valve is mounted between the two block valves. When the block valves have any internal leakage, the leaked medium will be bled through the bleed valve, thus the two media will not be mixed.

If the double block and bleed valve is used, only one valve can achieve the above function(see Fig 2(b)). There is a drain plug hole at the bottom of the double block and bleed valve. After the valve is closed, this plug can be removed. If internal leakage occurs on one disc side, the leaked medium can be bled through the plug hole, thus avoiding mixing of the two media. When the working medium is dirty, the sediment can be bled through the drain plug on a regular basis, when the pipeline needs to be overhauled, the medium residual in the lower part can be bled with the drain plug. In winter, the accumulated water in the cavity can be bled with the drain plug to prevent the valve from being frozen and destroyed.



双关双断阀、双密封轨道式旋塞阀、将军阀(全口径)

DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (FULL BORE)

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION

具有中腔泄压功能

API 6D规范规定“对于所有双密封的阀门,当在液体介质中使用,必须具有压差泄放功能”,泄放的压差是因环境温度的变化产生的。在常闭状态下,双密封阀门中腔压力会因温度升高而快速增加,该压差如不及时泄放,对阀门的操作将产生严重影响。

手动操作的双关双断阀通常有以下两种泄压系统

- (1) 手动泄压系统:手动泄压系统通常为安装在端盖上的针形阀。当介质为可以少量向大气中排泄的液体时,可以配备此种泄压系统。
- (2) 差热式泄压系统:差热式泄压系统是一种带有单向阀的管路系统(见图3)。图3中针形阀1三通1、单向阀1、三通2和针形阀3构成了差热式泄压系统。在该系统中,针形阀1常闭,针形阀3常开。当介质为不可以向大气中排泄的液体时,需配备此种泄压系统(一般是向上游管道中泄压)。

(1) Manual pressure relief system: The manual pressure relief system is generally a needle valve mounted on the end cap. When the medium is a liquid which can be slightly bled into the atmosphere, it can be equipped with such a pressure relief system.

(2) Differential thermal pressure relief system: The differential thermal pressure relief system is a pipeline system with a one-way valve(see Fig.3). In Fig.3, the needle valve 1, the tee 1, the one-way valve 1, the tee 2 and the needle valve 3 make up the differential thermal pressure relief system. In the system, the needle valve 1 is normally closed and the needle valve 3 is normally open. When the medium is a liquid which cannot be bled into the atmosphere, it shall be equipped with such a pressure relief system (generally pressure relief to the upstream pipeline).

IT HAS THE FUNCTION OF MIDDLE CAVITY PRESSURE RELIEF

It's stipulated in API 6D: "All valves with double seal must have a pressure differential relief function when used in a liquid medium". The relief pressure difference is generated from the changes in the ambient temperature. In the normally-closed state, the cavity pressure of the valve with double seal can increase rapidly due to the temperature rise, and if such a pressure difference is not bled promptly, it can have a serious impact on the valve's operation.

Generally, the double block and bleed valve with manual operation has the following two pressure relief systems:

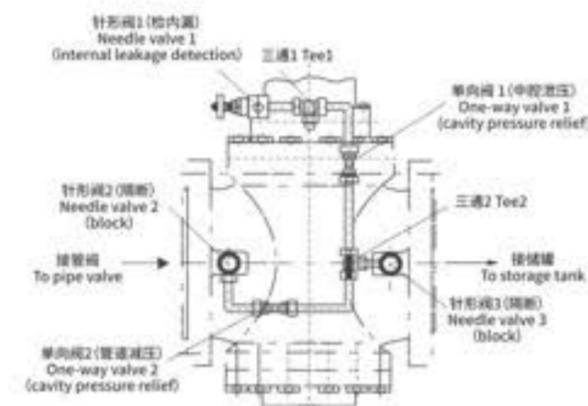


图3 差热式泄压及管道减压综合图
Comprehensive drawing of differential heat pressure relief and pipeline pressure reduction

具有检验内漏功能

当普通阀门处于关闭状态时,其密封效果的检测比较困难,而双关双断阀的检测则很容易,只要在关闭状态下打开泄压系统与端盖相连的针形阀即可,阀瓣若有内漏,介质就会通过针形阀流出,若介质不便于向大气排放,则可在针形阀上接一压力表,通过观察表压的变化来判断有无内漏。

IT HAS THE FUNCTION OF DETECTING INTERNAL LEAKAGE

When a common valve is closed, it's difficult to detect its sealing effect, while it's easy to detect the double block and bleed valve, just by mean of opening the needle valve connecting the pressure relief system to the end cap in the closed state. If the disc has any internal leakage, the medium will flow through the needle valve. If it's not convenient to discharge the medium into the atmosphere, a pressure gauge can be mounted on the needle valve to judge whether there is any internal leakage by means of observing the gauge pressure changes.

双关双断阀、双密封轨道式旋塞阀、将军阀(全口径)

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DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (FULL BORE)

防火功能及密封性

管道减压是储罐区管工设计中需要重点考虑的问题,即当罐前阀关闭后,管网中仍然充满了介质;随着环境温度的升高,管网中介质的压力会迅速增大;当温差变化较大时,增加的压力会超过管道的承受能力,容易造成管道泄漏。因此,管道应配备减压设备。

管道减压设计如图4(a)所示,在主切断阀的上、下游之间连接管道减压系统,该系统由两个截断阀(闸阀、球阀或截止阀)及这两个截断阀之间的一个减压阀组成。该系统成本高,而且占空间,不方便现场管理。

主切断阀选用双关双断阀的管道设计原理如图4(b)所示,减压系统附在主切断阀上,其设计结构简单,占用空间小,且成本低廉。

FIREPROOF FUNCTION AND AIRTIGHTNESS

Pipeline pressure reduction is a key consideration in the design of manifolds in the storage tank area, that is, the pipe network is still full of the medium even after the valve before the tank is closed; as the ambient temperature rises, the pressure of the medium in the pipe network will increase rapidly, when the temperature difference fluctuations are substantial, the increased pressure will exceed the pipe's withstanding ability, which may easily lead to pipeline leakage. Therefore, the pipeline should be equipped with a pressure reduction device.

The pipeline pressure reduction design is as shown in Fig.4(a) a pipeline pressure reduction system is connected between upper and lower reaches of the main block valve, and this system consists of two block valves(gate, ball or globe valve) and a pressure reduction valve between the two block valves. The system is costly and takes up too much room, not easy for site management.

The main block valve adopts the pipeline design principle of the double block and bleed valve, as shown in Fig.4(b), and the pressure reduction system is attached to the main block valve, with a simple design structure and being space-effective and low-cost.

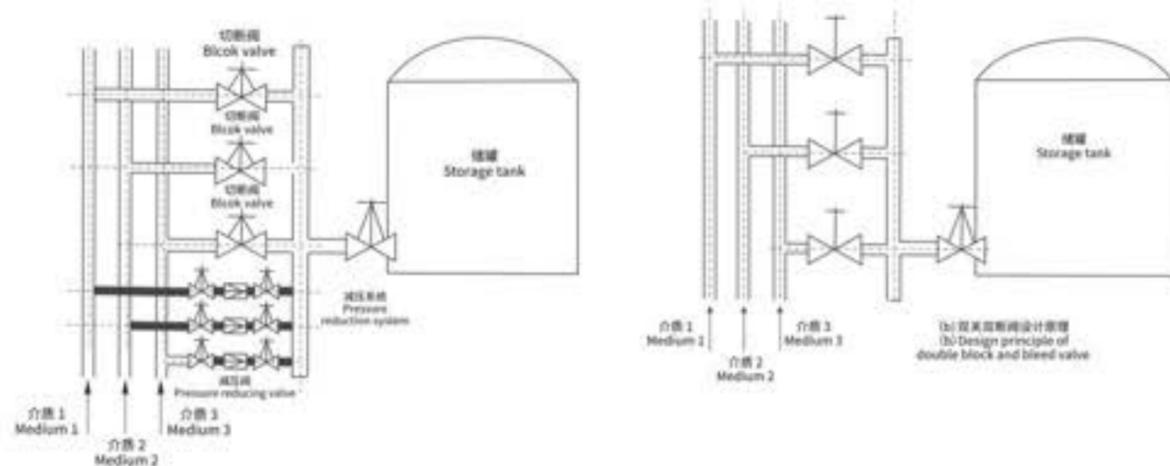


图4.管道减压原理图
Fig. 4 Schematic diagram of pipeline decompression

双关双断阀、双密封轨道式旋塞阀、将军阀(缩径)

DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (REDUCED BORE)

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION



用途

双密封导轨阀适用于:航空煤油、原油、轻质油、天然气、液化气、管道煤气、化工介质等管道上,作为截断介质的理想装置。

PURPOSE

The double seal rail valve is applicable as an ideal device for cutting off media in pipelines of aviation kerosene, crude oil, light oil, natural gases, liquefied petroleum gases, pipeline coal gases, chemical media, etc.

特点

1. 阀门在开关过程中,阀体密封面与滑片密封面没有任何接触,因此,密封面无摩擦、磨损,阀门的使用寿命长,开关力矩小;
2. 阀门在维修时,不需将阀门从管线上拆下,只需将阀门底盖拆开,调换一对滑片即可,维修十分方便;
3. 阀体及旋塞为全口径,介质在通过阀门时无流阻,并且可通过对管道进行清洗,克服了缩径阀门的缺点;
4. 阀体内腔壁有镀铬,密封区域坚硬光滑;
5. 滑片上的弹性密封采用氟橡胶,并且模压成型在滑片表面沟槽中,具有防火功能的金属对金属的密封作为弹性密封的背衬;
6. 阀门具有自动泄放装置(可选),在阀门完全关闭后,防止阀腔异常升压并检验阀门的效果;
7. 阀门开关指示器与开关位置同步,可以准确显示阀门的开关状态。

CHARACTERISTIC

1. In the valve's opening/closing process, there is no contact between the sealing surfaces of the valve body and the vane, so the sealing surfaces suffer neither friction nor wear, contributing to the valve's long service life and small opening/closing torque;
2. For the valve's maintenance, there is no need to remove the valve from the pipe line but just remove its bottom cover to replace the vane pair, thus very easy for the maintenance;
3. The valve's body and plug are full-bore so that the medium can flow through the valve without any flow resistance, and it's also possible to clean the pipeline to overcome the shortcomings of the reduced bore valve;
4. The valve's cavity is plated with hard chrome and the sealing area is hard and smooth;
5. The elastic seal on the vane is made of the fluorine rubber and molded and formed in a groove of the vane surface. The fireproof metal-to-metal seal is used as the backing of the elastic seal;
6. The valve is provided with an automatic bleed device [optional] which can prevent the abnormal pressure rise of the valve cavity and check the valve's effect after the valve is completely closed;
7. The valve's opening/closing indicator is in sync with the opening/closing position and can accurately display the valve's opening/closing status.

编制规范说明

阀门的设计与制造按API6D规定;
法兰连接尺寸按ANSI B16.5、JB79、HG20592、GB/T9113的规定;
阀门的结构长度按ANSI B16.10及GB12221-89、JB/T5298的规定;
阀门的检查与试验按API 598及API 6D的规定。

PREPARATION OF SPECIFICATIONS

The valve is designed and manufactured as per API6D;
The flange connection size is as per ANSI B16.5、JB79、HG20592 and GB/T9113;
The valve's structural length is as per ANSI B16.10、GB12221-89 and JB/T5298;
The valve is checked and tested as per API 598 and API 6D.

压力试验 PRESSURE TEST

压力级 Pressure level	150Lb	1.6MPa	300Lb	2.5MPa	600Lb	4.0MPa	900Lb	6.4MPa
强度试验 Strength test	3.0MPa	2.4MPa	7.7MPa	3.75MPa	15.4MPa	6.0MPa	23.0MPa	9.6MPa
高压密封试验 High pressure seal test	2.2MPa	1.8MPa	5.62MPa	2.75MPa	11.23MPa	4.4MPa	16.85MPa	7.1MPa
低压密封试验 Low pressure seal test	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa	0.6MPa

双关双断阀、双密封轨道式旋塞阀、将军阀(缩径)

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DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (REDUCED HORE)

双密封导轨阀的功能及适用性分析(缩径)

FUNCTION AND APPLICABILITY ANALYSIS OF DOUBLE SEALED GUIDE VALVE (REDUCING SIZE)

工作原理

双关双断阀及泄放功能阀门的工作原理关键是安装在阀盖上的两片密封滑片的动作。

WORKING PRINCIPLE

The action of two sealing vanes mounted on the cock is the key to the working principle of the double block and bleed valve.

阀门关闭

阀门关闭时,先旋转手轮,将旋塞及密封滑片旋转90°,然后旋塞向下移动,随着旋塞的运动时推动密封滑片向阀体内腔封面直至弹性密封圈被均匀的挤压到阀孔上下端,形成密封。

THE VALVE CLOSE

To close the valve, first rotate the handwheel to rotate the cock and the sealing vanes by 90°, then the cock will move downwards; the moving cock drives the sealing vanes to the sealing surfaces of the valve cavity until the elastic gasket ring is uniformly pressed to the upper and lower ends of the valve bore to achieve sealing.

阀门开启

阀门开启时,先旋转手轮提升旋塞,将密封滑片从阀体两侧密封圈拉回,当滑片完全收回脱离密封圈后,继续转动手轮,使旋塞及密封滑片旋转90°,阀门处于开启位置。

THE VALVE OPEN

To open the valve, first rotate the hand wheel to lift the cock and pull the sealing vane back from the sealing surfaces on both sides of the valve body. When the vane is completely retracted and separated from the sealing surface of the valve body, continue to turn the hand wheel to rotate the cock and the sealing vane by 90°. The valve is in the open position.

关于密封

弹性密封圈是模压成型在滑片的沟槽中,随着密封滑片向阀门的进出口移动,密封圈于也逐渐被压入沟槽中,经过机械加工的滑片表面与阀体内腔形成二级金属对金属密封防止弹性密封圈子继续被压,并且具有防火功能。

ABOUT SEALING

The elastic gasket ring is molded and formed in the groove of the vanes, and as the sealing vanes move to the valve's inlet and outlet, the gasket ring is also gradually pressed into the groove. The machined vane surface forms a secondary metal-to-metal seal with the valve cavity which can prevent the elastic gasket ring from being further pressed and also have a fireproof function.

双关双断阀及泄放

这是一种通过两个切断阀和一个在其中间的泄入阀达到完全隔离两端管线的目的的方法,关闭两主要阀门其开启泄放阀可提高系统的安全性,如果第一个阀门堵塞,漏出的介质可由开启的泄放阀导出。

DOUBLE BREAK AND BLEED VALVE AND RELEASE

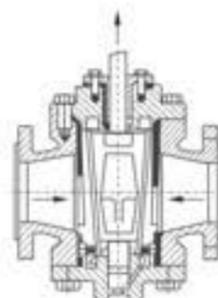
This is a way to achieve complete containment of both ends of the pipeline with two block valves and one bleed valve in between. When the two main valves are closed, closing / opening the bleed valve can improve the system's safety. If the first valve leaks, the leaked medium can be led out by the opened bleed valve.

双密封方式

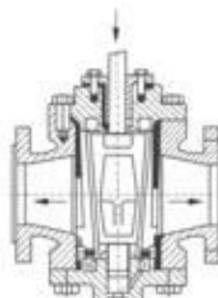
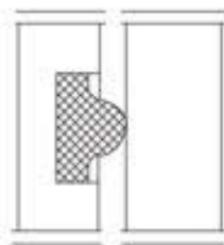
两个独立的密封滑片阀孔两端压紧(双关断),当阀门关闭时,泄放阀被打开,检验密封效果(泄放)。

DOUBLE SEALING MODES

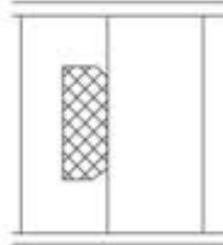
The two separate sealing vanes are compressed on upper and lower ends of the valve bore (double block), and when the valve is closed, the bleed valve will be opened to check the sealing effect (bleed).



弹性密封圈
被压缩之前
Before the
elastic sealing
ring is
compressed



弹性密封圈
被压缩之后
After the elastic
sealing ring is
compressed



双关双断阀、双密封轨道式旋塞阀、将军阀(缩径)

DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (REDUCED HORE)



双密封导轨阀的结构 STRUCTURE OF DOUBLE SEAL GUIDE VALVE

双密封导轨阀的基本结构主要由以下两部分组成(见图1)

介绍一种—双密封导轨阀的结构及工作原理,该阀的密封性能和使用寿命优于普通的闸阀和球阀,具备防火、在线维修、双关断及泄放、中腔泄压、内检漏等功能,结合实例说明了双密封导轨阀在油气储运系统的功能及应用,开辟了油气储运系统的工艺设计新的发展空间,解决了管道设计中遇到的很多问题,既优化了管道设计,提高了产品质量,又节约了管道运营成本。

The basic structure of the double seal rail valve mainly consists of the following two parts(see Fig.1)

Introduce a double seal rail valve's structure and working principle. The valve is superior to common gate and ball valves in terms of its sealing performance and service life. The valve has the functions of being fireproof, on-line maintenance, double block and bleed, cavity pressure relief, internal leak detection and others. Illustrate the double seal rail valve's functions and applications in the oil and gas storage and transportation systems in combination with examples, which has opened new development potential for process design of oil and gas storage and transportation systems and solved many problems encountered in pipeline design. It has not only optimized the pipeline design and improved the product quality but also saved the pipeline operation costs.

阀体

阀体的主要零部件有阀体、阀芯、阀瓣(嵌主密封圈)、端盖、底盘、填料等,阀芯与阀瓣是阀体部分的核心,阀芯通过上、下耳轴固定于阀体内,中间为流道口,两侧为斜楔盖,在该楔盖上有燕尾导轨同左右两片阀瓣相连,阀瓣是主密封件,阀瓣的表面为圆柱面,可达到B级硬密封精度,在该圆柱面上铣有一圈菱形槽,采用模压硫化的方法在其中永久嵌有主密封圈(氟化橡胶或丁腈橡胶等),当阀门关闭时可形成硬软密封。

VALVE BODY

The valve body includes such main parts as body, spool, discs [embedded with main gasket ring], and caps, chassis, packing, etc. The spool and the discs are the core of the body part. The spool is fixed inside the body with upper and lower trunnions, with the flow channel mouth in the middle and the wedge faces on both sides. The wedge faces are milled with dovetail guide which is connected to two discs on both sides. The discs are the main sealing element and have cylindrical surfaces which can reach a precision up to the B class hard seal. The cylindrical surfaces are milled with a prismatic groove, into which a main gasket ring (fluorinated rubber or nitrile rubber, etc.) is permanently embedded with the molding vulcanization method, contributing to hard and soft sealing when the valve is closed.

操纵器

操纵器的主要由指示标记牌,手轮,主轴,轴套,球头销,支架等组成,固定在端盖上,通过连接销与阀芯杆相连,操纵器部分是动作的执行机构,当阀门由开启→关闭时,按顺时针转动手轮,阀芯先作90°旋转运动,带动阀瓣转到阀体流道口位置,然后阀瓣作向下直线移动,驱动阀瓣径向扩张,向阀体内壁贴近,直到软密封被压入凹槽,使阀瓣表面与阀体内壁接触,完成关闭过程。

当阀门由于关闭→开启时,按逆时针转动手轮,阀芯先作向上直线移动,到一定位置后作90°旋转运动使阀门处于导通状态。

当阀门处于关闭状态时,阀体上、下游流道口均被阀瓣密封,即双密封,同时每个阀瓣的密封面又能形成软、硬两种密封,确保了阀门的零泄漏。当阀瓣旋转时,软密封与阀体不接触,无摩擦,硬密封对软密封可起到保护作用,并具有防火功能。

从图1可以看出,阀芯与耳轴(阀杆)的结构是一体的,上、下耳轴与端盖、底盘的配合部位有滑动轴承(DN>500的双密封导轨阀采用滚动轴承)

采用这种结构不仅可以减小摩擦阻力,而且便于实现精加工,以保证软密封的旋转间隙,另外,由于阀芯整体性结构以及滑动轴承的存在,确保了阀瓣的密封免受介质压力的影响,即阀门关闭后两侧产生的压差不影响阀门的密封性,这与普通的球阀和闸阀靠压差来实现密封有所不同。

MANIPULATOR

The manipulator mainly consists of indication sign, handwheel, main shaft, bushing, ball pin, bracket and other components, and is fixed on the end cap and connected to the spool bar with a connecting pin. The manipulator part is an actuator for actions. To close the valve from the open position, turn the handwheel clockwise, and the spool will rotate by 90° first to drive the disc to turn to the position of the flow channel mouth of the valve body. Then the spool will move straight downwards to drive the disc to expand radially and get close to the inner wall of the valve body until the soft seal is pressed into the groove so that the disc surface contacts the inner wall of the valve body to complete the closing process.

To open the valve from the closed position, turn the handwheel counterclockwise, and the spool will move straight upwards first, and after it reaches to a certain position, it will rotate by 90° so that the valve can be in a conducting state.

When the valve is in the closed state, both upper and lower flow channel mouths of the valve body are sealed with discs, namely double seal, and meanwhile two kinds of sealing, soft and hard, can come into being on the sealing surface of each disc, thus ensuring zero leakage of the valve. When the valve disc is rotating, the soft seal does not contact the valve body, contributing to zero friction, while the hard seal can protect the soft seal and also functions for fire prevention.

It can be seen from Fig.1 that the spool and trunnion (stem) structure is integrated, and there are sliding bearings on fitting parts between upper and lower trunnions and the end cap and the chassis (rolling bears are used for those double seal rail valves with DN>500).

Such a structure can not only reduce the friction resistance but also facilitate precision machining to ensure the soft seal's rotation clearance. In addition, the integrated structure of the spool and the presence of the sliding bearings ensure to protect the disc seal from the impact of the medium pressure, that is, the pressure difference generated from both sides after the valve is closed has no impact on the valve's sealing performance, which is different from the common ball and gate valves which rely on the pressure difference for sealing.

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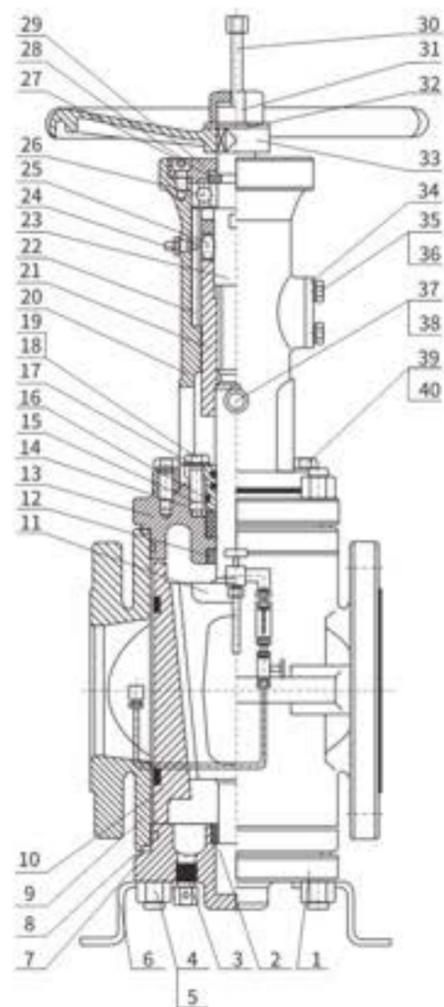
DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (REDUCED HORE)

双关双断阀、双密封轨道式旋塞阀、将军阀(缩径)

DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (REDUCED HORE)

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION



主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质Material
1	底盖 Bottom cover	A216 WCB
2	轴套 Shaft sleeve	C28000
3	排污阀 Blowdown valve	SS304
4	螺栓 Stud	A193 B7
5	螺母 Nut	A194 2H
6	支撑柱 Columns	Q235A
7	缠绕垫片 Winding gasket	SS304+Graphite
8	O型圈 O-rings	Viton
9	阀体 Body	A216 WCB
10	滑片 Slide	QT500-7+Viton
11	旋塞 Cock	A216 WCB
12	轴套 Shaft sleeve	C28000
13	阀盖 Bonnet	A216 WCB
14	填料 Packing	Flexible graphite
15	填料压盖 Packing gland	A216 WCB
16	O型圈 O-rings	Viton
17	O型圈 O-rings	Viton
18	外六角螺栓 Outer hexagon bolt	8.8
19	平垫圈 Flat washer	A3
20	支架 Holder	A216 WCB
21	传动套 Drive sleeve	QT500-7
22	定位套 Locating sleeve	1045
23	传动轴 Transmission shaft	A182 F6a
24	油杯 Oil cup	M10X1
25	滚动销 Rolling pin	T10
26	深沟球轴承 Deep groove ball bearings	GCr15
27	对开圆环 Split ring	A276 410
28	内六角螺钉 Hexagon socket screw	8.8
29	轴承压盖 Bearing gland	Q235A
30	指示杆 Indicator rod	Q235A
31	压套螺母 Pressing sleeve nut	1035
32	蝶形弹簧 Butterfly spring	65Mn
33	手轮 Handwheel	QT400-18
34	导向销 Guide pin	A276 410
35	外六角螺栓 Outer hexagon bolt	8.8
36	弹簧 Spring washers	65Mn
37	销轴 Pin shaft	A276 410
38	挡圈 Retaining ring	65Mn
39	外六角螺栓 Outer hexagon bolt	8.8
40	弹簧 Spring washers	65Mn

具有在线维修功能

当阀座上的软密封因某种原因受挤压造成内漏或操纵器(执行机构)出现故障时,不必将阀门从管道上拆下即可进行更换或维修,操纵器的维修也可在管道不停压的状态下进行,而闸阀或球阀密封部分受损时,必须将阀门从管道上拆下才能进行维修或更换,甚至直接报废阀门。

WITH ONLINE MAINTENANCE FUNCTION

When the soft seal on the disc is damaged for a certain reason, resulting in internal leakage or manipulator/actuator/malfunction, it's not necessary to remove the valve from the pipeline for replacement or maintenance; instead, the manipulator's maintenance can also be done when the pipeline pressure is not stopped. However, the gate valve or ball valve must be removed from the pipeline for maintenance or replacement and even the valve may be just scrapped.

具有双关断及泄放功能

如图2(a)所示,采用两个闸断阀(闸阀或球阀)来阻断介质,并在两个闸断阀之间安装一排污阀,当闸断阀发生内漏,所漏出的介质将通过排污阀排出,这样就不会造成两种介质的堵塞。

若采用双密封导轨阀,仅需一个闸断阀可实现上述功能(见图2(b)),双密封导轨阀的底部有一排污塞,当阀门关闭后,可取出该堵塞。若有一个闸断阀产生内漏,则漏出的介质通过堵塞孔排出,从而避免两种介质堵塞现象的发生。当输送介质较脏时,可定期通过排污塞将沉积物排出;当管道需要检修时,可通过排污塞排出残存在低处的介质。在冬季,可通过排污塞排出腔内积水,以防冻坏阀门。

WITH THE FUNCTION OF DOUBLE BLOCK AND BLEED

As shown in Fig 2(a), two block valves (gate or ball valve) are used to block the medium, and a bleed valve is mounted between the two block valves. When the block valves have any internal leakage, the leaked medium will be bled through the bleed valve, thus the two media will not be mixed.

If the double seal rail valve is used, only one valve can achieve the above functions (see Fig 2(b)). There is a drain plug at the bottom of the double seal rail valve. After the valve is closed, this plug can be removed. If internal leakage occurs on one disc side, the leaked medium can be bled through the plug hole, thus avoiding mixing of the two media. When the working medium is dirty, the sediment can be bled through the drain plug on a regular basis, when the pipeline needs to be overhauled, the medium residual in the lower part can be bled with the drain plug. In winter the accumulated water in the cavity can be bled with the drain plug to prevent the valve from being frozen and destroyed.

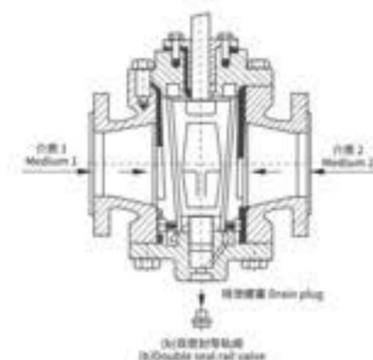
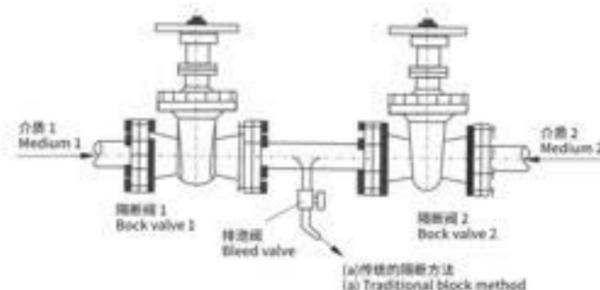


图2. 双关断及泄放功能原理图
Fig. 2 Schematic diagram of double shutdown and relief function

一、双密封导轨阀的功能 FUNCTION OF DOUBLE SEAL GUIDE VALVE

防火功能及密封性

油气储运系统中的介质均为易燃、易爆品,防火是油气储运装置在设计 and 选料时重点关注的课题,其装置不仅要密封性好,而且在现场发生火灾的情况下还具备一定的密封性能。

双密封导轨阀的密封形式均采用软、硬密封结合,其中包括闸阀及球阀、底盖等结构。软密封可以保证在正常运行状态下零泄漏,当现场发生火灾时,软密封有可能遭到破坏,这时硬密封将起主密封作用,可防止介质大量泄漏。相比较而言,闸阀采用硬密封,防火功能较好,但密封性能不容易得到保证,长期使用难以保证零泄漏;球阀采用软密封,其使用寿命较长,但不具备防火功能。

FIREPROOF FUNCTION AND AIRTIGHTNESS

The media in oil and gas storage and transportation systems are all flammable and explosives. Being fire-proof is a key focus in designing and selecting an oil and gas storage and transportation unit which should not only have a good sealing performance but also can have a certain sealing performance even when there is fire on the site.

The double seal rail valve all adopts a soft-hard sealing mode, including discs, end caps, chassis and other structures. The soft seal can ensure zero leakage in the normal working state, but when there is fire on the site, the soft seal may be destroyed, thus the hard seal will function as a primary seal to prevent massive leakage of the medium. Instead, the gate valve has an unreliable sealing performance and it's difficult to ensure zero leakage during long-term service though it has a good fireproof function with its hard seal, and the ball valve, with its soft seal, has a long service life, but it's not fireproof.

具有中腔泄压功能

API 6D规范规定“对于所有双密封的阀门,当在液体介质中使用,必须具有压差泄放功能”,泄放的压差是因环境温度的变化产生的。在常闭状态下,双密封阀门中腔压力会因温度升高而快速增加,该压差如不及时泄放,对阀门的操作将产生严重影响。

手动操作的双密封导轨阀通常有以下两种泄压系统

IT HAS THE FUNCTION OF MIDDLE CAVITY PRESSURE RELIEF

It's stipulated in API 6D: "All valves with double seal must have a pressure difference relief function when used in a liquid medium." The relief pressure difference is generated from the changes in the ambient temperature. In the normally-closed state, the cavity pressure of the valve with double seal can increase rapidly due to the temperature rise, and if such a pressure difference is not bled promptly, it can have a serious impact on the valve's operation.

Generally, the double seal rail valve with manual operation has the following two pressure relief systems

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DOUBLE BLOCK AND BLEED PLUG VALVE, TWIN SEAL PLUG VALVE (REDUCED BORE)

- (1) 手动泄压系统: 手动泄压系统通常为安装在端盖上的针形阀(见图1)。当介质为可以少量向大气中排泄的液体时, 可以配备此种泄压系统。
- (2) 差热式泄压系统: 差热式泄压系统是一种带有单向阀的管路系统(见图3)。图3中针形阀1三通1、单向阀1、三通2和针形阀3构成了差热式泄压系统。在该系统中, 针形阀1常闭、针形阀3常开。当介质为不可以向大气中排泄的液体时, 需配备此种泄压系统(一般是向上游管道中泄压)。

[1] Manual pressure relief system: The manual pressure relief system is generally a needle valve mounted on the end cap(see Fig. 1). When the medium is a liquid which can be slightly bled into the atmosphere, it can be equipped with such a pressure relief system.

[2] Differential thermal pressure relief system: The differential thermal pressure relief system is a pipeline system with a one-way valve(see Fig. 3). In Fig. 3, the needle valve 1, the tee 1, the one-way valve 1, the tee 2 and the needle valve 3 make up the differential thermal pressure relief system. In the system, the needle valve 1 is normally closed and the needle valve 3 is normally open. When the medium is a liquid which cannot be bled into the atmosphere, it shall be equipped with such a pressure relief system [generally pressure relief to the upstream pipeline].

具有检验内漏功能

当普通阀门处于关闭状态时, 其密封效果的检测比较困难, 而双密封轨道阀的检测则很容易, 只要在关闭状态下打开泄压系统与端盖相连的针形阀即可, 阀瓣若有内漏, 介质就会通过针形阀流出。若介质不便于向大气排泄, 则可在针形阀上接一压力表, 通过观察表压的变化来判断有无内漏。

IT HAS THE FUNCTION OF DETECTING INTERNAL LEAKAGE

When a common valve is closed, it's difficult to detect its sealing effect, while it's easy to detect the double seal rail valve, just by mean of opening the needle valve connecting the pressure relief system to the end cap in the closed state. If the disc has any internal leakage, the medium will flow through the needle valve. If it's not convenient to discharge the medium into the atmosphere, a pressure gauge can be mounted on the needle valve to judge whether there is any internal leakage by means of observing the gauge pressure changes.

独特的管道减压功能

管道减压是储罐区竣工设计中需要重点考虑的问题, 即当罐前阀关闭后, 管网中仍然充满了介质; 随着环境温度的升高, 管网中介质的压力会迅速增大; 当温差变化较大时, 增加的压力会超过管道的承受能力, 容易造成管道泄漏。因此, 管道应配备减压设备。

管道减压设计如图4(a)所示, 在主切断阀的上、下游之间连接管道减压系统, 该系统由两个截断阀(闸阀、球阀或截止阀)及这两个截断阀之间的一个减压阀组成。该系统成本高昂, 而且占用空间, 不方便现场管理。

主切断阀选用双密封轨道阀的普通设计原理如图4(b)所示, 减压系统附在主切断阀上, 其设计结构简单, 占用空间小, 且成本低廉。

UNIQUE PIPELINE DECOMPRESSION FUNCTION

Pipeline pressure reduction is a key consideration in the design of manifolds in the storage tank area, that is, the pipe network is still full of the medium even after the valve before the tank is closed; as the ambient temperature rises, the pressure in the pipe network will increase rapidly; when the temperature difference fluctuations are substantial, the increased pressure will exceed the pipe's withstanding ability, which may easily lead to pipeline leakage. Therefore, the pipeline should be equipped with a pressure reduction device.

The pipeline pressure reduction design is as shown in Fig.4(a), a pipeline pressure reduction system is connected between upper and lower reaches of the main block valve, and this system consists of two block valves (gate, ball or globe valve) and a pressure reduction valve between the two block valves. The system is costly and takes up too much room, not easy for site management.

The main block valve adopts the pipeline design principle of the double seal rail valve, as shown in Fig.4(b), and the pressure reduction system is attached to the main block valve, with a simple design structure and being space-effective and low-cost.

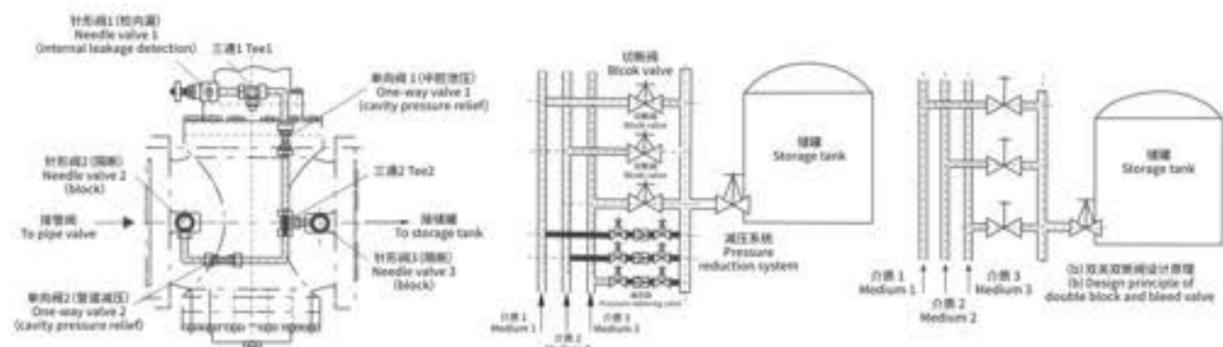


图3. 差热式泄压及管道减压综合图
Fig. 3 Comprehensive drawing of differential heat pressure relief and pipeline pressure reduction

图4. 管道减压原理图
Fig. 4 Pipeline decompression schematic diagram

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产品介绍

手动和半齿轮传动将军阀又称轨道式旋塞阀, 适用于航空煤油、原油、轻质油、天然气、液化气、管道煤气、化工介质等管道上, 作为截断介质的理想装置。双关双断及泄放功能阀门的工作原理关键是安装在旋塞上的两片密封滑片的动作。

PRODUCT INTRODUCTION

The manual and bevel gear drive general valve, also called the rail plug valve, is applicable as an ideal device for cutting off media in pipelines of aviation kerosene, crude oil, light oil, natural gases, liquefied petroleum gases, pipeline coal gases, chemical media, etc. The action of two sealing vanes mounted on the plug is the key to the working principle of the double block and bleed valve.

应用范围

半齿轮传动缩径和全通径将军阀适用于航空煤油、原油、轻质油、天然气、液化气、管道煤气、化工介质等管道上, 作为截断介质的理想装置。

APPLICATION SCOPE

The bevel gear drive reduced-bore and full-bore general valve is applicable as an ideal device for cutting off media in pipelines of aviation kerosene, crude oil, light oil, natural gases, liquefied petroleum gases, pipeline coal gases, chemical media, etc.

产品概述

阀体材质: 铜、铸铁、铸钢、碳钢、WCB、WC6、WC9、20#、25#、锻钢、A105、F11、F22、不锈钢、304、304L、316、316L、铬钼钢、低温钢、钛合金钢等。工作压力: 1.0Mpa-15.0Mpa。工作温度: -196℃-650℃。连接方式: 内螺纹、外螺纹、法兰、焊接、对焊、承插焊、卡套、卡箍。驱动方式: 手动、气动、液动、电动。

PRODUCT SUMMARY

Valve body material: copper, cast iron, cast steel, carbon steel, WCB, WC6, WC9, 20#, 25#, forged steel(A105, F11, F22, stainless steel, 304, 304L, 316, 316L, chrome molybdenum steel, low temperature steel, titanium alloy steel and so on. Working pressure: 1.0Mpa-15.0Mpa. Working temperature: -196°C to 650°C. Connection mode: female thread, male thread, flange, welding, butt welding, socket welding, ferrule and clamp. Actuating mode: manual, pneumatic, hydraulic and electric.

生产标准

国家标准GB、机械标准JB、化工标准HG、美标API、ANSI、德标DIN、日本JIS、JPI、英标BS生产。
设计制造标准: API 6D
结构长度标准: ASME B16.10
连接法兰标准: ASME B16.5
压力温度等级: ASME B16.34
试验检验标准: API 598, API 6D

PRODUCTION STANDARD

Produced as per China's national standard GB, the machinery standard JB, the chemistry standard HG, the American standards API and ANSI, the German standard DIN, the Japanese standard JIS, JPI and the British standard BS.
Design and manufacturing standard: API 6D
Structural length standard: ASME B16.10
Connecting flange standard: ASME B16.5
Pressure/temperature class: ASME B16.34
Test and inspection standard: API 598, API 6D

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结构特点

1. 阀门在开关过程中, 阀体密封面与滑片密封面没有任何接触, 因此, 密封面无摩擦、磨损, 阀门的使用寿命长, 开关力矩小;
2. 阀门在维修时, 不需将阀门从管线上拆下, 只需将阀门底盖拆开, 调换一对滑片即可, 维修十分方便;
3. 阀体及旋塞为缩径或全通径, 介质在通过阀门时无流阻, 并且可通球对管道进行清洗, 克服了缩径阀门的缺点;
4. 全通径和缩径将军阀的阀体内腔皆有硬铬, 密封区域坚硬光滑;
5. 滑片上的弹性密封采用氟橡胶, 并且模压成型在滑片表面沟槽中, 具有防火功能的金属对金属的密封作为弹性密封的背衬;
6. 阀门具有自动泄放装置(备选), 在阀门完全关闭后, 防止阀腔异常升压并检验阀门的效果;
7. 阀门开关指示器与开关位置同步, 可以准确显示齿轮传动全通径将军阀的开关状态。

关于密封

弹性密封圈是模式压成型在滑片的沟槽中, 随着密封滑片向阀门的进出口移动, 密封圈也逐被压入沟槽中, 经过机械加工的滑片表面与阀体内腔形成二级金属对金属密封防止弹性密封圈继续被压, 并且具有防火功能。

双关双断阀及泄放

这是一种通过两个切断阀和一个在中间的泄放阀达到完全隔断两端管线目的的方法, 关闭两主要阀门关开启泄放阀可提高被系统的安全性。如果第一个阀门泄露, 泄露的介质可由开启的泄放阀导出。

双密封方式

两个独立的密封滑片在阀孔上下端压紧(双关断), 当阀门关闭时, 泄放阀被打开, 检验密封效果(泄放)。

STRUCTURAL FEATURES

1. In the valve's opening/closing process, there is no contact between the sealing surfaces of the valve body and the vane, so the sealing surfaces suffer neither friction nor wear, contributing to the valve's long service life and small opening/closing torque.
2. For the valve's maintenance, there is no need to remove the valve from the pipeline but just remove its bottom cover to replace the vane pair, thus very easy for the maintenance.
3. The valve's body and plug are reduced-bore or full-bore so that the medium can flow through the valve without any flow resistance, and it's also possible to clean the pipeline with pigging to overcome the shortcomings of the reduced bore valve.
4. The cavity of the full-bore/reduced-bore general valve is plated with hard chrome and the sealing area is hard and smooth.
5. The elastic seal on the vane is made of the fluorine rubber and molded and formed in a groove of the vane surface. The fireproof metal-to-metal seal is used as the backing of the elastic seal.
6. The valve is provided with an automatic bleed device [optional] which can prevent the abnormal pressure rise of the valve cavity and check the valve's effect after the valve is completely closed.
7. The valve's opening/closing indicator is in sync with the opening/closing position and can accurately display the gear drive full-bore general valve's opening/closing status.

ABOUT SEALING

The elastic gasket ring is molded and formed in the groove of the vanes, and as the sealing vanes move to the valve's inlet and outlet, the gasket ring is also gradually pressed into the groove. The machined vane surface forms a secondary metal-to-metal seal with the valve cavity which can prevent the elastic gasket ring from being further pressed and also have a fireproof function.

DOUBLE BLOCK & BLEED VALVE AND BLEEDING

This is a way to achieve complete containment of both ends of the pipeline with two block valves and one bleed valve in between. When the two main valves are closed, closing / opening the bleed valve can improve the system's safety. If the first valve leaks, the leaked medium can be led out by the opened bleed valve.

DOUBLE SEALING MODES

The two separate sealing vanes are compressed on upper and lower ends of the valve bore [double block], and when the valve is closed, the bleed valve will be opened to check the sealing effect [bleed].

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阀门操作

阀门关闭:

阀门关闭时, 先旋转手轮, 将旋塞及密封滑片旋转90°, 然后旋塞向下移动, 随着旋塞的运动时推动密封滑片向阀体内腔封面直至弹性密封圈被均匀地挤压到阀孔上下端, 形成密封。

阀门开启:

阀门开启时, 先旋转手轮提升旋塞, 将密封滑片从阀体两侧密封面拉回。当滑片完全收回脱离阀体密封面后, 继续转动手轮, 使旋塞及密封滑片旋转90°, 阀门处于开启位置。

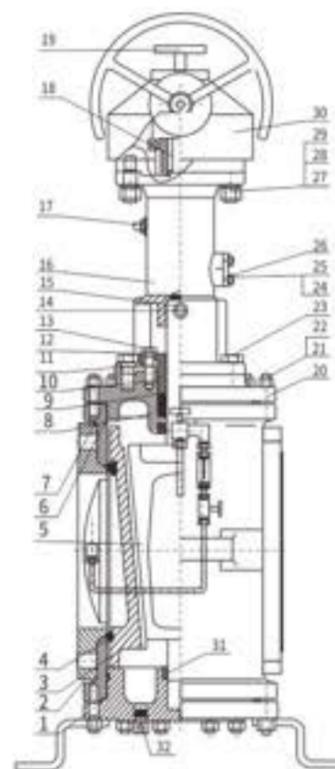
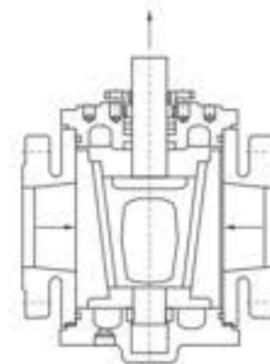
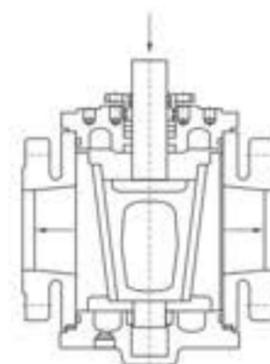
VALVE OPERATION

Close the valve:

To close the valve, first rotate the handwheel to rotate the cock and the sealing vanes by 90°, then the cock will move downwards; the moving cock drives the sealing vanes to the sealing surfaces of the valve cavity until the elastic gasket ring is uniformly pressed to the upper and lower ends of the valve bore to achieve sealing.

Open the valve:

To open the valve, first rotate the handwheel to lift the cock to pull back the sealing vanes from the sealing surfaces on both sides of the valve body. When the vanes are completely withdrawn and disengaged from the sealing surfaces of the valve body, continue to rotate the handwheel so as to make the cock and the sealing vanes rotate by 90°, and the valve will be on the open position.



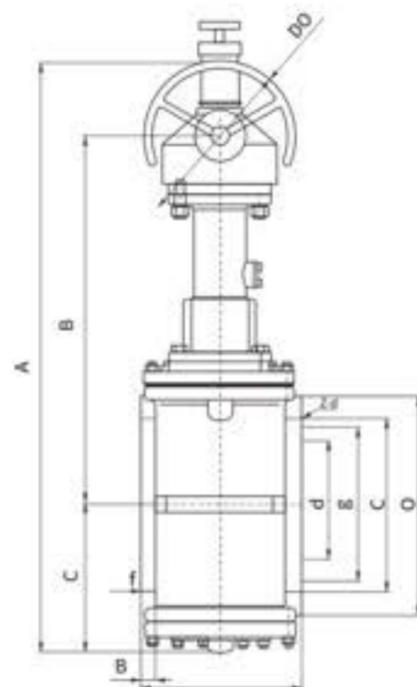
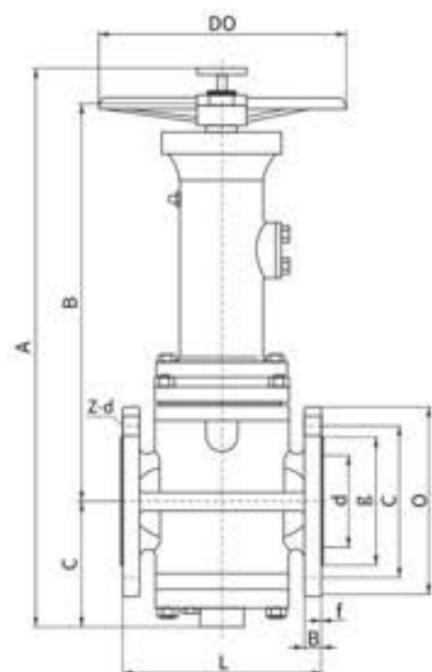
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质Material
1	底盖 Bottom cover	A216 WCB
2	阀体 Body	A216 WCB
3	滑片 Slide	QT400-18
4	密封圈 Sealing ring	Viton
5	旋塞 Cock	A216 WCB
6	O型密封圈 O-ring	Viton
7	缠绕垫片 Winding gasket	SS304+Graphite
8	填料 Packing	柔性石墨 Flexible graphite
9	填料压盖 Packing gland	A216 WCB
10	O型密封圈 O-ring	Viton
11	O型密封圈 O-ring	Viton
12	平垫圈 Flat washer	1035
13	外六角螺栓 Outer hexagon bolt	8.8级
14	销轴 Pin shaft	A276 410
15	挡圈 Retaining ring	65Mn
16	支架 Holder	A216 WCB
17	油嘴 Grease spout	C28000
18	平键 Flat key	1035
19	指示器 Indicator	1035
20	阀盖 Bonnet	A216 WCB
21	螺母 Nut	A194 2H
22	螺栓 Stud	A193 B7
23	外六角螺栓 Outer hexagon bolt	8.8级
24	导向销 Guide pin	410
25	外六角螺栓 Outer hexagon bolt	8.8级
26	弹簧 Spring washers	65Mn
27	螺母 Nut	A194 2H
28	螺栓 Stud	A193 B7
29	弹簧 Spring washers	65Mn
30	伞齿轮 Bevel gear	WCB
31	轴套 Shaft sleeve	C28000
32	堵头 Plug	SS304

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主要尺寸及重量 MAIN DIMENSIONS AND WEIGHT

150Lb 缩径、手轮、齿轮操作 150LB REDUCED BORE, HANDWHEEL, GEAR OPERATION

型号 Model	尺寸 Size(IN)	L	O	C	E	d	B	f	A	B	C	KG	D0	Z-d
GDX41X	2	178	Φ150	Φ120.5	Φ92	49	16.5	2	530	382	135		Φ200	4-Φ19
GDX41X	3	203	Φ190	Φ152.5	Φ127	74	19.5	2	590	395	129		Φ250	4-Φ19
GDX41X	4	229	Φ230	Φ190.5	Φ157	100	24.5	2	671	425	171		Φ300	8-Φ19
GDX41X	6	267	Φ280	Φ241.5	Φ216	150	26	2	805	520	210		Φ350	8-Φ22
GDX541X	8	292	Φ345	Φ298.5	Φ270	201	29	2	1096	645	253		Φ400	8-Φ22
GDX541X	10	330	Φ405	Φ362	Φ324	252	31	2	1283	753	280		Φ500	12-Φ25
GDX541X	12	356	Φ485	Φ432	Φ381	303	32.5	2	1385	777	331		Φ550	12-Φ25
GDX541X	14	381	Φ535	Φ476.5	Φ413	334	35.5	2	1395	790	341		Φ550	12-Φ29
GDX541X	16	406	Φ595	Φ540	Φ470	385	37	2	1654	948	406		Φ600	16-Φ29
GDX541X	18	864	Φ635	Φ578	Φ533.5	436	40.1	2	1680	960	420		Φ600	16-Φ32
GDX541X	20	914	Φ700	Φ635	Φ584	487	43.3	2	1892	1060	482		Φ600	20-Φ32

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主要尺寸及重量 MAIN DIMENSIONS AND WEIGHT

300Lb 缩径、手轮、齿轮操作 300LB REDUCED BORE, HANDWHEEL, GEAR OPERATION

型号 Model	尺寸 Size(IN)	L	O	C	E	d	B	f	A	B	C	KG	D0	Z-d
GDX41X	2	216	Φ165	Φ127	Φ92	49	23	2	530	382	135		Φ200	8-Φ19
GDX41X	3	282	Φ210	Φ168.5	Φ127	74	29	2	590	395	129		Φ250	8-Φ22
GDX41X	4	305	Φ255	Φ200	Φ157	100	32.2	2	671	425	171		Φ300	8-Φ22
GDX41X	6	403	Φ320	Φ270	Φ216	150	37	2	805	520	210		Φ350	12-Φ22
GDX541X	8	419	Φ380	Φ330	Φ270	201	42	2	1096	645	253		Φ400	12-Φ25
GDX541X	10	457	Φ445	Φ387.5	Φ324	252	48.1	2	1283	753	280		Φ500	16-Φ29
GDX541X	12	502	Φ520	Φ451	Φ381	303	51.3	2	1385	777	331		Φ550	16-Φ32
GDX541X	14	762	Φ585	Φ514.5	Φ413	334	54.5	2	1395	790	341		Φ550	20-Φ32
GDX541X	16	838	Φ650	Φ571.5	Φ470	385	57.6	2	1654	948	406		Φ600	20-Φ35
GDX541X	18	914	Φ710	Φ628.5	Φ533.5	436	60.8	2	1680	960	420		Φ600	24-Φ35
GDX541X	20	991	Φ775	Φ686	Φ584	487	64	2	1892	1060	482		Φ600	24-Φ35

主要尺寸及重量 MAIN DIMENSIONS AND WEIGHT

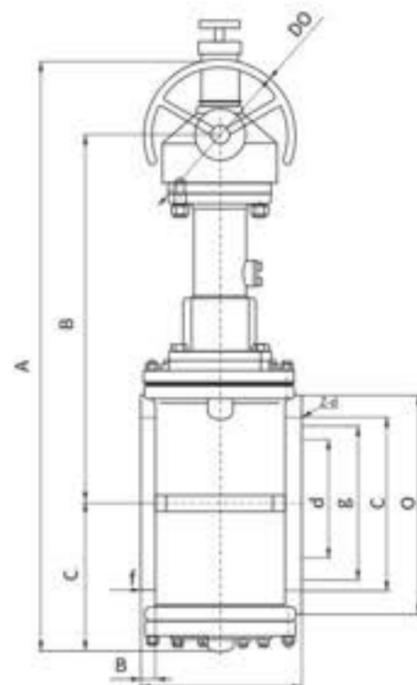
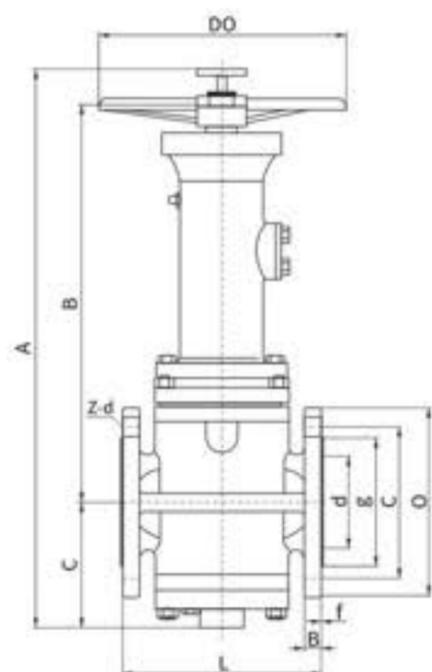
600Lb 缩径、手轮、齿轮操作 600LB REDUCED BORE, HANDWHEEL, GEAR OPERATION

型号 Model	尺寸 Size(IN)	L	O	C	E	d	B	f	A	B	C	KG	D0	Z-d
GDX41X	2	292	Φ165	Φ127	Φ92	49	25.4	2	530	382	135		Φ250	8-Φ19
GDX41X	3	356	Φ210	Φ168.3	Φ127	74	31.8	2	590	395	129		Φ300	8-Φ22
GDX41X	4	432	Φ275	Φ216	Φ157	100	38.1	2	671	425	171		Φ350	8-Φ25
GDX41X	6	559	Φ355	Φ292	Φ216	150	47.7	2	805	520	210		Φ350	12-Φ29
GDX541X	8	660	Φ420	Φ349	Φ270	201	55.6	2	1096	645	253		Φ400	12-Φ32
GDX541X	10	787	Φ510	Φ432	Φ324	252	63.5	2	1283	753	280		Φ500	16-Φ35
GDX541X	12	838	Φ560	Φ489	Φ381	303	66.7	2	1385	777	331		Φ550	20-Φ35
GDX541X	14	889	Φ605	Φ527	Φ413	334	69.9	2	1395	790	341		Φ550	20-Φ38
GDX541X	16	991	Φ685	Φ603	Φ470	385	76.2	2	1654	948	406		Φ600	20-Φ41
GDX541X	18	1092	Φ745	Φ654	Φ533.5	436	82.6	2	1680	960	420		Φ600	20-Φ44
GDX541X	20	1194	Φ815	Φ724	Φ584	487	88.9	2	1892	1060	482		Φ600	24-Φ44

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主要尺寸及重量 MAIN DIMENSIONS AND WEIGHT

PN16 缩径, 手轮, 齿轮操作 PN16 REDUCED BORE, HANDWHEEL, GEAR OPERATION

型号 Model	尺寸 Size(IN)	L	O	C	E	d	B	f	A	B	C	KG	D0	Z-d
GDX41X	50	178	Φ165	Φ125	Φ102	49	18	2	530	382	135		Φ200	4-Φ18
GDX41X	80	203	Φ200	Φ160	Φ138	74	20	2	590	395	129		Φ250	8-Φ18
GDX41X	100	229	Φ220	Φ180	Φ158	100	20	2	671	425	171		Φ300	8-Φ18
GDX41X	150	267	Φ285	Φ240	Φ212	150	22	2	805	520	210		Φ350	8-Φ22
GDX541X	200	292	Φ340	Φ295	Φ268	201	24	2	1096	645	253		Φ400	12-Φ22
GDX541X	250	330	Φ405	Φ355	Φ320	252	26	2	1283	753	280		Φ500	12-Φ26
GDX541X	300	356	Φ460	Φ410	Φ378	303	28	2	1385	777	331		Φ550	12-Φ26
GDX541X	350	381	Φ520	Φ470	Φ428	334	30	2	1395	790	341		Φ550	16-Φ26
GDX541X	400	406	Φ580	Φ525	Φ490	385	32	2	1654	948	406		Φ600	16-Φ30
GDX541X	450	864	Φ640	Φ585	Φ550	436	40	2	1680	960	420		Φ600	20-Φ30
GDX541X	500	914	Φ715	Φ650	Φ610	487	44	2	1892	1060	482		Φ600	20-Φ33

轨道式旋塞阀

DBB ORBIT PLUG VALVE

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION

主要尺寸及重量 MAIN DIMENSIONS AND WEIGHT

PN25 缩径, 手轮, 齿轮操作 PN25 REDUCED BORE, HANDWHEEL, GEAR OPERATION

型号 Model	尺寸 Size(IN)	L	O	C	E	d	B	f	A	B	C	KG	D0	Z-d
GDX41X	50	216	Φ165	Φ125	Φ102	49	20	2	530	382	135		Φ200	4-Φ18
GDX41X	80	282	Φ200	Φ160	Φ138	74	24	2	590	395	129		Φ250	8-Φ18
GDX41X	100	305	Φ235	Φ190	Φ162	100	24	2	671	425	171		Φ300	8-Φ22
GDX41X	150	403	Φ300	Φ250	Φ218	150	28	2	805	520	210		Φ350	8-Φ26
GDX541X	200	419	Φ360	Φ310	Φ278	201	30	2	1096	645	253		Φ400	12-Φ26
GDX541X	250	457	Φ425	Φ370	Φ335	252	32	2	1283	753	280		Φ500	12-Φ30
GDX541X	300	502	Φ485	Φ430	Φ395	303	34	2	1385	777	331		Φ550	16-Φ30
GDX541X	350	762	Φ555	Φ490	Φ450	334	38	2	1395	790	341		Φ550	16-Φ33
GDX541X	400	838	Φ620	Φ550	Φ505	385	40	2	1654	948	406		Φ600	16-Φ36
GDX541X	450	914	Φ670	Φ600	Φ555	436	46	2	1680	960	420		Φ600	20-Φ36
GDX541X	500	991	Φ730	Φ660	Φ615	487	48	2	1892	1060	482		Φ600	20-Φ36

主要尺寸及重量 MAIN DIMENSIONS AND WEIGHT

PN40 缩径, 手轮, 齿轮操作 PN40 REDUCED BORE, HANDWHEEL, GEAR OPERATION

型号 Model	尺寸 Size(IN)	L	O	C	E	d	B	f	A	B	C	KG	D0	Z-d
GDX41X	50	216	Φ165	Φ125	Φ102	49	20	2	580	382	135		Φ250	4-Φ18
GDX41X	80	282	Φ200	Φ160	Φ138	74	24	2	590	395	129		Φ300	8-Φ18
GDX41X	100	305	Φ235	Φ190	Φ162	100	24	2	671	425	171		Φ350	8-Φ22
GDX41X	150	403	Φ300	Φ250	Φ218	150	28	2	805	520	210		Φ350	8-Φ26
GDX541X	200	419	Φ375	Φ320	Φ285	201	34	2	1096	645	253		Φ400	12-Φ30
GDX541X	250	457	Φ450	Φ385	Φ345	252	38	2	1283	753	280		Φ500	12-Φ33
GDX541X	300	502	Φ515	Φ450	Φ410	303	42	2	1385	777	331		Φ550	16-Φ33
GDX541X	350	762	Φ580	Φ510	Φ465	334	46	2	1395	790	341		Φ550	16-Φ36
GDX541X	400	838	Φ660	Φ585	Φ535	385	50	2	1654	948	406		Φ600	16-Φ39
GDX541X	450	914	Φ685	Φ610	Φ560	436	57	2	1680	960	420		Φ600	20-Φ39
GDX541X	500	991	Φ755	Φ670	Φ615	487	57	2	1892	1060	482		Φ600	20-Φ42

轨道式旋塞阀

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双密封旋塞阀的密封

双密封旋塞阀的双密封结构不仅表现在双阀瓣上,更主要的是每片阀瓣的密封面均同时具有软、硬两种密封形式,硬密封精度不低于四级,这不仅保证了阀门的零泄漏,而且使阀门具备了防火功能,如图1所示,图a为开启状态的软密封形状;图b为关闭状态的软密封形状,由图中可以看出,软密封(橡胶)镶嵌在阀瓣的凹槽中,中间突起,两侧凹陷;这有利于阀门在关闭过程中软密封被压缩,向两侧凹槽中流动,最终形成硬密封;其优点在于保护软密封不被压伤,同时保证硬密封的实现。

双密封旋塞阀良好的密封性能可以确保泵的稳定工作状态,避免出现“气阻断流”现象,这一点已多次得到用户的确认。

SEAL OF DOUBLE SEAL PLUG VALVE

The double seal structure of the double seal plug valve is not just shown in the double disc, but more importantly, the sealing surface of each disc has both soft and hard seal types, and the precision of the hard seal is not lower than Level 4, which not only ensures the valve's zero leakage but also makes it fireproof. As shown in Fig.1, Fig.a is the soft seal shape in the open state while Fig.b is the soft seal shape in the closed state. It can be seen from the figure that the soft seal (rubber) is embedded in the grooves of the disc, raised in the middle and concave on both sides, that is in favor of the soft seal being compressed and flowing to the grooves on both sides during the valve's closing process to finally form a hard seal, its advantage is to protect the soft seal from being crushed and meanwhile to ensure to realize the hard seal.

The good sealing performance of the double seal plug valve can ensure the pump's stable working state and avoid "flow cutoff for air resistance", which has been repeatedly confirmed by our users.

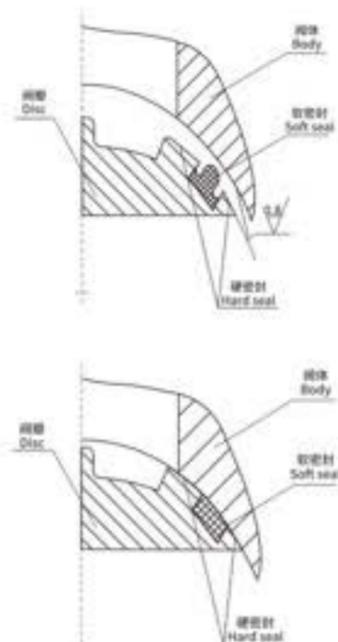


图1.密封形式
Fig.1 Sealing form

软密封的固定

软密封采用模压硫化工艺成型,丁腈橡胶一次硫化,氟化橡胶二次硫化;镶嵌牢固,永不脱落。

FIXING OF SOFT SEAL

The soft seal is formed with the molding and vulcanization process, including primary vulcanization of nitrile rubber and secondary vulcanization of fluorinated rubber; it's embedded securely and will never fall off.

防外漏设计

阀门端盖与阀体,底盖与阀体中法兰之间除了有O型圈密封外,在接触端面之间还增加了柔性石墨垫片,实现了双道密封;阀杆部分除了柔性石墨填料以外,在填料压盖与阀杆及端盖配合部分还增加了O型圈密封;泄压部分及排液螺塞与阀体部分的连接采用锥管螺纹设计,并垫紫铜垫密封,所有这些措施有效地保证了密封的可靠性,杜绝了外漏的发生(如图2所示)。

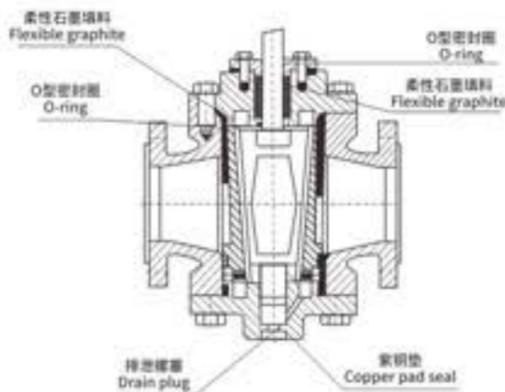


图1 防外漏设计
Fig.1 Anti leakage design

ANTI LEAKAGE DESIGN

In addition to the O-ring seals between the valve's end cap and body and between its chassis and body middle flange, a flexible graphite gasket is also added between the contact end faces to achieve double seal, in addition to the flexible graphite packing for the stem, the O-ring seals are added between the fitting parts of the packing gland, the stem and the end caps; the connection between the pressure relief part and drain plug and the body part adopts the tapered pipe thread design plus the red copper pad seal. All of these measures effectively ensure the reliability of sealing and prevent the occurrence of external leakage (Fig.2).

轨道式旋塞阀

DBB ORBIT PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION

具有在线维修功能

当阀瓣上的软密封因某种原因受损造成内漏或操纵器(执行机构)出现故障时,不必将阀门从管道上拆下便可进行更换或维修,操纵器的维修也可在管道不停压的状态下进行,而闸阀或球阀密封部分受损时,必须将阀门从管道上拆下才能进行维修或更换,甚至直接阀门报废。

WITH ONLINE MAINTENANCE FUNCTION

When the soft seal on the disc is damaged for a certain reason, resulting in internal leakage or manipulator (actuator) malfunction, it's not necessary to remove the valve from the pipeline for replacement or maintenance; instead, the manipulator's maintenance can also be done when the pipeline pressure is not stopped. However, the gate valve or ball valve must be removed from the pipeline for maintenance or replacement and even the valve may be just scrapped.

具有双关断及泄放功能

如图3(a)所示,采用两个隔断阀(闸阀或球阀)来隔断介质,并在这两个隔断阀之间安装一排泄阀,当隔断阀发生内漏,所泄漏的介质将通过排泄阀排出,这样就不会造成两种介质的掺混。

若采用双密封导轨阀,仅需一个阀就可实现上述功能(见图3(b)),双密封导轨阀的底部有一排泄螺塞,当阀门关闭后,可取出该螺塞。若有一侧阀瓣产生内漏,则漏出的介质通过螺塞孔排出,从而避免两种介质掺混现象的发生。当输送介质较脏时,可定期通过排泄螺塞将沉积物排出;当管道需要检修时,可通过排泄螺塞排出残存在低处的介质。在冬季,可通过排泄螺塞排出腔积水,以防冻坏阀门。

WITH THE FUNCTION OF PUN - OFF AND RELEASE

As shown in Fig.3(a), two block valves (gate or ball valve) are used to block the medium, and a bleed valve is mounted between the two block valves. When the block valves have any internal leakage, the leaked medium will be bled through the bleed valve, thus the two media will not be mixed.

If the double seal rail valve is used, only one valve can achieve the above functions [see Fig.3(b)]. There is a drain plug at the bottom of the double seal rail valve. After the valve is closed, this plug can be removed. If internal leakage occurs on one disc side, the leaked medium can be bled through the plug hole, thus avoiding mixing of the two media. When the working medium is dirty, the sediment can be bled through the drain plug on a regular basis; when the pipeline needs to be overhauled, the medium residual in the lower part can be bled with the drain plug. In winter the accumulated water in the cavity can be bled with the drain plug to prevent the valve from being frozen and destroyed.

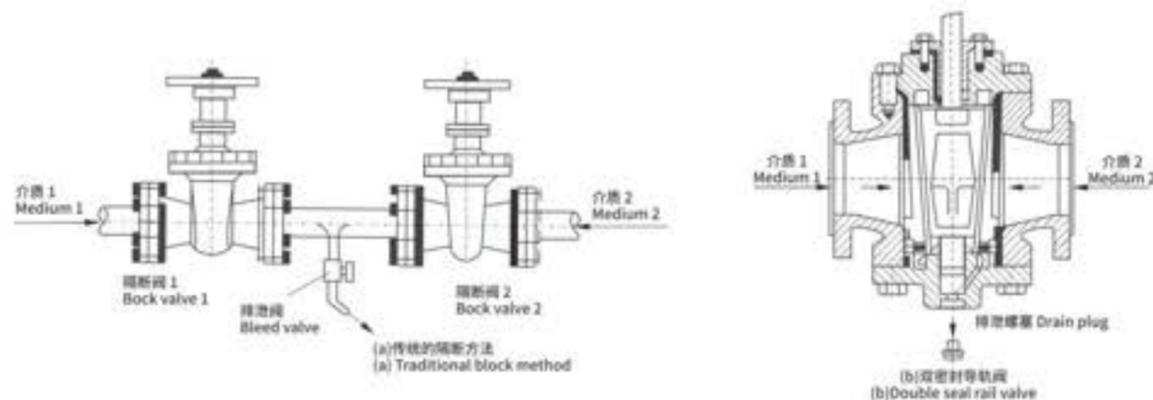


图3. 双关断及泄放功能原理图
Fig.3 Schematic diagram of double shutdown and relief function

具有中腔泄压功能

API 6D规范规定“对于所有双密封的阀门,当在液体介质中使用,必须具有压差泄放功能”,泄放的压差是因环境温度的变化产生的。在常闭状态下,双密封阀门中腔压力会因温度升高而快速增加,该压差如不及时泄放,对阀门的操作将产生严重影响。

手动操作的双密封轨道阀通常有以下两种泄压系统。

(1) 手动泄压系统:手动泄压系统通常为安装在端盖上的针形阀(见图1)。当介质为可以少量向大气中排进的液体时,可以配备此种泄压系统。

(2) 差热式泄压系统:差热式泄压系统是种带有单向阀的管路系统(见图4)。图中针形阀1三通1、单向阀1、三通2和针形阀3构成了差热式泄压系统。在该系统中,针形阀1常闭、针形阀3常开。当介质为不可以向大气中排进的液体时,需配备此种泄压系统(一般是向上游管道中泄压)。

IT HAS THE FUNCTION OF MIDDLE CAVITY PRESSURE RELIEF

It's stipulated in API 6D "All valves with double seal must has a pressure difference relief function when used in a liquid medium". The relief pressure difference is generated from the changes in the ambient temperature. In the normally-closed state, the cavity pressure of the valve with double seal can increase rapidly due to the temperature rise, and if such a pressure difference is not bled promptly, it can have a serious impact on the valve's operation.

Generally, the double seal rail valve with manual operation has the following two pressure relief systems.

[1] Manual pressure relief system: The manual pressure relief system is generally a needle valve mounted on the end cap(see Fig.1). When the medium is a liquid which can be slightly bled into the atmosphere, it can be equipped with such a pressure relief system.

[2] Differential thermal pressure relief system: The differential thermal pressure relief system is a pipeline system with a one-way valve(see Fig.4). In Fig.4, the needle valve 1, the tee 1, the one-way valve 1, the tee 2 and the needle valve 3 make up the differential thermal pressure relief system in the system, the needle valve 1 is normally-closed and the needle valve 3 is normally-open. When the medium is a liquid which cannot be bled into the atmosphere, it shall be equipped with such a pressure relief system [generally pressure relief to the upstream pipeline].

具有检验内漏功能

当普通阀门处于关闭状态时,其密封效果的检测比较困难,而双密封轨道阀的检测则很容易,只要在关闭状态下打开泄压系统与端盖相连的针形阀即可,阀瓣若有内漏,介质就会通过针形阀流出。若介质不便于向大气排放,则可在针形阀上接一压力表,通过观察表压的变化来判断有无内漏。

IT HAS THE FUNCTION OF DETECTING INTERNAL LEAKAGE

When a common valve is closed, it's difficult to detect its sealing effect, while it's easy to detect the double seal rail valve, just by mean of opening the needle valve connecting the pressure relief system to the end cap in the closed state. If the disc has any internal leakage, the medium will flow through the needle valve. If it's not convenient to discharge the medium into the atmosphere, a pressure gauge can be mounted on the needle valve to judge whether there is any internal leakage by means of observing the gauge pressure changes.

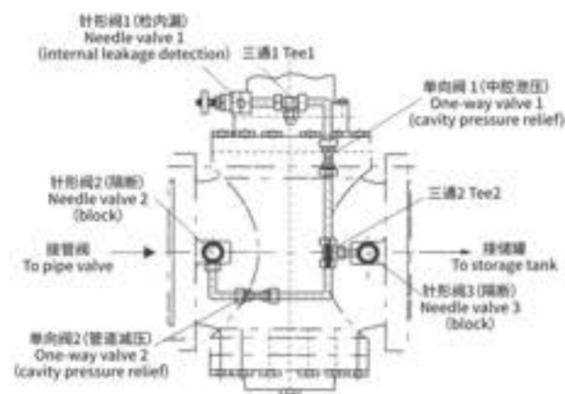


图4 差热式泄压及管道减压综合图
Fig. 4 Comprehensive drawing of differential heat pressure relief and pipeline pressure reduction

独特的管道减压功能

管道减压是储罐区管汇设计中需要重点考虑的问题,即当罐前阀关闭后,管网中仍然充满了介质;随着环境温度的升高,管网中介质的压力会迅速增大;当温差变化较大时,增加的压力会超过管道的承受能力,容易造成管道泄漏。因此,管道应配备减压设备。

管道减压设计如图5(a)所示。在主切断阀的上、下游之间连接管道减压系统,该系统由两个截断阀(闸阀、球阀或截止阀)及这两个截断阀之间的一个减压阀组成。该系统成本高,而且占用空间,不方便现场管理。主切断阀选用双密封轨道阀的管道设计原理如图5(b)所示,减压系统附在主切断阀上,其设计结构简单,占用空间小,且成本低廉。

UNIQUE PIPELINE DECOMPRESSION FUNCTION

Pipeline pressure reduction is a key consideration in the design of manifolds in the storage tank area, that is, the pipe network is still full of the medium even after the valve before the tank is closed, as the ambient temperature rises, the pressure of the medium in the pipe network will increase rapidly, when the temperature difference fluctuations are substantial, the increased pressure will exceed the pipe's withstanding ability, which may easily lead to pipeline leakage. Therefore, the pipeline should be equipped with a pressure reduction device.

The pipeline pressure reduction design is as shown in Fig.5(a), a pipeline pressure reduction system is connected between upper and lower reaches of the main block valve, and this system consists of two block valves(gate, ball or globe valve) and a pressure reduction valve between the two block valves. The system is costly and takes up too much room, not easy for site management.

The main block valve adopts the pipeline design principle of the double seal rail valve, as shown in Fig.5(b), and the pressure reduction system is attached to the main block valve, with a simple design structure and being space-effective and low-cost.

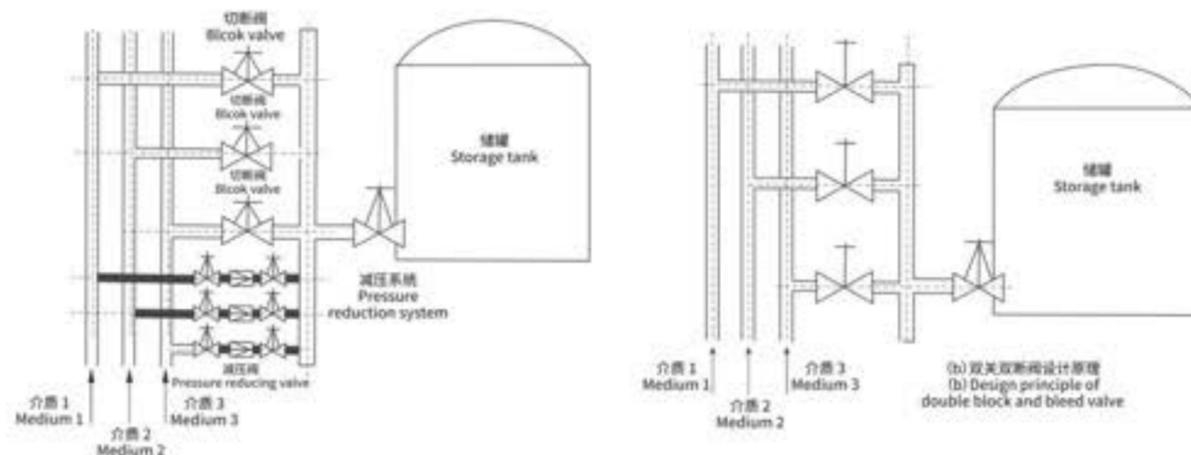


图5 管道减压原理图
Fig. 5 Schematic diagram of pipeline decompression

弹性座封偏心旋塞阀

ELASTIC SEAT SEALED ECCENTRIC PLUG VALVE

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结构形式

该种旋塞阀采用弹性座封偏心结构, 旋塞为曲轴式, 流线形横截面, 表面全部覆盖橡胶; 阀座可用耐蚀合金堆焊, 也可使用本体阀座。与旋塞密封面中心有一定偏心距; 流道的过流截面为矩形。

前言

弹性座封偏心旋塞阀是一种新型结构的旋塞阀, 填补了传统柱塞阀和球阀, 在大口径管道 (DN200以上)、污水泥泵等场合中的应用。其优异的密封性能和耐蚀性能、较小的启闭扭矩和水流损失、长久的使用寿命, 适用于城市污水、工业污水、泥浆及清水等工作环境, 可作为调节或截流装置使用。

PREFACE

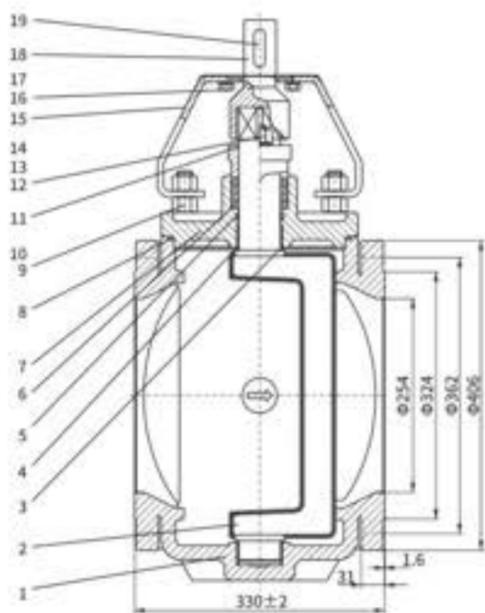
Elastic seat ring sealed eccentric plug valve is a new structure valve which fills the blank of traditional plunger valve and ball valve in the applications like large-diameter pipeline (above DN200) and muddy water and sludge occasions. Owing to its excellent sealing performance and corrosion-resisting performance, smaller opening/closing torque and water-flow loss and long service life, it is applied as the regulator or closure in the work occasions such as urban sewage, industrial sewage, sludge and clear water.

STRUCTURE TYPE

The plug valve applies elastic seat sealed eccentric structure, with a crank cock, streamline section and rubber-coated surface; its valve seat applies corrosion-resistant alloy surfacing, or an integral seat ring. A certain eccentricity occurs in the center of cock sealing face; its cross section of passage is rectangular.

主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name
1	阀体 Body
2	旋塞+NBR Cock + NBR
3	垫片 Gasket
4	滑动轴承 Sliding Bearing
5	O型圈 O-ring
6	填料 Packing
7	阀盖 Cover
8	O型圈 O-ring
9	螺柱 Stud
10	螺母 Nut
11	填料压盖 Packing gland
12	平垫片 Flat gasket
13	螺柱 Stud
14	螺母 Nut
15	支架 Bracket
16	螺栓 Bolt
17	弹垫圈 Spring washer
18	连接杆 Connecting rod
19	平键 Flat key



弹性座封偏心旋塞阀

ELASTIC SEAT SEALED ECCENTRIC PLUG VALVE

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION

工作原理

该种弹性座封偏心结构, 曲轴式旋塞不仅有足够的强度来承受高压和传递扭矩, 而且在阀门全开时可巧妙地避开流道, 获得较大的过流面积; 表面包覆的橡胶, 采用热硫化模压的成形工艺, 保证了橡胶与内部铁心的牢固黏合, 外表面的光滑流畅, 密封面的准确尺寸, 提高了阀门的耐蚀性能和使用寿命, 密封的可靠性和互换性; 耐蚀合金堆焊的阀座, 密封面接触面积小, 与旋塞密封面中心有一定偏心距, 确保密封的零泄漏效果, 可降低阀门启闭操作扭矩, 并延长了使用寿命; 矩形的过流截面, 当阀门作为调节装置使用时, 可获得理想的线性调节特性。

弹性座封偏心旋塞阀的关闭和开启, 是通过旋塞和阀体的偏心运动来实现的。旋塞相对阀体有一个偏心距, 阀体上的阀座相对旋塞体的回转中心也有一个偏心距。当旋塞体旋转90°从全开到全闭位置时, 旋塞体的密封面就和阀座贴合, 从而达到关闭密封目的。

当阀门处于打开位置时 (如图2a), 整个旋塞体离开通道, 流体全流量通过, 这时流通能力最大, 流阻最小。

当阀门处于调节位置时 (如图2b), 旋塞的一部分挡住了通道, 流通面积改变, 从而流体得到调节。由于偏心运动, 旋塞在旋转时不与阀座、阀体接触, 无磨损, 无卡住现象, 这一特性特别适合于作为自动控制阀。

当阀门处于关闭位置 (如图2c), 旋塞和阀座接触。由于偏心运动, 旋塞与阀座的接触比压随着输入力矩和介质压力的增加而增加, 密封可靠性大大提高。

WORKING PRINCIPLE

The elastic seat sealed eccentric structure and crank cock provide enough strength for bearing high pressure and transmitting torque, and also obtain large flow area by dexterously keeping away from the fully-opened valve passageway; the rubber applicable for surface coating applies heat vulcanization molding process that ensures the firm holding of rubber and internal iron core, the smoothening of outside surface, and the exact dimension of sealing face, and improves the corrosion-resistant performance and service life of the valve, and enhances the reliability and interchangeability of sealing; the corrosion-resistant alloy surfaced valve seat provides a small contact area of seating face, and leaves a certain eccentricity in the center of cock sealing face so as to safeguard the zero leakage of sealing, to reduce the operating opening/closing torque of the valve and to prolong the service life; the rectangular flow section, as the valve is used as regulator, can obtain a proper linear regulating property.

The opening and closing of the elastic seat sealed eccentric plug valve is achieved by the eccentric motion of cock and valve body. There is an eccentricity of cock and valve body, and also an eccentricity of valve seat on the body and gyration center of cock body. When the cock body is rotated by 90 degree from fully-opened to fully-closed position, the sealing face of the cock body is laminated with the seat so as to offer closing and sealing purpose.

When the valve is opened (as shown in Diagram 2a), the whole cock body keeps away from the passageway, the fluid is fully flowed, where provides maximum flow capacity and minimum flow resistance.

When the valve gets the regulating position (as shown in Diagram 2b), the portion of cock blocks the passage, changes the flow area, henceforth, the fluid is regulated. Due to eccentric motion, the cock will not contact the seat and valve body as rotating, resulting in no abrasion and blocking, which is especially suitable for automatic control valve.

When the valve gets the closing position (as shown in Diagram 2c), the cock and seat contacts, under the action of eccentric motion, the contact pressure of the cock and seat is increased according to the rise of input torque and medium pressure, which greatly improves the sealing reliability.

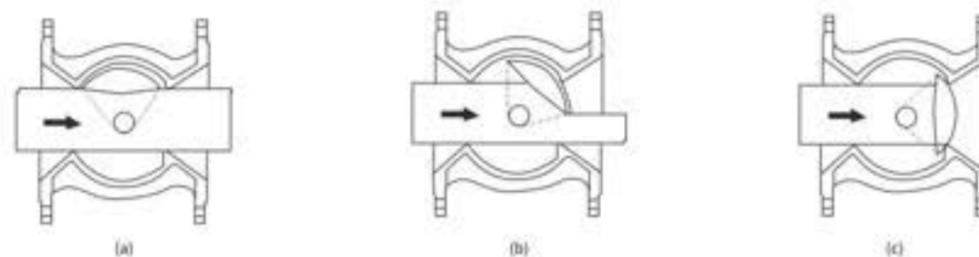


图2. 工作原理
(a) 全开位置 (b) 调节位置 (c) 全关位置
Figure 2. Working principle
(a) Fully-opened position (b) Regulating position (c) Fully-closed position

弹性座封偏心旋塞阀

ELASTIC SEAT SEALED ECCENTRIC PLUG VALVE

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性能特点

弹性座封偏心旋塞阀,对传统旋塞阀和半球阀进行了诸多改进,确保产品可靠的使用功能,对各种介质、高速、腐蚀和含杂质流体的适用性及较长的使用寿命,从下述性能特点中,可以了解到该阀先进的功能和结构设计。

- (1)弹性座封结构弹性旋塞与耐蚀阀座形成的密封结构,确保阀门密封可靠,实现零泄漏,克服了传统旋塞阀和半球阀金属密封易泄漏的缺陷。
- (2)偏心密封设计操作力只作用在阀门密封面接触或脱离的极短行程间,并且随密封压力的降低而迅速减小,密封面无磨损可自动补偿。解决了传统旋塞阀和球阀由于密封面全行程强制挤压,需要较大持久操作力且密封面磨损严重的问题。
- 1)整体包胶旋塞。全部口径范围的整体旋塞均采用最新硫化工艺,外表面全部用高性能橡胶包覆,密封弹性佳,耐流体腐蚀和高速流体的冲刷,克服了传统旋塞阀裸露的金属旋塞和半球阀分离式的球芯,容易受到流体腐蚀的缺陷。
- 2)特种耐蚀阀座。不锈钢或纯镍堆焊的阀座与阀体结合牢固,耐固体颗粒的磨损、高蚀介质的破坏和高速流体的冲刷。密封件的可互换性高,仅更换阀门旋塞即可继续使用,克服了半球阀浮动式阀座密封件互换性差,后期维护困难的缺点。
- 3)矩形直通流道。直通流道,流体水头损失小;矩形截面,可作为手动、电动及气动调节阀使用,流量调节线性度非常好,克服了传统球阀和半球阀用作调节阀时,其圆形截面的调节线性度不理想的问题。
- 4)一体式弓形轴。阀轴与旋塞整体铸造成形,传动强度和刚度,弓形阀轴设计,在阀门全开时可避开流道,导流效果显著,重量较传统旋塞阀和半球阀轻。
- 5)可拆卸阀盖。阀盖与阀体通过螺栓联接,阀门只需拆下阀盖螺栓即可在管道上维护,传统球阀为对开式或筒状阀体,当阀门出现故障时,必须将阀门整体从管道上拆下才可维护。
- 6)高强度承压壳体。阀体、阀盖等承压壳体采用高强度球墨铸铁,承压强度和刚度,比传统旋塞阀和半球阀的灰铸铁重量轻,运输吊装便利,同时作为密封面堆焊基体,与密封面堆焊材料结合工艺性好。
- 7)高温高速介质。高性能球墨铸铁壳体,密封橡胶及堆焊阀座,适用于高速流体的冲刷,介质使用温度可达-29~150°C,特别适用于各种冷、热水场合。
- 8)耐蚀表面处理。可根据介质的腐蚀性及工作环境,灵活选择对应的表面防腐处理方案,确保在各种恶劣工况下的长久使用寿命。

FEATURE

The elastic seat sealed plug valve makes improvements on traditional plug valve and segment valve, provides reliable applications and offers availability and long service life for various media, high-speed, corrosive fluid and fluid with impurity.

The advanced functions and structural design will be comprehended in the following performances and features.

- [1] The elastic seat sealed structure: the sealing structure of elastic cock and corrosion-resistant seat ensures the reliable sealing and zero leakage of the valve, and overcomes the error of easily being leaked occurred in the metal seal of traditional plug valve and segment valve.
- [2] Eccentric sealing design: The operating force is only acted on the very short travel of contact or disengage from the sealing face of the valve, moreover, is quickly reduced along the lowering of sealing pressure, there is no wearing on the sealing face and automatic compensation is offered. It solves the problems that traditional plug valve and ball valve occur serious wearing on the sealing face under large continuous operating force because the full travel of sealing face is forcibly squeezed.
- 1) Wholly rubber-coated cock. The whole cock of all diameters applies up-to-date vulcanization process, its outer surface is wholly coated with high-performance rubber, which enjoys excellent sealing elasticity and resistance to fluid corrosion and high-speed fluid scouring. It overcomes the defects of traditional plug valve that the exposed metal cock of traditional plug valve and the separated ball core of segment valve are easily corroded by fluids.
- 2) Special corrosion-resistant seat. Stainless steel or nickel-surfaced seat is firmly connected with the valve body, which can withstand the wearing of solid particles, and resist to the destroying of corrosive medium and the scouring of high-speed fluid. High-interchangeability sealing element is re-used by only changing the cock of valve. It overcomes the defects of segment floating-type seat in the bad interchangeability of sealing elements and difficult subsequent maintenance.
- 3) Rectangular through passageway. The through passageway has a less fluid head loss; its rectangular section can be applied as hand-, electrically- or pneumatically-driven control valve, and enjoys very good flow regulating linearity. It overcomes the improper regulating linearity of round section when the traditional ball valve or segment valve is used as regulator.
- 4) Integral bow-shaped valve shaft. The valve shaft and cock are integrally cast with high transmission strength and rigidity. The bow-shaped valve shaft structure is applicable for keeping away from the passageway of fully-opened valve, and offers remarkable diversion efficiency. Its weight is less than traditional plug valve and segment valve.
- 5) Dismountable bonnet. The bonnet is connected with valve body by screws, therefore, the valve is able to be maintained in the pipeline by just disassembling the screws of the bonnet. However, the traditional ball valve, made up from bisected or tubular valve body, occurs failure, the whole valve is maintained by wholly disassembled from the pipeline.
- 6) High-strength pressure shell. The pressure shell including valve body and bonnet is made from high-strength ductile iron with high bearing strength and rigidity, compared with traditional plug valve and segment valve, it is featured as less weight and convenient transporting and lifting. Moreover, as a surfacing base of sealing surface, it has better craftsmanship for surfacing materials of sealing surface.
- 7) High-temperature and high-speed medium. High performance ductile iron shell, sealing rubber and surface seat are suitable for the scouring of high-speed fluids. The applicable temperature of the medium reaches -29-150°C, especially suitable for various cold or hot water occasions.
- 8) Anti-corrosion surface treatment. According to the corrosion and work environments of the medium, the relevant surface anti-corrosion solution shall be flexibly chosen to insure a long service life under severe work conditions.

弹性座封偏心旋塞阀

ELASTIC SEAT SEALED ECCENTRIC PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION

应用范围

弹性座封偏心旋塞阀因其偏心设计、不锈钢或纯镍堆焊的阀座、整体包胶旋塞,使其耐腐蚀性、密封性极好,使用寿命、可靠性比传统部分回转阀门要长很多,因此,该阀作为传统旋塞阀和半球阀的理想升级产品,特别适合于工业污水、城市污水、泥浆和含固量高的介质的场合,目前在英国、德国和意大利等欧美发达国家的污水处理和其他工业系统已得到广泛应用,应用现场如图3所示。

若弹性座封偏心旋塞阀用于清水管道系统中,其安装方式可以垂直也可以水平。

如图4所示。

在污水、污水系统里,旋塞阀必须要水平安装,使旋塞位于水平管道的顶部,如图3所示,这样,在开启旋塞阀时,旋塞不会被沉于底部的杂质阻止或刮伤,另外杂质若沉积在阀体的底部,当旋塞在调节状态时,由于介质流速高,杂质易于冲出。

对于清水,阀门安装方向应为正向,即阀座与流体方向相对。若流体中含有固体、可沉积的颗粒,则应优先考虑阀门的轴线为水平方向安装,即在水平管道上,若打开阀门,旋塞应位于水平管道的顶部;在垂直管道上,若关闭阀门,旋塞应位于上部。

旋塞阀可以正向或反向安装,流体介质和阀门所处的位置决定的阀门的安装方向。由于偏心密封结构,旋塞阀承受反向压力的能力受到限制,正常情况下只保证正向密封性能。若要求承受反向压力时,应向制造商咨询。

APPLICATION RANGE

The elastic seat sealed eccentric plug valve has the advantages of corrosion resistance, excellent sealing, service life and better reliability by compared with traditional part-turn valves because of its eccentric structure, stainless steel or pure-nickel surfacing seat and wholly-rubber-coated cock. Henceforth, this valve is an ideal upgraded product of traditional plug valve and segment valve, especially applicable for the occasions of industrial sewage, urban sewage, slurry or other high-solid-content media, currently, it is widely used in the sewage treatment and other industrial systems in the developed countries like USA, Germany and Italy. The application site is illustrated in Diagram 3.

If the plug valve is used in clear water pipeline system, the vertical or horizontal installation can be applicable, illustrated in Diagram 4.

In primary water or sewage system, the plug valve must be horizontally installed so that the cock is positioned at the top of horizontal pipeline as illustrated in Diagram 3. Therefore, when opening the plug valve, the cock will not be blocked or scratched by the impurities at the bottom, besides, the impurities at the bottom of valve body can be easily outwashed under the action of high speed medium when the cock is at the regulating position.

As for clear water, the valve shall be installed in forward direction, i.e., the valve seat is opposite to the flow direction. If the fluid containing solid or deposited particles, the horizontal installation to the axial of the valve is preferred. Henceforth, in the horizontal pipeline, as opens the valve, the cock shall be at the top of the horizontal pipeline; in the vertical pipeline, as closes the valve, the cock shall be up-side.

The plug valve can be forward or reversely installed, which is determined by the position of fluid and valve. Due to eccentric sealing structure, the reverse pressure of plug valve is restrained, it is normal that there is only forward sealing performance. If the reverse pressure is required, please consult the manufacturer.



图3弹性座封偏心旋塞阀应用现场
Diagram 3 Application site of elastic seat sealed eccentric plug valve

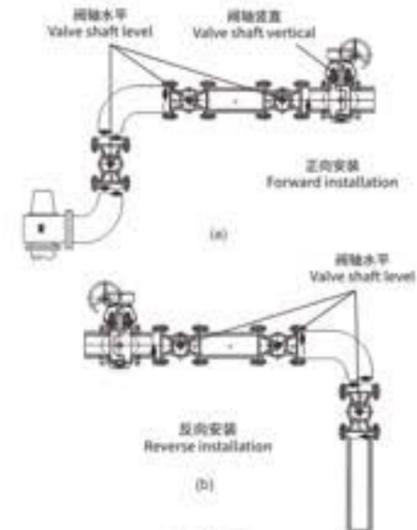


图4安装方式
Figure 4 Installation method
(a) 正向安装 Forward installation
(b) 反向安装 Reverse installation

弹性座封偏心旋塞阀

ELASTIC SEAT SEALED ECCENTRIC PLUG VALVE

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更广阔应用

弹性座封偏心旋塞阀的直通流道,使流体阻力减小,如图5a所示,在相同的流量下座塞阀的压力损失最小,能耗最低,且随着阀门口径的增大这一优点更加明显。面对进口产品,我国阀门制造技术已有相当基础,制造厂精心设计,精心施工,完全可以使国产气阀达到国际先进水平,也可以引进技术再创新。国外气阀制造商如一些关键技术,工艺控制程序作为借鉴,结合我国实际情况,还是如今用于特殊场合或特殊流体,如腐蚀性介质以及粉状物,阀门可持久工作安全可靠,所用材料为氟塑料,氟橡胶,聚四氟乙烯,弹性座封,弹性座封以及自润滑材料,目前国内阀门质量有了长足进步,可以满足进口产品,有助于提高国产气阀整体运行水平。气阀结构紧凑,操作方便,工作压力高,允许介质颗粒直径大,自给润滑,运行噪声低,适宜船舶应用。我国阀门制造厂应开发自主知识产权产品,注重关键技术突破,从国际先进水平入手,研究气阀结构,材料和密封,形成前瞻性研发理念,以期达到与国际名牌制造商的目的,那么具有自主知识产权的国产气阀将不仅具备国内船舶,也可推向国际市场,进而提高我国设备国际竞争力,对国内阀门制造厂完成转型升级,原始技术创新,对原有产品完全有能力更新换代,研制出性能更优的产品参与市场竞争。造船工业迅速发展,同时船舶设备相对落后,一些小设备由中船总公司地方装备制造,技术实力均不强,某行业的阀门制造厂开拓市场,如从船舶设备配套在优势大有裨益,持有国际证书的经验,可在船舶市场大显身手,我国阀门制造厂作为某行业一员,积极创新,自主创新,对石化,冶金及电力行业研发技术,其船用气阀国际领先的“基础”,应该有较好的市场前景,有满足“高质量标准”、“高能效”、“高寿命”。

弹性座封偏心旋塞阀的密封原理,可获得理想的流量调节特性,如图5b所示,阀门的驱动方式可以配置气动,气动或电动,以便实现远程控制。弹性座封偏心旋塞阀可用于紧急出口控制,具有防止回流,防止水锤和调节流量的功能。当泵启动时,流量输出缓慢增加,可避免造成水锤,损坏系统上的设备,当泵关闭时,为关闭,再停泵,可避免水锤,控制阀能可靠的关闭保持同步,防止水锤造成水锤,利用弹性座封偏心旋塞阀的调节和截止作用,可避免管道破裂或调节流量的水锤。

WIDER APPLICATIONS

The through passageway of plug valve has low water head loss as illustrated in Diagram 5a, under similar flow capacity the pressure loss of the plug valve is low and the power consumption is lower, and it is more obvious along the enlarging of the diameter of the valve.

The country lays a firm foundation on manufacturing technology of valves as compared with imported products, while the manufacturer makes meticulous design and construction that national air-valving valve can keep pace with world famous brands, or make further innovation.

The diaphragm is the other key technology of pneumatic diaphragm pump, either early used for draining pump or bridge pump in public utilities, or nowadays used for draining or conveying corrosive fluids, slurry or slurry matters. The reliable and long operation of the diaphragm is extremely important, made of the materials such as CR, WBR, FKM or PTFE, FF rubber, DuPont polyurethane. Now the quality of national diaphragm makes rapid progress, the high efficiency and reliable diaphragm, better than imported products, are available in China. It is beneficial to the operating level of the whole national pneumatic diaphragm pump industry.

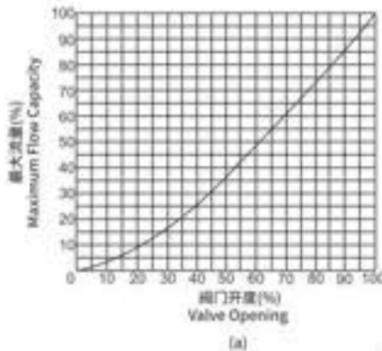
The pneumatic diaphragm pump has the merits of simple structure, easy maintenance, high work pressure, allowable large diameter suspended solid particles, high self-priming height and low operating noise, and is suitable for marine applications. The manufacturer keeps up the evolution and aims for international famous brands, less pressure on key technology breakthrough by starting from the few necessities designing. It forms its prospective study theory after making researches on pneumatic pump, flow passage components, valve seat and ball body as in to fight against international famous brands. Therefore, the national pneumatic diaphragm pump with independent intellectual property rights can be applied in marine ships and strives forward international markets to make competition in the international stage of ships. Even now, the manufacturer of diaphragm pump has fulfilled the first-phase ventures after primitive accumulation of capital, and is fully capable of upgrading on present products so as to research and manufacture the products with better comprehensive performance to participate in market competition.

The ship-making industry is rapidly developing, the ship-making facility is relatively lagging. Some small equipments are manufactured by CSSC local affiliated enterprises, but their scale and actual strength is not strong. The manufacturing plants of diaphragm pump explore the market and will benefit from the current situation of supporting equipments of ships, and play the important role in the ship markets by accumulating the experiences in market economy. The manufacturer as one of members in pump and valve industry actively carries out marketing and places the orders, is familiar with petrochemicals, refinery and power industry, the marine pneumatic diaphragm pump has a very good market prospects, that said, "Do not say the waters of running later and too shallow." For watching fish they are better than Fuyuhou fish.

The rectangular section of the plug valve can obtain an ideal flow regulation linearity as shown in Diagram 5b, the driving modes of the valve include electro-pneumatic or fully automatic driven devices to fulfil its automatic control.

For example, the plug valve is applicable for pump discharge control valve, with the functions of preventing backflow, blocking or regulating the water capacity.

When the pump starts, the valve opens gradually, the flow output is slowly increasing, which will not easily result in water hammering to destroy the facilities in the system. When the pump closes, the valve closes firstly, the pump stops, it provides automatic closing, the control valve keeps pace with the closing of the pump to prevent from reflux and water hammering arising. The water discharge capacity in the pipeline can be regulated according to the regulatory requirements by employing the flow regulating and closure function of the plug valve.



(a)

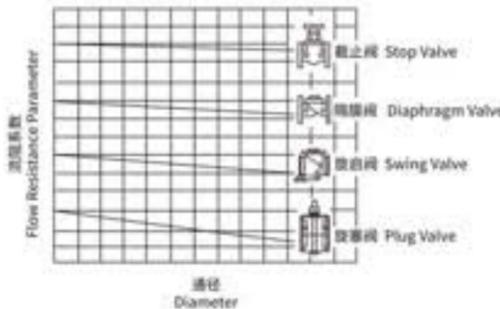


图5 流阻与流量特性
(a)流阻特性比较 (b)流量特性
Fig. 5 Flow resistance and flow characteristics
(a) Comparison of flow resistance characteristics (b) flow characteristics

结论

弹性座封偏心旋塞阀,是一种新型的旋塞阀,作为管路的调节或截止装置,已在城市污水、工业污水、泥浆及清水等场合得到广泛应用。

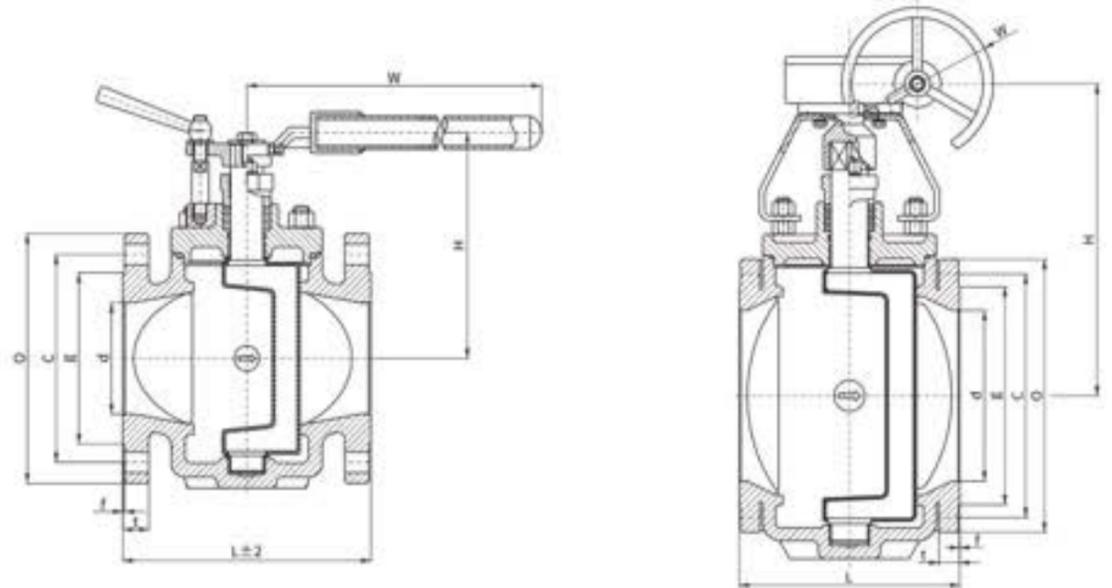
CONCLUSION

The elastic seat sealed eccentric plug valve is a new type plug valve acted as the regulator or closure unit in the pipeline, and is widely applied in the fields like urban sewage, industrial sewage, slurry or clear water.

弹性座封偏心旋塞阀

ELASTIC SEAT SEALED ECCENTRIC PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION



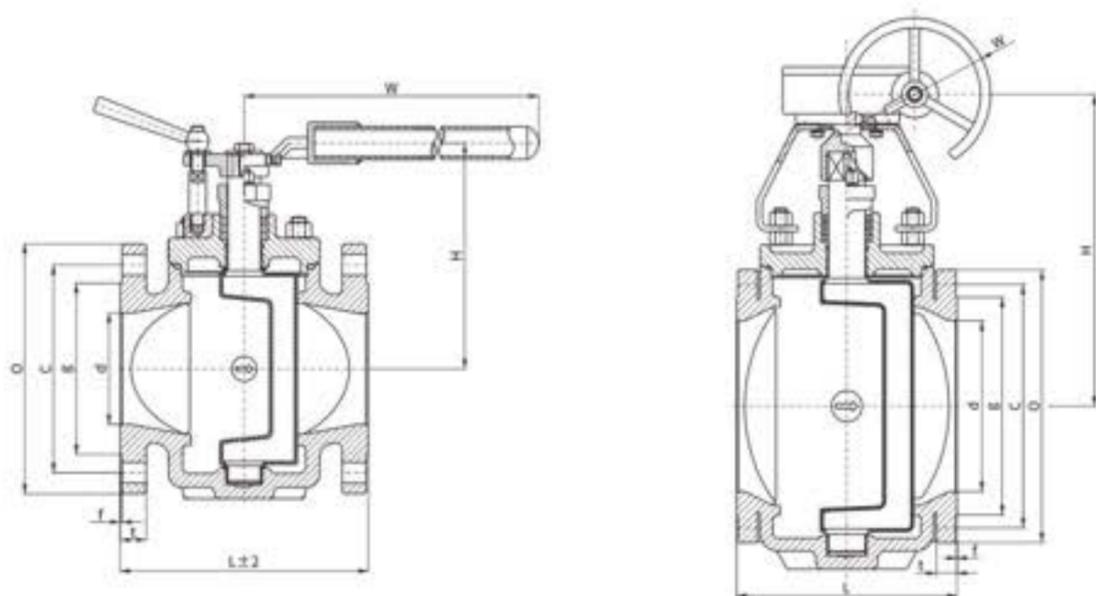
偏心旋塞国标德标主要尺寸 MAIN DIMENSIONS OF GB OR DIN ECCENTRIC COCK
PN10 蜗轮、手轮、齿轮操作 PN10 REDUCED BORE, HANDWHEEL, TURBINE OPERATED

型号 Model	尺寸 Size(DN)	L	O	C	g	d	t	f	H	W	n-d
PLVX43X	50	178	Φ165	Φ125	Φ102	51	18	3	145	Φ300	4-Φ18
PLVX43X	80	203	Φ200	Φ160	Φ138	76	20	3	180	Φ350	8-Φ18
PLVX43X	100	229	Φ220	Φ180	Φ158	102	20	3	207	Φ450	8-Φ18
PLVX43X	150	267	Φ285	Φ240	Φ212	152	22	3	280	Φ600	8-Φ22
PLVX343X	200	292	Φ340	Φ295	Φ268	203	24	3	382	Φ300	8-Φ22
PLVX343X	250	330	Φ395	Φ350	Φ320	254	26	3	455	Φ400	12-Φ22
PLVX343X	300	356	Φ445	Φ400	Φ370	305	26	4	480	Φ400	12-Φ22
PLVX343X	350	432	Φ505	Φ460	Φ430	337	26	4	515	Φ400	16-Φ22
PLVX343X	400	450	Φ565	Φ515	Φ482	387	26	4	560	Φ500	16-Φ26
PLVX343X	450	546	Φ615	Φ565	Φ532	438	28	4	620	Φ500	20-Φ26
PLVX343X	500	597	Φ670	Φ620	Φ585	489	28	4	690	Φ500	20-Φ26
PLVX343X	600	813	Φ780	Φ725	Φ685	591	30	5	817	Φ600	20-Φ30
PLVX343X	700	900	Φ895	Φ840	Φ800	692	35	5	900	Φ600	24-Φ30
PLVX343X	800	1000	Φ1015	Φ950	Φ905	779	38	5	950	Φ650	24-Φ33
PLVX343X	900	1321	Φ1115	Φ1050	Φ1005	874	38	5	1100	Φ700	28-Φ33

弹性座封偏心旋塞阀

ELASTIC SEAT SEALED ECCENTRIC PLUG VALVE

www.xodo.com



偏心旋塞国标德标主要尺寸 MAIN DIMENSIONS OF GB OR DIN ECCENTRIC COCK

PN16 缩径、手轮、齿轮操作 PN16 REDUCED BORE, HANDWHEEL, TURBINE OPERATED

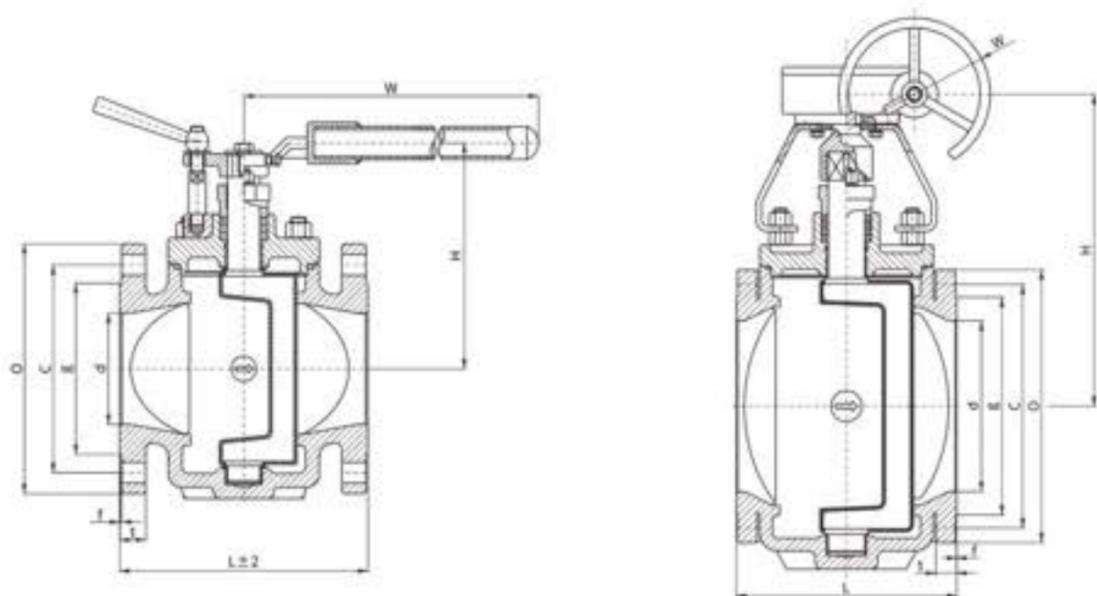
型号 Model	尺寸 Size(DN)	L	O	C	E	d	t	f	H	W	n-d
PLVX43X	50	178	Φ165	Φ125	Φ102	51	18	3	145	Φ300	4-Φ18
PLVX43X	80	203	Φ200	Φ160	Φ138	76	20	3	180	Φ350	8-Φ18
PLVX43X	100	229	Φ220	Φ180	Φ158	102	20	3	207	Φ450	8-Φ18
PLVX43X	150	267	Φ285	Φ240	Φ212	152	22	3	280	Φ800	8-Φ22
PLVX343X	200	292	Φ340	Φ295	Φ268	203	24	3	382	Φ300	12-Φ22
PLVX343X	250	330	Φ405	Φ355	Φ320	254	26	3	455	Φ400	12-Φ26
PLVX343X	300	356	Φ460	Φ410	Φ378	305	28	4	480	Φ400	12-Φ26
PLVX343X	350	432	Φ520	Φ470	Φ438	337	30	4	515	Φ400	16-Φ26
PLVX343X	400	450	Φ580	Φ525	Φ490	387	32	4	560	Φ500	16-Φ30
PLVX343X	450	546	Φ640	Φ585	Φ550	438	34	4	620	Φ500	20-Φ30
PLVX343X	500	597	Φ715	Φ650	Φ610	489	36	4	690	Φ500	20-Φ33
PLVX343X	600	813	Φ840	Φ770	Φ725	591	40	5	817	Φ600	20-Φ36
PLVX343X	700	900	Φ910	Φ840	Φ795	692	40	5	900	Φ600	24-Φ36
PLVX343X	800	1000	Φ1025	Φ950	Φ900	779	41	5	950	Φ650	24-Φ39
PLVX343X	900	1321	Φ1125	Φ1050	Φ1000	874	48	5	1100	Φ700	28-Φ39

弹性座封偏心旋塞阀

ELASTIC SEAT SEALED ECCENTRIC PLUG VALVE

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION



偏心旋塞国标德标主要尺寸 MAIN DIMENSIONS OF ANSI ECCENTRIC COCK

150LB 缩径、手轮、齿轮操作 150LB REDUCED BORE, HANDWHEEL, TURBINE OPERATED

型号 Model	尺寸 Size(NPS)	L	O	C	E	d	t	f	H	W	n-d
PLVX43X	2	178	Φ150	Φ120.5	Φ92	51	16.3	2	145	Φ300	4-Φ19
PLVX43X	3	203	Φ190	Φ152.5	Φ127	76	19.5	2	180	Φ350	4-Φ19
PLVX43X	4	229	Φ230	Φ190.5	Φ157	102	24.3	2	207	Φ450	8-Φ19
PLVX43X	6	267	Φ280	Φ241.5	Φ216	152	26	2	280	Φ800	8-Φ22
PLVX343X	8	292	Φ345	Φ298.5	Φ270	203	29	2	382	Φ300	8-Φ22
PLVX343X	10	330	Φ405	Φ362	Φ324	254	31	2	455	Φ400	12-Φ25
PLVX343X	12	356	Φ485	Φ432	Φ381	305	32.2	2	480	Φ400	12-Φ25
PLVX343X	14	432	Φ535	Φ476	Φ413	337	35	2	515	Φ400	12-Φ29
PLVX343X	16	450	Φ595	Φ540	Φ470	387	37	2	560	Φ500	16-Φ29
PLVX343X	18	546	Φ635	Φ577.9	Φ533	438	40.1	2	620	Φ500	16-Φ32
PLVX343X	20	597	Φ700	Φ635	Φ584	489	43.3	2	690	Φ500	20-Φ32
PLVX343X	24	813	Φ815	Φ749.3	Φ692	591	48.1	2	817	Φ600	20-Φ35
PLVX343X	28	900	Φ925	Φ863.6	Φ800	692	71.9	2	900	Φ600	28-Φ35
PLVX343X	30	1000	Φ985	Φ914.4	Φ857	779	75.1	2	950	Φ650	28-Φ35
PLVX343X	36	1321	Φ1170	Φ1085.8	Φ1022	874	90.9	2	1100	Φ700	32-Φ41

美标卡套软密封旋塞阀

API SLEEVE TYPE SOFT SEALING
PLUG VALVE

www.xodo.com

产品结构特点

美标卡套式软密封旋塞阀适用于公称压力CLASS150-900LBS, 工作温度-29°C~180°C的石油、化工、制药、化肥、电力行业等各种工况的管路上, 切断或接通管路介质。

其主要结构特点

1. 产品结构合理、密封可靠、性能优良、造型美观。
2. 它的密封性是通过卡套四周的密封面来实现的, 独特的360°金属唇边保证固定卡套。
3. 阀门没有空腔给介质积聚。
4. 金属唇边在旋转时提供自洁的作用, 适合于粘稠和易结垢的工况。
5. 双向流动, 安装使用更方便。
6. 零件材质及法兰尺寸可根据实际工况或用户要求合理选配, 满足各种工程需要。

PRODUCT STRUCTURAL FEATURES

Sleeve type soft sealing plug valve acc. to ANSI is applicable to the cutting and connection of pipelines medium that are used in various industries such as petroleum, chemical industry, pharmacy, chemical fertilizer, power industry etc under nominal pressure of CLASS150-900LBS, and working temperature of -29-180°C.

MAIN STRUCTURAL FEATURES

1. The product has reasonable structure, reliable sealing, excellent performance and beautiful appearance.
2. Its sealing is realized by the sealing face around the sleeve. It has unique 360 degree metal edge for protection and fixing of the Sleeve.
3. There is no cavity in the valve for accumulation of medium.
4. Metal edge provides the function of self-cleaning when the plug is rotated, applicable to the operation condition that is glutinous and apt to smudge.
5. Its characteristic double-direction flow makes installation and use more convenient.
6. The materials of the parts and sizes of flanges can be reasonably configured according to the actual operation condition of the requirements of the customers, so as to meet the various needs of engineering.

技术规范 TECHNICAL SPECIFICATION

结构形式 Structural style	BC
驱动方式 Driving mode	手柄、蜗轮蜗杆传动、气动、电动 Wrench wheel, worm & worm gear, pneumatic, electric-actuated
设计标准 Design standard	API 599, API 6D
结构长度 Structure length	ASME B16.10
连接法兰 Connecting flange	ASME B16.5
试验和检验 Test and inspection	API598, API6D

注: 阀门连接法兰尺寸可根据用户要求设计制造。
Note: the size of serial valve connecting flange can be designed according to customers' requirement.

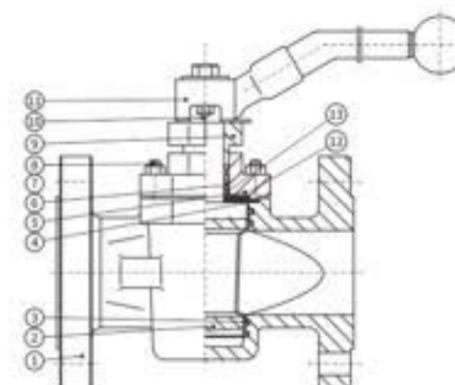
产品性能规范 PRODUCT PERFORMANCE SPECIFICATION

公称压力(LB) Nominal pressure	壳体试验压力(MPa) Shell test	密封试验压力(MPa) Sealing test	适用温度(°C) Suitable temp	适用介质 Suitable medium
150	3.0	2.2	≤120°C/200°C	水、蒸气、天然气、油品等 Water, steam, Gas & oil
300	7.7	5.62		
600	15.4	11.23		
900	23.0	16.85		
1500	38.5	28.10		

美标卡套软密封旋塞阀

API SLEEVE TYPE SOFT SEALING
PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY
CONTROL SOLUTION



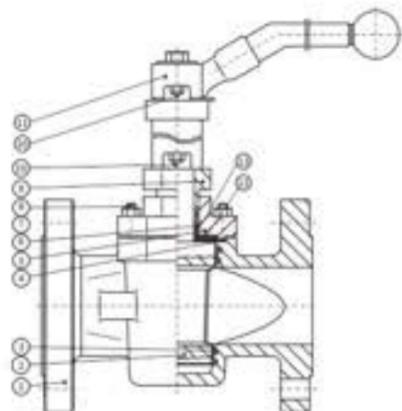
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质 Material
1	阀体 Body	ASTM A216-WCB, ASTM A217-WC1, WC6, WC9, C5 ASTM A351-CF8, CF8M, CF3, CF3M
2	旋塞 Plug	ASTM A216-WCB, ASTM A217-WC1, WC6, WC9, C5 ASTM A351-CF8, CF8M, CF3, CF3M
3	卡套 Sleeve(阀座 Seat)	PTFE, RPTFE, PPL, PEEK, Nylon
4	中道垫片 Gasket	柔性石墨+不锈钢 Flexible graphite+stainless steel, PTFE
5	阀盖 Bonnet	ASTM A216-WCB, ASTM A217-WC1, WC6, WC9, C5 ASTM A351-CF8, CF8M, CF3, CF3M
6	填料 Packing	聚四氟乙烯 PTFE
7	螺栓 Bolt	ASTM A193-B7, A320-B8, A193-B8M
8	螺母 Nut	ASTM A194-2H, A194-8, A194-8M
9	填料压盖 Gland	ASME A216-WCB, ASME A217-WC1, WC6, WC9, C5 ASME A351-CF8, CF8M, CF3, CF3M
10	调整螺栓 Adjusting gasket	ASTM A193-B7, A320-B8, A193-B8M
11	手柄 Wrench	ASTM A216 WCB
12	调整垫 Adjusting pad	SS304, SS316
13	填料垫 Packing pad	SS304, SS316

美标卡套软密封旋塞阀

API SLEEVE TYPE SOFT SEALING
PLUG VALVE

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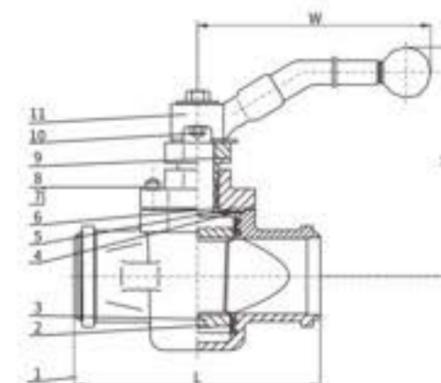
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质 Material
1	阀体 Body	ASTM A216-WCB,ASTM A217-WC1,WC6,WC9,C5 ASTM A351-CF8,CF8M,CF3,CF3M
2	旋塞 Plug	ASTM A216-WCB,ASTM A217-WC1,WC6,WC9,C5 ASTM A351-CF8,CF8M,CF3,CF3M
3	卡套 Sleeve(阀座Seat)	PTFE, RPTFE, PPL, PEEK, Nylon
4	中道垫片 Gasket	柔性石墨+不锈钢 Flexible graphite+stainless steel, PTFE
5	阀盖 Bonnet	ASTM A216-WCB,ASTM A217-WC1,WC6,WC9,C5 ASTM A351-CF8,CF8M,CF3,CF3M
6	填料 Packing	聚四氟乙烯PTFE
7	螺栓 Bolt	ASTM A193-B7,A320-B8,A193-B8M
8	螺母 Nut	ASTM A194-2H,A194-8,A194-8M
9	填料压盖 Gland	ASME A216-WCB ASME A217-WC1 WC6 WC9, C5 ASME A351 CF8,CF8M,CF3,CF3M
10	调整螺栓 Adjusting gasket	ASTM A193-B7,A320-B8,A193-B8M
11	手柄 Wrench	ASTM A216 WCB
12	调整垫 Adjusting pad	SS304, SS316
13	填料垫 Packing pad	SS304, SS316

美标卡套软密封旋塞阀

API SLEEVE TYPE SOFT SEALING
PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY
CONTROL SOLUTION



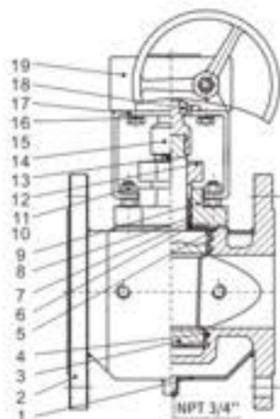
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质 Material
1	阀体 Body	ASTM A216-WCB,ASTM A217-WC1,WC6,WC9,C5 ASTM A351-CF8,CF8M,CF3,CF3M
2	旋塞 Plug	ASTM A216-WCB,ASTM A217-WC1,WC6,WC9,C5 ASTM A351-CF8,CF8M,CF3,CF3M
3	卡套 Sleeve (阀座Seat)	PTFE, RPTFE, PPL, PEEK, Nylon
4	中道垫片 Gasket	柔性石墨+不锈钢 Flexible graphite+stainless steel, PTFE
5	阀盖 Bonnet	ASTM A216-WCB,ASTM A217-WC1,WC6,WC9,C5 ASTM A351-CF8,CF8M,CF3,CF3M
6	填料 Packing	聚四氟乙烯PTFE
7	螺栓 Bolt	ASTM A193-B7,A320-B8,A193-B8M
8	螺母 Nut	ASTM A194-2H,A194-8,A194-8M
9	填料压盖 Gland	ASME A216-WCB ASME A217-WC1 WC6 WC9, C5 ASME A351 CF8,CF8M,CF3,CF3M
10	调整螺栓 Adjust bolt	ASTM A193-B7,A320-B8,A193-B8M
11	手柄 Wrench	ASTM A216 WCB

美标夹套保温软密封旋塞阀

API JACKET SLEEVE PLUG VALVE

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主要零部件材质 MAIN PARTS MATERIALS

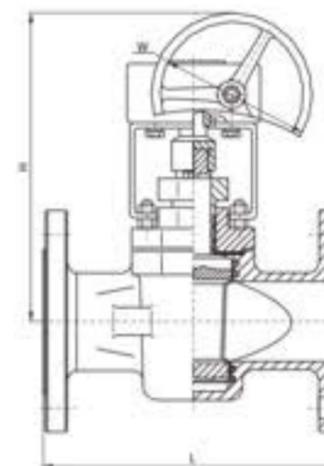
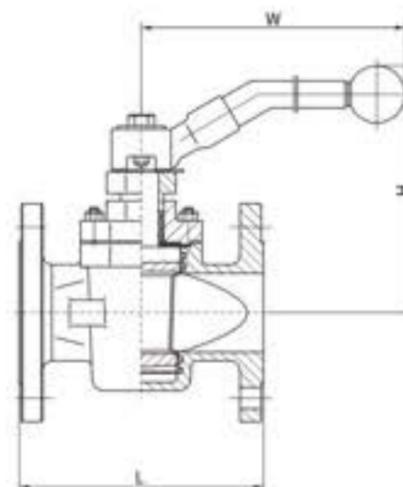
序号NO.	名称Part name	材质 Material
1	夹套 Jacket	ASTM A283 Gr D, SS304, SS316
2	阀体 Body	A216 WCB, A351 CF8, A351 CF8M, A351 CF3M, A351 CN7M, 904L
3	旋塞 Plug	A351 CF8, A351 CF8M, A351 CF3M, A351 CN7M, 904L
4	阀座 Seat	PTFE, RPTFE, PPL, NyLon, PEEK
5	垫片 Gasket	PTFE, RPTFE, PPL, SS304+Graphite
6	填料垫 Packing pad	SS304, SS316, SS316L
7	填料垫 Packing pad	SS304, SS316, SS316L
8	填料 Packing	Graphite, PTFE, RPTFE, PPL
9	阀盖 Bonnet	A216 WCB, A351 CF8, A351 CF8M, A351 CF3M, A351 CN7M, 904L
10	螺栓 Bolt	A193 B7M, A193 B8M, A193 B8, A193 B7
11	螺母 Nut	A194 2HM, A194 8M, A194 8, A194 2H
12	压板 Gland flange	A216 WCB, A351 CF8
13	螺栓 Bolt	A193 B7M, A193 B8M, A193 B8, A193 B7
14	连接套 Connecting sleeve	AISI 1045
15	螺栓 Bolt	A193 B7M, A193 B8M, A193 B8, A193 B7
16	垫片 Gasket	AISI 1566
17	支架 Yoke	ASTM A283 GR D, SS304
18	键 Key	AISI 1045
19	蜗轮 Worm	A536 60-40-18, WCB

美标软密封旋塞阀

API SOFT SEAL PLUG VALVE

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION



主要尺寸 MAIN DIMENSIONS

		X343F/X43F-150LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		108	117	127	140	165	178	190	203	229	254	267	292	330	356	381	
H		110	115	115	135	140	150	165	180	380	460	520	580	620	680	760	
W		195	205	205	315	315	330	400	590	690	300	320	320	350	380	450	
重量(Kg) Weight		8.5	9.5	10.5	12	14	18	22	26	40	60	70	130	219	381	570	
		X343F/X43F-300LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		140	152	165	178	190	216	241	283	305	381	403	419	457	502	762	
H		110	115	115	135	140	150	165	180	380	460	502	580	620	680	760	
W		195	205	205	315	315	330	400	590	690	300	320	320	350	380	450	
重量(Kg) Weight		8.5	9.5	10.5	12	14	18	22	26	40	60	70	130	219	381	570	
		X343F/X43F-600LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		165	190	216	229	241	292	330	356	432	508	559	660	787	838	889	
H		110	115	115	135	140	150	165	180	380	460	520	580	620	680	760	
W		195	205	205	315	315	330	400	590	690	300	320	320	350	380	450	
重量(Kg) Weight		11	13	17	20	23	27	31	36	72	98	141	245	330	515	710	
		X343F/X43F-900LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		216	229	254	279	305	368	419	381	457	559	610	737	838	965	1029	
H		110	115	115	135	140	150	165	180	380	460	520	580	620	680	760	
W		195	205	205	315	315	330	400	590	690	300	320	320	350	380	450	
重量(Kg) Weight		13	16	21	24	28	32	40	47	91	117	165	285	420	610	860	

注:四寸及以上为蜗杆轮操作
Note: The valve size above 3 inch with worm gear

德标卡套软密封旋塞阀

DIN SLEEVE TYPE SOFT SEALING
PLUG VALVE

www.xodo.com

产品结构特点

德标卡套软密封旋塞阀适用于公称压力PN1.6-16MPa, 工作温度-29-180°C的石油、制药、化肥、电力行业等各种工况的管路上, 切断或接通管路介质。

其主要结构特点

1. 产品结构合理、密封可靠、性能优良、造型美观。
2. 它的密封性是通过卡套四周的密封面来实现的。独特的360°金属唇边保证固定卡套。
3. 阀门没有空腔给介质积聚。
4. 金属唇边在旋转时提供自洁的作用, 适合于粘稠和易结垢的工况。
5. 双向流动, 安装使用更方便。
6. 零件材质及法兰尺寸可根据实际工况或用户要求合理选配, 满足各种工程需要。

PRODUCT STRUCTURAL FEATURES

Sleeve type soft sealing plug valve acc. to DIN is applicable to the cutting and connection of pipelines medium that are used in various industries such as petroleum, chemical industry, pharmacy, chemical fertilizer, power industry etc under nominal pressure of PN1.6-16MPa and working temperature of -29°C-180°C.

MAIN STRUCTURAL FEATURES

1. The product has reasonable structure, reliable sealing, excellent performance and beautiful appearance.
2. Its sealing is realized by the sealing face around the sleeve. It has unique 360 degree metal edge for protection and fixing of the Sleeve.
3. There is no cavity in the valve for accumulation of medium.
4. Metal edge provides the function of self-clearing when the plug is rotated, applicable to the operation condition that is glutinous and apt to smudge.
5. Its characteristic double-direction flow makes installation and use more convenient.
6. The materials of the parts and sizes of flanges can be reasonably configured according to the actual operation condition of the requirements of the customers, so as to meet the various needs of engineering.

技术规范 TECHNICAL SPECIFICATION

结构形式 Structural style	BC
驱动方式 Driving mode	手柄、蜗轮蜗杆传动、气动、电动 Wrench wheel, worm & worm gear, pneumatic, electric-actuated
设计标准 Design standard	API 599, API 6D
结构长度 Design criteria	EN 558 F1/F4/F5
连接法兰 Connecting flange	EN 1092
试验和检验 Test and inspection	DIN 3230

注: 阀门连接法兰尺寸可根据用户要求设计制造。
Note: the size of serial valve connecting flange can be designed according to customers' requirement.

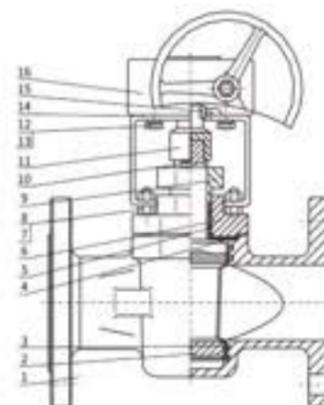
产品性能规范 PRODUCT PERFORMANCE SPECIFICATION

公称压力(MPa) Nominal pressure	壳体试验压力(MPa) Shell test	密封试验压力(MPa) Sealing test	适用温度(°C) Suitable temp	适用介质 Suitable medium
1.6	2.4	1.76	≤120°C/200°C	水、蒸气、油品等 Water, Gas & oil
2.5	3.75	2.75		
4.0	6.0	4.4		
6.4	9.6	7.04		
10.0	15.0	11.0		
16.0	24.0	17.6		

德标卡套软密封旋塞阀

DIN SLEEVE TYPE SOFT SEALING
PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY
CONTROL SOLUTION



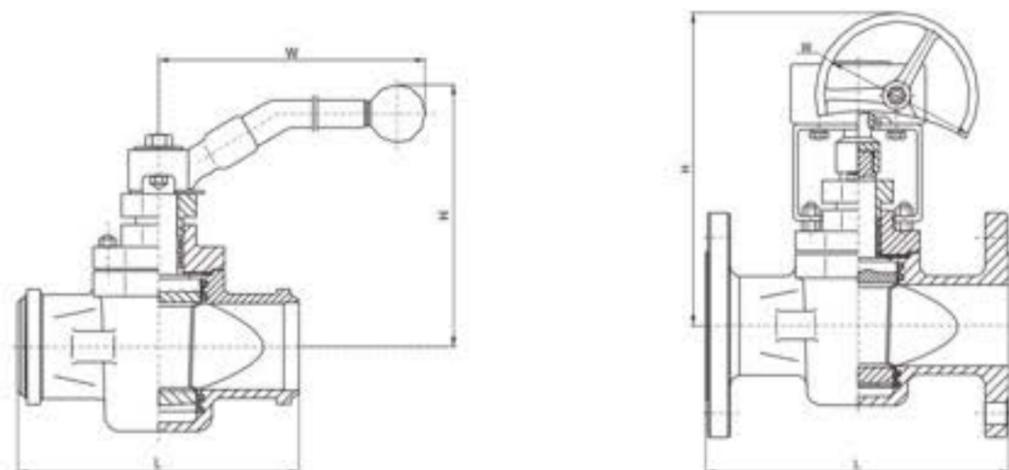
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质 Material
1	阀体 Body	GS-C25 1.7363, 1.4308, 1.4408, 1.4306, 1.4301
2	旋塞 Plug	GS-C25 1.7363, 1.4308, 1.4408, 1.4306, 1.4301
3	卡套 Sleeve(阀座 Seat)	PTFE, PRTFE, PPL, PEEK, Nylon
4	中道垫片 Gasket	柔性石墨+不锈钢 Flexible graphite+stainless steel, PTFE
5	填料 Packing	聚四氟乙烯 PTFE
6	阀盖 Bonnet	GS-C25 1.7363, 1.4308, 1.4408, 1.4306, 1.4301
7	螺栓 Bolt	ASTM A193-B7, A320-B8, A193-B8M
8	螺母 Nut	ASTM A194-2H, A194-8, A194-8M
9	压盖 Gland	GS-C25 1.7363, 1.4308, 1.4408, 1.4306, 1.4301
10	螺栓 Bolt	ASTM A193-B7, A320-B8, A193-B8M
11	连接套 Connect jacket	AISI 1045
12	螺栓 Bolt	ASTM A193-B7, A320-B8, A193-B8M
13	垫片 Gasket	AISI 1066
14	支架 Yoke	Q235, WCB
15	键 Key	AISI 1045
16	蜗轮 Worm	ASTM A536 60-40-18+other

德标卡套软密封旋塞阀

SLEEVE TYPE SOFT SEALING
PLUG VALVE ACC. TO DIN

www.xodo.com



主要尺寸 MAIN DIMENSIONS

X343F/X43F-16															
口径 Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350
L	130	150	160	180	200	230	290	310	350	400	480	600	730	850	980
H	150	155	160	180	190	200	220	230	380	460	520	580	620	680	740
W	195	205	205	315	315	330	400	590	690	300	320	320	350	380	380
重量 (Kg) Weight	9	10	11	13	14	19	23	27	43	62	75	155	222	390	580
X343F/X43F-25															
口径 Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350
L	130	150	160	180	200	230	290	310	350	400	480	600	730	850	980
H	150	155	160	180	190	200	220	230	380	460	520	580	620	680	740
W	195	205	205	315	315	330	400	590	690	300	320	320	350	380	380
重量 (Kg) Weight	10	11	13	15	17	22	31	55	77	88	190	190	235	399	680
X343F/X43F-40															
口径 Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350
L	130	150	160	180	200	230	290	310	350	400	480	600	730	850	980
H	150	155	160	180	190	200	220	230	380	460	520	580	620	680	740
W	195	205	205	315	315	330	400	590	690	300	320	320	350	380	380
重量 (Kg) Weight	12	14	18	21	24	29	33	39	75	103	146	251	337	521	720
X343F/X43F-64															
口径 Size	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350
L	130	150	160	180	200	230	290	310	350	400	480	600	730	850	980
H	150	155	160	180	190	200	220	230	380	460	520	580	620	680	740
W	195	205	205	315	315	330	400	590	690	300	320	320	350	380	380
重量 (Kg) Weight	14	17	22	25	29	33	43	50	94	123	170	291	430	625	675

注:四寸及以上为蜗杆轮操作 Note: The valve size above 3 inch with worm gear

三通、四通旋塞阀

3-WAY/4-WAY PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY
CONTROL SOLUTION

产品结构特点

三通、四通旋塞阀适用于压力CLASS150~900LBS, PN1.0~16.0工作温度-29~550°C的石油、化工、制药、化肥、电力行业等各种工况的管路上,多用于改变介质流动方向或进行介质分配。

其主要结构特点

1. 产品结构合理、密封可靠、性能优良、造型美观;
2. 可根据管路工况要求,设计成多种流通形式(如L型、T型等)、多种材质(如铸铁、铸钢、不锈钢)、多种密封形式(如硬密封、卡套密封、油密封等)的三通、四通旋塞阀。
3. 零件材质及法兰尺寸可根据实际工况或用户要求合理选配,满足各种工程需要。

PRODUCT STRUCTURAL FEATURES

3-way, 4-way plug valve is applicable to change the media flowing direction or to distribute the media, that are used in various industries such as, petroleum, chemical industry, pharmacy, chemical fertilizer, power, industry etc. under nominal pressure class 150-900LBS, PN1.0-16.0. Working temperature:-29°C-550°C

MAIN STRUCTURAL FEATURES

1. The product has reasonable structure, reliable sealing, excellent performance and beautiful appearance.
2. According to different conditions, the 3-way, 4-way plug valve can be designed into diverse media flowing forms (eg. "L" type or "T" type) or all kinds of material (eg. iron, cast steel, stainless steel) or unlike sealing forms (eg. Metal to metal, sleeve type, lubricated, etc).
3. The materials of the parts and sizes of flanges can be reasonably configured according the actual operation condition of the requirements of the customers, so as to meet the various needs of engineering.

技术规范 TECHNICAL SPECIFICATION

结构形式 Structural style	BB-BG
驱动方式 Driving mode	手柄、蜗轮蜗杆传动、气动、电动 Wrench wheel, worm & worm gear, pneumatic, electric-actuated
设计标准 Design standard	API 599, API 6D, GB/T22130
结构长度 Design criteria	ASME B16.10, GB12221, EN558
连接法兰 Connecting flange	ASME B16.5, HB20592, EN1092
试验和检验 Test and inspection	API598, API6D, GB/T13927, EN12266

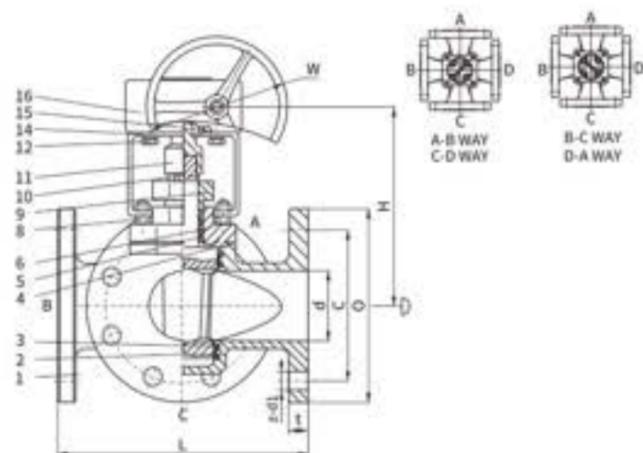
产品性能规范 PRODUCT PERFORMANCE SPECIFICATION

公称压力(LB) Nominal pressure	壳体试验压力(MPa) Shell test	密封试验压力(MPa) Sealing test	公称压力(MPa) Nominal pressure	壳体试验压力(MPa) Shell test	密封试验压力(MPa) Sealing test
150	3.0	2.2	1.6	2.4	1.76
300	7.7	5.62	2.5	3.75	2.75
600	15.4	11.23	4.0	6.0	4.4
900	23.0	16.85	6.4	9.6	7.04
			10.0	15.0	11.0
			16.0	24.0	17.6

四通旋塞阀

4-WAY PLUG VALVE

www.xodo.com



主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质 Material
1	阀体 Body	B148-C95800, A494 M35-1, A995 CD4MCUN A494 CW6MC, A890 4A, A995 5A
2	旋塞 Plug	B148-C95800, A494 M35-1, A995 CD4MCUN A494 CW6MC, A890 4A, A995 5A
3	阀座 Seat	PTFE
4	垫片 Gasket	PTFE
5	填料 Packing	PTFE
6	阀盖 Bonnet	B148-C95800, A494 M35-1, A995 CD4MCUN A494 CW6MC, A890 4A, A995 5A
7	螺栓 Bolt	A193-B8M
8	螺母 Nut	A194-8M
9	压盖 Gland	B148-C95800
10	螺栓 Bolt	A193-B8M
11	连接套 Connecting sleeve	AISI-1045
12	螺栓 Bolt	AISI-1035
13	垫片 Gasket	AISI-1066
14	支架 Yoke	CS
15	销 Pin	AISI-1045
16	蜗轮 Worm	A536 60-40-18+other

三通、四通旋塞阀

3-WAY/4-WAY PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION

多端口阀门

Tufline多口套筒旋塞阀为数千种应用带来经济性和更紧凑的系统设计。

双向流更灵活

在图表中，颜色表示流体流动的路径。双向流动允许更多的系统设计选项。

MULTI-PORT VALVES

Tufline Multiport Sleeved Plug Valves bring economy and more compact system design to thousands of applications.

BI-DIRECTIONAL FLOW FOR MORE FLEXIBILITY.

In the diagrams the color indicates the path of fluid flow. Bi-directional flow permits more system design options.

三通形式

只有A型阀塞才能切断流量。对于AX型，C型和D型插头，底部端口和一个侧端口之间总是有流动。

3-WAY ARRANGEMENTS

Only the Type A plug will shut off the flow. With the Type AX, C, and D plugs, there is always flow between the bottom port and one of the side ports.



三通和四通的阀门

为了优化系统灵活性，可提供4路和5路多端口阀门。有关可用尺寸和尺寸信息的详细信息，请访问www.xodo.com或与工厂联系。

4-WAY AND 5-WAY VALVES

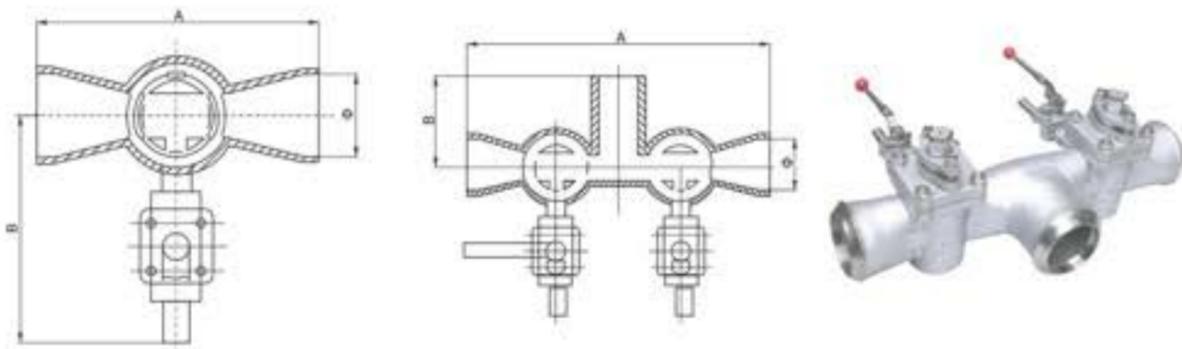
For optimum system flexibility 4-way and 5-way multiported valves are available. For details such as sizes available and dimensional information visit www.xodo.com or contact the factory.

	Type A	Type AX	Type C	Type C Pos. 1&2 Only	Type C Pos. 2&3 Only	Type D	Type D Pos. 1&2 Only	Type D Pos. 2&3 Only
0° Position								
90° Position								
180° Position								

单(双)冲洗旋塞阀

SINGLE (DOUBLE) FLUSH PLUG VALVE

www.xodo.com



主要尺寸 MAIN DIMENSIONS

公称口径 NPS Nominal diameter(in)	150LB 单行洗 (SINGLE FLUSH)			
	A	B	C	Φ
2	216	278		54.8
3	283	278		82.8
4	305	293		108.2
6	403	308		161.5
8	419	320		211.6
10	457	333		264.7
公称口径 NPS Nominal diameter(in)	150LB 双行洗 (DOUBLE FLUSH)			
	A	B	C	Φ
2	356	115	278	54.8
3	406	140	293	82.8
4	458	150	308	108.2
6	534	200	320	161.5
8	584	270	270	211.6
10	660	350	350	264.7
公称口径 NPS Nominal diameter(in)	300LB 单行洗 (SINGLE FLUSH)			
	A	B	C	Φ
2	216	278		54.8
3	283	278		82.8
4	305	293		108.2
6	403	308		161.5
8	419	320		211.6
10	457	333		264.7
公称口径 NPS Nominal diameter(in)	300LB 双行洗 (DOUBLE FLUSH)			
	A	B	C	Φ
2	432	115	278	54.8
3	566	140	293	82.8
4	610	150	308	108.2
6	806	200	320	161.5
8	838	270	270	211.6
10	914	350	350	264.7

美标压力平衡式倒装油密封旋塞阀

API INVERTED PRESSURE BALANCE LUBRICATED PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION

产品结构特点

美标压力平衡式倒装油密封旋塞阀适用于公称CLASS150~2500LBS, 工作温度-29~350°C的石油、化工、制药、化肥、电力行业等各种工况的管路上, 切断或接通管路介质。

PRODUCT STRUCTURAL FEATURES

Inverted pressure balance lubricated plug valve acc. to ANSI is applicable to the cutting and connection of pipelines medium that are used in various industries such as petroleum, chemical industry, pharmacy, chemical fertilizer, electric power industry etc. under nominal pressure of CLASS150-900LBS and working temperatures of -29-180°C.

其主要结构特点

1. 产品结构合理、密封可靠、性能优良、造型美观;
2. 倒装压力平衡的结构, 开关动作轻;
3. 阀体和密封面间设有油槽, 可随时通过油嘴向阀座注入密封油脂, 增加密封性能;
4. 零件材质及法兰尺寸问题可根据实际工况或用户要求合理选配, 满足各种工况需要。

MAIN STRUCTURAL FEATURES

1. It has logical structure, reliable seal, excellent performance and nice design.
2. It has the structure of flip-chip balanceable pressure and light on/off operation.
3. An oil groove is set between valve body and seal surface, which may infuse the seal grease to increase the seal capability.
4. The part materials and flange dimension may be selected according to current operating condition and users requirement, so that meet the requirements of various engineering.

技术规范 TECHNICAL SPECIFICATION

结构形式 Structural style	BC
驱动方式 Driving mode	手动 Manual 电动 Electric-actuated
设计标准 Design standard	API 599, API 6D
结构长度 Structure length	ASME B16.10
连接法兰 Connecting flange	ASME B16.5
试验和检验 Test and inspection	API598,API6D

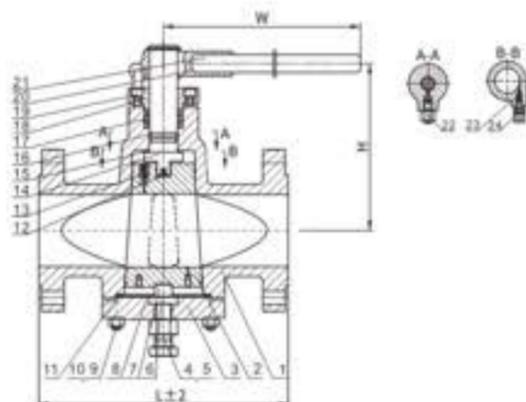
产品性能规范 PRODUCT PERFORMANCE SPECIFICATION

公称压力(LB) Nominal pressure	壳体试验压力(MPa) Shell test	密封试验压力(MPa) Sealing test	适用温度(°C) Suitable temp	适用介质 Suitable medium
150	3.0	2.2	≤80°C/300°C	水、蒸气、天然气、油品等 Water, steam, Gas & oil
300	7.7	5.62		
600	15.4	11.23		
900	23.0	16.85		
1500	38.3	28.10		
2500	63.8	46.80		

美标压力平衡式倒装油密封旋塞阀

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API INVERTED PRESSURE BALANCE
LUBRICATED PLUG VALVE



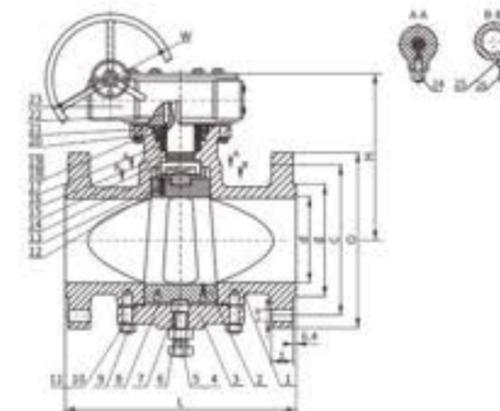
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质Material
1	阀体 Body	A216 WCB
2	旋塞 Cock	A217 CA15+N
3	阀盖 Cover	A216 WCB
4	螺栓 Bolt	A193 B7
5	螺母 Nut	A194 2H
6	调整块 Adjustment block	A276 410
7	调整块 Adjustment block	A276 410
8	金属隔膜 Metal diaphragm	SS304
9	螺栓 Bolt	A193 B7
10	螺母 Nut	A194 2H
11	缠绕垫片 Winding gasket	SS304+柔性石墨
12	弹簧 Spring	SS304
13	单向阀 Check valve	UCA
14	阀杆 Stem	A182 F6a
15	垫片 Gasket	PTFE
16	O型圈 O-ring	Viton
17	填料 Packing	石墨
18	压盖 Gland	A216 WCB
19	螺栓 Bolt	A193 B7
20	管子 The pipe	A570
21	手柄 Handle	A216 WCB
22	密封紧急装置 Sealing emergency device	UCA
23	单向阀 Check valve	UCA
24	注脂阀 Grease valve	UCA

美标压力平衡式倒装油密封旋塞阀

API INVERTED PRESSURE BALANCE
LUBRICATED PLUG VALV

提供流体安全控制解决方案
PROVIDE FLUID SAFETY
CONTROL SOLUTION



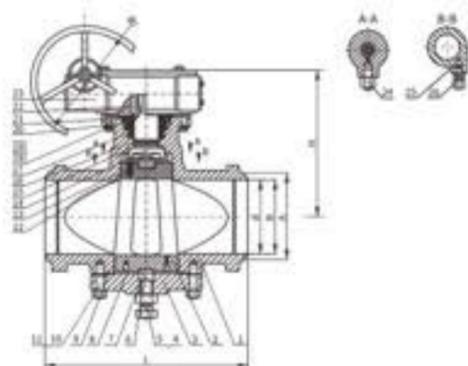
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质Material
1	阀体 Body	A352 LCC
2	旋塞 Cock	A352 LCC
3	阀盖 Cover	A352 LCC
4	螺母 Nut	A194-4
5	螺栓 Bolt	A320-L7
6	调整块 Adjustment block	A276-410
7	调整块 Adjustment block	A276-410
8	金属隔膜 Metal diaphragm	SS304
9	缠绕垫片 Spiral wound gasket	SS304+柔性石墨Graphite
10	螺母 Nut	A194-4
11	螺栓 Bolt	A320-L7
12	单向阀 Check valve	组零件 UCA
13	连接器 Connector	A276-410
14	阀杆 Stem	A322 4140+ENP, A322 4140+ENP
15	垫片 Gasket	PTFE
16	O型圈 O-ring	Viton
17	填料 Packing	柔性石墨 Graphite
18	螺栓 Bolt	AISI 1035
19	弹性垫片 Elastic gasket	AISI 1066
20	压盖 Gland	A352 LCC
21	螺栓 Bolt	A320-L7
22	键 Key	AISI 1045
23	涡轮驱动装置 Turbine drive	组零件 UCA
24	紧急密封装置 Emergency sealing device	组零件 UCA
25	单向阀 Check valve	组零件 UCA
26	注脂阀 Grease valve	组零件 UCA

美标压力平衡式倒装油密封旋塞阀

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API INVERTED PRESSURE BALANCE
LUBRICATED PLUG VALVE



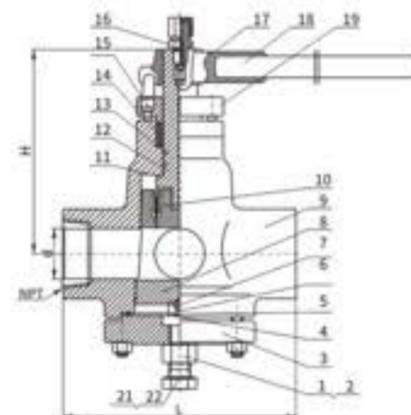
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质Material
1	阀体 Body	A216-WCB
2	旋塞 Cock	A216-WCB
3	阀盖 Cover	A216-WCB
4	螺母 Nut	A194-2H
5	螺栓 Bolt	A193-B7
6	调整块 Adjustment block	A276-410
7	调整块 Adjustment block	A276-410
8	金属隔膜 Metal diaphragm	SS304
9	缠绕垫片 Spiral wound gasket	SS304+柔性石墨 Graphite
10	螺母 Nut	A194-2H
11	螺栓 Bolt	A193-B7
12	单向阀 Check valve	组装件 UCA
13	连接器 Connector	A276-410
14	阀杆 Stem	A182-F6a
15	垫片 Gasket	PTFE
16	O型圈 O-ring	Viton
17	填料 Packing	柔性石墨 Graphite
18	螺栓 Bolt	AISI 1035
19	弹性垫片 Elastic gasket	AISI 1066
20	压盖 Gland	A216-WCB
21	螺栓 Bolt	A193-B7
22	键 Key	AISI 1045
23	涡轮驱动装置 Turbine drive	组装件 UCA
24	紧急密封装置 Emergency sealing device	组装件 UCA
25	单向阀 Check valve	组装件 UCA
26	注脂阀 Grease valve	组装件 UCA

美标压力平衡式倒装油密封旋塞阀

API INVERTED PRESSURE BALANCE
LUBRICATED PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY
CONTROL SOLUTION



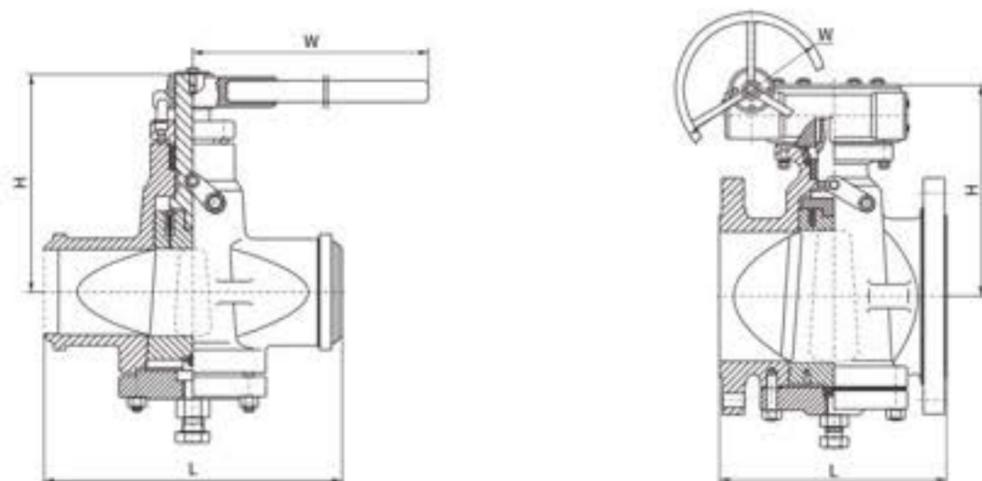
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质Material
1	螺栓 Bolt	A193-B7
2	螺母 Nut	A194-2H
3	阀盖 Cover	A105
4	金属隔膜 Metal diaphragm	SS304
5	缠绕垫片 Winding gasket	SS304+Graphite 柔性石墨
6	调整块 Adjustment block	A276-410
7	球 Ball	SS304
8	旋塞 Cock	A105
9	阀体 Body	A105
10	单向阀 Check valve	组装件 UCA
11	垫片 Gasket	PTFE
12	阀杆 Stem	A182-F6a
13	O型圈 O-ring	Viton
14	填料 Packing	Graphite 柔性石墨
15	螺栓 Bolt	A193-B7
16	注脂阀 Grease valve	组装件 UCA
17	管子 Pipe	A570
18	手柄 Handle	A216-WCB
19	压盖 Gland	A216-WCB
20	螺栓 Bolt	A193-B7
21	螺母 Nut	A194-2H

美标压力平衡式倒装油密封旋塞阀

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API INVERTED PRESSURE BALANCE
LUBRICATED PLUG VALVE



主要尺寸 MAIN DIMENSIONS

		X47W/X347W-150LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		108	117	127	140	165	178	190	203	229	254	267	292	330	356	381	
H		180	180	185	200	214	215	250	270	300	340	365	400	450	510	590	
W		400	400	500	500	600	600	820	820	300	300	320	320	350	380	380	
重量 (Kg) Weight		10	12	14	17	19	21	29	33	48	75	98	125	171	230	370	

		X47W/X347W-300LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		140	152	165	178	190	216	241	283	305	381	403	419	457	502	762	
H		180	180	185	200	210	215	250	270	300	340	365	400	450	510	590	
W		400	400	500	600	600	820	1000	1000	300	300	320	320	350	380	380	
重量 (Kg) Weight		12	14	16	19	21	24	31	36	61	86	130	190	255	380	560	

		X47W/X347W-600LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		165	190	216	229	241	292	330	356	432	508	559	660	787	838	889	
H		180	180	185	200	210	215	250	270	300	340	365	400	450	510	590	
W		400	400	500	500	600	600	820	820	300	300	320	320	350	380	380	
重量 (Kg) Weight		14	16	18	20	24	29	35	47	91	129	210	320	660	920	1250	

		X47W/X347W-900LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		216	229	254	279	305	368	419	381	457	559	610	737	838	965	1029	
H		180	180	185	200	210	215	250	270	300	340	365	400	450	510	590	
W		400	400	500	600	600	820	1000	1000	300	300	320	320	350	380	380	
重量 (Kg) Weight		17	29	21	24	30	37	44	65	110	160	255	380	810	1050	1460	

法兰连接美标提升式硬密封旋塞阀

API FLANGE-CONNECTION LIFTING
PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY
CONTROL SOLUTION

产品结构特点

法兰连接美标提升式硬密封旋塞阀适用于公称压力CLASS150~1500 LBS, 工作温度-29~550°C的石油、化工、制药、化肥、电力行业等各种工况的管路上, 切断或接通管路介质。

其主要结构特点

1. 产品结构合理、密封可靠、性能优良、造型美观。
2. 阀门的启闭过程是在密封面脱离的状态下进行的, 不会造成密封面的磨损。
3. 双向流动, 安装使用更方便。
4. 零件材质及法兰尺寸可根据实际工况或用户要求合理选配, 满足各种工程需要。

PRODUCT STRUCTURAL FEATURES

Flange-connection lifting plug valve acc. to ANSI is applicable to the cutting and connection of pipelines medium that are used in various industries such as petroleum, chemical industry, pharmacy, chemical fertilizer, power industry etc under nominal pressure of CLASS150-1500LBS, and working temperature of -29-550°C.

MAIN STRUCTURAL FEATURES

1. The product has reasonable structure, reliable sealing, excellent performance and beautiful appearance.
2. Opening and closing of the valve is carried out while the sealed surface is taken off, so it will not cause abrasion on the sealed surface.
3. Its characteristic double-direction flow makes installation and use more conveniently.
4. The materials of the parts and sizes of flanges can be reasonably configured according to the actual operation condition of the requirements of the customers, so as to meet the various needs of engineering.

技术规范 TECHNICAL SPECIFICATION

结构形式 Structural style	BC
驱动方式 Driving mode	BB-BG-QS & Y 手柄、伞齿轮、手柄 Hand wheel, bevel gear, wrench
设计标准 Design standard	API 599, API 6D
结构长度 Structure length	ASME B16.10
连接法兰 Connecting flange	ASME B16.5
试验和检验 Test and inspection	API598, API6D

注: 阀门连接法兰尺寸可根据用户要求设计制造。
Note: the size of serial valve connecting flange can be designed according to customers' requirement.

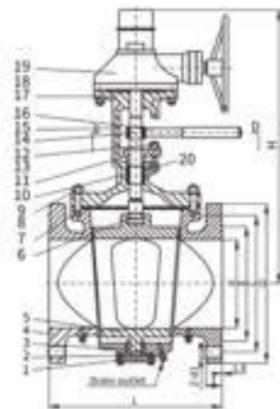
产品性能规范 PRODUCT PERFORMANCE SPECIFICATION

公称压力(LB) Nominal pressure	壳体试验压力(MPa) Shell test	密封试验压力(MPa) Sealing test	适用温度(°C) Suitable temp	适用介质 Suitable medium
150	3.0	2.2	-29-550°C	水、蒸气、油品等 Water, Gas & oil
300	7.7	5.62		
600	15.4	11.23		
900	23.0	16.85		
1500	38.3	28.10		
2500	63.80	46.80		

法兰连接美标提升式硬密封旋塞阀

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API FLANGE-CONNECTION LIFTING
PLUG VALVE



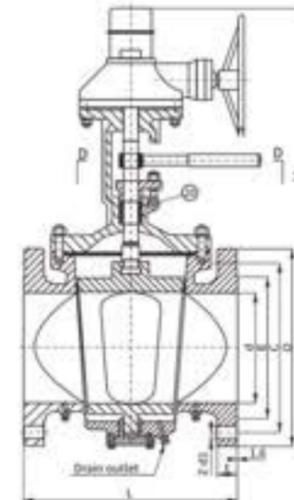
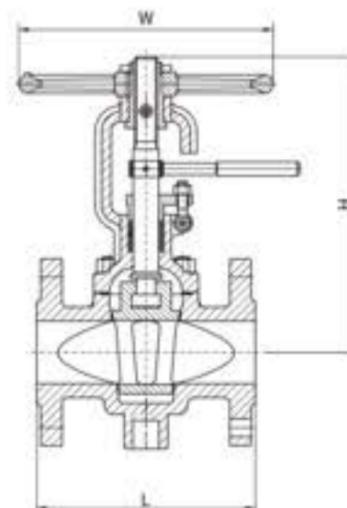
主要零部件材质 MAIN PARTS MATERIALS

序号NO.	名称 Part name	材质Material
1	螺栓 Bolt	A193 B16
2	垫片 Gasket	SS304+石墨 Graphite
3	底盖 Bottom cover	A217 C5
4	阀体 Body	ASTM A216-WCB, ASTM A217-WC1, WC6, WC9, C5 ASTM A351-CF8, CF8M, CF3, CF3M
5	旋塞 Cock	ASTM A216-WCB, ASTM A217-WC1, WC6, WC9, C5 ASTM A351-CF8, CF8M, CF3, CF3M
6	阀杆 Stem	A276 410
7	垫片 Gasket	柔性石墨+不锈钢 Flexible graphite+stainless steel, PTFE
8	螺栓 Bolt	ASTM A193-B7,A320-B8,A193-B8M
9	螺母 Nut	ASTM A194-2H,A194-8,A194-8M
10	填料 Packing	柔性石墨 Flexible graphite, PTFE
11	压盖 Gland	ASTM A216-WCB,ASTM A217-WC1,WC6,WC9,C5 ASTM A351-CF8,CF8M,CF3,CF3M
12	螺栓 Bolt	ASTM A193-B7,A320-B8,A193-B8M
13	螺母 Nut	ASTM A194-2H,A194-8,A194-8M
14	销 Pin	SS304
15	阀盖 Valve cover	ASTM A216-WCB,ASTM A217-WC1,WC6,WC9,C5 ASTM A351-CF8,CF8M,CF3,CF3M
16	手柄 Handle	ASTM A216-WCB ASTM A351-CF8,CF8M,CF3,CF3M
17	螺栓 Bolt	ASTM A193-B7,A320-B8,A193-B8M
18	螺母 Nut	ASTM A194-2H,A194-8,A194-8M
19	齿轮 Gear	UCA
20	销 Pin	SS304

法兰连接美标提升式硬密封旋塞阀

API FLANGE-CONNECTION LIFTING
PLUG VALVE

提供流体安全控制解决方案
PROVIDE FLUID SAFETY
CONTROL SOLUTION



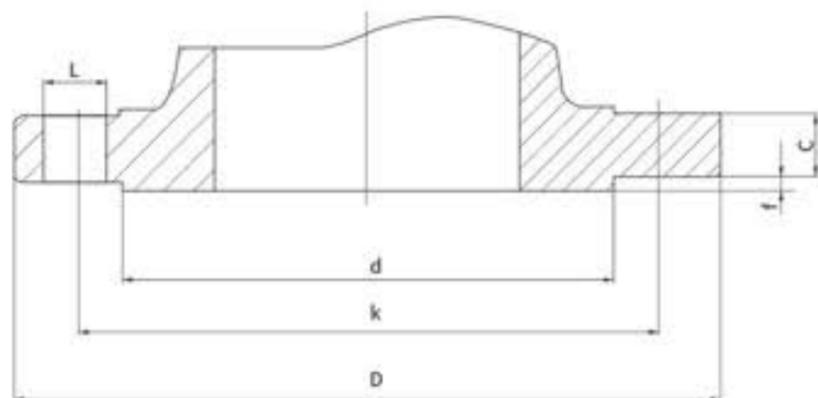
主要尺寸 MAIN DIMENSIONS

		TSX543W/TSX43W-150LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		108	117	127	140	165	178	190	203	229	254	267	292	330	356	381	
H		190	195	225	260	280	310	250	395	300	470	535	590	630	680	720	
W		180	180	180	220	220	220	250	250	300	350	350	400	500	500	600	
重量 (Kg) Weight		9	10	11	17	19	23	29	32	48	82	98	130	178	250	380	
		TSX543W/TSX43W-300LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		140	152	165	178	190	216	241	283	305	381	403	419	457	502	762	
H		190	195	225	260	280	310	340	395	435	470	535	590	630	680	720	
W		180	180	180	220	220	220	250	250	300	350	350	400	500	500	600	
重量 (Kg) Weight		10	12	14	19	21	28	34	39	75	95	135	200	255	415	650	
		TSX543W/TSX43W-600LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		165	190	216	229	241	292	330	356	432	508	559	660	787	838	889	
H		190	195	225	260	280	310	340	395	435	470	535	590	630	680	720	
W		180	180	180	220	220	220	250	250	300	350	350	400	500	500	600	
重量 (Kg) Weight		13	14	19	23	25	32	40	55	105	139	300	440	730	1150	1570	
		TSX543W/TSX43W-900LB															
口径 Size	mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	
L		216	229	254	279	305	368	419	381	457	559	610	737	838	965	1029	
H		190	195	225	260	280	310	340	395	435	470	535	590	630	680	720	
W		180	180	180	220	220	220	250	250	300	350	350	400	500	500	600	
重量 (Kg) Weight		16	17	26	30	33	39	50	70	137	181	397	590	860	1470	1880	

整体钢制管法兰GB/T 9124.1-2019

INTEGRAL STEEL PIPE FLANGE GB/T 9124.1-2019

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PN1.6-2.5MPa RF

主要尺寸 MAIN DIMENSIONS

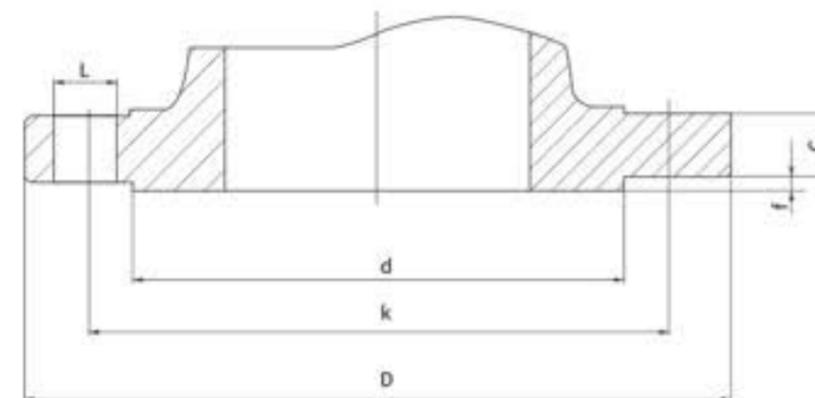
DN	D	k	L	螺栓n-Th	d	f	C
15	95	65	14	4-M12	45	2	14
20	105	75	14	4-M12	55	2	14
25	115	85	14	4-M12	65	2	14
32	140	100	18	4-M16	78	2	16
40	150	110	18	4-M16	85	3	16
50	165	125	18	4-M16	100	3	16
65	185	145	18	4-M16	120	3	18
80	200	160	18	8-M16	135	3	20
100	220	180	18	8-M16	155	3	20
125	250	210	18	8-M16	185	3	22
150	285	240	23	8-M20	210	3	24
200	340	295	23	12-M20	265	3	26
250	405	355	26	12-M24	320	3	30
300	460	410	26	12-M24	375	4	30
350	520	470	26	16-M24	435	4	34
400	580	525	30	16-M27	485	4	36
450	640	585	30	20-M27	545	4	40
500	715	650	34	20-M30	608	4	44
600	840	770	36	20-M33	718	5	48
700	910	840	36	24-M33	788	5	50
800	1025	950	41	24-M36	898	5	52

PN 1.6MPa RF

整体钢制管法兰GB/T 9124.1-2019

INTEGRAL STEEL PIPE FLANGE GB/T 9124.1-2019

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION



PN1.6-2.5MPa RF

主要尺寸 MAIN DIMENSIONS

DN	D	k	L	螺栓n-Th	d	f	C
15	95	65	14	4-M12	45	2	16
20	105	75	14	4-M12	55	2	16
25	115	85	14	4-M12	65	2	16
32	140	100	18	4-M16	78	2	18
40	150	110	18	4-M16	85	3	18
50	165	125	18	4-M16	100	3	20
65	185	145	18	8-M16	120	3	22
80	200	160	18	8-M16	135	3	22
100	230	190	23	8-M20	160	3	24
125	270	220	26	8-M24	188	3	28
150	300	250	26	8-M24	218	3	30
200	360	310	26	12-M24	278	3	34
250	425	370	30	12-M27	332	3	36
300	485	430	30	16-M27	390	4	40
350	555	490	34	16-M30	448	4	44
400	620	550	36	16-M33	505	4	48
450	670	600	36	20-M33	555	4	50
500	730	660	36	20-M33	610	4	52
600	845	770	41	20-M36	718	5	56
700	960	875	42	24-M39	815	5	60
800	1085	990	48	24-M45	930	5	64

PN 2.5MPa RF

整体钢制管法兰GB/T 9124.1

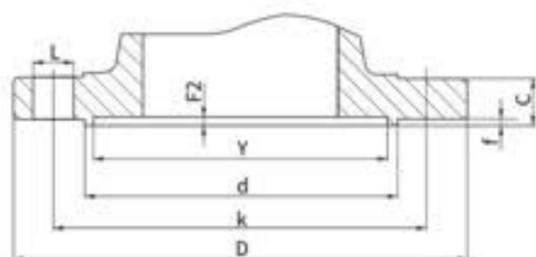
INTEGRAL STEEL PIPE FLANGE GB/T 9124.1

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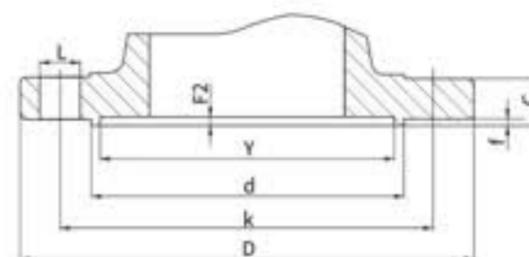
整体钢制管法兰GB/T 9124.1

INTEGRAL STEEL PIPE FLANGE GB/T 9124.1

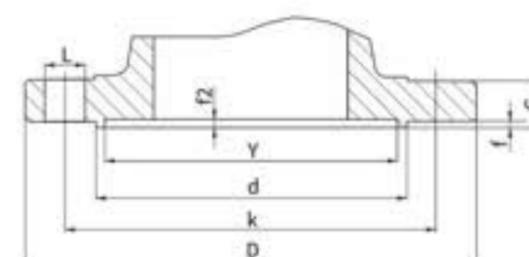
提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION



PN4.0-6.4MPa FM



PN10MPa FM



PN16.0 MPa

主要尺寸 MAIN DIMENSIONS

	DN	D	k	L	螺栓n-Th	d	Y	f	f2	C
PN 4.0MPa FM	15	95	65	14	4-M12	45	40	2	4	16
	20	105	75	14	4-M12	55	51	2	4	16
	25	115	85	14	4-M12	65	58	2	4	16
	32	140	100	18	4-M16	78	66	2	4	18
	40	150	110	18	4-M16	85	76	3	4	18
	50	165	125	18	4-M16	100	88	3	4	20
	65	185	145	18	8-M16	120	110	3	4	22
	80	200	160	18	8-M16	135	121	3	4	22
	100	235	190	23	8-M20	160	150	3	4.5	24
	125	270	220	26	8-M24	188	176	3	4.5	28
	150	300	250	26	8-M24	218	204	3	4.5	30
	200	375	320	30	12-M27	282	260	3	4.5	38
	250	450	385	34	12-M30	345	313	3	4.5	42
	300	515	450	34	16-M30	408	364	4	4.5	46
	350	580	510	36	16-M33	465	422	4	5	52
	400	660	585	41	16-M36	535	474	4	5	58
	450	685	610	41	20-M36	560	524	4	5	60
500	755	670	43	20-M39	612	576	4	5	62	
600	890	795	48	20-M45	730	678	5	6	62	
700	995	900	48	24-M45	835	768	5	6	68	
PN 6.4MPa FM	15	105	75	14	4-M12	55	40	2	4	18
	20	130	90	18	4-M16	68	51	2	4	20
	25	140	100	18	4-M16	78	58	2	4	22
	32	155	110	23	4-M20	82	66	2	4	24
	40	170	125	23	4-M20	95	76	3	4	24
	50	180	135	23	4-M20	105	88	3	4	26
	65	205	160	23	8-M20	130	110	3	4	28
	80	215	170	23	8-M20	140	121	3	4	30
	100	250	200	26	8-M24	168	150	3	4.5	32
	125	295	240	30	8-M27	202	176	3	4.5	36
	150	345	280	34	8-M30	240	204	3	4.5	38
	200	405	345	36	12-M33	300	260	3	4.5	44
	250	470	400	36	12-M33	352	313	3	4.5	48
	300	530	460	36	16-M33	412	364	4	4.5	54
	350	600	525	41	16-M36	475	422	4	5	60
	400	670	585	42	16-M39	525	474	4	5	66
	500	800	705	48	20-M45	640	576	4	5	70
600	930	820	58	20-M52	750	678	5	6	76	

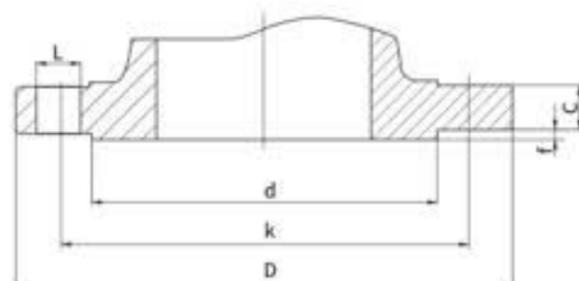
主要尺寸 MAIN DIMENSIONS

	DN	D	k	L	螺栓n-Th	d	Y	f	f2	C
PN 10.0MPa FM	50	195	145	26	4-M12	112	88	3	4	28
	65	220	170	26	8-M24	138	110	3	4	32
	80	230	180	26	8-M24	148	121	3	4	34
	100	265	210	30	8-M27	172	150	3	4.5	38
	125	315	250	34	8-M30	210	176	3	4.5	42
	150	355	290	34	12-M30	250	204	3	4.5	46
	200	430	360	36	12-M33	312	260	3	4.5	54
	250	505	430	41	12-M36	382	313	3	4.5	60
	300	585	500	42	16-M39	442	364	4	4.5	70
	350	655	560	48	16-M45	498	422	4	5	76
400	715	620	48	16-M45	558	474	4	5	80	
PN 16.0MPa FM	25	140	100	23	4-M20	72	58	2	4	28
	32	165	115	25	4-M22	85	66	2	4	30
	40	175	125	27	4-M24	92	76	3	4	32
	50	215	165	25	8-M22	132	88	3	4	36
	65	245	190	30	8-M27	152	110	3	4	44
	80	260	205	30	8-M27	168	121	3	4	46
	100	300	240	34	8-M30	200	150	3	4.5	48
	150	390	318	41	12-M36	270	204	3	4.5	66
	200	480	400	48	12-M42	345	260	3	4.5	78
	250	580	485	54	12-M48	425	313	3	4.5	88
300	665	570	54	16-M48	510	364	4	4.5	100	

整体钢制管法兰JIS B2212-B2220-2004

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INTEGRAL STEEL PIPE FLANGE JIS
B2212-B2220-2004



JIS10K-20KRF

主要尺寸 MAIN DIMENSIONS

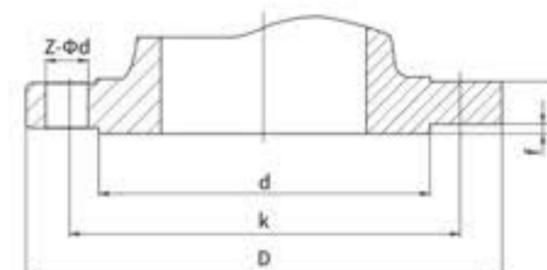
	DN	D	k	L	螺栓n-Th	d	f	C
JIS 10K RF	100	210	175	19	8-M16	155	2	18
	125	250	210	23	8-M20	185	2	20
	150	280	240	23	8-M20	215	2	22
	200	330	290	23	12-M20	265	2	22
	250	400	355	25	12-M22	325	2	24
	300	445	400	25	16-M22	370	3	24
	350	490	445	25	16-M22	415	3	26
	400	560	510	27	16-M24	475	3	28
	450	620	565	27	20-M24	530	3	30
	500	675	620	27	20-M24	585	3	30
JIS 20K RF	100	225	182	23	8-M20	160	2	24
	125	270	225	25	8-M22	195	2	26
	150	305	260	25	12-M22	230	2	28
	200	350	305	25	12-M22	275	2	30
	250	430	380	27	12-M24	345	2	34
	300	480	430	27	16-M24	395	3	35
	350	540	480	33	16-M30×3	440	3	40
	400	605	540	33	16-M30×3	495	3	46
	450	675	605	33	20-M30×3	560	3	48
	500	730	660	33	20-M30×3	615	3	50

整体钢制管法兰ASME B16.5-2017 B16.47-A2020

INTEGRAL STEEL PIPE FLANGE
ASME B16.5-2017 B16.47-A2020

提供流体安全控制解决方案

PROVIDE FLUID SAFETY
CONTROL SOLUTION



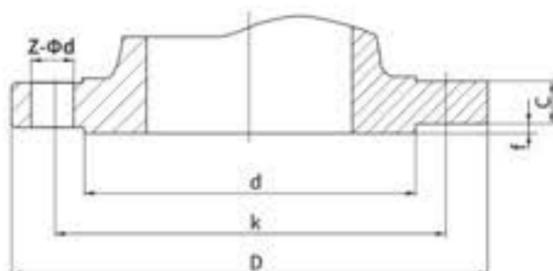
主要尺寸 MAIN DIMENSIONS

	DN	NPS	D	k	Z-Φd	d	f	C
CLASS 150 RF	25	1	108	79.5	4-Φ16	51	2	12
	40	1 1/2	127	98.5	4-Φ16	73	2	15
	50	2	152	120.5	4-Φ19	92	2	16
	65	2 1/2	178	139.5	4-Φ19	105	2	18
	80	3	190	152.5	4-Φ19	127	2	19
	100	4	229	190.5	8-Φ19	157	2	24
	125	5	254	216	8-Φ22.5	186	2	24
	150	6	279	241.5	8-Φ22.5	216	2	26
	200	8	343	298.5	8-Φ22.5	270	2	29
	250	10	406	362	12-Φ25.5	324	2	31
	300	12	483	432	12-Φ25.5	381	2	32
	350	14	533	476	12-Φ28.5	413	2	35
	400	16	597	540	16-Φ28.5	470	2	37
	450	18	635	578	16-Φ32	533	2	40
	500	20	699	635	20-Φ32	584	2	43
	600	24	813	749.5	20-Φ35	692	2	48
	700	28	927	863.5	-	800	2	72
800	32	1060	978	-	914	2	81	
CLASS 300 RF	25	1	124	89	4-Φ19	51	2	18
	40	1 1/2	156	114.5	4-Φ22.5	73	2	21
	50	2	165	127	8-Φ19	92	2	23
	65	2 1/2	190	149	8-Φ22.5	105	2	26
	80	3	210	168.5	8-Φ22.5	127	2	29
	100	4	254	200	8-Φ22.5	157	2	32
	125	5	279	235	8-Φ22.5	186	2	35
	150	6	318	270	12-Φ22.5	216	2	37
	200	8	381	330	12-Φ25.5	270	2	42
	250	10	445	387.5	16-Φ28.5	324	2	48
	300	12	521	451	16-Φ32	381	2	51
	350	14	584	514.5	20-Φ32	413	2	54
	400	16	648	571.5	20-Φ35	470	2	58
	450	18	711	628.5	24-Φ35	533	2	61
	500	20	775	686	24-Φ35	584	2	64
	600	24	914	813	24-Φ41	692	2	70
	700	28	1035	940	-	800	2	86
800	32	1149	1054	-	914	2	99	
CLASS 400 RF	25	1	124	89	4-Φ19	51	7	18
	40	1 1/2	156	114.5	4-Φ22.5	73	7	23
	50	2	165	127	8-Φ19	92	7	26
	65	2 1/2	190	149	8-Φ22.5	105	7	29
	80	3	210	168	8-Φ22.5	127	7	32
	100	4	254	200	8-Φ25.5	157	7	35
	125	5	279	235	8-Φ25.5	186	7	38.5
	150	6	318	270	12-Φ25.5	216	7	41.5
	200	8	381	330	12-Φ28.5	270	7	48
	250	10	445	387.5	16-Φ32	324	7	54
	300	12	521	451	16-Φ35	381	7	57.5
	350	14	584	514.5	20-Φ35	413	7	60.5
	400	16	648	571.5	20-Φ38	470	7	63.5
	450	18	711	628.5	24-Φ38	533	7	67
	500	20	775	686	24-Φ41	584	7	70
	600	24	914	813	24-Φ48	692	7	76.5
	700	28	1035	940	-	800	7	95
800	32	1149	1054	-	914	7	108	

整体钢制管法兰ASME B16.5-2017 B16.47-A2020

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INTEGRAL STEEL PIPE FLANGE
ASME/ANSI B16.5A-1992 B 16.47-1996



主要尺寸 MAIN DIMENSIONS

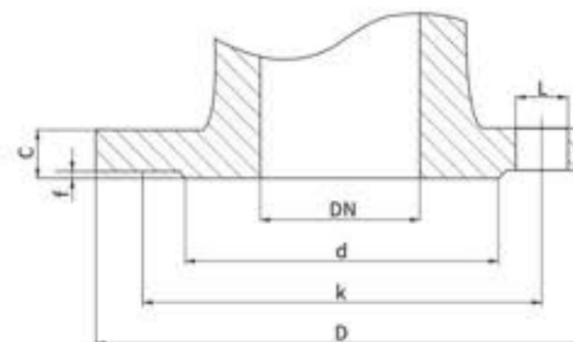
	DN	NPS	D	k	Z-φd	d	f	C
CLASS 600 RF	25	1	124	89	4-φ19	51	7	18
	40	1 1/2	156	114.5	4-φ22.5	73	7	23
	50	2	165	127	8-φ19	92	7	26
	65	2 1/2	190	149	8-φ22.5	105	7	29
	80	3	210	168	8-φ22.5	127	7	32
	100	4	273	216	8-φ25.5	157	7	38
	125	5	330	266.5	8-φ28.5	186	7	45
	150	6	356	292	12-φ28.5	216	7	48
	200	8	419	349	12-φ32	270	7	56
	250	10	508	432	16-φ35	324	7	64
	300	12	559	489	20-φ35	381	7	67
	350	14	603	527	14-φ38	413	7	70
	400	16	686	603	20-φ41	470	7	77
	450	18	743	654	20-φ44.5	533	7	83
	500	20	813	724	24-φ44.5	584	7	89
	600	24	940	838	24-φ51	692	7	102
700	28	1073	965.2	-	800	7	111	
800	32	1194	1079.5	-	914	7	117	
CLASS 900 RF	25	1	149	101.6	4-φ25.5	51	7	29
	32	1 1/2	159	111.1	4-φ28.5	64	7	29
	40	2	178	123.8	8-φ25.5	73	7	32
	50	2 1/2	216	165.1	8-φ28.5	92	7	38.5
	65	3	244	190.5	8-φ25.5	105	7	41.5
	80	4	241	190.5	8-φ32	127	7	38.5
	100	5	292	234.9	8-φ35	157	7	44.5
	150	6	381	317.5	12-φ32	216	7	56
	200	8	470	393.7	12-φ38	270	7	63.5
	250	10	545	469.9	16-φ38	324	7	70
	300	12	610	533.4	20-φ38	381	7	79.5
	350	14	640	558.8	20-φ41	413	7	86
	400	16	705	615.9	20-φ44.5	470	7	89
	450	18	787.4	685.8	20-φ51	533	7	102
	500	20	857	749.3	20-φ54	584	7	108
	600	24	1041.4	901.7	20-φ66.5	692	7	140
CLASS 1500 RF	25	1	149	101.6	4-φ25.5	51	7	29
	32	1 1/2	159	111.1	4-φ28.5	64	7	29
	40	2	178	123.8	8-φ25.5	73	7	32
	50	2 1/2	216	165.1	8-φ28.5	92	7	38.5
	65	3	244	190.5	8-φ32	105	7	41.5
	80	4	267	203.2	8-φ35	127	7	48
	100	5	311	241.3	8-φ41	157	7	54
	150	6	394	317.5	12-φ38	216	7	83
	200	8	483	393.7	12-φ45	270	7	93
	250	10	585	482.6	12-φ51	324	7	108
	300	12	673	571.5	16-φ54	381	7	124
	350	14	750	635	16-φ61	413	7	133.5
	400	16	825	704.8	16-φ67	470	7	146.5
	450	18	915	774.7	16-φ73	533	7	162
	500	20	985	831.8	16-φ80	584	7	178
	600	24	1084	990.6	16-φ92	692	7	203.5

德国铸钢法兰EN1092-2018

CAST STEEL FLANGE ACC.TO EN1092-2018

提供流体安全控制解决方案

PROVIDE FLUID SAFETY CONTROL SOLUTION



主要尺寸 MAIN DIMENSIONS

	DN	D	k	L	螺栓n-Th	d	f	C
DIN PN1.6 MPa RF	15	95	65	14	4-M12	45	2	16
	20	105	75	14	4-M12	58	2	18
	25	115	85	14	4-M12	68	2	18
	32	140	100	18	4-M16	78	2	18
	40	150	110	18	4-M16	88	3	18
	50	165	125	18	4-M16	102	3	20
	65	185	145	18	4-M16	122	3	18
	80	200	160	18	8-M16	138	3	20
	100	220	180	18	8-M16	158	3	20
	125	250	210	18	8-M16	188	3	22
	150	285	240	22	8-M20	212	3	22
	200	340	295	22	12-M20	268	3	24
	250	405	355	26	12-M24	320	3	26
	300	460	410	26	12-M24	378	4	28
	350	520	470	26	16-M24	438	4	30
	DIN PN2.5 MPa RF	15	95	65	14	4-M12	45	2
20		105	75	14	4-M12	58	2	18
25		115	85	14	4-M12	68	2	18
32		140	100	18	4-M16	78	2	18
40		150	110	18	4-M16	88	3	18
50		165	125	18	4-M16	102	3	20
65		185	145	18	8-M16	122	3	22
80		200	160	18	8-M16	138	3	24
100		235	190	22	8-M20	162	3	24
125		270	220	26	8-M24	188	3	26
150		300	250	26	8-M24	218	3	28
200		360	310	26	12-M24	278	3	30
250		425	370	30	12-M24	335	3	32
300		485	430	30	16-M27	395	4	34
350		555	490	33	16-M30	450	4	38
DIN PN4.0 MPa RF		15	95	65	14	4-M12	45	2
	20	105	75	14	4-M12	58	2	18
	25	115	85	14	4-M12	68	2	18
	32	140	100	18	4-M16	78	2	18
	40	150	110	18	4-M16	88	3	18
	50	165	125	18	4-M16	102	3	20
	65	185	145	18	8-M16	122	3	22
	80	200	160	18	8-M16	138	3	24
	100	235	190	22	8-M20	162	3	24
	125	270	220	26	8-M24	188	3	26
	150	300	250	26	8-M24	218	3	28
	200	375	320	30	12-M27	285	3	34
	250	450	385	33	12-M30	345	3	38
	300	515	450	33	16-M30	410	4	42
	350	580	510	36	16-M30	465	4	46

对接焊端ASME B16.25-2017

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BUTT WELDED ENDS ASME B16.25-2017

参数表 PARAMETER TABLE									
公称管径 Nominal pipe diameter	管号 Tube No	焊端外径 Outer diameter of welding end		公称内径 Nominal diameter		机加内径 Machining diameter		管子壁厚 Pipe wall thickness	
		inch	mm	inch	mm	inch	mm	inch	mm
2-1/2	40	2.88	73.0	2.469	62.6	2.479	62.97	0.203	5.0
	80			2.323	59.0	2.351	59.72	0.276	7.1
	160			2.125	54.0	2.178	55.32	0.375	10
	XXS			1.771	45.0	1.868	47.45	0.552	14.0
3	40	3.50	88.9	3.068	77.9	3.081	78.26	0.126	5.6
	80			2.900	73.7	2.934	74.52	0.300	8
	160			2.624	66.7	2.692	68.38	0.438	11
	XXS			2.300	58.5	2.409	61.19	0.600	15
3-1/2	40	4.00	101.6	3.548	90.2	3.564	90.53	0.226	5.6
	80			3.364	85.4	3.402	86.41	0.318	8
4	40	4.50	114.3	4.026	102.3	4.044	102.72	0.237	5.9
	80			3.826	97.1	3.869	98.27	0.337	8.8
	120			3.624	92.1	3.692	93.78	0.438	11
	160			3.438	87.3	3.530	89.66	0.531	14.2
	XXS			3.512	80.1	3.279	83.29	0.674	17
5	40	5.56	139.7	5.047	128.1	5.070	128.78	0.258	6.3
	80			4.813	122.3	4.866	126.60	0.375	10
	120			4.563	115.9	4.647	118.03	0.500	12.5
	160			4.313	109.5	4.428	112.47	0.625	16
	XXS			4.063	103.3	4.209	106.91	0.750	19.0
6	40	6.62	168.3	6.065	154.1	6.094	154.79	0.280	7.1
	80			5.761	146.3	5.828	148.03	0.432	11.0
	120			5.501	139.7	5.600	142.24	0.562	14.2
	160			5.187	131.7	5.326	135.28	0.719	17.5
	XXS			4.897	124.5	5.072	128.83	0.864	20
8	40	8.62	219.1	7.981	202.7	8.020	203.71	0.322	8
	60			7.813	198.5	7.873	199.97	0.406	10
	80			7.625	193.7	7.709	195.81	0.500	12.5
	100			7.437	188.9	7.544	191.62	0.594	16
	120			7.187	182.5	7.326	186.08	0.719	17.5
	140			7.001	177.9	7.163	181.94	0.812	20
	160			6.875	174.7	7.053	179.15	0.875	22.2
	XXS			6.813	173.1	6.998	177.75	0.906	22.5

对接焊端ASME B16.25-2017

BUTT WELDED ENDS ASME B16.25-2017

提供流体安全控制解决方案
PROVIDE FLUID SAFETY CONTROL SOLUTION

参数表 PARAMETER TABLE									
公称管径 Nominal pipe diameter	管号 Tube No	焊端外径 Outer diameter of welding end		公称内径 Nominal diameter		机加内径 Machining diameter		管子壁厚 Pipe wall thickness	
		inch	mm	inch	mm	inch	mm	inch	mm
10	40	10.75	273	10.020	254.4	10.070	255.78	0.365	8.8
	60			9.750	247.6	9.834	249.78	0.500	12.5
	80			9.562	242.8	9.670	245.62	0.594	16
	100			9.312	236.4	9.451	240.06	0.719	17.5
	120			9.062	230.2	9.232	234.49	0.844	22.2
12	140	12.75	323.9	8.750	222.2	8.959	227.56	1.000	25
	160			8.500	215.8	8.740	222.00	1.125	28
	STD			12.00	304.8	12.053	306.15	0.375	9.5
	40			11.938	303.2	11.999	304.77	0.406	10
	XS			11.750	298.4	11.834	300.58	0.500	12.7
	60			11.626	295.2	11.725	297.82	0.562	14.2
	80			11.374	288.8	11.505	282.23	0.688	17.5
	100			11.062	281.0	11.232	285.29	0.844	22.2
	120			10.750	273.0	10.959	278.36	1.000	25
	140			10.500	266.6	10.740	272.80	1.125	28
14	160	14.00	355.6	10.126	257.2	10.413	264.49	1.312	32
	STD			13.250	336.6	13.303	337.90	0.375	9.5
	40			13.124	333.4	13.192	335.08	0.438	11
	XS			13.000	330.2	13.084	332.33	0.500	12.7
	60			12.812	325.4	12.920	328.17	0.594	16
	80			12.500	317.6	12.646	321.21	0.750	20
	100			12.124	308.0	12.318	312.88	0.938	25.8
	120			11.812	300.0	12.044	305.92	1.094	28
	140			11.500	292.0	11.771	298.98	1.250	32
	160			11.188	284.2	11.498	292.05	1.406	36



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