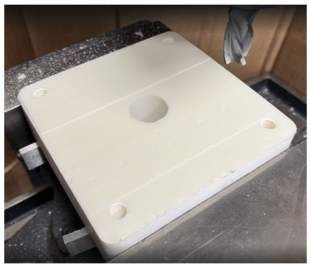

BASF RG 3280 Machining and Processing User Guide

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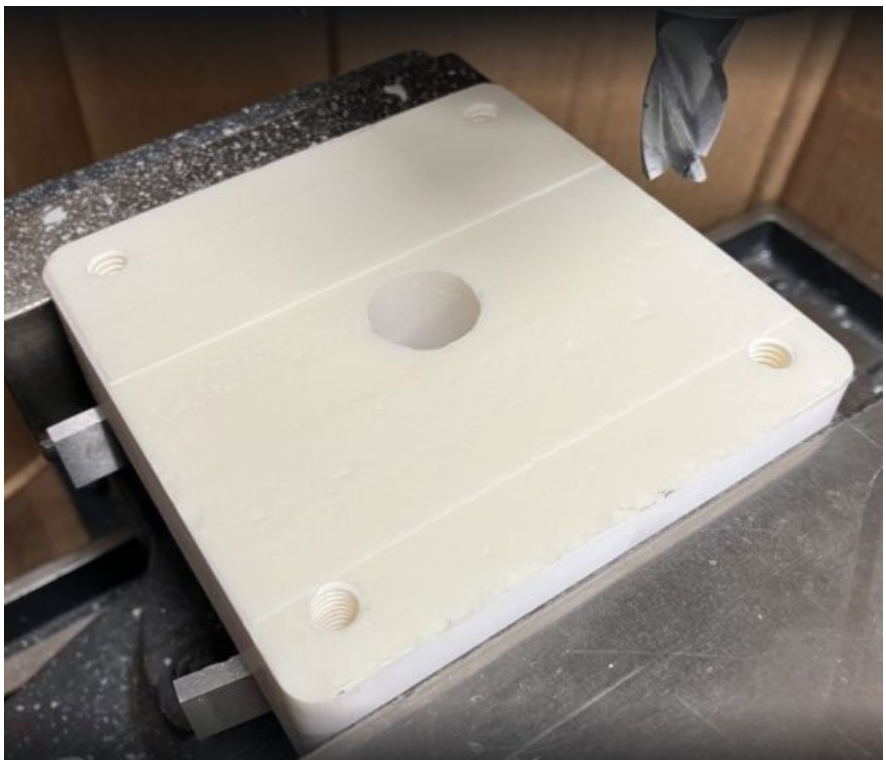
BASF FORWARD AM TECHNICAL GUIDE
Machining and Processing Guide
for Ultracur3D® RG 3280



Contents

RG 3280 Machining and Processing

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

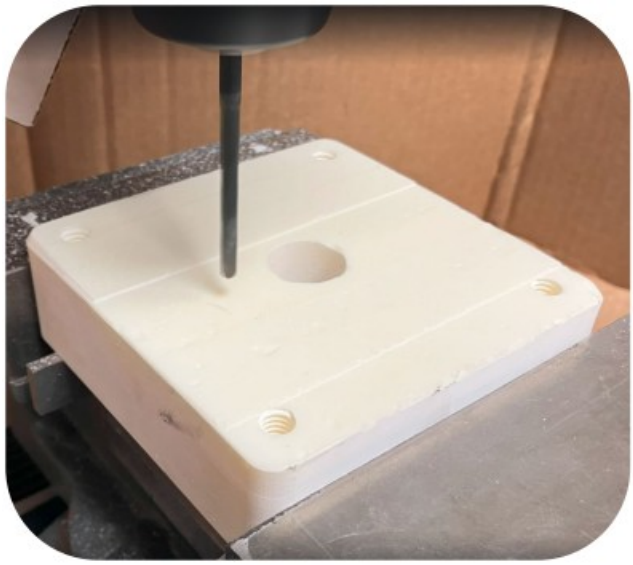
Disclaimer: These recommendations are non-binding and do not release the purchaser from suitability tests.

Cutting parameters for milling and drilling – Ultracur3D® RG 3280

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

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

Drilling			
Tool	n [RPM]	vc [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	



$$v_f = \mathrm{n} \times f_z \times z_n$$

vf [mm/min]	tool speed
n	Revolutions per minute (RPM)
fz [mm]	blade feed
zn	# 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.

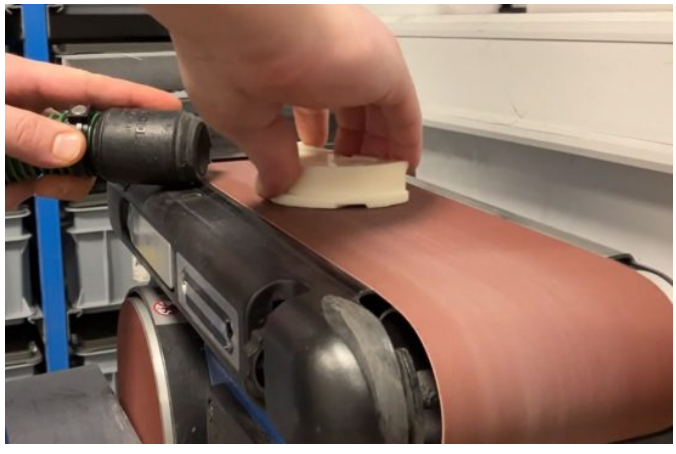
Milling				
Tool	n [RPM]	vc [m/min]	vf [mm/min]	Comment
D10 Carbide coated 4 bladed HSS mill cutter	1800 – 2500	55 – 100	200 – 500	Cutting depth of 0,5mm – 1mm work well for higher feed rates, ~0,2mm for slower feeds, resulting in smoother surface. Up cut milling gives better results.
D40 HSS 6 bladed 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.

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.

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

Documents / Resources

	BASF RG 3280 Machining and Processing [pdf] User Guide RG3280, RG 3280 Machining and Processing, RG 3280, Machining and Processing, and Processing, Processing

References

- User Manual