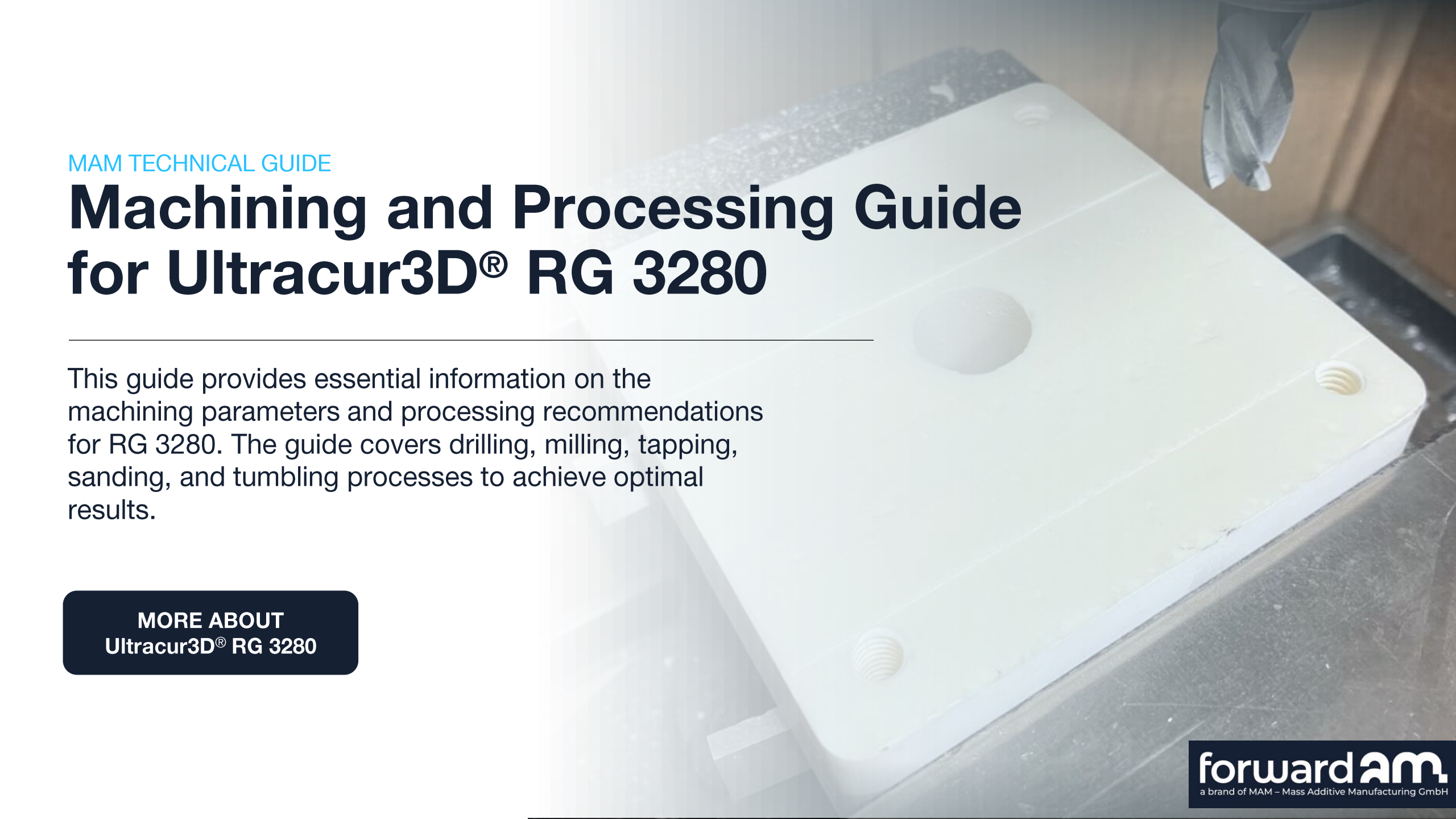
MAM TECHNICAL GUIDE

Machining and Processing Guide for Ultracur3D® RG 3280

This guide provides essential information on the machining parameters and processing recommendations for RG 3280. The guide covers drilling, milling, tapping, sanding, and tumbling processes to achieve optimal results.

MORE ABOUT Ultracur3D® RG 3280



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Cutting parameters for milling and drilling – Ultracur3D® RG 3280

$$n = \frac{v_c \times 1000}{\pi \times d}$$

n (RPM)	Revolutions per minute
v_c [m/min]	Cutting speed
d [mm]	Cutting tool diameter

$$v_f = n \times f_z \times z_n$$

v_f [mm/min]	tool speed
n	Revolutions per minute (RPM)
f_z [mm]	blade feed
z_n	# Blades of cutting tool

We recommend to start slow (bold values in the tables) and gradually increase until good results are found with the used equipment.

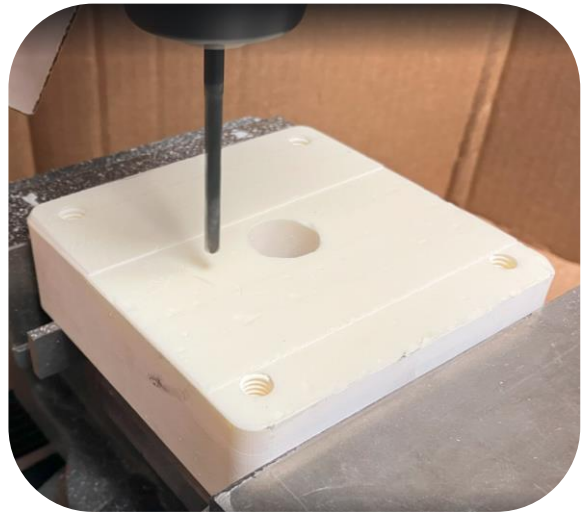
Freshly sharpened tools give best results.

Drilling

Tool	n [RPM]	v_c [m/nin]	Comment
D4,2 HSS Drill	1800 - 2200	**25** - 30	Good and easy progression. Only low pressure to reduce chipping on entrance and exit of hole. Drill the hole in small steps. **Holes >D5** should be printed and redrilled
D8,5 HSS Drill	1000 - 1500	**25** - 40	

Milling

Tool	n [RPM]	v_c [m/min]	v_f [mm/min]	Comment
D10 Carbide coated 4 bladed HSS mill cutter	1800 - 2500	**55** - 100	**200** - 500	Cutting depth of 0,5mm – 1mm work well for higher feed rates, ~0,2mm for slower feeds, resulting in smoother surface. Up cut milling gives better results.
D35 3 bladed mill cutter with coated indexable inserts	850-1000	**65**-75	**200**-300	**Best results** achieved with this mill bit for flattening and circumferential milling for all cutting depth from 1mm to 0,1mm
D40 HSS 6 bladed mill cutter	1000 - 1500	**100** - 150	**100** - 300	Cutting depth of 0,5mm – 1mm work well for higher feed rates, ~0,2mm for slower feeds, resulting in smoother surface. Up cut milling gives better results.





Disclaimer: These recommendations are non-binding and do not release the purchaser from suitability tests.

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Other processing reccomandations – Ultracur3D® RG 3280

TAPPING



- Use cutting oil to greatly improve results.
- Manual tapping works effectively up to a diameter of M5. Larger diameters tend to chip.
- Ideally, threads should be printed directly and only recut.

SANDING



- Sanding quickly evens out small irregularities.
- Regular sandpaper of any grit can be used for effective results.
- Consistent sanding pressure ensures a smooth and uniform surface finish.

TUMBLING



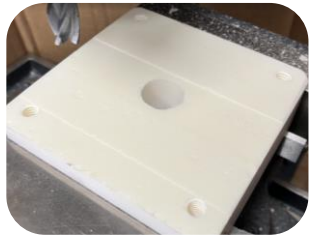
- Parts made from Ultracur3D® RG 3280 can be smoothed in a polishing machine or tumbler.
- After 90 minutes at 290 RPM with PM10 grinding chips (medium size and roughness abrasive medium), edges are slightly rounded and the surface is smooth and homogeneous.

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List of used equipment – Ultracur3D® RG 3280













Equipment	Purpose
Drill Press	Used for drilling holes with precise control
Drill Bit Set	Various sizes used for drilling and tapping
Cutting Oil	Used to improve the quality of tapping
Tapping Tool	Used for manual tapping of threads
Sanding Machine	Used for sanding surfaces to smooth out irregularities
Tumbling Machine (Otec Eco Maxi)	Used for tumbling parts to achieve a smooth and homogeneous surface
Grinding Chips (PM10)	Abrasive medium used in the tumbling process
Machined Part	Example of a part machined for testing

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