



## ULTRASONIC SHOT PEENING - MEDICAL APPLICATIONS



The STRESSONIC ® process adds an entirely new dimension to shot peening in the medical field. Among its many advantages, **it overcomes the pollution problems generated by conventional processes while giving improved mechanical characteristics to the different implant products.**

It is reliable, simple, repeatable and has many other benefits making it the safe solution to meet the stringent requirements of the medical sector and of bone capital preservation.

**Tibial base plates, intersomatic cages, hip and knee prostheses, mounting plates as well as surgical tools: scissors, pliers, and more; there are multiple ultrasonic shot peening applications.**

### MULTIPLE APPLICATIONS

The treatment can be applied to all kinds of parts in multiple configurations (robotic, on-site, on production lines, etc.).

In the treatment chamber, the beads behave like a gas, which creates homogeneous treatments over the area to be treated as well as in difficult areas to access.

### GUARANTEE TRACEABILITY

Our digital processes combined with our software allow:

- Settings configuration and saving
- Production statistics
- Dynamic monitoring of the process parameters on the human-machine interface

A perfectly clean technology, our process is perfectly suitable for clean room or controlled atmosphere environments.

To fully adapt to your needs, we make all of our products and processes, guaranteeing a high-performance and adapted service with perfect quality control.



**Example of a single position machine production**

## SPECIFICITY OF THE MEDIA

Most **STRESSONIC®** shot peening operations on medical prostheses are performed using **AISI 316 stainless steel media**.

Since the projection speeds are lower than for conventional shot blasting, this lower speed is compensated by the projectile mass. Ball bearings (rather than shot) with diameters ranging from 0.8 to 3mm are used. The combination of very high quality beads and the real-time control of treatment parameters ensures a reproducible and efficient treatment quality (residual stresses, roughness).

## PROVEN APPLICATIONS

### Tibial base plates

US peening on root fillet radius. We also worked on the threaded rod to be screwed into the threads.

#### Aim of treatment :

- Introduction of compression stress
- Improved surface finish



### Intersomatic cage

STRESSONIC® shot peening to remedy a problem of fatigue resistance at the bottom of the connection radius.

Maximum stress measured on the surface : -700 mPa



### Femoral and tibial stems

Complete shot peening of femoral and tibial stems. Shot peening of the offset connectors.



### Osteotomy plates

Full plate reinforcement treatment (except threading and boring)

