

Machining technology

# Medical Technology



A perfect solution for every  
manufacturing process.

**Schwab**

# High efficient manufacturing of threads on implants: A perfect solution for every manufacturing process!

As the specialist for the whirling and milling of external and internal threads, Schwanog has attained an unmatched reputation as a result of many successful applications with vast cost reductions.

Surgical implants are typical products in the medical technology, such as bone screws or bone (cervical) plates, which are generally manufactured from titanium or stainless steel. In the manufacturing of implants, there are various manufacturing processes for producing external and internal threads in a highly efficient manner.

With its comprehensive product line, Schwanog provides excellent precision and highest productivity. All threads are guaranteed to be completely burr-free.

Regardless which manufacturing process you pursue, Schwanog is able to provide the matching solution for the manufacturing of threads on bone screws. Schwanog has the perfect solution for every application, whether it is a single machining process using thread whirling on swiss-type (automatic) lathes or a two operation machining process while rough turning the screws and finishing (threading) them on special post thread milling or thread whirling machines.

Schwanog will find the most cost-effective and best technical solution for you.



Implants

## 1. Single machining process on swiss-type (automatic) lathes/turning centre

External threads:

### Thread whirling on swiss-type (automatic) lathes

The basic requirement for whirling a thread using a single machining process on swiss-type lathes is a whirling attachment. Whirling attachments are available for nearly all swiss-type automatic lathes from the OEM (original equipment manufacturer) and from manufacturers of driven tools.

Schwanog has developed special whirling systems consisting of cutter bodies and insertable inserts for these whirling attachments. Thread whirling with the Schwanog system has the advantage that it uses 6, 9 and 12 insertable inserts providing superior surface finishes, prolonged tool life and immense cost reduction due to quick tool changeovers.

Due to Schwanog's 6 insert (WEP System), 9 or 12 insert (DCI-System) that are available, machining times are drastically reduced due to increased feed rates when compared to the original 3 circular (button) style insert system.

Most whirling attachments can be equipped with Schwanog's 3 piece whirling assembly. This modular configuration provides fastest tool changeovers between the DCI and the WEP whirling system.



## 2. Post manufacturing process on thread milling and/or thread whirling machines

Schwanog provides another perfect solution for manufacturers which are rough-turning their implants on swiss type lathes while finishing (milling or whirling) the threads on post-milling or whirling machines.

### External threads Thread milling



Schwanog milling cutters are available in various diameters and with various numbers of teeth, depending on the application. Custom-made, individual solutions with quickest turnaround time are our specialty.



Thread milling cutter

### External threads: Thread whirling



For thread whirling on thread whirling machines, Schwanog has developed matching whirling holders (cutter bodies) for various types of whirling machines.



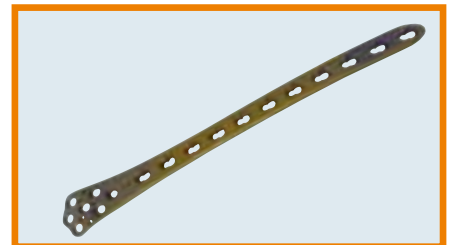
Schwanog whirling holder (cutter body) for Monnier & Zahner

### Internal threads: ID whirling

Orthopedic or dental high tech applications call often for a maximum in precision and longevity. Schwanog ID whirling tools (thread mills) precisely and efficiently produce internal threads on bone screws and bone (cervical) plates. The Schwanog whirling tools for internal machining are available in thread sizes from M1 to M5, and with 1 or 3 flutes, or can be customized to customer requirements.



ID whirling tools



Bone (cervical) plates



2-Flute milling cutter for bone (cervical) plates

# Insertable tooling systems.

## Application overview – Whirling and Milling

Whirling using a single machining process on swiss-type lathes



Schwanog cutter bodies are available for the following machines:

- Tornos
- Citizen
- Tsugami
- Traub
- BAZ
- Hanwa
- Star
- Maier
- Gildemeister

Thread milling on thread milling machines



Schwanog milling cutters are available for the following machines:

- Monnier & Zahner
- Lambertz

Thread whirling on thread whirling machines



Schwanog cutter bodies are available for the following machines:

- Monnier & Zahner
- Leistriz

Visit our website at [www.schwanog.com](http://www.schwanog.com) and watch the 3D animation for thread whirling. There is a perfect solution for every manufacturing process! Take this opportunity and use our capability to lower your part costs and thus increasing your profitability. We are looking forward to show you how, just call or email us your application along with part drawing.



OD grooving



ID Grooving with PWP



OD whirling



ID Whirling (Thread mills)



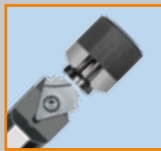
Thread milling



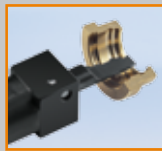
Polygon turning



Broaching of Serrations



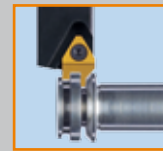
Form drilling



ID Grooving and turning




Shave Tools





Rotary transfer machines





Selector system

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