PSV OPTIONS BROCHURE

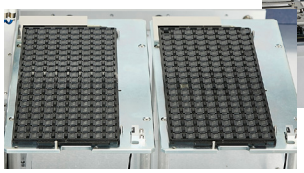
Media I/O, Marking, Inspection

DATAIO.COM

MEDIA I/O OPTIONS

Static Trays

The PSV7000, PSV5000, and PSV3500 support static JEDEC tray mounts. The static tray mounts can be configured for input (blank), pass (programmed) and reject devices, as well as for simultaneous use for input (blank) and pass (programmed) devices. Static trays are ideal for smaller job runs or high mix environments. Static trays must be manually changed during the job run.



- **PSV7000/PSV5000/PSV3500:** Support up to three static trays concurrently.

Automated Tray Stacker

For larger volume production runs, automated tray stackers optimize throughput with support for up to 20 JEDEC trays. For the PSV7000, Data I/O offers two versions of the Automated Tray Stacker.

PSV7000 Dual Input Tray Stacker:

The PSV7000 Dual Input Tray Stacker delivers two full trays of blank devices into the work area. Blank devices are picked up from the tray and placed into sockets for programming. Passed devices are placed back into the same tray and transported to the output stack when full. The system can automatically sort any mixed tray of input (blank) and pass (programmed) devices at the end of the Job. Upon completion, the tray of input devices is transported to the input stack and the tray of pass devices is transported to the output stack.

The Dual Input Tray Stacker is field upgradeable to PSV7-Dual Tray Feeder-EX, supporting dedicated tray-input to tray-output operation.

PSV3500 and PSV5000 Single Input Automated Tray Stacker:

The Single Input Automated Tray Stacker supports up to 20 JEDEC Trays. A single tray with input devices is delivered into the work area. These devices are picked up from the tray and placed into sockets for programming. Passed (programmed) devices are placed back into the same tray and transported to the output stack when the tray is full or the programming job is complete.

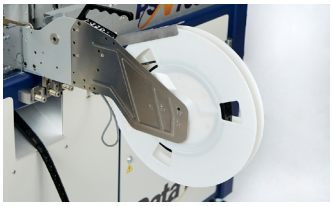
PSV7000 Dual Input Tray Stacker EX:

The PSV7000 Dual Input Tray Stacker EX enables ***dedicated Tray Input to Tray Output operation***. Two JEDEC trays are processed into the PSV7000 work area, one tray of input devices and one empty tray. Input devices are being picked from the input tray and placed into sockets for programming. Passed parts are placed into the dedicated pass tray and transported to the output stack when full.

Ideal for customers with the highest quality standards! The Dual Input Tray Stacker EX ensures that input (blank) and pass (programmed) devices will always stay separated from each other.

Tape Input

For Data I/O supports JEDEC tape input reels on the PSV7000, PSV5000, PSV3500, and PSV2800. The tape input sizes available for the PSV systems include tape widths from 8 mm to 56 mm. For devices in 8 mm and 12 mm reels, Data I/O offers tape input with anti-jostle feature, ensuring devices remain in the tape pockets prior to picking.



Tape Output

Data I/O's TR6 universal tape out for the PSV7000, PSV5000, PSV3500, and PSV2800. The TR6 supports 8 mm to 44 mm (adjustable) tape widths. The TR6 supports both pressure and heat seal cover tapes.

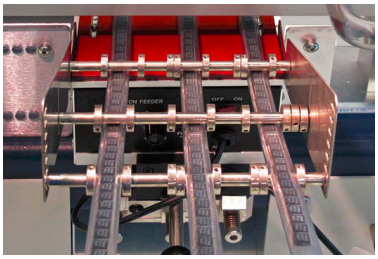
Tape Rewind

Rewind empty carrier tape onto a take-up reel simplifying handling. The Tape Rewind is supported on the PSV7000, PSV5000, PSV3500, and PSV2800. It simplifies handling of emptied tape.

Tube Input and Tube Output

Tube feeder motor controllers and custom tooling for Tube Input and Tube Output support. Tube Input tooling is ordered separately.

Tube Output kit comes with motor controller, mounting hardware, and cabling. Tube Output tooling is ordered separately. Please contact your Data I/O sales director to verify if your specific system configuration and device can be supported with Tube Input and Tube Output.

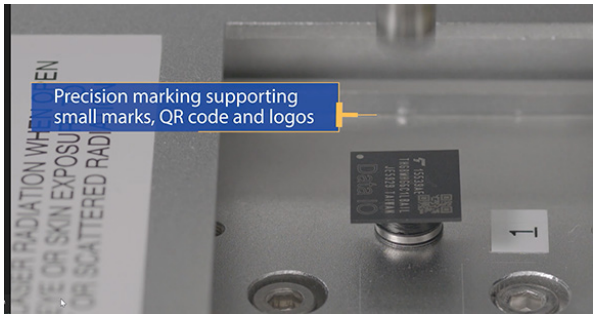


MARKING OPTIONS

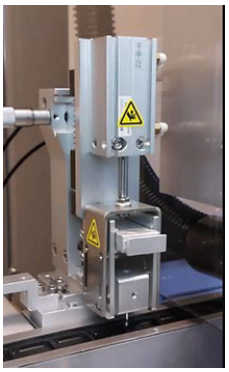
Fiber Laser Marking

High precision laser marking system. Control the size and depth of the laser mark with ease. In comparison to CO2 lasers, the fiber laser allows for higher precision laser marking while reducing the risk of damage to a part. Fiber laser marking supports complex marks including QR codes, logos, and large to very small font sizes.

- **PSV7000:** High precision laser marking system marks two devices simultaneously.
- **PSV5000/PSV3500:** High precision laser marking system marks one device at a time.



MARKING OPTIONS CONTINUED



Ink Dot Marking

Ink Dot Marker is a low-cost marking option for the PSV7000, PSV5000, PSV3500, and PSV2800. The Ink Dot Marking system supports dot marking in multiple ink colors for parts as small as 4-mm x 4-mm. The standard ink dot size is 0.8 mm tip with a speed of one mark per second depending on dwell time and air-flow adjustment. The Ink Dot Marking system is compatible with Data I/O's TR6 Tape Out.

Due to toxic flammability laws in most countries and jurisdictions, Data I/O does not supply, sell, nor deliver any type of ink. Contact your local ink supplier to procure additional inventories of ink. For example: https://artlineworld.com/wtb/index.html

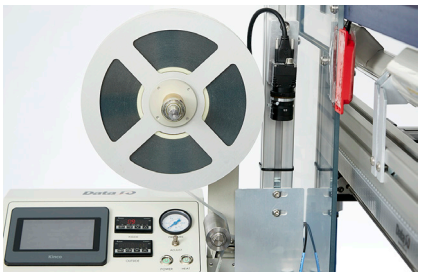
Recommended Ink: Shachihata STSG-1 (White) Quick Dry, or equivalent

INSPECTION OPTIONS

2D Tape Out Inspection

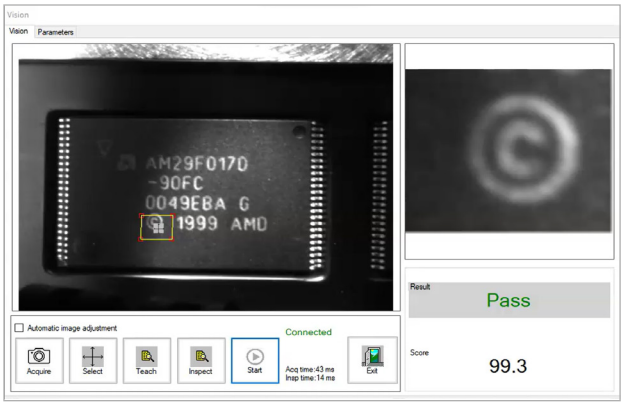
Improve quality processes with mark verification and part orientation during the tape-out with the 2D Tape Out Inspection for the PSV7000, PSV5000 and PSV3500. **2D Tape Out inspection uses the software to draw a box around a known good mark. For subsequent devices, the software calculates a percentage correlation to the original mark:**

- **Higher percentages**: indicate a high-quality mark; one that matches the original mark in image quality (ex. equal clarity, sharpness, resolution, proper orientation, etc.)
- **Lower percentages:** indicate a lower-quality mark; one that is blurry, fuzzy, improperly rotated, or otherwise distorted from the original mark



Examples of passed and failed marks from the 2D Tape Out Inspection (V-TEK-Scannertech 2D option):

Passed mark:

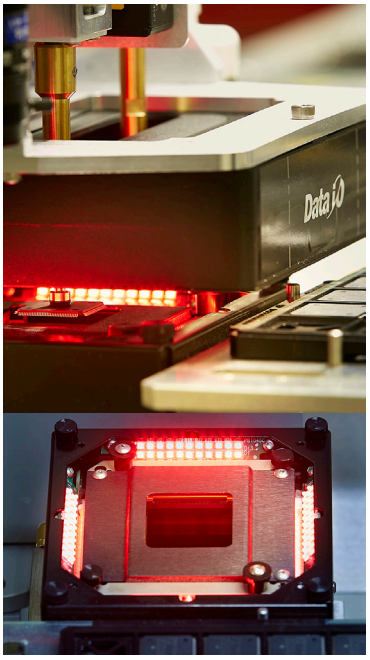


Failed mark:

Inspection is supported on the Data I/O TR6 tape-out options on the PSV7000, PSV5000, and PSV3500, systems. Additionally, the PSV7000 can also support the V-TEK tape-out 2D inspection.

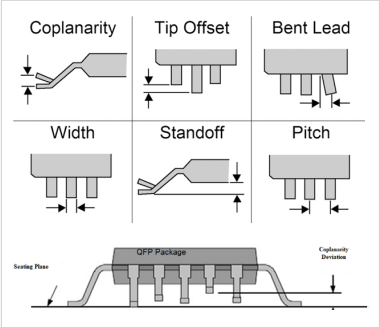
3D Vision Inspection

3D vision inspection ensures all leaded and non-leaded device pins/balls fall within defined tolerances (i.e. coplanarity, length, width, height, etc.). Devices that fail 3D vision inspection are rejected, ensuring only known good programmed devices are placed into the output media. The PSV7000, equipped with our 3D Vision Inspection System, inspects a variety of device packages including BGA, CSP, QFT, TSOP, SOIC, and J-Lead devices in three dimensions. Included are standard device file libraries for easy set-up and training. With an accuracy down to 7 microns for QFP, TSOP, J-Lead, BGA, and CSP devices, the 3D Vision Inspection System measures and inspects every lead or ball on each device to ensure they fall within the specified tolerances before the programmed devices are put in an output media. This inspection system is ideal for customers who require the highest quality and production yield and minimizes the risk of field failures.

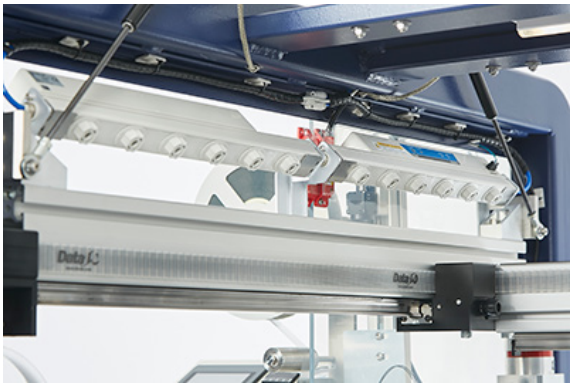


Data I/O offers two versions of the 3D Vision Inspection System, offered only on the PSV7000:

- **PSV 3D Coplanarity,** which inspects a variety of leaded device packages including QFP, TSOP and J-Lead devices in three dimensions.
- **PSV 3D Coplanarity Universal**, which inspects a variety of leaded and non-leaded devices packages including QFP, TSOP, J-Lead, BGA, and CSP devices.



ADDITIONAL OPTIONS



Ionizers

Ionizers are essential to ensure electrostatic discharge (ESD) conform work environments in automated programming systems. Electrostatic charges can lead to product failures due to electrostatic discharge. By continuously generating positive and negative ions, ionizers neutralize surface areas that are charged. For this reason, recognizing and eliminating electrostatic discharge in your PSV automated programming system is important for quality assurance.

Integrate ionizers to provide rapid elimination of ESD throughout the workspace. Integrated ionizers are supported on the PSV7000, PSV5000, PSV3500, and PSV2800. These ionization options allow the systems to meet the IEC 61340-4-7 standard specifications for voltage decay from 1000 V to less than 100 V in less than 20 seconds.

ADDITIONAL OPTIONS CONTINUED

NexTeach Pro

Simple, fast, and accurate. NexTeach Pro is automated teaching of XYZR measurements and coordinates for each programming job with the touch of a button.

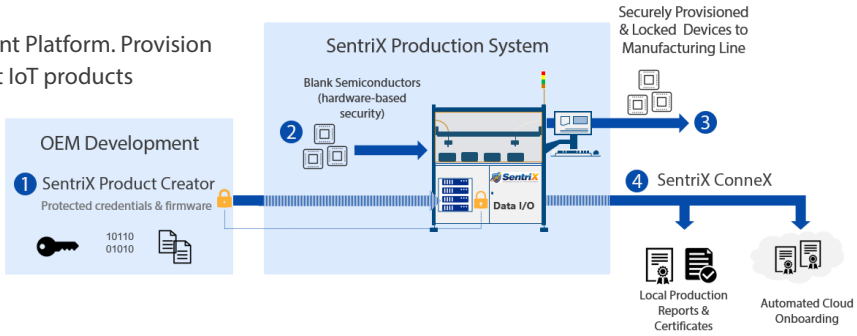
NexTeach Pro is available only on the PSV7000.

- **NexTeach Vision:** Easily find the device center (x-y) from the PSV7000 user interface, ideal for small devices
- **NexTeach Laser:** Quickly teach Z-height without touching the device with air (vacuum or puff)
- **NexTeach Software:** Automatically teach the XYZ measurements with a touch of a button

SentriX Security Deployment Platform

Upgrade a PSV7000/5000 to a SentriX Security Deployment Platform. Provision secrets and security objects into silicon devices to protect IoT products

- Integrates FIPS 140-2 Level 3 compliant HSM
- SentriX Product Creator tool suite
- Available as a turnkey security deployment system or as-a-service model as-a-Service Model



SentriX Technical Highlights

The SentriX security deployment process eliminates roadblocks to building secure products for your OEM customers.protect IoT products

SentriX
Embedding Security for a Connected World

High-security Deployment

- Integrated FIPS 140-2 compliant hardware security module (HSM)
- Enhanced Key Management Capabilities including, Factory/OEM CA (certificate authority), Commercial CA or SentriX HSM Mode
- Uses public key infrastructure (PKI) and offers certificate authority (CA) choice
- Secure provisioning as-a-Service up to 1,000 parts per hour
- Pre-manufacturing assembly security deployment
- Authenticates parts
- Cryptographic protection of secrets and firmware
- Supports silicon hardware Roots of Trust
- Works with encrypted firmware
- Programs firmware and data in addition to security deployment
- Air gapped and works offline

PSV PRODUCT OPTION
MATRIX CONTENT

PSV AUTOMATED PROGRAMMING SYSTEM FAMILY

Data I/O's PSV family delivers high performance, configuration flexibility, and the lowest total cost of ownership to meet the most demanding production requirements.

	Option	PSV2800	PSV3500	PSV5000	PSV7000
Media I/O	Tape Input	Component size: 2 mm x 3 mm to 21.5 mm x 21.5 mm Tape-in Supporting: 8/12/16/24/32 Tape Widths	Component size: 2 mm x 3 mm to 42.5 mm x 42.5 mm Tape-in Supporting: 8/12/16/24/32/44/56 Tape Widths	Component size: 2 mm x 3 mm to 42.5 mm x 42.5 mm Tape-in Supporting: 8/12/16/24/32/44/56 Tape Widths	Component size: 1.5 mm x 1.5 mm to 32 mm x 32 mm Tape-in Supporting: 8/12/16/24/32/44/56 Tape Widths
	TR6 Tape Output	8 mm to 44 mm Adjustable Tape Widths	8 mm to 44 mm Adjustable Tape Widths	8 mm to 44 mm Adjustable Tape Widths	8 mm to 44 mm Adjustable Tape Widths
	Tape Rewind	Yes	Yes	Yes	Yes
	Static Trays	N/A	Yes, up to 3 static trays	Yes, up to 3 static trays	Yes, up to 3 static trays
	Single Input Automated Tray Stacker	N/A	Yes	Yes	N/A
	Dual Input Automated Tray Stacker (Standard & EX)	N/A	N/A	N/A	Yes
	Tube Input & Tube Output	N/A	Yes	Yes	Yes
Marking	Fiber Laser Marking	N/A	Yes	Yes	Yes
	Ink Dot Marking	Yes	Yes	Yes	Yes
Inpection	2D Tape-out Inspection	N/A	Yes	Yes	Yes
	3D Vision Inspection	N/A	N/A	N/A	Yes
Options	Ionizer	Yes	Yes	Yes	Yes
	NexTeach Pro	N/A	N/A	N/A	Yes
	SentriX Security Deployment Platform	N/A	N/A	Yes	Yes

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