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

JB/T 8064.1-1996

Compression gas springs - Technical specifications

压缩气弹簧 技术条件

(English Translation)

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1 Scope

This Standard specifies the terms, marking, technical requirements, test methods, inspection rules, signs and packaging, transportation and storage of compression gas springs (hereinafter referred to as gas springs).

This Standard is applicable to gas springs filled with nitrogen or inert gas as the working medium.

2 Normative References

The clauses contained in the following standards constitute the clauses of this

Standard through reference in this Standard. At the time of publication of this Standard, all the indicated versions are valid. All standards will be revised, and all parties using this Standard shall explore the possibility of using the latest version of the following standards.

GB/T 1771-91 Paints and Varnishes - Determination of Resistance to Neutral Salt Spray

GB 1800-79 Tolerance and Fitting - General Standard Tolerance and Fundamental Deviation

GB/T 2348-93 Fluid Power Systems and Components - Cylinder Bores and Piston Rod Diameters

GB 2349-80 Fluid Power Systems and Components - Cylinders - Basic Series of Piston Strokes

GB 2828-87 Sampling Procedures and Tables for Lot-by-lot Inspection by Attributes (apply to inspection of successive lots or batches)

GB 6458-86 Metallic Coatings - Neutral Salt Spray Tests (NSS tests)

GB 6461-86 Metallic Coatings - Coatings Cathodic to the Substrate - Rating of Electroplated Test Specimens Subjected to Corrosion Tests

GB/T 13913-92 Autocatalytic Nickel-phosphorus Coating - Specification and Test Methods

JB 2864-81 Electroplated Coatings and Chemical Treatment for Automobiles

6.3.7 Cycle life

Gas springs that have gone through the thermal and cold shock resistance test shall also be able to withstand 20,000 times of cycle life test. After the test, the total attenuation of the nominal force shall be less than 13%; the dynamic friction shall comply with the stipulations of Table 2.

6.3.8 Tensile strength

The gas spring is stretched at 4 times the nominal force and maintained for 5 min; the force performance of the gas spring shall remain unchanged.

The gas spring is stretched at 8 times the nominal force and maintained for 5 min; the gas spring is allowed to fail, but not dismembered.

7.1.1

Use special or general-purpose measuring instruments with a division value less than or equal to 0.02 mm for size inspection.

7.1.2

Adopt visual inspection or 4 times magnifying glass for the inspection of the appearance quality. The electroplated coating, chemical treatment layer and paint coating shall respectively be inspected in accordance with the relevant regulations of

GB/T 13913, JB/Z 111 and JB 2864; the inspection results shall comply with the stipulations of 6.2.3 ~ 6.2.5.

7.2.1 Test conditions

The inspection shall be carried out at $20\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$. Before the inspection, the gas spring shall be in an environment of $20\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, and always be maintained in the stretched state; the piston rod must not be pressed; place it for above 2 h. The measuring speed of the testing machine is: 200 mm/min; the force measurement accuracy of the testing machine is not lower than 1%; the displacement measurement accuracy is not lower than 1%.

7.6 Life Test

On the testing machine, install the gas spring that has been subjected to the thermal and cold shock resistance test. The piston rod is placed downward; control the gas spring to complete cycles; the frequency of the cycles is 4 ~ 10 times/min. During the test, the temperature of the gas spring cylinder shall be lower than $50\text{ }^{\circ}\text{C}$.

After every 5,000 cycles, in accordance with the inspection method in 7.2, determine the force performance once. After 20,000 cycles, the determination results shall comply with the stipulations of 6.3.7.

7.7 Tensile Strength Test

Fix the gas spring on the testing machine; at a speed of 2 mm/min, load it. Then, in accordance with the stipulations of 6.3.8, conduct the test.

8.1 Inspection Classification

Product inspection is divided into type inspection and exit-factory inspection.

8.2 Type Inspection

Under one of the following circumstances, type inspection shall generally be conducted:

- a) Trial production and type appraisal of new products or old products being transferred to another factory for production;
- b) After formal production, when there are relatively significant changes in structures, materials and processes that might affect product performance;
- c) In formal production, inspection shall be periodically carried out or after a certain amount of output has been accumulated;
- d) When production is resumed after a long term of suspension;
- e) When there are significant differences between the exit-factory inspection results and the previous type inspection;

f) When the national quality supervision institution requests for type inspection.

8.2.1 Defects

Gas springs that do not comply with the specified technical requirements in product technical standards, process documents and drawings shall constitute a defect. In accordance with the severity of the defects, they may be divided into:

A Defective Item (fatal defect)

B Defective Item (severe defect)

C Defective Item (general defect)

See Table 3 for details.

Table 3

A Defective Item B Defective Item C Defective Item

Resistance to Thermal and Cold Shock

Cycle Life

Tensile Strength

Force

Characteristics

Size and Appearance Quality

Resistance to Neutral Salt Spray

8.2.2.1 Determination of inspection batch

a) The inspection batch must be qualified gas spring products; 500 gas springs constitute one inspection batch. If the number of products is greater than 500, then, the inspection personnel shall randomly divide them into several inspection batches (500 pieces in each batch), then, randomly determine an inspection batch as the object of the random inspection.

b) If the number of products is not more than 50, then, the inspection batch should not be sampled, instead, the stock products shall be selected for sampling.

8.2.3.1

Non-destructive inspection items shall share one sample. If the number of products is greater than 280, then, in accordance with the general inspection level-I specified in GB 2828, the sample size code F and one-time sampling scheme for normal inspection, select 20 gas springs; if the number of products is not more than