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**JIS B 6914** : 2002

(HTTAJ/JSA)

**Process of carburizing and  
carbonitriding, quenching and  
tempering of iron and steel**

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ICS 25.200; 77.140.01

Reference number : JIS B 6914 : 2002 (E)

## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee, as the result of proposal for revision of Japanese Industrial Standard submitted by the Heat Treatment Trade Association of Japan (HTTAJ)/the Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law. Consequently **JIS B 6914 : 1997** is replaced with this Standard.

In this revision, the title of Standard, scope, material for processing, types of processing, and the quality of processed goods have been revised, and newly the types and symbol of processing, environmental protection to the heat treatment oil and so on, and Annex (normative) : History of sintered ferritic material, and quality and test method of processed goods have been provided.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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## Process of carburizing and carbonitriding, quenching and tempering of iron and steel

**1 Scope** This Japanese Industrial Standard specifies the process of carburizing and carbonitriding, quenching and tempering of iron and steel (hereafter referred to as "processing").

Remarks : This Standard shall not be applied to cast iron.

**2 Normative references** The standards listed in Attached Table 1 contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards (including amendments) shall be applied.

**3 Definitions** For the purposes of this Standard, the definitions given in **JIS B 6905** and the following definitions apply.

- a) **material for processing** The parts which become the object of processing. The materials for processing are machinery parts, jigs, apparatuses, or parts thereof which are iron and steel products under almost or nearly completed conditions.
- b) **processed goods** The material for processing having been processed according to this Standard.
- c) **single body** A unit or lot of processed goods.
- d) **atmospheric furnace** A heating furnace which is capable of controlling the oxidation or reduction, and decarburization or carburization of the atmosphere used for heating the material for processing so as to meet the purpose of processing.
- e) **hot bath vessel** An equipment which is capable of heating or quenching and cooling the material for processing in hot bath of oil, molten salt, molten metal, etc.
- f) **air furnace** A furnace for heating the material for processing in air or fuel burnt gas.
- g) **vacuum furnace** An equipment which is capable of carburizing and quenching or carbonitriding and quenching by heating the material for processing in the carburizing gas or inert gas with reduced pressure, as well as it is a heating furnace which is capable of regulating the pressure to meet the purpose of processing. For cooling, any one of water, oil or gas shall be used.
- h) **plasma carburizing furnace and plasma carbonitriding furnace** A furnace which is capable of carburizing or carbonitriding with plasma by glow discharge generated between a cathode of the material for processing and an anode, in carburizing or carbonitriding atmosphere with reduced pressure. Some furnaces provide cooling equipment for quench hardening.