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GB/T 32253-2015

Precision hot forgings of straight bevel gears - Structural design specification

直齿锥齿轮精密热锻件 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. This standard was drafted. Jiangsu Pacific Precision Forging Technology Co., Ltd., Shanghai Automotive Transmission Co., Ltd., Beijing Institute of Electrical. The main drafters of this standard. Han Guan Xia, Huang Zepei, gold red, Tao Liping, Zhang Haiying, Wei Wei, Zhang Yong, Shen added Sheng, Zhou Lin, Zhou Xuan, Sun Hua standard. Straight Bevel Gear Precision Hot forging structural design codes

1 Scope

China's national structural design specification for precision hot forged straight bevel gears. It specifies the terms and definitions, the structural elements and the structural forms optimised for the hot forging process, and it applies to straight bevel gear forgings whose teeth are formed by precision forging, of mass not more than 20 kg, with a large end transverse module of not more than 20 mm and a tooth tip diameter of not more than 250 mm. It is the hot forging counterpart of GB/T 30569, which covers the same subject for cold forging, and the difference between the two is instructive. Cold forging gives the better surface and the tighter tolerance but is limited to small gears - module up to 10 and tip diameter up to 180 mm - because the forming loads at room temperature rise steeply with size. Hot forging works the metal above its recrystallisation temperature, where it flows far more readily, so a gear twice the diameter and several times the mass can be formed; the price is oxidation, scale and thermal contraction, which together mean a coarser tolerance and a lower accuracy grade. The accuracy required here is not lower than grade 10 of GB/T 11365-1989, against grade 8 for the cold forged product. Both processes share the essential advantage: the tooth flanks come out of the die at their finished form and are not cut, so the grain flow follows the tooth profile rather than being severed by a cutter, and the tooth is stronger in bending fatigue than a machined one. The structural elements specified - the parting plane, the forging draft and its tolerance, the web and hub arrangement - are what determine whether that can actually be achieved. Issued on 10 December 2015 and in force since 1 July 2016.

This standard specifies the forging straight bevel gear tooth portion of the precision hot forging (hereinafter referred to as "hot forging") terms and definitions, structures Form elements and heat forging straight bevel gears to optimize the structure. This standard applies to the final straight portion of the tooth bevel gear forging precision forging forming process, the quality <=20kg, end surface modulus <=20mm, tooth diameter <=250mm.

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

GB/T 32254-2015 straight bevel gears precision hot forging general technical conditions

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Straight Bevel Gear Precision Hot Forging precisionhotforgingofstraightbevelgear Using precision hot forging process to obtain a straight-toothed bevel gear forgings, their surface is no longer for cutting gear, accuracy no less than GB/T 11365-1989 specified 10.

3.2 Spoke spokeplate Hot forging annular plate connected to the rim and the hub between said wheel plate.

4 Structural elements

4.1 parting surface Hot forging parting surface is perpendicular to the axis, and contains a flat hot forging the largest diameter (Figure 1, Figure 2). Figure