

METHOD FOR TREATING A PART MADE OF FERROUS METAL, AND PART MADE OF FERROUS METAL

ABSTRACT

The invention relates principally to a method for treating a part (P) made of ferrous metal, comprising:

- a nitriding operation forming on the part (P) a combination layer (2) having a thickness of between 5 and 30 μm , and a diffusion region (3), arranged beneath and in contact with the combination layer (2), having a thickness of between 100 μm and 500 μm ; then
- an operation of quenching the part (P) by high-frequency induction, over an induction depth that is greater than or equal to 0.5 mm, thereby hardening the part (P) and lending said part (P):
 - a surface hardness greater than or equal to 50 HRC,
 - a hardness of the combination layer (2) greater than or equal to 400 HV0.05,
 - a hardness of the part greater than or equal to 500 HV0.05 at a depth of 500 μm ,

and wherein the high-frequency induction quenching operation is performed without the application of a protective film on the part (P) prior to the induction quenching operation.

The invention also relates to a part (P) made of ferrous metal, having significant resistance to wear by abrasion and adhesion, improved friction properties and improved resistance to scaling, and good corrosion resistance.

(Fig. 4)