

CNC Router End Mills (Up-cut and Down-cut)

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Consumables & Spares

CNC end mills are the cutters for CNC routers: up-cut spirals lift chips out for deep cuts, down-cut spirals press the top surface cleanly for visible faces, and compression bits do both. Carbide end mills in 3-10 mm sizes cover most school machining.

Key Features

- Solid carbide two-flute and three-flute types
- Up-cut spiral for chip evacuation
- Down-cut spiral for clean top edges
- Compression end mills for plywood both sides
- Shank sizes 3.175, 6 and 8 mm

Typical Uses in the Workshop

- Cut plywood, MDF and acrylic on the CNC
- Profile and pocket parts with clean edges
- Machine tooling foam and foam board
- Engrave and cut fine detail work

Safe Operation

1. Select the cut type for the material and finish
2. Match the speed and feed from the chart
3. Set the cut depth per pass within limits
4. Secure work so the cutter cannot climb
5. Run a test pass on scrap first

SAFETY NOTES

- Never touch the spindle while running
- Use the correct collet size and tighten properly
- Wear hearing and eye protection
- Keep hands clear of the work area
- Check the shank grip before each job

Maintenance & Consumables

- Clean resin and dust from flutes after use
- Check carbide tips for chips
- Store end mills in a labelled rack
- Replace dull cutters that burn the material
- Keep the collet and nut clean

Specification & Buying Notes

Stock 2 and 6 mm up-cut and down-cut carbide end mills in the materials the course cuts. Buy quality brands; cheap cutters break first lesson. A floating collet wrench and torque guide help.