

**YASKAWA**

# EcoTrim

Sustainable Robotic Cutting Solutions

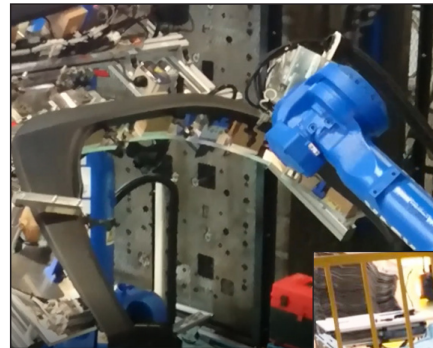


# Eco-Friendly Trimming Solutions for Molded Plastic Parts

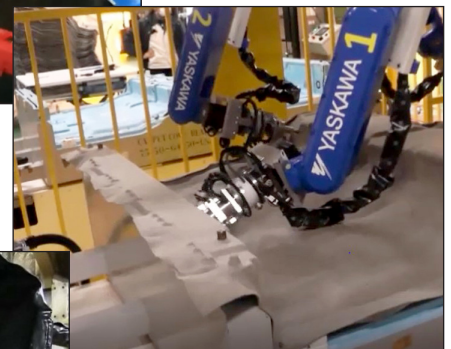
## Fast, Precise, Flexible

Designed for high-speed trimming, chamfering and deflashing applications, Yaskawa's EcoTrim® solutions solve the limitations of conventional trimming, combining robust capability, energy-sipping technology and exacting precision. This sustainable alternative is optimized to improve trim quality and reduce operational cost, and is ideal for molded plastic parts and other non-metallic materials.

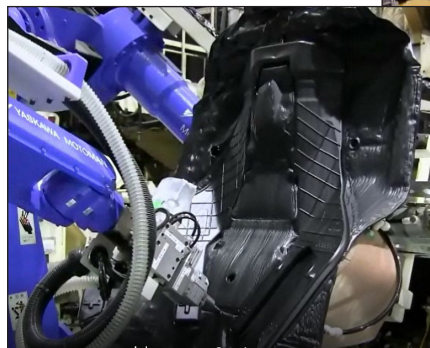
- Effectively replaces waterjet, laser cutting, hard tooling and manual trimming or routing methods.
- Well-suited for automotive interior components such as door trim, floor carpet, instrument panels, consoles and HVAC molded components, as well as most injected, vacuum, rotational or blow molded parts for general industry.
- Conveniently accommodates a variety of materials including plastics, film, carbon fiber reinforced polymer (CFRP) and non-woven fabrics.
- Extremely energy efficient: <1 kWh per trim tool verses >20 kWh for waterjet.
- Uniquely designed trim tools feature active compliance to follow shrinking or imprecise part contours.
- Strongly backed by world-class support services to maximize uptime, accelerate ROI and ensure long-term performance.



Gate cutting of rear door CFRP part



Trimming of automotive carpet



Extraction and trimming of blow molded HVAC duct

## The Yaskawa Advantage

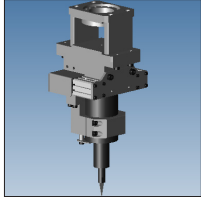
- Improve part-to-part finish consistency with built-in compliance
- Reduce direct labor and repetitive injury costs
- Save energy vs. waterjet trimming
- Quiet operation, no water hazards, no WIP drying time for post trim assembly operations
- Manage part shrinkage; parts can be trimmed right out of mold
- Efficiently trim perimeter flash and route holes/slots with one tool

## Proven Reliability That Delivers

Field-tested and refined on over 200 installations, our trim tools are designed to meet precise tolerances and the demands of automotive production volumes. These highly capable trim tools and workcells are backed by university development.

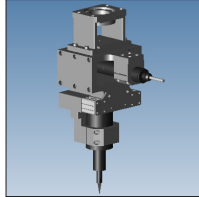
### Experience-Driven Trim Tool Designs

FOR YOUR PLASTIC PART TRIMMING NEEDS



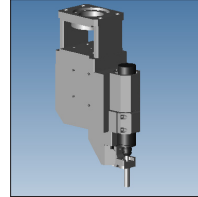
#### Ultrasonic Knife Tools

- Ultrasonic oscillation reduces cutting friction by 70%
- Four compliant/non-compliant trim tool models
- Seven proprietary knife blade designs
- Patented “control ball” material compression feature for cutting of softer materials
- 7th-axis blade rotation control for improved cycle rates



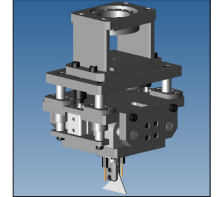
#### Hybrid Knife and Routing Tool (variant)

- High-speed router added to knife tools
- Programmable DC servo control
- Holes and slots quickly added to parts
- Standard (300W) and heavy duty (500W) versions available
- Fixed or retractable design options available
- Air-cooled for long life



#### Profile Routing and Gate Cutting Tool

- Fast and precise patented tool for gate cutting and edge profiling
- Customizable profile sleeves used for removing mold flash while protecting part quality
- Router bit tip extends beyond profiling sleeve for gate cutting



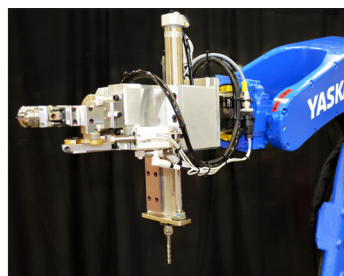
#### Flash Scraping Tool

- Adjustable compliance allows setting of scraping pressure against part for managing shrinkage or part-to-part variances
- Specifically designed to remove the smallest of parting lines from injection molded parts
- Commonly used for higher density material

### Diverse Dress Kit Options

FOR FULL DRESS OF ROBOT ARM AND MULTIPLE CUTTING TOOL VARIANTS

- Tested with a functional run-off, complete robot dress kits are offered for the Motoman® GP25 and GP50 robots for the knife and knife variants, as well as the routing and scraping tools.
- Kit includes:
  - Full dress for robot arm including the tool
  - Robot arm to controller interconnecting cables
  - Integrated electronics and pneumatics equipment
  - Pre-loaded INFORM jobs for tool actuation and troubleshooting



### Turnkey EcoTrim Workcells

FOR YOUR SPECIFIC PRODUCTION REQUIREMENTS

Standard and customized workcell configurations are available through our select EcoTrim integration partners.

Experience the difference EcoTrim solutions can have on your operations: [visit motoman.com/ecotrim](http://motoman.com/ecotrim)

# Integration Partners

## For Greater Solution Expertise



For more than 20 years, **Alliance Automation, LLC** has been a trusted leader in the design, build and integration of turnkey robotic systems. With an emphasis on the demanding automotive interior industry, the company specializes in many applications including plastic material processing, as well as developing innovative automation technologies.



With over 2,200 installations and a keen focus on rotomolded part trimming, **Rixan Automation, LLC** has the staff to design, manufacture and service an optimum automation system, specifically in the plastics and metal manufacturing industries. In conjunction with Yaskawa and NSK, Rixan has pioneered a broad scope of finishing capabilities including deflashing, routing and grinding.



An automation systems integrator with exceptional experience in the combination of vision technology with robotics, **Chicago Electric** excels in floor mat trimming and can enable a “fixture-free” ultrasonic trimming and finishing system that utilizes 2D and 3D vision solutions. As an Allen-Bradley system integrator, a control layer can be added to a robot system for ease of operator interface and connectivity to existing controls.

---

### Robust Patented Technology (Patented through NSK)

- Ultrasonic Trimming Apparatus (Canada); Registration No. 2625154
- Ultrasonic Trimming Apparatus and Ultrasonic Trimming Method (Mexico); Registration No. 299343
- Ultrasonic Trimming Apparatus and Ultrasonic Trimming Method (USA); Registration No. 8277282
- Ultrasonic Trimming Apparatus (USA); Registration No. 8591285
- Ultrasonic Trimming Method (USA); Registration No. 8512094
- Ultrasonic Trimming Method (USA); Registration No. 8632377
- Workpiece Removal and Finishing Device (USA); Registration No. 8740608
- Workpiece Removal and Finishing Device (Mexico); Registration No. 326212
- Deburring System, Deburring Apparatus and Cutter Blade (USA); Registration No. 8806999
- Machining Apparatus (USA); Registration No. 9539686

---

# YASKAWA

[yaskawa-motoman.com](http://yaskawa-motoman.com)

100 Automation Way | Miamisburg, OH 45342 | 937.847.6200