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GB/T 1239.2-2009

Replacing GB/T 1239.2-1989

Cold coiled helical springs technical specifications - Part 2: Compressions spring

冷卷圆柱螺旋弹簧技术条件 第2部分：压缩弹簧

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Foreword

GB/T 1239 "Cold coiled helical springs technical specifications" consists of the following three parts. - Part

1 Scope

GB/T 1239.2-2009 is the Chinese national standard on cold coiled helical springs technical specifications - part 2: compressions spring, in the field of mechanical systems and components. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 16 March 2009 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 November 2009. Classification: ICS 21.160, CCS J26. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered

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complete in English translation.

This Part of GB/T 1239 specifies technical requirements, test methods, inspection rules and packaging, marking, transportation and storage requirements for helical compression spring of cold rolled round section cylinder. This Part is applicable to helical compression spring of cold rolled round section cylinder (hereinafter referred to as the spring). The cross-sectional diameter of the spring material is greater than or equal to

0.5 mm. This Part is inapplicable to the spring of special requirements.

2 Normative references

The following documents contain the provisions which, through reference in this Part, become the provisions of this Part of

GB/T 1239.For dated references, their subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB/T 1805, Nomenclature of springs

GB/T 4357-1989, Carbon spring steel wires (neq JIS G3521.1984)

GB/T 16947, Helical spring fatigue testing standard

GB/T 18983, Oil - Hardened and tempered steel wire for mechanical springs (

GB/T 18983-2003, ISO/FDIS 8458-3.1992, MOD)

GB/T 21652, Copper and copper alloy wire

JB/T 7367, Magnetic particle inspection for helical compression springs

3 Terms and definitions

For the purposes of this Part of GB/T 1239, the terms and definitions defined in GB/T 1805 apply.

4 Structure type

See Table 1 for the structure type of the spring end.

5 Technical requirements

Products shall be manufactured in accordance with product drawings and technical documents approved by prescribed procedures.

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5.1.1 The spring generally uses the materials specified in Table

2.If other materials are needed, it shall be negotiated between the supplier and the purchaser.

5.2 Limit deviation level The limit deviation of spring size and characteristics is divided into three grades. 1, 2,

3.Each item level shall be independently selected according to the needs of use.

5.3 Dimensional parameters and limit deviation

5.3.1 Inner diameter or outer diameter The limit deviation of the inner diameter or outer diameter of the spring shall be as specified in Table 3.

5.3.2 Free height The limit deviation of the spring free height H0 is in accordance with Table 4. When the drawing requires the measurement of two points or more of the load, the free height is used as a reference.

5.3.5 Pitch uniformity When the equal-pitch spring is compressed to 80% of the full deformation, its normal-pitch ring shall not touch. The load of the spring compressed to 80% of the full deformation shall not be greater than the test load. The spring pitch value on the drawing is used as a reference.

5.3.7 Face grinding The flattened part of the spring support ring with both ends and flattened tightly is not less than 3/4 of the turn. Its roughness is not greater than Ra12.5.The end thickness is not less than 1/8d.

5.4 Spring characteristics and limit deviation

5.4.1 Characteristics The spring characteristics shall meet the requirements of

5.4.1.1 or 5.4.1.2. Generally, they are not used at the same time.

5.4.2 Limit deviation

5.4.2.1 The limit deviation of the load F under the specified height or deformation is in accordance with Table 7.

5.6 Permanent deformation The permanent deformation of the finished spring shall not be greater than 0.3% of the free height.

5.7 Heat treatment The spring needs to undergo stress relief annealing after forming. Springs formed with beryllium bronze wire need to be aged. Its hardness will not be assessed.

5.8 Surface quality There must be no harmful defects visible to the naked eye on the surface of the spring.

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5.10 Other requirements According to needs, the following requirements can be specified for the spring in the product drawing.

6 Test methods

6.1 Permanent deformation Compress the spring with the test load three times. Measure the change of free height after the second and third compression. When the test load is greater than the compression load, the compression load is regarded as the test load.

6.2 Spring characteristics The spring characteristics are measured on a spring testing machine with an accuracy of not less than ±1%.

6.3 Outer or inner diameter Use general measuring tools or special measuring tools with a division value less than or equal to 0.02mm. The tools with the outer diameter or pitch diameter on the drawing are used to measure the outer diameter. And the maximum outer diameter shall prevail.

6.4 Free height The free height is measured with a general measuring tool or a special measuring tool with a division value less than or equal to

0.05 mm. The maximum outer diameter shall prevail. When the weight of the spring affects the free height measurement, place the spring horizontally for measurement.

6.6 Straightness According to the method shown in Figure 2, place the spring horizontally on a grade-2 accuracy plate. Turn the spring one round. Use a special measuring tool to measure the maximum gap Delta' between the outer circle element line of the spring and the flat plate.

6.7 Compression height Load with a theoretical pressure less than or equal to

1.5 times. The spring is compressed and then used to measure the height of the spring with a universal measuring tool or a special measuring tool whose graduation value is less than or equal to 0.02mm.

6.8 Surface quality Use visual inspection or use a 5x magnifying glass to inspect the surface of the spring.

6.9 Surface treatment The surface treatment of the spring shall be carried out in accordance with relevant standards or technical agreements.

7 Inspection rules

7.1 Sampling inspection The product acceptance sampling inspection shall be in accordance with the provisions of JB/T 7944, or it may be negotiated by both the supplier and the purchaser.

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