

# **IBM** INSTALLATION INSTRUCTIONS

## **FC 5230. Add 30-Cartridge I/O to 3494 Model L10/L12/L14 Tape Library**

Document Number 05H7583 EC D19588

SSD - Tucson

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**Support/DPCE Review by:** L. Lawson  
**Status:** Field Use

**Note:** Install this Field Feature Bill Material (FFBM) only on the 3494 Model L10, L12 or L14 Tape Library Dataserver for which it was shipped.

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## Before Install (Sections 1 through 8)

### 1.0 Machines Affected

This FFBM affects the 3494 Model L10, L12 or L14 that requires the field installation of the 30 Cartridge I/O function.

### 2.0 Prerequisites / Concurrent / Companion

3494 Library Manager Code must be at LM516.09 or higher.

### 3.0 BMs To Be Installed

**EC 70672 Checkpoint**

Libraries at EC levels previous to C70672 have a front door with no filler panel for the 30-cartridge I/O.

#### 3.1.1 Pre-EC C70672 Libraries

FFBM	Description
05H7585	Install Instructions and Hardware

#### 3.1.2 EC C70672 (and later) Libraries

**Note:** The content of this FFBM should be the net difference between the parts that are required for the old 05H7585 FFBM and those required for the new FFBM.

FFBM	Description
09L4581	Install Instructions and Hardware

### 4.0 Preparation

Check all items listed on the bill of material to determine that all parts have been received.

### 5.0 Programming Updates

None

### 6.0 Purpose and Description

Expand customer's input/output capability to 30 cartridges and, if required, replace existing front door.

### 7.0 Installation Time

**CAUTION:**

One door weighs approximately 58 kilograms (130 pounds). At a minimum, two service representatives will be required to complete physical removal of the currently installed door, and the installation of the new door.

Machine Hours	System Hours	CE Hours	# CEs
3.0	0.0	4.2	2

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## **8.0 Special Tools, Materials, and/or Procedures Required**

None

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## Install (Sections 9, 10, and 11)

### 9.0 Safety

**CAUTION:**  
**One door weighs approximately 58 kilograms (130 pounds). At a minimum, two service representatives will be required to complete physical removal of the currently installed door, and the installation of the new door.**

Check the following safety items and correct as needed.

1. All safety engineering changes (ECs) have been installed correctly.
2. The location or list of engineering change announcements (ECAs) is accessible.
3. No obvious non-IBM changes have been made.

## 10.0 Details Of Installation

### 10.1 Relocate Customer Cartridges

- \_\_\_ 1. The capacity of the control unit is reduced by 50 cartridges (if *Convenience I/O FC 5210* is installed) or by 80 cartridges (if *Convenience I/O FC 5210* is **NOT** installed).
  - \_\_\_ a. The customer may need to relocate or eject the cartridges installed in columns **C** and **D** of the currently installed door.
  - \_\_\_ b. Go to section 10.2, "Subsystem Power" if there are **NO CARTRIDGES** installed in columns **C** and **D** of the currently installed door.
- \_\_\_ 2. Relocate the customer cartridges installed in columns **C** and **D**.
  - \_\_\_ a. If a large bulk output area was defined, you may be able to reduce or eliminate the bulk output area using **Teach-Current Configuration** to make room for the customer's cartridges from **C** and **D**.
  - \_\_\_ b. Otherwise, the cartridges must be either relocated to empty storage cells in the other library walls or ejected from the library.

### 10.2 Subsystem Power

- \_\_\_ 1. Ask the operator to complete or cancel jobs in the queue.
- \_\_\_ 2. Ask the operator to vary all library devices offline.
 

**Note:** In an HA1 environment, ensure that you are on the ACTIVE Library Manager before proceeding. Ensure that the standby Library Manager is enabled.
- \_\_\_ 3. Place the library manager in **Offline** mode.
- \_\_\_ 4. Place the library in **Pause** mode.
- \_\_\_ 5. Remove cartridges left in drives and place them in the error recovery cell (*1A1* for machines **WITHOUT** the Dual Gripper feature; or *1A3* for machines **WITH** the Dual Gripper feature) or an empty storage cell.
- \_\_\_ 6. Remove all cartridges in columns **A** and **B** of the currently installed door. Set the cartridges to the side for future reinstallation.
- \_\_\_ 7. When you are ready to start this installation, use the library Unit Power switch on the library operator panel to power the library down.

For machines prior to EC level C70672, go to section 10.3, "Remove 10 Cartridge I/O Hardware (pre-EC C70672)" on page 6.

For machines at EC level C70672 or later, go to section 10.5, "Remove 10-Cartridge I/O Hardware (EC C70672 and later)" on page 10.

### 10.3 Remove 10 Cartridge I/O Hardware (pre-EC C70672)

See Figure 1 on page 7 when performing the following steps.

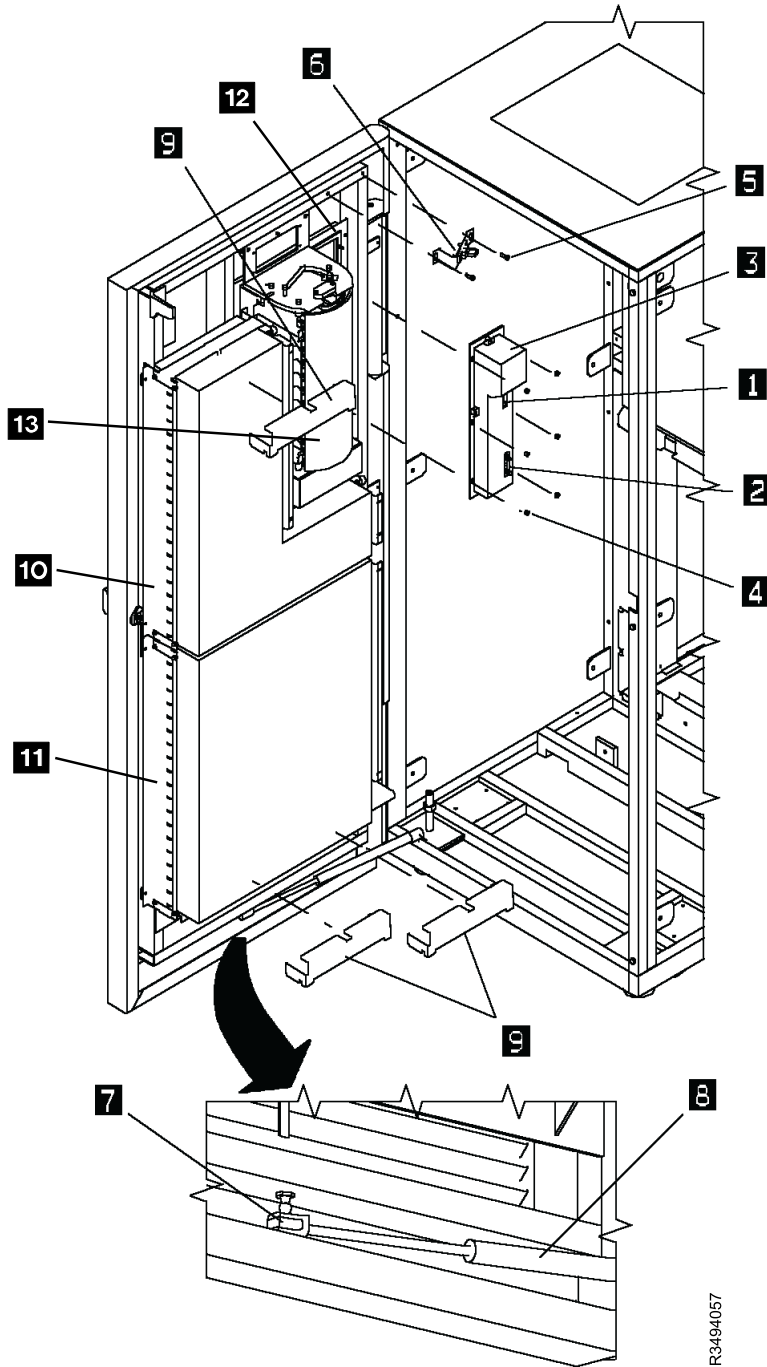
- \_\_\_ 1. Disconnect the OP panel cable **1** on the OP panel **3**. Set the cable to the side for future reinstallation within step 4 on page 8.
- \_\_\_ 2. Disconnect the terminator **2** or OP panel cable **2** from the OP panel **3**.
  - \_\_\_ a. If the *Convenience I/O* feature (FC 5210) is installed, you will disconnect the cable.
  - \_\_\_ b. If the *Convenience I/O* feature (FC 5210) is not installed, you will be

removing the terminator from the I/O connector. Set the terminator to the side for parts disposition as defined within section 14.0, "Parts Disposition" on page 17.

- \_\_\_ 3. Remove the operator panel card cover and four screws.
- \_\_\_ 4. Remove the operator panel **3** and six nuts **4** from the currently installed door. Set the OP panel to the side for future reinstallation within step 2 on page 8.
- \_\_\_ 5. Remove two screws **5** and the door interlock switch bracket **6**. They will be reinstalled within step 6 on page 8.
- \_\_\_ 6. By sliding the spring clip **7** off the door post, disconnect the door shock absorber **8** from the currently installed door. The door shock absorber will be reconnected within step 5 on page 8.
- \_\_\_ 7. Remove the door from the frame hinge pins. Set the door to the side for parts disposition as defined within Section 14.0, "Parts Disposition" on page 17.

Go to Section 10.4, "Install 30-Cartridge I/O Hardware (pre\_EC C70672)" on page 8.

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Figure 1. Remove 10-Cartridge I/O Hardware

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## 10.4 Install 30-Cartridge I/O Hardware (pre\_EC C70672)

See Figure 2 on page 9 when performing the following steps.

- \_\_\_ 1. Slide the new 30 cartridge I/O door (P/N 05H7584, supplied) over the frame hinge pins.
- \_\_\_ 2. Using the six nuts **1** removed within step 4 on page 6, reinstall the OP panel **2** to the newly installed door.
- \_\_\_ 3. Reinstall the operator panel cover and screws.
- \_\_\_ 4. Connect the two OP panel cables (**3** and **4**).
  - \_\_\_ a. Reconnect the OP cable **3** that was disconnected within step 1 on page 6.
  - \_\_\_ b. Connect the OP cable **4** that is connected to the new 30 cartridge I/O door.
- \_\_\_ 5. Slide the door shock absorber **7** over the door post, and slide the spring clip **8** back into place.
- \_\_\_ 6. Reinstall the two screws **6** and door interlock switch bracket **5** that were disconnected within step 5 on page 6.
- \_\_\_ 7. Referring to the *CARR Section* of the 3494 machine MI, adjust the door interlock switch actuator **5**.
- \_\_\_ 8. Replace the cartridges in columns A and B that were removed in step 6 on page 5 in section 10.2, "Subsystem Power" on page 5.

Proceed directly to Section 11.0, "Test Procedure" on page 16 if this machine **DOES NOT HAVE** the Dual Gripper feature (i.e. FC 5215) currently installed. Continue with step 11 on page 14 in section 10.6, "Install 30-Cartridge I/O Hardware (EC C70672 and later)" on page 11 if the Dual Gripper feature **IS INSTALLED**.

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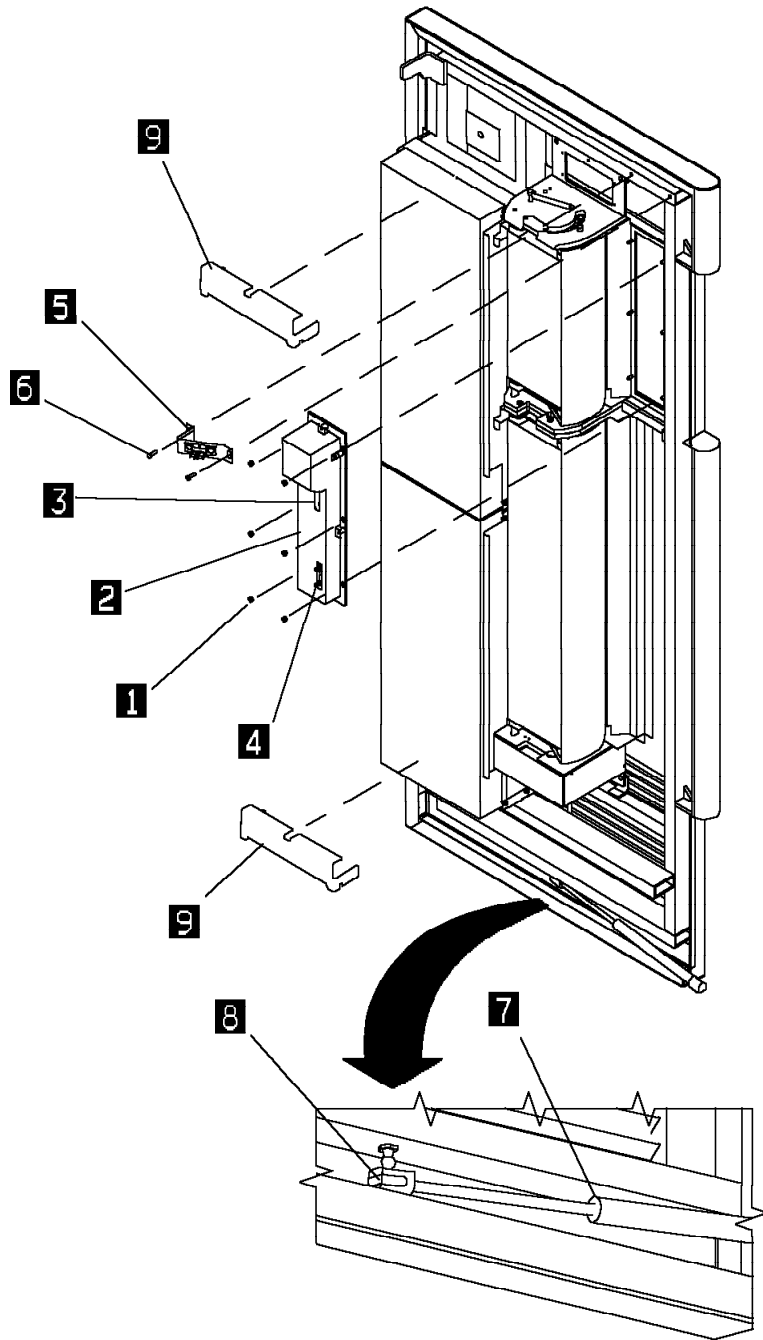


Figure 2. Install 30-Cartridge I/O Hardware

## 10.5 Remove 10-Cartridge I/O Hardware (EC C70672 and later)

### 10.5.1 10-Cartridge I/O Feature Is Not Installed

If the I/O feature is not currently installed, do the following to remove the filler panel and operator panel:

- \_\_\_ 1. Open the front door of the control unit.
- \_\_\_ 2. Remove all cartridges from the storage racks in the front door.

**Refer to Figure 1 on page 7 when doing the following steps.**

- \_\_\_ 3. Remove the jumper assembly at P2 **2**; set aside for disposition as defined in section 14.0, "Parts Disposition" on page 17.
- \_\_\_ 4. Disconnect the cable at P1 **1** on operator panel card.
- \_\_\_ 5. Set the door handle in the closed position.
- \_\_\_ 6. Remove the upper storage rack **10** and the bracket beneath the 10-cartridge I/O port **13** by removing three M4 and two M6 screws.
- \_\_\_ 7. Remove the lower 4x20 storage array **11** and four M4 screws.

Set the upper rack and lower array aside for disposition as defined in section 14.0, "Parts Disposition" on page 17.

- \_\_\_ 8. Remove the card cover **3** and three screws. Set the cover to the side for parts disposition as defined in section 14.0, "Parts Disposition" on page 17.

- \_\_\_ 9. Remove operator panel with card, lockwashers and nuts. Set all parts to the side for reinstallation.
- \_\_\_ 10. Remove the filler panel **12**, eight lockwashers and screws. Set all parts to the side for parts disposition as defined in section 14.0, "Parts Disposition" on page 17.

Go to Section 10.6, "Install 30-Cartridge I/O Hardware (EC C70672 and later)" on page 11.

### 10.5.2 10-Cartridge I/O Feature Installed

If the I/O feature is currently installed, do the following to remove the filler panel and operator panel:

**Refer to Figure 1 on page 7 when doing the following steps.**

- \_\_\_ 1. Remove both storage arrays **10**, **11** and ten M4 screws from the I/O door.
- \_\_\_ 2. Disconnect the I/O cable connector at P2 **2**.
- \_\_\_ 3. Remove the 10-cartridge I/O port assembly **13** and four screws. Set aside for disposition as defined in section 14.0, "Parts Disposition" on page 17.
- \_\_\_ 4. Remove the 10-cartridge I/O lower support bracket and 2 screws. Set aside for disposition as defined in section 14.0, "Parts Disposition" on page 17.
- \_\_\_ 5. Remove the lower filler panel, 8 lockwashers and screws, then discard. Set all parts to the side for parts disposition as defined within Section 14.0, "Parts Disposition" on page 17.

Go to Section 10.6, "Install 30-Cartridge I/O Hardware (EC C70672 and later)" on page 11.

## 10.6 Install 30-Cartridge I/O Hardware (EC C70672 and later)

See Figure 3 on page 12 when performing the following steps.

- \_\_\_ 1. Install the lower 30 I/O door bezel **10** (PN 05H7769, supplied) with seven M4 screws (PN 19P0320, supplied).
- \_\_\_ 2. Attach the center brace (PN 05H7582, supplied) using M4 screw (PN 19P0320, supplied) to the center front of the 30-cartridge I/O port.
- \_\_\_ 3. Install the 30-cartridge I/O port **11** (PN 05H7580, supplied) in the Lxx door frame using six M6 screws (PN 1624790, supplied).
- \_\_\_ 4. Reinstall the operator panel with card, the eight lockwashers and the six screws that were removed in section 10.5, "Remove 10-Cartridge I/O Hardware (EC C70672 and later)" on page 10, step 9 on page 10.
- \_\_\_ 5. Install card cover (PN 50G0390) **4** with 4 screws (PN 1622533) over card assembly.

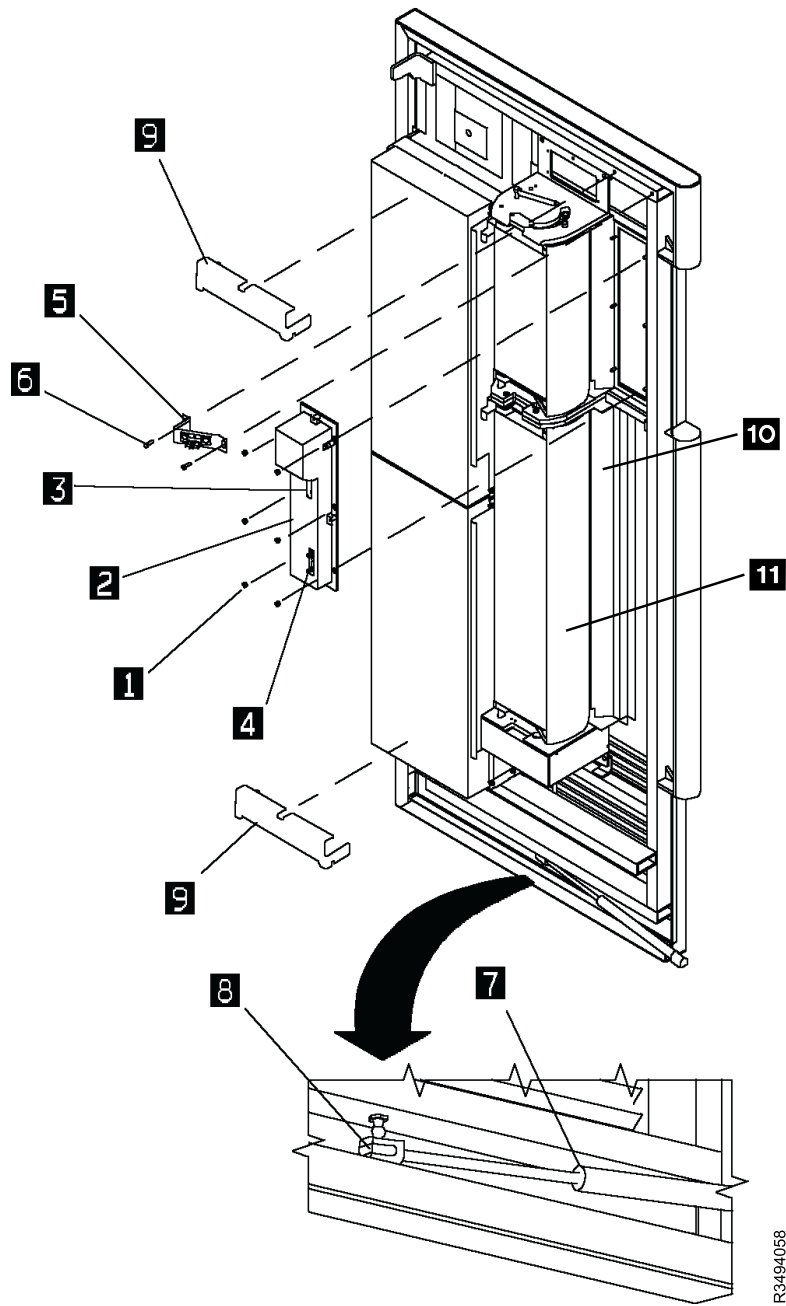
- \_\_\_ 6. Refer to Figure 4 on page 13. Install three cable clamps **1** (PN 65F6124, supplied) in the already-drilled holes on the Lxx door frame.
- \_\_\_ 7. Route the I/O cable through the clamps and attach the connector at P2.

**Note:** Attach P1 cable and close P2 **6** retention latches.

- \_\_\_ 8. Install two 2x20 storage arrays (PN 05H7578, supplied) onto the door frame using eight screws (PN 19P0320, supplied).
- \_\_\_ 9. Install row labels on the 2x20 storage arrays as follows:
  - \_\_\_ a. 2-16 PN 62G1545
  - \_\_\_ b. 22-36 PN 62G1547
- \_\_\_ 10. Replace the cartridges that were removed in step 6 on page 5 in section 10.2, "Subsystem Power" on page 5.

Go to section 11.0, "Test Procedure" on page 16 if this machine **DOES NOT HAVE** the Dual Gripper feature (i.e. FC 5215) currently installed. Continue with the step 11 on page 14 if the Dual Gripper feature **IS INSTALLED**.

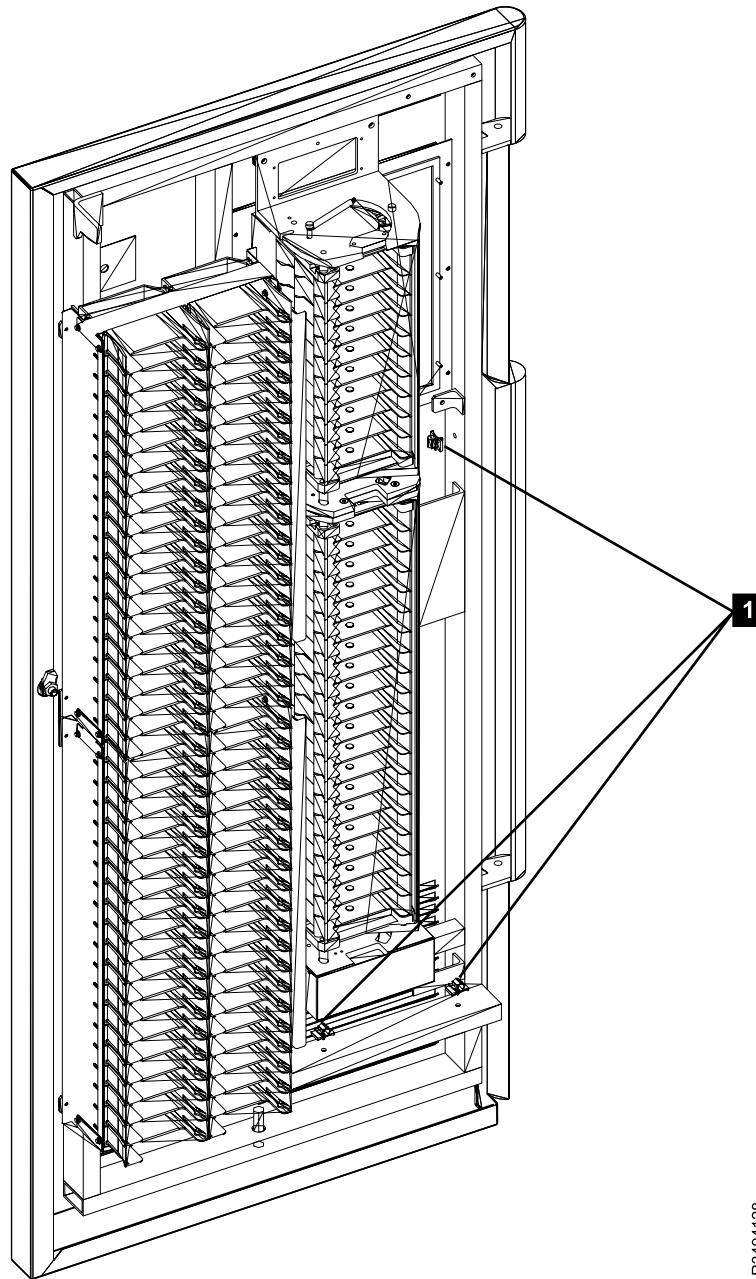
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Figure 3. Install 30 Cartridge I/O Hardware

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Figure 4. 3494 Lxx Door Frame Clamps

3494  
L10/L12/L14

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- \_\_\_ 11. From the following locations, remove the cartridge storage inserts from the door or storage arrays that you removed in step 6 in section 10.3, "Remove 10 Cartridge I/O Hardware (pre-EC C70672)" on page 6.
  - \_\_\_ a. If *Convenience I/O FC 5210 IS INSTALLED*: Referring again to Figure 1 on page 7, remove the top and bottom two rows **9** of cartridge storage inserts from the door.
  - \_\_\_ b. If *Convenience I/O FC 5210 IS NOT INSTALLED*: Refer to Figure 5 on page 15. Remove

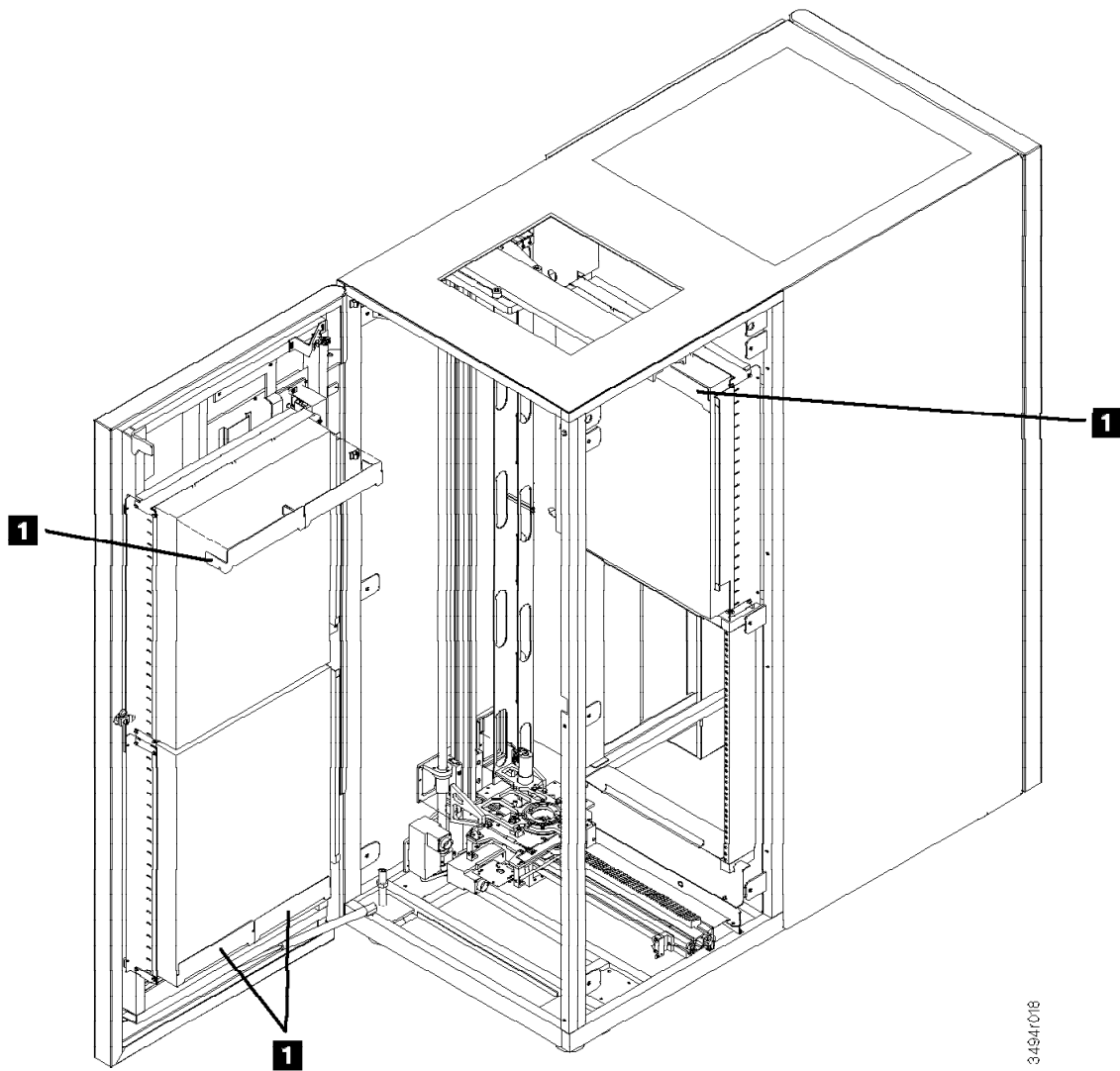
the top and bottom two rows **1** of cartridge storage inserts from the door.

**See Figure 2 on page 9 when performing the following steps.**

- \_\_\_ 12. In the new door you installed, install the cartridge storage inserts **9** (removed within step 11) in the top and bottom two rows of cartridge storage within the new door.

Proceed to Section 11.0, "Test Procedure" on page 16.

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Figure 5. Cartridge Storage Insert (control unit shown)

## 11.0 Test Procedure

- \_\_\_ 1. Ensure that the library is powered on. If you have an HA1 library, use the active Library Manager for installation testing.
- \_\_\_ 2. **ATTENTION:** Selection of **Teach New** will erase the customer's data base. Therefore it is important that you DO NOT automatically select the default option when performing step 3.
- \_\_\_ 3. Select **Teach - Current Configuration** option on the Teach Pulldown Menu.
- \_\_\_ 4. Select the **30 Cartridge Convenience I/O** option, and redefine the bulk output area per the customer's requirements.
  - \_\_\_ a. Reteach **wall 2**, and the convenience I/O station.
- \_\_\_ 5. Run **Verify Installation** on the Service pulldown menu. Choose the top, bottom, and one of the middle cartridge slots during the I/O test.
- \_\_\_ 6. **Open Door Verification** will re-inventory the storage when the library manager is put in an *Auto Online* mode.

Go to Section 12.0, "Field Updating" on page 17.

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## After Installation (Sections 12 through 15)

### 12.0 Field Updating

None

### 13.0 Field Support Publications

None

### 14.0 Parts Disposition

All REMOVED PARTS are the property of the customer. All UNUSED PARTS are the property of IBM, and are to be processed as follows:

#### USA

Provide all UNUSED PARTS to the local branch office for their recovery and reclamation programs.

#### World Trade

Provide all UNUSED PARTS to the Country Central Stock per existing procedures.

### 15.0 Machine Records

- \_\_\_ 1. Using existing procedures, report installation and quality.
- \_\_\_ 2. Using existing procedures, update all appropriate field records to reflect that FC 5230 has been installed and that ( *if appropriate*) FC 5210 was removed.

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