

Machining technology

# Thread Whirling



Significant cost reduction through thread whirling.

Schwannog

## Cost Savings: Thread Whirling.

**High-tech applications in microsurgery and orthodontics demand maximum precision and durability. As the specialist for insertable form tools, Schwanog is committed to continually finding new solutions for special applications.**

**The example of thread whirling when applied on implants made from titanium or stainless steel demonstrates how precision can be increased using the right tool while at the same time reducing costs.**

The demand for implants such as bone screws and plates in medical and dental surgery has been growing rapidly for a number of years. The necessary parts for such implants are mainly made from stainless steel or titanium in order to ensure a high level of compatibility. The associated requirements for implants in terms of precision and finish are extremely high.

As a specialist in high quality form tools we quickly recognized this demand. Our WEP product line is aimed precisely at this growth sector - thread whirling.

Thread whirling with the Schwanog WEP system has the advantage that form inserts are used. This not only ensures the high level of precision required but at the same time also significantly reduces costs when changing tools.

Thread whirling can be applied to equal advantage on both external and internal threads. On external threads, such as bone screws, this process is realized using a driven tool (whirling spindle), an insert holder (cutter body) with 5 insertable form tools as shown in this example. The total thread depth is whirled in one single process cutting from stock (raw material).

- Schwanog's cutter body is set up using the required helix angle in the front of the guide bushing and is driven at high speeds by the whirling spindle while the main spindle rotates at lower speeds and in most cases in the same direction.
- The stock is fed through the cutter body and whirling spindle and as soon as the required thread length is achieved, the whirling spindle retracts radially and the part (stock) axially.

**Thread whirling with the Schwanog WEP system offers three major advantages:**

- **Increased productivity due to prolonged tool life and quick tool changeovers**
- **Superior surface finishes**
- **Absolutely burr-free threads**



Schwanog WEP system

Thread whirling of bone screw and set-up

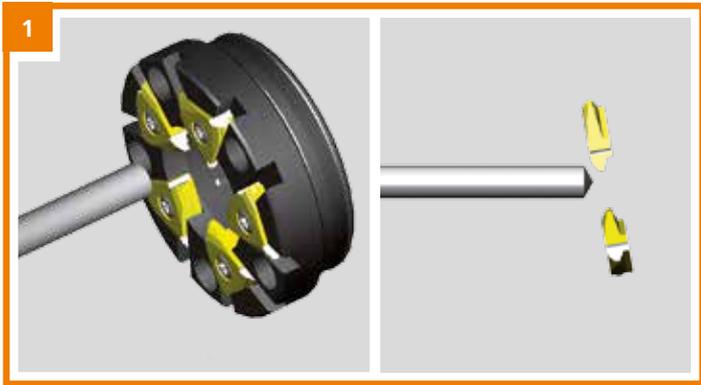


Schwanog WEP system with bone screw

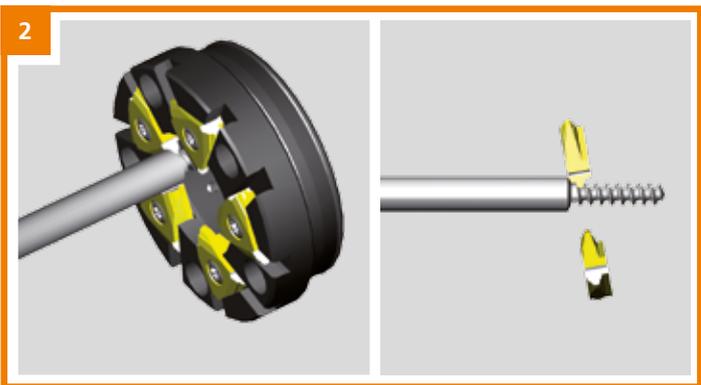


Schwanog WEP system with bone screw

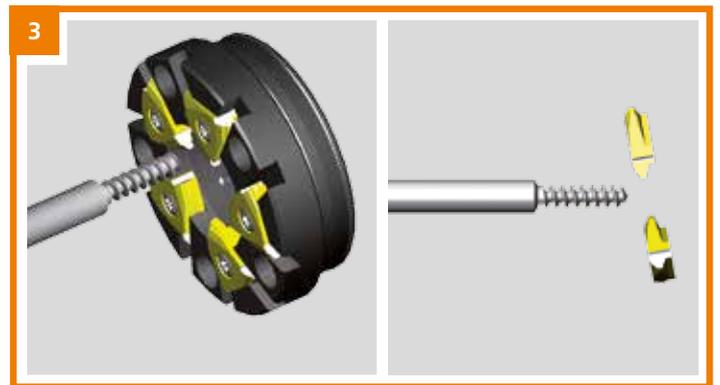
# Procedure



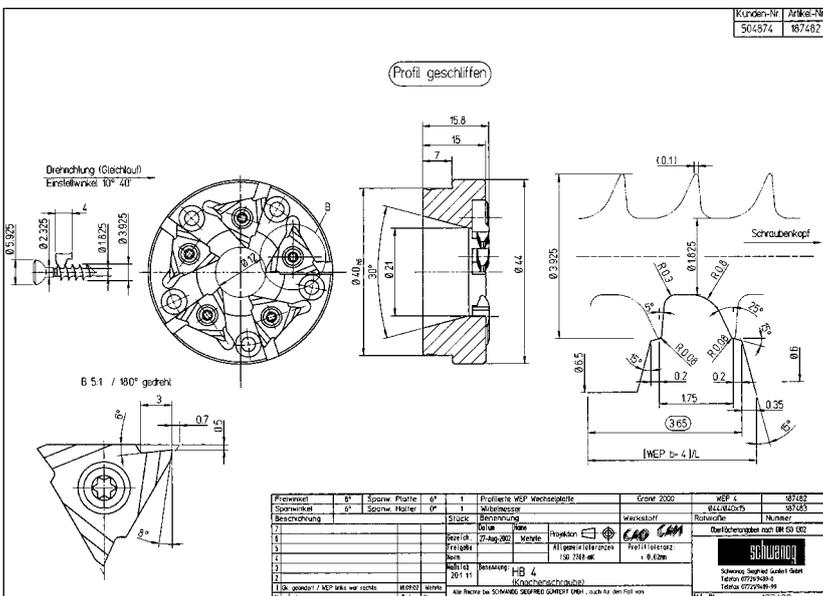
Schwanog cutter body is set up using the required helix angle in front of the guide bushing (stock) and rotates at high speed. The main spindle rotates at a lower speed in the same direction.



Thread whirling begins. The thread is achieved through a rotating motion of the C-axis and a longitudinal motion of the Z-axis, only one of the cutting edges is in operation during this process.



The required thread length is achieved. The whirling spindle retracts radially and then axially thereafter.



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.

# Insertable tooling systems.



OD Grooving



OD Grooving for rotary transfer machines



ID Grooving



ID Grooving and turning with WSI



Form drilling



Shave Tools



Skiving Tools



Polygon turning



Broaching of Serrations



OD Whirling



ID Whirling Tools (Thread Mills)



Selector system

 **Schwanog · Siegfried Güntert GmbH**  
Niedereschacher Str. 36 · D-78052 VS-Obereschach  
Tel. +49 (0) 77 21 / 94 89-0 · Fax +49 (0) 77 21 / 94 89-99  
www.schwanog.com · info@schwanog.com

 **Schwanog LLC**  
1630 Todd Farm Drive · Elgin, IL 60123  
Phone: 847-289-1055 · Fax: 847-289-1056  
www.schwanog.com · info.usa@schwanog.com

 **Schwanog Sàrl**  
89 Allée des Nénuphars · F-74300 Thyez  
Téléphone 0450 18 65 16 · Fax 0450 18 47 75  
www.schwanog.com · info.france@schwanog.com

 **Schwanog (Shanghai) Co., Ltd.**  
Room 757B, Tower 3, German Centre  
No. 88 Ke Yuan Road · 201203 Shanghai  
Phone: +86-21-2898-62 10 · Fax: +86-21-2898-62 12  
www.schwanog.com · info.china@schwanog.com

 **Schwanog · Siegfried Güntert GmbH**  
Palackého 289 · CZ-682 01 Vyškov  
Tel./Fax: +420 517 351 740 · Mobil: +420 739 257 060  
www.schwanog.com · ludvik.sochor@schwanog.com

 **Schwanog · Siegfried Güntert GmbH**  
ul. Wawerska 1A / 16 · PL-05-410 Józefów  
Tel: +48 606 177 025 · Fax. +48 22 610 07 45  
www.schwanog.com · lukasz.kucinski@schwanog.com