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

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**Heavy casting and forging for heavy-duty gas turbine - Part 2:
Superalloy die forgings**

重型燃气轮机用大型铸锻件 第2部分：高温合金模锻件

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Table of Contents

Preface	III
Introduction	IV
1 Scope	1
2 Normative references	1
3 Terms and Definitions	3
4 Ordering Requirements	4
5 First Article Test	4
6 Manufacturing Process	4
6.1 Smelting	4
6.2 Forging	5
6.3 Heat treatment	5
6.4 Machining	5
6.5 Defect removal and repair welding	5
7 Technical Requirements	6
7.1 Chemical composition	6
7.2 Mechanical properties	6
7.3 Hardness	7
7.4 High-magnification tissue	8
7.5 Low-power tissue	8
7.6 Nondestructive Testing	8
7.7 Shape, size and appearance quality	9
8 Test methods	9
8.1 Test method and sampling method, quantity and location	9
8.2 Chemical composition analysis	9
8.3 Hardness test	9
8.4 Inspection of shape, size and appearance quality	10
9 Inspection Rules	10
9.1 Batch Grouping Principles	10
9.2 Retest	10
10 Acceptance and Quality Certificate	10
11 Labeling and packaging	10
Figure 1 Schematic diagram of chord direction	4

Table 1 Heat treatment system	5
Table 2 Chemical composition (mass fraction)	6
Table 3 Permissible deviation of chemical composition of GH4698 (mass fraction) Table 4 Mechanical properties at room temperature	7
Table 5 High temperature tensile properties	7
Table 6 High temperature endurance performance	7
Table 7 Standard ultrasonic testing acceptance requirements for forgings	8
Table 8 Test method and sampling method, quantity and location	9

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 2 of GB/T 45981 "Large Castings and Forgings for Heavy-Duty Gas Turbines". GB/T 45981 has been published for the following part.

- Part 1: Steel open die forgings;
- Part 2: High temperature alloy die forgings;
- Part 3: Steel castings.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee for Standardization of Large Castings and Forgings (SAC/TC506).

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Introduction

Heavy-duty gas turbines are the core power equipment of energy efficient conversion and clean utilization systems and are widely used in power generation, distributed energy and electricity.

Heavy-duty gas turbine castings and forgings are the most important products of heavy-duty gas turbines.

The development foundation of the industry, with the development of heavy-duty gas turbine industry, its castings and forgings have made breakthroughs and formed a series of material systems.

To promote common benefits, it is necessary to propose material selection, ordering, manufacturing, testing methods and inspection rules for large castings and forgings used in heavy-duty gas turbines.

GB/T 45981 "Large Castings and Forgings for Heavy-Duty Gas Turbines" was formulated for this purpose.

Provide a basis for manufacturing and technical exchanges, and cultivate and enhance the material supporting capabilities of the heavy-duty gas turbine industry.

Due to the differences in materials, manufacturing and supply chains of components, GB/T 45981 is intended to consist of three parts.

- Part 1: Steel free forgings. The purpose is to standardize the shaft head, center tie rod, compressor and turbine wheel for heavy-duty gas turbines Manufacturing of large steel free forgings.
- Part 2: High-temperature alloy die forgings. The purpose is to standardize high-temperature alloy large die forgings and tie rod forgings for heavy-duty gas turbines Manufacturing of parts.
- Part 3: Steel castings. The purpose is to standardize heavy-duty gas turbines gravity cast using sand molds or molds with thermal conductivity equivalent to sand molds Used in the manufacture of large steel castings.

Large castings and forgings for heavy-duty gas turbines Part 2: High temperature alloy die forgings

1 Scope

This document specifies the ordering requirements, manufacturing process, and technical requirements for high-temperature alloy large die forgings and tie rod forgings for heavy-duty gas turbines.

It describes the corresponding test methods, stipulates the inspection rules, acceptance and quality certificates, marking and packaging.

This document applies to the manufacture of high-temperature alloy large die forgings and tie rod forgings for heavy-duty gas turbines.

2 Normative references

GB/T 223.5

GB/T 223.8

GB/T 223.9

GB/T 223.11

GB/T 223.17

GB/T 223.19

GB/T 223.20

GB/T 223.25

GB/T 223.28

GB/T 223.29

GB/T 223.30

GB/T 223.33

GB/T 223.37

GB/T 223.38

GB/T 223.42

GB/T 223.62

GB/T 223.64

GB/T 223.65

GB/T 223.70

GB/T 223.73

GB/T 223.75

GB/T 223.80

GB/T 223.85