Products Profile

VSSTEC TECHNOLOGY(SHENZHEN)CO.,LTD

Advancing Packaging Technology for a Smarter Future

Company Profile

VSSTEC TECHNOLOGY (SHENZHEN)CO.,LTD is a national high-tech enterprise,specializing in semiconductor packaging solutions and focusing on developing vacuum eutectic furnace,parallel seam welding system,glove box,stack array automated assembly equipment,semiconductor laser stack integrated testing system,vacuum oven,COS burn-in system,COS testing system,TEC temperature controllers, module burn-in,automatic reflow furnace and so on.. These solutions are designed to meet the needs of optical communications, smart sensing,high-power devices, and defense industries.

Top R&D Capabilities

Team Background

Employees with over 10 years of experience in semiconductor packaging technology, integrating multidisciplinary expertise in optics, mechanics, electronics, and software.

Technological Achievements

Breakthroughs in vacuum eutectic furnace and parallel seam welding technologies, received multiple national patents. Equipment performance meets international standards.

R&D Investment

Continuous investment in R&D personnel, equipment, and funding to enhance packaging capabilities, recognized by global markets.

Advantages

Core Business

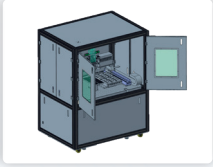
High-End Equipment Manufacturing

Comprehensive packaging solutions including Vacuum Eutectic Furnace, parallel seam welding systems, COS burn-in and testing systems,stacked array automated assembly equipment, and laser integrated machines.

Vacuum Eutectic Furnace

Parallel Seam Welding System

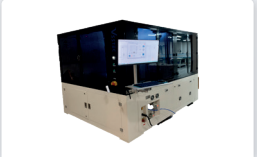
COS Testing System



Stack Array Automated Assembly Equipment

COS Burn-in System

Module Burn-in



Semiconductor Laser Stack Integrated Testing System

Glove Box System

High-Temp Vacuum Oven

TEC2416 Temperature Controller

Automatic Reflow Furnace

Applications

Cutting-edge industries such as optical communications, smart sensors, and high-power devices.

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Products

Vacuum Eutectic Furnace

Description

The Vacuum Eutectic Furnace features vacuum soldering, uniform heating, precise temperature control, and automated operation. Compatible with multiple reducing gases, it is ideal for high-reliability semiconductor device soldering.

Features

★**Vacuum Environment Soldering:** Eliminates oxidation and contamination, enhancing soldering quality and reliability.

★**Uniform Temperature Distribution:** Ensures consistent heating for stable product quality.

★**Precise Temperature Control:**High-accuracy temperature regulation to meet stringent process requirements.

★**Full Automation:** Automated operation, temperature control, and cooling for complex processes, reducing manual operation.

★**High-Quality Assurance:** Performance comparable to imported equipment, exported to the U.S. and Southeast Asia, recognized for reliability by optical communication and LiDAR clients.

★**Versatility:** Adaptable to diverse materials and sizes.

Applications

Aerospace, laser devices, LiDAR, and other industries requiring high-reliability soldering.

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Parameters

Parameters	SRO7500	SRO8200	SRO6100
Heating Plate Size	215mm x 230mm	315mm x 315mm	610mm x 610mm
Temperature	Max 450°C (Higher options available)	Max 450°C (Higher options available)	Max 450°C (Higher options available)
Welding Height	100mm (Higher options available)	100mm (Higher options available)	100mm (Higher options available)
Heating/Cooling Rate	Heating: 4°C /s, Cooling: 2°C /s (Cooling rate adjustable, higher options available)	Heating: 4°C /s, Cooling: 2°C /s (Cooling rate adjustable, higher options available)	Heating: 4°C /s, Cooling: 2°C /s (Cooling rate adjustable, higher options available)
Heating Method	Infrared Heating	Infrared Heating	Infrared Heating
Process Gas Precision Control	±1% (Same precision for multiple gas inlets)	±1% (Same precision for multiple gas inlets)	±1% (Same precision for multiple gas inlets)
Temperature Uniformity	±1% (≤ 85% heating area)	±1% (≤ 85% heating area)	±1.5% (≤ 85% heating area)
Heating Configuration	Bottom & Top Cover Heating (Optional)	Bottom & Top Cover Heating (Optional)	Bottom & Top Cover Heating (Optional)
Formic Acid Cleaning Function	Standard (Optional)	Standard (Optional)	Standard (Optional)
Pipeline and Chamber Leakage Rate	<5.0×10E-9mbar·L/s (Other options available)	<5.0×10E-9mbar·L/s (Other options available)	<5.0×10E-9mbar·L/s (Other options available)
Observation Window	82mm Viewing Window	82mm Viewing Window	82mm Viewing Window
Cooling Method	N2	N2	N2
Process Gases	Supports N2, Ar, and mixed gases (Configurable inlet channels)	Supports N2, Ar, and mixed gases (Configurable inlet channels)	Supports N2, Ar, and mixed gases (Configurable inlet channels)
Software	Windows 11 Process Computer + Touchscreen Microcomputer Software	Windows 11 Process Computer + Touchscreen Microcomputer Software	Windows 11 Process Computer + Touchscreen Microcomputer Software
Positive Pressure Module	Max 0.3Mbar (Optional)	Max 0.3Mbar (Optional)	Max 0.3Mbar (Optional)
Vacuum Pump	Dry Pump or Diaphragm Pump	Dry Pump or Diaphragm Pump	Dry Pump or Diaphragm Pump
Chamber Vacuum Level	≤ 0.01mbar or ≤ 5.0×10E-5mbar (Other specifications optional)	≤ 0.01mbar or ≤ 5.0×10E-5mbar (Other specifications optional)	≤ 0.01mbar or ≤ 5.0×10E-5mbar (Other specifications optional)
Oxygen Detection	0-1000ppm (Optional)	0-1000ppm (Optional)	0-1000ppm (Optional)
Power Supply	380V/6Kw	380V/16Kw	380V/26Kw
Chiller	Optional	Optional	Optional
Chamber Closing Method	Automatic Motor or Automatic Cylinder	Automatic Motor or Automatic Cylinder	Automatic Motor or Automatic Cylinder
Automation Support	Supports Automated Production Line	Supports Automated Production Line	Supports Automated Production Line
MES Production Management System Support	Yes	Yes	Yes

Parallel Seam Welding System

Description

The parallel seam welding system utilizes 25kHz high-frequency welding for hermetic sealing of metal-ceramic packages, featuring flexible pulse density adjustment and precise energy distribution.

Features

★ Low Heat Impact

★ High-Precision Force and Motion Control

★ Automated Process Stability

★ Inert Gas Protection

★ Customized Electrode Design

★ Support 1-pass corner & 4-pass center diagonal high frequency pulse welding

Parameters

Parameters	PSS-9000	PSS-9900
Welding Size	3mm×3mm - 250mm×250mm	5mm×5mm - 350mm×350mm
Welding Pressure	0.8-5Kg	0.8-5Kg
Height	62mm (Adjustable)	62mm (Adjustable)
Pulse Frequency	0.1ms-99ms	0.1ms-99ms
X, Y Axis Precision	±3μm	±3μm
Rotation Accuracy	±45 arc-sec	±45 arc-sec
Rotation Table	360°	360°
Welding Speed	Max 40mm/s	Max 40mm/s
Current Range	2000A or 2500A	2000A or 2500A
Welding Types	ONE-PASS Rectangle FOUR-PASS Quadrilateral FAST-TACK Spot Welding	ONE-PASS Rectangle FOUR-PASS Quadrilateral FAST-TACK Spot Welding
Spot Welding Capability	Supports arbitrary position spot welding	Supports arbitrary position spot welding
Power Supply Brand	Vsstec or Miyachi	Vsstec or Miyachi
Equipment Dimensions	L582mm×H480mm×W640mm	L782mm×H533mm×W762mm
Safety Protection Measures	Emergency stop dual-button start pause	Emergency stop dual-button start pause

Applications

Aerospace, laser components, LiDAR, and other industries requiring airtight welding.

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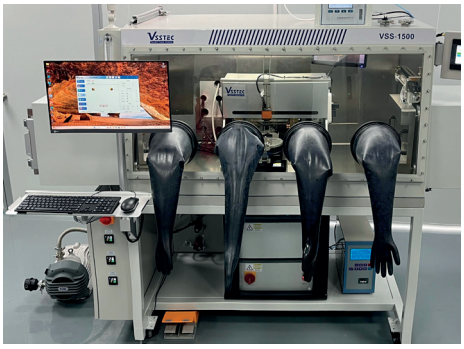
Glove Box System

Description

The glove box is a fully enclosed unit filled with high-purity inert gas, capable of continuously filtering active substances. Also known as a vacuum glove box or inert gas protection box, it efficiently removes water, oxygen, and organic gases, making it ideal for airtight applications.



Features

★**High-Purity Environment:**Advanced filtration and gas purification system ensures an oxygen-free, extremely low dew point down to -90degC, and dust-free workspace.

★**Versatile Gas Support:**Compatible with multiple gas mixtures (e.g., CDA, nitrogen, helium, argon etc), allowing ratio auto adjustments for various gases.

★**User-Friendly Design:** Features ergonomic gloves and a viewing window for convenient operation while ensuring airtight integrity.

★**Modular Configuration:**Customizable with options such as transition chambers and solvent purification systems to expand functionality.

★**High Reliability & Safety:**Constructed with premium materials and precision engineering for long-term stability, with integrated safety alarm systems.

★**Real-Time Monitor and Process Data Query**Real-time monitor and data retrieval for vacuum, temperature, pressure etc process data.

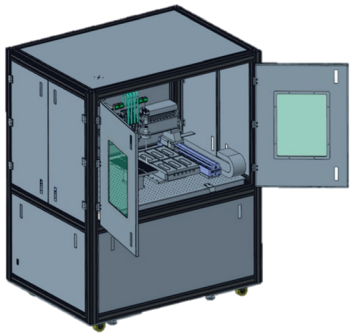
Parameters

Parameters	VSS-1200	VSS-1500	VSS-1800
Glove Box Size	L1200×D790×H1705mm (Other sizes available)	L1500×D790×H1705mm (Other sizes available)	L1800×D790×H1705mm (Other sizes available)
Leakage Rate	<5.0×10E-9mbar·L/s	<5.0×10E-9mbar·L/s	<5.0×10E-9mbar·L/s
Oxygen Analyzer	0-1000ppm	0-1000ppm	0-1000ppm
Dew Point Analyzer	20°C—110°C	20°C—110°C	20°C—110°C
Supported Gases	Nitrogen-oxygen mixtures, Krypton, Argon, etc.	Nitrogen-oxygen mixtures, Krypton, Argon, etc.	Nitrogen-oxygen mixtures, Krypton, Argon, etc.

Stack Array Automated Assembly Equipment

Description

Stack Array Automated Assembly Equipment is designed for automated semiconductor laser bar stacking, integrating mechanical, optical, electronic, and data processing technologies. It ensures high precision and consistency, making large-scale production more efficient.



Features

★**Automated Image Recognition:**High-speed, high-precision motion system for accurate chip placement, reducing human error.

★**9-Axis Intelligent Control:**Ensures stable material handling and precise alignment.

★**Flexible Multi-Wavelength Assembly:** Supports 8-12 chip trays for intelligent multi-wavelength laser stack assembly.

★**Multi-Functionality:** Adaptable for various laser components with customizable fixtures.

★**Data Traceability:**Comprehensive data logging ensures full traceability.

Parameters

Parameters	Stack Array Automated Assembly Equipment
Motion Control	9-axis motion control: X-axis: 300mm, Y-axis: 90mm, Z-axis: 50mm, Stroke (Θx ΘY): ±4° , ±8°
Image Recognition	High-resolution image recognition, precision <0.5μm
Clamping Mechanism	adjustable force
Multi-Tray Design	Supports multi-tray design for mixed chip assembly
Automatic Loading/Unloading	Skips defective components to prevent whole-system failure.

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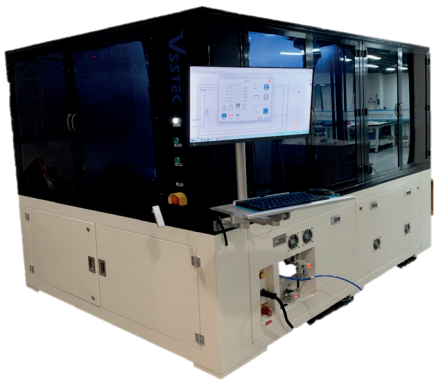
Semiconductor Laser Stack Integrated Testing System

Description

Semiconductor Laser Stack Integrated Testing System performs comprehensive testing of semiconductor laser stack arrays, including PIV characteristics, spectral properties, near-field beam profile, and far-field divergence.



Features

★ **Comprehensive Characterization:** PIV curve plotting, spectral analysis, near-field imaging, and far-field divergence measurement.

★ **Automated Batch Testing:** Increases efficiency with automated loading and testing.

★ **User-Friendly Software:** Intuitive graphical interface with customizable test parameters.

★ **Reliable System Stability:** High-precision instruments ensure accurate measurements.

Parameters

Parameters	Semiconductor Laser Stack Integrated Testing System
Power Testing	Pulse Test: 0-5000W, Average Power Test: 0-1000W
Spectral Testing	Wavelength Range: 200-1100nm, Resolution: 0.3nm.
Divergence Angle Testing	Measures horizontal and vertical divergence angles: Horizontal :-50° ~ 50° Vertical :-65° ~ 65° Accuracy: ±0.1°
Near-Field Beam Profile Testing	Detects defective emission points.

High-Temperature Vacuum Oven

Description

The vacuum oven provides precise temperature control and high vacuum conditions for removing moisture and volatile substances from materials, ensuring high-efficiency drying and processing.

Features

★**High-Temperature & High-Vacuum Processing:**Ideal for surface treatment, thermal processing, drying, and sintering.

★**Precision Control:**Advanced temperature and vacuum control systems ensure accurate material processing.

★**Reliable & Safe:**Built with safety mechanisms to ensure stable operation and operator protection.

★**Customizable:**Configurable to meet diverse industrial needs.

Parameters

Parameters	Vacuum Oven
Max Operating Temperature	400° C
Maximum Vacuum Level	0.01mbar
Heating Plate Size	296mm×288mm×85mm
Heating Layers	2 Layers
Oven Volume	296mm×288mm×85mm by 2 Layers
Heating Method	Infrared Heating
PLC Programming	up to 500 programmable steps
Heating Rate	Max 4°C/s
Cooling Rate	Average 1°C/s

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COS Burn-in System

Description

The COS (Chip on Substrate) Burn-in system ensures the long-term reliability of semiconductor chips. Highly integrated, it enhances utilization efficiency while collecting real-time burn-in data to optimize product performance. Built-in safety mechanisms protect against abnormal conditions by automatically cutting power.

Feature

★Fast and efficient, with comprehensive data collection, ideal for laboratories, R&D, and mass production.

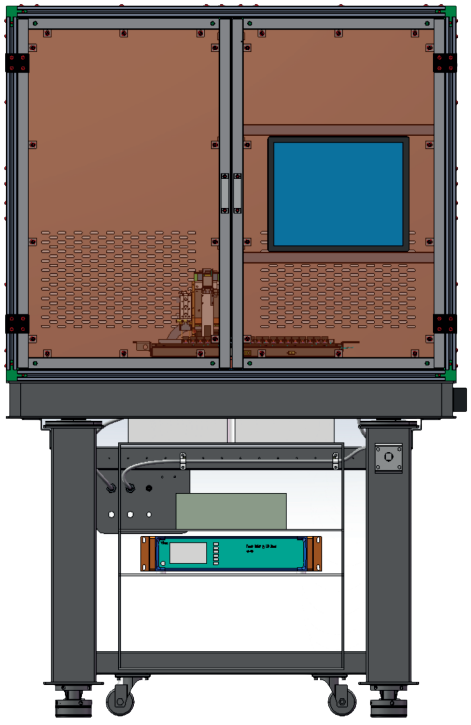
Parameters

Parameters	COS Burn-in System
Burn-in	Constant Current and Pulse Burn-in
Power Output	0-60A, 0-60V (Other specifications optional)
Capacity	Standard: 200 COS positions, customization is available
Tray Configuration	including 8-10 trays, each tray holds 10-20 positions;
Temperature Control	Adjustable from 25-70° C, also supports 70-110° C Burn-in

COS Testing System

Description

The COS (Chip on Substrate) testing system evaluates chip performance and reliability after packaging, ensuring compliance with design specifications before product deployment.



Features

★Fast and efficient, with comprehensive data collection, ideal for laboratories, R&D, and mass production.

Parameters

Parameters	COS Testing System
Testing	Measures product power, wavelength, divergence angle, and thermal resistance
Capacity	Supports manual and automated testing, can be integrated with burn-in fixtures for automatic testing
Tray Configuration	Supports independent fixtures and burn-in fixtures
Power Configuration	Configurable based on product requirements
Temperature Control	Adjustable from 20-110° C
Data Monitoring & Collection	Supports data acquisition and generates test reports

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TEC2416 Temperature Controller

Description

TEC2416 Temperature Controller is a precision temperature control system specifically designed for Peltier applications. It integrates a bipolar DC current source, dual-temperature monitoring inputs, and intelligent PID control, featuring smooth temperature step control, real-time monitoring capabilities, customizable software control, and development support. This system enables stable and precise temperature regulation in scientific research, medical applications, and industrial environments.

Features

★ High precision, ease of use, customizable.

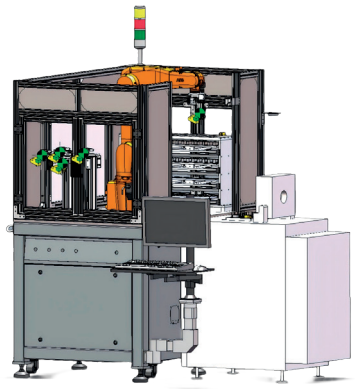
Parameters

Parameters	TEC2416 Temperature Controller
Output Current	0 —±16A ； ripple <1.5%
Output Voltage	0 —±30V
Driving Modes	Temperature control, voltage mode, current mode;
Temperature sensor support	Pt100, Pt1000, NTC
Temperature control range	-100°C — 200°C
Temperature control precision/stability	<0.01 °C
Others	USB 2.0 1kV, isolated (FTDI Chip)

Automatic Reflow Furnace

Description

Automatic Reflow Furnace is an intelligent heat treatment equipment used in semiconductor devices and electronic components packaging process, mainly used to achieve efficient and stable reflow welding process.By robotic arm and reflow furnace, the whole automatic production process can be realized to improve production efficiency and reliability.



Features

★**Automatic loading and unloading:** equipped with high precision manipulator, automatic completion of workpiece loading and unloading, reduce manual operation.

★**Automatic door control system:** when loading, the reflow furnace automatically opens the door; after loading is completed, the door automatically closes and enters the return program.

the temperature curve and reflow parameters are preset according to the process requirements; the equipment automatically executes the preset program after closing the door to ensure the consistency of welding quality.

★**Automatic material feeding and inspection:** after the completion of the reflow process, the furnace door is automatically opened; the robot automatically takes out the workpiece and transfers it to the inspection station, realizing the whole process automation.

support for a variety of production mode and process parameter storage; can be connected with MES system to achieve real-time recording and traceability of production data.

Parameters

Parameters	Automatic Reflow Furnace
Production Takt Time	TT=120s./Pcs (modular assembly) TT=180s./Pcs (Shell module assembly) TT=60s./Pcs (module test after reflow)
accuracy	The LD module is centered (the center point in the product shell) within ±0.1mm, and the parallelism deviation between assembled parts is less than 0.2deg
Equipment Load Capacity	LD ≤ 26PCS Small solder sheet ≤ 26PCS When the reflow is carried out, the test is less than 13Pcs
AOI Measurement	It has AOI vision inspection function for reflowed products ("LD module" and "shell in module") to detect appearance, position, parallelism and other data
Data report/data interface	Supports ACCESS database communication Provide data report output
Reflow Furnace Control	Reflow furnace start control, reflow furnace cover open/close control

Applications

Aerospace, laser devices, LiDAR, and other industries requiring high-reliability soldering

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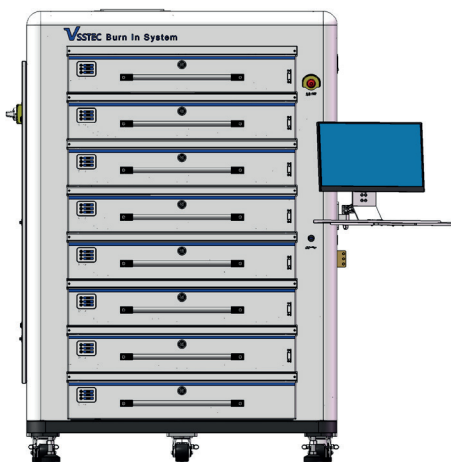
Module Burn-in

Description

The module burn-in collects burn-in data (power/current/voltage/temperature, etc.) in real time to optimize product performance and ensure long-term reliability of semiconductor chips. The built-in safety mechanism monitors abnormal data and provides fault warning functions.



Features

★ High integration, fast and complete data collection.
Suitable for laboratory, R&D and mass production.

Parameters

Parameters	Module Burn-in
Input Voltage	380V
Output Voltage	60V
Voltage Accuracy	±0.3%
Output	50A
Current Accuracy	±0.3%
Mode of Output	Constant Current/Pulse Burn-in
Output Range	0-60A.0-60V (Customizable)
Burn-in Quantity	Standard 96 positions, customizable (8 trays, 12 positions per tray)
Temperature Control	25°C-70°C burn-in (adjustable/room temperature); 70°C-110°C burn-in (optional)

VSSTEC TECHNOLOGY (SHENZHEN)CO.,LTD

Is committed to providing global customers with high-quality, reliable packaging and testing solutions through technologically innovative products

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