

New Product Information

MaxiMill HFC-TUR – Universal milling tool with high feed rate values

2017-05

General information

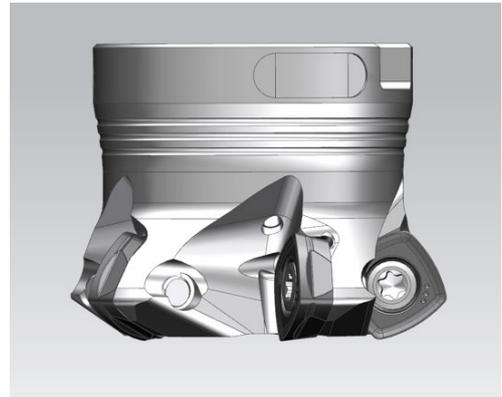
A revolutionary solution for greater productivity in the roughing of turbine blades.

As a general rule, button insert milling systems are used for these operations. However, the feed rate that can be achieved is limited by the shape of the insert.

Traditional high feed tools have a small cutting depth, but this does not permit high, dynamic feed rate values on complex components.

The solution can be found in the MaxiMill HFC-TUR milling tool, which combines both systems to deliver maximum feed rate values at higher cutting depths.

Thanks to sturdy screws and wide mating surfaces with precise positioning of the insert, the high-feed milling system combines easy handling with maximum cutting depths. The installation position of the insert reduces cutting forces, which in turn permits higher feed rate values. The temperature and vibrations produced during the machining process are also reduced considerably.



Advantages

- Easy handling due to sturdy screw and wide mating surface
- Cutting depths of up to 5 mm with high feed rate values
- Clear positioning of the indexable insert (4 indexes)
- Increased insert wear when turning the insert has no effect on correct positioning in the insert seat
- Large selection of indexable insert grades and geometries (MaxiMill HFC range)
- Reduction in machining temperature due to the installation position of the insert
- Tools with thro' coolant supply
- Nickel-plated and labelled tools

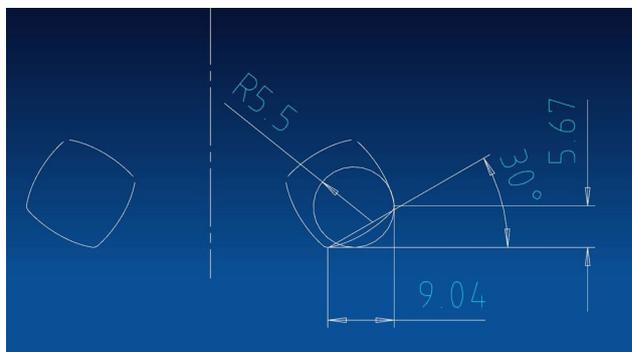
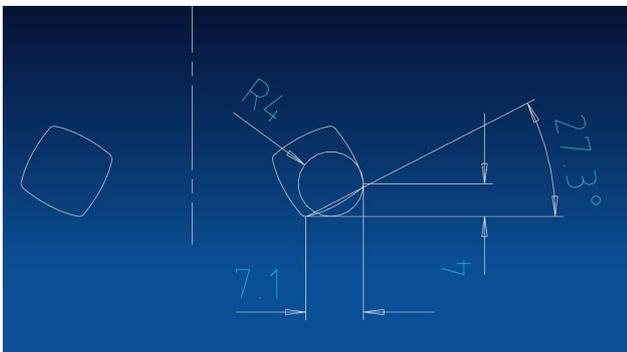
Recommended application:

- All components for face or 3D milling
- Components for which the necessary cutting depth is not reached using conventional HFC tools
- Components/machines with dynamics that are too low for high-feed milling
- Higher feeds compared to button insert and face milling systems

Recommended use:

- Ideal feed rate value of 0.5–1 mm per tooth
- Cutting depths with insert size 09 up to d.o.c. 3.6 mm, with insert size 12 up to d.o.c. 5.0 mm
- The "M50" geometry clearly produced the best results in trials and should be the preferred option

CAD programming same as button insert:



Example: AHFC.52.R.05-12-TUR

- Max. ramping angle:
 - Angled ramping = 2.6°
 - Helical ramping = 2.3°
 - Axial ramping = d.o.c. 1.5 mm
- Max. cutting depth at normal position relative to the working surface (90°) = d.o.c. 5 mm
- Max. cutting depth with 10° tool axis hitch angle = d.o.c. 3 mm

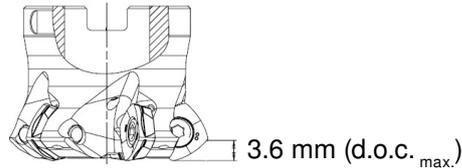


Product range:

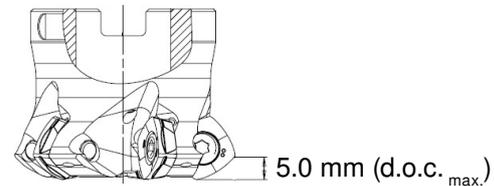
- Tools and indexable inserts available from stock
- Prices and discounts are the same as for the MaxiMill HFC system

Tool range:

Tool holders	
New	
Article no.	Designation
12158822	GHFC.32.R.03-09-TUR
12159756	AHFC.40.R.04-09-TUR
12159895	AHFC.42.R.05-09-TUR



12159911	AHFC.50.R.05-12-TUR
12159919	AHFC.52.R.05-12-TUR
12159920	AHFC.63.R.06-12-TUR



Diameters 32 mm – 63 mm are in stock; smaller/larger tool diameters are available on request. The dimensions of the tools correspond to the values for the standard "MaxiMill HFC" range. The diameter specified is the outer tool diameter with clamped inserts.

Size 09 indexable insert range	
New	
Article no.	Designation
11930332	XDLX 09T308ER-F40 CTC5240
12217472	XDLX 09T308ER-F40 CTPM245
11889178	XDLX 09T308SR-M50 CTCK215
11900630	XDLX 09T308SR-M50 CTCM235
11992795	XDLX 09T308SR-M50 CTCP220
11882017	XDLX 09T308SR-M50 CTCP230
11917358	XDLX 09T308SR-M50 CTPM225
11890320	XDLX 09T308SR-M50 CTPM240
12171277	XDLX 09T308SR-M50 CTPM245
11993168	XDLX 09T308SR-M50 CTPP225
11888505	XDLX 09T308SR-M50 CTPP235

Size 12 indexable insert range	
New	
Article no.	Designation
11930335	XOLX 120410ER-F40 CTC5240
12028602	XOHX 120410SR-F50 CTC5240
11889182	XOLX 120410SR-M50 CTCK215
11900627	XOLX 120410SR-M50 CTCM235
11992793	XOLX 120410SR-M50 CTCP220
11882019	XOLX 120410SR-M50 CTCP230
11917120	XOLX 120410SR-M50 CTPM225
11890321	XOLX 120410SR-M50 CTPM240
12171270	XOLX 120410SR-M50 CTPM245
11993162	XOLX 120410SR-M50 CTPP225
11888509	XOLX 120410SR-M50 CTPP235
11888514	XOLX 120410SR-R50 CTPP235



Machining example:

Forged blades

Material: martensitic, heat-resistant steel (X12CrNiMo12-3)

Clamping between fixture: unstable



Machining was performed using the MaxiMill A251.50.R.05-12-RS.

Machining data: $v_c = 320$ m/min; $f_z = 0.4$ mm; d.o.c. = 3 mm; machining of one segment.

Conversion to: AHFC.50.R.05-12-TUR / XOLX 120410SR-M50 CTPM245

Increased feed: $v_c = 320$ m/min; $f_z = 0.8$ mm; d.o.c. = 3 mm; machining of one segment.



Benefits:

Machining time is reduced by 50% with the same tool life.

The tool temperature is reduced with no increase in vibration or machine power.