经各大船级社认证的不锈钢金属膨胀节DN125-200

产品名称	经各大船级社认证的不锈钢金属膨胀节DN125-200
公司名称	靖江聚友船用配套设备有限公司
价格	面议
规格参数	品牌: 型号:AS125-200
公司地址	靖江市斜桥镇创新村五组
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产品详情

金属波形膨胀节制造技术条件

general specification for expansion joints

本公司生的金属膨胀节适用于压力不大于0.1mpa排烟温度不超过550°C的内燃机排烟管路，并依据美国ejma-2008，gb/t12777-2008《金属波形膨胀节通用技术条件》进行设计及制造。

1材料

1.1总则

1.1.1膨胀节制造用材料应具有材料生产厂出具的材料质保书。

1.1.2材料应经外观检查，材料表面不得有影响材料质量和使用的裂纹，结疤，折叠，夹渣和分层现象。

1.1.3实际测量的材料厚度应不小于其名义厚度减去该材料标准所规定的负偏差值。

1.2不锈钢板

1.2.1用于排烟管道的波纹管所采用的材料主要有sus304及sus321.其化学及机械性能如下表所示.

c (%)	si (%)	mn (%)	p (%)	s (%)	ni (%)	cr (%)	ti (%)
≤0.08	≤0.75	≤2.0	≤0.45	≤0.03	9.0-12.0	17.0-19.0	≥5c

sus321的化学成分

c (%)	si (%)	mn (%)	p (%)	s (%)	ni (%)	cr (%)	n
≤0.08	0.75	≤2.0	≤0.45	≤0.03	8.0-10.5	18.0-20.0	≤0.10

sus304的化学成分

屈服强度 σ 0.2mpa	抗拉强度 σ bmpa	伸长率 δ 5 %	硬 度 hv
≥205	≥515	≥40	210

sus321的机械性能

屈服强度 σ 0.2mpa	抗拉强度 σ bmpa	伸长率 δ 5 %	硬 度 hv
≥205	≥515	≥40	220

sus304的机械性能

1.3法兰材料要求

对于法兰的化学成分与机械性能应满足gb700-1998《碳素结构钢》中q235的规定的要求。

1.4焊接材料

波纹管材料为sus321时，焊丝材料为h0cr20ni10ti或类似焊材,波纹管材料为sus304时，焊丝材料为h0cr21ni10或类似焊材。

2.制造

2.1波纹管采用液压成形，焊接采用自动氩弧焊和手工氩弧焊。

2.1膨胀节制造步骤详见《金属膨胀节制造工艺流程图》。

2.3波纹管只允许有纵向的焊接接头，不允许有环向的焊接接头。管坯的拼接应采用自动氩弧焊.大于0.5mm的板材拼接焊对口错边量、焊缝的凹深度及余高不应大于板厚的10%。一批波纹管在成形之前，纵向焊缝应进行液体渗透检测或射线检测的抽检。

2.4管坯纵向焊缝接头数见下表，各相邻纵向接头间距应不小于250mm.

管坯外径	焊缝接头条数	管坯外径	焊缝接头条数
250	1	>600-1200	≤4
>250-600	≤2	>1200-2400	≤6

2.5管坯纵向焊缝焊接头表面应无裂纹、气孔、咬边和对口错边，凹坑，的余高应不大于壁厚的10%.

2.6波纹管表面不允许有裂纹、焊接飞溅物及大于板厚下偏差的划痕的凹坑等缺陷，不大于板厚的负偏差的划痕的凹坑应修磨使其圆滑过渡。

2.7波纹管与法兰之间采用手工氩弧焊，焊缝应无裂纹、气孔、夹渣、飞溅物等缺陷。

2.8波纹管、导管等不锈钢部件及法兰密封面不应涂漆。所有碳钢结构件表面应涂防锈油一道，银粉漆二道。

2.9膨胀节组件长度公差为±5,垂直度度公差为1%膨胀节的内径，且不大于3mm，且同轴度公差为

为1%膨胀节的内径，且不大于φ5。

膨 胀 节 安 装 须 知

installation instruction of expansion joint

为保证产品安装中不受损坏及确保产品的使用寿命，厂方建议安装时应注意以下几点:

in order to ensure that the product will not be damaged during installation and the use life ,we suggest that the following items shall be paid attention to during installation.

1.完成安装以前，不要拆除固定运输杆.

before finishing the installation, don’t dismantle the transportation-securing rod.

2.安装膨胀节应使箭头方向与介质方向流向一致，不得相反.

the arrow direction on the expansion joint shall be the same as the flow direction of the medium. no allowance to install in the opposite direction.

3.不要让吊具直接作用在波纹管上，以免造成破坏.

don’t allow the riggings against the bellows directly to avoid suffering damage.

4.不要让焊接飞溅落到未经保护的波纹管上，可以用潮湿的无氯石棉作为保护层。

don’t allow the weld splatter to touch the unprotected bellows, moist chlorine-free asbestos can be used as the protection sheath.

5.不要用含氯化物的清洁剂及钢丝刷清理波纹管。

don’t use wire brush and detergent containing chloride to clean the bellows.

6.不要强行转动膨胀节的端部对正螺栓孔，一般的波纹管是不能承受的.

don’t force to turn the end of bellows to align with the bolt-hole. generally the bellows can’t bear the torque.

7.所有的导向支架和固定支架未正确安装之前，不要实行水压试验或对系统抽真空。

before proper installation, no water pressure test or vacuumizing to all the guide brackets and securing brackets.

8.不要用管道吊架作为导向支架.

don ’ t use the pipe hanger as the guide bracket.

9.试验压力不得超过膨胀节额定工作压力的1.5倍。

the test pressure shall not exceed 1.5 times of expansion joint rated service pressure.

10.如果在安装之前进行试验，不要使用固定杆去撑压力及推力.

if teat will be done before installation, don ’ t use securing bar to support pressure and thrust.

11.管道的补偿量不得超过膨胀节的补偿量.

the compensation of pip doesn ’ t exceed that of expansion joint.

12.安装完毕以后，对整个系统进行压力试验以前，要拆除所有的运输固定装置。

after finishing the installation and before pressure test upon the whole system, to dismantle all the transportation securing device.

如果使用了不正确的安装程序，厂方的产品保证书可能失去意义。

according to factory ’ s quality guarantee certificate, we won ’ t be held responsible for any damage and/or consequence due to improper installation.

本公司金属膨胀节按欧盟及美国ejma进行审计：

computation sheet of bellows design

shape of expansion: as100/304-8

shape of bellows: u shape unreinforced

inside diametre: 102 mm convolution height:22 mm

convolution pitch: 25 mm number of convolutions in one bellows : 8

bellows nominal material thickness of one ply: 0.5 mm

number of bellows material plies of thickness : 1

bellows material: 0cr18ni9(304)

design temperature: 525 °C

**********modulus of elasticity at design temperature: 157500 mpa

yield strength at design temperature : 108. mpa

pressure: 0.1 mpa

axial movement : 36 mm lateral deflection: 0 mm

angular rotation :0 degree

allowable stress at design temperature: 98. mpa

**********bellows axial elastic spring rate per convolution: 418.37 n/mm

overall bellows axial spring rate: 52.3 n/mm

overall bellows lateral spring rate: 37.07 n/mm

overall bellows bending spring rate: 1.77 n · m/ °

bellows tangent circumferential membrane stress due to pressure s1: 8.95 mpa

bellows circumferential membrane stress due to pressure s2: 6.96 mpa

bellows meridional membrane stress due to pressure s3: 2.43 mpa

bellows meridional bending stress due to pressure s4: 49.21 mpa

bellows meridional membrane stress due to deflection s5: 9.83 mpa

bellows meridional bending stress due to deflection s6: 830.96 mpa

limiting internal design pressure based on column instability: 0.29 mpa

limiting internal design pressure based on inplane instability and local plasticity : 0.19 mpa

the static thrust due to internal pressure: 1.2174 kn

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the design of soft according to: standards of the expansion joint manufactures association

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本产品的品牌是UNION-FRIEND，型号是AS125-200