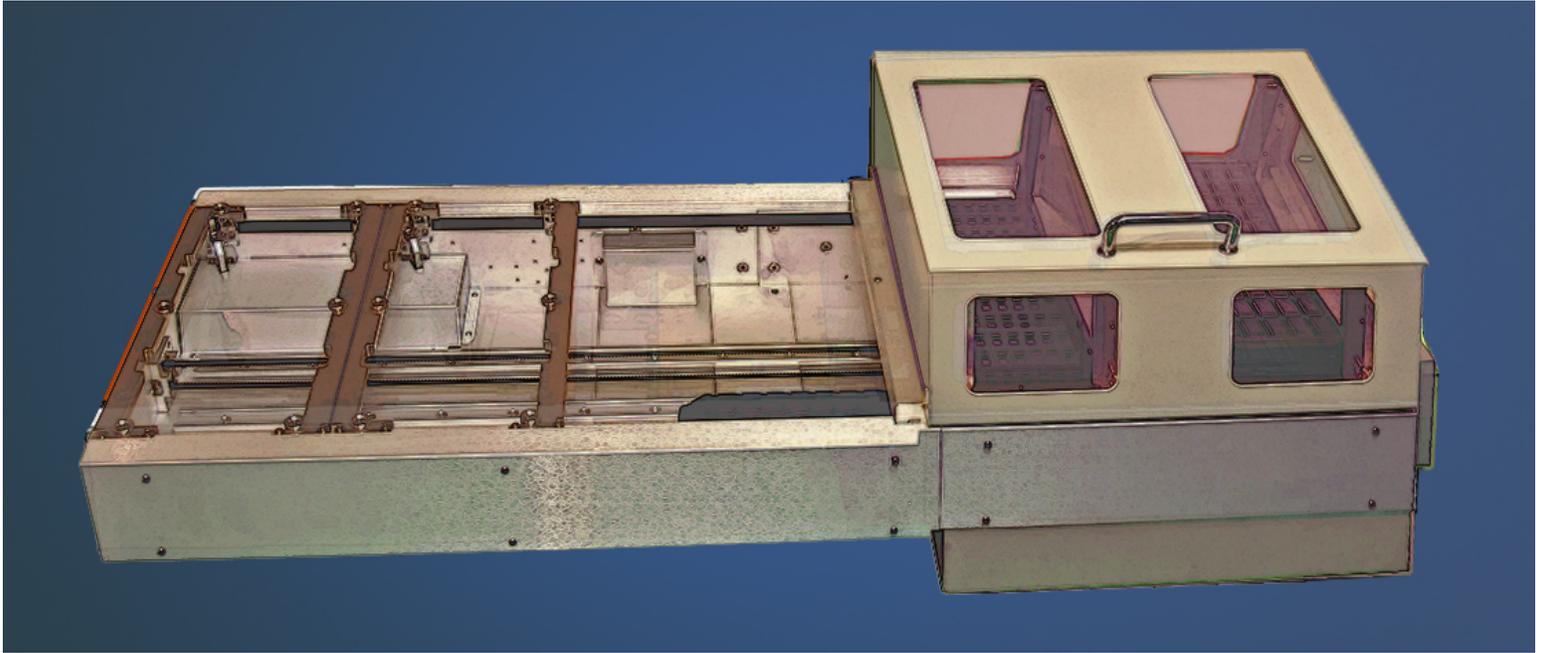


# Dual Tray Feeder Owner's Manual

Automatic Tray Feeder for  
PSV7000 Programming Systems



**Data iO**

...

096-0462-001A

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The author acknowledges the Dual Tray Feeder Team for providing information for much of this manual.



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# Welcome to the Dual Tray Feeder Owner's Manual

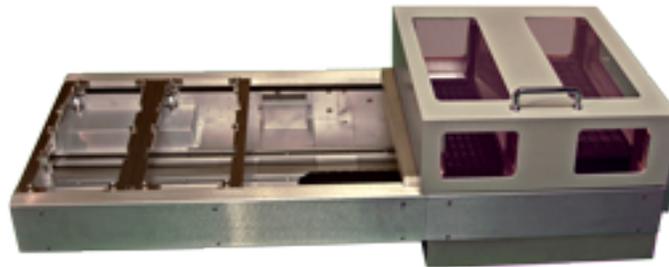
Data I/O's Dual Tray Feeder automatically delivers two trays to the PSV7000 workspace as needed. Please read the *Safety* heading for best results and safety to you and your product.

**Safety**

**Components**

**FAQs**

**Operation**



**Troubleshooting**

**Maintenance**

NOTE: Tray Feeders must be installed by Data I/O Service Department. For information regarding installing a Tray Feeder onto the PSV7000 see the PSV7000 Owner's Manual (PDF available from the AH700 Help menu) or Customer Letter PN 983-5066-001A that came with your Dual Tray Feeder.

Help Ver H1.A032014

[Disclaimer](#)

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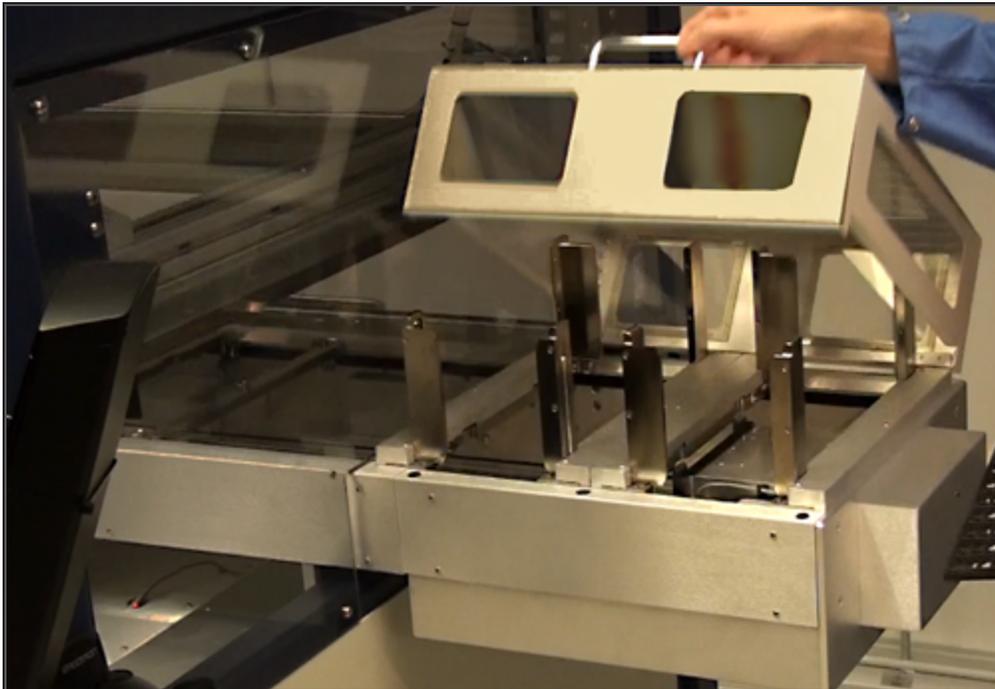
All rights reserved

# Safety

This System has several safety features designed to make the system safe and efficient to operate.

## Emergency Stop

To stop the Tray Feeder only in an emergency, open the Tray Feeder Cover.



To stop in a non-emergency, click **Pause** on the Run window.

## Safety Shields and Interlocks

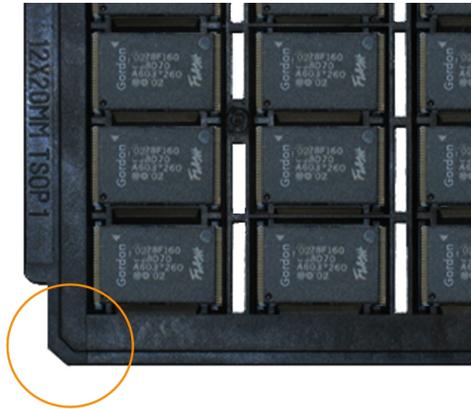
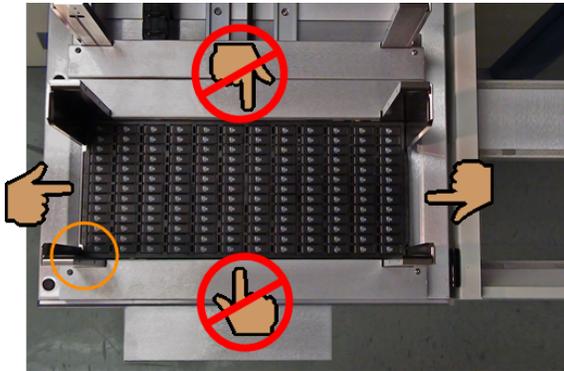
- Opening the Tray Feeder cover will stop and prevent any horizontal movement immediately and any vertical movement quickly (but not instantly). The PSV7000 gantry will still operate and devices will still be programmed until a tray exchange is needed.



- ''' CAUTION ''' Possible machine damage!
- Pushing the Emergency Stop button on the PSV7000 will NOT stop Tray Feeder motion.
  - Opening safety doors and panels on the PSV7000 will NOT stop Tray Feeder motion.
- To stop Tray Feeder motion quickly, open the Tray Feeder cover.

### General Precautions

- Do not use the Dual Tray Feeder for any purpose other than its **intended use**.
- Do not operate the system if the PSV7000 **safety doors** are not in their normal operating positions.
- Do not operate the system when any of the **outer cabinet panels** are removed, or the electronics panel is open.
- Do not operate the system unless you have been **thoroughly trained** and have **read and understand the instructions** in this Owner's Manual, particularly those that describe the system's safety features.
- **Do not disable** or attempt to defeat any of the safety features of this system. Serious personal injury and/or equipment damage can occur if any safety systems are disabled. If you suspect that a safety feature of the system is damaged or malfunctioning, stop using the system immediately and contact your local Data I/O Support office.
- Do not place any part of your body near the path of **moving machine parts**.

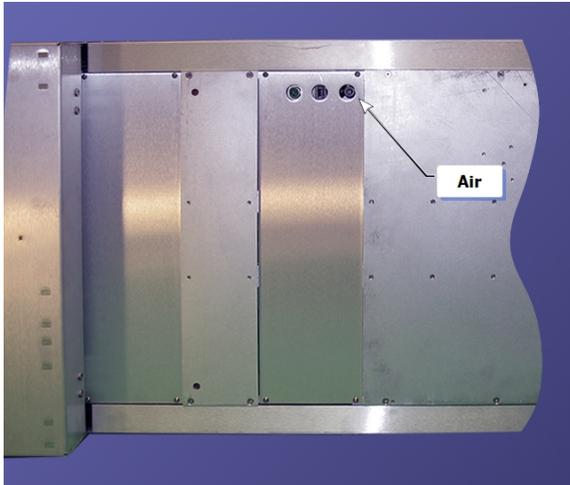


- Hint: for ease of inserting and removing trays, hold them on the ends instead of the sides.
- The tray must be inserted with the beveled corner to the outside front corner (lower left in this image).

### Repair Precautions

**::: WARNING :::**  **Pinch Point Hazard! if moving equipment by hand, trays and the tray elevator can pinch fingers at the Input and Output Stack locations. (Under normal operation, the Tray Feeder cover prevents motion.) Use caution when doing maintenance.**

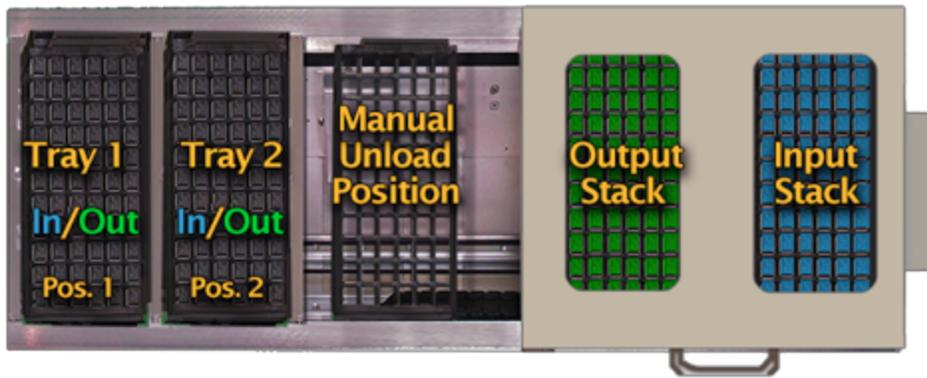
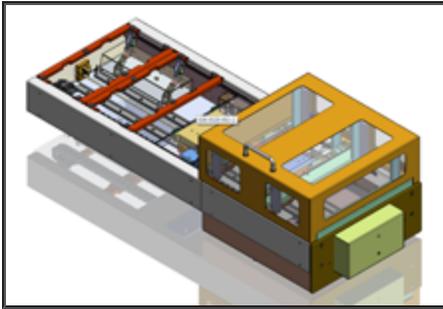
- Only **qualified personnel** trained by Data I/O to service and maintain the System should install, maintain, repair, or troubleshoot the system.
- Do not operate a system while servicing, replacing, or adjusting any component unless directed to do so in this Help. Make sure that the system is properly **shut down before servicing**.
- Disconnect external air line before servicing **pneumatic parts**.



■ Utilities are on the bottom of the Dual Tray Feeder.

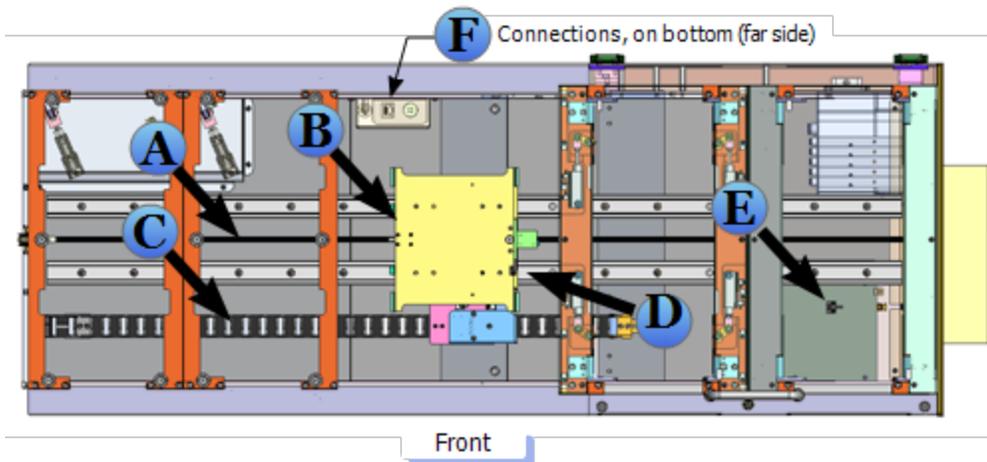


# Components



■ Tray Feeder tray positions.

Letters on the image correspond to the list below.



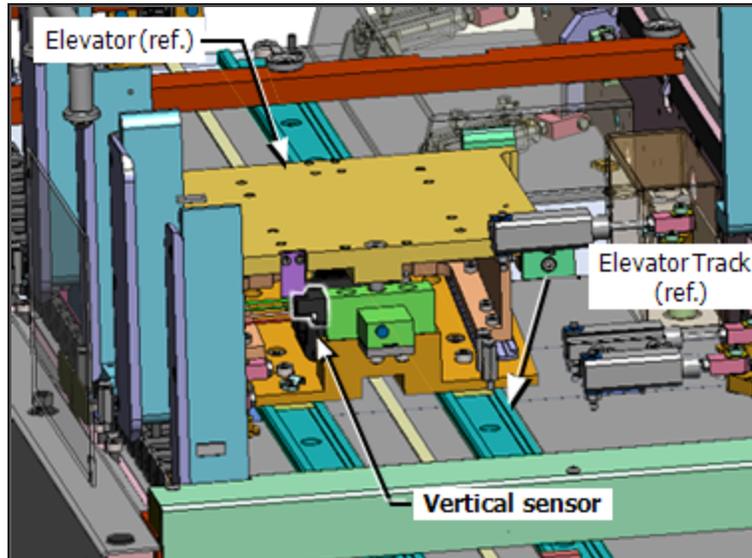
■ Top view of the Dual Tray Feeder, PN 9660130001. Cover not shown. See the labeled details below.

- A.** Drive Belt, PN 2640023001

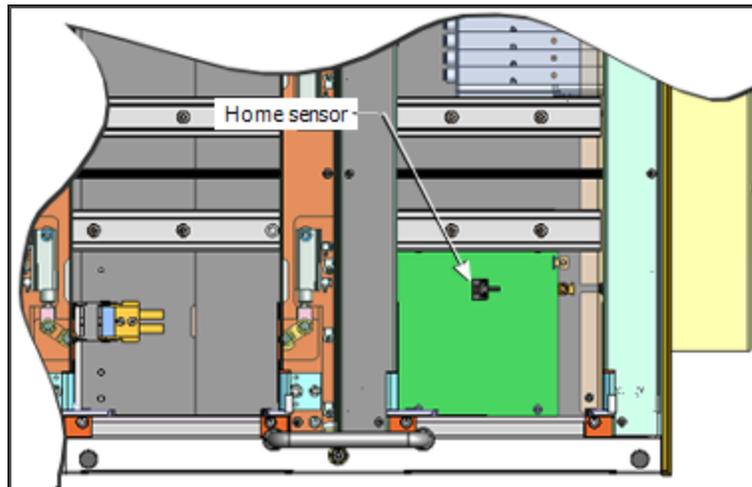
**B.** Tray Shuttle Elevator Assembly, PN 7502446002

**C.** Ribbon Cable (inside cable-carrier), 7090800001

**D.** Elevator Vertical Home Sensor,  
PN 8150064001



**E.** Elevator (horizontal) Home Sensor,  
PN 8150067001



**F.** Utility connections: Power, Ethernet, and air.

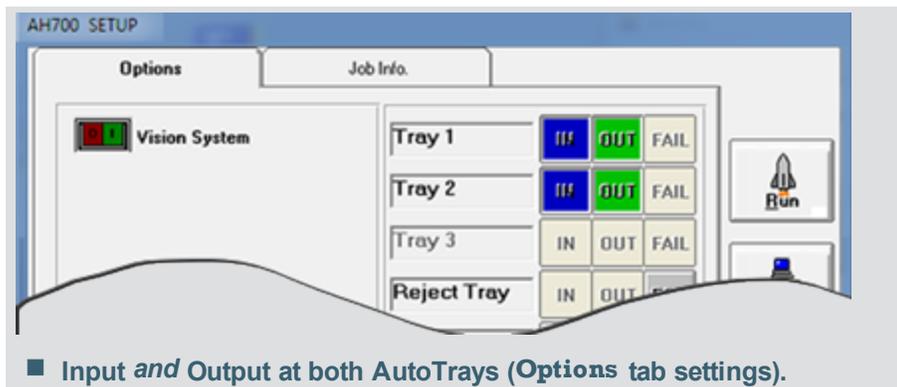




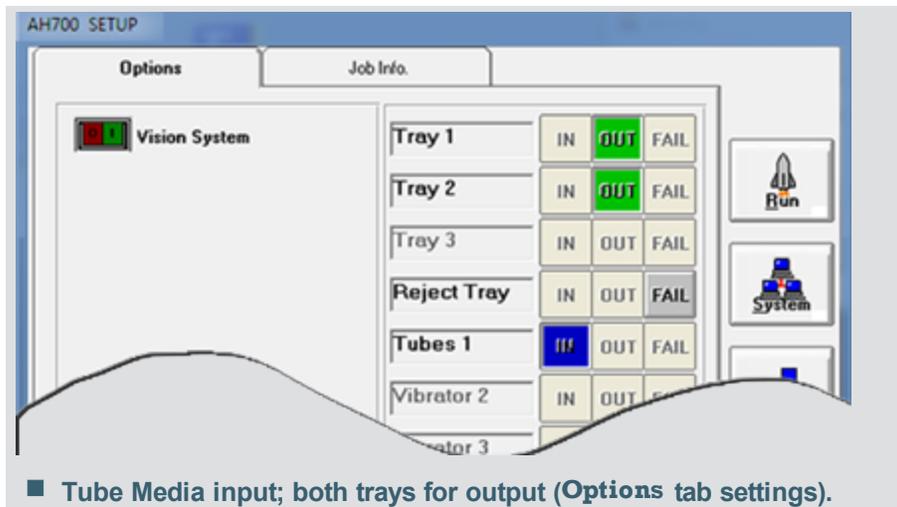
# Operation

## Running a Job with the Automatic Dual Tray Feeder

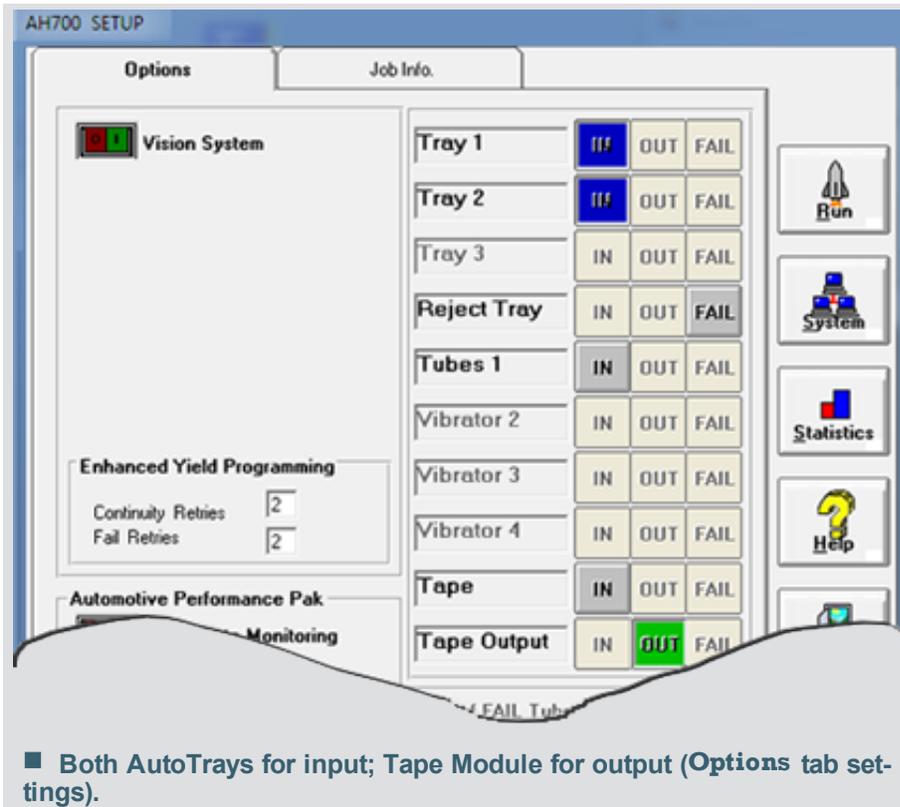
1. Prior to clicking Start in AH700, install trays of unprogrammed devices into the Input Stack of the Tray Feeder. It accepts up to 20 JEDEC trays. [Which one is the Input Stack?](#)
2. Start a PSV7000 job as usual (through TaskLink. The Tray Feeder loads the first tray.
3. In AH700, click Start. The Tray Feeder initializes.
4. At the Setup > Options Tab select the Tray options desired. Some samples follow:



### TUBE INPUT



TAPE OUTPUT



5. When setup options are set, ensure that the machine workspace matches the settings. Rectify differences.
6. Click Run. A password may be required.

Only full trays of successfully programmed devices will be placed in the Output Stack.

### Removing a Tray that is Not Full

If devices were placed into a reject tray or bin, the final tray will not be filled completely.

To remove incompletely filled trays:

1. At the Run window, right-click the image of the desired tray and click ToManualUnload. [View Image](#)

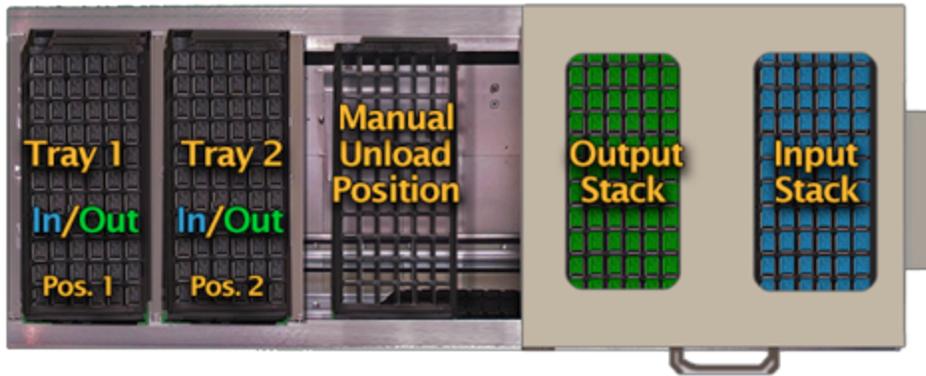


2. After the tray stops in the center of the Tray Feeder, open the Safety door and remove the tray. [View Image](#)

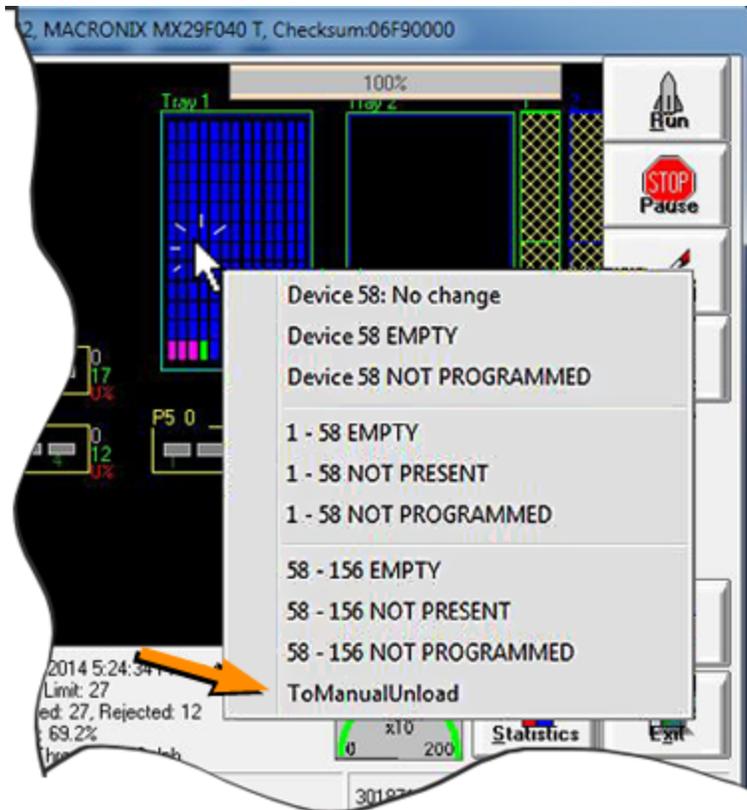
To continue programming, close the door and proceed as desired.



### Tray Positions



### Tray Context Menu



# Frequently Asked Questions

## CATEGORIES

—skip down to:

[Interrupting Operation](#)

[Change the Job / Run a Different Job](#)

[Output Devices and Input Devices](#)

[Running without programming](#)

[More information—where to find it, and Misc](#)

## INTERRUPTING OPERATION

### Can I interrupt the Dual Tray Feeder from sending a tray to the Output Stack?

- A. Yes. In the Run window, click **Pause**.
- B. Right-click the desired non-empty tray to open a context menu, then click to **ManualUnload**.
- C. After all motion stops, open the safety door and remove the tray.

### If there are trays at Positions 1 and 2 when I start a job, can I remove them?

- A. Yes. To remove them, see the question above.

### Can I manually send a tray to the output stack?

- A. Yes. In the Run window, click **Pause**.
- B. Right-click the desired tray to open a context menu, then click to **StackOut**.

### Can I pause Tray Feeder operation?

- A. Clicking **Pause** on the AH700 Run window will pause programming new devices but allow the Tray Feeder to finish exchanging one tray if movement has already started.

**Compare to Opening the Tray Feeder Cover:** Opening the cover may not immediately pause programming devices, but it will stop any Tray Feeder motion immediately and therefore, pause the job when a tray exchange is needed.

### Will the Tray Feeder run slower with the cover open?

- A. There is no slow speed operation. However, trays will not be exchanged while the cover is open and will effectively stop operation.

## CHANGE THE JOB / RUN A DIFFERENT JOB

### Do I have to exit AH700 to run a new job with a Tray Feeder?

- A. To run the same job over, you need to exit the Run window and Setup window (back to the Start window). Load the Tray Feeder prior to clicking **Start**.

To run a different job, you must always exit AH700 to select the job in TaskLink (whether it uses an Automatic Tray Feeder or not).

### What if I start a job with trays in position 1 and/or position 2?

A. The system will discover the trays and use them. Make sure they are the correct trays and devices for the current job.

**Can I start a job with empty trays already in the Output Stack?**

A. Yes.

**While a job is running, can I add or remove trays from Input or Output Stacks?**

A. Yes.

OUTPUT DEVICES AND INPUT DEVICES

**Will the output stack ever have trays that are not full—such as if devices get rejected?**

A. No. Only full trays are sent to the output stack. ZZ

RUNNING WITHOUT PROGRAMMING

**Can I transfer devices from trays to tape or tube without programming them?**

A. Yes. In the **Setup > Options** window, set both Tray Feeder trays to **Input**.

B. Set Ignore Programmers ON.

**Can I laser-mark devices without programming them?**

A. Yes. . In the **Setup > Options** window, set Tray Feeder trays to **Input and Output**.

B. Set Ignore Programmers ON.

MORE INFORMATION, WHERE TO FIND IT; MISCELLANEOUS

**Where can I get a copy of the PSV7000 Owner's Manual?**

A. You can find a PDF in the AH700 Help Menu, or download it from the [Document Library](#) on our Website. For a hard copy in a binder, contact Data I/O [Customer Service](#).

**Can I move my Tray Feeder to a different PSV7000 Machine?**

A. It is possible to do with the help of a trained Data I/O Service Technician or representative. Alignment is critical and may require an alignment tool (jig). Also, software changes to the PSV7000 must be made. Refer to Data I/O Customer Letter PN 983-5066-001A+, *Installing the Dual Tray Feeder*.







# Maintenance

The Dual Tray Feeder is remarkably easy to maintain.

## Cleaning

### Exterior

MONTHLY:

Wipe down the exterior panels of the Dual Tray Feeder with isopropyl alcohol applied to a lint-free cloth.

### Interior

All surfaces contacting moving parts should be kept clean for smooth operation.



**::: WARNING :::** Possible Collision Hazard! The force in the moving PSV7000 gantry can cause serious bodily injury. When working within the machine, moving the Pick & Place head must be the responsibility of only one qualified individual. All other personnel must stay clear of any machine controls to prevent injury to the person working within the system. Never operate the system with safety shields open.



**::: WARNING :::** Pinch Hazard! Sockets can actuate while a PSV7000 safety door is open. DO NOT send any commands while any PSV7000 safety door is open.

DAILY:

Make sure that there are no devices on the [elevator tracks](#).

To remove devices:

1. Pause or End a job and wait for all motion to stop.
2. Open the PSV7000 safety door and remove the devices that can be reached with a vacuum tweezers.
3. If trays are in the way, after performing step 1, at the Run window, right-click the desired tray (s) and click ToStackIn, ToStackOut, or ToManualUnload.

MONTHLY:

Clean the elevator tracks. To clean the tracks:

1. End a job and wait for all motion to stop.
2. Remove any trays remaining on the Tray Feeder and blow the tray elevator tracks with clean, dry, compressed air, or wipe with isopropyl alcohol applied to a lint-free cloth.

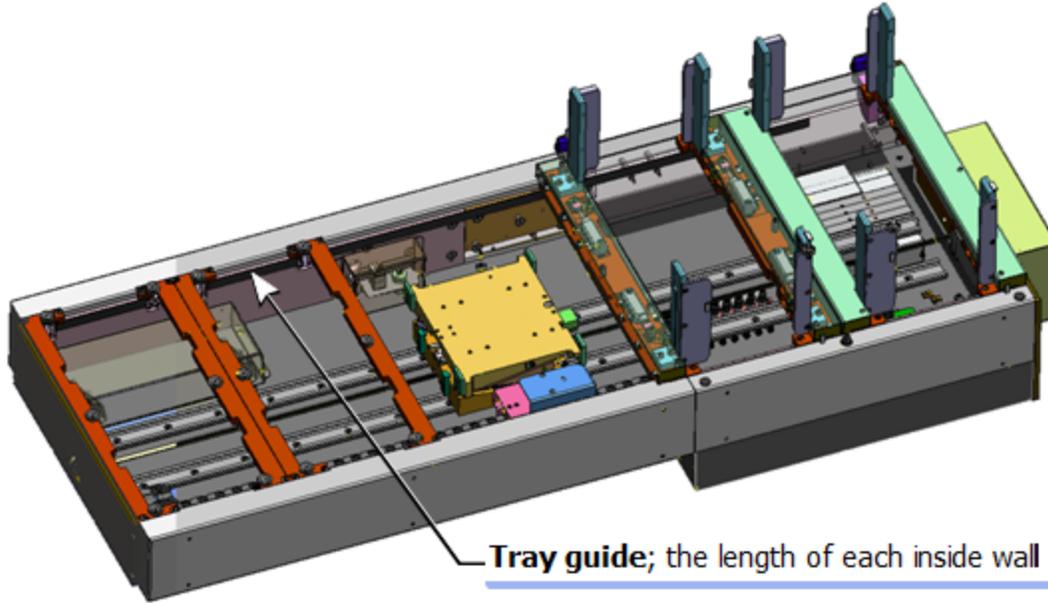
ANNUALLY

Clean the [black tray guide strips](#) on each side of feeder:

1. End a job and wait for all motion to stop.
2. Open one of the safety doors and wipe each strip with isopropyl alcohol applied to a lint-free cloth.



## Tray Guides



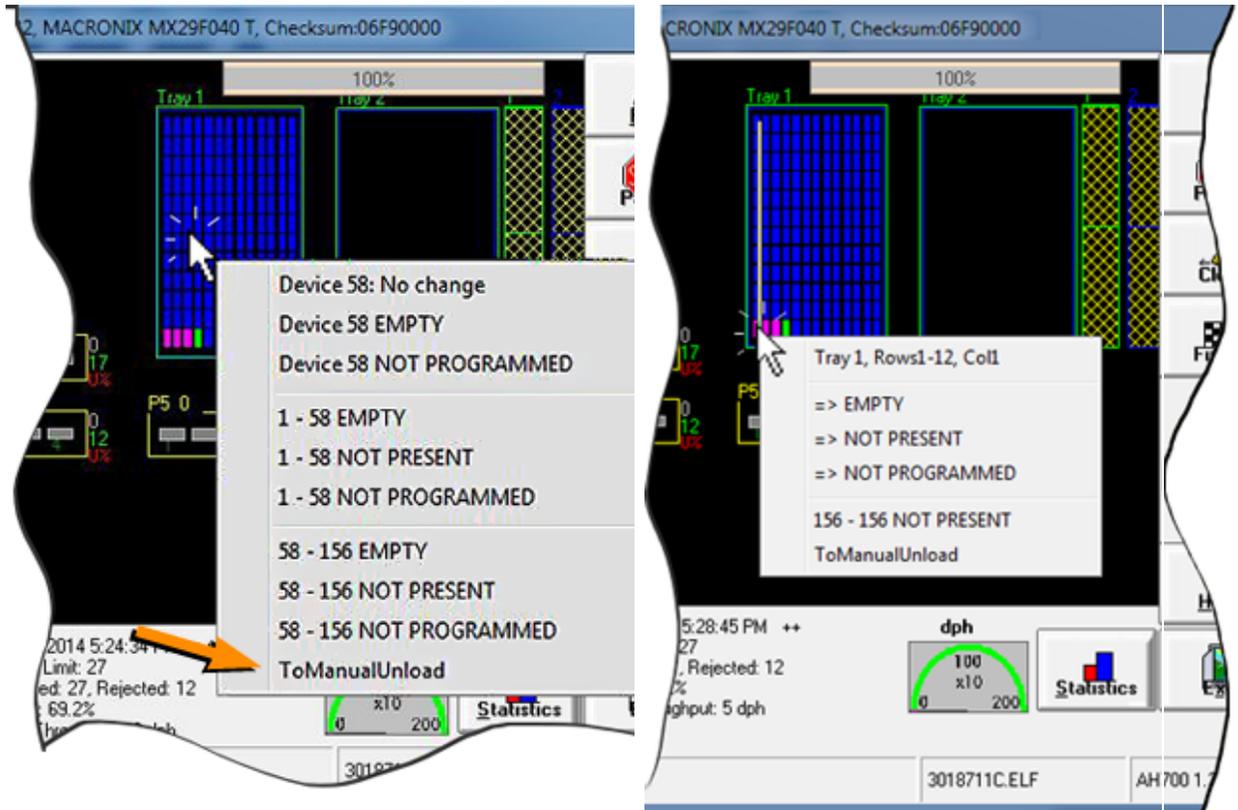
**Tray guide; the length of each inside wall**

# Troubleshooting

Category	Problem or error message	Possible Resolutions
Stalls	Tray Feeder hangs in an unknown state.	In AH700, at the I/O Interface window > Trays tab, click <b>INIT</b> . See the AH700 Help for more information about the functions on the Trays tab dialog.
Stalls	A tray hangs up or the tray elevator doesn't sense it.	The tray may warped. Inspect that it sits level; replace if not.
PNP errors	<ul style="list-style-type: none"> <li>• Many errors picking devices from trays.</li> <li>• Cannot pick devices from one particular area of a tray.</li> </ul>	<ul style="list-style-type: none"> <li>• The tray may warped. Inspect that it sits level; replace if not.</li> <li>• The Tray Feeder may have been installed incorrectly (not square to the gantry). Contact <a href="#">Data I/O Support</a>.</li> <li>• Make sure the Tray Feeder mounting screws are tight.</li> <li>• Make sure you are using the correct tip for devices and have sufficient air. Refer to the PSV7000 Operator's manual.</li> </ul>
	Cannot pick any devices because location is wrong.	<ul style="list-style-type: none"> <li>• Reteach the tray locations in the Package File. See the AH700 on-screen Help.</li> </ul>
	Probes fail to pick many devices because the probe height is wrong.	<ul style="list-style-type: none"> <li>• If the trays are not warped, reteach the tray Z-height in the Package File (Z AutoFind). See the AH700 on-screen Help.</li> </ul>
Run Window	At the Run window, the image of the devices in the tray in is wrong.	You can change the image to match the tray with the tray sub-menu: right-click the desired tray. See <a href="#">samples</a> .

## Changing the Run window Image of a Tray

NOTE: The tray sub-menu only affects the images not the actual tray pocket status. For example, clicking DEVICE 1 EMPTY does not remove nor replace a device in pocket one of the tray.



■ Sample of clicking one pocket. Command groups are to affect  
 a) that pocket,  
 b) Pocket 1 up through that pocket, or  
 c) all from that pocket to the end of the tray.

■ Sample of selecting an entire column (Rows 1 -12 in Column 1).

# Contacting Data I/O

**The BEST way to get technical assistance is by visiting the Data I/O Web site and completing a Web-form. At the home page, click on Technical Support.**

If sending an e-mail (instead of using the Web form), please provide the following information to help us give you quick and accurate assistance:

- Dual Tray Feeder serial number; [Where?](#)
- Software version number of AH700; [Where?](#)  
TaskLink version; Where?  
and FlashCORE Firmware version; Where?
- Detailed description of the problem you are experiencing; and the event log file from  
c:\ah700\logs\stacker\.
- Error messages (if any). A screen capture (image) is best.
- Device manufacturer and part number (if device related).

## World Wide Web

The Data I/O Web site at [www.dataio.com](http://www.dataio.com) includes links to general information about Data I/O, online information about technical products, a list of sales offices, a Representative Search feature, a device search engine, and technical library that includes application notes, bulletins, data sheets, manuals, and white papers.

## Customer Support and Sales

### WORLDWIDE

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Fax: +1 425-867-6972  
E-mail: support : [support@dataio.com](mailto:support@dataio.com)

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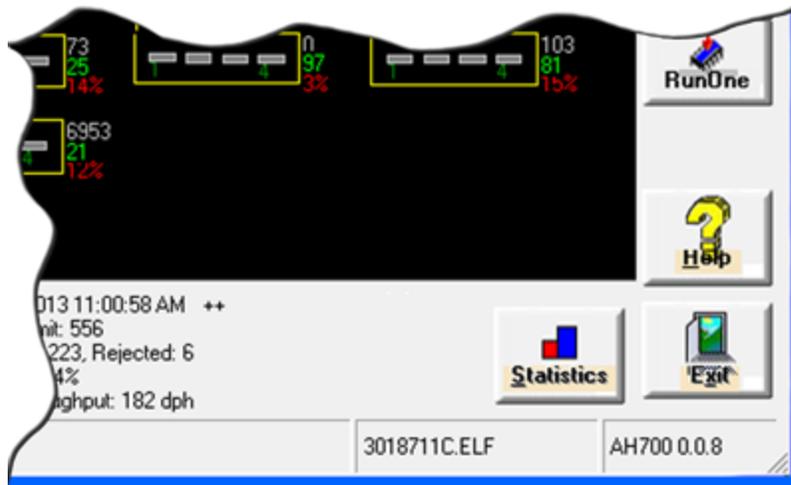
For sales, click *Contact Sales* on our home page or e-mail: [ChinaSales@dataio.com](mailto:ChinaSales@dataio.com)

### OTHER COUNTRIES

Use this representative locator: [www.dataio.com/contact/repsearch.asp](http://www.dataio.com/contact/repsearch.asp)

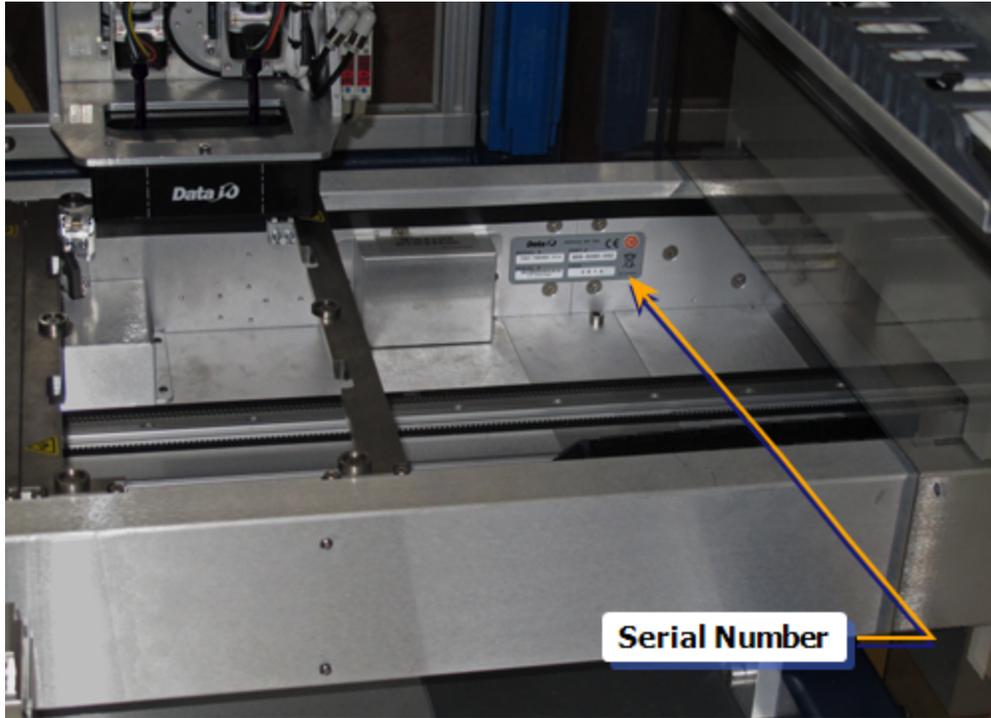


## Software Version Info



- Run window (Setup > Run)

## Serial Number Location



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