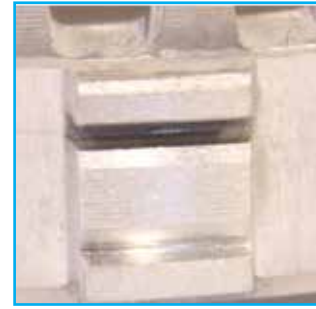
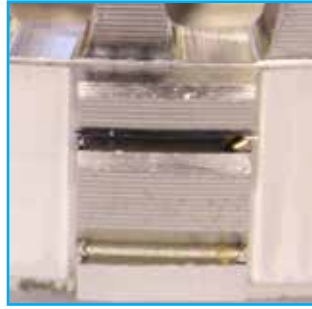




# Deburring Solutions

# We design the automation around the deburring process

Before deburring



After deburring

## Burr Categories\*

**Class 1:** Micro-burrs, sharp edges, magnification required

**Class 2:** Feather burrs, easily scratched off, magnification not required

**Class 3:** Well-attached, require mechanical force to remove

**Class 4:** Large well-attached burrs are thicker, larger, and stronger than class 1-3

**Class 5:** Extruded burrs, large material deformations caused by machine tooling

## Adaptive Technologies

Automating a deburr process is not as simple as presenting a part to a high speed spindle.

Years of experience have given Matrix the understanding and know-how that led to the creation of proven deburring processes. These proprietary adaptive technologies are designed to simulate the flexibility and delicacy of human movements.

- Matrix designed
- Proprietary technology
- Monitors tool wear
- Prevents excess removal
- Regulates speed, feed & pressure
- Ideal for more delicate operations
- Ensures consistent finish
- Integrated tool wear feature
- Used with abrasive deburring
- Ideal for multiple deburring surfaces
- Minimizes cycle time
- EOAT spindles
- Selecting optimal deburring material optimizes process, maximizes tool life.



Touch Detection



Compliance Spindle



Positioners & Engineered Tools



Deburring Media & Tools



Wet Deburring

\* Source: Akuszewski, M. (2014, November 18). A Standard Approach to Classifying Burrs. Retrieved from <https://www.productionmachining.com>

## Matrix Deburring Application Laboratory



To effectively evaluate an automated deburring operation, real life testing is required.

We created this deburring lab to streamline the testing process. The lab allows us to take actual end-user parts and test various processes and technologies.

From there we validate the process and generate data to create the optimal recommendation.

- Burrs are a reality
- Manual deburring operations are tough jobs & difficult to control
- Effective automated deburring systems require adaptive technologies



Double Deburring System With Touch Detection



Multi-Spindle With Compliance System

# About Matrix Design, LLC

Matrix works closely with end users to develop, build, and install robotic automation systems. Specializing in machine tending, deburring, and a range of material handling systems, Matrix has built a reputation for designing and delivering the most optimal and robust industrial automation systems to manufacturers worldwide. We are a Level 4 FANUC system integrator, FANUC ASI (Authorized System Integrator), FANUC Certified Servicing Integrator, and FANUC Vision Specialist.

## Our Foundation

Matrix is based on our Core Values and Internal Processes (the Matrix Way) to ensure your expectations and requirements are met, from concept development to installation to lifetime service and 24/7 support.

*We don't nickel and dime and we stay until it's done – that's our guarantee.*



## Our Customers



## Certifications

