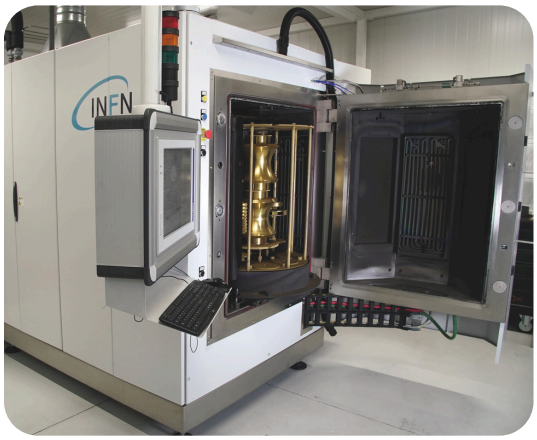
PVD
Physical Vapor Deposition

EUROLLS

Description

PVD is a physical vapor deposition process that allows the application of **thin high-hardness ceramic coatings** on metallic components. Thanks to the high purity of the materials used and the low deposition temperatures, PVD coatings **significantly improve wear resistance, sliding properties and corrosion protection**, while maintaining the base material properties unchanged.



Process

The component is placed inside a vacuum chamber, where the coating materials (metals or ceramic compounds) are vaporized by means of cathodic arc or magnetron sputtering. The ionized atoms deposit on the surface of the part, forming a thin, uniform, and highly adherent layer.

Deposition takes place at a moderate temperature (200–500 °C), **ideal for hardened steels or for components sensitive to deformation**. Accurate control of vacuum, pressures, and currents ensures a consistent, compact coating with high performance.

Highlights

- High surface hardness (up to 3,500 HV depending on the coating)
- Low coefficient of friction
- Excellent resistance to wear, corrosion, and chemical agents
- Controlled-temperature deposition, ideal for finished components
- Thin, stable layer with high adhesion
- Wide range of aesthetic and functional colorations
- Perfect in combination with preliminary treatments (e.g. nitriding)
- Applied on finished products, without the need for grinding

Applications



- Rolls, bushings, and components subject to abrasion
- Cold or hot forming dies
- Cutting tools, punches, dies
- Mechanical components with high sliding requirements
- Parts exposed to corrosion, chemical agents, or saline environments
- Automotive, mechanical, energy, medical, and marine sectors

Applied materials

- The applied materials are special coatings developed by Eurolls

Technical Data

- Maximum cylinder diameter: 600 mm
- Maximum length: 700 mm
- Maximum weight: 800 kg

Product	Material	Colour	Hardness	Thickness	Max working temp	Roughness	Substrate
EUKRIPTONIT	Combinations of Ti	Various gold, grey, red	1800-3000 Hv	1-6 ym	600°C	0,2 - 0,4	Tool steel, high speed steel, cermet, tungsten carbide
EUKRIPTOKROM	Combinations of Cr	Silver/grey	1500-2500 Hv	1-8 ym	850°C	0,2 - 0,4	Tool steel, high speed steel, cermet, tungsten carbide
EUKRIPTAL	Combinations of Ti, Cr, Al, Si	Various grey, dark purple	>3500 Hv	1-8 ym	1100°C	0,2 - 0,4	Tool steel, high speed steel, cermet, tungsten carbide

Treatable materials

- Hardened and tool steels
- Stainless steels
- Alloy steels
- Cemented carbides
- Special alloys

EUROLLS

+39 0433 750500
@ sales@eurolls.com
www.eurolls.com