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Fabrication Corner

CNC Routing – Some Tips

A growing number of new applications now use aluminium in metal fabrication due to its high strength-to-weight ratio and superior corrosion resistance.

We came across an excellent website on CNC machining (*www.cnccookbook.com*) It has an article with 11 tips for CNC routing of aluminium.

- Don't be in a hurry - a router will be slower than a purpose built CNC mill
- CNC Router aluminium feeds and speeds are key
- Use a special aluminium router bit for cutting aluminum (carbide end mills)
- Use smaller diameter router bits
- Be paranoid about clearing chips
- Watch cut depths and slotting –they make it harder to clear chips
- Lubricate with a mist spray
- Don't slow down the feedrate too much!
- If your machine can't feed fast enough, use fewer flutes and increase cut width

Tip number 5 is one of the key tips:

Be paranoid about clearing chips

"I can't stress this enough, especially when the material has an affinity to bond with the cutter. Recutting chips break more cutters than most any other thing I see happening. Be paranoid about clearing the chips. Don't count on a nearby vacuum dust collection system unless you have personally verified it sucks the chips out of even the deepest cuts. More reliable is an air blast fixed to the spindle and pointing right at where the cutter meets the material being cut. If you're standing there, nozzle in hand (or worse a brush) thinking you can keep things clear, you're not paranoid enough about clearing chips."

This tip goes to the heart of machining aluminium that if you don't clear the chips they can heat up, reach aluminium's low melting point of 650 degrees C and glue up the cutting tip.

Source : https://www.cnccookbook.com/10-tips-for-cnc-router-aluminum-cutting-success/