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

GB/T 30569-2014

**Structural design specification for precision cold forgings of
straight bevel gears**

直齿锥齿轮精密冷锻件 结构设计规范

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard by the National Standardization Technical Committee Forging (SAC/TC74) and focal points. Drafting of this standard. Jiangsu Pacific Precision Forging Technology Co., Ltd., Wuhan University of Technology, Beijing Institute of Electrical. The main drafters of this standard. Han Guan Xia, Huang Zepei, Waring, gold red, Dong Yi, Xie talk, Han will, Zhou Lin, Tao Liping, Zhang Yong, Wei Wei. Straight bevel gear precision cold forging structural design codes

1 Scope

China's national structural design specification for precision cold forged straight bevel gears. It specifies the structural elements of the toothed portion of such a forging, the way its dimensions are marked and measured, and the structural forms that suit the cold forging process, and it applies to straight bevel gear forgings whose teeth are formed by precision forging on a press, with a large end transverse module of not more than 10 and a tooth tip diameter of not more than 180 mm. Precision cold forging is what allows a bevel gear tooth to be produced without cutting it. The blank is formed at room temperature in a closed die, the tooth flanks come out of the die at their finished form and surface, and no gear cutting operation follows - which removes the slowest and most expensive step in bevel gear manufacture and, because the grain flow follows the tooth profile instead of being cut through, produces a tooth that is stronger in bending fatigue than a machined one. The reason a design specification is needed rather than just a process description is that the process constrains the part. Metal at room temperature flows only so far and only under very high pressure, the die is loaded to the limit of what tool steel survives, and a feature that is trivial to machine can be impossible to forge - or possible only at a die life that makes the part uneconomic. This standard fixes the structural elements the designer must get right: the parting plane, the draft, the transitions and radii, the web and hub arrangement, the allowances left for any subsequent machining, and how each of them is dimensioned and measured, with an accuracy no lower than grade 8 of GB/T 11365-1989. Issued on 6 May 2014 and in force since 1 December 2014.

This standard specifies the tooth portions of cold precision forging straight bevel gear forging (hereinafter referred to as "cold forging") of structural elements, standard size Notes and measurement; and according to the characteristics of the cold forging process, cold forging proposed to optimize the structure in the form of straight bevel gears. This standard applies to the press, the final portion of the tooth straight bevel gear forging precision forging forming process, the large end to end surface modes Number ≤ 10 , tooth diameter $\leq \phi 180\text{mm}$ forgings.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 11365-1989 bevel and hypoid gear precision

JB/T 4201-1999 Straight Bevel Gear Precision Hot forgings

JB/T 9181-1999 straight bevel gears precision hot forging structural design codes

QC/T 270 auto steel forged parts did not note the size limit deviation tolerance

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Straight Bevel Gear Precision cold forging precision cold forging of straight bevel gear At room temperature, using precision cold forging toothed portion forming process was cold forging straight bevel gear. Its surface is no longer cutting teeth Machining, precision is not lower than the GB/T 11365-1989 prescribed eight.

4 Structural elements

4.1 parting surface Cold forging parting plane, is perpendicular to the axis line, comprising a cold forging and the maximum diameter (FIG. 1) or big end tooth (FIG. 2) of a Plane.
Figure