

JB

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JB/T 6169-2006

Replacing JB/T 6169-1992

Metal Bellows

金属波纹管

(English Translation)

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1 Scope

This standard specifies the classification principle, the series division principle and the basic requirements and test methods for service performance of metal annular bellows (hereinafter referred to as bellows).

This standard is applicable to bellows used in instruments and sensors (referred to as sensitive bellows); it is also applicable to bellows used in various compensators, and those used in sealing and isolating devices, elastic supporting devices, shock absorbers and flexible connecting devices (referred to as universal bellows).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this national standard. For dated references, subsequent amendments (excluding corrections) to, or revisions, of any of these publications do not apply. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the referenced document applies.

GB 150-1998 Steel pressure vessels

GB/T 191 Packaging - Pictorial marking for handling of goods (eqv ISO 780: 1997)

GB/T 321 Preferred numbers - Series of preferred numbers

GB/T 699 Quality carbon structure steels

GB/T 912 Hot-rolled sheets and strips of carbon structural steels and high strength low alloy structural steels

GB/T 1047 Pipework components - Definition and selection of DN (nominal size) (GB/T 1047-2005; ISO 6708: 1995, MOD)

GB/T 1048 Pipework components - Definition and selection of PN (GB/T 1048-2005, ISO/CD 7268: 1996, MOD)

GB/T 1801 Limits and fits - Section of tolerance zones and fits (GB/T 1801-1999; eqv ISO 1829: 1975)

GB/T 1802 Limits and fits - Tolerance zones and fits for commonly-used holes and shafts size from 500mm to 3,150mm

GB/T 1803 Limits and fits - Tolerance zones for holes and shafts size up to 18 mm

GB/T 2059 Copper and copper alloy strip

GB/T 2828.1-2003 Sampling procedures for inspection by attributes - Part1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection (ISO 2859-1: 1999, IDT)

GB/T 2829-2002 Sampling procedures and tables for periodic inspection by attributes (Apply to inspection of process stability)

GB/T 3274 Hot-rolled plates, sheets and strips of carbon structural steels and high strength low alloy structural steels (GB/T 3274-1988, neq GammaOCT 14637:1979)

GB/T 3280 Cold rolled stainless steel sheets and plates

GB/T 4237 Hot rolled stainless steel sheets and plates (GB/T 4237-1992, neq JISG 4304: 1984)

GB/T 14992 Classification and designation for superalloys and high temperature intermetallic materials

GB/T 15010 Cold-rolled sheets of corrosion-resisting

GB/T 15464-1995 General-purpose specification for the packaging of instrumentation products

GB 16749-1997 Bellows expansion joints for pressure vessel

JB/T 4711-2003 Coating and packing for pressure vessels transport

JB/T 4730.2 Nondestructive testing of pressure equipments - Part 2: Radiographic testing

JB/T 10078 Elastic alloy sheets for sensor

YB/T 323 Beryllium bronze sheets and strips

YB/T 5256 3J1 and 3J53 alloy for elastic component technical requirement

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply:

3.1 nominal movement

given value in a product technical document, usually a design calculation value for the displacement which is the deviation of bellows from their original position due to their deflection under the action of force, moment and pressure, referring to the following three types of movement in general, namely, axial movement which is axial expansion and contraction of bellows, angular movement which is their axial bending, and transverse movement which is parallel dislocation of their port planes

3.2 nominal spring rate

given value in a product technical document, usually a design calculation value for stiffness which is the force or moment required for bellows to generate unit movement deflection (or the resistance or reaction moment generated by bellows when experiencing unit movement), varying according to the types of movement