Certificate No: LR21332007TA
Issue Date: 02/08/2021
Expiry Date: 01/08/2026

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	**Taizhou City Xinghai Pipe Co.,Ltd**
Address	Fangniu Village, Louzhuang Town, Jiangyan District, Taizhou, 225507, China
Place of Production	Taizhou City Xinghai Pipe Co.,Ltd Caoyang Village, Louzhuang Town, Jiangyan District, Taizhou, 225507, China
Type	Expansion Bellows
Description	GB/T12522-2009 Series (unreinforced): - Type A/ AS/BS CB1153-2008 Series (unreinforced): - Type AS/BS
Trade Name	XH
Application	Marine Piping Systems: - Exhaust gas piping systems (GB/T12522-96 Series) - Fresh water(CB1153-93 Series) - Steam pressure piping systems (CB1153-93 AS Types only) - Oil piping systems (CB1153-93 BS Types only)
Specified Standard	Lloyd's Register Rules and Regulations for the Classification of Ships, July

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Xiaodong Zhang

Lead Specialist and Section Leader for Engineering Section to Lloyd's Register Classification Society (China) Co Ltd

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2018.
GB/T 12522-2009
CB/T 1153-2008

Ratings

GB/T12522-2009 Series:
Type A/AS:
Nominal Pipe Diameter (mm):
DN65/DN200/DN500/DN600/DN700/DN800/DN900/DN1000;
Design Pressure (MPa): 0.1
Type BS:
Nominal Pipe Diameter (mm): DN1200/DN2600/DN3200;
Design Pressure (MPa): 0.05
Bellow materials: 321/316L/SS2205/SMO254
CB1153-2008 Series:
Type AS:
Nominal Pipe Diameter (mm): DN50/DN200/DN500/DN600;
Design Pressure (MPa): 1.6
Type BS:
Nominal Pipe Diameter (mm): DN50/DN300/DN800/DN1000;
Design Pressure (MPa): 0.6
Bellow materials:316L/SS2205/SMO254

Other Conditions

Where the expansion joints are intended to be installed on board ships, classed or intended to be classed with Lloyd'sRegister, the following conditions are applicable: -

1. CB1153-2008Series expansion joints: -
   - For theCB1153-2008 B & BS Types, an adequate root gap is to be provided for the welding of the bellows to the protection pipe so as to ensure full penetration of welds.
   - Where expansion joints are used in Class I and Class II piping system and steam pressure and oil fuel piping systems having a design pressure of more than 0.35MPa (3.6 kgf/cm2), the joints are to be

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examined, tested by hydraulic pressure and installed on board, to the attending Surveyor's satisfaction.

- Welding and non-destructive testing are to be in accordance with Part 5, Chapter 17 of the Rules, to the attending Surveyor's satisfaction.
- The dimensions and materials of flanges, gaskets and bolting, and the pressure-temperature rating of the bolted flanges in pressure pipelines, in accordance with national or other established standards.

1. Expansion joints are to be protected against over extension and compression. The adjoining pipes are to be suitably aligned, supported, guided and anchored. Where necessary, expansion bellows are to be protected against mechanical damage.
2. Loose flange designs are to be in accordance with a recognised National or International Standard.
3. It should be noted that the specified values of lateral displacement are not qualified as amended in red on the drawings in this type approval. Bellows stresses, S1, S2,S3, S4, S5, S6, St and fatigue life, Nc are to be calculated in accordance with GB/T 12777-1999 or "Standards of the Expansion Joint Manufactures Association, Inc." to meet purchasers' specifications for individual products.
4. The expansion joints are not recommended for salt-water services as austenitic stainless steels are prone to pitting, particularly in polluted waters. Part 5, Chapter 12,section 11.3.4 refers.
5. Expansion joints are to be installed according to manufacturer's instructions and to the attending surveyor's satisfaction.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Classification Society (China) Co Ltd of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document LR21332007TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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