PLASNIT® & PLASOX®

Process description:
PLASNIT®
Plasma nitriding is a thermo-chemical type of surface treatment during which molecular nitrogen (N2) is cracked up in plasma to obtain active nitrogen. The nitrogen penetrates the component surface and thus increases its hardness and wear resistance.

PLASOX®
Is a combined process of PLASNIT® and subsequent oxidisation to achieve increase in corrosion resistance and minimisation of the friction coefficient.

Industries using this process:
→ Mechanical engineering, automotive, tool and die manufacturing, aerospace

Materials:
→ Structural steels (e.g. S355), low-alloy heat-treated steels (e.g. 1.7225) and nitriding steels (e.g. 1.8519, 1.8550), tool steels (e.g. 1.2343, 1.2379) and plastics mould steels (e.g. 1.2311)
→ Corrosion-resistant steels upon request

Main features:
→ Mechanical covering possible
→ Vacuum plasma process between 400°C and 600°C
→ Micro-pulse plasma nitriding technology has been developed by RÜBIG

Plant dimensions:
→ Max. Ø 1.500 mm / 6.000 mm in height
→ ~ 10.000 kg

Major use and purpose of the process:
→ Protection against surface wear
→ For increase of surface hardness
→ For improvement of corrosion resistance and run-in properties
→ Increase of fatigue strength

Throughput duration:
→ See list of deadlines

Process duration:
→ Depending on the nitriding depth (NHT / NHD) and the material
Possible preparation treatment of the surface for optimum surface condition:
→ Metal blank surface
→ No corrosion
→ Micro-blasting
→ Free from grease, oil, processing agents or drawing and casting skins
→ Polishing
→ Annealing
→ Clean cooling channels
→ No strain hardening through e.g. mechanical processing

Required information:
→ Surface hardness
→ Nitriding depth
→ Interconnection coat thickness / oxide coat thickness
→ Definition of the area to be nitrided (included as a not in the construction drawing)

Important:
→ Installation surfaces are not treated

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