



## AI Vision Guided Robotic Wide Belt Sanding Cell RG1200 for Automated Metal Deburring

Our Product Introduction

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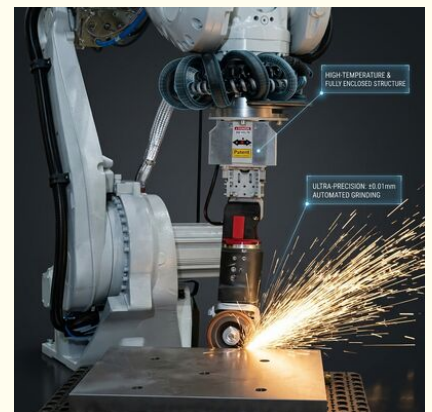
### Basic Information

- Place of Origin: China
- Brand Name: SKD
- Certification: CE
- Model Number: RG1200
- Minimum Order Quantity: 1 set
- Price: USD 45000-120000
- Packaging Details: Shrink wrapped and reinforced steel pallet, seaworthy wooden case
- Delivery Time: 45-70 days after deposit
- Payment Terms: TT / LC at sight
- Supply Ability: 30 sets per year

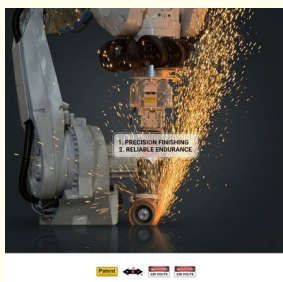


### Product Specification

- Robot Payload: 170 Kg
- Robot Reach: 2650 Mm
- Sanding Head Motor: 22 KW Frequency Controlled
- Abrasive Belt Size: 2500 X 1380 Mm
- Max Working Width: 1350 Mm
- Material Thickness: 1-60 Mm
- Vision System: 3D Structured Light Camera
- Cycle Time: 35-70 S Per Part
- Control System: Industrial PC, 15 Inch Touch Screen
- Power Supply: 380 V 50 Hz
- Footprint: 4200 X 3600 X 2600 Mm
- Machine Weight: 6.5 Ton
- Highlight: **Robotic Wide Belt Sanding Cell,  
AI Vision Guided Grinding Machine,  
Automated Metal Deburring Robot Cell**



### More Images



## Product Description

The SKD RG1200 robotic wide belt sanding cell brings AI vision guidance into everyday metal finishing work. Instead of an operator lifting heavy laser-cut or plasma-cut blanks onto a wide belt head by hand, a six-axis industrial robot locates each part on the pallet, picks it, presents it to the sanding drum at a controlled angle, and stacks the finished component. The cell is built for job shops and OEM production lines that run high part variety but cannot justify dedicated fixtures or robot programming for every batch.

Every workpiece is identified by a 3D vision system before it is touched. The vision module matches the live scan against stored part recipes, compensates for position and rotation errors on the pallet, and sends the corrected path to the robot controller within a fraction of a second. Because the part is measured rather than fixtured, mitred corners, cut-outs, weld seams and burnt edges are all treated with the same repeatable motion, and the abrasive belt wears evenly instead of being loaded on one spot.

## Key Features

- **Vision Guided Robotic Grinding:** A structured-light 3D camera identifies randomly stacked parts and corrects pick position automatically, so mixed pallets can be processed without mechanical fixtures or manual teach-in.
- **Automated Deburring Cell:** Picking, sanding, edge rounding, inspection and stacking run in one continuous cycle, releasing skilled operators from repetitive lifting and dust exposure.
- **AI Part Recognition:** The recognition library stores hundreds of recipes; new parts are added by presenting one sample, and the system generates the grinding path without robot programming knowledge.
- **Programming-Free Operation:** Operators select a part number from the touch screen and press start. No pendant teaching, no CAD import and no external integrator are required for a new batch.
- **High Power Laser Cut Edge Grinding:** A 22 kW sanding head with frequency control removes dross, oxide and hard burrs left by high power fiber laser and plasma cutting, delivering a consistent Rz finish on thicknesses from 1 mm to 60 mm.
- **Consistent Surface Finish:** Force-controlled compliance keeps belt pressure constant across the part, so the first and the last piece of a 500-piece order measure the same.
- **Flexible Integration:** The cell can be supplied as a stand-alone island or connected to an existing wide belt sander, edge rounding machine or conveyor line through a standard PLC handshake.
- **Safety By Design:** Fenced working envelope, safety-rated scanners, dual-channel E-stop and interlocked service door meet CE machinery requirements.

## Technical Specifications

| Parameter             | Specification                                            |
|-----------------------|----------------------------------------------------------|
| Robot payload / reach | 170 kg / 2650 mm, six-axis industrial robot              |
| Sanding head motor    | 22 kW with frequency inverter, belt speed 5-25 m/s       |
| Abrasive belt size    | 2500 x 1380 mm, pneumatic tensioning and oscillation     |
| Working width         | 1350 mm single pass, multi-pass up to 2600 mm            |
| Material thickness    | 1 mm - 60 mm                                             |
| Workpiece weight      | Up to 120 kg per part with magnetic or vacuum gripper    |
| Vision system         | 3D structured light camera, recognition time under 0.5 s |
| Cycle time            | 35 - 70 s per part depending on edge length and finish   |
| Control system        | Industrial PC with 15 inch touch screen, recipe database |
| Power supply          | 380 V / 50 Hz, 30 kVA installed load                     |
| Air supply            | 0.6 MPa, 350 L/min dry compressed air                    |
| Footprint / weight    | 4200 x 3600 x 2600 mm, approx. 6.5 ton                   |

## Applications

The RG1200 is used wherever flat metal parts leave a cutting machine with sharp edges and oxide. Typical work includes laser-cut brackets, plasma-cut base plates, flame-cut structural components, stainless steel kitchen panels, aluminium cover plates, elevator door skins and agricultural machine housings. It suits sheet metal fabricators running high mix low volume production, subcontract deburring houses that process dozens of part numbers per shift, and OEM plants that need a repeatable edge radius before powder coating or welding.

Because the cell grinds by path rather than by fixture, it also handles parts that are difficult to clamp, such as thin panels that would deflect under

a conventional through-feed sander. Slag removal on flame-cut plate, weld seam dressing on fabricated frames and oxide removal before painting are all covered by the same recipe structure, which means one investment replaces several manual finishing stations.

### **Packaging & Quality Assurance**

Each cell is assembled and run-tested in our workshop before shipment. A factory acceptance test records cycle time, surface roughness and repeatability on customer samples, and the report is delivered with the machine. The robot, controller and vision unit travel in individual seaworthy cases, while the base frame and sanding head are fixed on a reinforced steel pallet with rust-preventive film and shrink wrap. Standard packing is suitable for 40HQ container loading; wooden case packing and fumigation certificates are available on request.

Commissioning support includes remote guidance over video link, a two-day on-site training option for operators and maintenance staff, and a twelve-month warranty on mechanical parts. Spare belts, gripper pads, vision calibration targets and a documentation set in English are supplied with every delivery. Our service team keeps a stock of critical components such as belts, sensors and pneumatic valves so that production downtime stays measured in hours, not weeks.



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