

VERSATILE

Suitable for a Variety of Scenarios

01



Visual positioning and sorting for loading a certain 3C product

For unstructured incoming materials, the Tianji SCARA uses a 9-point calibration method for visual recognition. It communicates with cameras to determine the position coordinates, assesses the orientation of the materials, and filters them for precise material handling. The robot places materials accurately in specified locations.

Robot model:SR3D/SR3
Key Features:Despite the small size of the products and the need to differentiate orientation, the system can still accurately identify and efficiently handle the materials with a precision requirement of 0.05mm.

02



Medical Device Industry: Fully Automated Loading and Unloading

In the medical device industry, automated systems employ CCD technology for precise positioning and assembly of silicone rings. This system can detect tiny cracks in silicone rings and is compatible with various colors. Two SCARA robots perform clip insertion with high precision, maintaining an error margin within 0.04mm. The system also adjusts part positions in real-time during high-speed operations using camera imaging.

Robot Model: SR6D/SR6
Key Features: Designed for small product sizes, ensuring precise recognition and efficient handling with a precision requirement of 0.01mm.

03



Copper Foil Placement

The system utilizes upper dual cameras to identify the position and angle of copper foil. Tianji SCARA communicates with these cameras to pinpoint locations, directing five suction nozzles to accurately pick up the copper foil. A lower camera captures further images to calculate compensation values, ensuring precise placement.

Robot Model: SR3D/SR3
Key Features:Integrates communication between the robot and three cameras, featuring automatic calibration and compensation calculations by the lower camera for error correction. Precision requirement: 0.03mm.

04



Hardware Parts Visual Inspection and Stacking Arrangement

The system utilizes a vibratory feeder with dual channels for feeding, while cameras capture and locate the orientation and side of each hardware piece. Tianji SCARA robots pick up items from the conveyor, adjust their orientation to uniform directions, and place them on a product table. A second SCARA simultaneously picks up two hardware pieces from the product table, using a built-in stacking program for rapid arrangement.

Robot Model:SR3D/SR3
Key Features:Identifies unordered materials. Built-in stacking program for efficient arrangement. Precision requirement: 0.05mm.

Application case

Automotive Electronics



Assembly of automotive wiring harnesses
model number :EVO3D

Automotive Electronics



Deburring of universal joints
model number :SR6D

New Energy



Loading and unloading of square-shaped battery components for new energy applications
model number :SR20D

New Energy



Loading and unloading for connector injection molding machine
model number :SR20D

New Energy



Testing of power battery components
model number :SR6D

Other industries



Household Products - Fully Automatic Insulated Cup Assembly Production Line
model number :SR6D



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TIANJI ROBOT BROCHURE - SRD SERIES

SCARA ROBOT



GUANGDONG TIANJI INTELLIGENT SYSTEM CO.,LTD.

TIANJI ROBOT - SRD

The TIANJI SCARA SRD series robots are designed for high speed, precision, and stability. They feature a working range of 400mm to 1000mm and a payload capacity of 3kg to 20kg. These robots are ideal for applications such as handling, assembly, vision inspection, and dynamic loading/unloading on conveyor belts. They are extensively used across various industries including 3C electronics, automotive electronics, lithium batteries, home appliances, and hardware.

01

Far More than Speed

With a fastest standard cycle time of just 0.35 seconds, production pace is significantly enhanced. This system supports a variety of operating modes including traditional teach pendant programming, PC-based teaching software, HMI touchscreen programming, remote I/O, and various levels of PLC control, accommodating diverse control needs.

02

Precise and Efficient

With a repeatability precision of $\pm 0.01\text{mm}$ and $\pm 0.005^\circ$, the system ensures high efficiency, accuracy, and stability. It operates continuously 24/7 at high speeds, maintaining consistent performance throughout.

03

High Inertia, Enhanced Stability

The SR10D and SR20D models feature a J4 joint with exceptionally high allowable inertial torque, reaching up to $1\text{kg}\cdot\text{m}^2$, which meets the demands for heavy loads. These robots are especially suitable for handling, loading/unloading, and assembly operations in the lithium battery industry, where stability and capacity for large loads are critical.

04

Inverted SCARA: Breaking Spatial Limits with Compact

Considering spatial constraints and cost-effectiveness, it can partially replace parallel robots and inverted vertical multi-joint robots, enhancing efficiency in every inch of the production space. Suitable for sorting, tray loading, assembly, and inspection processes in industries such as 3C and packaging.

05

TIANJI Fusion Control System

The SRD series boasts superior acceleration and speed control capabilities, significantly enhancing operational efficiency. The system excels in vibration suppression. Its unique algorithm automatically adjusts acceleration and deceleration to ensure optimal robot lifespan and performance.

