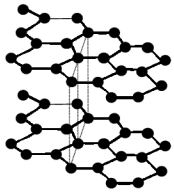
IonCoat+

Ion Nitriding + DLC (Diamond-like carbon) - Ionitech's Duplex Technology



Graphite

Diamond

Improve your parts with diamond-like hardness and graphite-like friction.

Diamond-Like Carbon is amorphous carbon coating, containing sp2 (graphite-like) and sp3 (diamond-like) bonds with hydrogen content. The sp2 connections lower the coefficient of friction and the sp3 connections increase the hardness.

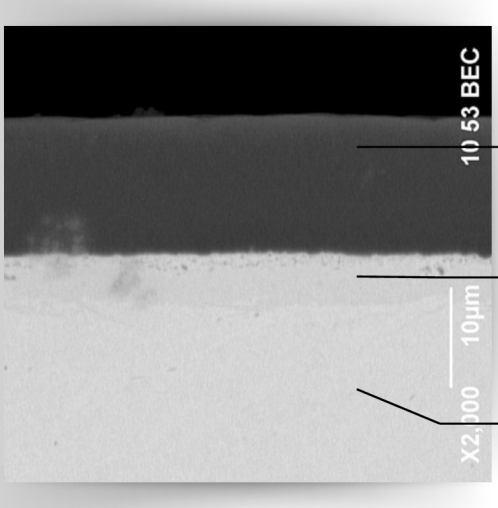
DLC (Amorphous)

The DLC layer is a great addition to the nitrided case, since it further decreases the coefficient of friction. It also additionally improves the hardness and wear-resistance. Having two parts working together, both with DLC cover will provide a smooth and almost frictionless feel.

DLC is famous for being a solid lubricant, because of the low friction coefficient. It is a good substitute to oil in applications where oil can't be used for reasons of high-temperature, like in engines, or military applications, or vacuum, in space applications.

In addition, the high-resistivity to corrosion makes DLC a great solution for parts working in highly-corrosive environments.

DLC coating provides great improvement of the tribological properties, a great-looking black appearance and is a fine addition to the plasma nitriding, done in the same process and chamber, thanks to Ionitech's **IonCoat+** Technology.



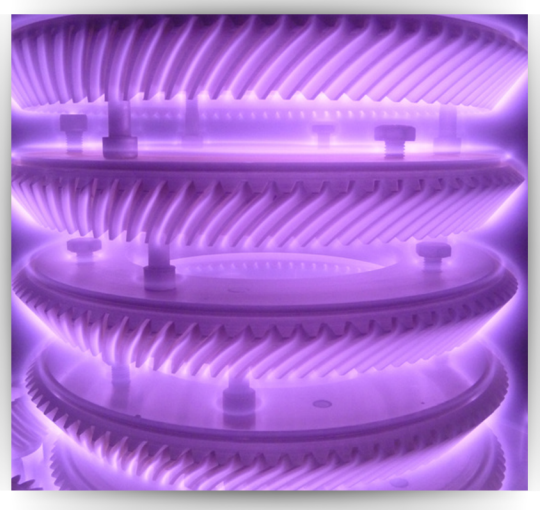
DLC Coating

No Coating

Hardness: > 1000 HV
Coefficient of friction: <= 0.1 µ
Coating thickness: 2 - 30+ µm
Exceptional corrosion and chemical resistance

IONITECH ion nitriding technology

Ion/Plasma Nitriding



Ion/Plasma nitriding is a diffusion process in which nitrogen is introduced into the crystal structure of the material and increases the hardness, wear resistance and fatigue life of the tools and parts.

White Layer (2 - 15 µm)

- High Hardness
- Reduction of abrasive and adhesive wear
- Increased corrosion resistance
- Lower friction coeficient

Diffusion zone (30 - 400 µm)

- High Hardness
- High Fatigue strength

Transition zone between diffusion zone and core material

Core Material

- Remains the same - keeping ductility of the material

Ion/Plasma nitriding is a method with vast technological possibilities, suitable for treating parts with very complex shapes and geometries.

Diffusion layers of desired structure can be obtained, i.e. the diffusion saturation process is controllable and can be optimized to comply with the particular requirements to the layer qualities. The achieved nitride zones are dense and solidly connected with the base metal.

Plasma Nitriding is also capable of treating parts of Stainless Steel without the necessity of a predepasivation process. The treatment could also be carried out so that it could preserve the corrosion resistance of the steel.

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