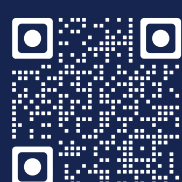
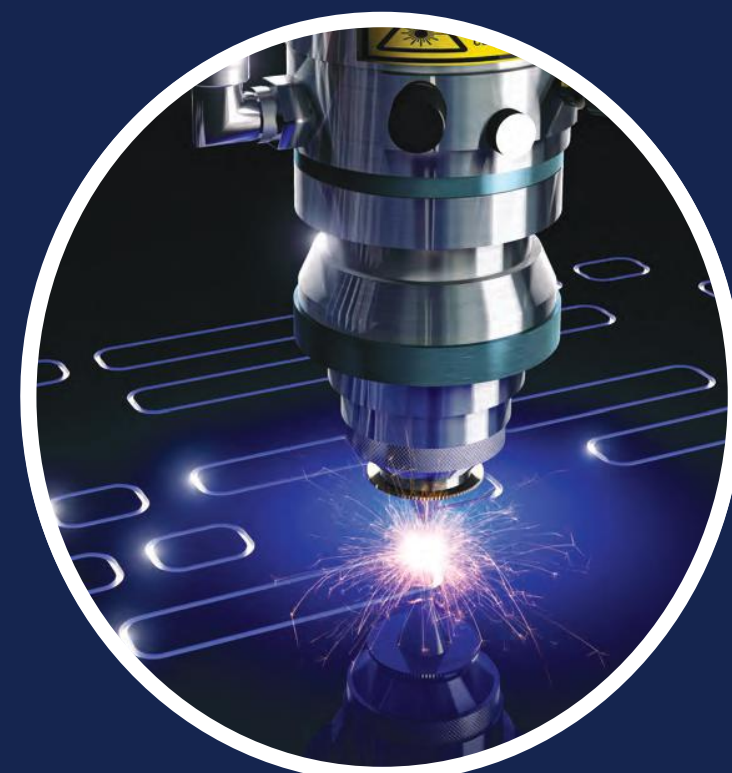
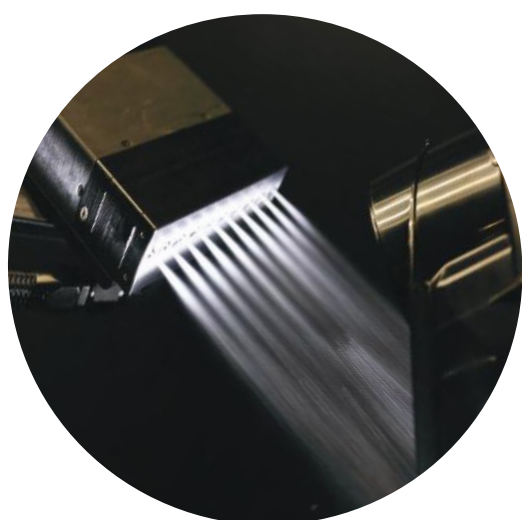


Advanced Surface Treatment Solutions



Reliabotics Surface Technologies Group

Reliabotics Surface Technologies Group (RSTG) offers complete solutions for surface treatment and finishing for various industries, with expertise in cost-effective and eco-friendly technologies addressing precision surface cleaning, surface preparation, grinding, deburring, polishing and laser marking. Reliabotics Surface Technologies Group is the first in the industry to offer these comprehensive solutions for all surface related processes utilizing a wide range of standard products and proprietary technologies.



CO2 Technology

- Uses recycled CO2 gas or liquid
- Dry precision cleaning
- Reduces process footprint
- Can be used with plasma, laser, and nano-ceramic brushes
- Can be optimized to use as lubricant & coolant
- Robot Ready



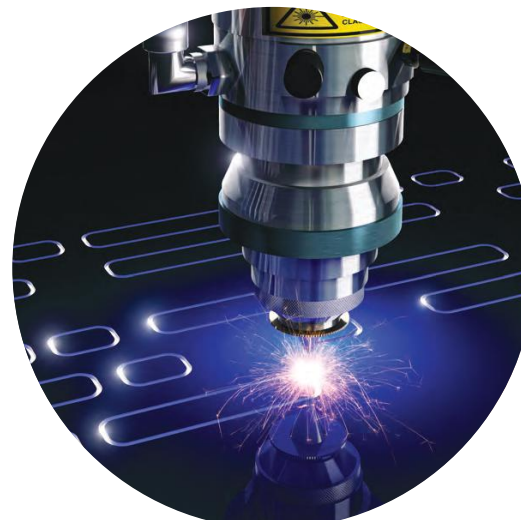
Nano-Ceramic Brush

- Uses nano-ceramic abrasive technology
- Perfect for deburring, polishing and surface finishing
- Can be used dry or wet
- Used in multi-axes CNC & turning centers
- Robot & Integration Ready



Plasma Technology

- Atmospheric plasma & corona technology
- Surface prep. of plastics & metals
- Can be combined with CO2 technology
- Robot Ready



Laser Technology

- Uses MOPA laser technology
- Perfect for cleaning, marking and welding applications
- Can be used with CO2 technology
- 100-300 W laser power
- Robot Ready



ECO-FRIENDLY



LOW COST



ROBOT READY



**SMALLER
FOOTPRINT**



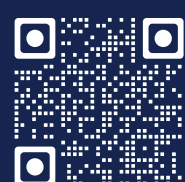
RECYCLED CO2



**REPLACE WATER
CLEANING**



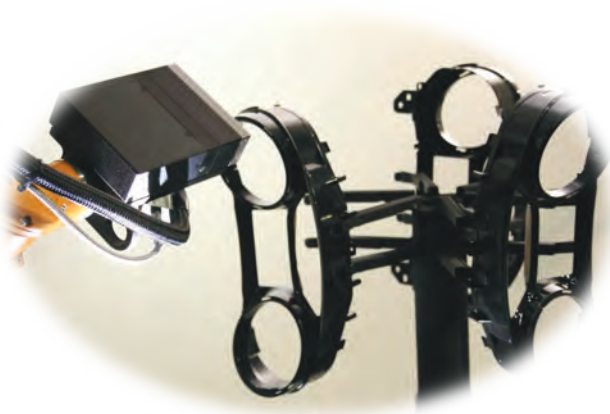
NO VOC's



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Industrial Applications

Reliabotics' turnkey, modular and flexible robotic work cells are ideal to automate many of today's manufacturing applications in factories, R&D centers and processing facilities serving a number of industries and market verticals.



Automotive

- Surface Prep. & Paint Prep.
- Surface Cleaning
- Pre-Inspection & Pre-Gauging
- Deburring, Sanding & Polishing
- EV Battery Cleaning
- Form-in-Place Gasketing



Aerospace

- Pre-Inspection Cleaning
- Composite Treatment
- Mold Cleaning
- Thin Films & Oil Removal
- Surface Finishing
- Adhesive & Bonding Prep.



Manufacturing

- Surface Finishing
- Thin Film Removal
- Post & Pre-Process Cleaning
- Dry-Machining, Cooling & Lubrication
- Laser Welding & Marking
- Vision & Inspection



Biomedical

- Implants Surface Cleaning
- Prosthesis Surface Prep. & Cleaning
- Medical Device Manufacturing
- Precision Surface Finishing
- Fingerprints & Oil Cleaning
- Laser Marking



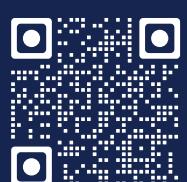
Optics & Glass

- Fingerprints Cleaning
- Post & Pre-Process Cleaning
- Surface Finishing
- Laser Processing
- Optronics Cleaning
- Ophthalmic Mold Cleaning



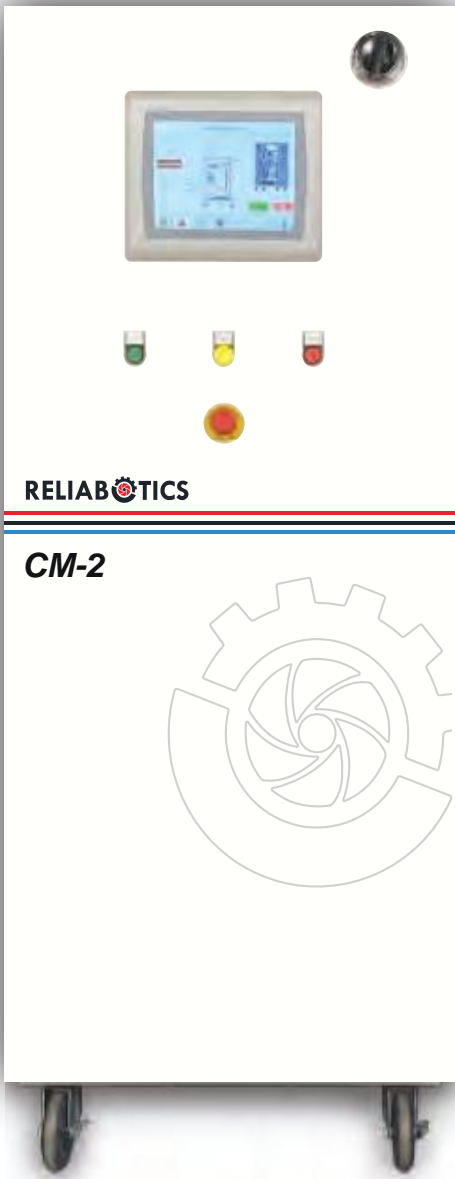
Electronics

- Surface Cleaning
- Flux Removal
- Semiconductor Treatment
- Wafer Marking
- Wafer Processing
- Laser Welding & Soldering



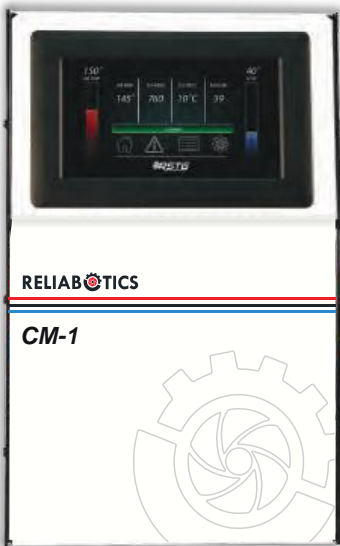
CO2 Cleaning Technology

CO2 Cleaning is a precision surface cleaning method that removes dry and wet contaminants from a surface without any contact and damage.



CM-2

- Ideal for large integration solutions
- Modular
 - Integration Ready with Network & IO Connectivity
 - Suitable for large surfaces
 - Uses CO2 gas - bulk tanks
 - Width 27.25" - Height 70.5" - Length 42"



CM-1

- Ideal for table top solutions
- Portable
 - Robot Ready with IO connectivity
 - Suitable for small surfaces
 - Uses CO2 Liquid - small tanks & micro bulk
 - W 9.5" - H 15" - L 13"

Clean various contaminants without contact and damaging surfaces.

- Thin films
- Oil residues
- Fingerprints
- Sand dust
- Dust and dirt
- Lint and particles

CE-3



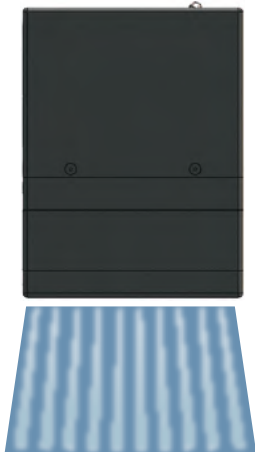
CE-6



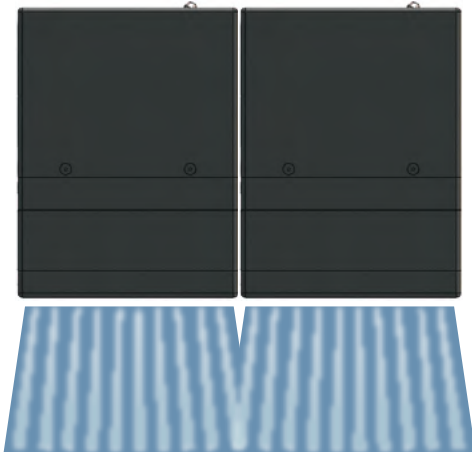
CK-6



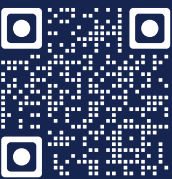
CE-10



CE-20



Technical Specifications of CO2 Nozzles				
Specifications	CE-3/CK-3	CE-6/CK-6	CE-10	CE-20
CO2 Consumption	12 lbs/hr	24 lbs/hr	40 lbs/hr	80 lbs/hr
AIR Consumption	25 cfm (max)	40 cfm (max)	70 cfm (max)	140 cfm (max)
Cleaning Path	1 inch	2 inches	5 inches	10 inches
Operating Cost	~ \$4/hr.	~ \$7/hr.	~ \$13/hr.	~ \$25/hr.



Nano-Ceramic Brushes

Reliabotics Stone Brush TM by SOWA is made of high-quality ceramic fiber with infused abrasive at nano-level. This nano-ceramic brush technology allows precision surface finishing of metals, plastics and glass at the highest possible feeds and speeds.

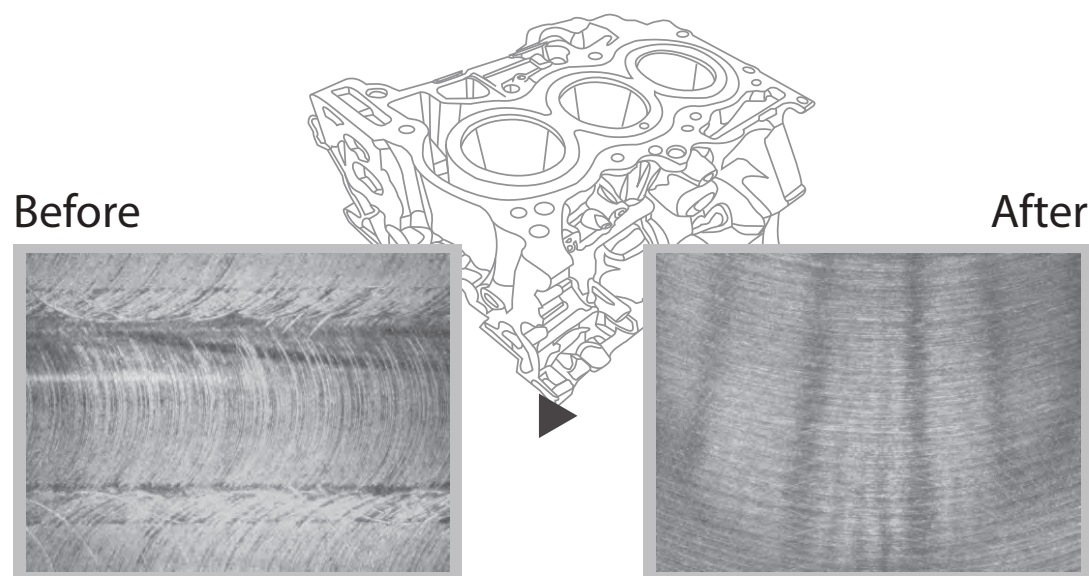


Characteristics

Available in wide range of sizes, resiliency, and grits.

- 8-10 times longer life than conventional brushes
- 60 times more grinding power than nylon brushes
- High pressure & temperature tolerance
- Can be used wet or dry
- Custom brushes are also available
- Robot & integration ready
- Ideal for high precision and large volume processes

<div>More</div> <div>↑</div> <div>Aggressiveness</div> <div>↓</div> <div>Less</div>	#150	
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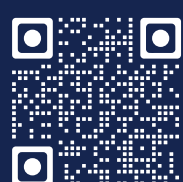
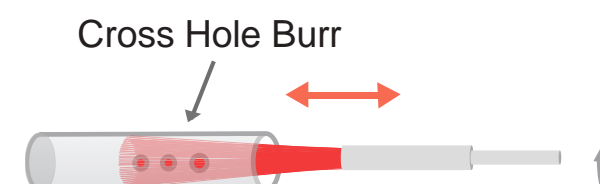
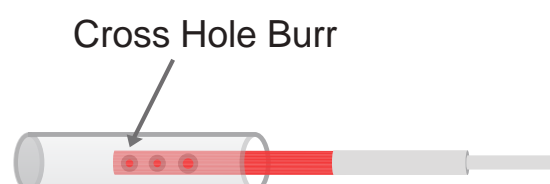
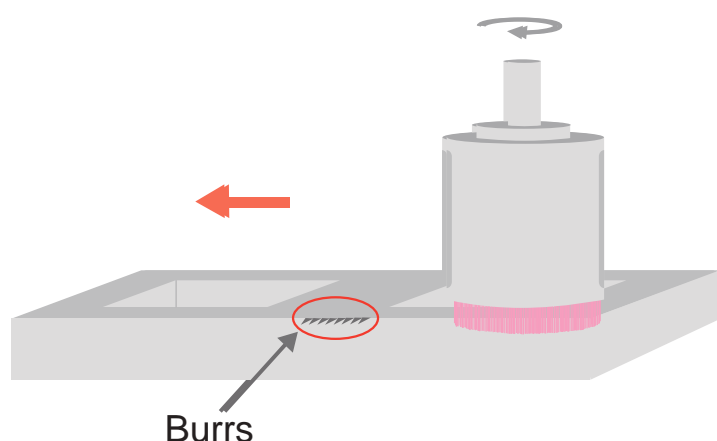


Surface Material: SCM440
 Stone Brush Grit: 400
 Stone Brush Size: ø25
 Speed: 6000 rpm
 Feed: 1000 mm/min
 Depth: 0.5 mm



Surface Material: Aluminium Alloy
 Application: Remove Burrs
 Speed: 6000 rpm
 Feed: 1000 mm/min
 Depth: 0.5 mm

Each of these ceramic fiber bristles are abrasives. Softer touch with higher grinding power helps achieve the appropriate surface roughness level without excess shaving and material removal.



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Laser Technology

Reliabotics' fiber laser delivers high pulses using Master Oscillator Power Amplifier (MOPA) technology. The high peak, high frequency pulses remove surface layers and contaminants from materials without damaging the base material.

Characteristics

100-300 W MOPA laser at 1043 nm

- Long life cycle
- Robust in dynamic environment
- Clean, simple & effective
- Cost effective
- No post processing requirements
- High level of accuracy
- Robot & Integration Ready



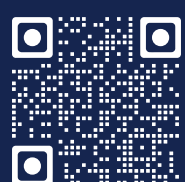
Plasma Technology

Reliabotics offers the industry's most advanced atmospheric Plasma surface treatment system utilizing high voltage DC Plasma discharge in atmospheric air. The versatility of this technology allows full robotic integration or can be used as a standalone unit.

Characteristics

PlasmaTEC-X™ by Tantec ensures a constant nozzle discharge flow with automatic adjustment.

- Cost effective & eco-friendly
- Treats both plastic and metal surfaces
- Multiplexing head configuration for wider area
- Easy maintenance and lower operating cost
- Designed for maximum utility and minimum space
- Works on 110V or 220V without compromising power
- Robot & integration ready



RSTG Hybrid Solutions

Reliabotics Surface Technologies Group (RSTG) is an advanced sourcing and engineering group that specializes in delivering processes unique to substrates and materials. Reliabotics offers discrete and multi-process solutions for surface treatment by combining two or more processes using proprietary products, technologies, and robotic work cells.

Brush + CO2

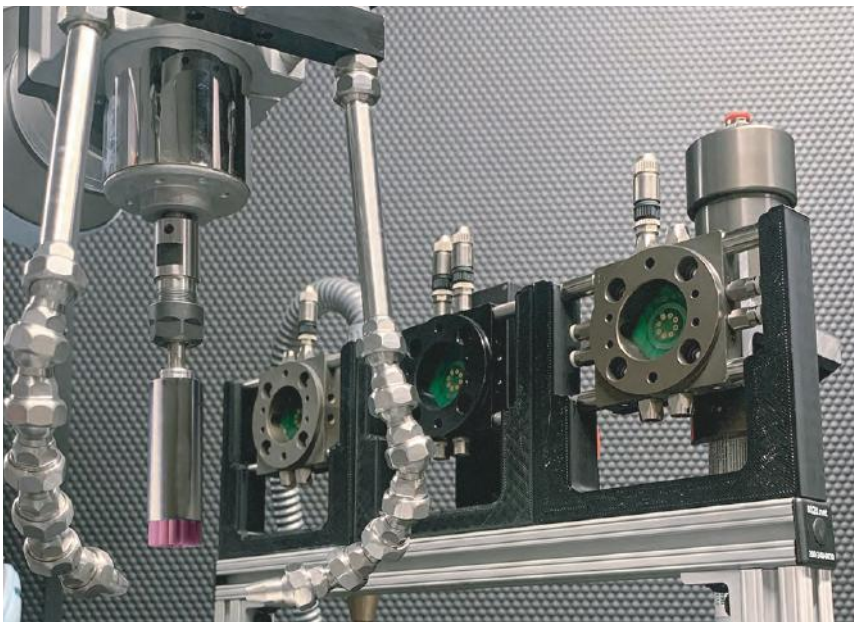
Provides ready to ship parts after surface finishing and cleaning

CO2 + Plasma

Prepares surface for high reliability bonding

Laser + CO2

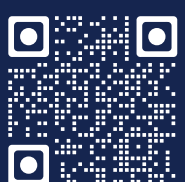
Introduces cooling and cleaning effect during ablation and etching.



Fully integrated and cost-effective surface treatment robot work cells are available with options for inspection and material handling with built-in filtration for your custom applications. The RSTG is a one-stop solution from initial analysis to complete engineered solutions incorporating unique or hard to find process equipment and integrated solutions requiring robotics or automation.

Any metal, alloy, glass, plastic, ceramic, fiber or composite material

- Substrate cleaning
- CO2 Spray Cleaning
- Surface preparation for chemical bonding
- Adhesion promoters for paint and coatings
- Surface modification
- Abrasives and micro-abrasives
- Nano-ceramic coating
- Nano ceramic proprietary brushes and fiber
- High reliability adhesion solutions
- Material smoothing finishing, deburring and polishing
- Active compliant grinding and sanding
- Laser and photonic based surface modification
- Marking, ablation, micro-machining
- Machine Vision Inspection and Test
- Pull testing and Strain Analysis
- R&D and process development



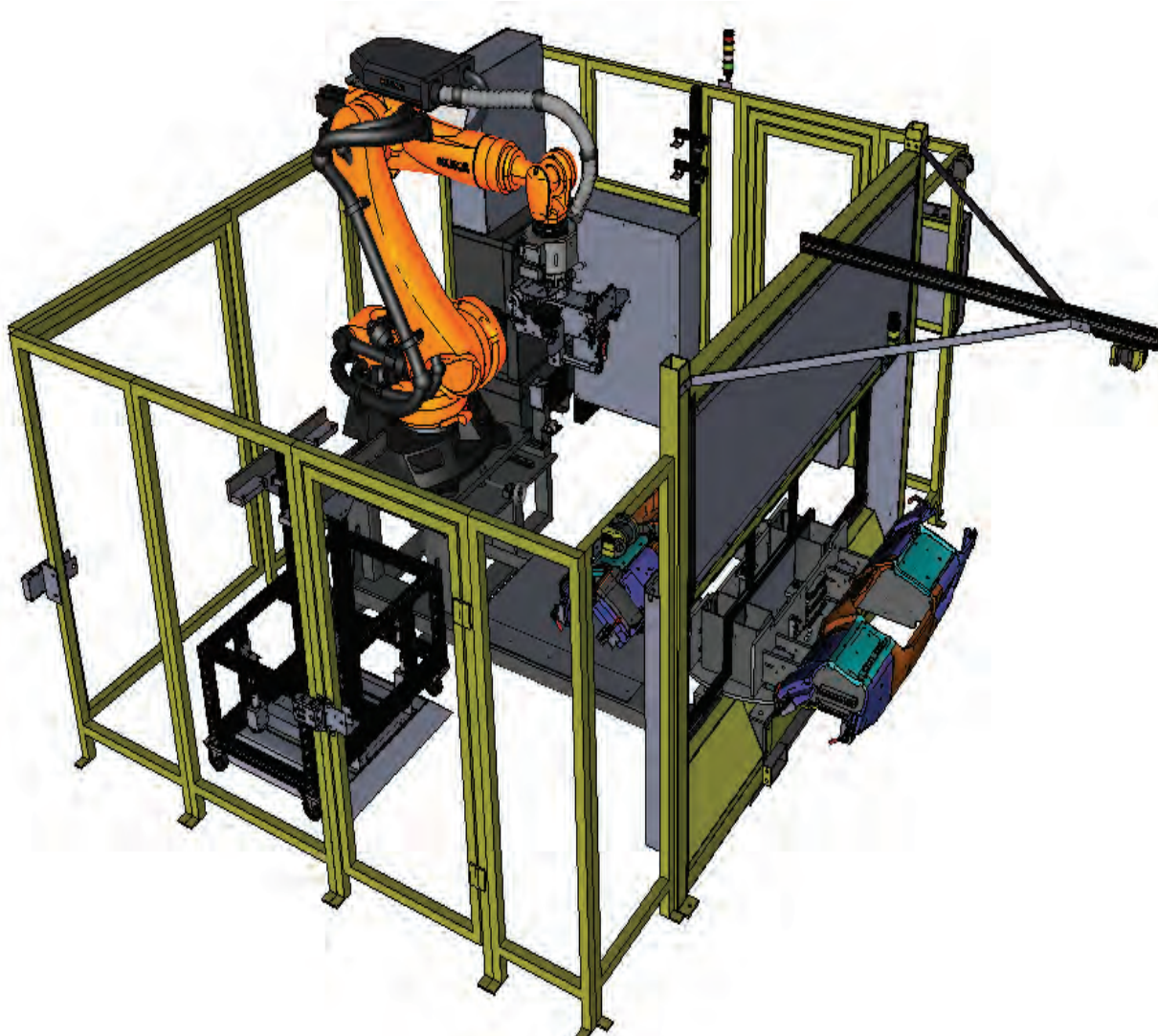
Complete Robotic Automation Solutions

Reliabotics offers Roboroom; a turnkey, modular automation work cell for easy robotic integration with PLC controls, machine vision, end-of-arm tooling, conveyance and feeding systems. RoboRoom replaces manual manufacturing processes, while increasing product quality and production throughput with a quick return on investment.



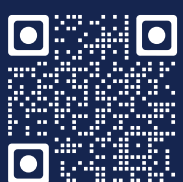
Turnkey Work Cell (RoboRoom)

- Industry standard components
- Easy to program & deploy
- Configurable, modular & scalable
- Quick ROI
- Industry 4.0 ready
- Optional Conveyance & Feeders



Custom Robotic Work Cell

- For special custom applications
- Ideal for medium-large parts
- Customizable cells for large parts
- RIA 15.06 Safety Compliance
- For medium-large robots

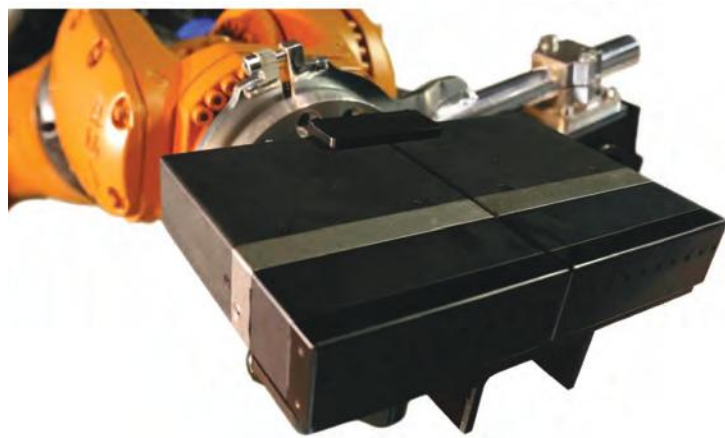


Competitive Advantage

Reliabotics is a full service robotic integration and automation company specializing in surface treatment. Reliabotics turnkey and custom platforms are designed and built to meet the highest industry standards. Reliabotics provides comprehensive service and support including test and demo of customers' parts for design proof-of-concept.

CO2 Cleaning Technology

- Eco-friendly & uses recycled CO2
- Consumes 5x less CO2 than other technologies
- Reduces process equipment footprint
- Eliminates VOC's and water
- Variety of nozzles for various parts
- Robust system with modular spare parts
- Robot ready with unique nozzle design



Nano-Ceramic Brush Technology

- 8x longer brush life
- 60x more grinding power
- Reduce cycle time
- Increase feeds and speeds
- Used both dry and wet
- Used with robot, CNC or other machining platforms
- Custom grits for special applications



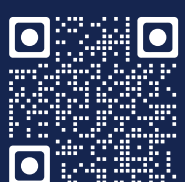
Laser Technology

- High quality & cost effective
- Optional vision assisted laser processing
- High speed process for marking, welding, cutting, and surface processing
- Minimal service requirements
- Eco-friendly & simple to operate



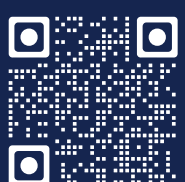
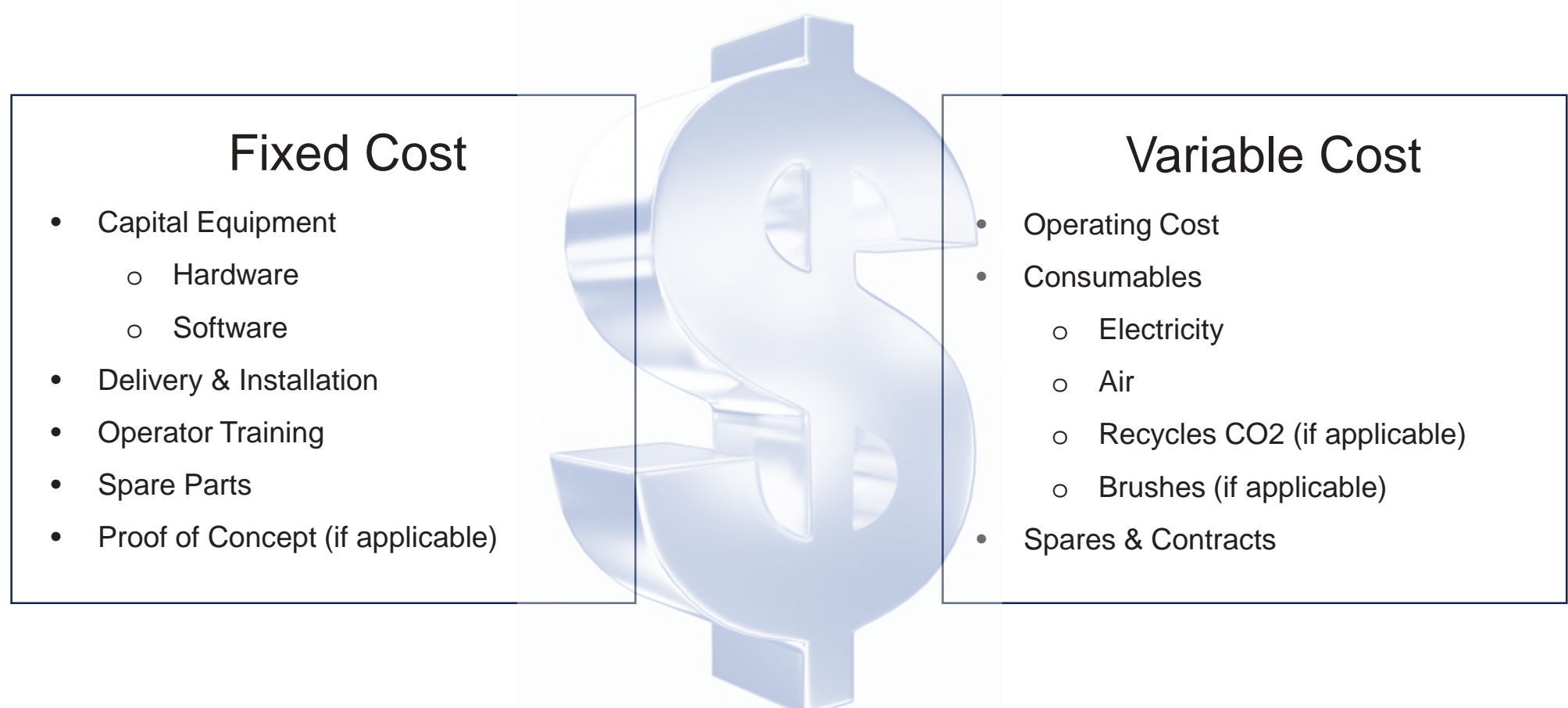
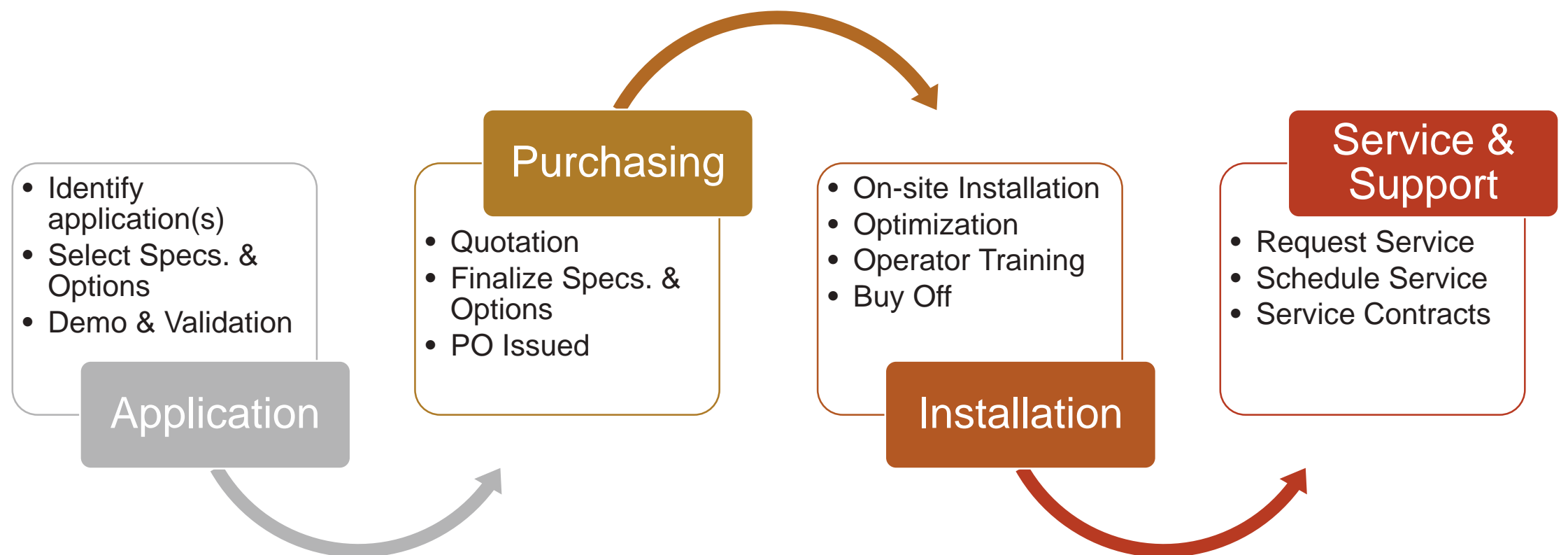
Plasma Technology

- Easy installation & operation
- High speed production
- Potential free discharge with output control
- PlasmaRemote™ & Control Signals
- Automatic discharge air regulation
- Standby Air flow



Total Cost of Ownership

Reliabotics' advanced, modular automation products and solutions are based on our proven robust designs and quality production backed by our outstanding service team. Engineered for fast payback, our systems' overall cost of ownership is one of the most competitive in the industry. Our expert teams work closely with customers to identify key automation and business challenges to provide comprehensive technical solutions and purchasing options.



Return On Investment (ROI)

ROI in the automation industry is a process by which the initial cost of capital expenditure and its daily operating costs are recovered in a given period of time. Our customers achieve a quick ROI based on their specific use of automation by reducing labor, increasing production throughput and product quality, with the option to operate over multiple shifts. Typical ROI for standard products is <12-18 months.

ROI Factors

- Labor Cost
- Hours of Operation
- Yields & Throughput
- Floor Space
- Safety
- Downtime



Flexible Purchasing Options

Reliabotics offers multiple financing options to empower our customers to easily adopt and operate the latest automation technologies to address different business needs and capital budget. Reliabotics’ purchasing, leasing and RaaS (subscription) financing options are designed to provide a quick, effective and convenient way to improve your operations and increase profitability.

Buy Option

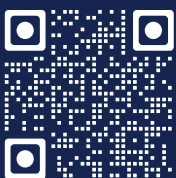
Reliabotics offers customers to purchase directly from Reliabotics with fixed cost of hardware, software, installation, and programming. Service & spare parts packages are available with direct purchasing for quick maintenance and minimal down-time. Direct purchasing and buy option provides the quickest ROI.

RaaS Option

RaaS model allows adoption of latest technologies without long-term commitment to purchase, own, program or service the equipment. A monthly subscription covers all aspects of deploying and using the robotic solution. It allows users to adopt new technologies without high upfront cost, with Pay-Go options.

Lease Option

Reliabotics offer products and solutions through a third party lease program. This option allows the customers to convert one time capital equipment cost to monthly operational cost to ease the cash flow.
Rental: Some products qualify for monthly rental program that allows the customers to test & develop their process internally.

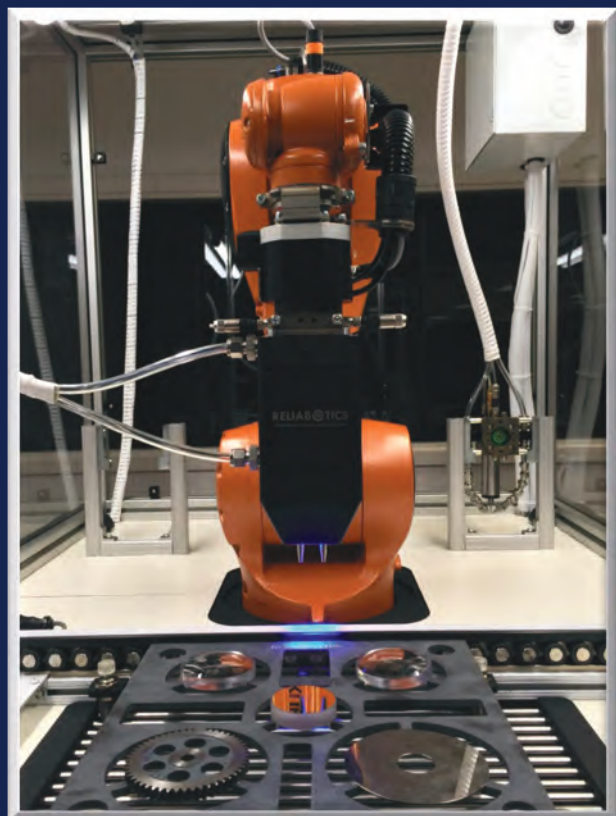


Reliabotics Overview

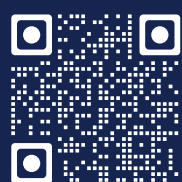
Reliabotics offers standard products and turnkey, modular automation work cells with expertise in surface treatment and surface finishing for various industrial applications involving precision cleaning, surface preparation, marking, deburring and polishing.

Key Features:

- Advanced modular robotic work cells for many industrial applications with quick ROI
- Standard products and software offerings
- Comprehensive service and support model
- Environment friendly solutions
- Safety standards compliance
- Work with partners, distributors and integrators
- Competitive pricing with flexible purchasing options
- First in the surface treatment industry to offer RaaS model for turnkey solutions



Contact us for onsite demo, reports & sample testing through our R&D Lab



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