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(HTTAJ/JSA)

**Process of induction hardening
and tempering of iron and steel**

ICS 25.200; 77.140.01

Reference number : JIS B 6912 : 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 6912 : 1996** is replaced with this Standard.

In this revision, the material for processing, types of processing, and so on 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 induction hardening and tempering of iron and steel

1 Scope This Japanese Industrial Standard specifies the process of induction hardening and tempering or of induction hardening of iron and steel (hereafter referred to as “processing”).

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 shall apply.

- a) **induction hardening and tempering** A treatment which, in order to harden the whole or a part of surfaces of iron and steel products, is to heat up to an appropriate temperature higher than A_{C3} or A_{C1} by induction heating, and to cool with an appropriate quenchant (quenching), furthermore, in order to adjust the hardness and to increase toughness, to heat in a usual tempering furnace at an appropriate temperature below A_{C1} , then to cool (tempering). The tempering process involves the induction tempering.
- b) **material for processing** The parts and materials which become the object of processing. The parts are almost or nearly finished iron and steel products that are machines, tools, jigs, equipment or their parts, while the materials are iron and steel and their semi-finished products made by rolling, casting, forging, etc.
- c) **processed goods** The material for processing having been processed according to this Standard.
- d) **distortion** The deviation in shape or dimension for the processed goods from that of the material for processing. The distortion in the direction at a right angle to the longitudinal direction of goods is called “bend”. The deviation shall be expressed as the maximum value in each direction.
- e) **single body** A unit or lot of processed goods.

4 Type and symbol of processing The type and symbol of processing shall be as Table 1 according to the methods of processing.

Table 1 Type and symbol of processing

Type of processing	Symbol ⁽¹⁾
Induction hardening and tempering ⁽²⁾	HQI-HT
Induction hardening and induction tempering	HQI-HTI
Induction hardening	HQI

Notes (1) Symbols shall be based on **JIS B 0122**.

(2) This means ordinary tempering by a tempering furnace.