



中海威

BEIJING ZHONGHAIWEI ENVIRONMENT ENGINEERING CO.,LTD

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Pipe Products

管道产品卷

北京中海威环保科技有限公司

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企业简介 Company Profile

北京中海威环保科技有限公司(原北京中海威管道设备有限公司)创建于2000年,是集研究开发、生产、销售服务为一体的高科技型企业。企业现有职工256人,有高级工程师10人,大专以上人员30人。公司下设商务部、财务部、产品研发部、生产分公司等部门。公司通过了ISO9001:2008及ISO14001:2004体系认证。下设的荣阳制造分公司占地30000m²,5栋车间及办公楼建筑面积共15000m²;φ4500*13500大型硫化罐、喷砂设备、蒸汽锅炉、焊接设备、立车、钻床等生产及检验设备齐全。公司自创建伊始,围绕环保、电力、市政、石化、化工、冶金等行业。

公司主要产品是衬胶衬塑防腐、水处理设备、各类非标容器制造、橡胶补偿器、橡胶吸泥排泥管、松套伸缩接头、非金属补偿器、波纹补偿器和阀门等系列产品,生产能力10万台套/年。现已成为全国市政、电力、钢铁、石油、化工、船舶、轻工、环保等行业单位首选产品,并在国家级重点工程上广泛采用。工程项目有:内蒙古金桥热电厂、临河热电厂、包头第三电厂、华宁热电厂、包头东华热电公司、辽宁大唐国际锦州热电厂、河北大唐国际张家口热电厂、洛阳新安、四川珙县、蒲城电厂、满洲里、伊敏电厂及佳木斯电厂脱硫项目;北京小红门污水厂、卢沟桥污水厂、清河污水厂、唐山曹妃甸供水工程、唐山东郊污水厂、西郊污水厂等市政工程。生产口径达到DN4000mm以上。为国家重点工程配套了优质产品。产品畅销全国30多个省、市、自治区及部分国外工程,为我国基础工业的发展做出了巨大的贡献。

我公司始终坚持海纳百川、诚信为本、科技创新、和谐双赢的宗旨;对产品求精、求新、求更好的原则;为用户提供详细的技术咨询、周到的服务、一流的产品。

Established in 2000, Beijing Zhonghaiwei Environment Engineering Co., Ltd (the former Beijing Zhonghaiwei Pipe Equipment Co., Ltd) is a new & hi-tech enterprise integrating R&D, production, sales and service. It has 256 employees including 10 senior engineers, 30 employees have received college education. Its main departments include Business Dept., Financial Dept., Product R&D Dept. and Production Branches. The company has passed ISO9001:2008 and ISO14001:2004 quality system certifications, and the manufacturer in Xingyang covers an area of 30000m², it owns five workshops and office buildings which cover 15000 m², in addition, it has perfect equipment for production and tests such as φ4500x13500 large vulcanizers, blasters, steam boilers, welding equipment, vertical boring mill and drilling machines. Since establishment, the company has been devoted to the development of environment protection, electricity, municipal construction, petroleum, chemistry and metallurgy.

Main products: corrosion protection devices, water-treating equipment, non-standard containers, rubber compensators, sludge suction/discharge rubber pipes, loose expansion joints, non-metal compensators, bellow compensators and valves. Output: 100,000 sets/year. At present, our products enjoy the priority to be adopted in municipal construction, electricity, steel, petroleum, chemistry, ships, light industry and environment protection at home, besides, the products have been used in national key projects. Main projects: Inner Mongolia Jinqiao Thermal Power Plant, Linhe Thermal Power Plant, Baotou No.3 Power Plant, Huanning Thermal Power Plant, Baotou Donghua Thermal Power Co., Ltd, Liaoning Datang International Jinzhou Thermal Power Plant, Hebei Datang International Zhangjiakou Thermal Power Plant, Luoyang Xin'an Power Plant, Sichuan Qixian Power Plant, Pucheng Power Plant, Manzhouli Power Plant, Yimin Power Plant, Jiamusi Power Plant (desulfurization), Beijing Xiaohongmen Waste Water Plant, Lugouqiao Waste Water Plant, Qinghe Waste Water Plant, Tangshan Caoheidian Water Supply Project, Tangshan East Waste Water Plant, West Waste Water Plant and so on. Product caliber: DN4000mm or above. The company has provided quality products for key projects at home, which are well sold in over 30 provinces, cities, autonomous regions and for some foreign projects. The company has made great contributions for the development of basic industry at home.

Insisting on the tent of faith, technical innovation, harmony and win-win and the principle of latest, perfection and top quality of products, the company would provide specific technical support, considerate service and first-class products.



中海威环保科技

我们的昨天——感谢您的参与

我们的今天——离不开您的帮助

我们的明天——更离不开您的支持

开拓创新、与时俱进的我们深深的感谢您！

Our history—be obliged to your participation

Our presence—needing your assistance

Our development—needing your supports

We are obliged to you all in development, innovation and progress.



企业宗旨 Business Tenets

以科技创造未来，用精品回报社会

Create a Bright Future through Technology, Contribute to the Society with Quality Products

服 精 诚 一
务 益 信 言
一 求 待 九
流 精 人 鼎

质量方针 *QUALITY POLICIES*

T 质量第一，客户至上，
Top Quality, Client First

经营目标 Business Objectives

上规范管理，创知名品牌，获最佳效益

Standard Management, Famous Products, Best Benefits

铸就未来

[诚信]



持续改进，一流服务！

Continuous Improvement, First Class Service

企业文化

ENTERPRISE CULTURE

企业精神 Enterprise Spirit

海纳百川，诚信为本，敬业奉献，追求卓越。
Faith, Devotion, Contributions and Excellence.

管理文化 Management Culture

以人为本，科学管理，开拓创新，务实奉献。
Human-Orientated, Scientific Management, Innovation, Contributions.

质量文化 Quality Culture

精益求精，持续改进，追求完美，用户满意。
Excellence, Improvement, Improvement, Satisfaction.

理念文化 Enterprise Ideal

诚实守信，和谐双赢，共谋发展，缔造未来。
Honesty, Harmony & Win-Win, Common Development, Bright Future.

营销文化 Marketing Culture

共享科技，体验完美，贵于品质，恒于服务。
Technology Shared, Perfection, Quality and Service.

品牌文化 Brand Culture

走科技之道，创一流品牌。
Technology-Orientated, First Class Brand.

用人文化 Employment Culture

广纳贤才，唯才是举。
Talents Collected, Talents First.



QUALIFICATION CERTIFICATES 资质证书

发明专利证书

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设计人: 陈、陈 (Chen, Chen)

专利申请号: 2005 年 04 月 01 日

发明人: 陈德明

发明公告号: 2005 年 04 月 01 日

本专利证书是根据中华人民共和国专利法及其实施细则的规定，经国家知识产权局审查，符合专利法及其实施细则的规定，准予授予发明专利权，并依法公告，以保护专利权人的合法权益，并鼓励发明创造，促进科学技术进步。

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国家知识产权局

局长: 白春

2005 年 04 月 01 日



生产设备

Production Equipment

工欲行其事，必先利其器。Fine tools shall be prepared before doing anything.

先进的工艺技术与精良的生产设备的完美组合是生产高尖产品的前提，每一生产环节都是先进工艺的结晶。

Advanced production processes and excellent production equipment are premises for the production of top quality products, and each production link cannot be separated from advanced technologies.



硫化罐
Vulcanizer



大型立车
Large vertical boring mill



挤出机
Extruder mill



捏和机
Kneading machine



橡胶加工
Rubber processing



检测设备 Testing Equipment

科技之光，怡然共享。 High Technology for Development.

科技的领先是占领市场的前提，是质量的保证，是客户信赖的前提。用我们的努力，想客户所想，用现代科技塑造实在品质。

Leading technologies are premises for share occupation, guarantees for quality, basis for credit from clients, we just do what the clients need and guarantee the product quality with high technologies.



研发中心
R&D Center



老化试验设备
Degradation testing equipment



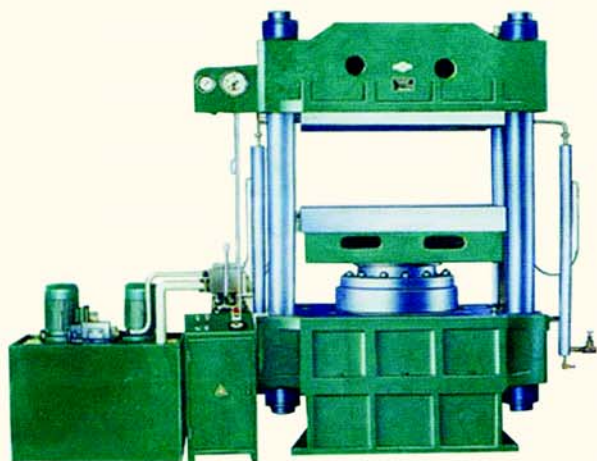
拉伸试验室
Tensile Test



硬度计
Hardness meter



橡胶测厚仪
Rubber thickness tester



平板硫化机
Flat vulcanizing machine



化验室
Lab



北京中海威环保科技有限公司

BEIJING ZHONGHAIWEI ENVIRONMENT ENGINEERING CO., LTD

产品组照 Products Pictures



橡胶补偿器
Rubber Compensator



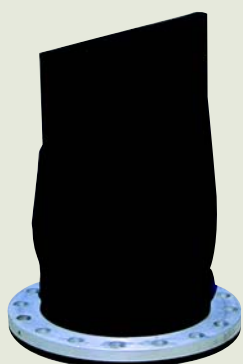
橡胶补偿器
Rubber Compensator



橡胶排泥管
Rubber Sludge Discharge Pipe



橡胶吸泥管
Rubber Sludge Suction Pipe



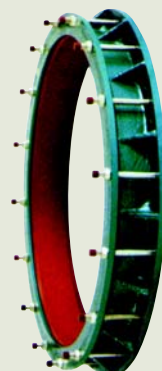
法兰式橡胶缓闭
逆止阀
Flanged slow-closing rubber check valve



AY 压盖式松套
伸缩接头
AY gland loose expansion joint



BY 压盖限位松套伸
缩接头
BY gland limit loose expansion joint



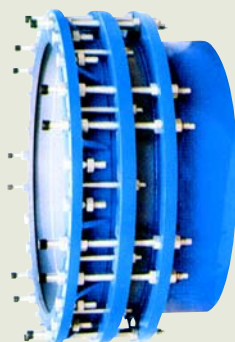
AF 法兰式松套伸缩
接头
AF flanged loose expansion joint



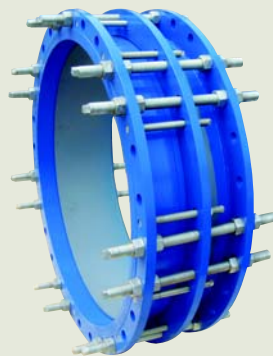
BF 单法兰式限位松
套伸缩接头
BF flanged limit loose expansion joint



B2F 双法兰式限位松套
伸缩接头
B2F Double-flanged limit and loose expansion joint



CF 单法兰
传力接头
CF double-flange transmission joint

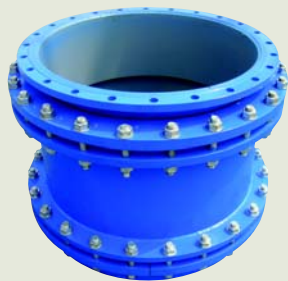


C2F 双法兰
传力接头
C2F double-flange transmission joint



E 型球形补偿接头
E type spherical compensator joint

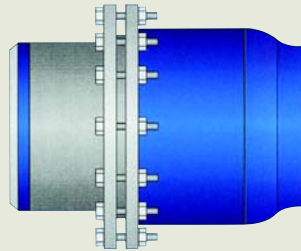
产品组照 Products Pictures



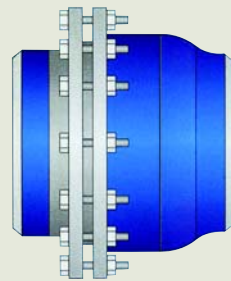
D 型补偿接头
D type compensation joint



KRH(J)大间隙卡箍式柔性管接头
KRH(J)wide gap yoke flexible pipe joint



新式套筒补偿器
New sleeve compensator



旋转套筒补偿器
Rotary sleeve compensator



无推力旋转补偿器
Thrust-free rotary compensator



FDB 型橡胶小波风道接头
FDB type wavelet rubber air duct joint



FVB 型风道橡胶补偿器
FVB type air duct compensator



FUB 型风道橡胶补偿器
FUB type air duct rubber compensator



圆形纤维织物补偿器
Round fabric compensator



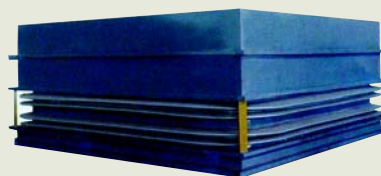
矩形纤维织物补偿器
Rectangular fabric compensator



高温轴向补偿器
High temperature axial compensator



煤粉管道新型三向补偿器
Coal fines pipe-based new three-way compensator



矩形金属补偿器
Rectangular metal compensator



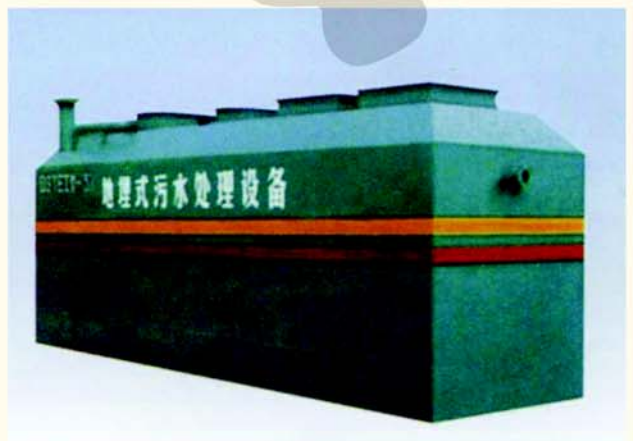
地埋式补偿器
Embedded compensator



北京中海威环保科技有限公司

BEIJING ZHONGHAIWEI ENVIRONMENT ENGINEERING CO.,LTD

水处理装置 Water Treatment Equipment



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橡胶补偿器的优缺点

Advantages and Disadvantages of Rubber Compensators

橡胶补偿器(又名:可曲挠橡胶接头)在国际上已广泛应用有五十多年的历史,国内的开发应用也已有二十余年。由于在市政、电力等建设工程中,在钢性管道之间采用柔性连接或解决地基不均匀沉降等问题时,往往采用橡胶补偿器。目前的橡胶补偿器根据端部密封结构的不同可分为3种,分别为:

(1) 橡胶球体端部用钢丝圈作为加强圈,在使用时,橡胶球体内由于液体压力的作用会使橡胶球体发生变形,结果会使橡胶球体端部向内倾斜,即橡胶球体端部端面与设备或管道法兰不能密实接触,导致橡胶球体端部和设备或管道法兰之间产生泄漏,密封效果不理想,严重时出现拉脱现象。如图1所示:

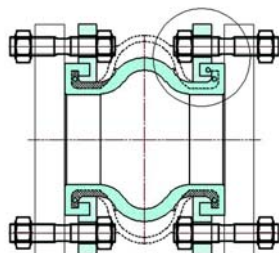


图1(a)
Figure 1(a)

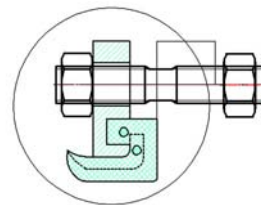


图1(b)
Figure1(b)

(2) 橡胶球体端部为全密封结构,即:端部密封面外径与本体松套法兰外径相同,有螺栓从其端部穿过。此结构端部在工厂钻孔时,把增强层已破坏,降低了耐拔脱性。承压时球体受压膨胀及轴向伸长时增强层都会变形,严重时橡胶密封端面会从法兰孔处撕裂而拉脱。如图2所示:

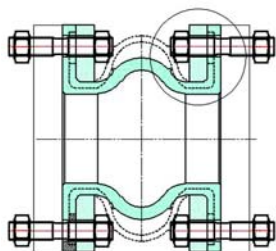


图2(a)
Figure 2(a)

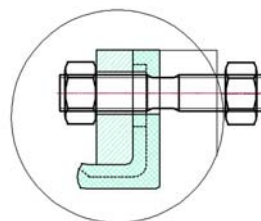


图2(b)
Figure2(b)

Rubber compensators (alternate name: flexible rubber joint) have been widely used over 50 years around the world. The development and adoption of rubber compensators exceeds 20 years at home. Rubber compensators are always adopted for flexible connection between stiff pipes or disposal of non-uniform settlement in foundation during the construction of municipal works and power engineering. At present, according to the difference in the seal structures of the ends, rubber compensators are divided into three kinds, namely:

(1) Bead rings are used for reinforcement on the end of rubber ball. During the operation, the rubber ball will deform due to the hydraulic pressure in the ball, which makes the end of the rubber ball incline inward, namely the end surface of the rubber ball shall not touch any equipment or pipe flange compactly, which leads to leakage between the end of the rubber ball and equipment or pipe flange. The sealing performance is not what as expected, if serious, disjunctions will occur. Refer to Figure 1.

(2) Full sealing on the end of rubber ball, namely the external diameter of sealing face of the end is the same as that of loose flange of the main body, a bolt travels through the end. During the drilling at the factory, the reinforced layer of the end is damaged, which reduces the performance of stirring and disjunction resistance, if serious, the seal face will be torn from the flange hole till disjunction. Refer to Figure 2.

(3) 由橡胶球体和对称设置在橡胶球体两端的两个分瓣式法兰组成，分瓣式法兰通过槽（或燕尾）形连接块附着在橡胶球体的侧面，并用螺栓沿轴向将分瓣式法兰和槽（或燕尾）形连接块固定连接在一起，在橡胶球体的端部凸缘内嵌有横截面为矩形或圆形或椭圆形或方形的金属加强环。发装时用螺栓将分瓣式法兰和待连接设备或管道法兰相连接，并将橡胶球体端部凸缘夹持其中。这种结构虽然提高了耐拔脱性能，但在使用时，橡胶球体内由于液体压力的作用会使橡胶球体发生变形，严重时增强层形变拉动金属环侧转，橡胶密封面随之变形，造成密封面倾斜变窄，即橡胶球体端部密封面与设备或管道法兰不能密实接触，导致橡胶球体端部密封面和设备或管道法兰之间产生泄漏。再者由于连接分瓣式法兰和矩形连接块的螺栓是沿轴向设置的，当橡胶补偿器内充满高压液体时，分瓣式法兰会受到径向力作用，同时连接分瓣式法兰和槽（或燕尾）形连接块的螺栓会受至剪切力的作用容易被破坏而产生事故。如图 3 所示：

(3) Rubber ball and two valving flanges designed symmetrically on the two ends of the rubber ball. The valving flanges attach to the side of the rubber ball via groove shape (or forked tail) connecting piece, a bolt is used to fix the valving flanges and groove shape (or forked tail) connecting piece along the shaft. Enforcing ferrules, whose cross section is square, round, elliptic or rectangular, are chained inside the flange of the end of the rubber ball. During the installation, bolts shall be used to connect the valving flanges with equipment or pipe flanges to be connected, and clamp the flange of the end of the rubber ball. Though the structure improves the performance of stirring and disjunction resistance, however, during the operation, the rubber ball will deform due to the hydraulic pressure in the rubber ball, if serious, the deformation of the reinforced layer will pull the ferrule to yaw, and the seal face of the rubber face of the rubber ball will deform, which will lead to the inclination and striction of the seal face, namely the seal surface of the rubber ball shall not touch any equipment or pipe flange compactly, which leads to leakage between the end of the rubber ball and equipment or pipe flange. Meanwhile, for the bolts which connect valving flanges and rectangular connecting pieces are designed along the shaft, when the rubber compensator is filled with liquid under high pressure, the valving flanges will be influenced by radial force, in addition, the bolts which connect valving flanges and groove shape (forked tail) connecting pieces will be damaged easily due to the shear force, and accidents will occur. Refer to Figure 3.

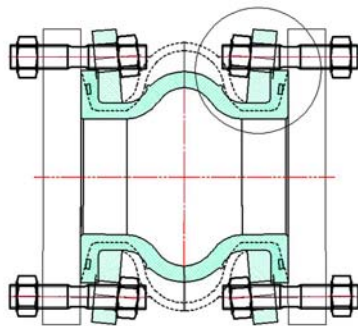


图3(a)
Figure 3(a)

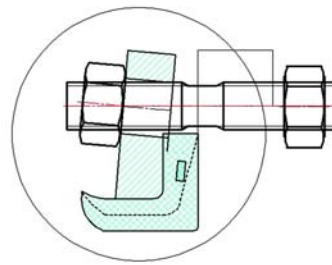


图3(b)
Figure 3(b)

上述三种结构橡胶补偿器存在共同不足之处：

- 1、橡胶补偿器承压后橡胶球体向外膨胀，压缩量大或径向位移时会出现螺栓螺纹挤压破坏橡胶球体，现象[如图 1(a)、图 2(a)、图 3(a)]影响使用寿命。
- 2、橡胶补偿器采用的是松套法兰，在拆卸橡胶补偿器时无法调整压缩变形，故拆卸比较困难：

The disadvantages shared by three rubber compensators mentioned above include:

1. The rubber ball will expand outward with the rubber compensator pressed, if higher amount of compression or radial dispersion occur, the threads of bolts will be extruded, which will damage the rubber ball, the cases in Figure 1(a), Figure 2(a) and Figure 3(a) will do harm to the service life.
2. The rubber compensators adopt loose flanges, during the removal, it is unable to adjust the deformation under compression, so it is difficult to remove the rubber compensator.



我公司专利产品优越性能

专利号：①发明专利：ZL 2005 1 0105910.7

②外观专利：ZL 2005 3 0124122.3

本产品的优点是：①产品由于其中的金属加强环的横截面为 T 形或梯形或 Γ 形，使用中使橡胶球体的端部凸缘不容易发生变形，密封效果好，不会发生泄漏。②本产品中的连接盘横截面为 U 形，可有效阻止橡胶球体管段的变形，增加橡胶球体管段部分的强度，承受压力高，使该部分不会破裂损坏。③连接盘的底面抵着橡胶球体波段平面部分，通过调整螺栓，不需要移动管道和设备就可拆装橡胶补偿器或设备。④当变形量大时，螺栓螺纹不会挤压破坏到橡胶球体，延长使用寿命；⑤由于其连接螺栓垂直于半径方向，当连接盘受压时其不会受到剪切力作用，所以连接效果好，不会发生泄漏。⑥由于本产品中连接管和橡胶球体端部凸缘及连接盘侧面紧密接合，可有效阻止橡胶球体和连接管之间发生变形，不会出现泄漏情况，不会出现拨脱现象。如图 4 所示：

High performances of our patented products

Patent No.: ① Invention Patent: ZL2005 1 0105910.7

② Appearance Patent: ZL2005 3 0124122.3

Advantages of the product: (1) Due to the T shape, trapeze or Γ shape of cross section of reinforcing ferrule inside the product, the flange of the end of rubber ball will be not easy to deform in operation, it has features of sound sealing and no leakage. (2) The cross section of coupling in the product has a U shape, which can prevent efficiently the deformation of pipe section of the rubber ball, enforce the strength of the pipe section of the rubber ball so as to bear higher pressure and protect it from being damaged. (3) The bottom of the coupling leans against the wave plane of the rubber ball, with the bolts adjusted, it is unnecessary to move pipes or equipment to remove the rubber compensator or equipment. (4) If serious deformation occurs, the damage of threads extruded of the bolts will not damage the rubber ball so as to prolong the service life. (5) due to the connection to the bolts vertical to the radius, it will be free from shear force due to the pressure on the coupling, accordingly the connection effect is ideal and brings no any leakage. (6) For the connecting pipes have close joint with the flange of end of the rubber ball and sides of the coupling, it will well prevent the deformation between the rubber ball and the connecting pipes and brings no any leakage, and there will be no any disjunction. Refer to Figure 4.

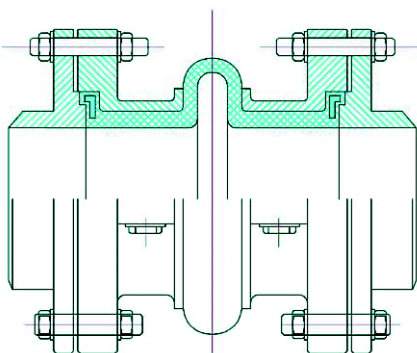


图4(a)
Figure 4(a)

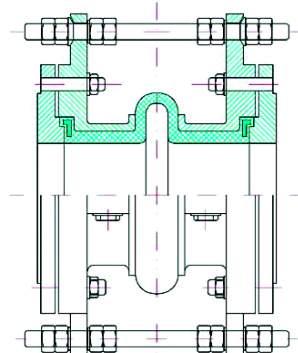


图4(b)
Figure 4(b)

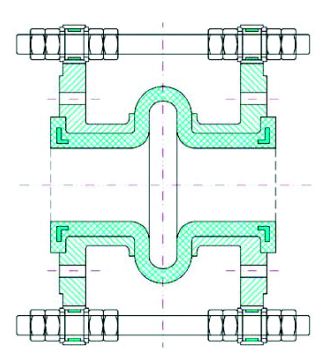


图4(c)
Figure 4(c)

一、橡胶补偿器(可曲挠橡胶接头)

I. Rubber Compensators (Flexible Rubber Joints)

产品特性

该产品主要利用橡胶的独特性能,如高弹性、高气密性、耐介质性和耐候性及耐辐射性等,采用高强度、冷热稳定性强的聚脂帘布斜交与之复合后,经高压、高温模压交联而成。内部致密度高,能承受较高压力,弹性变形效果优异。产品结构设计断面弧高、曲线长,具有较大的多向位移功能。特别适用于地质条件复杂,沉降幅度大和管道运行中冷热变化频繁易造成管道损伤的场所。利用橡胶的弹性滑动转移和变形机械力的转热散逸功能有效的消除泵、阀及管道自身的位移物理破坏。因橡胶属不良传导材料,所以它又是一种良好的降低振动和噪声传递的理想环保产品。该产品设计内壁光滑,经实际测试,对介质的流速,流量无任何影响,并且永不生锈,可以免除有效运行期内的维修。

产品应用范围

由于橡胶补偿器有良好的综合性能,主要用于原水和污水的提升和输送,火力发电厂的给水和冷却循环水、冶金行业的冷凝水、化工行业的化学物质的管道输送,石化行业的冷却、稀释及其它行业的长短距离管线间的柔性连接。因为橡胶具有较高的耐磨性,还适用于一切行业的粒状和粉状及气体的低温输送。

另外,为了保证工程质量,特别请设计部门及使用单位注意,如果您将该产品设计安装于水泵的出口近端或管道的转角部位时,务请注明增设防拉脱限位装置。如果您的管道需埋设于地下,请使用我公司产品地理防护装置。总之,只要您的使用条件中有一定隐患存在,订货时请注明使用条件,我们会及时向您提供满意的答复。

执行标准: CJ/T208—2005
HG/T2289—2001

Performances

Based on the unique characteristics of rubber such as high elasticity, high air tightness, medium resistance, weathering resistance and radiation resistance, the product, with polyester cord characterized of high strength and high heat stability adopted for skew crossing and compound, is made under high pressure, high-temperature molding and cross link. It owns higher density inside to bear higher pressure as well as ideal elastic deformation. It is extremely suitable for places where there are complex geologic conditions, large sedimentation range and pipes are easy to be damaged due to frequent alternation between heat and coldness in pipes. The elastic slide transfer and deformation of rubber and the heat dispersion of mechanical force may well prevent the physical damages from the displacement of pumps, valves and pipes. As a poor conductor, it is a harmless to reduce the vibration and noise transmission. The product is designed with smooth inner walls, after testing, it is proved to have no any influence on the flow speed and flux of medium, and keeps stainless for ever, accordingly it will be free of maintenance in operation.

Application Scope

Due to the sound complex performances of rubber compensators, it is mainly used for the lift and transport of raw water and sewage, and pipeline transportation of feed-water and water for cooling circulation in thermal power plants, condensed water in metallurgy and chemical substances in chemical industry as well as dilution and flexible connection between short and long pipelines. Relying on the high abrasion resistance of rubber, it is also suitable for the transportation under low temperature of powdery and grainy air in any industry.

In addition, in order to guarantee the construction quality, designers and users warned: if the product is installed close to the exit of a pump or at the corner of pipes, a caging device against disjunction must be noted for installation. In general, if there is any hidden trouble in your operation, relevant operation conditions must be noted in your order, and you will get a satisfactory reply.

Executive Standard: CJ/T208—2005
HG/T2289—2001

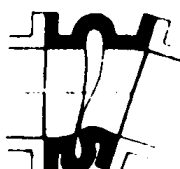


橡胶补偿器位移情况示意图

Displacement Diagrams of Rubber Compensators



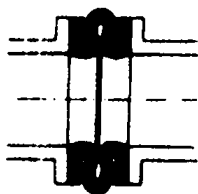
扭转位移
Torsional Displacement



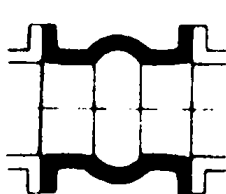
横向位移 (错位)
Transversal Displacement (malposition)



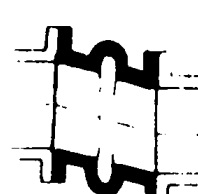
角向位移 (错位)
Angular Displacement (malposition)



轴向压缩
Axial Compression



轴向伸长
Axial Elongation



径向位移
Radial Displacement

物理机械性能表

Physical and Mechanical Properties

单位 (mm)
Unit (mm)

序号 No	项目 Item		指标 Index	实测值 Measured Value
			内外胶层 inner/outer rubber lining	
1	拉伸强度 (MPa) Tensile strength (MPa)		≥ 12	13.5
2	扯断伸长率 (%) Tensile yield (%)		≥ 450	560
3	扯断永久变形 (%) Tension set at break (%)		≤ 25	20
4	硬度 (邵尔A)度 Hardness (Shore A hardness)		60 ± 5	60
5	脆性温度 (°C) Brittleness temperature (°C)		≤ -30	-40
6	粘合强度 (帘布层间) Cohesive strength (between cord fabric) (KN/m)		≥ 2.0	4.8
7	热空气老化 (100°C × 48h) Hot air aging	拉伸强度降低率 % Rate of Tensile Strength Reduction	≤ 25	15
		扯断伸长降低率 % Rate of ultimate elongation reduction	≤ 30	20
8	质量变化率 (10% H ₂ SO ₄ × 168h 室温) % Mass change (10% H ₂ SO ₄ × Room temperature) %		≤ 3	2
9	质量变化率 (10% NaOH × 168h) % Mass change (10% H ₂ SO ₄ × Room temperature) %		≤ 3	2

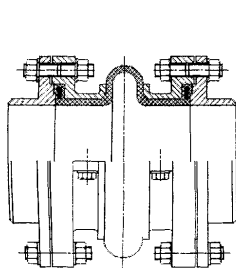
橡胶性能一览表 Rubber Performances

单位 (mm)
unit (mm)

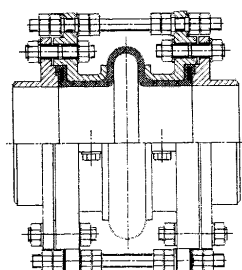
		天然胶 Natural rubber	丁苯胶 styrene-butadiene rubber	氯丁胶 Chloroprene rubber	丁腈胶 Nitrile Butadiene rubber	丁基胶 Butyl rubber	三元乙丙胶 EPDM	硅橡胶 Silicone rubber	氟橡胶 Viton	海帕隆 Hapalon	氯磺化聚乙烯 Chlorosulfonated polyethylene
纯胶 Pure rubber	比重 Specific weight	0.91-0.93	0.93-0.94	1.15-1.25	1.00-1.20	0.91-0.93	0.86-0.87	0.95-0.98	1.8-1.82	1.11-1.18	1.10-1.20
	加工性 workability	◎	◎	◎	◎	△	○	○	△	○	△
硫化胶 Mechanical properties of cross-linked rubber	硬度 Hardness	10-100	30-100	10-90	15-100	20-90	30-90	30-90	50-90	50-90	50-85
	拉伸强度 kg/cm ² Tensile strength	30-300	50-200	50-250	50-250	50-150	50-200	40-100	70-200	70-200	70-200
	伸长率 % Extensibility	100-1000	100-800	100-1000	100-800	100-800	100-800	50-500	100-500	100-500	100-600
	撕裂强度 Tear strength	◎	△	○	○	○	△	△-×	○	○	○
	耐曲挠性 flexing life	◎	○	○	○	◎	○	○-×	○	○	○
	耐磨性 Arasive resistance	◎	◎	◎-○	◎	○	○	△-×	◎	◎	◎
	最高使用温度℃ Highest temperature	100	100	130	130	150	150	280	300	160	160
硫化胶物理性能 Physical properties of cross-linked rubber	脆性温度℃ Brittleness temperature	-50~-70	-30~-60	-35~-55	-10~-20	-30~-55	-40~-60	-70~-120	-10~-50	-20~-60	-
	耐老化性 Ageing resistance	○	○	◎	○	◎	◎	◎	◎	◎	◎
	耐臭氧性 Ozone resistance	×	×	◎	×	◎	◎	◎	◎	○	◎
	耐透气性 Air permeability resistance	○	△	○-△	○-×	◎	◎	◎-△	○-△	◎	○
耐介质性 Medium resistance	汽油 Gasoline	×	×	○	◎	×	×	△-×	◎	◎	△
	苯 Benzene	×	×	×	△-×	×	×	△-×	◎	△	△-×
	强酸 Strong acid	△	△	○	○	○	○	△	◎	△-×	◎
	弱酸 Weak acid	○	○	○	○	○	◎	○	◎	◎	◎
	强碱 Strong alkaline	○	○	○	○	○	◎	◎	×	◎	◎
	弱碱 Weak alkaline	○	○	○	○	○	◎	◎	△	◎	◎

注: ◎-优 ○-良 △-可 X-不可 Note: ◎-Excellent, ○-Good, △-Available X-Unavailable

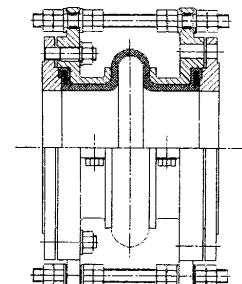
补偿器型式示意图 Diagrams of Compensators



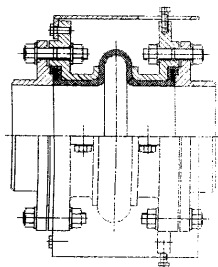
(1)焊接式
(1)Welding



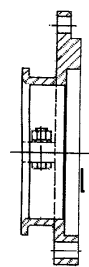
(2)焊接传力式
(2)Welding Transmission



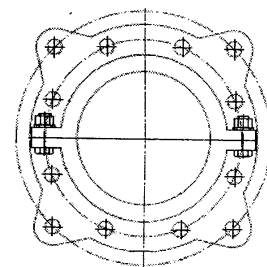
(3)法兰传力式
(3)Flange Transmission



(4)地埋式
(4)Flush Type



(5)连接盘
(5)Coupling



橡胶补偿器型式说明 Instructions for Types of Rubber Compensators

1、法兰型 型号: ZXTF

该产品由橡胶球体、U型活套连接法兰盘组成。橡胶球体由内胶层、外胶层、增强层、T型或L型加强环组成。主要用与阀门、设备的法兰连接，起到补偿变形、保护设备的作用。

2、焊接型 型号: ZXTJ

该产品由橡胶球体、U型活套连接盘、螺栓及焊接短管组成。橡胶球体由内胶层、外胶层、增强层、T型或L型加强环组成，主要用在长距离管线或构筑物之间，起用补偿变形、保护管线及构筑物的作用。

3、传力加强型 型号: ZXTC

该产品由橡胶球体、U型活套连接盘、传力螺杆螺母组成。橡胶球体由内胶层、外胶层、增强层、T型或L型加强环组成。通过传力螺杆将两端连成钢性体，消除管道中产生的盲板推力对设备的破坏。安装拆卸时通过螺栓调整长度，运行时必须锁紧传力螺杆。主要用在泵房、高压力或沉降量大的管线上。

4、埋地型 型号: ZXTD

该产品由橡胶球体、U型活套连接盘及埋地护罩组成。橡胶球体由内胶层、外胶层、增强层、T型或L型加强环组成。通过安装在连接盘外部的埋地保护罩，橡胶补偿置于内部，有自由变形空间，外部保护罩根据地面荷载设计，完全能承受外力。另增加限位装置，防止变形极限对产品的破坏。

1.Flange type: Type:ZXTF

The product consists of rubber ball, U-shaped loop coupling flange, the rubber ball contains inner rubber lining, outer rubber lining, reinforced lining, T-shaped or L-shaped strengthening ring. It is mainly used for the flange connection of valves and equipment for compensation for deformation and equipment protection.

2.Welding type: Type:ZXTJ

The product consists of rubber ball, U-shaped loop coupling, bolts and short welded pipes. The rubber ball contains inner rubber lining, outer rubber lining, reinforced lining, T-shaped or L-shaped strengthening ring. It is mainly used between long pipes or structures for compensation for deformation so as to protect equipment and structures.

3.Transmission type: Type:ZXTC

The product consists of rubber ball, U-shaped loop coupling, transmission lever and bolts. The rubber ball contains inner rubber lining, outer rubber lining, reinforced lining, T-shaped or L-shaped strengthening ring. Two ends are connected by transmission lever to eliminate the damages on the equipment from the push of blind plate produced in pipes. During the installation or un-installation, with the length of bolt adjusted, the transmission screw must be locked in operation. It is mainly used on pipe houses and pipes under high pressure or high sedimentation.

4.Flush type: Type:ZXTD

The product consists of rubber ball, U-shaped loop coupling and flush shield. The rubber ball contains inner rubber lining, outer rubber lining, reinforced lining, T-shaped or L-shaped strengthening ring. Through the flush shield installed outside the coupling, the rubber compensator is installed inside with free space for deformation. Designed under ground load, the external shield can bear foreign forces. Meanwhile, a limiter is added to prevent the damages on the product from deformation limit.

选型说明:

①橡胶补偿器的实际工作压力达到设计压力的 70% 或安装在弯头及三通位置时, 必须增加限位装置。

②对于安装在水泵出口或出口近距离管线上的橡胶补偿器建议选用传力型。

③对于设置在长距离管线上或构筑物之间橡胶补偿器建议选用地埋型。

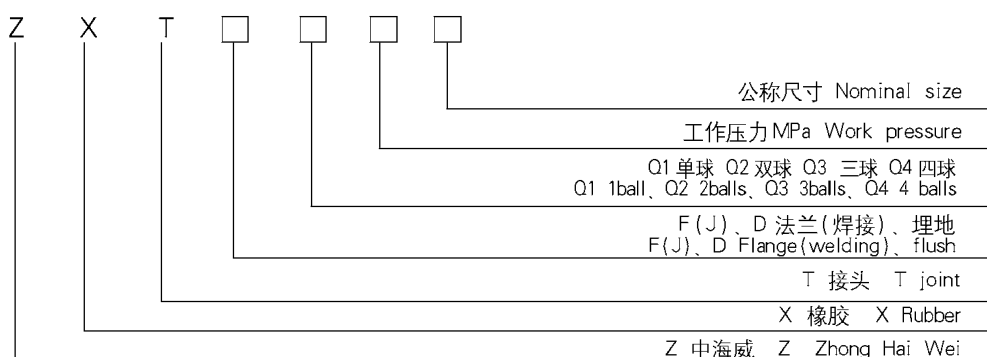
Instruction for Type Selection:

①A limiter must be added when actual work pressure of the rubber compensator reaches 70% or the rubber compensator is installed at the bend or the tee junction.

②It is recommended to select a transmission type rubber compensator which is installed at the exit of pipe or pipelines adjacent to the exit.

③It is recommended to select a flush type rubber compensator which is installed on long pipes or structures.

产品型号标示说明: Description of Product Type:



标记示例: 公称尺寸为 PN500, 工作压力 1.0MPa 的焊接式单球体橡胶补偿器 ZXTQ1J-1.0 500

Mark Sample: Welding single ball rubber compensator with nominal size PN500 and working pressure 1.0MPa ZXTQ1J-1.0 500

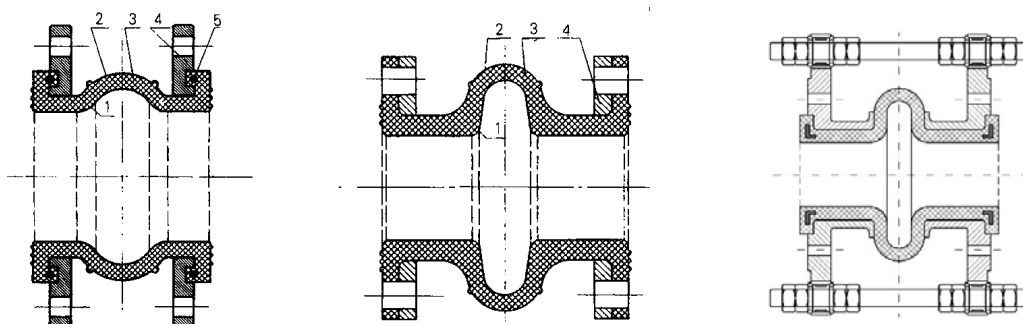
材料表 Materials

序号 NO.	名称 Name	材料 Materials
1	内胶层 Inner rubber lining	IIR、CR、EPDM、NR、NBR
2	外胶层 Outer rubber lining	IIR、CR、EPDM、NR、NBR
3	骨架层 Casing ply	聚脂帘布 Polyester cord fabric
4	法兰 Flange	Q235A、不锈钢 Stainless steel
5	加强环 Strengthening ring	Q235A
6	限位块 Stopper	Q235A、不锈钢 Stainless steel
7	限位拉杆 Limit bar	Q235A、35#, 不锈钢 Stainless steel
8	螺母 Nut	Q235A、20#, 不锈钢 Stainless steel

1、单球体橡胶补偿器

1.Ball Rubber Compensator

接头剖面图 Section of Joint





ZXTQ1F(J)单球体橡胶补偿器通径、长度、位移参数表

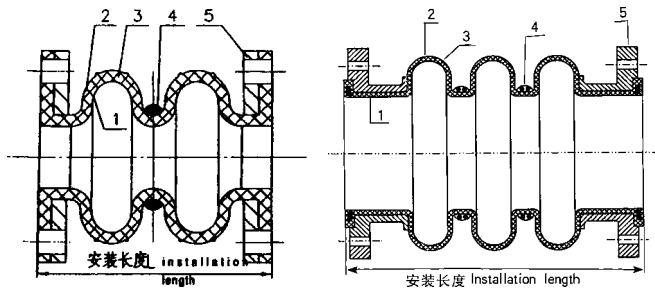
Diameter、Length and Displacement of ZXTQ1F(J)Single Spherical Rubber Compensator

单位 (mm)
unit (mm)

通径DN mm	Diameter 寸inch	法兰式长度 mm Flange length	焊接式长度 Welding length	轴向位置 Axial position		径向位移 Radial displacement	角向位移度 (a1+d2) Angular Displacement
				伸长 Elongation	压缩 Compression		
32	1 1/4 "	90		6	10	10	25
40	1 1/2 "	95		6	10	10	25
50	2 "	105		6	10	10	25
65	2 1/2 "	115		8	15	12	25
80	3 "	135		8	15	12	25
100	4 "	150		12	20	16	15
125	5 "	165		12	20	16	15
150	6 "	180		12	20	16	15
200	8 "	210	610	30	30	16	15
250	10 "	230	630	30	30	25	8
300	12 "	245	645	30	30	25	8
350	14 "	255	755	30	30	25	8
400	16 "	255	755	30	30	25	8
450	18 "	255	755	30	30	25	8
500	20 "	255	755	30	30	25	8
600	24 "	260	760	40	40	25	8
700	28 "	260	760	40	40	30	3
750	30 "	260	760	40	40	30	3
800	32 "	260	860	40	40	30	3
900	36 "	260	860	40	40	30	3
1000	40 "	300	860	40	40	30	3
1100	44 "	300	900	40	40	30	3
1200	48 "	300	900	50	50	30	3
1300	52 "	300	900	50	50	35	2
1400	56 "	350	1050	50	50	35	2
1500	60 "	350	1050	50	50	35	2
1600	64 "	350	1050	50	50	35	2
1800	72 "	400	1100	50	50	35	2
2000	80 "	400	1100	60	60	35	2
2200	88 "	400	1100	60	60	35	2
2400	96 "	450	1150	60	60	35	2
2600	104 "	450	1150	60	60	35	2
2800	112 "	450	1150	60	60	35	2
3000	120 "	500	1300	60	60	35	2
3200	128 "	500	1300	70	70	35	2
3400	136 "	500	1300	70	70	35	2
3600	144 "	500	1300	70	70	35	2
3800	152 "	550	1350	70	70	35	2
4000	160 "	550	1350	70	70	35	2
4200	168 "	550	1350	70	70	35	1
4400	176 "	600	1400	70	70	40	1
4600	184 "	600	1400	70	70	40	1
4800	192 "	650	1400	70	70	40	1
5000	200 "	650	1400	70	70	40	1

2、多球体橡胶补偿器

2、Multi-Spherical Rubber Compensator



序号 No	名称 Name	材料 Material
1	内胶层 Inner rubber lining	IIR、CR、EPDM、NR、NBR
2	外胶层 Outer rubber lining	IIR、CR、EPDM、NR、NBR
3	骨架层 Casing ply	聚酯帘布 Polyester cord fabric
4	加强环 Strengthening ring	Q235A
5	法兰 Flange	Q235A、不锈钢 Stainless steel

多球体可曲挠橡胶接头通径、长度、位移参数表

Diameter, Length and Displacement of Multi-Spherical Flexible Rubber Joint

单位 (mm)
unit (mm)

通径 Diameter		双球长度 mm Double-sphere strength	三球长度 mm Length of Three Spheres (mm)	四球长度 mm Length of Four sphere (mm)	轴向位移 Axial Displacement			径向位移 Radial Displacement			角向位移度 (a1+d2) ° Angular Displacement			
mm	寸 inch				双球 Double Spheres	三球 Three spheres	四球 Four spheres	双球 Double Spheres	三球 Three spheres	四球 Four spheres	双球 Double Spheres	三球 Three spheres	四球 Four spheres	
32	1 1/4 "	165	250	300	± 30	± 50	± 70	45	65	75	45	47	50	
40	1 1/2 "	165	250	300	± 40	± 60	± 80	45	65	75	45	47	50	
50	2 "	165	250	300	± 40	± 60	± 80	45	65	75	45	47	50	
65	2 1/2 "	175	300	350	± 40	± 60	± 80	45	65	75	45	47	50	
80	3 "	175	300	350	± 40	± 60	± 80	45	65	75	45	47	50	
100	4 "	225	350	400	± 50	± 70	± 90	55	70	80	30	32	35	
125	5 "	225	350	400	± 50	± 70	± 90	55	70	80	30	32	35	
150	6 "	225	350	400	± 50	± 70	± 90	55	70	80	30	32	35	
200	8 "	325	400	450	± 50	± 70	± 90	55	70	80	15	20	30	
250	10 "	325	400	450	± 50	± 70	± 90	55	70	80	15	20	30	
300	12 "	325	450	500	± 60	± 80	± 100	65	75	85	15	15	15	
350	14 "	325	450	500	± 60	± 80	± 100	65	75	85	15	15	15	
400	16 "	400	450	500	± 60	± 80	± 100	65	75	85	15	15	15	
450	18 "	400	550	600	± 70	± 80	± 100	65	75	85	10	10	12	
500	20 "	400	550	600	± 70	± 85	± 120	65	75	85	10	10	12	
600	24 "	400	550	600	± 70	± 85	± 120	65	75	85	10	10	12	
700	28 "	400	550	600	± 75	± 90	± 120	70	80	90	10	10	12	
800	32 "	450	550	600	± 75	± 90	± 120	70	80	90	8	10	12	
900	36 "	450	550	600	± 75	± 90	± 120	70	80	90	8	10	12	
1000	40 "	450	550	600	± 75	± 90	± 120	70	80	90	8	10	12	
1200	48 "	500	550	600	± 80	± 100	± 140	70	80	90	6	10	12	
1400	56 "	500	600	650	± 80	± 100	± 140	75	85	100	6	8	10	
1600	64 "	500	600	650	± 80	± 100	± 140	75	85	100	6	8	10	
1800	72 "	500	600	650	± 80	± 100	± 140	75	85	100	6	8	10	
2000	80 "	550	600	650	± 85	± 120	± 160	75	85	100	4	6	8	
2200	88 "	550	650	700	± 85	± 120	± 160	70	80	100	4	6	8	
2400	96 "	550	650	700	± 85	± 120	± 160	70	80	100	4	6	8	
2600	104 "	550	650	700	± 85	± 120	± 160	70	80	100	4	6	8	
2800	112 "	550	650	700	± 85	± 120	± 160	70	80	100	4	6	8	
3000	120 "	550	650	700	± 85	± 120	± 160	70	80	100	4	6	8	

说明: ① 订货时请注明结构长度和连接尺寸采用标准。

② 如所需可曲挠橡胶接头有关参数不在上表范围内, 请注明, 本公司可代为设计、制造。

Note: ① Specify the applicable standards of structural length and connection sizes when placing orders.

② Specify parameters of flexible rubber joints out of the table mentioned above if necessary, and our company will design and manufacture them for you.



压力等级对应法兰连接尺寸、数值表 (表 1)

Relative Flange Connection Size and Numerable Table of Pressure Rating (Table 1)

单位 (mm)
unit (mm)

公称通径 Nominal Diameter	0.25MPa			0.6MPa			1.0MPa		
DN/mm	D	K	n-φ	D	K	n-φ	D	K	n-φ
32	120	90	4-φ14	120	90	4-φ14	140	100	4-φ18
40	130	100	4-φ14	130	100	4-φ14	150	110	4-φ18
50	140	110	4-φ14	140	110	4-φ14	160	125	4-φ18
65	160	130	4-φ14	160	130	4-φ14	180	145	4-φ18
80	190	150	4-φ18	190	150	4-φ18	200	160	8-φ18
100	210	170	4-φ18	210	170	4-φ18	215	180	8-φ18
125	240	200	8-φ18	240	200	8-φ18	245	210	8-φ18
150	265	225	8-φ18	265	225	8-φ18	280	240	8-φ23
200	320	280	8-φ18	320	280	8-φ18	335	295	8-φ23
250	375	335	12-φ18	375	335	12-φ18	390	350	12-φ23
300	440	395	12-φ23	440	395	12-φ23	440	400	12-φ23
350	490	445	12-φ23	490	445	12-φ23	500	460	16-φ23
400	540	495	16-φ23	540	495	16-φ23	565	515	16-φ26
450	595	550	16-φ23	595	550	16-φ23	615	565	20-φ26
500	645	600	20-φ23	645	600	20-φ23	670	620	20-φ26
600	755	705	20-φ26	755	705	20-φ26	780	725	20-φ30
700	860	810	24-φ26	860	810	24-φ26	895	840	24-φ30
750	920	865	24-φ30	920	865	24-φ30	965	900	24-φ33
800	975	920	24-φ30	975	920	24-φ30	1015	950	24-φ34
900	1075	1020	24-φ30	1075	1020	24-φ30	1110	1050	28-φ30
1000	1175	1120	28-φ30	1175	1120	28-φ30	1220	1160	24-φ36
1100	1275	1220	28-φ30	1305	1240	28-φ33	1340	1270	32-φ36
1200	1375	1320	32-φ30	1400	1340	32-φ33	1455	1380	32-φ39
1300	1475	1420	32-φ30	1520	1450	32-φ36	1575	1490	32-φ42
1400	1570	1520	36-φ30	1630	1560	36-φ36	1675	1590	36-φ42
1500	1690	1630	36-φ30	1730	1660	36-φ36	1785	1700	36-φ42
1600	1790	1730	40-φ30	1830	1760	40-φ36	1915	1820	40-φ48
1800	1990	1930	44-φ30	2045	1970	44-φ39	2115	2020	44-φ48
2000	2190	2130	48-φ30	2265	2180	48-φ42	2325	2230	48-φ48
2200	2405	2340	52-φ33	2475	2390	52-φ43	2550	2440	52-φ56
2400	2605	2540	56-φ33	2685	2600	56-φ43	2760	2650	56-φ56
2600	2805	2740	60-φ33	2905	2810	60-φ48	2960	2850	60-φ56
2800	3030	2960	64-φ36	3115	3020	64-φ48	3180	3070	64-φ56
3000	3230	3160	68-φ36	3315	3220	68-φ48	3405	3290	68-φ60
3200	3430	3360	72-φ36	3525	3430	72-φ48			
3400	3630	3560	76-φ36	3735	3640	76-φ48			
3600	3840	3770	80-φ36	3970	3860	80-φ56			
3800	4045	3970	80-φ39						
4000	4245	4170	84-φ39						

PN1.6MPa/2.5MPa 钢制管法兰尺寸表(表 2)

Flange Sizes of PN1.6MPa/2.5MPa Steel Pipes(Table 2)

单位 (mm)
unit (mm)

公称 通径 DN Nominal Diam- eter	管子外径 Outer diameter of pipe	1.6MPa连接尺寸 1.6.MPa Connection Size					2.5MPa连接尺寸 2.5MPa Connection Size				
		法兰外径 Outer diameter flange	螺栓孔中 心圆 K Center circle K of Bolt Hole	螺栓孔直径 Diameter Of bolt hole	螺栓、螺柱Bolt, Stud		法兰外径 Outer diameter of flange	螺栓孔中 心圆直径 K Diameter K of central circle in the bolt hole	螺栓孔 直径 Diameter of bolt hole	螺栓、螺柱Bolt, Stud	
					数量n Qty	螺纹 Th Thread				数量n Qty	螺纹 Th Thread
32	38	140	100	18	4	M16	140	100	18	4	M16
40	45	150	110	18	4	M16	150	110	18	4	M16
50	57	165	125	18	4	M16	165	125	18	4	M16
65	76	185	145	18	4	M16	185	145	18	8	M16
80	89	200	160	18	8	M16	200	160	18	8	M16
100	108	220	180	18	8	M16	235	190	23	8	M20
125	133	250	210	18	8	M16	270	220	26	8	M24
150	159	285	240	23	8	M20	300	250	26	8	M24
200	219	340	295	23	12	M20	360	310	26	12	M24
250	273	405	355	26	12	M24	425	370	30	12	M27
300	325	460	410	26	12	M24	485	430	30	16	M27
350	377	520	470	26	16	M24	555	490	34	16	M30
400	426	580	525	30	16	M27	620	550	36	16	M33
450	480	640	585	30	20	M27	670	600	36	20	M33
500	530	715	650	34	20	M30	730	660	36	20	M33
600	630	840	770	36	20	M33	845	770	40	20	M36
700	720	910	840	36	24	M33	960	875	42	24	M39
800	820	1025	950	40	24	M36	1085	990	48	24	M45
900	920	1125	1050	40	28	M36	1185	1090	48	28	M45
1000	1020	1255	1170	42	28	M39	1320	1210	56	28	M52
1100	1120	1370	1280	42	28	M39	1425	1315	55	28	M52
1200	1220	1485	1390	49	32	M45	1530	1420	55	32	M52
1300	1320	1585	1490	49	32	M45	1640	1530	62	32	M56
1400	1420	1685	1590	49	36	M45	1755	1640	62	36	M56
1500	1520	1820	1710	54	36	M48	1865	1750	62	36	M56
1600	1620	1930	1820	56	40	M52	1975	1860	62	40	M56
1800	1820	2130	2020	56	44	M52	2195	2070	70	44	M64
2000	2020	2345	2230	60	48	M56	2425	2300	70	48	M64



3、橡胶补偿器安装说明书

3、Description for Installation of Rubber Compensator

1、橡胶补偿器在管道施工安装时，必须让其处于自然状态，不要在安装时让产品产生人为变形。

2、橡胶补偿器与管道法兰连接时，螺栓必须对称地加压拧紧，使所有螺栓松紧一致，使用条件恶劣的场所，除增加平垫外，还应增加弹簧垫圈，以防螺母松动。

3、当橡胶补偿器在水（油）泵出口近距离或开停频繁条件下使用时，为减少橡胶接头长度的拉伸和压缩过大而给泵和管道带来的影响，应在法兰两端增加限位装置。建议选用传力型。

4、使用DN1000mm以上大口径橡胶补偿器时，为便于安装和降低劳动强度，应在法兰一端制作一节适量长度的短管，待橡胶接头与短管和另一端管道连接好以后，再把短管与对口端长管焊接。

5、为便于因短管焊接变形而造成的径向偏差，应在焊接前用圆钢或其他相应强度的金属物把两端管道法兰临时焊接，使橡胶接头与法兰连接处形成刚性体，待短管焊接完成后，再把焊接物去掉，以使橡胶接头在安装完毕后处于自然状态。

6、在实施金属连接物与法兰临时焊接时，切记用掩盖物将焊接处橡胶接头盖住，以免焊接时烧坏球体。

1. During the installation of pipes, the rubber compensator must be kept under natural conditions, and there shall be no any manmade deformation in the installation of the product.

2. When the rubber compensator is connected with the pipe flange, the bolts must be pressurized and screwed down symmetrically, and all bolts shall be kept consistent in tightness, if it is used in places with bad conditions, except plain cushion added, spring washers shall be used to prevent the bolts from loosening.

3. When the rubber compensator is used close to the exit of the water/oil pumps or started or stopped frequently, it is recommended to select a transmission type, meanwhile, a limiter shall be added on both ends of the flange in order to reduce the influence on pipes and pumps due to the over expansion or compression of the length of rubber joints.

4. When the rubber compensator with caliber exceeding DN1000mm, in order to make it easy for installation and reduce the labor strength, a short pipe with proper length shall be made on one end of the flange, after the rubber joint is connected with the short pipe and pipes, and then weld the short pipe to the long pipe.

5. In order to guarantee the radial deviation formed because of the deformation of welding short pipes, it is needed to weld temporarily flanges on two ends through round steel or other metals with similar strength before welding so as to form a steel body at the joint of rubber joint and flange, after welding the short pipes, remove the welding parts so as to keep the rubber joint under natural conditions after installation.

6. During the temporary welding of metals and flanges, remember to cover the rubber joint at the welding points with shielding so as to prevent the rubber ball from being burned in welding.

二、橡胶柔性止回阀(鸭嘴阀)

II、Flexible rubber check valve (duckbill valve)

产品简介

ZXF 橡胶缓闭逆止阀是一种全橡胶结构、外形呈“鸭嘴状”、具有“正向流入, 反向逆止”功能的新型给排水阀门产品。它根据受力分析和受力计算, 针对不同的工况, 采用不同的设计机理, 选用不同的橡胶配方, 并按特殊工艺制作而成。正向工作时, 水由进水口流入, 微小的水压, 便能打开阀门, 水压越大, 阀门开启越大, 水流量越大。反向工作时, 阀口自然关闭, 密封逆止, 背压越大, 阀口越紧, 密封效果越好。它广泛用于市政、水利、污水处理等各种出水排放口, 防止倒灌、倒流, 是取代拍门的理想产品。

产品特点

与传统拍门比较, 优势特别明显:

- a) 根据水压差自动开启和关闭, 安全可靠, 无噪音, 无需人员操作, 无需维护。
- b) 正向开启水阻力小, 启动压力小, 且流量根据水压自然调节;
- c) 反向逆止密封好, 没有渗漏, 防止了倒流, 背压越大, 效果越佳;
- d) 防腐、防老化, 不变形, 适应性强, 使用寿命;
- e) 尺寸范围广, 公称直径 DN50 至 DN3000。

安装结构形式

- 1) 套接式 ZXF-T 安装在排水管的出口
- 2) 法兰式 ZXF-F 安装在排水管带法兰的出口末端
- 3) 安装板式 ZXF-F 安装于出水口末端构筑物上
- 4) 内置式 ZXF-F 安装于城市雨水污水和系统出口末端
- 5) 灰浆或水泥管道式 ZXF-T 安装于灰浆或水泥管道的末端

Introduction

ZXF rubber slow closing inverted valve is made of rubber, it looks like a duckbill and is a new draining valve with functions of forward inflow and reverse back stop. Based on analysis and calculation of stress, the product is made via special process with different design principles, different rubber prescription under different operating conditions. During the forward operation, water flows in from the inlet, and the lower water pressure will open the valve, the higher the water pressure is, the wider the valve is opened, and the higher the water flow is. During the back stop operation, the valve will close naturally, seal and stop. The higher the water pressure is, the tighter the valve is, the better the sealing effect. The product is widely used in draining water of municipal construction, water conservancy and sewage process so as to prevent reverse flow and reflux, it is an ideal product to replace flat valves.

Characteristics

Compared with traditional flat valves, it owns obvious advantages:

- a) It will start and close automatically according to the differential water pressure, safe, reliable, noiseless, no manual operation or maintenance.
- b) There is smaller resistance in forward start, small pressure to start, in addition, the flux can be adjusted automatically according to the water pressure.
- c) There is sound seal for back stop, no leakage, back flow prevention, the higher the back pressure is, the better the effect is.
- d) Corrosion protection, aging protection, no deformation, high adaptation and long service life.
- e) Wide size, nominal size: DN50-DN3000.

Installation type

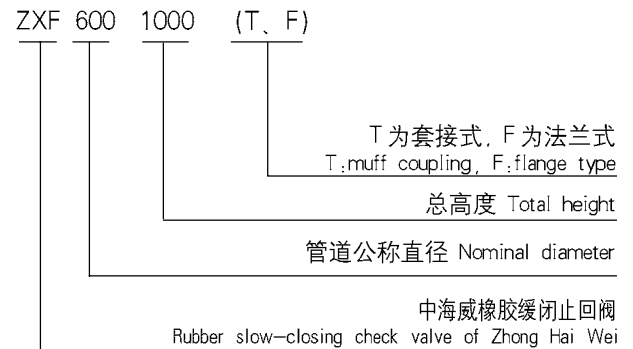
- 1) Muff coupling type ZXF-T installed at the outlet of drainpipe
- 2) Flange type ZXF-F installed at the end of outlet of drainpipe with flange
- 3) Mounting plate ZXF-F installed on the structure of the end of outlet
- 4) Inlayed ZXF-F installed at the end of outlets of urban rainwater and sewage and system
- 5) Mortar or cement pipe type ZXF-F installed on the ends of mortar of cement pipes



适用范围 Application Scope

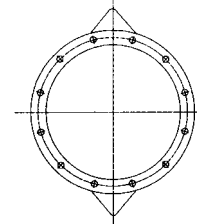
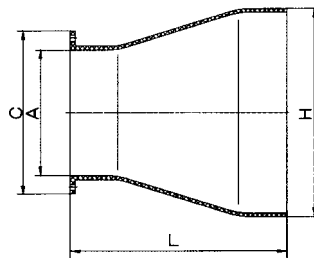
- 1) 该产品性能卓越, 适用范围广
 - 2) 适用于污水系统
 - 3) 适用于排放系统
 - 4) 适用于堤坝排放
 - 5) 适用于机场、高速公路排水
 - 6) 适用于下水道排放
 - 7) 适用于污水池排放
 - 8) 气味相隔
- 1) Quality performance, wide application
 - 2) Applicable for sewage systems
 - 3) Applicable for drainage systems
 - 4) Applicable for drainages from dams
 - 5) Applicable for drainages in airports and highways
 - 6) Applicable for drainages in sewers
 - 7) Applicable for drainages from sewage reservoirs
 - 8) Smell separation

型号说明 Instructions for Type



1、法兰式橡胶缓闭逆止阀

1、Flanged Slow-Closing Check Valve

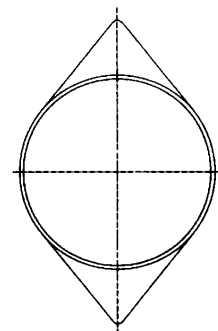
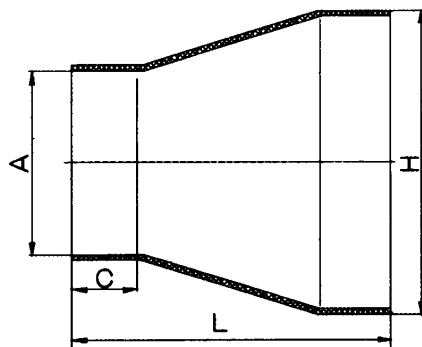


单位 (mm)
unit (mm)

型号 Type	管道公称直径 Nominal Diameter of Pipes	长度 L Length	高度 H Height	法兰外径 C External Diameter of Flange
ZXF50-150-F	50	150	100	150
ZXF80-220-F	80	220	140	200
ZXF100-250-F	100	250	200	225
ZXF150-340-F	150	340	265	275
ZXF200-420-F	200	420	325	338
ZXF250-520-F	250	520	425	400
ZXF300-620-F	300	620	525	485
ZXF350-700-F	350	700	625	525
ZXF400-800-F	400	800	725	588
ZXF450-900-F	450	900	825	625
ZXF500-980-F	500	980	925	688
ZXF600-1120-F	600	1120	1025	800
ZXF700-1180-F	700	1180	1125	969
ZXF800-1350-F	800	1350	1400	1080
ZXF900-1500-F	900	1500	1525	1150
ZXF1000-1600-F	1000	1600	1725	1325
ZXF1200-1840-F	1200	1840	1950	1485

2、套接式橡胶缓闭逆止阀

2、Muff Coupling Slow-Closing Check Valve



单位 (mm)
unit (mm)

型号 Type	管道公称直径 Nominal diameter of pipe	长度 L Length	高度 H Height	套入深度 C Deepness of Muff Coupling
ZXF50-158-T	50	158	100	25
ZXF80-232-T	80	232	140	40
ZXF100-270-T	100	270	200	40
ZXF150-360-T	150	360	265	50
ZXF200-450-T	200	450	325	50
ZXF250-560-T	250	560	425	75
ZXF300-650-T	300	650	525	115
ZXF350-750-T	350	750	625	115
ZXF400-850-T	400	850	725	135
ZXF450-950-T	450	950	825	150
ZXF500-1060-T	500	1060	925	200
ZXF600-1200-T	600	1200	1025	200
ZXF700-1260-T	700	1260	1125	200
ZXF800-1450-T	800	1450	1400	250
ZXF900-1620-T	900	1620	1525	250
ZXF1000-1720-T	1000	1720	1725	250
ZXF1200-2010-T	1200	2010	1950	300
ZXF1400-2280-T	1400	2280	2320	320
ZXF1600-2600-T	1600	2600	2650	350
ZXF1800-2920-T	1800	2920	2960	400
ZXF2000-3150-T	2000	3150	3300	450
ZXF2200-3450-T	2200	3450	3580	500
ZXF2400-3760-T	2400	3760	3925	550
ZXF2600-3900-T	2600	3900	4250	600
ZXF2800-4200-T	2800	4200	4580	650
ZXF3000-4500-T	3000	4500	4990	700



安装使用说明

1) 安装前的准备

a) 请核对工况与阀的型号、安装方式、技术参数、技术要求(耐压或背压、耐温、耐腐蚀条件)是否相符。

b) 检查阀的内外有无人为损坏, 检查阀内有无脏物等。

c) 检查安装管道外表面或连接法兰有无毛刺, 有无变形, 是否光滑平整。

2) 安装过程

a) 套接式橡胶缓闭逆止阀的安装, 应使阀的内径与连接管道的外径正确匹配; 套入深度应符合相对应的要求; 管道外表可涂加水工胶密封; 卡箍卡口之间应适当加橡胶垫片, 然后拼紧连接螺栓; 若橡胶缓闭逆止阀采用辅助衬管, 连接时, 辅助衬管与预留管应密封焊牢, 并适当增加加强筋提高强度和刚性。

b) 法兰式安装时, 排水管的出口法兰尺寸应与橡胶缓闭逆止阀的连接法兰尺寸相对应; 法兰与法兰之间应视具体情况, 加装密封垫, 保证连接紧固后的绝对密封; 还要注意不能碰坏橡胶缓闭逆止阀的法兰唇边。

C) 其它方式安装时, 参照上述要求。

d) 当公称直径大于DN800时, 由于阀体重量较大, 加之工作时, 阀体腹腔中有大量的水及水流冲击, 须增加一支承拉杆, 通过阀体上的吊环, 将阀体长期稳固的吊起。

3) 注意事项

a) 阀体在搬运、贮存、安装中, 要避免不规范操作。

b) 如阀体长期保存, 要防止明火。严禁叠放。

c) 正常使用中, 无需维护, 但要防止尖硬物戳穿阀体。

d) 工作部位不能有物体的挤压, 以免影响它的自然开启和关闭。

订货须知

a) 用户要提供现场使用工况的情况说明及技术要求。

b) 用户要提供必要的技术参数, 包括管道的公称直径、管道接口外径、安装型式及正向开启压力、反向逆止背压的数值。

c) 我方技术人员将根据用户的要求, 为用户选型设计。

Instruction for Installation

1) Preparation before installation

a) Check operating conditions, valve types, installation method, technical parameters, technical requirements (pressure resistance or back pressure, temperature resistance and corrosion prevention or other conditions).

b) Check whether valves (inside/outside) are damages or not, there are any sundries or not.

c) Check whether the outer surfaces of the pipes or coupling flanges have any burrs, deformation, and the surfaces are smooth or not.

2) Installation

a) The installation of muff coupling rubber slow-closing inverted valve shall make the internal diameters of valves match with external diameter of the connecting pipes, the muff coupling depth shall meet relevant requirements, the external surfaces of pipes can be coated with rubber for sealing; rubber cushions shall be placed between yoke and bayonet, and then screw down the connecting bolts. If the rubber slow-closing check valve adopts ancillary liner pipes, during the connection, the ancillary liner pipes and the reserved pipes shall be sealed and welded, and some reinforcing bars shall be used for reinforcing the strength and stiffness.

b) During the installation of flanges, the sizes of flange at the outlet of the drainpipe shall match with that of coupling flange of the rubber slow-closing check valve, if necessary, liners can be added between flanges to assure the absolute sealing after firm connection, meanwhile, the lips of the flange for the rubber slow-closing check valve shall not be damaged.

c) Refer to the requirements mentioned above for other installation methods

d) When the nominal diameter exceeds DN800, due to the large weight of the valve, there is lots of water and flow inside the cavity the valve, an additional support bar shall be installed, and the valve will be lift stably for a long time through the slinger on the valve.

3) Precautions

a) During the transport, storage and installation of the valves, Do follow specifications in operation.

b) If the valves will be kept for a long time, Do avoid open flame and forbid piling.

c) During the normal use, it needs no any maintenance, however, sharp or hard substances shall be prevented from piercing through the valve body.

d) There shall be no extrusion on the working parts so as to avoid its natural open or start.

Notices for Orders

a) Users shall provide working conditions in situ and technical requirements.

b) Users shall provide necessary technical parameters, including nominal diameter of the pipe, external diameter of pipe's joints, installation type, and values of direct pressure to start, and back pressure of reverse stop.

c) At the request of users, our technicians will provide types and designs for users.

三、疏浚胶管 III.Dredging Rubber Hose

1、排泥橡胶软管 1、Sludge Discharge Rubber Hose



①性能

钢法兰排泥胶管用于与疏浚船配套输送泥沙。壁厚18—75毫米。适宜工作温度为零下20摄氏度到50摄氏度。便于安装、使用灵活、安全、耐磨、耐曲挠。

① Performance

A steel flange sludge discharge rubber hose is used for the transport of mud and sand. Wall thickness: 18~75mm, Applicable temperature: -20°C~50°C. It is convenient to be installed and flexible, safe, wearable and flexibility resistance.

②规格尺寸表 ②Specification and Sizes

内径 Inner Diameter		工作压力 (MPa) Working Pressure	爆破压力 (MPa) Bursting Pressure	长度 (m) Length	参考壁厚 (mm) Wall Thickness
mm	公差 (mm) Allowable Error				
300	± 2	0.4—1.2	3.6	1.3	34—37
414	± 2	0.4—1.2	3.6	1.3	35—37
560	± 3	0.4—1.2	3.6	2.3	40—45
600	± 3	0.4—1.2	3.6	2.3	40—45
700	± 3	0.8—1.5	4.5	2.3	40—45
800	± 4	1.2—2.5	5.5	2.6	50—52
900	± 4	1.5—2.5	7.5	2.3	55—58
1000	± 5	2.0—2.5	7.5	3.5	75
1200	± 5	2.0—2.5	7.5	3.5	75

其他技术参数根据客户的需要制定。

As for other technical parameters, refer to the requirements by the clients.

③橡胶的物理机械性能

③ Physical and Mechanical Properties of Rubber

表 Table 1

项 目 Items			指 标 Index	
			内胶层 Inner Rubber Lining	外胶层 Outer Rubber Lining
拉伸强度 Tensile Strength	Mpa	≥	12	10
扯断伸长率 Tensile Strength at break	%	≥	450	420
热空气老化 Hot air aging 70°C × 72h	拉伸强度 Tensile strength	%	+25 — -25	
	扯断伸长率 Elongation at break	%	+10 — -30	
磨耗量 Abrasion value			0.7	
邵氏硬度 Shore hardness			60—66	
使用温度 (度) Applicable temperature			-40~+60	



④工作压力 0.4—2.5Mpa ④ Working Pressure 0.4~2.5Mpa

表 Table 2

试验项目 Items for Test	试验压力 Test Pressure	指标 Index
加压时的长度变化率 % Length—variation rate under pressure	最高工作压力 ± Max working pressure	10
	1.5 倍最高工作压力 ± 1.5 times of max working pressure	15
加压时的外景变化率 % Outer variation rate under Pressure	最高工作压力 ± Max working pressure	5
	1.5 倍最高工作压力 ± 1.5 times of max working pressure	7.5

⑤液压性能

⑤ Hydraulic performances

排泥橡胶软管在 1.5 倍于规定的工作压力下
定压试验时，应无渗漏、局部鼓泡等其它异常现象。

排泥橡胶软管工作压力有特殊要求的，由需方确
定，供方设计，爆破压力不低于工作压力的 3 倍。

排泥橡胶软管在管体变形试验时，其长度和外径
变化率应符合表 2 的规定。

When the soil discharging—based rubber hose is tested
under constant pressure and 1.5 times of standard working
pressure, there shall be no leakage, partial bubbling or other
abnormal phenomena.

If the soil discharging—based rubber hose has special
requirements on the working pressure, it will be confirmed
by the buyer and designed by the seller, and the bursting
pressure shall not be less than 3 times of the working
pressure.

During the test on the deformation of pipe body, the
change rate of length and external diameter of the soil
discharging—based rubber hose shall comply with require-
ments in Table 2.

⑥真空性能

⑥ Vacuum performance

吸泥橡胶软管当真空度达到 80KPa 时，不得有吸
扁，脱层及其他异常现象。

When the vacuum degree of the soil absorbing rubber
hose reaches 80KPa, there must be no flat, delamination or
other abnormal phenomena.

⑦粘接性能

⑦ Cohesiveness

排、吸泥橡胶软管各层之间粘合强度不小于
1.5KN/m。

The cohesiveness between layers of soil discharging and
soil absorbing rubber hoses shall not be less than 1.5KN/m.

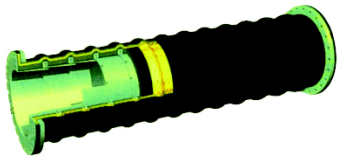
⑧胶管长度公差一般为胶管全长的 ± 2%

⑧ The tolerance in the length of rubber pipe shall be +2% of the full length of the pipe.

排、吸泥橡胶软管各层之间粘合强度不小于
1.5KN/m。

The cohesiveness between layers of soil discharging and
soil absorbing rubber hoses shall not be less than 1.5KN/m.

2、吸泥橡胶软管 2、Sludge Suction Hose



①性能

钢法兰排泥胶管用于与疏浚船配套输送泥沙。厚壁 18—75 毫米。适宜工作温度为零下 20 摄氏度到 50 摄氏度。便于安装、使用灵活、安全、耐磨、耐曲挠。

① Performance

A steel flange sludge discharge rubber hose is used for the transport of mud and sand. Wall thickness: 18~75mm, Applicable temperature: -20°C~50°C. It is convenient to be installed and flexible, safe, wearable and flexibility resistance.

②规格尺寸表 Specification and Sizes

内径 Inner Diameter		工作压力 (MPa) Working Pressure	爆破压力 (MPa) Bursting Pressure	长度 (m) Length	参考壁厚 (mm) Wall Thickness
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600	± 3	0.4—1.2	3.6	2.3	40—45
700	± 3	0.8—1.5	4.5	2.3	40—45
800	± 4	1.2—2.5	5.5	2.6	50—52
900	± 4	1.5—2.5	7.5	2.3	55—58
1000	± 5	2.0—2.5	7.5	3.5	75
1200	± 5	2.0—2.5	7.5	3.5	75

其他技术参数根据客户的需要制定。

As for other technical parameters, refer to the requirements by the clients.

③橡胶的物理机械性能

③ Physical and Mechanical Properties of Rubber

表 Table 1

项 目 Item			指 标 Index	
			内胶层 Inner rubber lining	外胶层 Outer rubber lining
拉伸强度 Tensile strength	Mpa	≥	12	12
扯断伸长率 Tensile strength at break	%	≥	450	420
热空气老化 Hot air aging 70°C × 72h	拉伸强度 Tensile strength	%	+25 — -25	
	扯断伸长率 Elongation at break	%	+10 — -30	
磨耗量 Abrasion value			0.7	
邵氏硬度 Shore hardness			60—66	
使用温度 (度) Applicable temperature			-40~+60	



④ 液压性能

排泥橡胶软管在 1.5 倍于规定的工作压力下进行定压试验时, 应无渗漏、局部鼓泡等其它异常现象。

排泥橡胶软管工作压力有特殊要求的, 由需方确定, 供方设计, 爆破压力不低于工作压力的 3 倍。

排泥橡胶软管在管体变形试验时, 其长度和外径变化率应符合表 2 的规定。

⑤ 液压性能

排泥橡胶软管在 1.5 倍于规定的工作压力下进行定压试验时, 应无渗漏、局部鼓泡等其它异常现象。

排泥橡胶软管工作压力有特殊要求的, 由需方确定, 供方设计, 爆破压力不低于工作压力的 3 倍。

排泥橡胶软管在管体变形试验时, 其长度和外径变化率应符合表 2 的规定。

⑥ 真空性能

吸泥橡胶软管当真空度达到 80KPa 时, 不得有吸扁, 脱层及其他异常现象。

⑦ 粘接性能

排、吸泥橡胶软管各层之间粘合强度不小于 1.5KN/m。

⑧ 胶管长度公差一般为胶管全长的 ± 2%

⑧ The tolerance in the length of rubber pipe shall be +2% of the full length of the pipe.

排、吸泥橡胶软管各层之间粘合强度不小于 1.5KN/m。

④ Hydraulic performances

When the soil discharging—based rubber hose is tested under constant pressure and 1.5 times of standard working pressure, there shall be no leakage, partial bubbling or other abnormal phenomena.

If the soil discharging—based rubber hose has special requirements on the working pressure, it will be confirmed by the buyer and designed by the seller, and the bursting pressure shall not be less than 3 times of the working pressure.

During the test on the deformation of pipe body, the change rate of length and external diameter of the soil discharging—based rubber hose shall comply with requirements in Table 2.

⑤ Hydraulic performances

When the soil discharging—based rubber hose is tested under constant pressure and 1.5 times of standard working pressure, there shall be no leakage, partial bubbling or other abnormal phenomena.

If the soil discharging—based rubber hose has special requirements on the working pressure, it will be confirmed by the buyer and designed by the seller, and the bursting pressure shall not be less than 3 times of the working pressure.

During the test on the deformation of pipe body, the change rate of length and external diameter of the soil discharging—based rubber hose shall comply with requirements in Table 2.

⑥ Vacuum performance

When the vacuum degree of the soil absorbing rubber hose reaches 80KPa, there must be no flat, delamination or other abnormal phenomena.

⑦ Cohesiveness

The cohesiveness between layers of soil discharging and soil absorbing rubber hoses shall not be less than 1.5KN/m.

The cohesiveness between layers of soil discharging and soil absorbing rubber hoses shall not be less than 1.5KN/m.

3、飘浮排泥胶管

3、Floating Sludge Discharge Hose

性能 Performance

- 1、高耐磨，防紫外线橡胶外层；
- 2、磨损指示色层；
- 3、独立的泡沫浮层：密封不吸水；浮出水面部分不小于总体面积的 20%；
- 4、高品质，强耐磨橡胶；
- 5、法兰按照客户要求定制；
- 6、弯曲角度：工作状态能弯曲角度 0—45°。



- 1.External rubber layer featured of high abrasion resistance and ultraviolet rays protection.
- 2.Layers of marker
- 3.Independent foam floating roof, sealing, no absorption of water, the part above the water will not be less than 20% of total area.
- 4.High quality and high abrasion proof rubber
- 5.Flanges are customized at the request of users
- 6.Bend angle: 0—45 degrees in operation.



型号：A 型(软管型)——内层为耐磨橡胶
B 型(硬管型)——内层为刚性材料

Type: A (soft pipe)——Inner layer: abrasion proof rubber
B (hard pipe)——Inner layer: stiff materials

1. 耐磨胶的拉伸强度 $\geq 15\text{MPa}$
 耐磨 $\leq 0.45\text{cm}^3/1.61\text{Km}$
2. 工作压力 0.8—3.0Mpa
3. 在工作状态下（介质含砂小于 30%），浮出水面部分不少于管体最大外径的 30%。
4. 曲挠性能，A 型最小弯曲半径为 $\pi D/4$ （D 为管内径）
- 1.The tensile strength of abrasion proof rubber $\geq 15\text{MPa}$
 Abrasion resistance $\leq 0.45\text{m}^3/1.6\text{Km}$.
- 2.Working pressure: 0.8—3.0MPa
- 3.Under the working conditions (the content of sand in medium < 30%), the part above the water $\geq 30\%$ of max external diameter of the pipe.
- 4.Flexing: the min bending radius of type A shall be $\pi D/4$ (D: inner diameter of the pipe)

4、装甲胶管 Armored Hose

性能

装甲胶管用于疏浚采矿工程，与管线配套使用，价值较高，主要适用于输送具有锋利接触面、较大体积、比重较大，相对冲击强度较大的矿物质，如金刚砂、矿石等。

- 1、使用超耐磨的 30CrMnSi 作为工作面；
- 2、定向组装与对接；
- 3、使用稳定性高，输送能力强。



Performance

Armored hoses are mainly used for dredging and mining projects with the support of pipelines, due to higher costs, the products mainly adopted to convey mineral substances which have sharp contact surfaces, large volume, high gravity and higher relative impact strength, such as silicon carbide and ores.

1. 30CrMnSi with higher abrasion resistance adopted as working surface;
2. Directed assembly and butt-joint.
3. High stability and strong transport capacity.



5、工程胶管 Hoses for Engineering

性能

工程橡胶管用于疏浚船与输油船，工程环境与使用要求比较高，属于高端产品，主要输送水。其性能特点：安全系数高、耐曲挠、稳定性好、使用寿命较长。



Performances

The hoses are mainly used for dredge and oil-transported ship, which have higher requirements in engineering and operating conditions, as top-grade products, they are mainly used for water feeding. The products have features of high safety factor, flexibility resistance, sound stability and long service life.

引进国外技术，合作开发新产品

Foreign Technologies Introduced to Develop New Products



四、管路松套补偿接头 IV、Loose Compensation Joint for Pipelines

概述

管路松套补偿接头是在吸取国外先进技术的基础上, 结合我国国情研制生产开发的。产品设计颖合理, 结构简单可靠, 密封性能优越, 装卸方便, 有利于管道的安装和维修。根据结构和使用情况, 可分为六大类: A、松套补偿接头; B、松套限位补偿接头; C、松套传力补偿接头; D、大挠度松套补偿接头; E、球形补偿接头; F、压力平衡型补偿接头。

General

Borrowing advanced technologies from abroad, the product is researched and processed under current situations in China. It has features of logical design, simple and reliable structure, quality sealing, easy installation and un-installation, and convenient for the installation and maintenance of pipes. According its structure and purposes, it has six kinds: A. Loose compensation joint; B. Loose limit compensation joint; C. Loose transmission compensation joint; D. High flexibility loose compensation joint; E. Spherical compensation joint; F. Pressure balancing compensation joint.x

执行标准

设计制造检验标准 GB/T12465—2007

法兰连接 GB/T17241—1998、GB/T9115—2000

Executive Standard

Standard for design, process and test: GB/T12465—2007

Flanged connection: GB/T17241—1998, GB/T9115—2000

主要金属零件材料 Main metal Parts and Materials

零件名称 Part Name	材 料 Material		
	名称 Item	牌号 Trademark	标准号 Design Code
本体、压盖、 限位短管、短管法兰 Main body, Gland, Limited short pipe	碳素结构钢 Carbon steel	Q235—A	GB/T700—1998
	优质碳素结构钢 Quality carbon steel	20, 35, 45	GB/T699—1999
	球墨铸铁 Nodular cast iron	QT400—15	GB/T1348—1998
	不锈钢 Stainless steel	0Cr18Ni9, 00Cr17Ni14Mo2	GB/T3280—1992
螺栓、螺柱、 传力螺杆、螺母 Bolt, Stud Power screw, Nut	碳素结构钢 Carbon steel	Q235—A	GB/T4237—1992
	优质碳素结构钢 Quality carbon steel	35, 45	GB/T700—1998
	不锈钢 Stainless steel	0Cr18Ni9, 00Cr17Ni14Mo2, 1Cr18Ni10Ti	GB/T699—1999 GB/T1220—1992

密封圈用橡胶材料 Rubber Materials for seal ring

名称 Name	胶料代号 Code	标准编号 Standard No.	适用介质 Applicable Medium
橡胶 Rubber	WA	HG/T 3091—2000	50°C 以下冷饮用水 Cold drinking water bellow 50°C
	WC		海水、淡水、生活污水、空气 Sea water, Fresh water, Domestic sewage, Air
	SL70	HG/T 3093—1988	原油、滑油、成品油 Raw oil, Lubricating oil, Product oil
	G70	HT/T 3092—1988	燃气、热气体 Fuel gas, Thermal gas
	FN70	HG/T 3089—2001	燃油 Fuel oil
	WB	HG/T 3097—2006	110°C 以下饮用热水 Hot drinking water bellow 110° C
	WD		110°C 以下非饮用热水 (热水) Hot no-drinking water bellow 110° C
	F70	AMS 7276G—2001	200°C 以下蒸汽 Steam at lower than 200° C

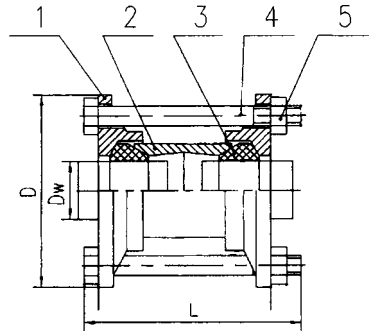
产品分类 Product Classification

型式 Type	公称通 DN Nominal Diameter	可挠量 Flexible Quantity (°)	偏心量 Eccentricity Quantity
AL	10~50	2	2
压盖松套式 AY Gland and loose type	65~700	3	3
	800~2000		4
	2200~3200		5
法兰松套式 AF Flange loose type	65~700	2	2
	800~2000		3
	2200~3200		4
	3400~4000		5
大挠度补偿接头 D Compensation joint D with large deflection	100~600	7	18
	700~1200	6.5	23
	1400~1600		26
	1800~2600	6	30
	2800~3200		35
球形补偿接头 E Ball-type compensation joint	100~1000	15	—
	1200~1600	13	
	1800~2400	10	



1、AY 型 (SSJB) 压盖式松套补偿接头

1、AY-Type(SSJB) Gland and Loose Compensation Joints



序号 No	名称 Name	数量 Qty	材料 Material
1	压盖 Gland	2	Q235A、QT400-15
2	套筒 Sleeve	1	Q235A、20#
3	密封圈 Seal ring	2	NBR、CR、EPDM
4	螺栓 Bolt	n	Q235A、35#
5	螺母 Nut	n	Q235A、20#

压盖式松套补偿接头的基本尺寸

Basic Sizes of Gland and Loose Compensation Joints

单位 (mm)
unit (mm)

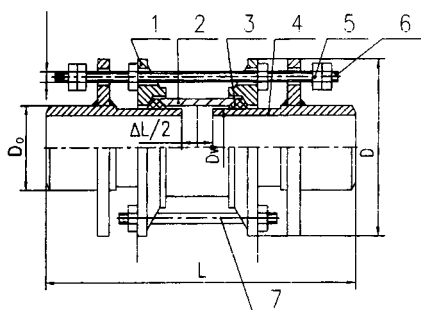
公称通径 Nominal diameter DN	管子外径 Dw Outer diameter of pipe	外形尺寸 Overall size		管子插入长度 $\approx L_0$ Inserted length Of pipe		伸缩量 δ Flexibility		n—Th 短型 Shortness				
		外径 Dw Outer diameter	总长 L Total length									
			短型 Shortness	长型 Length	短型 Shortness	长型 Length	短型 Shortness	长型 Length	0.6—1.6(MPa)	2.5(MPa)		
65	76	155	148	208	52.5	67.5	15	45	4—M12	4—M12		
80	89	165								4—M16		
100	108	190										
125	114	195							160	220	4—M16	6—M16
	133	215										
140	225											
150	159	245	6—M20	8—M20								
168	255											
200	219	310										
250	273	375	163	223	67.5	82.5	25	55	6—M20	8—M20		
300	325	440	213	273					8—M20	10—M20		
350	355	470										
	377	490										
400	406	520							10—M20	12—M20		
	426	540										
450	457	570										
	480	590										
500	508	625										
	530	645										
600	610	730			12—M20	14—M20						
	630	750	12—M24	16—M24								
700	720	850	295	355					14—M24	18—M24		
800	820	965							16—M24	20—M24		
900	920	1065							18—M27	24—M27		
1000	1020	1165							20—M27	28—M27		
1200	1220	1365	310	377					20—M27	20—M27		
1400	1420	1590							22—M27	30—M30		
1500	1520	1690							24—M27	32—M30		
1600	1620	1795							26—M30			
1800	1820	2000							28—M30			
2000	2020	2200	30—M30									
2200	2220	2420	32—M33									
2400	2420	2635	34—M33									
2600	2620	2835	320	400	92.5	107.5	45	75	36—M33	38—M33		
2800	2820	3040							40—M33			
3000	3020	3240							42—M36			
3200	3220	3440										
3400	3420	3640		490								
3600	3620	3860										
3800	3820	4080		500								
4000	4020	4300										

2、BY 型(SSJB-3)压盖式限位松套补偿接头

2、BY Type (SSJB-3) Gland and Limited Loose Compensation Joints

压盖限位补偿接头是在松套补偿接头原有基础上, 增设限位短管等组件, 在最大伸缩量处用双螺母锁定, 能吸收允许范围内的管道轴向位移和承受管道内的压力推力。

Based on the loose compensation joint, the gland and limited loose compensation joint shall be added with components such as limited short pipes and so on, and then it is locked by double nuts at the place of largest expansion, in order to absorb the axial displacement of pipes in the allowable scope and bear the pressure and thrust within the pipe.



序号 No	名称 Name	数量 Qty	材料 Material
1	压盖 Gland	2	QT450-10、Q235A
2	套筒 Sleeve	1	QT450-10、Q235A
3	密封圈 Seal ring	2	NBR、CR、EPDM
4	限位短管 Limited short pipe	2	Q235A
5	螺母 Nut	n	Q235A、20#
6	长螺栓 Long bolt	n	Q235A、35#
7	短螺栓 Short bolt	n	Q235A、35#

SSJB-3 压盖式松套补偿接头的基本尺寸

Basic Sizes of SSJB-3 Gland and Loose Compensation Joints

单位 (mm)

unit (mm)

公称通径 DN Nominal diameter	管子外径 D w Outer diameter of pipe	外形尺寸 Overall size				伸缩量 δ Expansion δ	质量 /kg Quality/kg
		外径 D Outer diameter	总长 L Total length				
			安装尺寸 Installation size(mm)	max	min		
65	76	155	645	690	600	45	10.1
80	89	165					14.2
100	108	190					20.4
	114	195					23.3
125	133	215					26.5
	140	225					28.1
150	159	245					32.6
	168	255					33.3
200	219	310					44.7
250	273	375					66.6
300	325	440	655	710	600	55	87.8
350	377	490					102.7
400	426	540					110.3
450	480	590					133.0
500	530	645					150.4
600	630	750					176.4
700	720	850					210.5
800	820	965					1075
900	920	1065	636.9				
1000	1020	1165	700.6				
1200	1220	1365	837.2				
1400	1420	1590	1192.1				
1500	1520	1690	1278.8				
1600	1620	1795	1387.5				
1800	1820	2000	1723.2				
2000	2020	2200	2092.6				
2200	2220	2420	2468.1				
2400	2420	2635	2735.2				
2600	2620	2835	3016.4				
2800	2820	3040	3461.8				
3000	3020	3240	3872.3				
3200	3220	3440	1130	1260	1000	130	

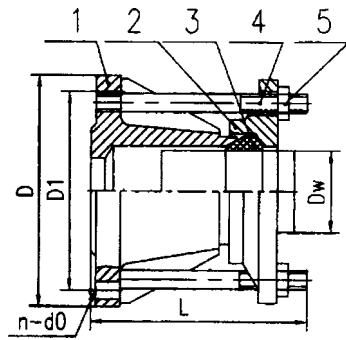
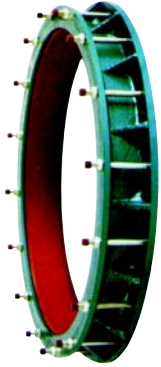


3、AF 型(VSSJA)法兰式松套补偿接头

3、AF-Type(VSSJA) Flanged Loose Compensation Joints

- 1、AF 型法兰式补偿接头适用于一边与法兰连接，一边管子连接。
- 2、公称通径大于 1000 的松套伸缩接头，建议增订长度为 500mm 的短管或短管法兰。

- 1、AF type flanged loose compensation joint shall be connected with the flange on one end and the other side is connected with the pipe.
- 2、As for the loose expansion joint with the nominal diameter over 1000, it is suggested that a short pipe or short pipe flange with the length of 500mm should be additionally ordered.



序号 No	名称 Name	数量 Qty	材料 Material
1	本体 Main body	1	Q235A、QT400-15
2	压盖 Gland	1	Q235A、QT400-15
3	密封圈 Seal ring	1	NBR、CR、EPDM
4	螺栓 Bolt	n	Q235A、35#
5	螺母 Nut	n	Q235A、20#

PNO.25Mpa AF(VSSJA)法兰式松套补偿接头的主要尺寸

Main Sizes of PNO.25Mpa AF(VSSJA) Flanged Loose Compensation Joints

单位 (mm)
unit (mm)

公称通径 DN Nominal diameter	管子外径 D _w Outer Diameter of pipe	法兰连接尺寸 Size of flange connection				螺栓 bolt n/个 n/tuit	螺栓 Th ₁	总长 L Total length	管子插入长度 ≈ L ₀ Inserted length of pipe	伸缩量 δ Expansion δ	质量 /kg Quality/kg				
		法兰外径 D ₁ Outer diameter of flange	螺栓中心圆直径 D ₀ Diameter D ₀ of central circle in the bolt hole	螺栓孔径 d ₀ Diameter d ₀ of bolt hole											
65	76	160	130	14	4	M12	118	65	25	5.7					
80	89	190	150	18			M16			123	6.8				
100	108	210	170								8	M16	123	8.5	
	114													200	225
125	133	240	200		12	M20		160	10.5						
	140			265			225		13.8						
150	159	490	445							16	M20	160	12.5		
	168												540	495	20
200	219	320	280		22	M20		160							
250	273	375	335	24			M27		255						
300	325	440	395							26	M30	275			
350	355	490	445										30	M33	300
	377				540	495		36							
400	406	595	550	33			M36		300						
	426									645	600	36			
450	457	755	705										39	M36	300
	480				860	810		39							
500	508	975	920	39			M36		300						
	530									1075	1020	39			
600	610	1175	1120										39	M36	300
	630				1375	1320		39							
700	720	1575	1520	39			M36		300						
800	820									1790	1730	39			
900	920	1990	1930										39	M36	300
1000	1020				2190	2130		39		M36	300				
1200	1220	2405	2340	39			M36		300						
1400	1420				2605	2540						39			
1600	1620	2805	2740										39	M36	300
1800	1820				3030	2960		39		M36	300				
2000	2020	3230	3160	39			M36		300						
2200	2220				3430	3360						39			
2400	2420	3630	3560										39	M36	300
2600	2620				3840	3770		39		M36	300				
2800	2820	4045	3970	39			M36		300						
3000	3020				4245	4170						39			
3200	3220												39	M36	300
3400	3420							39		M36	300				
3600	3620			39			M36		300						
3800	3820											39			
4000	4020												39	M36	300

PNO.6MPa AF 型(VSSJA)法兰式松套补偿接头的主要尺寸

Main Sizes of PNO.6MPa,AF Type(VSSJA)Flanged Loose Compensation Joints

单位 (mm)
unit (mm)

公称通径 Nominal diameter DN	管子外径 Outer Diameter of pipe D _w	法兰连接尺寸 Size of flange connection					总长L Total length	管子插入长度≈ L ₀ Inserted length of pipe	伸缩量 δ Expansion	质量 /kg Quality/kg				
		法兰外径D Outer diameter D of flange	螺栓孔中心圆直径 D1 Diameter D1 of the central circle in the bolt hole	螺栓孔径 d ₀ Hole diameter d0 of bolt	螺栓 Bolt									
					n/ 个 n/tuit	Th.								
65	76	160	130	14	4	M12	118	65	25	5.7				
80	89	190	150	18		M16	123			6.8				
100	108	210	170							8	8.5			
	114										8.9			
125	133	240	200		12					M20	130	10.5		
150	159	265	225				8					12.5		
	168											13.8		
200	219	320	280	22			M24					160	15.8	
250	273	375	335		16	85		32.5	22.3					
300	325	440	395						20		130		30.3	
350	355	490	445										16	85
	377									36.0				
400	406	540	495		24	M27		160		32.5		38.8		
450	426			595					550		26	85	32.5	
	457	645	600				28							85
480	755			705					30					
500		508	645		600			32		85				
600	530	755		705							36	85	32.5	
	610		860		810		36							85
630	975	920		39		85			32.5					
700			720		1075			1020		42				
800	820	1175	1120								48	85	32.5	
900	920				1405		1340	52						85
1000	1020	1630	1560	56		85			32.5					
1200	1220				1830		1760			60				
1400	1420	2045	1970								64	85	32.5	
1600	1620				2265		2180	68						85
1800	1820	2475	2390	72		85			32.5					
2000	2020				2685		2600			76				
2200	2220	2905	2810								80	85	32.5	
2400	2420				3115		3020	M52						85
2600	2620	3315	3220	300		140			70					
2800	2820				3525		3430			1247.2				
3000	3020	3735	3640								1331.6			
3200	3220				3970		3860	1484.8						
3400	3420	56	80	1636.5										
3600	3620						1906.0							



PN1.0MPa AF 型(VSSJA)法兰式松套补偿接头的主要尺寸

Main Sizes of PN1.0MPa,AF(VSSJA)Flange-Type Loose Compensation Joints

单位 (mm)
unit (mm)

公称通径 Nominal diameter DN	管子外径 Outer diameter of pipe D _w	法兰连接尺寸 Size of flange connection					总长 L Total length	管子插入长度 ≈ L ₀ Inserted Length of pipe ≈ L ₀	伸缩量 δ Expansion δ	质量 /kg Quality/kg									
		法兰外径 D Outer diameter D of flange	螺栓孔中心圆直 径 D ₁ Diameter D ₁ of central circle in the bolt hole	螺栓孔径 d ₀ Diameter d ₀ of bolt hole	螺栓 Bolt														
					n/个 n/tuit	Th.													
65	76	185	145	18	4	M16	118	65	25	6.3									
80	89	200	160		8		M20			123	7.4								
100	108	220	180								12	M24	160	8.7					
	114													10.4					
125	133	250	210											16	M27	130	11.3		
	140																12.7		
150	159	285	240	20		M30		255	14.8										
	168				15.9														
200	219	340	295		24		M36		270	19.4									
250	273	395	350							28	M39	27.5							
300	325	445	400									32	M45	300	33.5				
350	355	505	460												36	M52	140	38.4	
	377			42.0															
400	406	565	515	40		M56		70										44.6	
	426				48.0														
450	457	615	565		44		M60		70	56.4									
	480									58.2									
500	508	670	620							48	M63	70	63.4						
	530												70.2						
600	610	780	725	52		M66		70					79.6						
	630												87.1						
700	720	895	840		56		M70		70				104.1						
800	820	1015	950										56	M70	70	198.5			
900	920	1115	1050							56	M70	70				210.3			
1000	1020	1230	1160													56	M70	70	242.3
1200	1220	1455	1380	56		M70		70											357.9
1400	1420	1675	1590																56
1600	1620	1915	1820		56		M70		70										
1800	1820	2115	2020										56	M70	70				
2000	2020	2325	2230							56	M70	70							
2200	2220	2550	2440													56	M70	70	
2400	2420	2760	2650	56		M70		70											
2600	2620	2960	2850																56
2800	2820	3180	3070		56		M70		70										
3000	3020	3405	3290										56	M70	70				

PN1.6MPa AF 型(VSSJA)法兰式松套补偿接头的主要尺寸

Main Sizes of PN1.6MPa, AF Type(VSSJA)Flanged Loose Compensation Joints

单位 (mm)
unit (mm)

公称通径 Nominal diameter DN	管子外径 Outer diameter of pipe D _w	法兰连接尺寸 Size of Flange Connection					总长 L Total length	管子插入长度≈ L ₀ Inserted Length of Pipe ≈ L ₀	伸缩量 δ Expansion δ	质量 /kg Quality/kg									
		法兰外径 D Outer diameter D of flange	螺栓孔中心圆直 径 D ₁ Diameter D ₁ of central circle in the bolt hole	螺栓孔径 d ₀ Diameter d ₀ of bolt hole	螺栓 Bolt														
					n/个 n/tuit	Th.													
65	76	185	145	18	4	M16	118	65	25	6.3									
80	89	200	160		8					M20	123	7.4							
100	108	220	180				12					M24	160	8.7					
	114													10.4					
125	133	250	210											16	M27	85	11.3		
	140																12.7		
150	159	285	240	20		M30											130	14.8	
	168				15.9														
200	219	340	295		24		M33			255	19.4								
250	273	405	355					28	M36		27.5								
300	325	460	410								32	M39	130	35.9					
350	355	520	470											36	M45	65		40.3	
	377			46.2															
400	406	580	525	42		M45											130	49.1	
	426				52.8														
450	457	640	585		48		M45	130	58.1										
	480								62.5										
500	508	715	650						54	M45	130	72.2							
	530											79.4							
600	610	840	770	60		M45						130	94.5						
	630												95.7						
700	720	910	840		66		M45	130					104.1						
800	820	1025	950										72	M45	130	198.5			
900	920	1125	1050						78	M45	130					211.8			
1000	1020	1255	1170													84	M45	130	254.4
1200	1220	1485	1390	90		M45						130							393.9



4、BF 型(VSSJA-1)单法兰式松套限位补偿接头

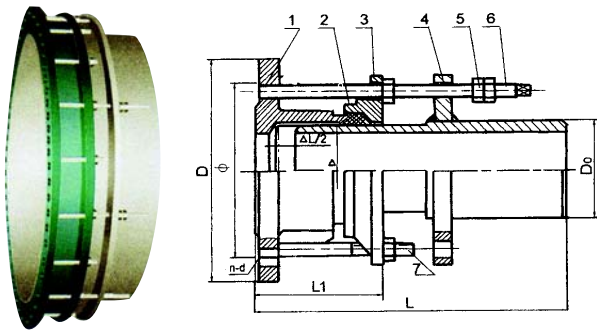
4.BF Type(VSSJA-1)Single-Flange Loose and limited Compensation Joints

1、BF 型单法兰松套限位伸缩接头适用于一边与法兰连接，一边与管子焊接；B₂F 型双法兰式松套限位伸缩接头适用于两边均与法兰连接。

2、此产品适合与阀门或设备连接，起到热胀冷缩补偿，安装拆卸方便的作用。在运行中可以轴向位移。

1、The BF-type single-flange loose and limited expansion joint shall be connected with the flange on one end and the other be welded on the pipe; B₂F-type double-flange loose and limited expansion joint shall be connected with the flange on two ends.

2、The product can be connected with valves or equipment for expansion compensation as well as easy for installation and disassembly. It will have axial displacement in operation.



序号 No.	名称 Name	数量 Qty	材料 Material
1	本体 Main body	1	QT450-10、Q235A
2	密封圈 Seal ring	1	NBR、CR、EPDM
3	压盖 Gland	1	QT450-10、Q235A
4	限位短管 Limited short pipe	1	Q235A
5	螺母 Nut	n	Q235A、20#
6	长螺栓 Long bolt	n	Q235A、35#
7	短螺栓 Short bolt	n	Q235A、35#

PNO.6MPa BF 型(VSSJA-1)单法兰式松套限位补偿接头的主要尺寸

Main Sizes of PNO.6MPa,BF(VSSJA-1)Single-Flange Loose and Limited Compensation Joints

单位 (mm)
unit (mm)

公称通径 D N Nominal diameter	管子外径 D _w Outer Diameter	法兰连接尺寸 Size of flange connection					总长 L Total length	伸缩量 δ Expansion δ	质量 /kg Quality/kg											
		法兰外径 D Outer diameter D Of flange	螺栓孔中心圆直径 D ₁ Diameter D ₁ of central circle in the bolt hole	螺栓孔径 d ₀ Diameter d ₀ of bolt hole	螺栓 Bolt															
					n/ 个 n/tuit	Th.														
65	76	160	130	14	4	M12	340	25	8.3											
80	89	190	150	18		M16			9.0											
100	108	210	170						8	M16	13.0									
	114				13.8															
125	133	240	200		12						M20	15.8								
	140											16.6								
150	159	265	225									20	M24	20.3						
	168													21.1						
200	219	320	280											22	M20	25.7				
250	273	375	335				16	M20								44.2				
300	325	440	395	30		M27										48.6				
350	377	490	445						24	M27						57.2				
400	426	540	495													26	M24	64.2		
450	480	595	550		32						M30							77.4		
500	530	645	600															36	M33	87.8
600	630	755	705									40	M33							107.3
700	720	860	810																	44
800	820	975	920											48	M39					
900	920	1075	1020				52	M39												
1000	1020	1175	1120	56		M39														
1200	1220	1405	1340						60	M45										
1400	1420	1630	1560													64	M45			
1600	1620	1830	1760		68						M45									
1800	1820	2045	1970															72	M45	
2000	2020	2265	2180									42	M39							
2200	2220	2475	2390																	48
2400	2420	2685	2600											48	M45					
2600	2620	2905	2810				48	M45												
2800	2820	3115	3020	48		M45														
3000	3020	3315	3220						48	M45										
3200	3220	3525	3430													48	M45			

PN1.0MPa BF 型(VSSJA-1)单法兰式松套限位补偿接头的主要尺寸

Main Sizes of PN1.0MPa, BF Type(VSSJA-1)Single-Flange Loose and Limited Compensation Joints

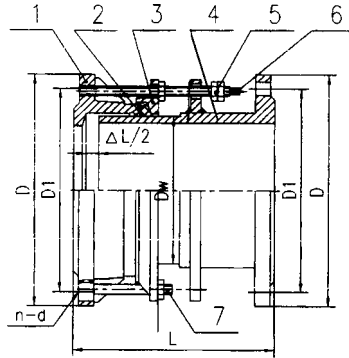
单位 (mm)
unit (mm)

公称通径 Nominal diameter DN	管子外径 Outer diameter Dw of pipe D _w	法兰连接尺寸 Size of flange connection					总长 L Total length	伸缩量 δ Expansion δ	质量 /kg Quality/kg					
		法兰外径 D Outer diameter D of flange	螺栓孔中心圆直径 D ₁ Diameter D ₁ of central circle In the bolt hole	螺栓孔径 d ₀ Diameter d ₀ of bolt hole	螺栓 Bolt									
					n/个 n/tuit	Th.								
65	76	185	145	18	4	M16	340	25	9.3					
80	89	200	160		8				M20	10.0				
100	108	220	180							32	M24	14.5		
	114											15.3		
125	133	250	210									36	M27	17.6
	140													18.5
150	159	285	240	40		M30	22.5							
	168				23.4									
200	219	340	295		44		M36	28.5						
250	273	395	350					48	M39	49.1				
300	325	445	400							52	M45	54.0		
350	377	505	460									56	M52	63.6
400	426	565	515	60		M60								71.3
450	480	615	565											64
500	530	670	620		68		M72							
600	630	780	725					72	M78					
700	720	895	840							76	M84			
800	820	1051	950									80	M90	
900	920	1115	1050	84		M96								
1000	1020	1230	1160											88
1200	1220	1455	1380		92		M108							
1400	1420	1675	1590					96	M114					
1600	1620	1915	1820							100	M120			
1800	1820	2115	2020									104	M126	
2000	2020	2325	2230	108		M132								
2200	2220	2550	2440											112
2400	2420	2760	2650		116		M144							
2600	2620	2960	2850					120	M150					
2800	2820	3180	3070							124	M156			
3000	3020	3405	3290									128	M162	



5、B2F 型(VSSJA-2)双法兰式松套限位补偿接头

5、B2F Type(VSSJA-2)Double-Flange Loose and Limited Compensation Joints



序号 No.	名称 Name	数量 Qty	材料 Material
1	本体 Main body	1	QT450-10、Q235A
2	密封圈 Seal ring	1	NBR、CR、EPDM
3	压盖 Gland	1	QT450-10、Q235A
4	限位短管 Limited short pipe	1	Q235A
5	螺母 Nut	n	Q235A、20#
6	长螺栓 Long bolt	n	Q235A、35#
7	短螺栓 Short bolt	n	Q235A、35#

PN0.6Mpa B2F 型(VSSJA-2)双法兰式松套限位补偿接头的主要尺寸

Main Sizes of PN0.6Mpa,B2F(VSSJA-2)Double-Flange Loose and Limited Compensation Joints

单位 (mm)
unit (mm)

公称通径 DN Nominal diameter	管子外径 D _w Outer diameter D _w of pipe	法兰连接尺寸 Size of flange connection					总长 L Total length	伸缩量 δ Expansion δ	质量 /kg Quality/kg		
		法兰 外径 D Outer diameter D of flange	螺栓孔中心圆直径 D ₁ Diameter D ₁ of central circle in the bolt hole	螺栓孔径 d ₀ Diameter d ₀ of bolt hole	螺栓 Bolt						
					n/ 个 n/tuit	Th.					
65	76	160	130	14	4	M12	340	25	13.1		
80	89	190	150	18		M16			15.1		
100	114	210	170						21.6		
125	140	240	200		27.6						
150	168	265	225		34.1						
200	219	320	280		42.4						
250	273	375	335		58.8						
300	325	440	395	22	12	370			32.5	69.8	
350	377	490	445				86.1				
400	426	540	495				98.1				
450	480	595	550				112.3				
500	530	645	600				138.3				
600	630	755	705				173.4				
700	720	860	810	26	20		M24	211.1			
800	820	975	920	30	24		M27	600		65	380.9
900	920	1075	1020			472.1					
1000	1020	1175	1120			538.2					
1200	1220	1405	1340	33	32	M30	749.8				
1400	1420	1630	1560	36	36	M33	640		70		1034.8
1600	1620	1830	1760		40						1405.6
1800	1820	2045	1970	39	44	M36					1658.5
2000	2020	2265	2180	42	48	M39					1975.2
2200	2220	2475	2390		52			2460.7			
2400	2420	2685	2600		56			2751.4			
2600	2620	2905	2810	48	60	M45		710		70	2905.4
2800	2820	3115	3020		64						3175.8
3000	3020	3315	3220		68		3472.3				
3200	3220	3525	3430		72		3824.6				
3400	3420	3735	3640	48	76	M45					
3600	3620	3970	3860	56	80	M52					

PN1.0Mpa B2F 型(VSSJA-2)双法兰式松套限位补偿接头的基本尺寸

Basic Sizes of PN1.0Mpa, B2F Type(VSSJA-2)Double-Flange Loose and Limited Compensation Joints

单位 (mm)
unit (mm)

公称通径 Nominal diameter DN	管子外径 Outer diameter DW of pipe D _w	法兰连接尺寸 Size of Flange Connection					总长 L Total length	伸缩量 δ Expansion δ	质量 /kg Quality/kg	
		法兰外径 D _f Outer diameter D of flange	螺栓孔中心圆直径 D ₁ Diameter D ₁ of central circle in the bolt hole	螺栓孔径 d ₀ Diameter d ₀ bolt hole	螺栓 Bolt					
					n/个 n/tuit	Th.				
65	76	185	145	18	4	M16	340	25	14.8	
80	89	200	160		8				M16	16.7
100	114	220	180							24.0
125	140	250	210							30.7
150	168	285	240	22		M20	37.8			
200	219	340	295		47.1					
250	273	395	350		65.3					
300	325	445	400		370		32.5	77.5		
350	377	505	460	95.6						
400	426	565	515	26		M24		108.9		
450	480	615	565					124.8		
500	530	670	620		30		M27	153.7		
600	630	780	725					192.7		
700	720	895	840	600		65		234.6		
800	820	1015	950					33	M30	423.3
900	920	1115	1050		524.5					
1000	1020	1230	1160		36		M33			597.9
1200	1220	1455	1380	39	M36	833.1				
1400	1420	1675	1590	42	36	M39	640	70	1089.3	
1600	1620	1915	1820	48	40	M45			1479.6	
1800	1820	2115	2020		44				1745.8	
2000	2020	2325	2230		48				2079.2	
2200	2220	2550	2440	56	52	M52	710	70	2590.2	
2400	2420	2760	2650		56				2896.2	
2600	2620	2960	2850		60				3058.3	
2800	2820	3180	3070		64				3342.9	
3000	3020	3405	3290	60	68	M56			3655.1	



PN1.6、2.5MPa B2F 型 (VSSJA-2) 双法兰限位补偿接头的主要尺寸

Main Sizes of PN1.6、2.5MPa B2F Type (VSSJA-2) Double-Flange Loose and Limited Compensation Joint

单位 (mm)
unit (mm)

公称通径 Nominal diamete DN	管子外径 Outer Diameter O. D. of pipe	外形尺寸 Overall diameter		伸缩量 Expansion △ L	法兰连接尺寸 Size of flange connection					
					1.6MPa			2.5MPa		
	DW	L	L1		D	D1	n—d0	D	D	n—d0
65	76	340	105	25	185	145	4— φ 18	185	145	8— φ 18
80	89				200	160	8— φ 18	200	160	8— φ 22
100	108				220	180		235	190	
	114									
125	133				250	210		270	220	
	140									
150	159				285	240	8— φ 22	300	250	8— φ 26
	168						12— φ 26	360	310	12— φ 26
200	219				405	355				
250	273				460	410		485	430	16— φ 30
300	325				520	470		16— φ 26	555	490
350	377	580	525	16— φ 30	620	550	16— φ 36			
400	426	350	130	32.5	640	585	20— φ 30	670	600	20— φ 36
450	480				715	650	20— φ 30	730	660	
500	530				840	770	20— φ 36	845	770	20— φ 39
600	630				910	840	24— φ 36	960	875	24— φ 42
700	720				1025	950	24— φ 40	1085	990	24— φ 48
800	820	590	220	65	1125	1050	28— φ 40	1185	1090	28— φ 48
900	920				1255	1170	28— φ 42	1320	1210	28— φ 56
1000	1020				1485	1390	32— φ 48	1530	1420	32— φ 56
1200	1220				1685	1590	36— φ 48	1755	1640	36— φ 62
1400	1420				1930	1820	40— φ 56	1975	1860	40— φ 62
1600	1620				2130	2020	44— φ 56	2195	2070	44— φ 70
1800	1820				2345	2230	48— φ 62	2125	2300	48— φ 70

6、CF 型(VSSJAFG)单法兰松套传力补偿接头

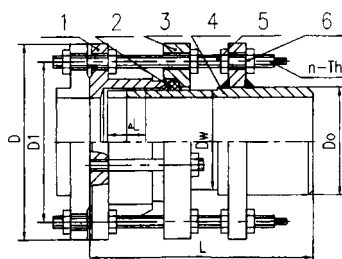
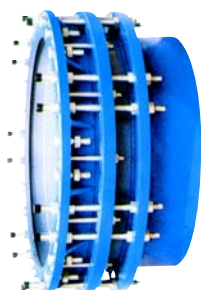
6、CF Type(VSSJAFG)One-Flange Loose Transmission Compensation Joint

性能特点

松套传力接头是由法兰松套伸缩接头和短管法兰、传力螺杆等构件组成。短管具有一定伸缩位移量，在守装维修时，根据现场安装尺寸进行调整，在正常工作时，可以把轴向推力传递至整个管道。这样不仅提高工作效率，而且对泵阀门等设备起到一定的保护作用。在运行中不允许轴向传动。

Performances & Features

The product consists of flanged loose expansion joint, short-pipe flange and transmission screw. The short pipe shall have some expansion displacement. During the installation or maintenance, it can be adjusted according to the installation size in situ. Under normal working conditions, the axial thrust can be transmitted to the whole pipe, which not only improves the work efficiency but also protects pumps and valves, and there shall be no any axial transmission in operation.



序号 NO.	名称 Name	数量 Qty	材料 Material
1	本体 Main body	1	QT450-10、Q235A
2	密封圈 Seal ring	1	NBR、CR、EPDM
3	压盖 Gland	1	QT450-10、Q235A
4	限位短管 Limited short pipe	1	Q235A
5	螺栓 Bolt	n	Q235A、35#
6	螺母 Nut	n	Q235A、20#

PN0.6MPa CF(VSSJAFG)单法兰松套传力接头的基本尺寸

Basic Sizes of PN0.6MPa CF Type(VSSJAFG)Single-Flange Loose Transmission Joints

单位 (mm)
unit (mm)

公称通径 DN Nominal diameter	管子外径 Dw Outer diameter DW of pipe	法兰连接尺寸 Size of flange connection			安装尺寸 L Installation size L	调节量△ L Regulation △ L	质量 /kg Quality/kg			
		法兰外径 D Outer diameter of flange	螺栓孔中心圆直径D ₁ Diameter D ₁ of central circle in the bolt hole	螺栓孔径 Diameter of bolt hole						
				n/ 个 n/tuit				do		
65	76	160	130	4	14	400	20	13.3		
80	89	190	150					15.5		
100	108/114	210	170					22.3		
125	133/140	240	200	8	18			28.5		
150	159/168	265	225					35.4		
200	219	320	280					44.3		
250	273	375	335	12	22			420	25	61.1
300	325	440	395							75.5
350	377	490	445							95.5
400	426	540	495	16	26	109.7				
450	480	595	550			124.8				
500	530	645	600			146.3				
600	630	755	705	20	30	600	30			197.4
700	720	860	810							240.5
800	820	975	920							402.8
900	920	1075	1020	24	33			620	441.4	
1000	1020	1175	1120						506.9	
1200	1220	1405	1340						713.4	
1400	1420	1630	1560	36	36				630	976.3
1600	1620	1830	1760							1342.5
1800	1820	2045	1970							1495.3
2000	2020	2265	2180	42	39	650	1900.9			
2200	2220	2475	2390				2316.1			
2400	2420	2685	2600				2597.3			
2600	2620	2905	2810	48	42		750	40		2984.9
2800	2820	3115	3020							3338.4
3000	3020	3315	3220							3821.4
3200	3220	3525	3430						4357.2	



PN1.0MPa CF 型(VSSJAFG) 单法兰松套传力补偿接头的基本尺寸

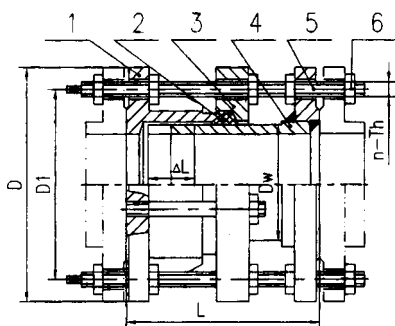
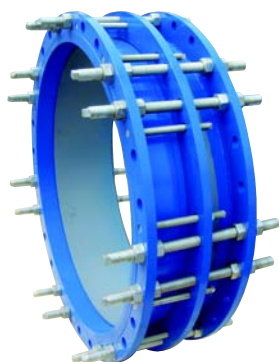
Basic Sizes of PN1.0MPa,CF Type(VSSJAFG)Single-Flange Loose Transmission Compensation Joints

单位 (mm)
unit (mm)

公称通径 Nominal diameter DN	管子外径 Outer diameter DW of pipe D _w	法兰连接尺寸 Size of flange connection				安装尺寸L Installation size L	调节量△L Regulation △ L	质量 /kg					
		法兰外径D Outer Diameter D of flange	螺栓孔中心圆直径 D1 Diameter D1 of central circle in the bolt hole	螺栓孔径 Diameter of bolt hole				质量 /kg Quality/kg					
				n/个n/unit	do								
65	76	185	145	4	18	400	20	14.8					
80	89	200	160	8				18	20	17.2			
100	114	220	180							20	18	20	24.8
125	140	250	210										20
150	168	285	240		20	18	20						
200	219	340	295	20				18	20				
250	273	395	350							20	18	20	
300	325	445	400										20
350	377	505	460		20	18	20						
400	426	565	515	20				18	20				
450	480	615	565							20	18	20	
500	530	670	620										20
600	630	780	725		20	18	20						
700	720	895	840	20				18	20				
800	820	1015	950							20	18	20	
900	920	1115	1050										20
1000	1020	1230	1160		20	18	20						
1200	1220	1455	1380	20				18	20				
1400	1420	1675	1590							20	18	20	
1600	1620	1915	1820										20
1800	1820	2115	2020		20	18	20						
2000	2020	2325	2230	20				18	20				
2200	2220	2550	2440							20	18	20	
2400	2420	2760	2650										20
2600	2620	2960	2850		20	18	20						
2800	2820	3180	3070	20				18	20				
3000	3020	3405	3290							20	18	20	

7、C2F 型(VSSJAF)双法兰松套传力补偿接头

7、C2F(VSSJAF)Double-Flange Loose Transmission Compensation Joints



序号 NO.	名称 Name	数量 Qty	材料 Material
1	本体 Main body	1	QT450-10、Q235A
2	密封圈 Seal ring	1	NBR、CR、EPDM
3	压盖 Gland	1	QT450-10、Q235A
4	限位短管 Limited short pipe	1	Q235A
5	螺栓 Bolt	n	Q235A、35#
6	螺母 Nut	n	Q235A、20#

PN0.6MPa C2F 型(VSSJAF)双法兰松套传力补偿接头的基本尺寸

Basic Sizes of PN0.6MPa,C2F(VSSJAF)Double-Flange Loose Transmission Compensation Joints

单位 (mm)
unit (mm)

公称通径 DN Nominal diameter	管子外径 D w Outer diameter DW of pipe	法兰连接尺寸 Size of flange connection				安装尺寸 L Installation size L	调节量△L Regulation △ L	质量 /kg Quality/kg		
		法兰外径 D Outer diameter D of flange	螺栓孔中心圆直径 D 1 Diameter D1 Of central circle in the bolt hole	螺栓孔径 Diameter of bolt hole						
				n/ 个 unit	do					
65	76	160	130	4	14	200	20	11.8		
80	89	190	150		8			18	13.5	
100	114	210	170						18.6	
125	140	240	200						23.8	
150	168	265	225	12					22	220
200	219	320	280		36.9					
250	273	375	335		49.6					
300	325	440	395		61.5					
350	377	490	445	16	26	240	30	79.3		
400	426	540	495					91.2		
450	480	595	550					104.1		
500	530	645	600					123.2		
600	630	755	705	20	30	350	40	169.8		
700	720	860	810					208.9		
800	820	975	920					346.1		
900	920	1075	1020					380.6		
1000	1020	1175	1120	28	33	370	30	438.8		
1200	1220	1405	1340	32				646.7		
1400	1420	1630	1560	36				843.6		
1600	1620	1830	1760	40				1189.7		
1800	1820	2045	1970	44	39	380	30	1394.8		
2000	2020	2265	2180	48				1665.5		
2200	2220	2475	2390	52				2056.7		
2400	2420	2685	2600	56				2350.1		
2600	2620	2905	2810	60	42	400	40	2720.4		
2800	2820	3115	3020	64				3053.2		
3000	3020	3315	3220	68				3460.3		
3200	3220	3525	3430	72				3912.6		



PN1.0MPa C2F 型(VSSJAF)双法兰松套传力补偿接头的基本尺寸

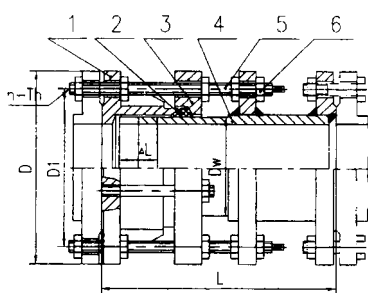
Basic Sizes of PN1.0MPa,C2F (VSSJAF) Double-Flange Loose Transmission Compensation Joints

单位 (mm)
unit (mm)

公称通径 Nominal diameter DN	管子外径 Outer diameter DW of pipe D _w	法兰连接尺寸 Size of flange connection				安装尺寸 L Installation size L	调节量△L Regulation △ L	质量 /kg		
		法兰外径D Outer diameter D of flange	螺栓孔中心圆直径 D1 Diameter D1 Of central circle in the bolt hole	螺栓孔径Diameter r of bolt hole				Quality/kg		
				n/ 个n/unit	do					
65	76	185	145	4	18	200	20	13.1		
80	89	200	160	8				22	15.0	
100	114	220	180						20.7	
125	140	250	210						26.4	
150	168	285	240						33.8	
200	219	340	295	12	26	220	25		41.0	
250	273	395	350					55.1		
300	325	445	400					68.3		
350	377	505	460	16	30			240	30	88.1
400	426	565	515							101.3
450	480	615	565	20		33	350			30
500	530	670	620		136.9					
600	630	780	725		188.7					
700	720	895	840	24	36	370		30	232.1	
800	820	1015	950						384.6	
900	920	1115	1050	28	39		380		30	422.9
1000	1020	1230	1160							487.6
1200	1220	1455	1380	32	42					400
1400	1420	1675	1590	36	48	888.0				
1600	1620	1915	1820	40	56	1252.3				
1800	1820	2115	2020	44		450	40	1468.2		
2000	2020	2325	2230	48				1753.5		
2200	2220	2550	2440	52	400			40	2165.2	
2400	2420	2760	2650	56		2473.7				
2600	2620	2960	2850	60		450	40		2864.5	
2800	2820	3180	3070	64	3214.2					
3000	3020	3405	3290	68	60			3642.3		

8、CC2F 型 (VSSJAFC) 可拆式双法兰松套传力补偿接头

8、CC2F Type(VSSJAFC)Detachable Double-Flange Loose Transmission Compensation Joints



序号 NO.	名称 Name	数量 Qty	材料 Material
1	本体 Main body	1	QT450-10、Q235A
2	密封圈 Seal ring	1	NBR、CR、EPDM
3	压盖 Gland	1	QT450-10、Q235A
4	限位短管 Limited short pipe	1	Q235A
5	螺栓 Stud	n	Q235A、35#
6	螺母 Nut	n	Q235A、20#

PN0.6MPa CC2F 型(VSSJAFC)可拆式双法兰松套传力补偿接头的基本尺寸

Basic Sizes of PN0.6MPa, CC2F Type(VSSJAFC)Detachable Double-Flange Loose Transmission Compensation Joints

单位 (mm)
unit (mm)

公称通径 DN Nominal diameter	管子外径 D _w Outer diameter DW of pipe	法兰连接尺寸 Size of flange connection				安装尺寸 L Installation size L	调节量△ L Regulation △ L	质量 /kg Quality/kg				
		法兰外径 D Outer Diameter D of flange	螺栓孔中心圆直径 D ₁ Diameter D ₁ of central circle in the bolt hole	螺栓孔径 Diameter of bolt hole								
				n/ 个 unit	do							
65	76	160	130	4	14	400	20	17.9				
80	89	190	150		8			18	20.6			
100	114	210	170						28.4			
125	140	240	200	37.1								
150	168	265	225	46.2								
200	219	320	280	12	22			420	25	57.4		
250	273	375	335							76.3		
300	325	440	395							16	26	440
350	377	490	445	122.7								
400	426	540	495	141.2								
450	480	595	550	158.1								
500	530	645	600	20	30	600	30			186.2		
600	630	755	705							261.9		
700	720	860	810					324.5				
800	820	975	920	24				36	650	40	516.7	
900	920	1075	1020		570.3							
1000	1020	1175	1120		658.8							
1200	1220	1405	1340	984.4								
1400	1420	1630	1560	32	33			670			840	40
1600	1620	1830	1760	36	36	1767.2						
1800	1820	2045	1970	40	39	1981.7						
2000	2020	2265	2180	44	42	700	2483.4					
2200	2220	2475	2390	48		730	3086.3					
2400	2420	2685	2600	52		48	840	40	3456.4			
2600	2620	2905	2810	56					3844.3			
2800	2820	3115	3020	60	4307.8							
3000	3020	3315	3220	64	4738.1							
3200	3220	3525	3430	68	72				5134.7			



PN1.0MPa CC2F 型(VSSJAFC)可拆式双法兰松套传力接头的基本尺寸

Basic Sizes of PN1.0MPa,CC2F(VSSJAFC)Detachable Double-Flange Loose Transmission Joints

单位 (mm)
unit (mm)

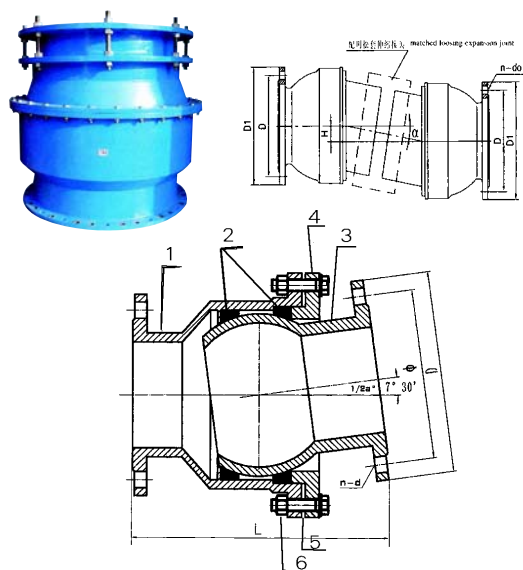
公称通径 Nominal diameter DN	管子外径 Outer diameter DW of pipe D _w	法兰连接尺寸 Size of flange connection				安装尺寸 L Installation size L	调节量△ L Regulation △ L	质量 /kg	
		法兰外径D Outer Diameter D of flange	螺栓孔中心圆直径 D1 Diameter D1 of Central circle in the bolt hole	螺栓孔径Diameter r of bolt hole				Quality/kg	
				n/ 个unit	do				
65	76	185	145	4	18	400	20	19.9	
80	89	200	160	8					22.9
100	114	220	180						31.6
125	140	250	210						41.2
150	168	285	240						51.2
200	219	340	295						63.8
250	273	395	350	12	22				84.8
300	325	445	400	16		420	25	105.1	
350	377	505	460					136.3	
400	426	565	515		26			157.3	
450	480	615	565	20				175.7	
500	530	670	620					206.9	
600	630	780	725		30				291.1
700	720	895	840	440					361.1
800	820	1015	950			24	600	30	574.2
900	920	1115	1050		28				633.7
1000	1020	1230	1160	36					732.2
1200	1220	1455	1380	32	39	650			1036.2
1400	1420	1675	1590	36	42				1340.9
1600	1620	1915	1820	40	48	670			1860.0
1800	1820	2115	2020	44					2086.1
2000	2020	2325	2230	48		700	2614.3		
2200	2220	2550	2440	52	56	730	3249.2		
2400	2420	2760	2650	56			3638.3		
2600	2620	2960	2850	60		840	40	4046.7	
2800	2820	3180	3070	64				4534.6	
3000	3020	3405	3290	68	62			4987.4	

9、E 型球形补偿接头

9、E-type Spherical Compensation Joint

一、产品特点

E 型球形补偿接头是用于挠度较大的管道连接，其构造主要由球体和密封装置等元件组成，安装在管道上后，球体可以回转中心自由转动，来补偿管道的热膨胀、挠曲、振动。具有补偿能力大，占据空间小，流体阻力小，安装方便，投资省等优点，主要适用于各种三向位移的热力、地面沉降大、震动大、地形复杂的管路。



1、Characteristics

Consisting of a ball and sealing device, the product is mainly used for the pipe connection with higher flexibility, the ball is installed on the ball to rotate freely around the centre of gyration so as to compensate for the thermal expansion of pipes, torsion and vibration. It has advantages of high compensation, small occupation, lower fluid resistance, easy to install and low costs. It is mainly applicable for pipes with heating power of three-way displacement, large ground subsidence, strong shake and complex landform.

序号 NO.	名称 Name	数量 Qty	材料 Material
1	壳体 Shell	1	ZG230-450
2	密封圈 Seal ring	2	NBR、EPDM
3	球形短管 Spherical and short pipe	1	ZG230-450
4	压盖 Gland	1	Q235A
5	螺栓 Gland	n	Q235A、35#、1Cr18Ni9Ti
6	螺母 Nut	n	Q235A、20#、1Cr18Ni9Ti

主要尺寸 Main Sizes

单位 (mm)
unit (mm)

公称通径 DN Nominal diameter (mm)	法兰连接尺寸 Size of flange connection									长度 Length L	可挠量 Expansion a ₀
	0.6MPa			1.0MPa			1.6MPa				
	D	φ	n-d	D	φ	n-d	D	φ	n-d		
50	140	110	4- φ 14	165	125	4- φ 19	165	125	4- φ 19	220	15
65	160	130	4- φ 14	185	145	4- φ 19	185	145	4- φ 19	280	
80	190	150	4- φ 19	200	160	8- φ 19	200	160	8- φ 19	340	
100	210	170	4- φ 19	220	180	8- φ 19	220	180	8- φ 19	290	
125	240	200	8- φ 19	250	210	8- φ 19	250	210	8- φ 19	300	
150	265	225	8- φ 19	285	240	8- φ 23	285	240	8- φ 21	320	
200	320	280	8- φ 19	340	295	8- φ 23	340	295	12- φ 23	382	
250	375	335	12- φ 19	395	350	12- φ 23	405	355	12- φ 28	410	
300	440	395	12- φ 23	445	400	12- φ 23	460	410	12- φ 28	430	
350	490	445	12- φ 23	505	460	16- φ 23	520	470	16- φ 28	470	
400	540	495	16- φ 23	565	515	16- φ 28	580	525	16- φ 31	550	
450	595	550	16- φ 23	615	565	20- φ 28	640	585	20- φ 31	600	
500	645	600	20- φ 23	670	620	20- φ 28	715	650	20- φ 34	689	
600	755	705	20- φ 26	780	725	20- φ 31	840	770	20- φ 37	725	
700	860	810	24- φ 26	895	840	24- φ 31	910	940	24- φ 37	800	
800	975	920	24- φ 31	1015	950	24- φ 34	1025	950	27- φ 40	893	
900	1075	1020	24- φ 31	1115	1050	24- φ 34	1125	1050	28- φ 40	920	
1000	1175	1120	28- φ 31	1230	1160	28- φ 37	1255	1170	28- φ 43	975	
1200	1405	1340	32- φ 34	1455	1380	32- φ 40	1485	1390	32- φ 49	1125	13
1400	1630	1560	36- φ 37	1675	1590	36- φ 43	1685	1590	36- φ 49	1290	
1600	1830	1760	40- φ 37	1915	1820	40- φ 49	1930	1820	40- φ 56	1385	
1800	2045	1970	44- φ 40	2115	2020	44- φ 49	2130	2020	44- φ 56	1580	10
2000	2265	2180	48- φ 43	2325	2230	48- φ 49	2345	2230	48- φ 62	1870	
2200	2475	2390	52- φ 43	2550	2440	52- φ 56				1950	
2400	2685	2600	56- φ 43	2760	2650	56- φ 56				2080	

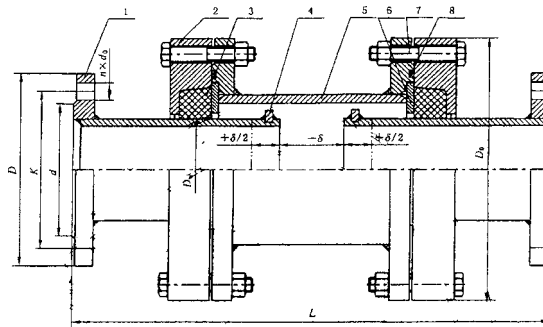
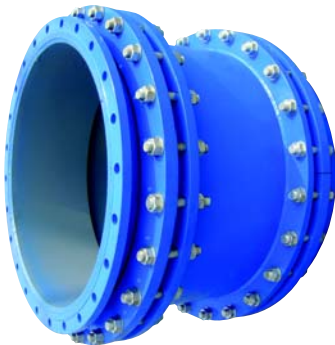


10、D 型补偿接头

10、D-Type Compensation Joints

PN0.6MPa D 型补偿接头的结构和基本尺寸

Structures and Basic Sizes of PN0.6MPa and D Type Compensation Joints



- 1——短管法兰 Short pipe flange
- 2——压盖 Gland
- 3——密封圈 Seal ring
- 4——限位块 Limited block
- 5——本体 Main body
- 6——挡圈 Shield ring
- 7——螺栓 Bolt
- 8——密封条 Gland strip

单位：毫米 Unit(mm)

公称通径 Nominal diameter DN	管子外径 Outer Diameter Dw of pipe Dw	尺寸 Size				密封面 Sealing surface d	外形尺寸Overall size		可挠量 Flexibil- ity/(°)	最大伸缩量 Max expansion δ	质量 Quality /kg			
		法兰外径 Outer Diameter D of flange	螺栓孔中心圆直径 Diameter K of central circle in the bolt hole K	螺栓孔径 Diameter do of bolt hole do	螺栓 Bolt n/个 n/unit Th		Do	总长 Total length L						
100	114	210	110	18	4	M16	144	305	7	60	86			
125	140	240	200		8		174	330			520	110		
150	168	265	225				199	360			135			
200	219	320	280				254	415			178			
250	273	375	335				12	309			465	560	218	
300	325	440	395	22	363	530		605			279			
350	377	490	445		16	413		580			317			
400	426	540	495			463		645			382			
450	480	595	550			518		700			432			
500	530	645	600			20	568	750			670	470		
600	630	755	705	26	667		870	720			641			
700	720	860	810		24		772	960			750	746		
800	820	975	920				30	878	1085	810	950			
900	920	1075	1020					M27	978	1185	855	1138		
1000	1020	1175	1120			1078			1305	950	1386			
1200	1220	1405	1340	33		32			M30	1295	1505	1000	6.5	65
1400	1420	1630	1560	36	36	M33			1510	1715	1050	1844		
1600	1620	1830	1760		40		1710		1930	1140	2288			
1800	1820	2045	1970		39	44	M36	1918	2150	1200	2666			
2000	2020	2265	2180	42	48	M39	2125	2370	1250	3483				
2200	2220	2475	2390		52		2335	2570	1300	4032				
2400	2420	2685	2600		56		2545	2820	1420	5143				
2600	2620	2905	2810		48		60	M45	2750	3020	1450	5982		
2800	2820	3115	3020	64		2960	3230		1500	6593				
3000	3020	3315	3220	68		3160	3440		1600	7218				
3200	3220	3525	3430	72		3370	3685		1780	7996				

PN1.0MPa D 型补偿接头的结构和基本尺寸

Structures and Basic Sizes of PN1.0MPa, D Type Compensation Joints

单位: 毫米 Unit: mm

公称通径 Nominal diameter DN	管子外径 Outer diameter Dw of pipe Dw	尺寸 Size					密封面 Sealing surface d	外形尺寸 Overall size		可挠量 Flexibility /(°)	最大伸缩量 Max expansion δ	质量 Quality /kg		
		法兰外径 Outer Diameter D of flange D	螺栓孔中心圆直 径Diameter K of central circle in the bolt hole K	螺栓孔径 Diameter do of bolt hole do	螺栓 Bolt			Do	总长 Total length L					
100	114	220	180	18	8	M16	156	305	520	7	60	90		
125	140	250	210				184	330				115		
150	168	285	240				211	360				145		
200	219	340	295	22	12	M20	266	415	560			185		
250	273	395	350				319	465				230		
300	325	445	400				370	530	605			294		
350	377	505	460				429	580				337		
400	426	565	515				16	20	M24			480	645	660
450	480	615	565	530	700	452								
500	530	670	620	582	750	670						501		
600	630	780	725	30	24	M27	682					870	720	581
700	720	895	840				794					960	750	6.5
800	820	1015	950				33	M30	901	1085	810	1055		
900	920	1115	1050	1001	1185	855			1203					
1000	1020	1230	1160	36	28	M33			1112	1305	950	1411		
1200	1220	1455	1380	39	32	M36	1328	1505	1000	1725				
1400	1420	1675	1590	42	36	M39	1530	1715	1050	2036				
1600	1620	1915	1820	48	40	M45	1750	1930	1140	6.5	65	2560		
1800	1820	2115	2020		44		1950	2150	1200	6	75	3015		
2000	2020	2325	2230		48		2150	2370	1250			3897		
2200	2220	2550	2440	56	52	M52	2370	2570	1300			4563		
2400	2420	2760	2650		56		2570	2820	1420			5921		
2600	2620	2960	2850		60		2780	3020	1450			6916		
2800	2820	3180	3070		64		3000	3230	1500	7799				
3000	3020	3405	3290	60	68	M56	3210	3440	1600			8556		



PN1.6MPa D 型补偿接头的基本尺寸

Basic Sizes of PN1.6MPa,D Compensation Joints

单位: 毫米 Unit(mm)

公称通径 Nominal diameter DN	管子外径 Outer diameter Dw of pipe Dw	尺寸 Flange size					密封面 Sealing surface d	外形尺寸mansions		可挠量 Flexible Flexibil- ity/(°)	最大伸缩量 Max expansion δ	质量 Quality /kg
		法兰外径 Outer Diameter D of flange	螺栓孔中心圆直 Diameter K of central circle in the bolt hole K	螺栓孔径 Diameter do of bolt hole do	螺栓 Bolt			Do	总长 Total length L			
					n/个 n/unit	Th						
100	114	220	180	18	8	M16	156	305	520	7	60	90
125	140	250	210				184	330				115
150	168	285	240	22		M20	211	360				145
200	219	340	295				266	415				200
250	273	405	355	26	12	M24	319	465	560			235
300	325	460	410				370	530	310			
350	377	520	470	30		16	429	580	605			352
400	426	580	525				480	645	430			
450	480	640	585	33	M27		548	700	660			482
500	530	715	650				609	750	670			641
600	630	840	770	36	20	M30	720	870	720			841
700	720	910	840				794	960	750			1175
800	820	1025	950	39		24	M33	901	1085	810	1353	
900	920	1125	1050					1001	1185	855	1614	
1000	1020	1255	1170	42	28	M36	1112	1305	950	1853		
1200	1220	1485	1390	48		32	M39	1328	1505	1000	1905	
1400	1420	1685	1590		36			M45	1530	1715	1050	2268
1600	1620	1930	1820	56	40	M52	1750	1930	1140	2852		
1800	1820	2130	2020				44	1950	2150	1250	6	75
2000	2020	2345	2230	60	48	M56	2150	2370	1300	4371		

11、F 型补偿接头

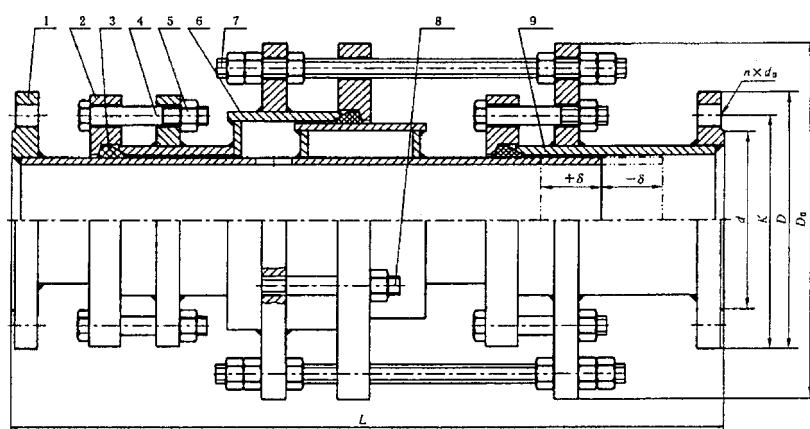
11、F-Type Compensation Joints

下型补偿接头是一种无推力补偿接头，安装在轴向变形较大的管线上起到补偿作用，FY 型用在 90℃ 以下管线上，FY 型用在 90℃ 以上的管线上。

The product is a thrust-free compensation joint, which is installed on the pipeline with larger axial deformation for compensation; FY-type is applicable for the pipeline below 90℃.

PN0.6MPa FY 型补偿接头的结构和基本尺寸

Structures and Basic Sizes of PN0.6MPa, FY Compensation Joints



- 1——本体 Main body
- 2——压盖 Gland
- 3——密封圈 Seal ring
- 4——螺栓 Bolt
- 5——螺母 Nut
- 6——平衡筒 Surge drum
- 7——传力螺杆 Transmission screw
- 8——螺柱 Stud
- 9——伸缩筒 Telescopic cylinder

单位：毫米 Unit (mm)

公称通径 Nominal diameter DN	尺寸 Size					密封面 Sealing surface d	外形尺寸Overall size		最大伸缩量 Max expansion δ	质量 Quality /kg
	法兰外径 Outer Diameter D of flange	螺栓孔中心圆直径 Diameter K of central circle in the bolt hole	螺栓孔径 Diameter d ₀ of bolt hole	螺栓 Bolt			外径 Outer diameter D ₀	总长 Total length L		
100	210	170	18	4	M16	144	350	1050	70	105.3
150	265	225		8		199	400	1200		140.4
200	320	280		12		254	475			230.6
250	375	335				309	540	1350		270.4
300	440	395	22	16	M20	363	620	1400	80	398.4
350	490	445				413	680	1450		469.3
400	540	495		20		463	770	1500		596.4
450	595	550				518	860			750.3
500	645	600	26	24	M24	568	920	1550		876
600	755	705				667	1050	1079.5		
700	860	810		28		773	1200	1600		1377.5
800	975	920				878	1360	1800		1961.4
900	1075	1020	30	32	M27	978	1520	1900		2325
1000	1175	1120				1078	1640	2000		2285
1200	1405	1340	33	32	M30	1295	1950	2200		



PN1.0MPa FY 型补偿接头的基本尺寸

Basic Sizes of PN1.0MPa,FY Compensation Joints

单位: 毫米 Unit: mm

公称通径 Nominal diameter DN	尺寸 Size					密封面 Sealing surface d	外形尺寸Overall size		最大伸缩量The Max expansion δ	质量 Quality /kg	
	法兰外径 Outer Diameter D of flange	螺栓孔中心圆直径 Diameter K of central circle in the bolt hole K	螺栓孔径 Diameter do of bolt hole do	螺栓 Bolt			外径Outer diameter Do	总长 Total length L			
				n/个 n/unit	Th						
100	220	180	18	8	M16	156	350	1050	70	105.3	
150	285	240	22		M20	211	400			1200	140.4
200	340	295				266	475				1350
250	395	350	12	319		540	1400	278.4			
300	445	400		370		620		1450		406.4	
350	505	460	16	M24		429	680			1500	481.3
400	565	515			480	770	80	620.4			
450	615	565			530	860		1500	770.3		
500	670	620	20	582	920	1550			901.2		
600	780	725		30	M27		682		1050	1114.5	
700	895	840					794	1200	1600	1412.5	
800	1015	950	33		24	M30	901	1360	1800	2006.4	
900	1115	1050		1001			1520	1900	2395.6		
1000	1230	1160		36	28	M33	1112	1640	2000	2935.0	
1200	1455	1380	39				32	M36	1328	1950	2200

PN1.6MPa FY 型补偿接头的结构和基本尺寸

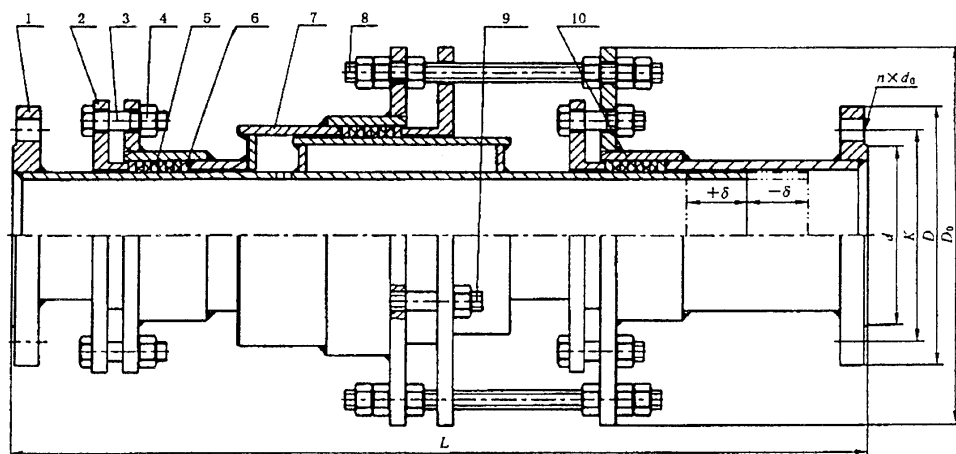
Structures and Basic Sizes of PN1.6MPa,FY Compensation Joints

单位: 毫米 Unit: mm

公称通径 Nominal diameter DN	尺寸 Size					密封面 Sealing surface d	外形尺寸Overall size		最大伸缩量 Maxexpansion δ	质量 Quality /kg
	法兰外径 Outer Diameter D of flange	螺栓孔中心圆直径 Diameter K of central circle in the bolt hole K	螺栓孔径 Diameter do of bolt hole do	螺栓 Bolt			外径 Outer diameter Do	总长 Total length L		
				n/个 n/unit	Th					
100	220	180	18	8	M6	156	350	1050	70	105.3
150	285	240	22		M20	211	400			140.4
200	340	295		12		M24	266	475		1200
250	405	355	319		540		285.4			
300	460	410	370		620		1350	418.4		
350	520	470	429		680		1400	496.3		
400	580	525	30	16	M27	480	770	1450		640.4
450	640	585				548	860	1500	805.3	
500	715	650	33	20	M30	609	920		80	956.2
600	840	770	36		M33	720	1050	1550		1204.5
700	910	840		24		M36	794	1200		1600
800	1025	950	39		M39		901	1360		1800
900	1125	1050		28		1001	1520	1900		2545.6
1000	1255	1170	42		1112	1640	2000	3135		
1200	1485	1390	48	32	M45	1328	1950	2200		4452

PN0.6MPa FT 型补偿接头的结构和基本尺寸

Structures and Basic Sizes of PN0.6MPa,FT Compensation Joints



- 1——本体 Main body
 2——压盖 Gland
 3——螺栓 Bolt
 4——螺母 Nut
 5——填料 Padding
 6——填料座 Padding seat
 7——平衡筒 Surge drum
 8——传力螺杆 Transmission screw
 9——螺柱 Stub
 10——伸缩筒 Telescopic cylinder

PN0.6MPa FT 型补偿接头的基本尺寸

Basic Sizes of PN0.6MPa Compensation Joints

单位: 毫米 Unit: mm

公称通径 Nominal diameter DN	尺寸 Size					密封面 Sealing Surface d	外形尺寸Overall size		最大伸缩量 Max expansion δ	质量 Quality /kg
	法兰外径 Outer Diameter D of flange	螺栓孔中心圆直径 Diameter K of central circle in the bolt hole K	螺栓孔径 Diameter do of bolt hole do	螺栓 Bolt			外径 Outer diameter Do	总长 Total length L		
				n/个 n/unit	Th					
100	210	170	18	4	M16	144	350	1100	70	121.1
150	265	225		8		199	400			161.5
200	320	280				254	475			1200
250	375	335			M20	309	540	1350		
300	440	395	12	363		620	458.2			
350	490	445		413		680	1400			539.7
400	540	495	22	16		463	770	1450		80
450	595	550			518	860	1500	862.8		
500	645	600		20	568	920		1007.4		



PN1.0MPa FT 型补偿接头的结构和基本尺寸

Structures and Basic Sizes of PN1.0MPa,FT Type Compensation Joints

单位: 毫米 Unit:mm

公称通径 Nominal diameter DN	尺寸 Size					密封面 Sealing surface d	外形尺寸Overall size		最大伸缩量 Max expansion δ	质量 Quality /kg
	法兰外径 Outer Diameter D of flange	螺栓孔中心圆直径 Diameter K of central circle in the bolt hole	螺栓孔径 Diameter do of bolt hole	螺栓 Bolt			外径 Outer diameter Do	总长 Total length L		
				n/个 n/unit	Th					
100	220	180	18	8	M16	156	350	1100	70	121.1
150	285	240	22		M20	211	400			161.5
200	340	295				266	475			272.1
250	395	350		12		319	540	320.2		
300	445	400	370			620	467.4			
350	505	460	429			680	1400	553.5		
400	565	515	16	M24	480	770	1450	80		713.5
450	615	565	20		530	860	1500		885.8	
500	670	620			582	920			1036.4	

PN1.6MPa FT 型补偿接头的结构和基本尺寸

Structures and Basic Sizes of PN1.6MPa,FT Compensation Joints

单位: 毫米 Unit:mm

公称通径 Nominal diameter DN	尺寸 Size					密封面 Sealing surface d	外形尺寸Overall size		最大伸缩量 Max expansion δ	质量 Quality /kg
	法兰外径 Outer Diameter D of flange	螺栓孔中心圆直径 Diameter K of central circle in the bolt hole K	螺栓孔径 Diameter do of bolt hole	螺栓 Bolt			外径 Outer diameter Do	总长 Total length L		
100	220	180	18	8	M16	156	350	1100	70	121.1
150	285	240	22		M20	211	400			161.5
200	340	295		26		12	M24	266		475
250	405	355	319		540			328.2		
300	460	410	370		620			1350		481.2
350	520	470	16		M27	429	680	1400		570.7
400	580	525		480		770	1450	736.5		
450	640	585	30	20	M30	548	860	1500	80	926.1
500	715	650				33	609			920

12、KRH (J) 大间隙卡箍式柔性管接头

12、KRH(J)Wide Gap Yoke Flexible Pipe Joint



一、产品特点 I、Characteristics

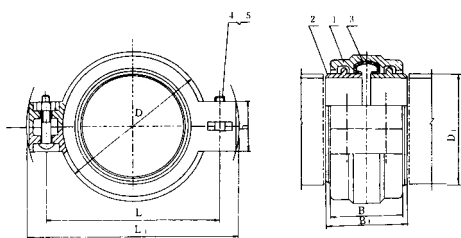
大间隙卡箍式柔性管接头是一种连接管道、安装简便、性能可靠的产品，在低压时，靠密封圈的弹性变形达到密封的；在压力增加时，通过介质作用在密封圈上，起到自密封的作用，并在管端间留有间隙来补偿管道因热胀冷缩而产生的位移和挠曲。该产品广泛应用于消防、矿山、电力、化工、城市供排水等管路。产品在与泵、阀、管件等设备连接时，可根据实际需要尺寸定制法兰短管。

The product is used for pipe connection characterized of simple installation and reliable performance. Under low pressure, the sealing is achieved through the elastic deformation of seal ring. When the pressure increases, it will achieve self sealing through medium, and reserve gaps between pipe ends to compensate for the displacement and flexibility resulted from the thermal expansion and shrink of pipes. The product is widely used on pipelines of fire protection, mines, power, chemical industry and urban water supply and discharge. When it is connected with pumps, valves or pipe fittings, flanged short pipes can be customized as per the actual sizes.

二、产品型号、规格及主要尺寸 II、Types, Specifications, and Main Sizes of Products

1、KRH 型（环式）大间隙卡箍式柔性管接头 KRH-Type(Loop Type)Large Interval and Yoke-Type Flexible Pipe Joints

单位 (mm)
unit (mm)



序号 No.	名称 Name	数量 Qty	材料 Material
1	壳体 Casing	1	ZG230-450
2	短管 Short pipe	2	Q235A、20、16Mn
3	密封圈 Seal ring	1	NBR、EPDN
4	螺栓 Bolt	n	Q235A、35、1Cr18Ni9Ti
5	螺母 Nut	n	Q235A、20、1Cr18Ni9Ti

KRH 环式大间隙卡箍式柔性管接头基本尺寸 KRH Loop-Type Large Interval and York-Type Flexible Pipe Joints

公称压力 Nominal Pressure PN (kgf/cm ²)	公称通径 Nominal diameter DN	钢管外径 Outer diameter D ₁ of steel pipe D ₁	允许管端轴向负荷 Allowable axial load at the pipe end N(kgf)	管端最大间隙 Max Interval at pipe end	转角 Corner θ	管子挠度 Pipe flexibility mm/m	L ₁	L	D	B	B ₁	螺栓直径 Diameter of bolt mm	理论质量 Theoretical Mass kg/set
10 (102)	50a	57	25518(2603)	6	6.03	105	140	101	87	59	100-106	12	2.12
	50	60	28274(2884)		5.73	100	143	104	90	59	100-106		2.19
	65a	73	41854(4269)		4.71	82	155	117	103	59	100-106		2.58
	65	76	45365(4627)		4.51	78	158	120	106	59	100-106		2.64
	80	89	62211(6346)		3.85	67	176	135	123	64	100-106		3.23
	100a	108	91609(9344)		3.18	55	200	156	140	64	100-106		4.13
	100	114	102070(10411)	8	3.01	52	205	162	146	64	100-106	14	4.30
	125a	133	138929(14171)		3.43	60	237	190	170	76	110-118	16	6.39
	125	140	156145(15927)		3.25	56	244	197	178	76	110-118		6.74
	150a	159	198557(20253)		2.88	50	261	215	196	78	120-128		8.17
	150	168	221671(22610)		2.71	47	281	226	205	78	120-128	18	9.12
	175	194	295592(30150)		2.35	41	316	256	235	80	120-128	20	11.95
4 (40.8)	125a	133	55572(5668)		3.43	60	238	186	168	72	110-118	16	5.47
	125	140	62458(6371)		3.25	56	248	197	176	72	110-118		5.93
	150a	159	79423(8101)		2.88	50	265	215	196	72	110-118		6.77
	150	168	88668(9044)		2.71	47	275	225	205	72	110-118		7.21
	175	194	118237(12060)		2.35	41	306	252	231	72	110-118	18	8.51

三、注意事项

- * 理论质量包括卡箍、端管、橡胶密封圈、螺栓和螺母的质量。
- * 公称通径中带a和不带a两种直径表示在相同公称直径下钢管外径不同，订货时须注明。
- * 标记示例：KRH-PN/DN

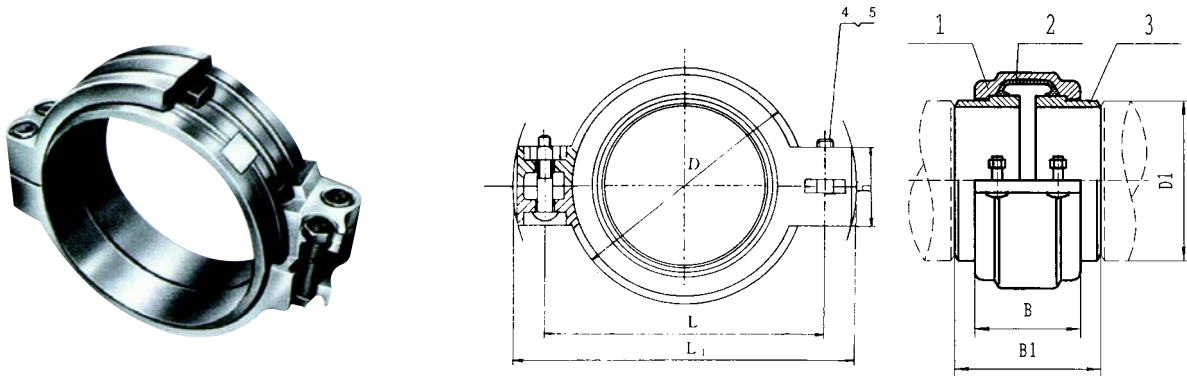
III、Precautions

- * Theoretical mass shall include masses of yoke, pipe end, rubber seal ring, bolt and nut
- * Nominal diameters with a or not mean steel pipes with the same nominal diameter have different external diameter, which shall be noted in orders.
- * Marker samples: KRH-PH/DN



2、KRJ 型（肩式）大间隙卡箍式柔性管接头

2、KRJ-Type(Shoulder Type)Large Interval and Yoke-Type Flexible Pipe Joints



序号 No.	名称 Name	数量 Quantity	材料 Material
1	壳体 Casing	1	ZG230-450
2	密封圈 Seal ring	1	NBR、EPDM
3	短管 Short pipe	2	Q235A、20、16Mn
4	螺栓 Bolt	n	Q235A、35、1Cr18Ni9Ti
5	螺母 Nut	n	Q235A、20、1Cr18Ni9Ti

KRJ（肩式）大间隙卡箍式柔性管接头基本尺寸

KRJ(Shoulder Type)Large Interval and Yoke-Type Flexible Pipe Joints

单位 (mm)
unit (mm)

公称压力 Nominal pressure (kgf/cm ²)	公称通径 Nominal diameter DN	钢管外径 Outer diameter of steel pipe D1	允许管端轴向负荷 Allowable axial loan At the pipe end N (kgf)	管端最大 间隙 Max interval at pipe end	转角 Corner θ	管子挠度 Pipe flexibility mm/m	L ₁	L	D	B	B ₁	螺栓直径 Bolt Diameter mm	理论质量 kg/ 套 Theoretical Mass kg/set
10 (102)	200	219	415476(42379)	6	1.48	26	361	300	296	70	100-106	22	14.59
	225	245	514719(52501)	6	1.33	33	391	328	326	72	100-106	22	17.13
	250	273	633471(64614)	6	1.20	21	432	364	360	76	110-116	24	21.47
	300	325	886683(90442)	6	1.01	17	495	420	416	82	120-126	27	30.01
	350	377	1182370(120602)	7	1.03	18	563	480	474	90	130-137	30	41.07
	400	426	1506739	7	0.90	15	613	532	528	94	140-147	30	53.71
4.0 (40.8)	200	219	{153687}	6	1.48	26	340	288	280	62	90-96	16	9.27
	225	245	166190(16951)	6	1.33	23	370	316	310	64	90-96	16	11.15
	250	273	205887(21001)	6	1.20	21	409	350	344	68	100-106	18	14.52
	300	325	253388(25846)	6	1.01	17	464	404	400	70	100-106	18	18.84
	350	377	354673(36177)	7	1.03	18	526	462	458	76	110-117	20	26.21
	400	426	472948(48241)	7	0.90	15	577	512	518	76	110-117	22	29.55
	450	480	602096(61475)	7	0.80	14	634	568	566	76	110-117	22	36.72
2.5 (25.5)	500	530	760466(77568)	7	0.73	12	687	621	621	76	110-117	22	41.11
	600	630	922887(94134)	8	0.70	12	784	718	714	80	110-118	24	47.48
	700	720	809282(82547)	12	0.93	16	891	822	822	100	130-142	24	76.31
	800	820	1057845	12	0.82	14	994	924	922	102	140-152	24	91.46
2.5 (25.5)	900	920	{107900}	16	0.97	16	1097	1028	1022	114	150-166	24	106.25
	1000	1020	1365721	16	0.88	15	1201	1130	1126	116	150-166	24	119.99

三、注意事项 III、Precautions

1、理论质量包括卡箍、端管、橡胶密封圈、螺栓和螺母的质量。 2、标记示例：KRJ-PN/DN

1、Theoretical mass shall include masses of yoke, pipe end, rubber seal ring, bolt and nut 2、Marker samples: KRJ-PN/DN

13、套筒补偿器 Sleeve Compensator

套筒补偿器主要由套筒(芯管)、外壳、封材料等组成,根据补偿方向可分为轴向套筒补偿器和旋转套筒补偿器。前者用于补偿管道的轴向伸缩;后者是一种自密封无推力可旋转式套管补偿器,它由变径管、内管、密封座、填料、螺母、螺栓、填料压盖构成,用于任意角度的轴向旋转。通常由两个或者三个组合,用来补偿管线的轴向、角向、横向位移,当热力管网中轴向位移或轴向推力较大,以及管网线路结构走向需要调整时,利用本补偿器可获得较大的补偿量和平衡能力,也可根据管网的结构改变管道的走向。可减低管线造价。广泛应用于城镇供暖、冶金、矿山、发电、石油、化工、建筑等行业的输送管道之中。

我公司开发的新式套筒补偿器的密封材料,在其化学性能和物理结构上取得长足的发展,能耐高温、耐磨、防腐蚀、抗老化,适用温度 -40°C 至 150°C ,特殊情况下可达 350°C ;采用高性能自压式动密封的原理和结构,确保密封性能可靠且经久耐用。能适应任何管道的密封要求。外壳与内套筒之间采用新型合成材料密封,既能保证轴向滑动,又能保证管内介质不泄漏。另外增设一道在线堵漏密封可在线维修。

新式套筒补偿器设计了防拉断装置,可保证在其伸缩到极限位置时不被拉开,从而使整个管网运行的安全性大大提高。

套筒补偿器对氯离子含量无要求,特别适用于介质或周围环境氯离子超标的系统上。

连接型式可分为:焊接式、法兰式

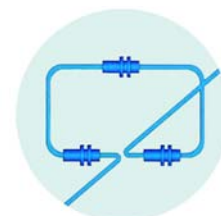
The product consists of sleeve (inner pipe), casing and sealing materials. According to the compensation directions, it can be divided into axial sleeve compensator and rotary sleeve compensator. The first is used to compensate for the axial expansion of pipes; the second is a thrust-free rotary sleeve compensator with self sealing. Its main parts include telescoping pipeline, inner pipe, sealing seat, filling, nut, bolt and gland, which is used for axial rotation in any direction. Generally two or three parts will be combined to compensate for the axial, angular and transverse displacements of pipelines. When the axial displacement or axial thrust in the heating pipes is large or the direction of pipelines need to be adjusted, the product can be used to obtain higher compensation or balanced capacity, meanwhile, the directions of pipelines can be changed as per the structure of the pipelines, it can reduce the costs of pipelines. The product is widely used in conduit pipes of urban heat supply, metallurgy, mines, power generation, petroleum, chemical industry and construction.

The sealing materials developed by our company for new sleeve compensators have been further improved in chemical performance and physical structure. It has features of high temperature resistance, abrasion resistance, corrosion resistance, aging resistance, etc. Applicable temperature: -40°C — 150°C and even 350°C under special conditions. The product adopts the principle and structure of self-pressure dynamic seal with high performance so as to assure reliable sealing and long duration and meet sealing requirements of any pipe. The part between casing and inner sleeve adopt new compound materials for sealing, which not only assures axial slip and prevent from medium leakage. In addition, an online seal block is increased for online maintenance.

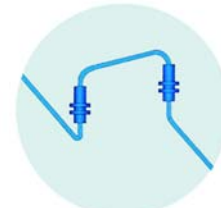
The new sleeve compensator is designed with a tensile failure-free device, which assures it to be not pulled off in expansion limit so as to greatly increase the safety of the pipelines.

The sleeve compensator has no requirements on the contents of chlorine ion, it is specially applicable for the system where medium or chlorine ion around exceeds requirements.

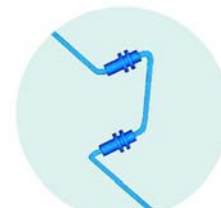
Connection type: welding, flanged



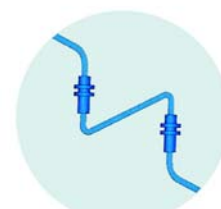
两管在同一直线上
Two pipes on the same line



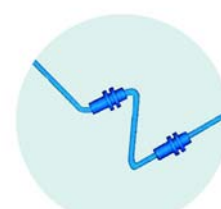
两管在水平方向平行
Two pipes parallel horizontally



两管在垂直方向平行
Two pipes parallel in vertical orientation

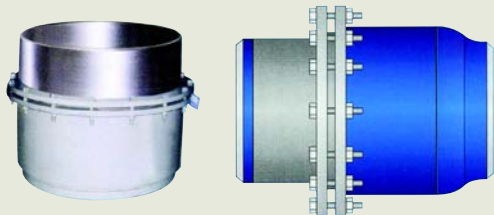


两管在垂直方向平行
Two pipes parallel in vertical orientation



两管高低成折角
Two pipes forming bevel in height





新式套筒补偿器

New Sleeve Compensator

位移方向：轴向

工作压力：(MPa)0.6、1.0、1.6、2.5

公称口径：DN40—DN1500

新式套筒补偿器主要由套筒(芯管)、外壳、封材料等组成。分为单向接管连接和双向接管连接，密封材料采用耐高温、耐磨、耐腐蚀、抗老化的材料，采用高性能自压式动密封的原理和结构，适用-40℃至150℃，特殊情况下可达350，设计了防拉断装置，可保证在其伸缩到极限位置时不被拉开，从而使整个管网运行的安全性大大提高。

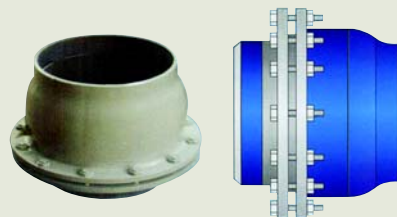
Direction of Displacement: Axial

Working Pressure: 0.6, 1.0, 1.6 and 2.5(MPa)

Nominal Diameter: DN40—DN1500

New sleeve compensator mainly consists of sleeve (inner pipe), casing, sealing material and so on. It has two kinds: one-way pipe connection, two-way pipe connection.

The sealing materials adopt special materials characterized of high temperature resistance, abrasion resistance, corrosion resistance and aging resistance, the product adopts the principle and structure of self-pressure dynamic with high performance; Applicable temperature: -40℃—150℃ and even 350℃ under special conditions, which not only assures axial slip and prevent from medium leakage. In addition, an online seal block is increased for online maintenance. The new sleeve compensator is designed with a tensile failure-free device, which assures it to be not pulled off in expansion limit so as to greatly increase the safety of the pipelines.



旋转套筒补偿器

Rotary Sleeve Compensator

位移方向：任意角度的轴向旋转

工作压力：(MPa)0.6、1.0、1.6、2.5

公称口径：DN40—DN1500

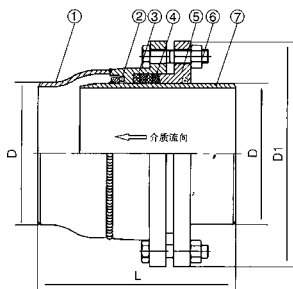
旋转补偿器是一种自密封无推力可旋转式筒补偿器，它由变径管、内管、密封座、填料、螺母、螺栓、填料压盖构成；设置两圈滚珠，有利于结构自动补偿或调整密封，也有利于自由转动。当热力管网中轴向位移或轴向推力较大，以及管网线路构走向需要调整时，利用本补偿器可获得较大的补偿量和平衡能力，也可根据管网的结构改变管道的走向。

Direction of Displacement: Axial rotation in any direction

Working Pressure: 0.6, 1.0, 1.6 and 2.5(MPa)

Nominal Diameter: DN40—DN1500

The product is a self-sealing and thrust rotary sleeve compensator, it consists of convergent pipe, inner pipe, seal seat, filling, nut, bolt and gland. Two sets of balls are set to make it easy for automatic compensation or adjusting the sealing or automatic rotation. When the axial displacement or axial thrust in thermal pipelines is large or the direction of pipelines needs to be adjusted, the product can be used to obtain higher compensation or balanced capacity, or the direction of pipelines can be changed according to the structure of the pipelines.



无推力旋转式补偿器 Thrust-free rotary compensator

- | | |
|--------|-----------------|
| 1、端接管 | 1、Pipe nipple |
| 2、钢球 | 2、Steel ball |
| 3、密封座 | 3、Sealing seat |
| 4、密封填料 | 4、Seal filling |
| 5、压盖 | 5、Gland |
| 6、螺栓 | 6、Bolt |
| 7、旋转筒 | 7、Rotary sleeve |

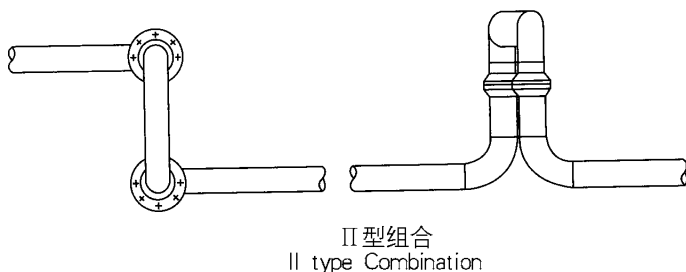
序号 No.	公称口径(DN) Nominal diameter (DN)	接口尺寸(D) Interface size(D)	最大外形尺寸(D1) Max overall dimensions (D1)	产品长度(L) Product Length(L)
1	50	57	142	225
2	80	89	190	250
3	100	108	220	250
4	125	133	240	280
5	150	159	275	280
6	200	219	335	300
7	250	273	395	300
8	300	325	450	350
9	350	377	510	350
10	400	426	560	350
11	450	480	610	380
12	500	530	670	380
13	600	630	760	400



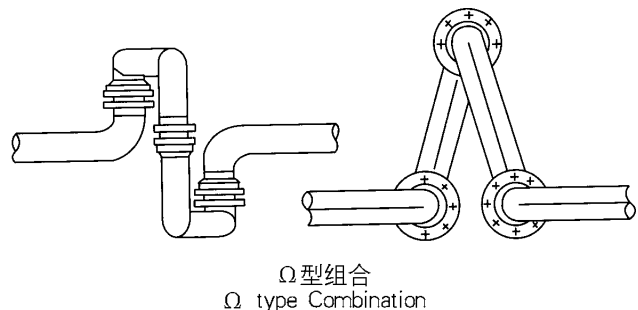
14、无推力旋转式补偿器 Thrust-Free Rotary Compensator

在热网设计中，设计人员要根据地理环境和市区规划的要求，不断变化标高和改变走向，这样热网就可以划分为许多段标高不同，走向各异和直线距离不等的管段所组成，这些直管段的热补偿若靠现有的套筒、波形或门型补偿器难以达到理想的效果。为此本公司依据许多专家的建议，研制成功 ZXA 型系列旋转式补偿器并在众多蒸汽管道热网上进行了试用，获得了成功。

旋转补偿器外形如图一：



External view of rotary compensator I:



旋转式补偿器的特点

本补偿器若与常用的套筒、波形、门型等补偿器比较，具有以下特点：

1 本补偿器不产生内压推力（或盲板推力）因而补偿器两端的固定支架可以做的很小。

2 为了防止套筒、波形补偿器的损坏，设计和安装要求“严格找中”，因此每一个补偿器前必须额外增加导向支架。本补偿器不存在“找中”问题，因而不必额外增加导向支架。

3 本补偿器在保温时不必留出热伸缩量，因而热损失较小。

4 本补偿器采用目前国内最先进的密封材料，并有较合理的密封面结构，从而使密封材料和密封面的磨损极为轻微，可保证在更长时间内不产生泄漏。

5 本补偿器的旋转筒内装设了止退圈和减摩、定心弹子，大大增加了工作的可靠性。

6 补偿器具有两种基本组合，数十种变化，补偿能力可达 1800mm，一个本补偿器可代替数个套筒或波形补偿器。

Characteristics of rotary compensators

Compared with general sleeve, bellow or door type compensators, the product has the following characteristics:

1. The compensators produces no thrust under internal pressure (or thrust from blind plate), so the rigid bearings on two ends of the compensator can be smaller.

2. In order to prevent sleeve and bellow compensators from being damaged, "Strict Calibration" is provided in requirements of design and installation. Therefore, an additional guide bracket shall be added before each compensator. The compensator needs no calibration, so it is unnecessary to install additional guide bracket.

3. The compensator needs no thermal expansion for temperature preservation, so the thermal loss is lower.

4. The compensator adopts sealing materials the most advanced at home as well as logical structure of sealing surface so that the abrasion between sealing materials and sealing surface is extremely smaller, which guarantees no leakage in a long time.

5. Packing ring and aligning beads for friction reduction are designed inside the rotary sleeve of the compensator, which greatly increases the reliability of the operation.

6. The compensator has two basic combinations, tens of changes, and the capacity of compensation can reach 1800mm, and one compensator can replace a few sleeves or bellow expansion joints.

旋转式补偿器动作原理及选型要点 Operating principle and key points of type selection of rotary compensator

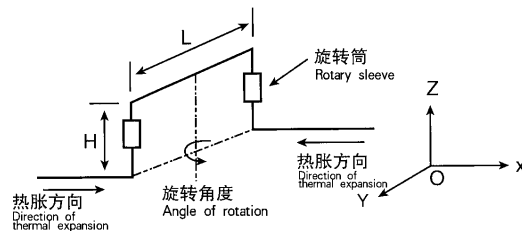
A 旋转式补偿器动作原理、布置方式

ZXZ 型系列旋转式补偿器的补偿原理, 是通过成双旋转筒和 L 力臂形成力偶, 使大小相等, 方向相反的一对力, 由力臂回绕着 Z 轴中心旋转, 以达到力偶两边热管边产生的热胀量的吸收。

1 II 型组合旋转式补偿器(图二、三)

当补偿器布置于两固定支架之间时, 则热管运行时的两端有相同的热胀量和相同的热胀推力, 将力偶回绕着 O 中旋转了 θ 角, 以达到吸收两端方向相对、大小相同热胀量 Δ 。

当补偿器的布置不在两固定支架中心, 而偏向热管较短的一端, 在运行时的力偶臂 L 的中心 O 偏向较短的一端回绕来吸收两端方向相对、大小不等的膨胀量 Δ_1 、 Δ_2 。



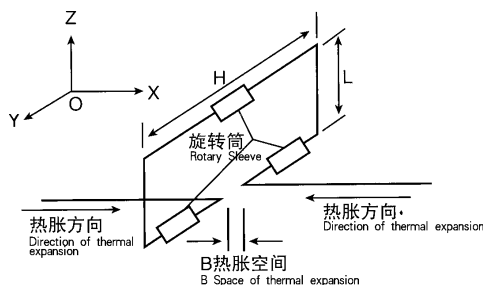
此例补偿器的布置和球形补偿器类似, 当在吸收热膨胀量时, 在力偶臂旋转到 $1/2\pi - \theta$ 时, 管道发生最大的摆动 Y 值。

虽然吸收热胀随着转角 θ 或力偶臂 L 的加大而增加, 但为了限止 Y 摆动过大, 对 O 值不超过表四的推荐值, L 选在 1.5—6 米范围内为宜。

该补偿器适应性较广, 对平行路径(如图二)、转角路径和直线路径及地理过渡至架空, 均可布置。

2Q 型组合旋转式补偿器(图四、五)

Q 型组合旋转式补偿器, 主要用在热管道的直管段。它在热管道两侧对称布置由力偶 L 和成对的旋转筒组成 Q 形状的对力偶, 依靠两固定支架间的热管道, 相对指向补偿器的热胀力推动两对力偶同步旋转, 如图四 θ 角和 B 间距由大变, 以达到吸收最大的热胀量 $\Delta_{\max} = B_{\max} - B_{\min}$ 。



图四: Q 型组合补偿器立体图(直线布置)
Fig4: Q Type Combined Compensator (three-dimensional diagram—straight line)

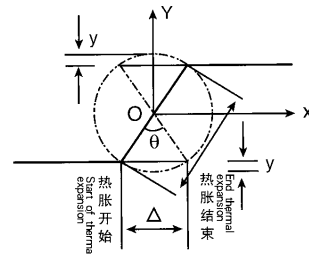
A. Operating principle and arrangement of rotary compensator

Compensation principle of ZXZ type rotary compensators: double rotary sleeves and L tension arm are adopted to form coupling, equal in size and reverses in direction. The tension arm will rotate around the center of Z shaft so as to absorb the thermal expansion produced by thermal pipes on both sides of the coupling.

1 II Type Combined Rotary Compensator(Fig2, Fig3)

When the compensator is set between two rigid bearings, there will be the same thermal expansion and thermal thrust on two ends of thermal pipes, the coupling will rotate by θ angle around the O center, so as to absorb the thermal expansion Δ the same in size and opposite in direction on two ends.

If two ends of the compensators is not set at the center of two rigid bearings but deviate to the end of short pipe, during the operation, the center O of coupling arm L will deviate to the short end to absorb the thermal expansion Δ_1 , Δ_2 equal in size and opposite in direction of two ends.



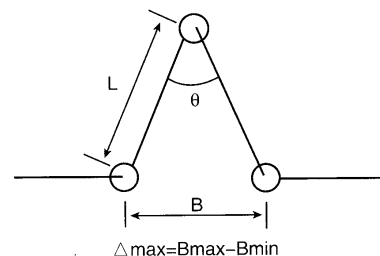
The arrangement of the compensator is similar to that of spherical compensator, when absorbing thermal expansion, after the coupling arm rotates to $1/2\pi - \theta$, the pipe produces the max oscillating quantity Y.

Though the absorption of thermal expansion increases with the increase of rotary angle θ or the coupling arm L, in order to restrict the over oscillation of Y, values of θ shall not exceed that given in Table IV, and L shall be 1.5—6m for better effect.

The compensator has wide applicability, which can be arranged for parallel routes (as Fig 2), corner routes and straight routes, geographical transition till overhead.

2Q type Combined Rotary Compensator (Fig4, Fig 5)

Q type combined rotary compensator is mainly used on straight pipe section on thermal pipes. It is arranged symmetrically on both sides of the thermal pipes, where the coupling L and pairs of rotary sleeve form Q-shaped couples. Relying on the thermal pipes between two rigid bearings, the thermal expansion force to the compensator drives the two pairs of couples to rotate synchronistically, refer to Fig 4, the distance between θ angle and B changes from large to small so as to absorb the max thermal expansion $\Delta_{\max} = B_{\max} - B_{\min}$ 。



图五: Q 型组合式补偿器正面图(直线布置)
Fig 5: Q Type Combined Compensator (Front elevation—straight line)

选型要点

1 II 型组合式补偿器高 $H = \text{旋转筒长} + 2 \times 1.5DN$, 特殊情况可采用 1 倍 DN 弯头, Ω 型组合式补偿器宽 $= 2 \times (\text{旋转筒长} + 2 \times 1.5DN)$ 。

Key points for type selection

1. II type combined compensator: High $H = \text{length of rotary sleeve} + 2 \times 1.5DN$, or 1 time DN bend to be adopted under special conditions. Ω type combined compensator: Width $W = 2 \times (\text{length of rotary sleeve} + 2 \times 1.5DN)$.

见表一 Table 1

表一: Ha 尺寸 Table 1:Ha size													
公称通径 DN(mm)Nominal diameter DN(mm)		100	150	200	250	300	350	400	450	500	600	700	800
旋转筒长(mm)Length of rotatory sleeve(mm)		250	280	300	300	350	350	350	380	380	400	400	400
H (mm)	Ⅱ型组合Ⅱ-type combination	550	730	900	1050	1250	1400	1550	1730	1880	2200	2500	2820
	Ω型组合Ω-type combination	1100	1460	1800	2100	2500	2800	3100	3460	3760	4400	5000	5640

2 本公司推荐 θ 角极大值(见表二) 2 Max Value of θ Angle commended by the company(See Table2)

表二：摩擦角 θ 的极大值 (θ) Table 2: Max values of θ Angle					
公称通径DN (mm)Nominal diameter DN (mm)		≤ 200	300	400	500
θ°	II型组合 II-type combination	60	55	50	45
	Ω 型组合 Ω -type combination	≤ 60			

C 旋转力偶的摩擦力矩及其推力

1、推动力偶的转动, 必须克服一对旋转筒的摩擦力矩。热管道输送蒸汽的工作压力为 $PN=1.6\text{MPa}$, 蒸汽温度对合金密封填料的膨胀系数略比钢材高的附加紧力造成的附加力矩不予考虑的情况下, 确定其摩擦力矩。

合金密封填料箱内摩擦力矩 k_1 , 抗盲板力的摩擦力矩 M_{k2} , 热管道在运行情况下的一对旋转筒的总摩擦力矩为: $M_k = 1.2(M_{k1} + M_{k2})Ncm$

C. Frictional moment and thrust of rotary couple

1. Rotation of couple: The frictional moment of pairs of rotary sleeves must be overcome. Working pressure of thermal pipe for steam transmission: $PN=1.6\text{MPa}$, the frictional moment shall be decided without consideration of secondary moment resulted from additional force where the temperature of steam is higher than that of steel in the expansion coefficient of alloy sealing materials.

The frictional moment in the alloy sealing material cage: k_1 , frictional moment against blind plate: M_{k2} , total The frictional moment of a pair of rotary sleeve with the operation of thermal pipes: $M_k = 1.2(M_{k1} + M_{k2})Ncm$.

表三: H 尺寸 Table3: H size													
公称通径 Dn (mm) Nominal diameter DN (mm)		100	150	200	250	300	350	400	450	500	600	700	800
NCm	Ⅱ 型组合 Ⅱ-type combination	137352	303312	584232	928056	1714056	2337380	3026230	3890300	4883080	8227704	9844000	121130001
	Ω 型组合 Ω-type combination	206028	454968	876348	1392084	2571084	3506080	4539348	5835460	7324630	12341556	15750400	193808001

2、II 组合旋转式补偿器的力偶臂(如图二、三) L 一般取 1.5~6 米, 特殊情况可以更长。力偶臂必须和一对大小相等、方向相反的力互相垂直。所以, 在热膨胀过程中, 要使得力偶旋转(即一对旋转筒动作)的力 P 由下式确定:

$$P = M_k \div L \cos(\theta/2) (N) M_k; Ncm; L; cm$$

型组合旋转式 31、偿器的力偶(图四、五)由三只旋转筒左右两个 L 组成一双力偶。 L 臂长计算见 B6, L 长度的计算值为最小值, 可适当放大(减小 θ 角), 以减少膨胀时的推力。

$$P = 0.67 M_k \div L \cos(\theta/2) (N) M_k; Ncm; L; cm$$

注: 设计时一般先确定旋转臂长 L 值。

2. Couple arm of II type combined rotary compensator (Fig 2, Fig 3) L , 1.5~6m generally, or longer under special conditions. The couple arm must be vertical with a pair of forces, equal in size, and opposite in direction. Accordingly during the thermal expansion, the force P to rotate the couple arm (namely operation of a pair of rotary sleeve) shall be determined according to the following format:

$$P = M_k \div L \cos(\theta/2) (N) M_k; Ncm; L; cm$$

The couple of II type combined rotary compensator (Fig 4, Fig5) adopts three rotary sleeves and two L s (right and left) to form a pair of couple. Refer to B6 for calculation of L arm, the length of L calculated shall be the min value, which can be increased properly (reducing θ angle) to reduce the thrust in expansion.

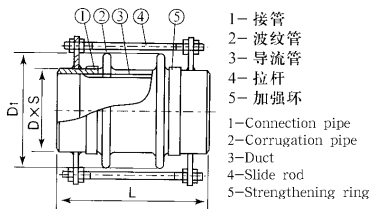
$$P = 0.67 M_k \div L \cos(\theta/2) (N) M_k; Ncm; L; cm$$

Note: First of all, the length L of the rotary arm shall be calculated.

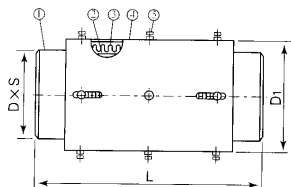


五、波纹膨胀节V、Corrugation Expansion Joints

单式轴向型膨胀节(YDZ) Single-Type Axial Expansion Joints(YDZ)

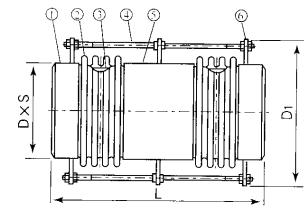


单式轴向型膨胀节(YDZ)
Single-Type Axial Expansion Joints(YDZ)



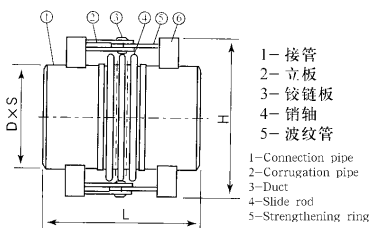
1-接管 2-波纹管 3-导流管 4-外护套 5-螺栓
1-Connection pipe 2-Duct 3-Corrugation pipe 4-Outer sheath 5-Bolt

复式轴向型膨胀节(YFZ)
Double-Type Axial Expansion Joints (YFZ)

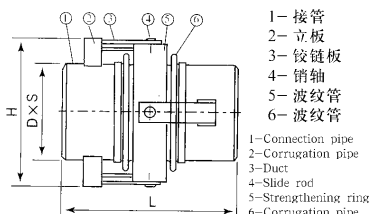


1-接管 2-波纹管 3-导流管
4-控制杆 5-中间接管 6-耳板
1-Connection pipe 2-Corrugation pipe 3-Duct
4-Control rod 5-Middle connection pipe 6-Syrinx

复式轴向型膨胀节(YFC)
Double-Type Axial Expansion Joints (YFC)



角向铰链型膨胀节(YJL)
Angular Hinged Expansion Joints(YJL)



万向角铰链型膨胀节(YWJ)
Universal Hinged Expansion Joint(YWJ)

序号 No.	规格型号 Specification	轴向补偿(mm) Axial compensation (mm)	轴向刚度 (N/mm) Axial rigidity	接口尺寸 D × S(mm) Interface size	径向最大外形 尺寸D'(mm) Max overall diameter	产品长度 L (mm) Product length D	压力等级范围 (MPa) Range of pressure grade
1	16YDZ100-J	20~33	417~208	φ 108 × 4	310	320~390	0.25~2.5
2	16YDZ150-J	21~30	456~285	φ 159 × 4.5	370	340~400	0.25~2.5
3	16YDZ200-J	32~49	480~320	φ 219 × 6	445	350~400	0.25~2.5
4	16YDZ250-J	32~49	930~620	φ 273 × 8	500	420~490	0.25~2.5
5	16YDZ300-J	36~54	1253~835	φ 325 × 8	550	470~560	0.25~2.5
6	16YDZ350-J	40~60	1265~843	φ 377 × 8	620	500~610	0.25~2.5
7	16YDZ400-J	40~60	1373~915	φ 426 × 10	700	510~620	0.25~2.5
8	16YDZ500-J	43~65	2452~1635	φ 426 × 10	850	530~630	0.25~2.5
9	16YDZ600-J	47~70	1740~1160	φ 529 × 10	1000	580~760	0.25~2.5
10	16YDZ700-J	24~71	5944~1982	φ 630 × 10	1110	470~790	0.25~2.5
11	16YDZ800-J	24~97	6365~1591	φ 720 × 12	1265	480~590	0.25~2.5
12	16YDZ900-J	27~96	5150~1288	φ 820 × 12	1350	550~1050	0.25~2.5
13	16YDZ1000-J	28~125	10075~2519	φ 1020 × 12	1450	550~1050	0.25~2.5

复式轴向型膨胀节(YFZ、YFC) Double-Type Axial Expansion Joints(YFZ、YFC)

序号 No.	规格型号 Specification	轴向补偿(mm) Axial compensation (mm)	轴向刚度 (N/mm) Axial rigidity	接口尺寸 D × S(mm) Interface size	径向最大外形 尺寸D'(mm) Max overall diameter	产品长度 L (mm) Product length D	压力等级范围 (MPa) Range of pressure grade
1	16YFZ(BFC)100-J	30~55	145	φ 108 × 4	220	450~860	0.25~2.5
2	16YFZ(BFC)150-J	50~82	214	φ 159 × 4.5	280	550~960	0.25~2.5
3	16YFZ(BFC)200-J	50~133	160	φ 219 × 6	340	700~1160	0.25~2.5
4	16YFZ(BFC)250-J	80~140	310	φ 273 × 8	410	700~1310	0.25~2.5
5	16YFZ(BFC)300-J	80~143	418	φ 325 × 8	460	700~1450	0.25~2.5
6	16YFZ(BFC)350-J	80~161	422	φ 377 × 8	520	800~1480	0.25~2.5
7	16YFZ(BFC)400-J	100~162	458	φ 426 × 10	580	800~1510	0.25~2.5
8	16YFZ(BFC)500-J	100~183	365	φ 529 × 10	690	800~1780	0.25~2.5
9	16YFZ(BFC)600-J	100~188	734	φ 630 × 10	800	900~1790	0.25~2.5
10	16YFZ(BFC)700-J	100~188	813	φ 720 × 10	890	1000~1790	0.25~2.5
11	16YFZ(BFC)800-J	100~200	890	φ 820 × 12	1020	1000~1850	0.25~2.5
12	16YFZ(BFC)900-J	100~200	965	φ 920 × 12	1150	1000~1850	0.25~2.5
13	16YFZ(BFC)1000-J	100~200	1160	φ 1020 × 12	1290	1000~1850	0.25~2.5

单式轴向型膨胀节(YDZ) Single Axial Expansion Joints(YDZ)

序号 No.	规格型号 Specification	角向补偿(mm) Angular compensation	轴向刚度 (N/mm) Angular Rigidity	接口尺寸 D × S(mm) Interface size	径向最大外形 尺寸D'(mm) Max overall diameter	产品长度 L (mm) Product length D	压力等级范围 (MPa) Range of pressure grade
1	16YJL(YWJ)100×4-J	± 69~12	12	φ 108 × 4	250~410	540	0.25~2.5
2	16YJL(YWJ)150×8-J	± 4~12	61	φ 159 × 4.5	330~460	720	0.25~2.5
3	16YJL(YWJ)200×6-J	± 8~12	83	φ 219 × 6	400~560	760	0.25~2.5
4	16YJL(YWJ)250×6-J	± 7.8~12	131	φ 273 × 8	480~710	820	0.25~2.5
5	16YJL(YWJ)300×6-J	± 7.5~12	244	φ 325 × 8	540~810	900	0.25~2.5
6	16YJL(YWJ)350×6-J	± 7.5~12	310	φ 377 × 8	451~900	1030	0.25~2.5
7	16YJL(YWJ)400×6-J	± 6.9~11	406	φ 426 × 10	660~980	1030	0.25~2.5
8	16YJL(YWJ)500×6-J	± 4.5~9	939	φ 529 × 10	800~1280	1100	0.25~2.5
9	16YJL(YWJ)600×6-J	± 4.5~8	2072	φ 630 × 10	930~1350	1260	0.25~2.5
10	16YJL(YWJ)700×6-J	± 3.9~6	3108	φ 720 × 12	1030~1400	1260	0.25~2.5
11	16YJL(YWJ)800×6-J	± 3.6~6	3863	φ 820 × 12	130~1500	1260	0.25~2.5
12	16YJL(YWJ)900×6-J	± 3.6~6	4040	φ 920 × 12	1250~1730	1340	0.25~2.5
13	16YJL(YWJ)1000×4-J	± 2.4~6	12705	φ 1020 × 12	1370~2000	1000	0.25~2.5
14	16YJL(YWJ)1100×4-J	± 2.4~6	14292	φ 1120 × 12	1510~2200	1280	0.25~2.5
15	16YJL(YWJ)1200×4-J	± 3~6	11936	φ 1220 × 12	1620~2400	1520	0.25~2.5

六、橡胶风道补偿器

VI、Rubber Air Duct Compensator

一、产品特点

该产品利用橡胶的高弹性，高气密性，耐介质性和玻纤维织物的柔顺性和耐热性能，两端配用金属短管和法兰与风机和风管连接，能补偿风管运行的热膨胀，也可以补偿多向位移。由于橡胶和织物有较好的柔顺性，况且都具有良好的吸声、隔振功能，能有效的减少锅炉、风机、气流在运行中产生的噪声和振动传递。由于主体材料为橡胶或纤维织物及纤维状保温隔热材料，无反推力，本身重量轻，无需管道支座，能节省大量的材料和劳动。特别是织物补偿器，因为使用的是有机硅材料，它有良好的耐高温、耐腐蚀性能，橡胶又具有较高的气密性，绝对不泄露，且价格低廉，远远低于金属补偿器和进口产品。

I、I.Characteristics

Based on the high elasticity, high air-tightness and medium resistance of rubber and the flexibility and heat resistance of fiberglass fabrics, the product is designed with short metal pipes and flanges connected with fan and air duct on two ends so as to compensate for the thermal expansion needed by operating air duct and for the displacements. Due to the flexibility of rubber and fabrics as well as sound absorption, vibration isolation, it can well reduce the noises and vibration transmission of boilers, fans and air flow in operation. For the main materials are rubber or fiber fabrics and the fibers have features of temperature preservation and thermal insulation, no reverse thrust and light weight, it needs no pipe bearing and save lots of materials and labors. Especially the fabric compensator, due to the organosilicon as raw material, it owns sound high temperature resistance and corrosion resistance, for the rubber has higher air-tightness absolute no leakage, low costs, much lower than that of metal compensator and imported products.

二、应用范围 II、Scope of Application

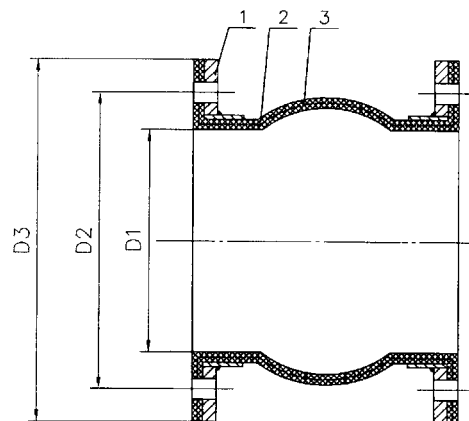
工厂类 Factory	火力发电厂 Fuel electric plant	锅炉、燃气轮机排气系统 Boiler, Exhaust system of gas turbine
	石化工业 Petrochemical industry	锅炉、工业用炉排气系统 Boiler, Exhaust system of industrial furnace
	排烟脱硫装置 Stack desulfurization device	湿式、干式通风道 Wet and dry air chute
	冶金系统 Metallurgy system	高炉、转炉、燃烧炉等的排烟除尘 Elimination of smoke and dust from blast furnace, converter, combustion furnace and so on
	核发电厂 Nuclear power plant	换气装置 Scavenging arrangement
	水泥工业 Cement industry	各种窑、集尘、烟尘处理系统 Various disposal systems of kiln, dust arrest, smoke
装置类 Device	集尘器 Dust collector	各设备的风机进出口 Import and export of the blower fan of all the equipment
	吸尘器 Suction cleaner	
	空气加热器 Air heater	
	洗涤塔 Washing tower	
	引风机 Draught fan	
	鼓风机 Fan	



1、FDB 型橡胶小波风道接头

1、FDB-Type Rubber Wavelet Air Duct Joints

产品结构 Product Structure

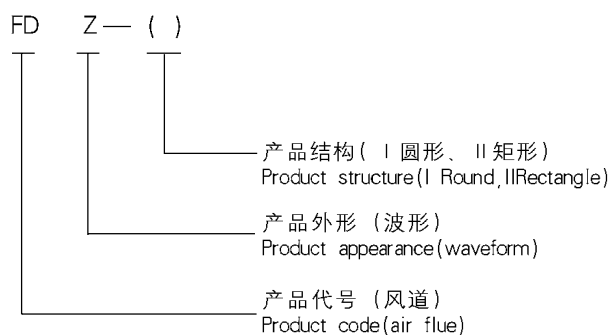


FDB 部分规格连接尺寸表 Connection Sizes of FDB Specification

单位mm) unit(mm)

D1	D2	D3	连接螺孔 Bolt Hole Connection	
			ϕ	n1
600	650	676	12	16
800	860	910	15	16
1000	1065	1110	15	16
1200	1270	1330	15	24
1600	1660	1700	15	28
2000	2070	2020	15	32

标识 Mark



序号 No.	名称 Name	材料 Material	数量 Qty
1	法兰 Flange	Q235	2
2	内、外胶层 Inner and outer rubber linings	天然、合成橡胶 Natural and synthetic rubber	
3	增强层 Reinforced layer	挂胶纤维织物 Rubberized fiber fabric	2 层 2 layers

订货说明: 1、订货时需说明产品长度, 内边长在 2000mm 以上的, 需提供有关尺寸及其它资料。

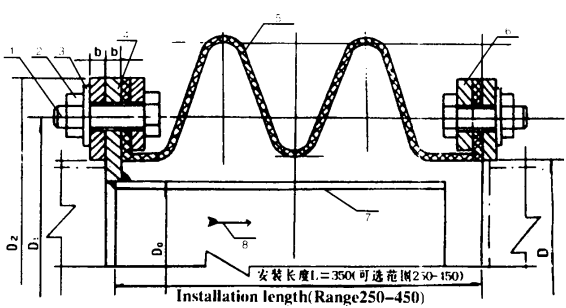
2、产品适用压力: 9800Pa。 3、适用温度范围: -40℃、150℃。

Notes: 1. The product length shall be specified in orders, when the inner side length exceeds 2000mm, relevant sizes and other data shall be provided.

2. The pressure applicable for the product: 9800Pa。 3. Applicable temperature: -40℃、150℃。

2、FVB 型风道橡胶补偿器
2、FVB-Type Air Duct Rubber Compensator

FVB 型结构图 FVB-Type Structure Diagram



- 组合零件: Component parts:
- | | |
|--------|-----------------------|
| 1、螺栓 | 1.Bolt |
| 2、螺母 | 2.Nut |
| 3、垫圈 | 3.Gasket |
| 4、套管法兰 | 4.Casing flange |
| 5、波纹管 | 5.Corrugated pipe |
| 6、背板法兰 | 6.Dorsal plate flange |
| 7、套管 | 7.Sleeve |
| 8、流向标志 | 8.Flow mark |

标识 Mark

F	V	B	()
(通径 I、矩形 II、变径 III) Diameter I, Rectangle II Variable diameter III			
产品代号 (波纹) Product code (corrugation)			
产品代号 (波纹形状) Product code (waveform)			
产品代号 (风道) Product code (air duct)			

材料表 Materials List

序号 No.	名称 Name	材料 Material	数量 Qty
1	法兰 Flange	Q235 扁钢、角钢 Q235 flat steel, angular steel	2 件
2	内、外胶层 Inner and outer rubber lining	天然胶 合成胶 Natural rubber, Synthetic rubber	1 件
3	增强层 Reinforced layer	挂胶纤维织物 Rubberized fiber fabric	2-4 层
4	套筒 Sleeve	Q235、A3	1 套

产品技术性能指标 Technical Performances of the product

单位 (mm)
unit (mm)

技术性能 Technical performance	FVB	FUB
补偿长度 Compensation length	± 100mm	± 90mm
工作压力 Working pressure	≤ 9800Pa	≤ 9800Pa
湿度范围 Temperature range	-40℃-300℃	-40℃-300℃
安装长度 Installation length	300-450mm	300-450mm
拉伸长度变化率 Various value of tensile length	≤ 15%	≤ 15%
两端支架间距之和 Sum of intervals between supports at the two ends	≤ 50m	≤ 50m
两端滑动支架间距 Interval between slide supports at two ends	2~4m	2-4m
胶料性能 Rubber properties		
拉伸强度 Tensile strength	≥ 12MPa	≥ 12MPa
扯断伸长率 Tensile elongation	≥ 300%	≥ 300%
扯断永久变形 Permanent tensile deformation	≤ 25%	≤ 25%
硬度 Hardness	58 ± 3°	58 ± 3°
热空气老化 Hot air aging	70℃ × 72h	70℃ × 72h
扯断伸长变化率 Various rate of tensile elongation	≤ 20%	≤ 20%



连接尺寸（参考）表一 Table 1—Connection Size(for reference)

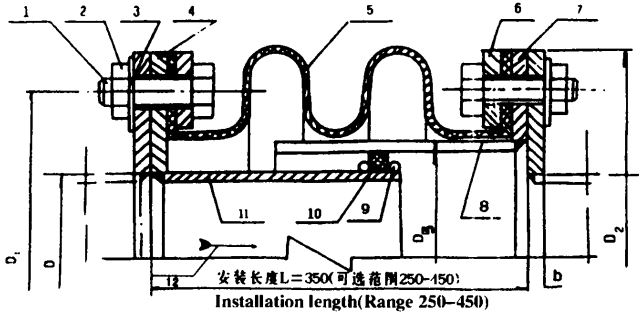
单位mm) unit(mm)

型号 mm Type	管外径D Outer diameter D of pipe	D1	D2	D3	b	连接螺栓数量n × φ M Quantity of connection Bolt	重量 /kg Weight
FVB500	529	600	640	469	8	16 × M16	89.8
FVB600	630	705	755	570			114.6
FVB700	720	810	860	660		18 × M16	134.8
FVB800	820	920	975	760		18 × M20	192.0
FVB900	920	1020	1075	860		20 × M20	213.8
FVB1000	1020	1120	1175	960		24 × M20	241.6
FVB1100	1120	1220	1275	1060	263.0		
FVB1200	1220	1320	1375	1160	10	30 × M22	312.6
FVB1300	1320	1420	1475	1260			335.0
FVB1400	1420	1520	1575	1360		36 × M22	369.6
FVB1500	1520	1630	1685	1440		36 × M22	349.4
FVB1600	1620	1730	1785	1540			477.5
FVB1700	1720	1830	1885	1640		44 × M22	515.9
FVB1800	1820	1930	1985	1740			536.0
FVB1900	1920	2030	2085	1840			565.2
FVB2000	2020	2130	2185	1940	12	44 × M27	725.2
FVB2200	2220	2340	2410	2140		50 × M27	881.8
FVB2400	2420	2540	2610	2340	14	54 × M27	953.0
FVB2500	2520	2640	2710	2440		56 × M30	1057.5
FVB2600	2620	2760	2810	2540		58 × M30	1098.4
FVB2800	2820	2960	3030	2740		60 × M30	1260.9
FVB3000	3030	3160	3230	2940		64 × M30	1347.8
FVB3200	3220	3360	3430	3140		72 × M30	1441.5
FVB3400	3420	3560	3630	3340		74 × M30	1523.0
FVB3600	3620	3760	3840	3540	16	78 × M30	1825.1
FVB3800	3820	3960	4040	3740		80 × M30	1924.1
FVB4000	4020	4160	4240	3940		84 × M30	2023.0

3、FUB 型风道橡胶补偿器

3、FUB-Type Flue Rubber Compensator

FUB 型结构图 FUB-Type Structure Diagram



组合零件: 1、螺栓 2、螺母 3、垫圈 4、内套管法兰 5、波纹管 6、背扳法兰
7、外套管法兰 8、外套管 9、挡圈 10、密封胶圈 11、内套管 12、流向标志
Component parts: 1.Bolt 2.Nut 3.Gasket 4.Inner race flange 5.Corrugation pipe 6.Dorsal plate flange 7.Inner sleeve pipe flange
Outer sleeve pipe flange 8.Outer sleeve pipe 9.Check ring 10.O-ring seal 11.Inner sleeve pipe 12.Flow mark

型号标识 Types and Marks



材料表 Materials List

单位 (mm)
unit (mm)

序号 No.	名称 Name	材料 Material	数量 Quantity
1	法兰 Flange	Q235 扁钢、角钢 Q235 flat steel, Angular steel	2 件 2 Pieces
2	内、外胶层 Inner and outer rubber lining	天然胶、合成胶 Natural rubber, Synthetic rubber	1 件 1 Piece
3	增强层 Reinforced layer	挂胶纤维织物 Rubberized fiber fabric	2-4 层 2-4 layers
4	内套筒 Inner sleeve	Q235 A3	1 套 1 set
5	外套筒 Outer sleeve	Q235 A3	1 套 1 set
6	密封圈 Seal ring	天然胶、合成胶 Natural rubber, Synthetic rubber	1 件 1 piece



连接尺寸 (参考) 表二 Table 2—Connection Sizes (for reference)

单位mm)
unit (mm)

型号 mm Type	管外径 D Outer diameter D of pipe	D1	D2	D3	法兰厚度 mm Thickness of flange (mm)	连接螺栓数量 $n \times \phi M$ Quantity of Connection bolt	重量 kg Weight
FUB800	812	950	1000	850	8	24 × M22	184.6
FUB900	912	1050	1100	950			203.6
FUB1000	1012	1150	1200	1052	10	30 × M22	221.9
FUB1100	1112	1250	1300	1152			240.7
FUB1200	1212	1350	1400	1252			259.5
FUB1300	1312	1450	1500	1352			278.3
FUB1400	1412	1550	1600	1452		30 × M22	357.3
FUB1500	1512	1650	1700	1552		36 × M22	291.2
FUB1600	1614	1750	1800	1654			426.3
FUB1700	1714	1850	1900	1754	10	44 × M22	449.7
FUB1800	1814	1950	2000	1854			481.0
FUB1900	1914	2050	2120	1954			533.4
FUB2000	2016	2170	2240	2056			619.9
FUB2100	2116	2270	2340	2156	12	54 × M30	753.3
FUB2200	2216	2370	2440	2256			785.3
FUB2300	2316	2470	2540	2356			817.2
FUB2400	2416	2570	2640	2456			849.2
FUB2500	2516	2670	2740	2556			881.2
FUB2600	2616	2770	2840	2656	14	64 × M30	913.2
FUB2800	2816	2970	3040	2856			986.5
FUB3000	3016	3170	3240	3056			1050.5
FUB3200	3216	3370	3440	3256			1114.6
FUB3400	3420	3580	3660	3480	16	72 × M30	1443.9
FUB3500	3520	3680	3760	3580			1484.7
FUB3600	3620	3780	3860	3680			1525.4
FUB3800	3820	3980	4060	3880		80 × M30	1606.9
FUB4000	4020	4180	4260	4080			1688.3
FUB4200	4220	4380	4460	4280			1769.8

七、织物(非金属)补偿器通用技术参数

VII、General Technical Parameters of Fabric (Non-metal) Compensator

产品广泛应用于火电、冶金、化工、水泥等行业，具有耐高温，耐腐蚀，密封性能好，结构合理，安装维护方便等优点。

脱硫用织物补偿器是最新开发的特色系列产品，这类补偿器，除了具有一般补偿器所有的优点外，还具有高强度、高密封性、及耐腐蚀性强、结构简单、寿命长、能适应各种脱硫工程需要，经国家大中型烟气脱硫工程配套使用，深受好评！

织物补偿器的组成：

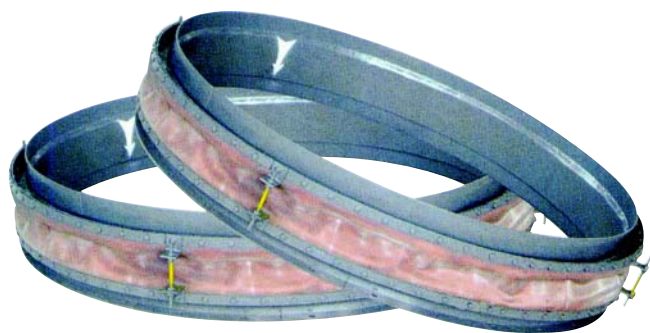
织物补偿器主要由补偿主体、防尘套、金属防磨管、压板法兰及烟风道法兰等组成。根据补偿器结构的不同，可大致分为普通烟风道用、防腐脱硫用、燃气燃油专用、防水防磨用补偿器等。

The product is widely used in thermal power, metallurgy, chemical industry and cement, which has advantages such as high temperature resistance, corrosion resistance, logical structure, simple installation and maintenance.

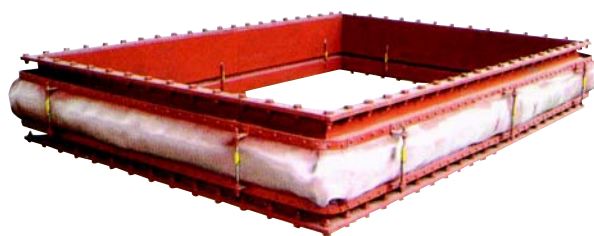
Desulfurization-based fabric compensator is a new product developed recently, the compensator, owning all advantages of general compensators, have features of high strength, high tightness, high corrosion resistance, simple structure, long service life, which can meet various equipments of desulfurization, it has been adopted in national large and medium-sized desulfurization projects, and well appraised.

Members of fabric compensator

Fabric compensator mainly consists of main body, dust cloth, rustproof metal pipe, pressing flange and air duct flange. According to the difference of compensator's structures, it can be divided compensator for general air duct, compensator for anti-desulfurization, special compensator for fuel gas and oil, and compensator for water and abrasion resistance.



圆形非金属补偿器
Round Non-Metal Compensator



矩形非金属补偿器
Rectangular Non-Metal Compensator



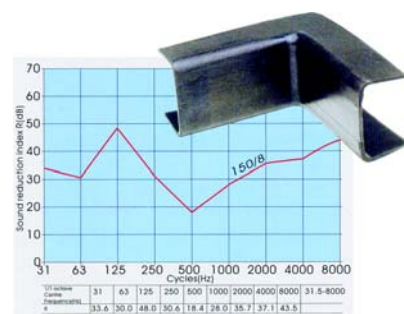
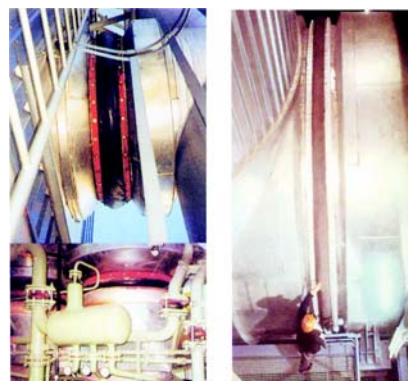
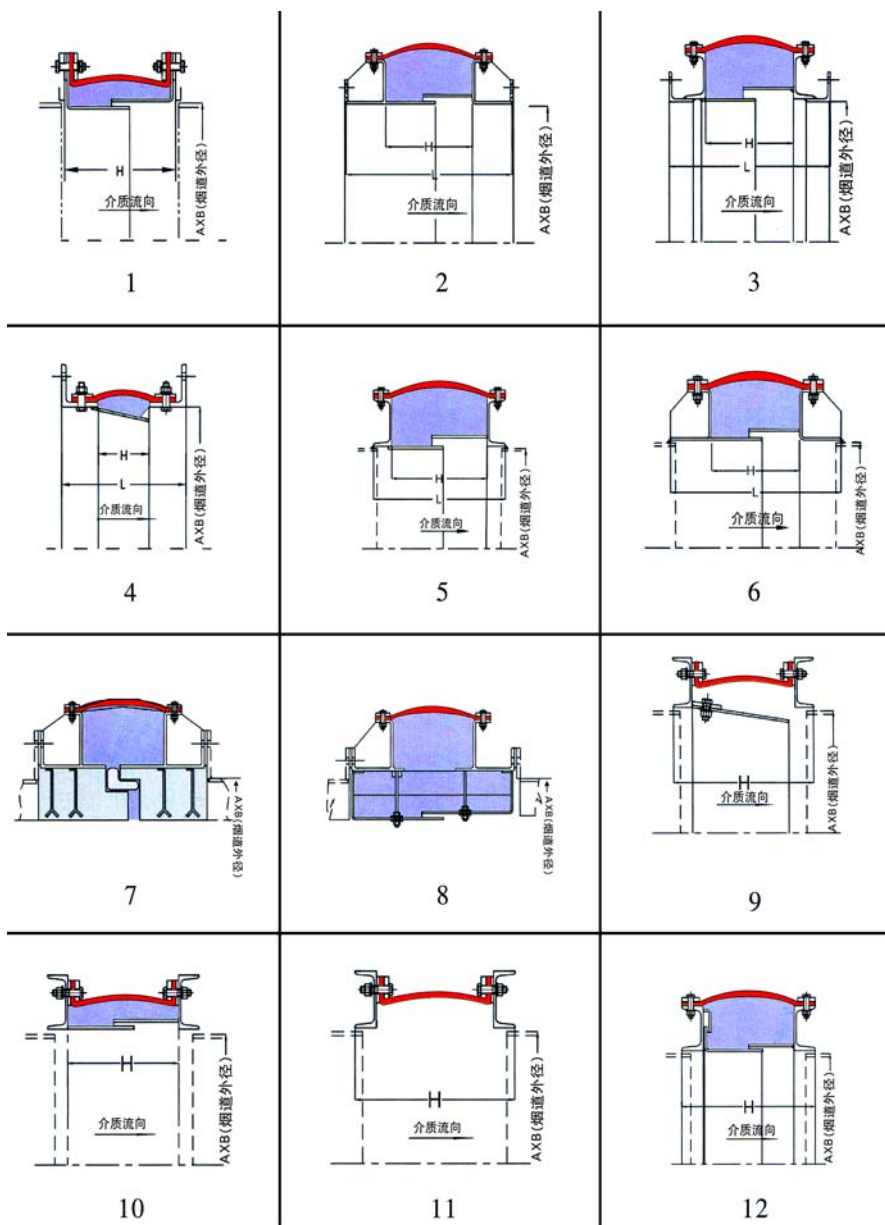
适用高温
Applicable for High Temperature



适用穿墙管
Applicable for Wall Pipe

织物补偿器结构示意图

Structure Diagram of Fabric Compensator



注: 第1-6类: 适用于风机、烟风管道

第7类: 适用于高温、高压烟道

第8类: 燃气机专用

第9-11类: 脱硫用

第12类: 适用于大偏移量烟道

Note: N1: Flow direction of medium

N2: AXB (External diameter of air duct)

Category 1-6: applicable for fans, air ducts

Category 7: applicable air ducts under high temperature and high pressure

Category 8: Special for gas engine

Category 9-11: for desulfurization

Category 12: applicable for air duct with higher shift

可根据客户需求设计制作各种规格的织物(非金属)补偿器。

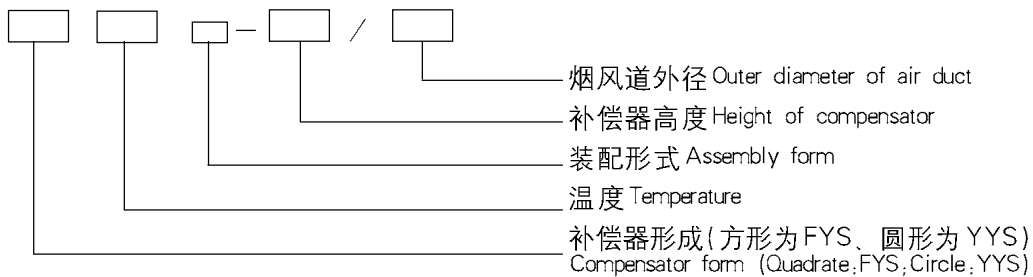
欢迎选用本厂生产的各种规格的织物热膨胀(非金属)补偿器系列产品。

Various fabric(non-metal) compensators can be processed at the request of clients.

Welcome to adopt our fabric heat expansion (non-metal) compensators.

技术参数 Technical Parameters

织物补偿器的表示 Fabric compensator, said



如: FYS I 3-400/3000 × 3000 表示为装配形式为 III 型、高度为 400、温度为 280-400℃ 烟风道外径为 3000 × 3000 的补偿器 (几种常见补偿器的结构图如下)

For example: FYS I 3-400/3000 × 3000 means: a compensator which has an assembly form of III type, height of 400, temperature of 280 ~ 400℃, 3000 × 3000 outer diameter of air duct (Several structures of common compensators as below)

选型技术参数 (供参数) Technical Parameters of Type Selection (for parameters)

单位 (mm)
unit (mm)

项目 Item	类型 Type	长度 (mm) Length (mm)	150	200	250	300	350	400	450	500	600	700	800
工作温度 (长期冲击) Working Temperature (long-term impact)	I	$\leq 80 / \leq \pm 120$	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left
	II	$\geq 120 / \leq \pm 280$	"	"	"	"	"	"	"	"	"	"	"
	III	$\geq 280 / \leq \pm 400$	"	"	"	"	"	"	"	"	"	"	"
	VI	$\geq 400 / \leq \pm 600$	"	"	"	"	"	"	"	"	"	"	"
	V	$\geq 600 / \leq \pm 800$	"	"	"	"	"	"	"	"	"	"	"
℃ 工作压力 (常态 / 冲击) KPa ℃ Working pressure (normalcy / impact) KPa	I	$\leq \pm 5 / \leq \pm 10$	"	"	"	"	"	"	"	"	"	"	"
	II	$\leq \pm 10 / \leq \pm 25$	"	"	"	"	"	"	"	"	"	"	"
	III	$\leq \pm 10 / \leq \pm 25$	"	"	"	"	"	"	"	"	"	"	"
	VI	$\leq \pm 10 / \leq \pm 25$	"	"	"	"	"	"	"	"	"	"	"
	V	$\leq \pm 10 / \leq \pm 25$	"	"	"	"	"	"	"	"	"	"	"
补偿值 (mm) Compensation Value (mm)	轴向位移 (-X/+X) Axial displacement (-X/+X)		-45/+15	-60/+20	-70/+25	-90/+30	-105/+35	-120/+40	-135/+45	-150/+50	-180/+60	-210/+70	-240/+80
	侧向位移 Lateral displacement	Q	± 15	± 20	± 25	± 30	± 35	± 40	± 45	± 50	± 60	± 70	± 80
烟风道气体流速 (m/s) Air flow speed in the air duct (m/s)	I	8~15	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left	同左 As left
	II~V	8~20	"	"	"	"	"	"	"	"	"	"	"



服务以人为本

Human-Orientated Service

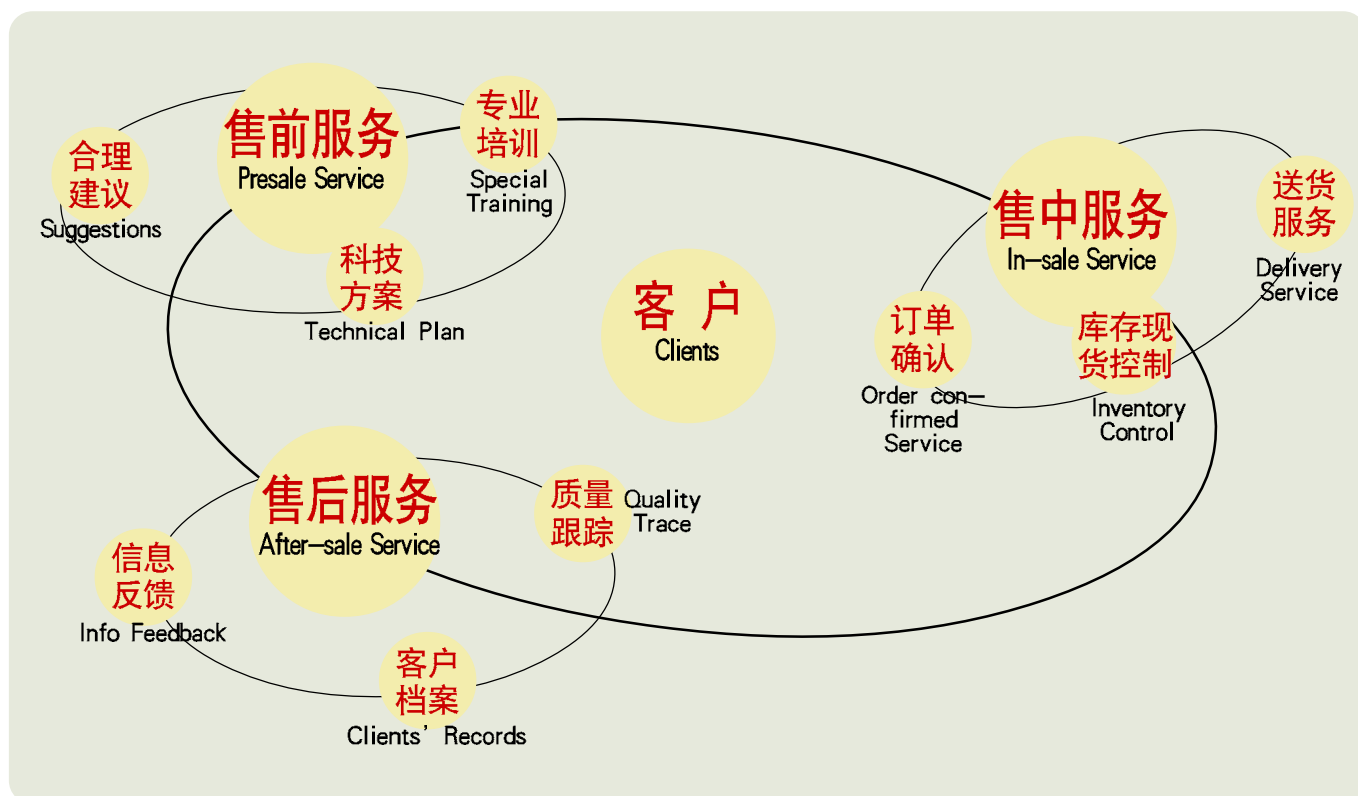
每一位用户都千差万别，切实考虑每一位用户的需要，是我们的必修课，随时待命的客户呼叫中心，以及针对不同客户设立的不同服务方案。所有的一切，都是为了更加以人为本。

我们的服务理念：服务就是销售；服务是持久的竞争力；服务是企业 and 顾客永恒的关系纽带。



Each client has the unique demands of his own, which should be mastered by us, the client's service center has prepared various plans for clients, all are done for our clients.

Service concept: Service is a marketing method, a competitiveness lasting forever and a permanent link between enterprises and clients.



AFTER SALES SERVICE 售后服务

We are devoted to providing quality products and 我们用高质量的产品
perfect after sale service for clients.完善的售后服务奉献顾客



顾客是上帝，顾客是企业效益的创造者，中海威公司超值的 service 赢得用户广泛的赞誉，建立了完善的售后服务体系，通过远程支持、现场维护、指导培训等快速反应机构，立求尽善尽美，我们对顾客的承诺是永恒不变的。

A client is our God, and a client is the source of economic benefits of an enterprise. Our valuable services have been well appraised by clients, equipped with perfect after sale service system, remote supports, on-the-spot maintenance, instruction and training, we will try our best to do everything best and abide by our commitments to the clients forever.



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