

Nitriding EUROLLS

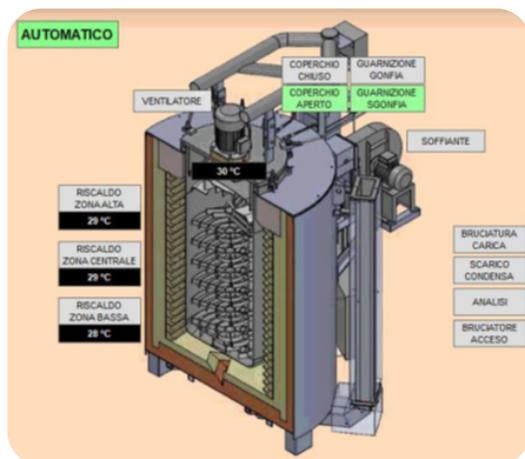
Description

Nitriding is a **thermochemical treatment** that **enriches the surface of steel with nitrogen**, creating an **extremely hard layer resistant to wear and fatigue**.

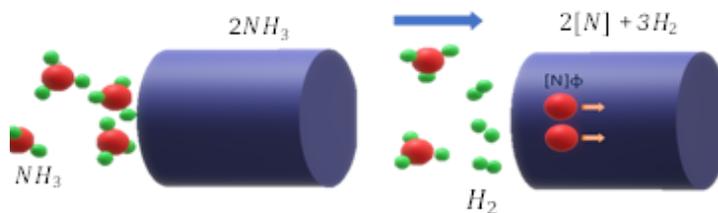
It is a low-temperature process that allows improvement of surface hardness while **maintaining the mechanical characteristics** of the core unchanged, minimizing component deformations and distortions.

Process

The component is treated in a controlled atmosphere inside a furnace at a temperature between 480°C and 580°C. During the process, gaseous ammonia (NH_3) dissociates, releasing nitrogen, which diffuses into the surface of the material. This generates an extremely hard layer of nitrided compounds (white layer) and a subsequent diffusion zone that significantly improves resistance to wear, fatigue, and corrosion.



Gas nitriding allows uniform treatments even on large components, maintaining minimal distortions thanks to the low operating temperatures.



Highlights

- Very high surface hardness (up to 1,200–1,300 HV)
- Minimal deformation due to low temperatures
- High resistance to wear, fatigue, and corrosion
- Excellent dimensional stability
- Longer service life compared to conventional treatments
- Ideal for precision components

Applications

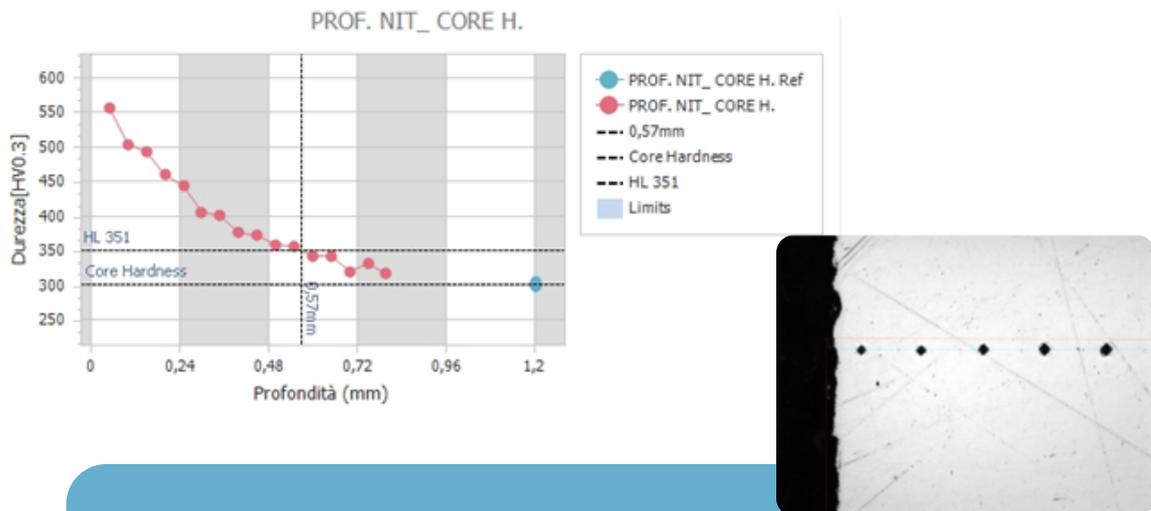
- Rolls and bearings
- Shafts, gears, bushings, and moving mechanical parts
- Components subject to abrasion, thermal fatigue, or metal-to-metal contact
- Molds, dies, and tools
- Elements requiring high surface hardness with minimal deformation

Technical Data

- Maximum load size: $\varnothing 920 \times h 1,600$ mm
- Maximum weight: 2,000 kg

Treatment Thickness

- From 0.1 to 0.8 mm depending on material and treatment time
- White layer: 5–20 μm



Treatable Materials

- Nitriding alloy steels
- Structural steels
- Tool steels
- Stainless steels