

Heat treatment of metals for manufacturing processes and service.

Machinery Pub Co - Heat Treatment



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Heat Treatment of Metal

Hello, I have been working with metal for years and I am happy to see a series coming up as instructables on the subject of heat treating.

Heat Treatment of Metal

Specify the heat treatment cycle: When the specifics of the required heat treatment are known, then these can be communicated to the supplier when placing the order. Basically two types of flame hardening techniques are in use, namely, spin hardening and tooth-at-a-time methods. The air, water, brine, oils and molten salts are used as quenching mediums.

A Quick Look at Heat Treating Processes for Metals

The cold treating of hardened steel may be carried out after tempering treatment. The resulting microstructure is a mixture of ferrite and cementite which has a higher strength and hardness, but lower ductility.

Heat Treatment Processes: Types, Methods, Purposes [PDF]

Internal stresses are relieved as the atoms in the metal rearrange themselves into the position that they occupied before being subjected to mechanical operation.

Common heat treating processes for Steel alloy

The same experiment was repeated for steels of different carbon percentages. Plasma nitriding is essentially a gas nitriding treatment in which the method of delivering nitrogen atoms to the surface of nitrided components is quite different from the standard gas nitriding processes. In this process, steel is heated 30° — 40°C above the upper critical temperature and then followed by continuous cooling to room temperature by quenching in water or oil.

Heat Treatment Process

The thermochemical heat treatment processes, carburizing and nitriding, enhance excellently the fatigue strength of components of steel.

Heat Treatment of Steels & Metals

This treatment is therefore typically followed by a tempering process which is a heating process at another lower specific temperature to stress relieve the material and minimize the brittleness problem. In addition, Nitrex is capable of selective carburizing where only specific areas of the part are to be treated.

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