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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 33202-2016

Precision forgings of generator claw poles - Principles of technological design

发电机爪极精密锻件 工艺编制原则

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Standardization Administration of the PRC

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed and centralized by the National Standardization Technical Committee for Forging (SAC/TC74). The standard responsible for the drafting unit. Jiangsu Longcheng Precision Forging Co., Ltd., Beijing Institute of Electrical and Mechanical. The main drafters of this standard. Zhuang Xiaowei, Tang Xiaofeng, Wang Ling, Zhou Lin, Xu Jun, Jin Hong, Chen Wenjing, Wei Wei. Principle of Compiling Precision Technology of Generator

1 Scope

China's national standard for how the forging process for generator claw poles is to be laid out. It specifies the principles for compiling the process for precision claw pole forgings, and it applies to claw pole forgings of diameter not more than 180 mm hot forged on a press; it does not apply to claw poles cold forged on a press. A claw pole is the rotor component of an automotive alternator: a steel piece with a hub and a set of interleaved fingers that, paired with a mirror-image counterpart around a field coil, produces the alternating field that generates the current. Every internal combustion vehicle has one, so this is a component made in tens of millions a year, and the economics are entirely a matter of the forging. The fingers are long, thin, tapered and radial - a shape that metal does not willingly flow into - and they must come off the press close enough to final dimensions that machining is minimal, because there is no margin in the part to pay for machining. So the process design decides everything: how the billet is heated, how many blows are used, how the preforms distribute the material before the finishing impression, how the flash is arranged, and how the dies are cooled and lubricated. This standard writes down the principles by which those choices are made, referring to GB/T 30567 for the general principles of steel precision hot die forging and GB/T 12362 for the tolerances and machining allowances. Issued on 13 December 2016 and in force since 1 July 2017.

This standard specifies the principle of the principle of the preparation of the precision welding of the generator. This standard applies to the diameter of not more than phi180mm generator claw pole forging in the press on the hot forging forming. This standard does not apply to the cold forging of the generator pawl forging on a press.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 2828.1 Sampling inspection procedures Part 1. Batch inspection sampling plan for retrieval by quality limit (AQL)

GB/T 8541 Forging terminology

GB/T 12362-2016 Tolerances and machining margins for steel forgings

GB/T 30567-2014 Principles for the preparation of steel precision hot die forging

3 Terms and definitions

The following definitions and definitions as defined in GB/T 8541 apply to this document.

3.1 There is a yoke claw clawpolewithcore A claw pole piece with a yoke on its bottom plane, see Fig. Figure 1 shows the yoke pawl