Wisdomshow DS-3200 X-Ray Automatic Counting Machine with 99% Accuracy and 17-inch Detector for SMT Electronic Components

Our Product Introduction

for more products please visit us on bgaxraymachine.com

Basic Information

- Place of Origin: Guangdong, China
- Brand Name: Wisdomshow
- Minimum Order Quantity: 1
- Price: CN¥546,642.40

Product Specification

- Weight: 2500 Kg
- Power: 2400 W
- Voltage: 220V/110V
- Feeding Speed: 4-8s
- Loading Capacity: 10kg
- Equipment Size: 4500*1200*2118mm
- Equipment Weight: 2800kg
- Image Size: 430*430mm
- Detector Size: 17-inch
- Counting Accuracy: 99%
- X-ray Tube: American VJ
- Material Plates: Four 7-inch Or One 13-17-inch
- Algorithm: AI Deep Learning
- Data Upload: Cloud Database
- Display: 17-inch Ultra-clear Screen

More Images

Product Description

Wisdomshow DS-3200 X-Ray Automatic Counting Machine

The DS-3200 is an advanced online automatic counting machine that utilizes X-ray technology with 99% accuracy for SMT electronic components. Featuring a 17-inch detector and AI-powered software, this system revolutionizes component counting and inventory management.

Key Features & Technology

The DS-3200 employs X-ray perspective principles combined with proprietary AI algorithm software to rapidly and accurately count components in trays, with automatic scan code upload and data integration with MSE, ERP, and other systems.

Advanced Hardware Components

American VJ X-ray tube for long life and maintenance-free operation

17-inch ultra-clear flat-panel detector for fast, distortion-free imaging

Simultaneous counting of four 7-inch material plates or one 13-17 inch plate

Operational Benefits

Significantly reduces counting time and eliminates manual labor requirements

Enables staff reallocation to other production tasks

Minimizes line changeover and downtime

Digital data output for barcode printing or direct database upload

Inventory Management Advantages

The DS-3200 counting machine dramatically improves material shortage prevention, reduces loss and leakage, and enables digital management of material storage. This results in lower inventory costs and improved inventory accuracy.

Non-Invasive Counting

No need to open packaging bags, maintaining coil integrity and material moisture resistance.

AI Deep Learning Technology

Our proprietary software utilizes artificial intelligence deep learning algorithms that automatically identify components and apply appropriate counting algorithms without manual binding.

Learning Capabilities

- Length-width ratio analysis
- Component corner angle measurement
- Internal to external component slope calculation
- Image deformation pattern recognition

As component counting operations increase, the system becomes progressively more accurate. The AI can easily handle similar components and larger plates with enhanced precision over time.

芯片内部检测
In-Chip Detection
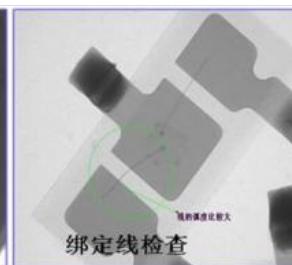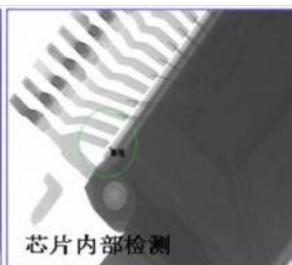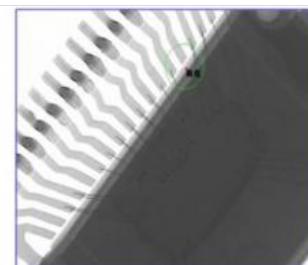
绑定线检查
Binding Line Detection
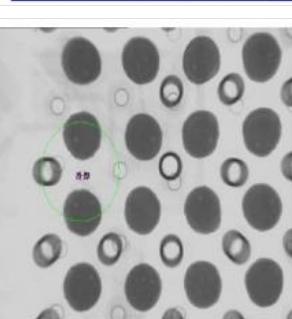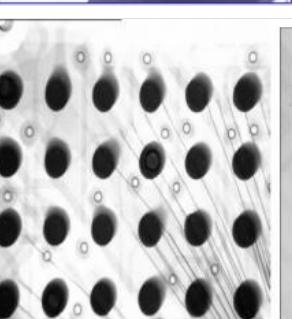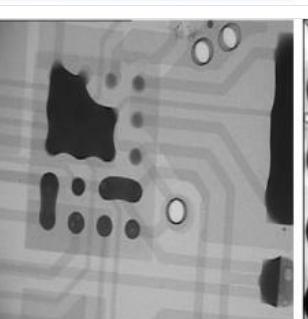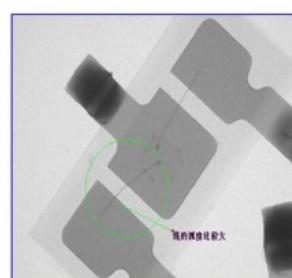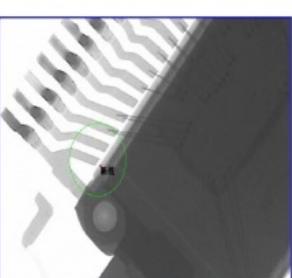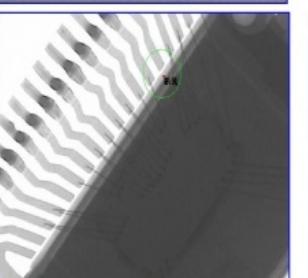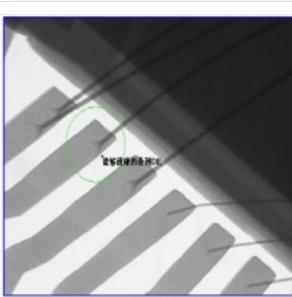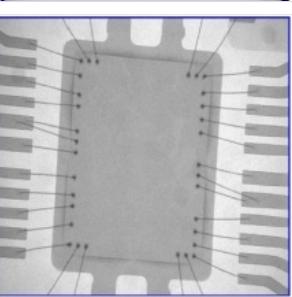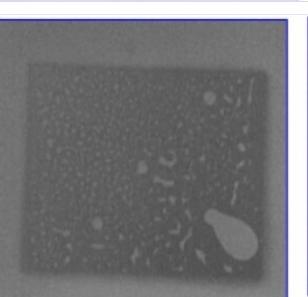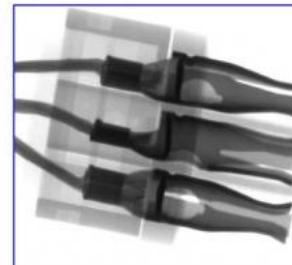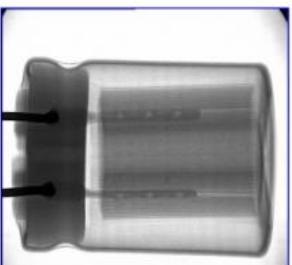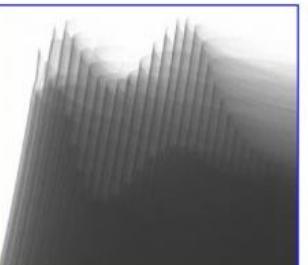
Continuous Tin Electrodeposit

Skewing

Cold Welding

Wafer Testing

IC封装 pack
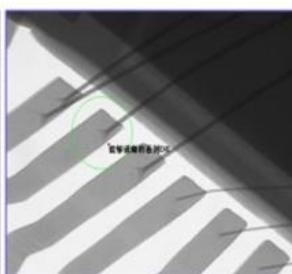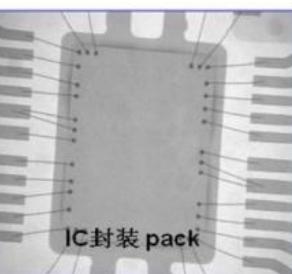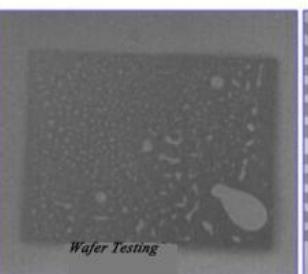
Cloud Database Integration

All counting data and images are uploaded to our secure cloud platform. Our engineering team continuously optimizes algorithms based on data collected from all deployed devices, with regular updates pushed to customer databases.

Over time, counting accuracy approaches 100% with expanding component coverage. When new components are encountered, existing

database matches enable immediate software updates for higher efficiency and accuracy.

Shenzhen WisdomShow Technology Co., Ltd.

Wisdom and Innovation, Sincere in Service,
Refine on the Quality, Looking Forward to the Future
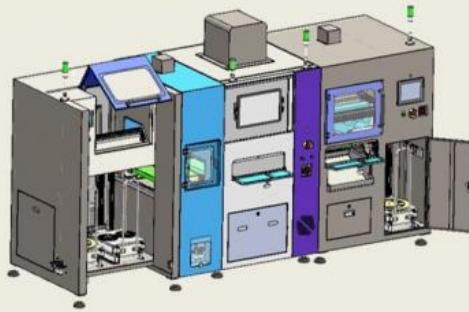
DS-3200 online counting machine

Factory Introduction

Shenzhen Wisdomshow Technology Co., Ltd is an enterprise of X-Ray inspection equipment, X-Ray counting machine and BGA rework station integrating R&D, production, sales, trade and service.

Our company appoints talents, continuously introduces high-end talents, employees have a strong team spirit, has built an online sales platform and communication system, and guarantees to provide excellent after-sales service, so that the company has won good reputation and evaluation at home and abroad.

We has set up sales and service outlets in more than 30 countries including the United States, Italy, Poland, Brazil, India, Algeria, Thailand, and Vietnam. After years of continuous efforts, our products have accumulated a good reputation.

1-1 Intelligent Warehousing Operation Process

MES/ERP Digital control systam

Real-time upload

Work order

SMT production line

Incoming material

Production plans

X-ray component counter

Intelligent warehousing

AGV handling trolley

Inventory of incoming materials

Counting and warehousing

Delivery to production line

Material returned by production line

1-2 Digital Control System Integration Solution and Process

Usage requirements and pplication scenarios

1. After the X-ray intelligent counting machine completes the counting , the resulting data is uploaded to the digital control system for updating
2. Main application scenarios: ① work order return ② single LPN inventory ③ initial inventory / re-inventory.

Docking plan and process

Integration of X-ray Intelligent Counting Machine

1. Counting machine business type

- Offline Model: Not interfaced with IMS system, direct counter
- Work Order: Applicable only to the operation scenario of work order returns; LPN must be in 'Pending Push' status.
- Inventory List Counting: Applicable to IMS 'Self-walk' inventory feature. LPN must be in the 'Locked' status of the inventory list.
- Single LPN Counting: Quantity correction for a single LPN in 'In Stock' status.

Add checkbox options on the operation interface of the counting machine Offline Mode/Work Order Return/Inventory List Counting/Single LPN Counting.

2. The data counting machine calls the IMS interface and transmits the following information to IMS: LPN number, and business type code.

3. LPN Verification: IMS checks if the current status of the LPN is consistent with the selected business type.

- Validation Passed: IMS returns an OK signal, and the data counting machine starts counting, proceeding to the next step.
- Validation Failed: IMS returns an NG signal, and the counting machine displays IMS error information in a pop-up dialog on the operation interface, stopping the counting process.

4. The counting machine transmits counting result data back: LPN number and the counted quantity

- IMS updates the remaining quantity of the LPN and returns the result information.
- The counting machine interface displays the result of IMS data update.

1-3 Introduction to Label Template Printing Rules

P/N: 803414260 QTY: 48 PCS
SUPLET
RID: SLN220718000032
D/C: 2228 L/N: 2228
Vendor: 苏川 ■■■ 科技有限公司
Name: XLKRNTP4850C2D1-A
Desc: 500*352*89mm, ■ ADC12/A380.

QR code content

① V1016 & ② 2228 & ③ 2228 & ④ 803414260 & ⑤ 48 & ⑥ 2022/7/10 & ⑦ SLN220718000032 & ⑧ M00773

Parsing detail

line number	field name	Field type	paragraph separator
①	Supplier Code	character	&
②	D/C	character	&
③	Production Batch	character	&
④	Material Code	character	&
⑤	Reel ID Count	character	&
⑥	Production Date	character	&
⑦	ReeL ID	character	&
⑧	Manufacturer Code	character	&

2-1 Equipment Advantage

1. High Level of Automation:

Achieve fully automated counting, printing, labeling, and material handling in intelligent online inspection operations. Digitally manage material storage to reduce inventory costs and enhance material counting accuracy.

2. High Detection Accuracy:

Based on AI intelligent recognition algorithms, the detection accuracy is excellent. The calculation accuracy for conventional components exceeds 99.99%. Equipped with a high-definition camera and proprietary intelligent algorithms, it achieves high scan code recognition rates and precise labeling.

3. Strong Detection Adaptability:

Suitable for various types of surface mount components (SMD). It has high compatibility and can rapidly and accurately detect 7-15 inch reels (upgradeable to 17 inches), Jedec Trays, IC moisture-sensitive packages, and other materials. No need to unpack for detection, preserving the integrity of the reel and not affecting moisture resistance.

4. User-Friendly Detection:

Counting data is automatically recorded and output, supporting integration with digital control systems. The system enables fully automated online detection without manual intervention. Customizable fully automatic loading and unloading modules flexibly adapt to various production scenarios.

5. High Detection Efficiency:

Detection speed is 8-10 seconds per reel, significantly improving efficiency and reducing the need for manual labor.

6. Equipment Related Qualifications:

This product obtains the exemption certificate, radiation safety is guaranteed, at the same time can let the user exempt: operator occupational health physical examination, participate in the "nuclear technology use of radiation safety and protection examination" to obtain a certificate on the job, the equipment placed in a specific area and other ancillary work.

Additional Machine Views

2-2 Working Principle

X-ray Source → DS-3200 ← Radiation Shielding Enclosure

Acquisition of ray source charge signals

monitor

Image Processing + AI Algorithm for Material Quantity Recognition

Flat Panel Detector → reel

Industrial PC

Feeding Platform

Convert the Charge Signal into RAW Image.

2-3 workflow

Infeed Direction

Outfeed Direction

DS-3200 Intelligent online counting machine

Automatic Loading - (AGV/Cart/Docking Station/Production Line)

Barcode Recognition - Scanning Area

Automatic Identification and Counting of Materials - Counting Area

Automatic Label Printing and Application - Labeling Area

Automatic Unloading - (AGV/Cart/Docking Station/Production Line)

2-4 Introduction to Parameters

DS-3200 Intelligent online Counting Machine

X-ray Source | Flat Panel Detector | Counting Parameters | Equipment Specifications

X-ray Source		Flat Panel Detector		Counting Parameters		Equipment Specifications	
Tube Voltage	80KV	Detector Type	Non-Silicon Crystal 17-inch Flat Panel	Max Tray Size	17 inch	Total Power	1.5KW
Tube Current	0.2mA			Max Tray Thickness	100mm	Equipment Dimensions	3470*1290*2100mm
Cooling Method	Air Cooling	Pixel Matrix	3072*3072	Compatible Mini Component Size	Imperial 01005	Equipment Weight	about 1500KG
Focus Size	35μm	Pixel Size	140μm	Counting Speed	22 seconds (for the entire process)	Unloading Method	Left to Right/ Right to Left
X-ray Radiation Angle	30°	Image Size	430*430mm	Counting Accuracy	99.99% (01005 for ex.)	Air Pressure	0.5Mpa
Radiation Safety	< 1uSv/hr (International Standards)	Detector Size	470*470*35mm	Worktable Size	430mm*430mm	Power Supply Voltage	220V 50-60Hz
		Image Output Time	1s	Worktable Load Capacity	10KG		

3-1 Online Component Counting Application Scenario (AGV Loading - CW Customer)

Example of Online Automatic Component Counting Application with AGV (Automated Guided Vehicle) Transport Cart

Loading Section

Scanning Section

Picking Section

Labeling and Unloading Section

Advantages of AGV Automatic Loading:
1. Unrestricted equipment placement.
2. Real-time data upload to the system.
3. Accurate and reliable data integration.

3-2 Online Component Counting Application Scenario (Cart Loading - DX Customer)

Example of Online Automatic Component Counting Application with Cart Loading

Labeling and Unloading Section

Picking Section

Scanning Section

Loading Section

Advantages of Cart Loading:
1. Facilitates component counting according to work orders.
2. Controllable order of material feeding and receiving.
3. Real-time data upload to the system.
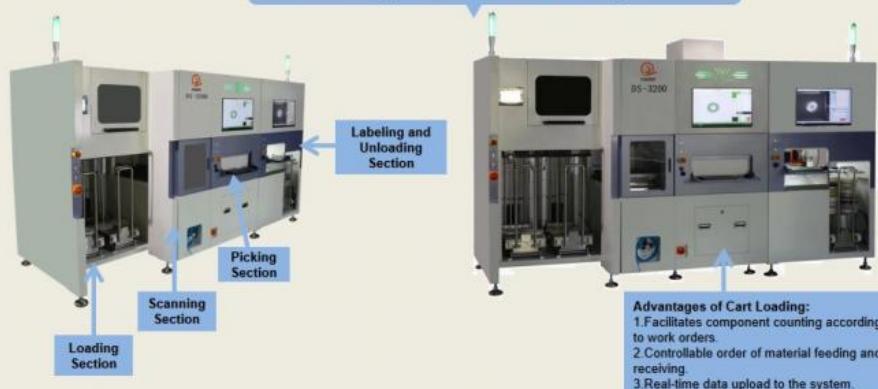
3-1 Online Component Counting Application Scenario (Corner Dock Loading - ZY Customer)

Example of Online Automatic Component Counting Application with Corner Dock Loading

Loading Section

Scanning Section

Picking Section

Unloading Section

Advantages of Corner Table Loading:
1. Reduced workspace requirements.
2. Small footprint.
3. Real-time data upload to the system.
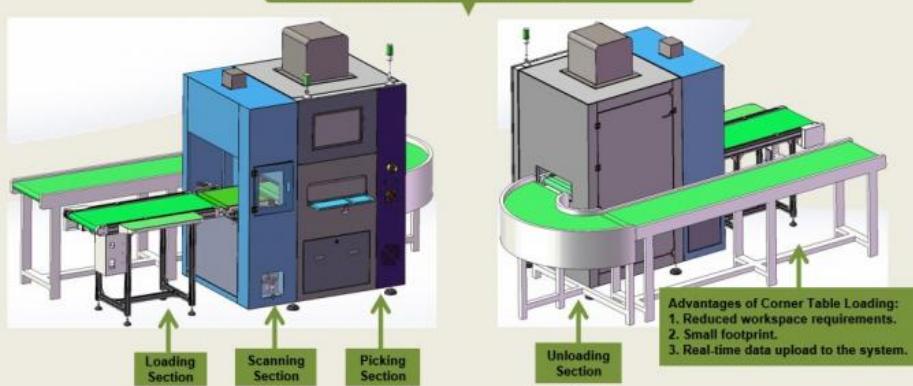
3-3 Inline Ordering Application Scenarios (Assembly Line Loading - HK Customers)

Example of Online Automatic Component Counting Application in Conjunction with a Production Line

Loading Section | Scanning Section | Picking Section | Unloading Section

Advantages of Onloading on the Production Line:
1. Unrestricted Equipment Placement
2. Real-time Data Upload to the System
3. Diverse Utilization Scenarios
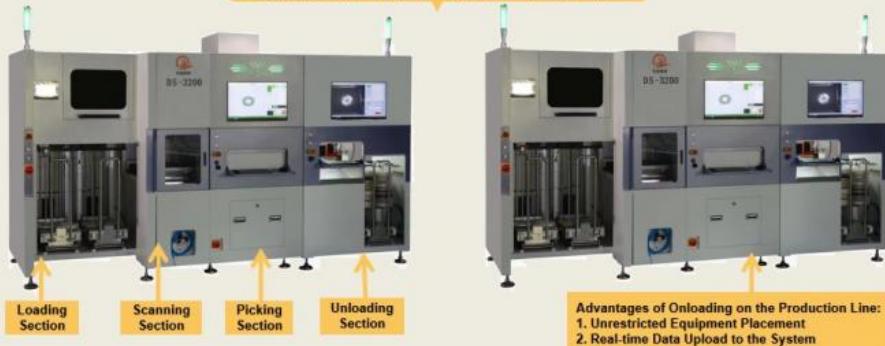
4 Automatic labeling function introduction

1. Through machine vision positioning, using high-definition cameras and proprietary intelligent algorithms, automatic labeling on the material tray can be achieved.

2. After automatic counting: automatically print a new label and affix it.

3. The new label can cover the original label on the tray, and the covering accuracy can reach 98%.

4. The new label can also be affixed to any position on the material tray.
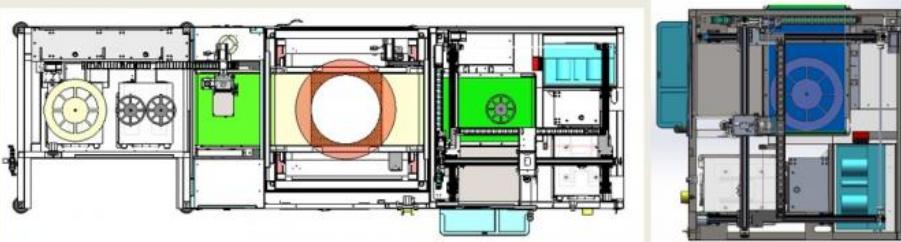
5-1 AI and Algorithms

1. Software Neuron Algorithm

A neural network is typically composed of multiple neurons widely interconnected. The overall behavior of a system depends not only on the individual characteristics of each neuron but may be primarily determined by the interactions and connections between the units.

The evolution direction of a system, under certain conditions, will depend on a specific state function.

nonlinear (math.) | non-limitation | Unconventionality | non-convexity

Artificial neural networks possess the capabilities of adaptation, self-organization, and self-learning.

Nonlinear relationships are a common characteristic in nature. The intelligence of the brain is a manifestation of nonlinear phenomena. Artificial neurons exist in two different states: activation or inhibition. This behavior is mathematically represented as a form of nonlinear relationship in artificial neural networks.

2. Artificial Intelligence Deep Learning Algorithms

1. The pick-and-place software utilizes artificial intelligence deep learning algorithms.

2. There is no need to bind components and algorithms; instead, AI is employed to automatically identify components and apply algorithms.

3. The algorithm can learn data from previously picked components, including:
- Aspect ratio
- Angles at each corner of the component
- Slopes between components from the innermost to the outermost
- Deformation patterns of component images from the innermost to the outermost, and so on.

4. As the number of component pick-and-place iterations increases, the accuracy of the picking results improves. The system becomes more adept at handling similar components and larger trays with ease.

3. Intelligent database

1. The equipment software adopts machine learning algorithms for automatic learning.

2. It analyzes a large volume of data records, automatically updating and fine-tuning the database.

3. Over time, the accuracy of equipment pick-and-place operations will approach 100%.

4. The coverage of component types will also become increasingly extensive.

5-2 Software Features

Counting Report

Integration with MES/ERP and other systems.

foreign object detection

Usage Timer for Fluorescent Tube

5-3 Speed & Accuracy

1.X-ray counting machine can be integrated with SMT residual material counting for enhanced intelligent warehousing；

2.Capable of counting four reels simultaneously, taking as little as 8 seconds, a single machine can save labor equivalent to 5-7 personnel.

3.Enhance the efficiency, reliability, and data-driven management of residual material counting and material warehousing.

4.For unconventional materials with inaccurate counting, provide model algorithm optimization updates, achievable within 24 hours.

5.As of now, the counting time and accuracy for materials of various sizes are as follows:

Name	Material Dimensions	Accuracy	Name	Material Dimensions	Accuracy	Name	Material Dimensions	Accuracy	Name	Material Dimensions	Accuracy
Resistor	01005	99.95%	Capacitor	01005	99.99%	Inductor	CD32	99.99%	MOS	2N7000	100.00%
	0201	99.99%		0201	99.99%		CD43	99.99%		2N7002	100.00%
	0402	100.00%		0402	100.00%		CD52	100.00%		2N7004	100.00%
	0603	100.00%		0603	100.00%		CD54	100.00%	IC	BGA	100.00%
	0805	100.00%		0805	100.00%		CD73	100.00%		QFN	100.00%
	1206	100.00%		1206	100.00%		CD75	100.00%		QFP	100.00%
	1210	99.99%		1210	100.00%		CD104	100.00%	Crystal Oscillator	4025B	100.00%
	1812	99.99%		1608	100.00%		CD105	100.00%		2016B	100.00%
	2010	99.99%		2125	100.00%		M1	100.00%		1612B	99.99%
	2512	99.99%		3612	100.00%		M2	100.00%		HC -49	99.99%
Tantalum Capacitor	TANT 4525	100.00%	Transistor	SOT 23	100.00%	Diode	M4	100.00%	Optocoupler		99.99%
	TANT 6640	100.00%		SOT 89	100.00%		M5	100.00%	Switch		99.99%
	TATN 7343	100.00%		SOT 363	100.00%		4148	100.00%	Terminal Block	TATN 7343	100.00%

5-4 Sample Counting Image

SMD Surface Mount Components Automatic Pick and Place System for Capacitors, Resistors, Inductors, Diodes, Transistors, etc.

Automatic Pick and Place of Full Reel Components (with Moisture Barrier Bag and Desiccant)

Automatic Pick and Place of Small Quantity Components in the Tail Reel.

Automatic Pick and Place of Loose Components

Automatic Pick and Place of JEDEC Tray Components.

Due to the X-ray (2D imaging) detection principle, stacked or non-flat materials cannot be accurately counted. Currently, for the entire industry, materials like pellets cannot be accurately counted using X-ray counting machines.

Packing & Shipping

Standard export wooden cases for secure transportation

Delivery within 2 workdays after payment confirmation

Shipping via TNT, DHL, FEDEX, air, or sea freight

Loading ports: Shenzhen or Hong Kong

Why Choose Wisdomshow Technology?

Direct Manufacturer - Complete control from design to assembly

12+ Years Experience - Over 20 R&D engineers specializing in PCB/BGA technology

Industry Leader - Largest BGA rework factory in China

Trusted Supplier - Vendor to HUAWEI, TCL, ZTE, MEIZU, KONKA, LENOVO, FOXCONN

Global Reach - Over 100,000 users worldwide

Superior Service - Speedy customer support with lifetime after-sales service

Efficient Delivery - Worldwide shipping with precision handling

Customers come to factory place order

Chad   Lebanon

Chad

Lebanon

Banglades

India

Turkey
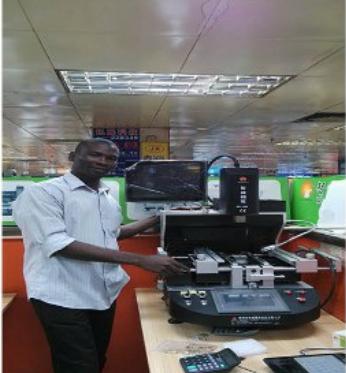
Nigeria

Sudan

Egypt

India

Bangladesh

Bangladesh

Asam Takina ▶ Wisdemshow Wds
June 7 at 1:27pm · 48

This is best brand forever I buy another brand I face problem but on this I'm
OK on my work

Unlike Comment Share

South Africa

Norway

Iraq

Saudi Arabia

Bangladesh

Jordan

France

Morocco

Egypt

Lebanon

Pakistan

Our Services

Customer Support

- 12-hour inquiry response time
- Direct manufacturer pricing
- One-year warranty with free training and lifetime technical support
- Comprehensive global shipping options with tracking
- Professional after-sales service team
- Complete manual and demonstration video included
- Flexible payment terms: T/T, Western Union, PayPal, Alibaba Pay, credit cards

Quality Assurance

- Comprehensive quality control with independent QA/QC inspectors
- CE & ISO certified products
- Free spare parts during 12-month warranty period

Demo operation videos for training

24-hour technical support response

Company Profile

Shenzhen Wisdomshow Technology Co., LTD. is a professional BGA rework station manufacturer committed to "professional, integrity, excellence, customer first" business philosophy.

Leading manufacturer of BGA rework stations

Over 10 years of industry experience

CE Certificate and ISO certified products

100% QC inspection before shipment

Customized branding available

Significant global market share

Frequently Asked Questions

Operation & Training

Q: Is this machine easy to operate for first-time users?

A: Yes, we provide comprehensive English manuals and guide videos. The machine supports both Chinese and English languages. Additional support is available via email, Skype, phone, video call, or Alibaba online service.

Technical Support

Q: What if the machine has problems?

A: We provide free parts replacement during the one-year warranty period.

Shipping & Packaging

Q: Is the packaging safe for delivery?

A: All machines are securely packed in standard strong wooden cartons with protective foam interior.

Payment Options

Q: What payment methods do you accept?

A: We accept bank transfer, Western Union, MoneyGram, PayPal, Alibaba Pay, AliExpress Pay, and credit cards.

Order with Confidence!

We understand concerns about ordering from China. Our company participates in Alibaba Trade Assurance. If we don't meet contract requirements for on-time shipment or product quality, Alibaba may refund your payment as stated in your contract.

Shenzhen Wisdomshow Technology Co.,ltd

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