PVD Sputtering Coating

now with SPUTTERING 2.0 we reach new PERFORMANCE frontiers

Among the various PVD techniques, Sputtering is the most flexible, effective and precise method for depositing a thin film of high density metal, giving a product aesthetic and mechanical performance.
The process is carried out in vacuum to deposit with high efficiency any metals and alloys on any kind of substrate and to guarantee uniformity as well as functionality.

With Sputtering machines it is possible to obtain technical coatings with a wide range of metallic colors and polishing variants, moreover the products are more economical, resistant and ecological but …..

now the KOLZER PVD 2.0 Sputtering coating

produces morphologically dense and defect-free coatings. The control of the microstructure guarantees perfect adhesion to surfaces.

The result is a dense and extremely smooth coating at the atomic level, and significantly exceeds the quality and tenacity of the classic Sputtering and Arco coatings.
Particularly suitable for the automotive sector and where you want to get the maximum performance from a PVD.
PVD 2.0 uses long pulses (up to 3.0 msec) with power of the order of hundreds of KW on the cathode. This imparts high energies to the atoms so as to project them into the surface layers of the substrate, depositing dense, adherent coatings, free from surface defects and very hard (> 30 GPa) and with an increase in Young's modulus (> 368 GPa).

Examples of PVD 2.0 coatings:
Corrosion resistance: CrN / NbN
Resistance to oxidation: CrAlYN / CrN, Ti-Al-Si-N, Cr-Al-Si-N
Optical systems: Ag, TiO2, ZnO, InSnO, ZrO2, CuInGaSe
MAX phases: TiSiC
Microelectronics: Cu, Ti, TiN, Ta, TaN
Hard Coatings: carbon nitride CNx, Ti – C
Hydrophobic surfaces: HfO2

PVD 2.0 has been successfully applied with KOLZER machines for thin film deposition in industry, particularly on functional components, where the requirements are high.

Some technical data:

average power: 20 kW	maximum power: 1500 V / 2000 A
peak power up to 3 MW	pulse length: 50-1500 ms

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