

Turbo  Twister

maykestag

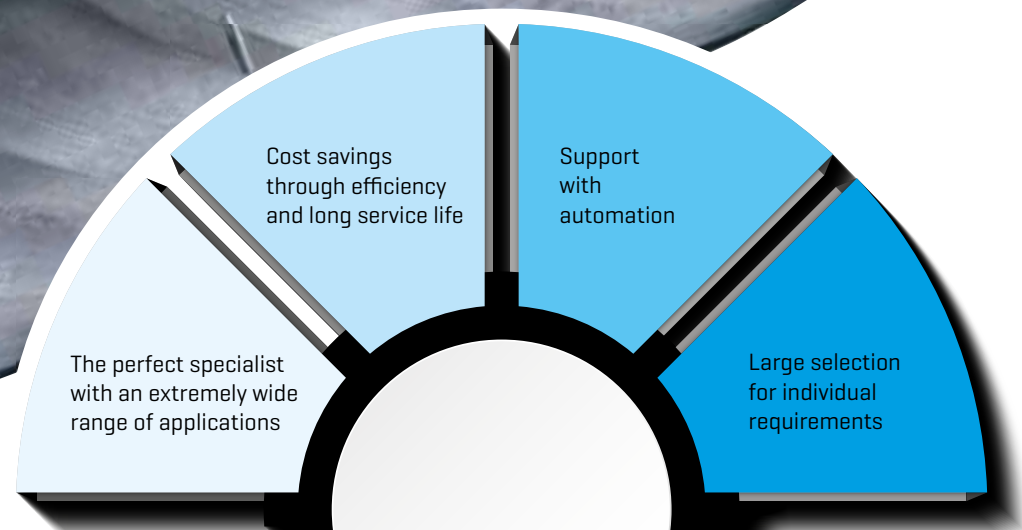
PERFORMANCE  
IN PRECISION

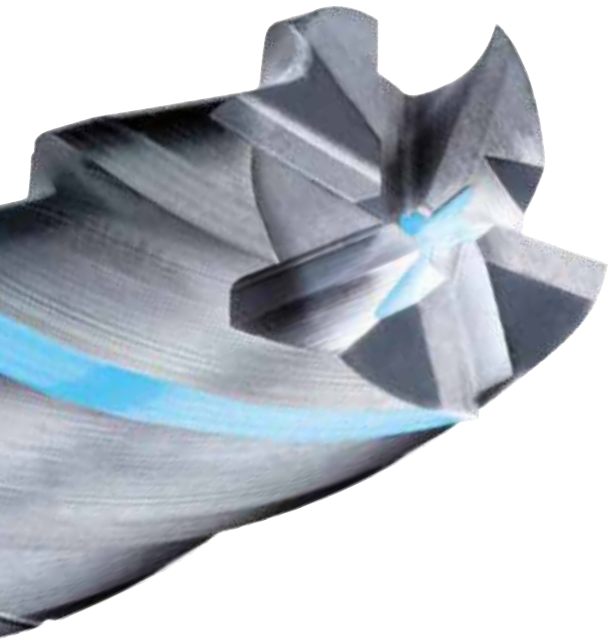
High-speed  
Trochoidal cutting

# The Turbo makes the difference.

**Our development team set out to exceed the highest demands of machining technology:** The requirements to machine multiple materials in the form of many different operations have become increasingly demanding.

That's why we have developed a new generation of trochoidal milling that enables an unrivalled variety of operations with just one tool and in almost all materials. Only the new Turbo-Twister can do that.





#### YOUR BENEFITS

- One tool for almost all materials
- No tool change
- No unexpected breakouts
- Wide 2xD-5xD product range
- Very wide range of cutting values for easy use in almost all modern CNC manufacturing

#### THE STABLE ONE

Extremely robust core, ensures significantly reduced vibrations and gives the tool a significantly longer service life.

#### THE SPECIAL ONE

Impresses with its excellently matched helix angle to the geometry and therefore ensures perfect chip transport.

#### THE CHIP BREAKER

Short chips thanks to several chip breakers, reduction of chip accumulation and therefore high process security is ensured, especially in automated production.

#### THE UNIQUE ONE

Due to the interaction of the factors mentioned, the tool can be used in almost all materials and therefore ensures an extremely high savings potential.

Turbo  Twister

PERFORMANCE  
IN PRECISION

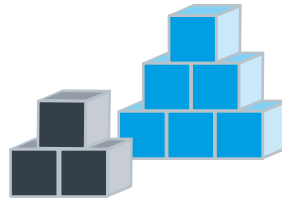
COMPETITION 1

|                                |   |           |
|--------------------------------|---|-----------|
| Material                       | 1.7225   42CrMo4 QT                       |           |
| Machine                        | Heller MCH250                             |           |
| Tool holder                    | HSK 100 Weldon with ic [internal cooling] |           |
| Strategy                       | Trochoidal                                |           |
| Cooling                        | Air                                       |           |
| Workpiece clamping             | Tombstones                                |           |
| Manufacturer                   | Competitor                                | MAYKESTAG |
| Type                           | 5xD                                       | 5xD       |
| Tool diameter [mm]             | 10  | 10        |
| Vc - Cutting speed [m/min]     | 188,5                                     | 188,5     |
| fz - Feed per tooth [mm/tooth] | 0,04                                      | 0,04      |
| Ap - Cutting depth [mm]        | 47  | 47        |
| Ae - Cutting width [mm]        | 0,3                                       | 0,3       |
| Service life                   | 50 min                                    | 570 min   |



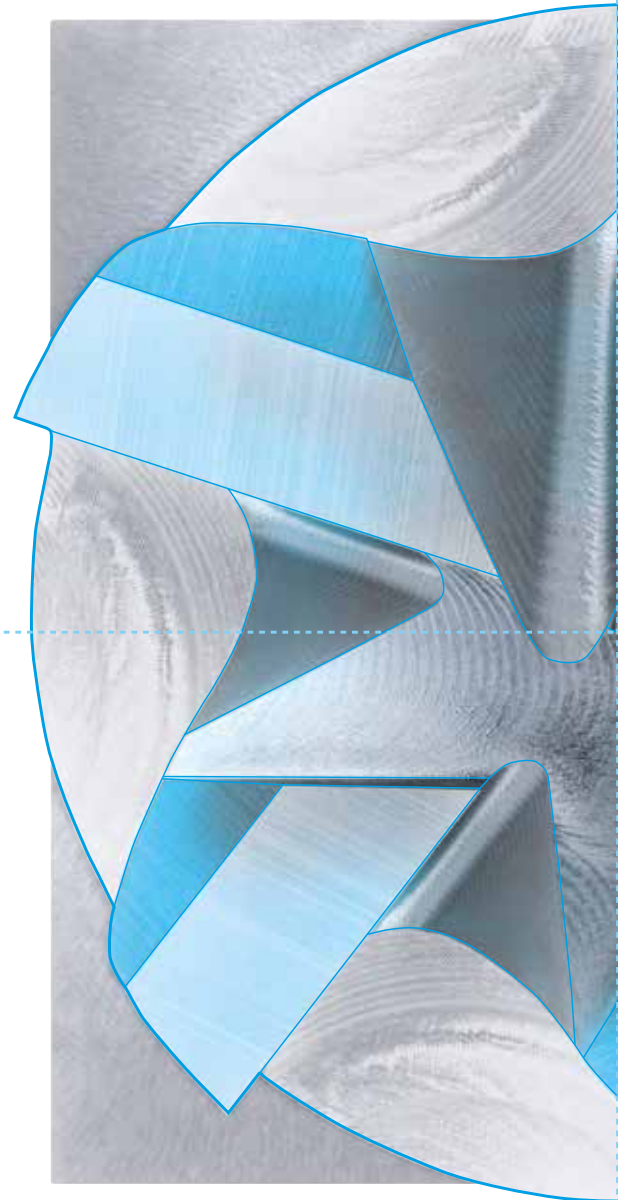
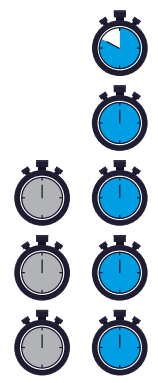
COMPETITION 2

|                                |  |              |
|--------------------------------|--|--------------|
| Material                       | 1.4571                                   |              |
| Machine                        | DMU 65                                   |              |
| Tool holder                    | HSK 63 Weldon with ic [internal cooling] |              |
| Strategy                       | Trochoidal                               |              |
| Cooling                        | Emulsion                                 |              |
| Workpiece clamping             | three jaw chuck                          |              |
| Manufacturer                   | Competitor                               | MAYKESTAG    |
| Type                           | 5xD                                      | 5xD          |
| Tool diameter [mm]             | 12                                       | 12           |
| Vc - Cutting speed [m/min]     | 166                                      | 166          |
| fz - Feed per tooth [mm/tooth] | 0,11                                     | 0,11         |
| Ap - Cutting depth [mm]        | 60                                       | 60           |
| Ae - Cutting width [mm]        | 0,6                                      | 0,6          |
| Service life                   | 3 workpieces                             | 6 workpieces |



COMPETITION 3

|                                |                  |                  |
|--------------------------------|------------------|------------------|
| Material                       | 1.4404           |                  |
| Machine                        | Hermle C42       |                  |
| Tool holder                    | HSK 63 Weldon    |                  |
| Strategy                       | Trochoidal       |                  |
| Cooling                        | Emulsion         |                  |
| Workpiece clamping             | Stamping vice    |                  |
| Manufacturer                   | Competitor       | MAYKESTAG        |
| Type                           | 3xD              | 3xD              |
| Tool diameter [mm]             | 12               | 12               |
| Vc - Cutting speed [m/min]     | 140              | 140              |
| fz - Feed per tooth [mm/tooth] | 0,1              | 0,1              |
| Ap - Cutting depth [mm]        | >1,5xD - <max ap | >1,5xD - <max ap |
| Ae - Cutting width [mm]        | 1                | 1                |
| Service life                   | 180 min          | 290 min          |

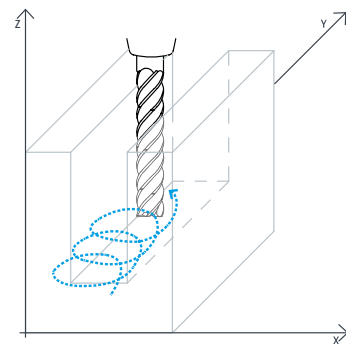
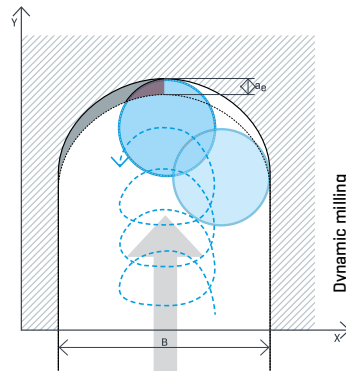




Suitable for static and dynamic milling strategies

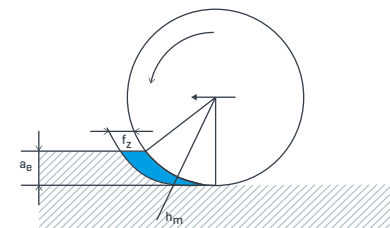
Maximum efficiency through intelligent trochoidal strategy

Recommended and detailed cutting values



Milling conditions, cutting width and cutting angle change continuously during trochoidal machining processes in order to achieve as consistent an average chip thickness as possible. This depends primarily on the CAM software. Our recommended cutting conditions are guidelines.

The ideal values for each particular application should be adjusted during the chipping process. We will be pleased to assist you with any questions.



$$\text{Average chip thickness } h_m = f_z \cdot \sqrt{\frac{a_e}{D}} \text{ [mm]}$$

### The perfect SUPRADUR coating

- Extremely resistant special coating for a wide range of applications.
- The optimal thermal shock resistance increases process security even under the most difficult conditions.
- Ideal for wet and dry machining in almost all materials.

### Quick, simple, and precise.

This means that the machines can quickly be set to the right values and their circumstances.

A reference book that provides you with everything you need to know for the application and material-related selection and use of machining tools and systems.

A source of information to help you use Turbo-Twister products efficiently and effectively.



PERFORMANCE  
IN PRECISION

# STC+

The different lengths allow you to achieve a stable process for all application needs, thereby increasing your productivity and profitability.



# 2xD

# 3xD

# 4xD

# 5xD



## SUPRADUR

| d1 <sub>h10</sub><br>mm | d2 <sub>h6</sub><br>mm | l1<br>mm | l2<br>mm |      | Z | Code 8002<br>Art.-No. |
|-------------------------|------------------------|----------|----------|------|---|-----------------------|
| 3                       | 6                      | 50       | 7        | 0,05 | 5 | 0 8002003001 00       |
| 4                       | 6                      | 50       | 9        | 0,05 | 5 | 0 8002004001 00       |
| 5                       | 6                      | 54       | 11       | 0,05 | 5 | 0 8002005001 00       |
| 6                       | 6                      | 54       | 14       | 0,05 | 5 | 0 8002006001 00       |
| 8                       | 8                      | 61       | 18       | 0,05 | 5 | 0 8002008001 00       |
| 10                      | 10                     | 69       | 22       | 0,05 | 5 | 0 8002010001 00       |
| 12                      | 12                     | 80       | 26       | 0,05 | 5 | 0 8002012001 00       |
| 14                      | 14                     | 83       | 30       | 0,05 | 5 | 0 8002014001 00       |
| 16                      | 16                     | 92       | 34       | 0,05 | 5 | 0 8002016001 00       |
| 20                      | 20                     | 104      | 42       | 0,05 | 5 | 0 8002020001 00       |

Chip breaker 2 pcs.

| d1 <sub>h10</sub><br>mm | d2 <sub>h6</sub><br>mm | l1<br>mm | l2<br>mm |      | Z | Code 8003<br>Art.-No. |
|-------------------------|------------------------|----------|----------|------|---|-----------------------|
| 3                       | 6                      | 54       | 10       | 0,05 | 5 | 0 8003003001 00       |
| 4                       | 6                      | 54       | 13       | 0,05 | 5 | 0 8003004001 00       |
| 5                       | 6                      | 57       | 16       | 0,05 | 5 | 0 8003005001 00       |
| 6                       | 6                      | 62       | 20       | 0,05 | 5 | 0 8003006001 00       |
| 8                       | 8                      | 69       | 26       | 0,05 | 5 | 0 8003008001 00       |
| 10                      | 10                     | 79       | 32       | 0,05 | 5 | 0 8003010001 00       |
| 12                      | 12                     | 92       | 38       | 0,05 | 5 | 0 8003012001 00       |
| 14                      | 14                     | 97       | 44       | 0,05 | 5 | 0 8003014001 00       |
| 16                      | 16                     | 106      | 50       | 0,05 | 5 | 0 8003016001 00       |
| 20                      | 20                     | 124      | 62       | 0,05 | 5 | 0 8003020001 00       |

Chip breaker 2 pcs.

| d1 <sub>h10</sub><br>mm | d2 <sub>h6</sub><br>mm | l1<br>mm | l2<br>mm |      | Z | Code 8004<br>Art.-No. |
|-------------------------|------------------------|----------|----------|------|---|-----------------------|
| 6                       | 6                      | 69       | 26       | 0,05 | 5 | 0 8004006001 00       |
| 8                       | 8                      | 77       | 34       | 0,05 | 5 | 0 8004008001 00       |
| 10                      | 10                     | 89       | 42       | 0,05 | 5 | 0 8004010001 00       |
| 12                      | 12                     | 103      | 50       | 0,05 | 5 | 0 8004012001 00       |
| 14                      | 14                     | 111      | 58       | 0,05 | 5 | 0 8004014001 00       |
| 16                      | 16                     | 124      | 66       | 0,05 | 5 | 0 8004016001 00       |
| 20                      | 20                     | 145      | 82       | 0,05 | 5 | 0 8004020001 00       |

Chip breaker 3 pcs.

| d1 <sub>h10</sub><br>mm | d2 <sub>h6</sub><br>mm | l1<br>mm | l2<br>mm |      | Z | Code 8005<br>Art.-No. |
|-------------------------|------------------------|----------|----------|------|---|-----------------------|
| 6                       | 6                      | 72       | 32       | 0,05 | 5 | 0 8005006001 00       |
| 8                       | 8                      | 83       | 42       | 0,05 | 5 | 0 8005008001 00       |
| 10                      | 10                     | 99       | 52       | 0,05 | 5 | 0 8005010001 00       |
| 12                      | 12                     | 115      | 62       | 0,05 | 5 | 0 8005012001 00       |
| 14                      | 14                     | 125      | 72       | 0,05 | 5 | 0 8005014001 00       |
| 16                      | 16                     | 140      | 82       | 0,05 | 5 | 0 8005016001 00       |
| 20                      | 20                     | 163      | 102      | 0,05 | 5 | 0 8005020001 00       |

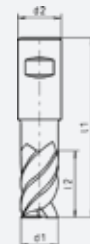
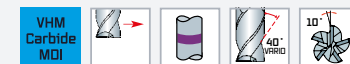
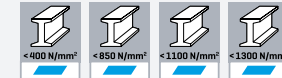
Chip breaker 3 pcs.

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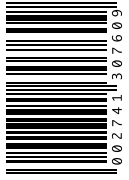
STC+ shank cutters  
Turbo-Twister-Allround,  
Five flutes, different  
spiral angles, 2xD, 5xD

### Application area:

High performance tool for static and dynamic trochoidal milling. For finishing and rough milling in almost all materials.



With the compliments of:



9 602741 30769

Art.-No.: 0099900281100

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**maykestag**  
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IN PRECISION