

WALThER TROWAL!



PROCESSING OF IMPLANTS

MEDICAL TECHNOLOGY

Trowal processing of implants

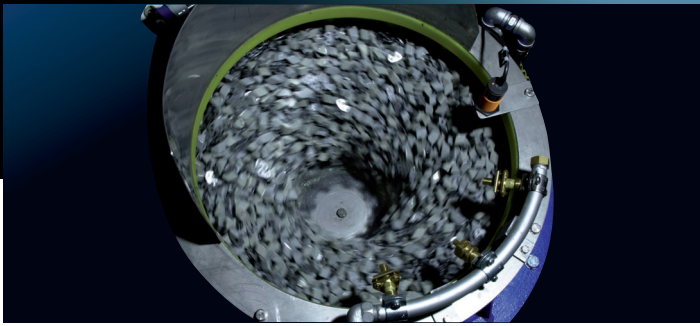
Application

Walther Trowal has developed many different solutions over many years of development for the processing of parts for the medical industry. These include efficient processes for tooth and joint prosthesis, trauma surgical implants, bone screws and bone plates. In general, these parts consist of difficult to machine materials such as titanium, cobalt-chrome and cast alloys and are in typically very delicate.

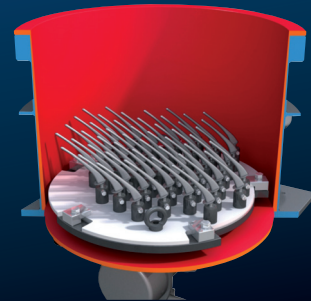
The correct process for each part

To achieve optimum and economic results, the use of the correct equipment and process consumables is critical. To undertake the finishing process, bowl vibrators, high performance vibrators, centrifugal force and drag finishing machines of various types and sizes are available. Process consumables, such as chips and polishing media as well as compounds are especially selected for the individual process.

We improve surfaces



Finishing process in a centrifugal force machine



Fixed hip implants in a multi-vibrator

Vibratory Grinding

By the use of bowl vibrators, small as well as large implants can be processed. This type of machine are especially suitable for long bone splints, plates and screws, processing the parts from all sides.

High Performance Vibratory Grinding

In multi-vibrators, the implants are mounted onto fixtures and clamped to the bottom of the work bowl mechanically or electro-magnetically. It is impossible for parts to touch each other. The small amplitude and high frequency can achieve (with use of a multi-stage process) excellent polishing results. Difficult to access inner contours can also be processed with this machine type.

Drag Finishing

Several femur, tibia or hip implants are fixed onto a fixing device and are dragged, rotating around their own axis, through the static grinding or polishing media. The parts cannot touch one another, this process works very quickly and can produce surfaces up to "mirror finish".

Centrifugal Force Grinding

Centrifugal disc finishing machines are perfectly suited for deburring and smoothing of bone screws, plates, splints or skin clips. The grinding performance of these machines is x10 higher than applies for standard vibrators, and hence they are very quick and economical.

The Three-Stage-Process

Specially for endoprosthesis, Walther Trowal has developed the three-stage process:

- pre-grinding
- smoothing
- polishing

First, the parts are pre-ground with ceramic chips, then fine-ground with plastic chips and finally they are high gloss polished with bone china balls. The achieved "mirror gloss" has a roughness quality of about Ra 0,2 µm.

Advantages at a glance

- High reproducibility and hence uniform quality
- Reduction of subsequent work
- Reduction of scrap parts
- High economic efficiency



Tibia implants, pre-ground and polished



Process steps of a hip implant



Process steps of a femur implant



Bone plates, pre-ground and polished



Drag finishing clamping device for hip implants