

Our solution allows the robotic cell to be customized according to customer requirements, including workpiece dimensions, an automatic tool magazine with tool wear management, and many other features.



VAUTOMATION
ADVANCED TECHNOLOGY

AUTOMATIC TRIMMING , CONTOURING, DRILLING AND THREADING MACHINE FOR CARBON FIBERS PROFILES



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Solution enables the simple, fast, and highly flexible machining of continuously varying parts.

Thanks to the vision system mounted directly on the robot, the machine automatically adapts even when the part differs from the original CAD model due to the natural flexibility of carbon fiber profiles.

By combining 3D vision with a trim line acquired directly on the part during the manufacturing phase, the system generates machining paths that accurately follow the component's actual geometry. This allows the machine to perform trimming according to design specifications while compensating for part deflection, **without the need for dedicated fixtures.**

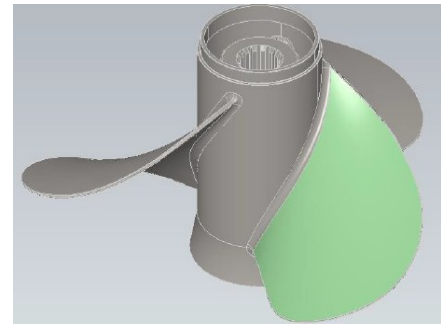
This technology enables the operator to switch between different part types at any time, without being constrained to serial production, while still maintaining precision up to **± 0.5 mm.**

All of this is integrated with a user-friendly interface offering three operating modes, described below, to ensure maximum ease of use and configuration.

Operation is further simplified **by a vacuum clamping base** combined with a **customizable threaded grid**, allowing rapid fixture setup. This solution makes tooling extremely straightforward and enables easy handling of parts of any shape.

An **automated spindle change system** is also available as an option, ideal for customers seeking a fully autonomous machine capable of performing multiple machining operations without operator intervention.

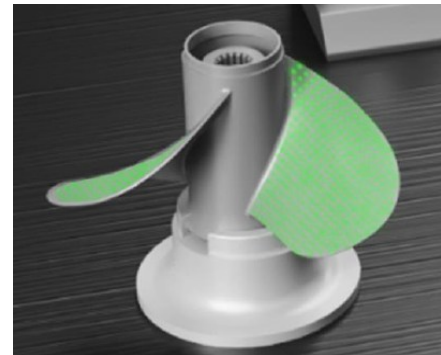
Operating Mode 1 – Offline Programming from CAD Model



CAM programming that interacts with a CAD model within a virtual environment.

- ✓ **GENERAL-PURPOSE USE**
- ✓ **CAD MODEL REQUIRED**
- ✓ **CAM EXPERTISE REQUIRED**
- ✓ **PROCESS EXPERTISE REQUIRED**

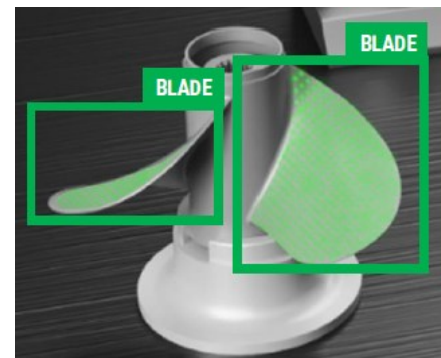
Operating Mode 2 – 3D Reconstruction via Vision System



Extract 3D entities (surfaces, edges, etc.) directly from the 3D reconstruction output.

- ✓ **GENERAL-PURPOSE USE**
- ✓ **NO CAD MODEL REQUIRED**
- ✓ **NO CAM EXPERTISE REQUIRED**
- ✓ **PROCESS EXPERTISE REQUIRED**

Operating Mode 3 – 3D Semantic Segmentation



Semantically interpret the 3D reconstruction.

- ✓ **SPECIFIC PRODUCTS**
- ✓ **NO CAD MODEL REQUIRED**
- ✓ **NO CAM EXPERTISE REQUIRED**
- ✓ **NO PROCESS EXPERTISE REQUIRED**