

SMILE PLASTICS

HOW TO
CUT ON
THE CNC

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What you'll need:

- CNC machine
- Clean, level cutting bed
- Cutting tool suitable for plastics
- Computer with CNC control software
- Safety goggles
- Safety gloves

Steps:

1. Check that the cutting bed is clean, level, and free of debris or obstructions. A clean cutting surface is essential for achieving accurate and consistent cuts.
2. Choose a cutting tool that is specifically designed for cutting plastics. Consider factors such as the material thickness and the desired cutting precision. Ensure that the cutting parameters, including tool speed, feed rates, and cutting depths, have been set according to the manufacturer's recommendations and the properties of the material.
3. Load the CNC program onto the computer connected to the CNC machine. Double-check the program to ensure that the cutting paths and dimensions are correct.
4. Place the material securely on the cutting bed of the CNC machine. Use clamps or other suitable methods to prevent the material from shifting during the cutting process.

5. Start the CNC machine and initiate the cutting operation. Monitor the process closely to ensure that the tool cuts accurately and smoothly through the plastic material. If necessary, adjust the cutting parameters or tool paths to optimise the cutting performance.

6. To minimise heat build-up and achieve a smooth surface finish when cutting thicker or denser plastic materials, use multiple passes with a sharp single flute upward cutter, ideally with a polished face suitable for plastics. Faster spindle speeds with medium feed rates work best for PET materials, while slower speeds are better for HIPS plastics. We've had success using 3 passes per 10mm cutting depth, preventing overheating and melting, resulting in cleaner and more precise cuts.

7. Throughout the cutting operation, keep a close eye on the material for any signs of overheating or melting. If you notice any issues, such as excessive melting or deformation of the material, pause the cutting process immediately and address the problem before proceeding.

8. Once the cutting operation is complete, carefully remove the cut piece from the CNC machine. Use caution to avoid damaging the freshly cut edges or surfaces of the plastic material.

9. Examine the cut piece closely to ensure that the dimensions and quality of the cuts meet your expectations. If necessary, use sandpaper or other finishing tools to smooth any rough edges or surfaces.

10. After cutting, clean up any debris or swarf from the cutting bed and surrounding area.

MATERIALS REIMAGINED



Certificate Number 19268
ISO 9001, ISO 14001