

# **MULTIDEC®-WHIRLING**

THE MODERN WAY TO MAKE THREADS



- HIGH PRODUCTIVITY = LOW MANUFACTURING COSTS
- SHORT MACHINING TIMES
- LONG SERVICE LIFE
- TOP QUALITY SURFACES
- IDEAL CHIP REMOVAL
- CORNER RADII UP TO 0.03 MM
- HIGH CONCENTRICITY (±0.005 MM)





# **MULTIDEC<sup>®</sup>-WHIRLING**

Multidec<sup>®</sup>-Whirling is a thread whirling tool system with multiple cutting edges designed to significantly increase thread manufacturing productivity. Unlike thread turning which requires several successive cutting passes, the thread is produced without burr in a single pass when the whirling technique is used. Use of up to 12 cutting edges enables machining time to be significantly reduced. For optimum results, Utilis supplies a number of variants for specific machines with different circular trajectories and lengths.





#### SYSTEM STRUCTURE







### Modular system

Mono-system

Flexible multi-component system. Reduces set-up times through fast and straightforward whirling ring change (the adapter remains in place) with guaranteed concentricity of  $\pm 0.005$  mm.

Highly compact single component system. This enables high concentricity of  $\pm 0.005$  mm to be achieved.



#### Single and double thread cutting

Thread forms with concave radii of 0.03 mm can be produced.

### **INCREASED PRODUCTIVITY**

By using up to 12 cutting edges, productivity can be significantly increased with the same feed rate per tooth. The result: faster manufacturing at lower cost.

#### SHORTER MACHINING TIMES

Whirling with up to 12 cutting edges enables production times to be cut substantially. The rate of machine capacity utilization can therefore be improved and substantially higher capacities achieved.

The fact that the threads are free from burr also minimizes the need for reworking. Fast and easy whirling tool changes reduce set-up time with a positive impact on productivity.

#### HIGHER SURFACE QUALITY

The use of up to 12 cutting edges, higher concentricity, special cutting edge geometry and ideal chip removal enable top quality surfaces to be produced without burr.

This reduces the cost of subsequent finishing operations.

#### **CORNER RADII UP TO 0.03 MM**

The possibility of grinding concave radii of up to 0.03 mm enables the most stringent quality and accuracy criteria to be satisfied.

#### LONGER SERVICE LIFE

The use of up to 12 cutting edges lengthens service life considerably. This results in lower down times and handling costs.

#### **BETTER CHIP REMOVAL**

Whirling produces short chips which are easy to remove. This guarantees significantly higher process security and enables materials such as titanium which are hard to machine to be worked efficiently – with a positive impact on service life and surface quality.

### CONCENTRICITY (±0.005 MM)

Modern manufacturing technologies and top quality criteria give improved concentricity; that in turn enables high surface qualities to be achieved.

## **EXAMPLES OF MACHINING**



#### STANDARD THREAD HA 4.5 IN 1.4441 / 316 LVM / SUS 316

#### Mission:

Substantial saving on machining time and improved service life with no loss of quality.

#### Outcome:

- machining time halved
- service life improved to 175 %
- high surface quality
- smooth running
- identical quality

#### DEEP DOUBLE THREAD IN TITANIUM GRADE 5



#### Mission:

Production of double threads with a high material removal volume. The client requires high accuracy despite the heavy cutting forces.

#### Outcome:

- high surface quality
- extremely smooth running
- high accuracy

#### ECCENTRIC WHIRLING IN 1.4057 / 430 F / SUS 430 F



#### Mission:

Eccentric production on the long lathe replaces expensive traditional techniques.

Whirling permits fast component production with a high degree of accuracy and without rechucking.

#### Outcome:

- high surface quality Ra 0.15-0.18
- feasibility without expensive clamping fixtures
- high cutting speed
- utmost precision Ø 10.5 mm  $\pm$  4  $\mu$ m or Ø 7 mm  $\pm$  3  $\mu$ m
- even faster than specified process time

#### METRIC THREAD M 1.6 IN TITANIUM GRADE 2



#### Mission:

Replace the conventional and cumbersome rolling-milling technique to improve surface quality, increase process security and minimize the chip removal problem.

#### Outcome:

- absolutely accurate shape
- very good surfaces
- more than twice as fast as a conventional process
- high process security

#### LATHE/MILLING CENTER WITH HSK40 ATTACHMENT



#### Mission:

Use of thread whirling on lathe milling centers to produce thread lengths of up to  $5 \times \emptyset$  and reduce machining time.

#### Outcome:

- very good surface
- stable clamping
- extremely smooth running
- 400 % higher productivity than on a long lathe

Your contact:





#### Utilis AG, Precision Tools Kreuzlingerstrasse 22, CH-8555 Müllheim Phone +41 52 762 62 62, Fax +41 52 762 62 00 info@utilis.com, www.utilis.com