

El Gran Bajío



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YOUR SOLUTION IN HEAT TREATMENT

CRIO is in the center of the Mexican Republic in Querétaro, Saltillo and Coahuila.

It offers services dedicated to the heat treatment industry, providing its customers with equipment manufactured with the highest quality and technology, ensuring a stable and repetitive process that meets the expectations of the automotive, aerospace and construction industries; among other.

SERVICES

Thermal Treatments

They are methods or processes used to alter the physical and sometimes chemical properties of materials. A heat treatment involves heating or cooling the material, usually to extreme temperatures, to improve its mechanical properties, especially hardness, strength and toughness.

Carburized

This thermochemical treatment is carried out in an endothermic atmosphere plus an enrichment gas, to obtain a sufficient carbon potential, capable of enriching the carbon percentage layer and the time necessary to obtain the desired layer depth, quenching in oil to harden the layer. layer and the core of

the part. A subsequent tempering to eliminate the tensions originated during the tempering, and obtain that the surface has the required resistance, wear hardness and ductile core.

Temper

Quenching in oil is carried out in atmosphere furnaces depending on the dimensions of the piece, at temperatures of 815 – 870 °C in an endothermic atmosphere with a carbon potential according to the type of steel and quenching in oil to harden the entire section of the piece, and tempered to eliminate the stresses caused during hardening, to the required hardness.



Tempered

Tempering is a heat treatment that follows the hardening of the steel. Its purpose is to reduce the internal stresses of the piece caused by hardening or cold deformation. It improves the mechanical characteristics by reducing brittleness, slightly decreasing hardness, this will be more pronounced the higher the tempering temperature. The heating temperature is between 165 °C and 650 °C.

Carbonitrided

The carbonitriding process is carried out in an endothermic atmosphere by introducing carbon and nitrogen into ferrous alloys, maintaining the temperature above A_{c1} for a certain time in an atmosphere containing gases such as hydrocarbons, carbon monoxide and ammonia to obtain a deep layer, quenched in oil to obtain a hard surface with high resistance to wear and tempered to eliminate the stresses caused during quenching.

Annealing

Annealing is the thermal treatment that consists of heating and holding at a suitable temperature followed by cooling at a specific rate, it is used mainly to soften materials, but also simultaneously, produce desired changes in other properties or microstructure. The purpose of such changes may be but is not restricted to making the material more machined, facilitating cold working, improvements in mechanical and electrical properties, and/or increasing dimensional stability.

Normalized

This is a process normally used on hardened steel. It is used to refine grains that have been deformed by cold working and can improve the ductility and hardness of steel. In this process the steel is heated to a little above its upper critical point. It is then allowed to cool in air. This forms small grains which gives a harder and stronger metal with normal yield strength and not the maximum

ductility obtained with annealing. Normalizing improves the machinability of the piece and gives dimensional stability in case it is subjected to future heat treatments.

Relieved of effort

Stress Relieving is recommended for parts that have been welded, for steel castings, etc. This process is carried out at a temperature below 650 °C, regularly at 723 °C.

Press Tempering

It is a type of quenching in which molds are aligned and pressed with the piece to be treated before starting the quenching process in oil. The part is supported by dies (upper and lower) where oil is introduced into this seal so that the part is hardened, controlling its deformation.



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