After years of Research and Development

TRIBO SURFACE ENGINEERING
IS PROUD TO ANNOUNCE

THE WORLD’S LARGEST HEAVY METAL ION IMPLANTER

METAL ION IMPLANTATION uses high energy to bombard individual metal atoms deep into other surfaces. Ions into metals, ceramics, carbide, plastic or any other solid material.

This is the holy grail of surface engineering. It can give huge increases in the surface characteristics of metals and other materials, such as increasing hardness, fatigue life, and even increase tensile strength. It can improve surface conductivity of plastics and ceramics, and allow for catalysis behavior in materials for a fraction of the cost and material. By implanting chromium, for example, we can add corrosion resistance to almost any material. Easy to see why this is such a great leap in the field of surface engineering.

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Tribo has been serving the engineering community since 1989 providing coating, design and manufacturing solutions to Aerospace, Racing, Electronics, Automotive, Heavy Industrial, Railroad, Marine, Medical and a host of other demanding and leading edge industries.

Tell us what solutions you require. We are here to help.
METAL ION IMPLANTATION IS NOT A COATING.

We are using high energy metal ions embedded in the material to ~ 1 micron. It is suitable for work-hardened or heat-treated metals and other materials. Because it is inside the base material, there is no dimensional change from the process and no need to remachine parts.

This process is the first to be on a production scale, with our beam implantaing to a field of 8 sq. ft. By far the world’s largest.

We can implant any conductive metal including heavy metals such as nickel, tungsten, titanium, chromium, platinum and silver. Our extensive research will attempt many other materials as we develop our science. Various metals can be implanted into a single part to add the specific characteristics desired from the process.

For example, in a gear life test comparing untreated, shotpeened and implanted carburized gears, we saw a 25x increase in gear life from implantation over the untreated piece. Tungsten carbide drills and endmills have seen 300% increases in lifetime and greater while cutting a variety of materials. Results were similar for steel and other high strength metals.

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Here’s a (partial) list of potential applications:

Machining/Tooling punches,
Cutting/Drilling/Mining Applications - Cast Iron, HSS Steel, Stainless Steel, Titanium, Inconel, Aluminium, Phenolic, Hasteloy, Fiberglass, Kovar
Bearings
Bandsaw Blades
Automotive Cam shaft, valve/seats, piston, rings, crankshafts, rod, rocker arms, pistons
High Heat Applications
Military Ceramic/Kevlar Armors
Semiconductors
Medical Antimicrobial
Fuel Cells
Hybrid coatings
Virtually any object that experiences wear
Endmills, turning/grooving inserts, thread rolling, broaches, hobs, if you have some more ideas, talk to us.

Reverse Idler, 8620 Carburized Steel

more on P.4 >
TRIBO COATING

Creative research and engineering for innovative results.
Ask about our extensive fixturing design and manufacturing experience.

ONLY AT TRIBO SURFACE ENGINEERING...
THE WORLD’S LARGEST HEAVY METAL ION IMPLANTER
www.tribosurfaceengineering.com
or CALL US FOR MORE INFORMATION.

Tell us what solutions you require. We are here to help.

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WWW.TRIBOSURFACEENGINEERING.COM

A very small part of Tribo’s Metal Ion Implaner

We’ll post more info when it comes available. Keep checking our site, things are changing very fast at Tribo.