IBM INSTALLATION INSTRUCTIONS

FC 5045. Enhanced Library Manager for 3494 Model L10/L12/L14 Tape Library Dataservers

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SSD, Tucson

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Status: Field Use

Note: Install this Field Feature Bill Material (FFBM) only on the 3494 Tape Library Dataserver for which it was shipped.

Contents

Before Install (Sections 1 through 8)

1.0 Machines Affected

This FFBM applies only to those 3494 Subsystems where FC 5045 ("Enhanced Library Manager") has been ordered.

2.0 Prerequisites / Concurrent / Companion

If "Remote Library Manager Console" (FC 5226) was previously installed, refer to installation instructions "Remote Library Manager Console with TCP/IP" (P/N 05H7277, supplied) to reinstall the *Remote Library Manager Console*.

Note: If the communications protocol being used is APPC, go to Appendix A (at the end of this installation instruction) to remove the old configuration from the controlling workstation before reinstalling.

3.0 FFBMs To Be Installed

3.1 Library Manager Replacement

Note: One the following FFBMs will be supplied:

- FFBM 05H8789 will be supplied if the 3494 subsystem **DOES NOT CONTAIN** SC 9040 (3494 Model HA1); OR
- FFBM 05H8790 will be supplied if the 3494 subsystem **DOES CONTAIN** SC 9040 (3494 Model HA1).

3.1.1 Enhanced Library Manager WITHOUT SC 9040

FFBM	Description
05H8789	Installation Instructions and Hardware

3.1.2 Enhanced Library Manager WITH SC 9040

FFBM	Description
05H8790	Installation Instructions and Hardware

3.2 MIC3/LPC3 Card Replacement

Note: The following FFBM will be furnished if EC C35035 ("MIC3 Card Assembly") is not reflected as currently installed within the San Jose Plant MLC system.

EC CHECKPOINT:

- *EC C35035*: MIC card reflects part number 05H8144.

FFBM	Description
05H8297	MIC3/LPC3 Card Replacement

3.3 Library Manager Feature Installations

Note: The following features will be *plant installed* within the new “Enhanced Library Manager, if any of them have been **ordered on the same MES order as FC 5045**:

- FC 5214 (“2nd Hard Drive”): See Section 3.3.1, “2nd Hard Drive”; and/or
- FC 5219 (“IBM Token Ring LAN Attachment”): See Section 3.3.2, “IBM Token Ring LAN Attachment” on page 7; and/or
- FC 5220 (“Ethernet LAN Attachment”): See Section 3.3.3, “Ethernet LAN Attachment” on page 7; and/or
- FC 5229 (“Expansion Attachment Card”): See Section 3.3.4, “Expansion Attachment Card” on page 8

Proceed to Section 3.4, “Library Manager Feature Enhancements” on page 8 if none of the above listed features were ordered on the same MES as FC 5045.

3.3.1 2nd Hard Drive

Note: The following FFBM will be supplied if the addition of FC 5214 has been ordered on the same MES order as the addition of FC 5045.

Hardware required to be installed within the new “Enhanced Library Manager” will be *factory installed*. Any additional hardware requiring installation external to the new “Enhanced Library Manager” will be shipped along with the appropriate installation instructions within the FFBM listed below.

Proceed to Section 3.4, “Library Manager Feature Enhancements” on page 8 if this was the only Library Manager feature that met the installation criteria listed within Section 3.3, “Library Manager Feature Installations.”

FFBM	Description
50G0967	2nd Hard Drive FFBM

3.3.2 IBM Token Ring LAN Attachment

Note: The following FFBM will be supplied if the addition of FC 5219 has been ordered on the same MES order as the addition of FC 5045.

Hardware required to be installed within the new “Enhanced Library Manager” will be *factory installed*. Any additional hardware requiring installation external to the new “Enhanced Library Manager” will be shipped along with the appropriate installation instructions within the FFBM listed below.

Proceed to Section 3.4, “Library Manager Feature Enhancements” on page 8 if this was the only (or last) Library Manager feature that met the installation criteria listed within Section 3.3, “Library Manager Feature Installations” on page 6.

FFBM	Description
05H4076	IBM Token Ring LAN Attachment FFBM

3.3.3 Ethernet LAN Attachment

Note: The following FFBM will be supplied if the addition of FC 5220 has been ordered on the same MES order as the addition of FC 5045.

Hardware required to be installed within the new “Enhanced Library Manager” will be *factory installed*. Any additional hardware requiring installation external to the new “Enhanced Library Manager” will be shipped along with the appropriate installation instructions within the FFBM listed below.

Proceed to Section 3.4, “Library Manager Feature Enhancements” on page 8 if this was the only (or last) Library Manager feature that met the installation criteria listed within Section 3.3, “Library Manager Feature Installations” on page 6.

FFBM	Description
05H4078	Ethernet LAN Attachment FFBM

3.3.4 Expansion Attachment Card

Note: The following FFBM will be supplied if the addition of FC 5229 has been ordered on the same MES order as the addition of FC 5045.

Hardware required to be installed within the new “Enhanced Library Manager” will be *factory installed*. Any additional hardware requiring installation external to the new “Enhanced Library Manager” will be shipped along with the appropriate installation instructions within the FFBM listed below.

Proceed to Section 3.4, “Library Manager Feature Enhancements.”

FFBM	Description
05H4072	Expansion Attachment Card FFBM

3.4 Library Manager Feature Enhancements

Note: Library Manager feature hardware will be upgraded if any of the following feature installation criteria is met:

- FC 5214 (“2nd Hard Drive”) is already installed within the current Library Manager: See Section 3.4.1, “2nd Hard Drive” on page 9; and/or
- FC 5219 (“IBM Token Ring LAN Attachment”) is already installed within a *PS/ValuePoint Library Manager*: See Section 3.4.2, “IBM Token Ring LAN Attachment” on page 9; and/or
- FC 5229 (“Expansion Attachment Card”) is already installed within the current Library Manager: See Section 3.4.3, “Expansion Attachment Card” on page 10.

Proceed to Section 4.0, “Preparation” on page 10 if none of the above listed creteria pertains to your currently installed Library Manager.

3.4.1 2nd Hard Drive

Note: The following FFBM will be supplied if FC 5214 is reflected on the Plant MLC system as already installed.

Hardware required to be installed within the new “Enhanced Library Manager” will be *factory installed*. Any additional hardware requiring installation external to the new “Enhanced Library Manager” will be shipped along with the appropriate installation instructions within the FFBM listed below.

Proceed to Section 4.0, “Preparation” on page 10 if this was the only Library Manager feature that met the installation criteria listed within Section 3.4, “Library Manager Feature Enhancements” on page 8.

FFBM	Description
50G0967	2nd Hard Drive FFBM

3.4.2 IBM Token Ring LAN Attachment

Note: The following FFBM will be supplied if FC 5219 is reflected on the Plant MLC system as already installed within an existing *PS/ValuePoint Library Manager*.

Hardware required to be installed within the new “Enhanced Library Manager” will be *factory installed*. Any additional hardware requiring installation external to the new “Enhanced Library Manager” will be shipped along with the appropriate installation instructions within the FFBM listed below.

Proceed to Section 4.0, “Preparation” on page 10 if this was the only Library Manager feature that met the installation criteria listed within Section 3.4, “Library Manager Feature Enhancements” on page 8.

FFBM	Description
05H4076	IBM Token Ring LAN Attachment FFBM

3.4.3 Expansion Attachment Card

Note: The following FFBM will be supplied if FC 5229 is reflected on the Plant MLC system as already installed.

Hardware required to be installed within the new “Enhanced Library Manager” will be *factory installed*. Any additional hardware requiring installation external to the new “Enhanced Library Manager” will be shipped along with the appropriate installation instructions within the FFBM listed below.

Proceed to Section 4.0, “Preparation.”

FFBM	Description
05H4072	Expansion Attachment Card FFBM

4.0 Preparation

__ 1. **Verify which Library Manager is currently installed** by referring to Figure 1 (*PS/ValuePoint Library Manager*), Figure 2 on page 11 (*IBM Model 7585 Industrial Computer System Unit*) and Figure 3 on page 11 (*IBM Model 7588 Industrial Computer System Unit*).

__ 2. Read and understand the purpose and details of this installation instruction.

__ 3. Check all items listed on the bill(s) of material supplied to determine that all parts **requiring FIELD INSTALLATION** have been received.

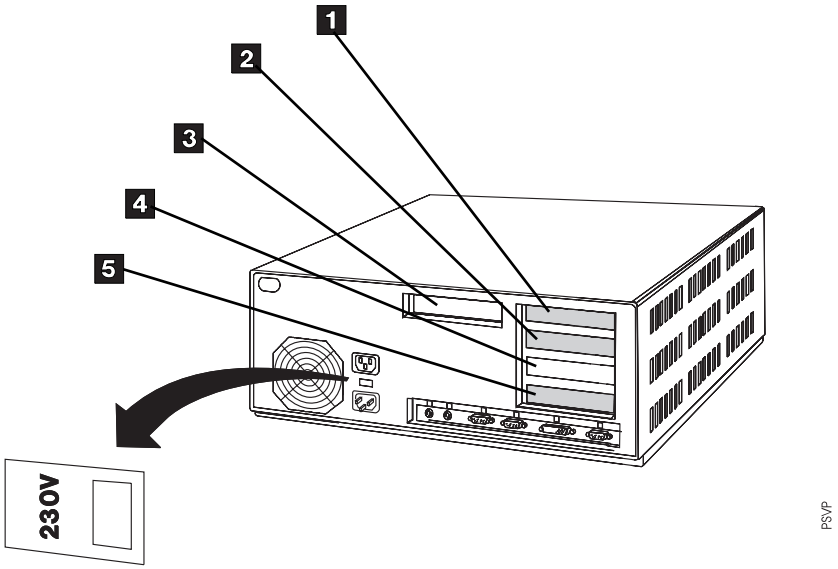


Figure 1. PS/ValuePoint System Unit (Rear View)

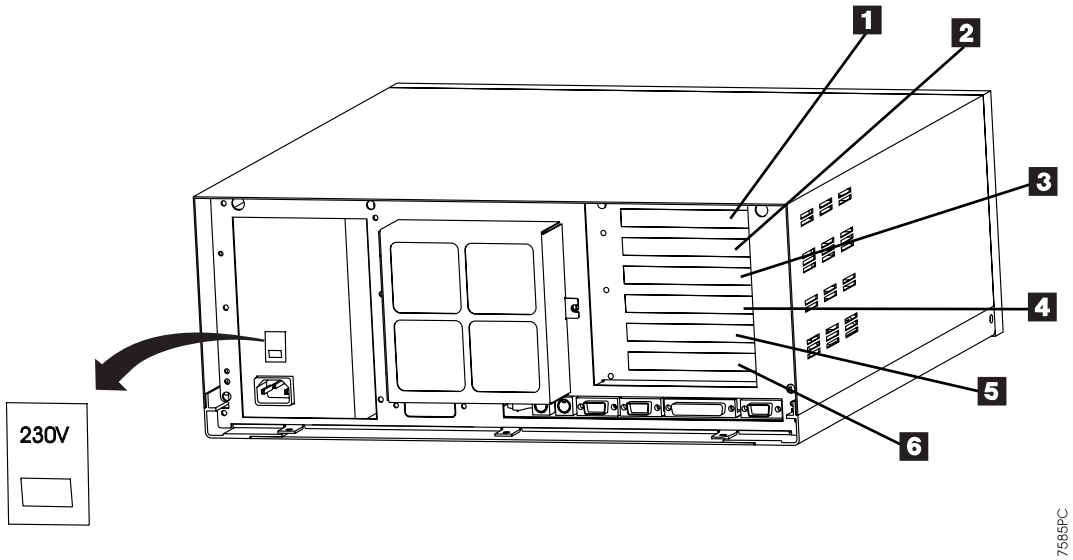


Figure 2. Model 7585 Industrial Computer System Unit (Rear View)

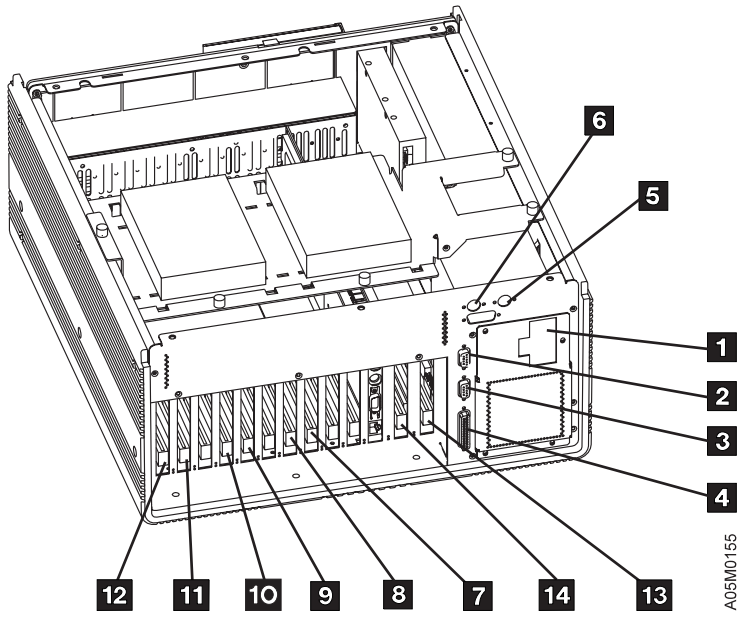


Figure 3. Model 7588 Industrial Computer System Unit (Interior View)

5.0 Programming Updates

None.

6.0 Purpose and Description

Replaces the existing Library Manager (within the 3494 Model L10, L12 or L14 control unit) with the *latest production practice level* of the *IBM Model 7588 Industrial Computer System Unit*.

7.0 Installation Times

Machine Hours	System Hours	CE Hours
2.0	0.0	2.3

8.0 Special Tools, Materials, and/or Procedures Required

You will require a copy of the following documents:

- *IBM 3494 Tape Library Maintenance Information* manual (05H8504, supplied).
  - Sections **LOC** and **CARR** provide the required information for the installation of Library Managers.
  - Familiarize yourself with “System Unit, Library Manager Cards, Display Adapter Card, Ethernet Adapter, ARTIC186 Adapter, Servo Control Card and Token Ring Adapter” procedure found within the **LOC** Section.
  - Familiarize yourself with the “**Configuration Utility Program**” procedure found within the **CARR** Section.
- “IBM PS/ValuePoint Installing Options” manual that was shipped with the 3494 Subsystem. Familiarize yourself with Chapter 1, “Option Installation Overview”.
- “IBM 7585 Industrial Computer Information, Installation, Operation and Hardware Maintenance” manual (S06H-2298) that was shipped with the *IBM Model 7585 Industrial Computer System Unit*. Familiarize yourself with Chapter 3 (“Installing Options”).
- “IBM 7588 Industrial Computer Information, Installation, Operation and Hardware Maintenance” manual (S76H-4349) that was shipped with the *IBM Model 7588 Industrial Computer System Unit*. Familiarize yourself with Chapter 3 (“Installing Options”); and Chapter 6 (“Location of Primary and Secondary IDE Ports”).

Details of Installation (Sections 9, 10, and 11)

9.0 Safety

9.1 Electrostatic Discharge (ESD)

Warning: Some parts handled during this installation are **very sensitive** to electrostatic discharge (ESD). See *Working With ESD-Sensitive Parts* in the **CARR** Section of the 3494 Maintenance Information Manual.

9.2 Subsystem Power

__ 1. Ask the operator to complete or cancel jobs in the queue.

__ 2. Ask the operator to vary all library devices offline.

__ 3. Place the library manager in **Pause** mode.

__ 4. Remove cartridges left in drives and place them in the error recovery cell (1A1 if the machine is without the Dual Gripper feature; and 1A3 if the Dual Gripper feature is installed) or an empty storage cell.

__ 5. Return to **Auto-Online**.

__ 6. After all the cartridges have been returned to their home cell, place the library manager in **Offline** mode.

__ 7. Save the following information from the **OLD Library Manager** in case the Database Restore procedure fails. Record the information in the table provided in 17.0, “Appendix B” on page 64.

__ a. From the Library Manager menu select:

- **Mode**
- **Service menu**
- **Teach**
- **Teach current configuration**

__ b. A **"Teach-Box Configuration"** window will appear. Record all the Box (frame) configurations, High-Capacity I/O Facility and RTIC Card Configuration. Select **OK**.

__ c. Next the **"Teach-Base Information"** window will appear. Record the Library Serial Number, VTS library serial number if installed, Dual Gripper type, Default Cartridge Type, Convenience I/O type, Password required, Home Cell Mode and Adjacent frame inventory update information. Select **OK**.

__ d. Next the **"Teach-Device Identifiers"** window will appear. Record the device identifiers information. Select **OK**.

__ e. If the library contains a VTS subsystem a **"Teach-Virtual Device Identifiers"** window will appear. Record the virtual device identifiers information.

__ f. This completes the information needed for teach, select **Cancel teach**.

__ 8. Place the library in **Pause** mode.

__ 9. From the library manager service window disable the **Inventory update** option under the **Commands** pulldown before shutdown.

__ 10. Before shutting down the Library Manager, check the currently installed version of Library Manager microcode by selecting **Help** and **About**. Record this information as it will be needed for step 15 on page 17.

__ 11. Shut down the Library Manager.

__ 12. From the shutdown menu, select **"Service window"** (HINT: MAXIMIZE screen).

__ 13. Check to see if Remote Console was previously installed:

__ a. From the service window type:

__ 1) **SET REMT_CON** and press **enter**.

__ 2) Remote Console can be considered as **NOT INSTALLED** if the response is **REMT_CON=(NULL)**. Proceed to step 15 on page 17; OR

__ 3) Remote Console can be considered as **INSTALLED** if any other response is received. Proceed to step 14.

__ 14. **Remote Console is installed:** Perform the following steps to save the configuration information:

Note: Record the information in Table 2 or 3 of 17.0, “Appendix B” on page 64.

__ a. If TCP/IP is the communications protocol being used, perform the following commands from the service window:

__ 1) Type **Hostname** and press **enter.**

__ a) You should see something like the following:
lma.tucson.ibm.com

__ b) lma is the hostname; and tucson.ibm.com is the domain name.

__ c) Save this information.

__ 2) Type in **type c:\tcpip\etc\resolv** and press **enter.**

Note: If no nameserver is being used the **RESOLV** file will not exist.

__ a) You should see something like the following:

domain tucson.ibm.com
nameserver 9.115.0.250
nameserver 9.115.1.250

__ b) This gives you the domain name again and any nameservers if nameservers are being used.

__ c) Save this information.

__ 3) Type in **type c:\tcpip\bin\setup.cmd** and press **enter.**

__ a) You should see something like the following:

route -fh
arp -f
ifconfig lan0 **9.115.23.207** netmask **255.255.254.0**
REM ifconfig lan1
REM ifconfig lan2
REM ifconfig lan3
REM ifconfig lan4
REM ifconfig lan5
REM ifconfig lan6
REM ifconfig lan7
REM ifconfig sl0
route add default **9.115.23.254** 1
route add net 9 9.115.23.254 1

__ b) Save the information highlighted above. (This gives you the IP address (9.115.23.207) for lan0, the netmask (255.255.254.0) and any router information (9.115.23.254))

__ b. If APPC is the communications protocol being used, perform the following commands from the service window.

__ 1) Type **EPM c:\ibmcom\lantran.log**

__ a) Look for the line:

"Adapter 0 is using node address xxxxxxxxxxxx."
(where xxxxxxxxxxxx is the UAA of the adapter)

If you are using ethernet the line will read:
"Adapter 0 is using node address xxxxxxxxxxxx. The Token-Ring format is xxxxxxxxxxxxxxx."

__ b) Save the Token_Ring format of the address.

__ 2) Type **EPM c:\cmlib\ibm3494.ndf**

__ a) Look for the line:

DEFINE_LOCAL_CPFQ_CPNAME(xxx.yyy)

__ b) Save xxx.yyy (the fully qualified CP name)

__ 3) **REMINDER**: Using the above information, Appendix A needs to be performed on the **Controlling Work Station**. Until this update is performed, the Remote Console will not be operational.

__ c. The above information will be needed when Remote Console is installed and configured on the new **Library Manager** workstation.

__ 15. You must install the latest microcode revision plus fix pack on your **current platform before exporting** the Library Manager database to disk. This will ensure that the database backup will be compatible with the microcode when restored after hardware modifications have been made. If the current library manager microcode is at 516.09 or higher go to 17

__ 16. To install the latest microcode revision follow the "Software Revision Installation" procedure listed within the **CARR** Section of the 3494 MI. Use the latest level of 3494 Library Manager Diskettes available. Revision 516.09 is the earliest level which will support this MES installation process. After installation of the latest microcode shutdown the library manager.

__ 17. From a Service Window, enter **"C:\backold"** to export the LM database and necessary system files to floppy disk(s) (P/N 1619667, 5 supplied within the MES) in a compressed format. It should take two or less to complete the export, depending on how efficiently your database compresses. This "Database Export Copy" may be used later to "Restore and Migrate" the library manager to your new library manager computer. You should key on the message "Database/System File backup successful" to determine if you have valid export disks that can be used later for restore and migrate. It is **recommended** that the **C:\backold** be performed twice to two different set of diskettes.

If the database export fails, a **Teach New** will be required instead of a **Teach Current.** Continue to the next step if the database export failed. If the database export was successful go to step 24 on page 18.

Note: You cannot use the **Backup database** option under the **Utilities** pulldown from the library manager to create backup database diskettes. You can create the diskettes, but they will not be useable for restoring the database on the new 7588 library manager.

__ 18. You will need the data saved from step 7 on page 13. Also you will need to copy the file sysrange.pri to a diskette by typing in the following command from the service window:

copy c:\lm\pri\sysrange.pri a: and press enter.

If the Dual Hard Drive feature is installed, type in the following from the service window:

copy d:\lm\sec\sysrange\sec a: and press enter. else

copy c:\lm\sec\sysrange\sec a: and press enter.

If the library contains a VTS, continue to the next step to save the customer's VTS data. If the library does not contain a VTS, go to step 24 on page 18

__ 19. From the service window, type in the following command to save the file sysvtsmp.pri to a diskette:

copy c:\lm\pri\sysvtsmp.pri a: and press enter

If the Dual Hard Drive feature is installed, type in the following from the service window:

copy d:\lm\sec\sysrange\sec a: and press enter. else

copy c:\lm\sec\sysrange\sec a: and press enter.

__ 20. Restart the old Library Manager workstation and bring up **Pause-Offline**.

__ 21. To save the customer's logical types perform the following:

From the Library Manager menu select

- **Database**
- **List database volumes...**

A "List Database Volumes" window will appear. You will need to create a database query to retrieve the logical

information. From the **Output Column 1** drop-down list select **Volser**, from the **Output Column 2** drop-down list box select **Media Type**. Next click on the radio button next to **Specific Media Type**, then display the drop-down list next to Specific Media Type and highlight the first VTS media type. The Output Device will be A: and the Filename for the first query can be listdb.000. You will need to run the query for all VTS media types. Each time you run the query for each media type make sure and change the filename.

__ 22. To save the customers Fast Ready categories perform the following:

From the Library Manager menu select

- **Commands**
- **System management**
- **Set VTS category attributes...**

A "Define Fast Ready Categories" window will appear, if the customer has defined any Fast Ready Categories they will be displayed in the bottom left window under the Category VTS heading. Record the information.

__ 23. Shutdown the Library Manager.

__ 24. When you are ready to start this installation, use the library Unit Power switch on the library operator panel to power the library down.

10.0 Details Of Installation

10.1 Prepare the Library Manager System Unit for Service

Note: The following section deals with the preparation of removing the Library Manager Unit from the 3494 Library Control Unit. This applies to all three Library Manager types of *PS/ValuePoint Library Manager*, *IBM 7585 Industrial Computer Library Manager*, and *IBM 7588 Industrial Computer Library Manager*.

See Figure 4 on page 20 when performing the following step.

__ 1. Loosen the screw holding the braided strap to the MIC card.

__ 2. Open the cable clamps **3** that secure the library manager cables to the control unit frame.

__ 3. Disconnect the DI/DO cable and flat panel display:

__ a. Disconnect the DI/DO Card cable connector from the MIC card **1**.

__ b. Remove the DI/DO cables from cable clamps.

Note: Skip the balance of this step, and proceed to the step 4 on page 19 *if the Library Manager you are about to replace is a* IBM Model 7588 Industrial Computer System Unit.

__ c. Remove the two screws located on the bottom of the flat panel display. Set the screws to the side for future reinstallation within step 2c on page 50.

__ d. *Carefully lift* and remove the flat panel display.

__ 4. Proceed to one of the following sections which matches the currently installed Library Manager:

__ a. Section 10.2, “PS/ValuePoint Library Manager Installations” on page 21 for *PS/ValuePoint Library Manager* replacements; OR

__ b. Section 10.3, “IBM 7585 Library Manager Installations” on page 26 for *IBM 7585 Industrial Computer System Unit* replacements; OR

__ c. Section 10.4, “IBM 7588 Library Manager Installations” on page 31 for *IBM 7588 Industrial Computer System Unit* replacements.

1 DI/DO cable connector on the MIC1 Card.

2 Servo Control cable connector on the MIC1 Card.

3 Cable clamps

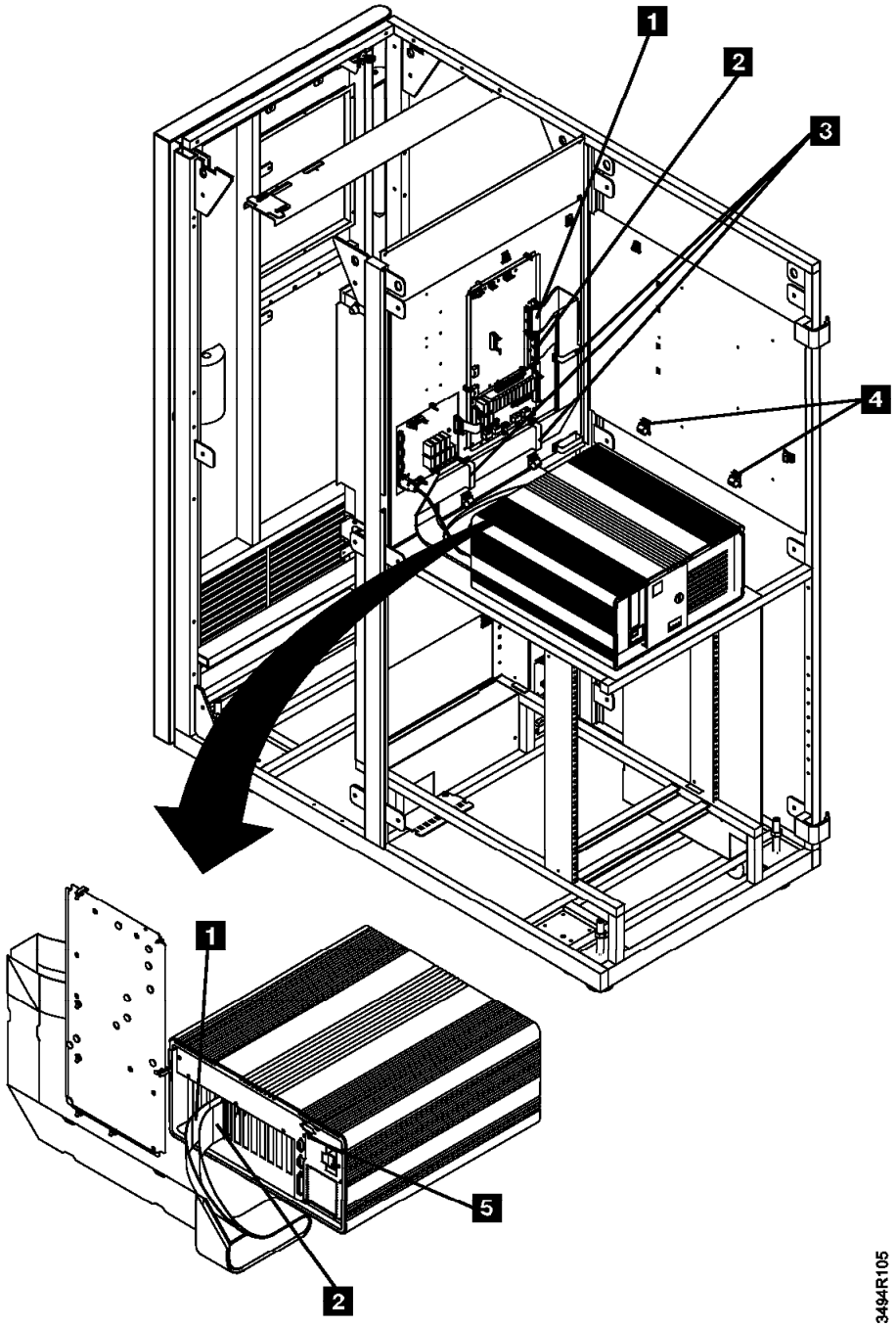


Figure 4. DI/DO and Servo Control cabling to MIC1 Card (Interior View)

10.2 PS/ValuePoint Library Manager Installations

Note: The following three sub-sections will deal with:

- Library Manager removal.
- Factory installation of various feature hardware.
- Relocaton of an Ethernet Adapter Card (if installed).

10.2.1 Library Manager Removal

Warning: Some parts to be handled during the DI/DO cable and card removal are **very sensitive** to electrostatic discharge (ESD). See "Working with ESD-Sensitive Parts" in the CARR section of the 3494 Maintenance Information Manual.

__ 1. Disconnect all of the cables from the *PS/ValuePoint Library Manager*.

__ 2. Remove the AC power cable. Set the cable to the side for parts disposition as defined within Section 14.0, “Parts Disposition” on page 55

__ 3. Remove the *PS/ValuePoint Library Manager*, and place it in a convenient work area.

Proceed to Section 10.2.2, “Plant Installation of Feature Cards” if any of the following features are *currently installed* or *ordered on the same MES as FC 5045*:

- **FC 5214**: “2nd Hard Drive”; and/or
- **FC 5219**: “IBM Token Ring LAN Attachment”; and/or
- **FC 5220**: “Ethernet LAN Attachment”; and/or
- **FC 5229**: “Expansion Attachment Card”.

Proceed to Section 10.6, “Relocate Breakout Box Bracket” on page 39 if **NONE** of the previously listed features is currently installed or ordered on the same MES as FC 5045.

10.2.2 Plant Installation of Feature Cards

Note: The purpose of this section is to identify what feature cards (as listed at the bottom of Section 10.2.1, “Library Manager Removal”) need to be relocated in the field, or can be expected to be factory installed within the new Enhanced Library Manager supplied via FC 5045.

__ 1. **2nd Hard Drive**: The hard disk drive will be *factory installed* within the new Enhanced Library Manager if:

   a. FC 5214 **was already installed** within the current Library Manager; OR

   b. FC 5214 **has been ordered on the SAME MES as FC 5045**.

__ 2. **IBM Token Ring LAN Attachment**: The feature card will be *factory installed* within the new Enhanced Library Manager if:

   a. FC 5219 **was already installed** within the current Library Manager; OR

   b. FC 5219 **has been ordered on the SAME MES as FC 5045**.

__ 3. **Ethernet LAN Attachment**:

   a. The feature card will be *factory installed* within the new Enhanced Library Manager if FC 5220 **has been ordered on the SAME MES as FC 5045**.

   b. If *already installed within current Library Manager*, the feature card will have to be relocated in the field to the new Library Manager furnished as part of FC 5045. This activity will be covered within Section 10.2.3, “Field Relocation of Feature Cards” on page 22.

__ 4. **Expansion Attachment Card**: The feature card will be *factory installed* within the new Enhanced Library Manager if:

   a. FC 5229 **was already installed** within the current Library Manager; OR

b. FC 5229 **has been ordered on the SAME MES as FC 5045**.

Proceed to Section 10.2.3, "Field Relocation of Feature Cards" if the "Ethernet LAN Attachment" feature (FC 5220) **is currently installed** within the *PS/ValuePoint Library Manager*; OR

Proceed to Section 10.6, "Relocate Breakout Box Bracket" on page 39.

10.2.3 Field Relocation of Feature Cards

Note: This section will cover the relocation of the "Ethernet LAN Attachment" feature card from the *PS/ValuePoint Library Manager* to the new *IBM Model 7588 Industrial Computer System Unit* supplied by FC 5045.

__ 1. Remove the cover of the *PS/ValuePoint Library Manager* by following the instructions below. For additional detail on removing the cover, see the "PS/ValuePoint Installing Options" manual.

__ a. With the front of the computer facing you, unlock the cover lock.

__ b. Push down and hold the cover-release latch (on the top left-hand side of the unit) as you slide the cover toward you until it separates from the computer.

__ 2. Unpack the new *IBM Model 7588 Industrial Computer System Unit*, and locate it close to the *PS/ValuePoint Library Manager*.

__ 3. Remove the cover of the new *IBM Model 7588 Industrial Computer System Unit* by following the instructions below:

__ a. Loosen the six screws on the top cover to the system unit, and place the cover to the side for future reinstallation.

See Figure 5 on page 23 when performing the following steps.

__ b. Disconnect the IDE ribbon cable **1** and the power cable from the rear of the HDD.

__ c. Loosen the three knurled thumbscrews that secure the HDD carrier to the sheet metal chassis, and then gently place the HDD carrier assembly to the side for future reinstallation.

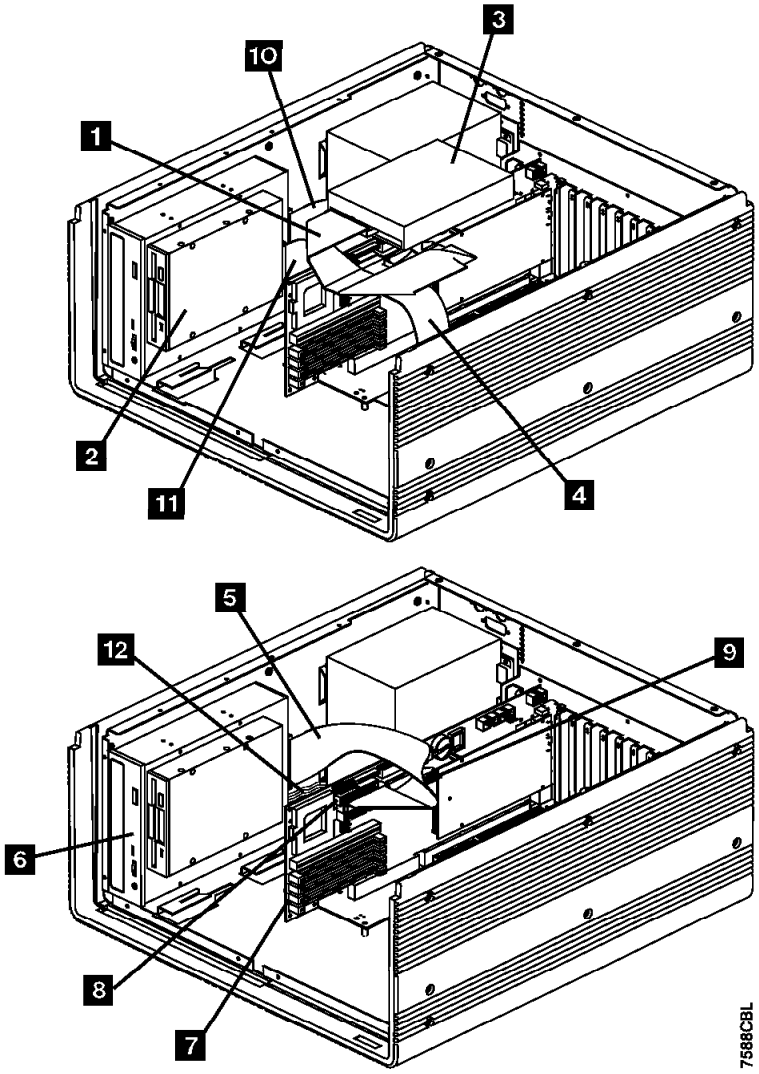


Figure 5. Disconnect IDE Ribbon Cable

See Figure 6 when performing the following steps.

__ 4. Using a screwdriver, remove the expansion slot screw that secures the card **4** to the system unit.

__ 5. Remove the card **4** from the card slot, and set it to the side for future reinstallation.

1 DI/DO Card cable connector.

2 Servo Control Card cable connector.

3 Display Adapter Card cable connector.

4 ARTIC Card1, Token Ring Adapter, or Ethernet Adapter (Optional Feature).

5 ARTIC Card cable connector.

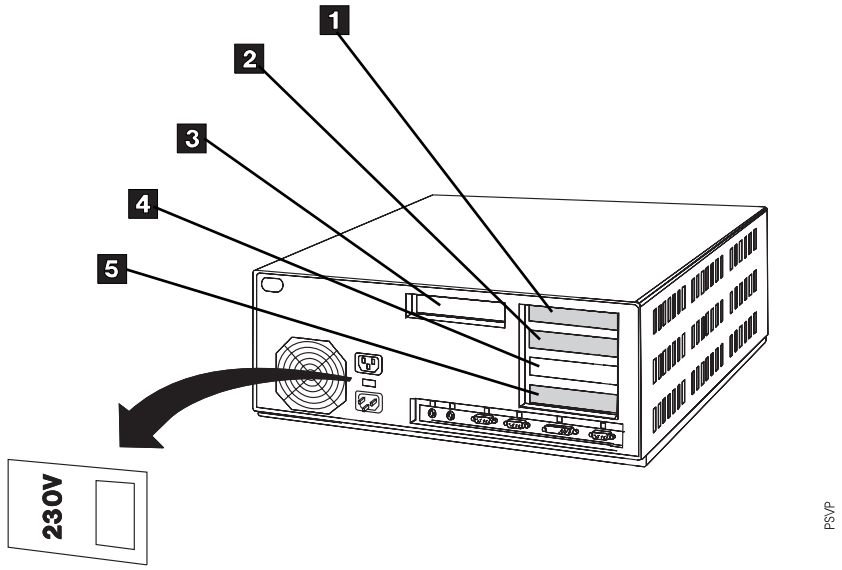


Figure 6. PS/ValuePoint System Unit (Rear View)

See Figure 7 when performing the following steps.

__ 6. Install the adapter card into the card slot (**7** or **4**) within the new *IBM Model 7588 Industrial Computer System Unit*.

__ 7. Using a screwdriver, install the expansion slot screw that secures the card to the system unit.

Go to Section 10.5, “Reinstall Computer Covers” on page 38.

1 EtherJet Adapter Card (Model HA1, Alternate Link).

2 EtherJet Adapter Card (Model HA1, Primary Link).

3 ARTIC Card 0 cable connector.

4 ARTIC Card 1 cable connector.

5 Servo Card cable connector.

6 DI/DO Card cable connector.

7 Token Ring Adapter Card or Ethernet Adapter (optional feature).

8 Display Adapter Card cable connector.

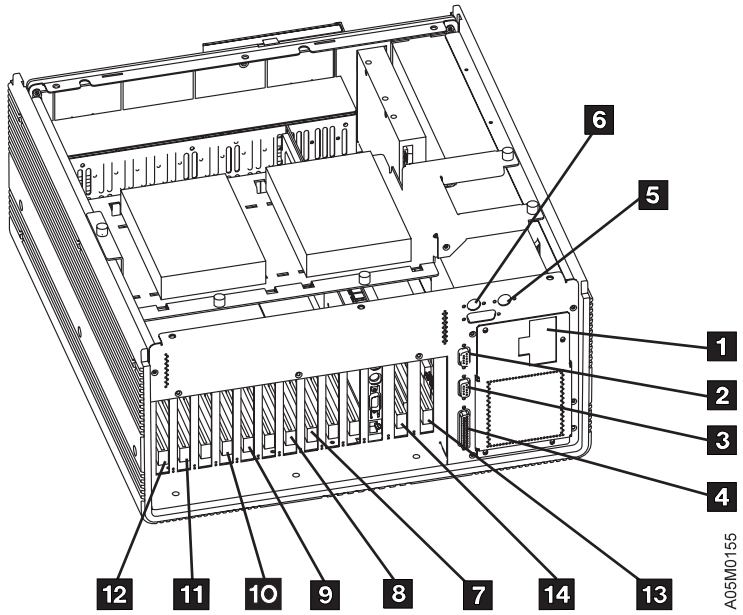


Figure 7. Model 7588 Industrial Computer System Unit (Interior View)

10.3 IBM 7585 Library Manager Installations

Note: The following three sub-sections will deal with:

- Library Manager removal.
- Factory installation of various feature cards.
- Relocaton of an various feature cards (if installed).

10.3.1 Library Manager Removal

Warning: Some parts to be handled during the DI/DO cable and card removal are **very sensitive** to electrostatic discharge (ESD). See "Working with ESD-Sensitive Parts" in the CARR section of the 3494 Maintenance Information Manual.

__ 1. Disconnect all of the cables from the *IBM 7585 Industrial Computer System Unit*.

__ 2. Remove the AC power cable. Set the cable to the side for parts disposition as defined by Section 14.0, “Parts Disposition” on page 55.

__ 3. Remove the *IBM 7585 Industrial Computer System Unit*, and place it in a convenient work area.

Proceed to Section 10.3.2, “Plant Installation of Feature Cards” if any of the following features are *currently installed* or *ordered on the same MES as FC 5045*:

- **FC 5214**: “2nd Hard Drive”; and/or
- **FC 5219**: “IBM Token Ring LAN Attachment”; and/or
- **FC 5220**: “Ethernet LAN Attachment”; and/or
- **FC 5229**: “Expansion Attachment Card”.

Proceed to Section 10.6, “Relocate Breakout Box Bracket” on page 39 if **NONE** of the previously listed features is currently installed or ordered on the same MES as FC 5045.

10.3.2 Plant Installation of Feature Cards

Note: The purpose of this section is to identify what feature cards (as listed at the bottom of Section 10.3.1, “Library Manager Removal”) need to be relocated in the field, or can be expected to be factory installed within the new Enhanced Library Manager supplied via FC 5045.

__ 1. **2nd Hard Drive**: The hard disk drive will be *factory installed* within the new Enhanced Library Manager if:

   a. FC 5214 **was already installed** within the current Library Manager; OR

   b. FC 5214 **has been ordered on the SAME MES as FC 5045**.

__ 2. **IBM Token Ring LAN Attachment**:

   a. The feature card will be *factory installed* within the new Enhanced Library Manager if FC 5219 has been ordered on the SAME MES as FC 5045.

   b. If *already installed within current Library Manager*, the feature card will have to be relocated in the field to the new Enhanced Library Manager furnished as part of FC 5045. This activity will be covered within Section 10.3.3, “Field Relocation of Feature Cards” on page 27.

__ 3. **Ethernet LAN Attachment**:

   a. The feature card will be *factory installed* within the new Enhanced Library Manager if FC 5220 has been ordered on the SAME MES as FC 5045.

   b. If *already installed within current Library Manager*, the feature card will have to be relocated in the field to the new Enhanced Library Manager furnished as part of FC 5045. This activity will be covered within Section 10.3.3, “Field Relocation of Feature Cards” on page 27.

__ 4. **Expansion Attachment Card**: The feature card will be *factory installed* within the new Enhanced Library Manager if:

   a. FC 5229 **was already installed** within the current Library Manager; OR

   b. FC 5229 **has been ordered on the SAME MES as FC 5045**.

Proceed to Section 10.3.3, "Field Relocation of Feature Cards" if the "Ethernet LAN Attachment" feature (FC 5220) or "IBM Token Ring LAN Attachment" feature (FC 5219) **are currently installed** within the *IBM 7585 Industrial Computer System Unit*; OR

Proceed to Section 10.6, "Relocate Breakout Box Bracket" on page 39.

10.3.3 Field Relocation of Feature Cards

Note: This section will cover the relocation of the "Ethernet LAN Attachment" or "IBM Token Ring LAN Attachment" feature cards from the *IBM 7585 Industrial Computer System Unit* to the new *IBM Model 7588 Industrial Computer System Unit* supplied by FC 5045.

__ 1. Remove the cover of the *IBM 7585 Industrial Computer System Unit* by following the instructions below. For additional detail on removing the cover, see "7585 Industrial PC Installing Options" manual.

   __ a. With the front of the computer facing you, loosen the two screws on the back of the Library Manager that helped secured the top cover.

   __ b. Push the top cover toward the rear of the Library Manager to open the top cover.

__ 2. Unpack the new *IBM Model 7588 Industrial Computer System Unit*, and locate it close to the *IBM 7585 Industrial Computer System Unit*.

   __ a. Loosen the six screws on the top cover to the system unit, and place the cover to the side for future reinstallation.

   See Figure 8 on page 28 when performing the following steps.

   __ b. Disconnect the IDE ribbon cable **1** and the power cable from the rear of the HDD.

   __ c. Loosen the three knurled thumbscrews that secure the HDD carrier to the sheet metal chassis, and then gently place the HDD carrier assembly to the side for future reinstallation.

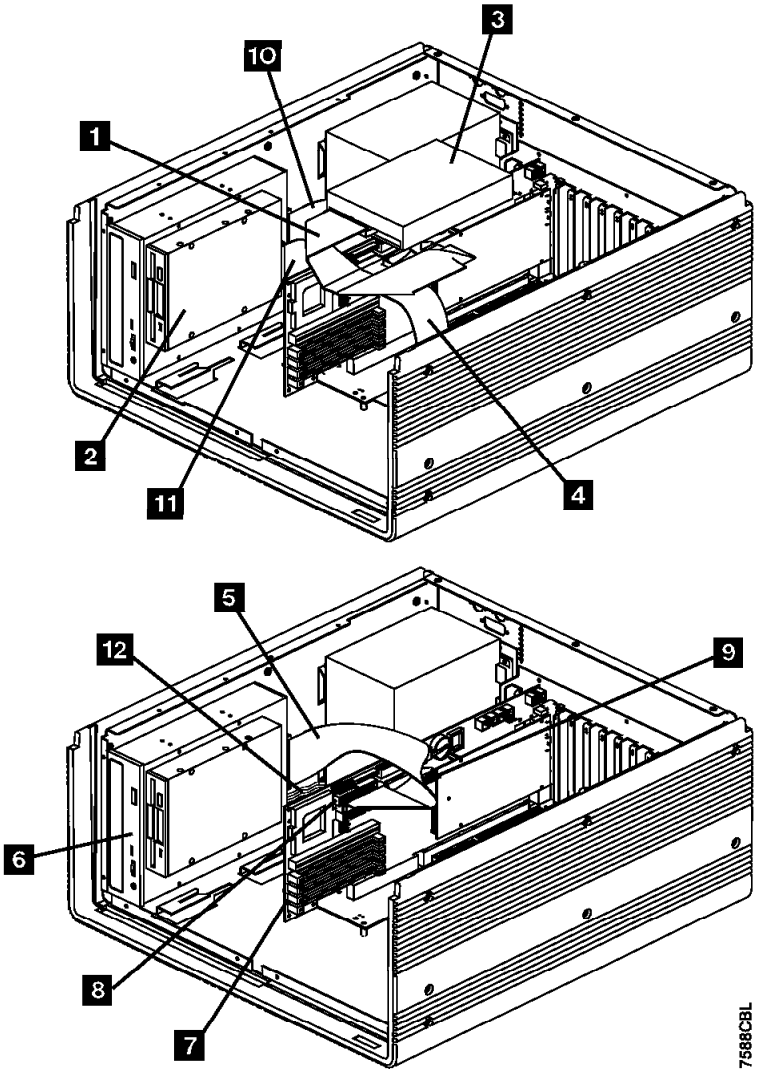


Figure 8. Disconnect IDE Ribbon Cable

See Figure 9 when performing the following steps.

__ 3. Using a screwdriver, remove the expansion slot screw that secures the card (**3** and/or **5**) to the system unit.

__ 4. Remove the adapter card (**3** and/or **5**) out of the card slot, and set it to the side for future reinstallation.

1 DI/DO Card slot.

2 Display Adapter Card slot.

3 Reserved for LAN Adapter or future use.

4 Servo Control Card slot.

5 ARTIC 1, Token Ring Adapter, or Ethernet Adapter (optional feature) card slot.

6 ARTIC 0 Card slot.

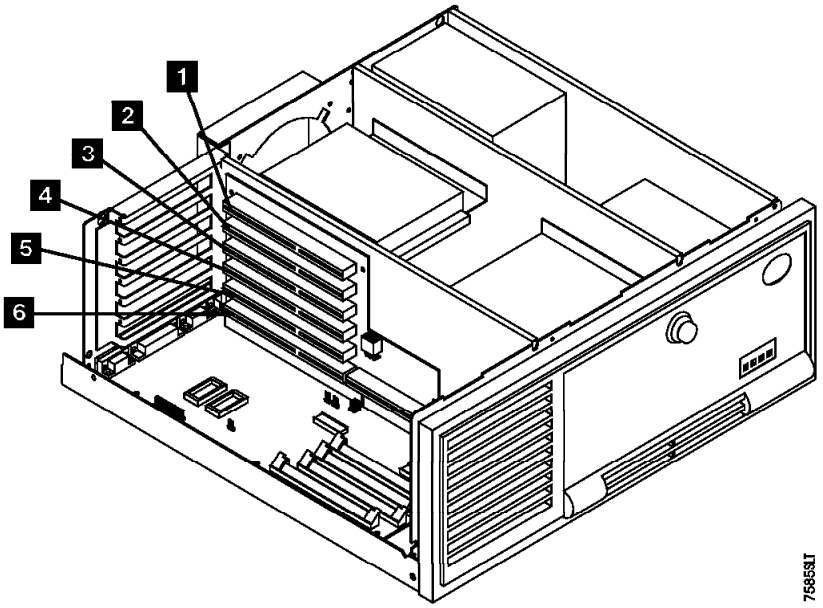


Figure 9. Model 7585 Industrial Computer System Unit (Interior View)

See Figure 10 when performing the following steps.

__ 5. Install the adapter card into the card slot (**7** and/or **4**) within the new *IBM Model 7588 Industrial Computer System Unit*.

__ 6. Using a screwdriver, install the expansion slot screw that secures the card to the system unit.

Go to Section 10.5, “Reinstall Computer Covers” on page 38.

1 EtherJet Adapter Card (Model HA1, Alternate Link).

2 EtherJet Adapter Card (Model HA1, Primary Link).

3 ARTIC Card 0 cable connector.

4 ARTIC Card 1 cable connector.

5 Servo Card cable connector.

6 DI/DO Card cable connector.

7 Token Ring Adapter Card or Ethernet Adapter (optional feature).

8 Display Adapter Card cable connector.

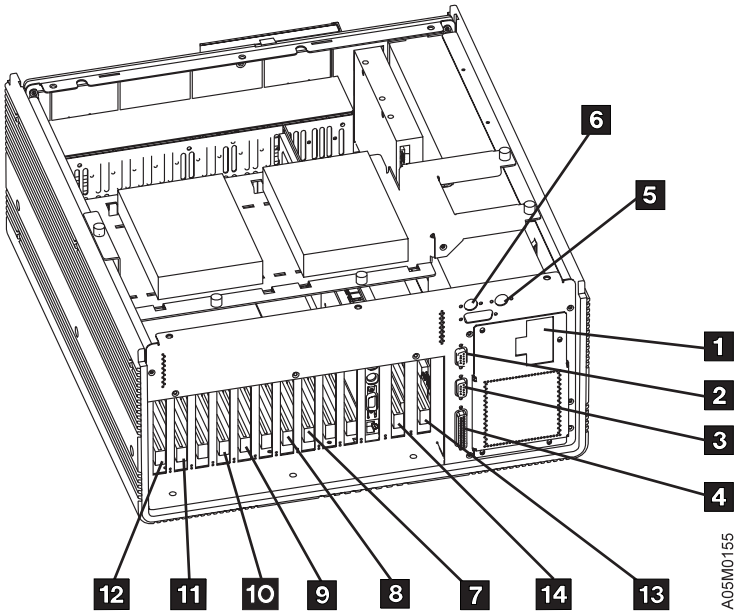


Figure 10. Model 7588 Industrial Computer System Unit (Interior View)

10.4 IBM 7588 Library Manager Installations

Note: The following three sub-sections will deal with:

- Library Manager removal.
- Factory installation of various feature cards.
- Relocaton of an various feature cards (if installed).

10.4.1 Library Manager Removal

Warning: Some parts to be handled during the DI/DO cable and card removal are **very sensitive** to electrostatic discharge (ESD). See "Working with ESD-Sensitive Parts" in the CARR section of the 3494 Maintenance Information Manual.

__ 1. With exception of the DI/DO cables, disconnect all of the cables from the *IBM 7588 Industrial Computer System Unit*.

__ 2. Remove the AC power cable. Set the cable to the side for parts disposition as defined by Section 14.0, “Parts Disposition” on page 55.

__ 3. Remove the *IBM 7588 Industrial Computer System Unit*, and place it in a convenient work area.

Proceed to Section 10.4.2, “Plant Installation of Feature Cards” if any of the following features are *currently installed* or *ordered on the same MES as FC 5045*:

- **FC 5214**: “2nd Hard Drive”; and/or
- **FC 5219**: “IBM Token Ring LAN Attachment”; and/or
- **FC 5220**: “Ethernet LAN Attachment”; and/or
- **FC 5229**: “Expansion Attachment Card”.

Proceed to Section 10.6, “Relocate Breakout Box Bracket” on page 39 if **NONE** of the previously listed features are currently installed or ordered on the same MES as FC 5045.

10.4.2 Plant Installation of Feature Cards

Note: The purpose of this section is to identify what feature cards (as listed at the bottom of Section 10.4.1, “Library Manager Removal”) need to be relocated in the field, or can be expected to be factory installed within the new Enhanced Library Manager supplied via FC 5045.

__ 1. **2nd Hard Drive**: The hard disk drive will be *factory installed* within the new Enhanced Library Manager if:

   a. FC 5214 **was already installed** within the current Library Manager; OR

   b. FC 5214 **has been ordered on the SAME MES as FC 5045**.

__ 2. **IBM Token Ring LAN Attachment**:

   a. The feature card will be *factory installed* within the new Enhanced Library Manager if FC 5219 has been ordered on the SAME MES as FC 5045.

   b. If *already installed within current Library Manager*, the feature card will have to be relocated in the field to the new Enhanced Library Manager furnished as part of FC 5045. This activity will be covered within Section 10.4.3.1, “IBM Token Ring LAN Attachment” on page 35.

__ 3. **Ethernet LAN Attachment**:

   a. The feature card will be *factory installed* within the new Enhanced Library Manager if FC 5220 has been ordered on the SAME MES as FC 5045.

   b. If *already installed within current Library Manager*, the feature card will have to be relocated in the field to the new Enhanced Library Manager furnished as part of FC 5045. This activity will be covered within Section

10.4.3.2, “Ethernet LAN Attachment” on page 36.

__ 4. **Expansion Attachment Card**:

a. The feature card will be *factory installed* within the new Enhanced Library Manager if FC 5229 has been ordered on the SAME MES as FC 5045.

b. The feature card will be *factory installed* within the new Enhanced Library Manager if **SC 9040 WAS NOT previously installed**.

c. The feature card will have to be relocated in the field to the new Enhanced Library Manager if **FC 9040 WAS previously installed**. This activity will be covered within Section 10.4.3.3, “Expansion Attachment Card” on page 36.

Proceed to Section 10.4.3, “Field Relocation of Feature Cards” on page 33 if the “IBM Token Ring LAN Attachment” feature (FC 5219); “Ethernet LAN Attachment” feature (FC 5220); and/or “Expansion Attachment Card” feature (FC 5229) **are currently installed** within the *IBM 7588 Industrial Computer System Unit*; OR

Proceed to Section 10.5, “Reinstall Computer Covers” on page 38.

10.4.3 Field Relocation of Feature Cards

Note: This section will cover the relocation of the "IBM Token Ring LAN Attachment"; "Ethernet LAN Attachment"; and/or "Expansion Attachment Card" hardware from the **currently installed** *IBM Model 7588 Industrial Computer System Unit* to the new *IBM Model 7588 Industrial Computer System Unit* supplied by FC 5045.

__ 1. Remove the cover from the *IBM 7588 Industrial Computer System Unit* you removed within step 3 on page 31.

__ a. Loosen the six screws on the top cover to the system unit, and place the cover to the side for future reinstallation.

See Figure 11 on page 34 when performing the following steps.

__ b. Disconnect the IDE ribbon cable **1** and the power cable from the rear of the HDD.

__ c. Loosen the three knurled thumbscrews that secure the HDD carrier to the sheet metal chassis, and then gently placed the HDD carrier assembly to the side for future reinstallation.

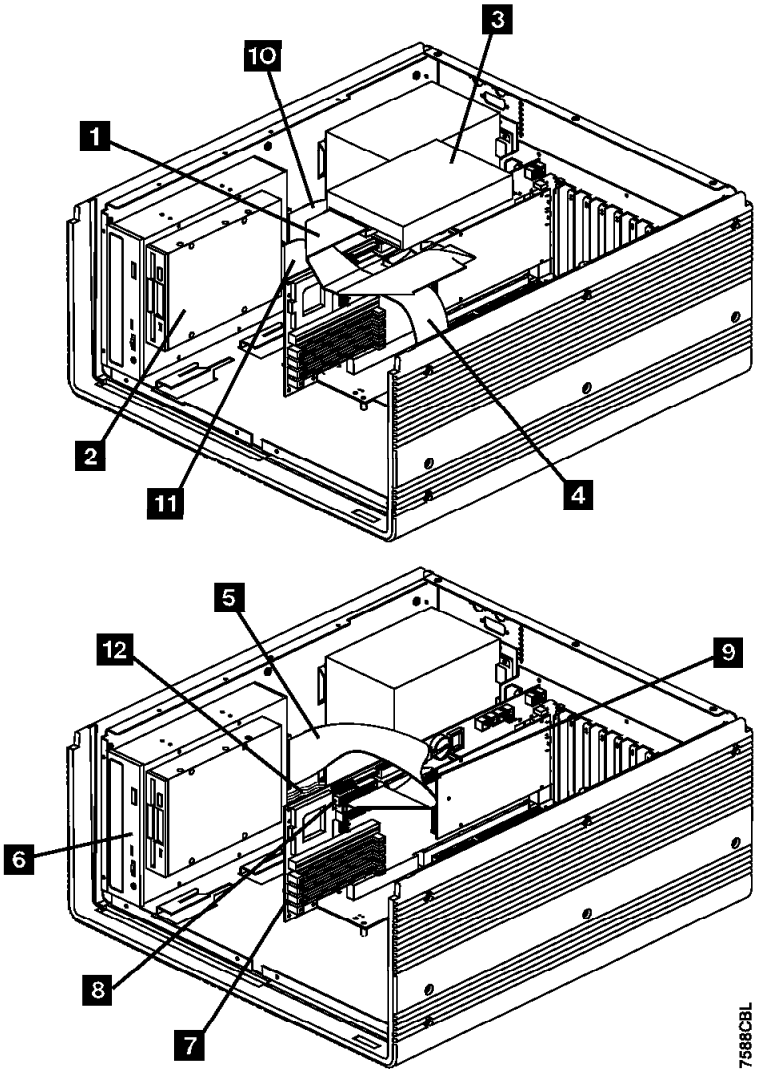


Figure 11. Disconnect IDE Ribbon Cable

__ 2. Unpack the new *IBM 7588 Industrial Computer System Unit*, and locate it close to the previously installed Library Manager.

__ a. Loosen the six screws on the top cover to the system unit, and place the cover to the side for future reinstallation.

Refer again to Figure 11 on page 34 when performing the following steps.

__ b. Disconnect the IDE ribbon cable **1** and the power cable from the rear of the HDD.

__ c. Loosen the three knurled thumbscrews that secure the HDD carrier to the sheet metal chassis, and then gently placed the HDD carrier assembly to the side for future reinstallation.

Proceed to one or more of the following sections:

- 10.4.3.1, “IBM Token Ring LAN Attachment” If the “IBM Token Ring LAN Attachment” feature was already installed; and/or
- 10.4.3.2, “Ethernet LAN Attachment” on page 36 If the “Ethernet LAN Attachment” feature was already installed; and/or
- 10.4.3.3, “Expansion Attachment Card” on page 36 If the “Expansion Attachment Card” feature was already installed.

10.4.3.1 IBM Token Ring LAN Attachment

See Figure 12 on page 37 when performing the following steps.

__ 1. Previously installed Library Manager:

__ a. Using a screwdriver, remove the expansion slot screw that secures the feature card (**7** or **4**) to the system unit.

__ b. Remove the feature card (**7** or **4**) out of the card slot, and set it to the side for reinstallation within the next step.

__ 2. New Enhanced Library Manager:

__ a. Install the adapter card (removed within the last step) into the card slot (**7** or **4**) within the new system unit.

__ b. Using a screwdriver, install the expansion slot screw that secures the card to the system unit.

Proceed to one or more of the following sections:

- 10.4.3.2, “Ethernet LAN Attachment” on page 36 If the “Ethernet LAN Attachment” feature was already installed; and/or
- 10.4.3.3, “Expansion Attachment Card” on page 36 If the “Expansion Attachment Card” feature was already installed.
- 10.5, “Reinstall Computer Covers” on page 38 if no other feature cards were previously installed.

10.4.3.2 Ethernet LAN Attachment

See Figure 12 on page 37 when performing the following steps.

__ 1. Previously installed Library Manager:

   __ a. Using a screwdriver, remove the expansion slot screw that secures the feature card (7 or 4) to the system unit.

   __ b. Remove the feature card (7 or 4) out of the card slot, and set it to the side for reinstallation within the next step.

__ 2. New Enhanced Library Manager:

   __ a. Install the adapter card (removed within the last step) into the card slot (7 or 4) within the new system unit.

   __ b. Using a screwdriver, install the expansion slot screw that secures the card to the system unit.

Proceed to one of the following sections:

- 10.4.3.3, “Expansion Attachment Card” If the “Expansion Attachment Card” feature was already installed.
- 10.5, “Reinstall Computer Covers” on page 38 if the “Expansion Attachment Card” was not previously installed.

10.4.3.3 Expansion Attachment Card

See Figure 12 on page 37 when performing the following steps.

__ 1. Previously installed Library Manager:

   __ a. Using a screwdriver, remove the expansion slot screw that secures the feature card (4 or 7) to the system unit.

   __ b. Remove the ARTIC186 Card 1 (4 or 4) out of the card slot, and set it to the side for reinstallation within the next step.

__ 2. New Enhanced Library Manager:

   __ a. Install the ARTIC186 Card 1 (removed within the last step) into the card slot (4 or 7) within the new system unit.

   __ b. Using a screwdriver, install the expansion slot screw that secures the card to the system unit.

Proceed to Section 10.5, “Reinstall Computer Covers” on page 38.

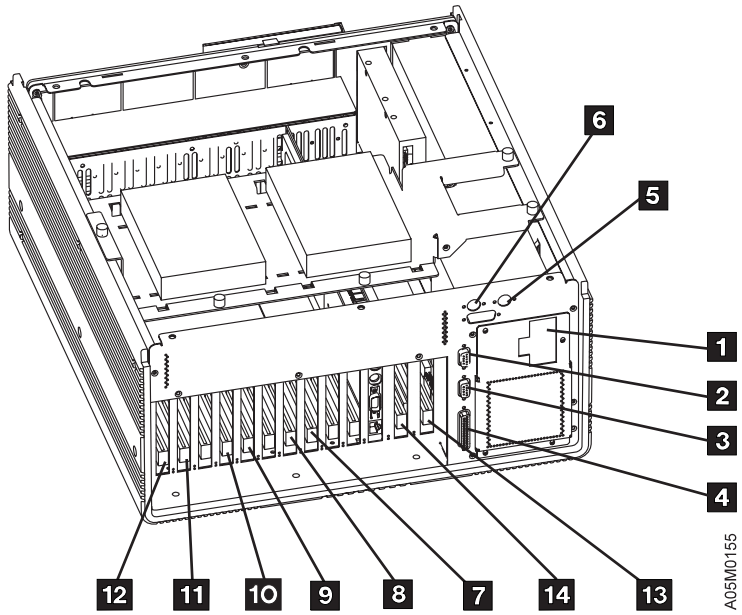


Figure 12. Model 7588 Industrial Computer System Unit (Interior View)

10.5 Reinstall Computer Covers

__ 1. For the *PS/ValuePoint Library Manager*, do the following:

__ a. Align the glides of the cover with the tracks on the front of the computer.

__ b. Slide the cover to the back of the computer until it snaps into place.

__ c. Lock the cover lock.

__ 2. For the *Model 7585 Industrial Computer System Unit*, do the following:

__ a. Reinstall the HDD carrier assembly by tightening the three knurled thumbscrews that secure the HDD carrier to the sheet metal chassis.

__ b. Connect the IDE ribbon cable(s) and the power cable(s) to the rear of each HDD.

__ c. Reinstall the cover, and tighten the six screws on the top cover of the system unit.

__ 3. For the *Model 7588 Industrial Computer System Unit*, do the following:

__ a. Reinstall the HDD carrier assembly by tightening the three knurled thumbscrews that secure the HDD carrier to the sheet metal chassis.

__ b. Connect the IDE ribbon cable(s) and the power cable(s) to the rear of each HDD.

__ c. Reinstall the cover, and tighten the six screws on the top cover of the system unit.

Proceed to Section 10.6, “Relocate Breakout Box Bracket” on page 39 if you just replaced either a *PS/ValuePoint Library Manager* or a *Model 7585 Industrial Computer System Unit*.; OR

Proceed to Section 10.8, “Install Industrial Computer System Unit” on page 50 if you just replaced *Model 7588 Industrial Computer System Unit*.

10.6 Relocate Breakout Box Bracket

See Figure 13 when performing the following steps.

__ 1. Remove the ARTIC breakout box(es), but **do not** disconnect the ARTIC breakout box cables.

__ a. Remove the two screws **2** that secure the base Library Manager ARTIC breakout box **1** to the side of the control unit frame. Set the screws to the side for future reinstallation.

__ b. If the "Expansion Attachment Card" ARTIC breakout box **3** is installed, remove the two screws **4** that secure it to the side of the control unit frame. Set the screws to the side for future reinstallation.

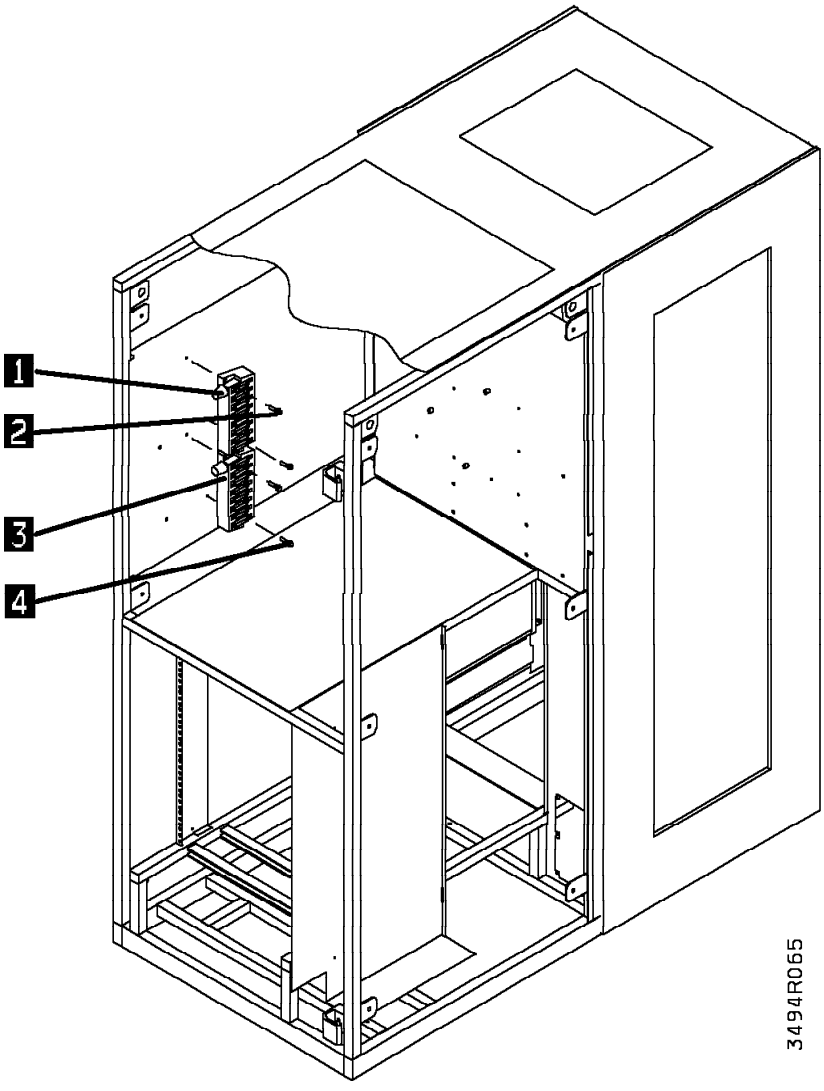


Figure 13. Breakout Box(es) Bracket Removal

See Figure 14 on page 41 when performing the following steps.

__ 2. Using three screws **1** and **2** (P/N 1624776, provided), install the bracket **3** (P/N 05H7774, provided).

__ a. As displayed, two of the screws **1** will be installed in the same two holes from which you removed the base Library Manager ARTIC breakout box.

__ b. As displayed, the third screw **2** will be installed in the top hole that normally accommodates the installation of the "Expansion Attachment Card" ARTIC breakout box.

__ 3. Using the screws **4** (removed in step 1a on page 39, Section 10.6, "Relocate Breakout Box Bracket" on page 39) and **5** (removed in step 1b on page 39, Section 10.6, "Relocate Breakout Box Bracket" on page 39), reinstall the ARTIC breakout box(es):

__ a. Install the base library manager ARTIC breakout box at the top of the bracket; and

__ b. If the "Expansion Attachment Card" is currently installed, reinstall the second ARTIC breakout box directly below the first ARTIC breakout box.

Go to Section 10.7, "Install the Card Panel Adapter" on page 42.

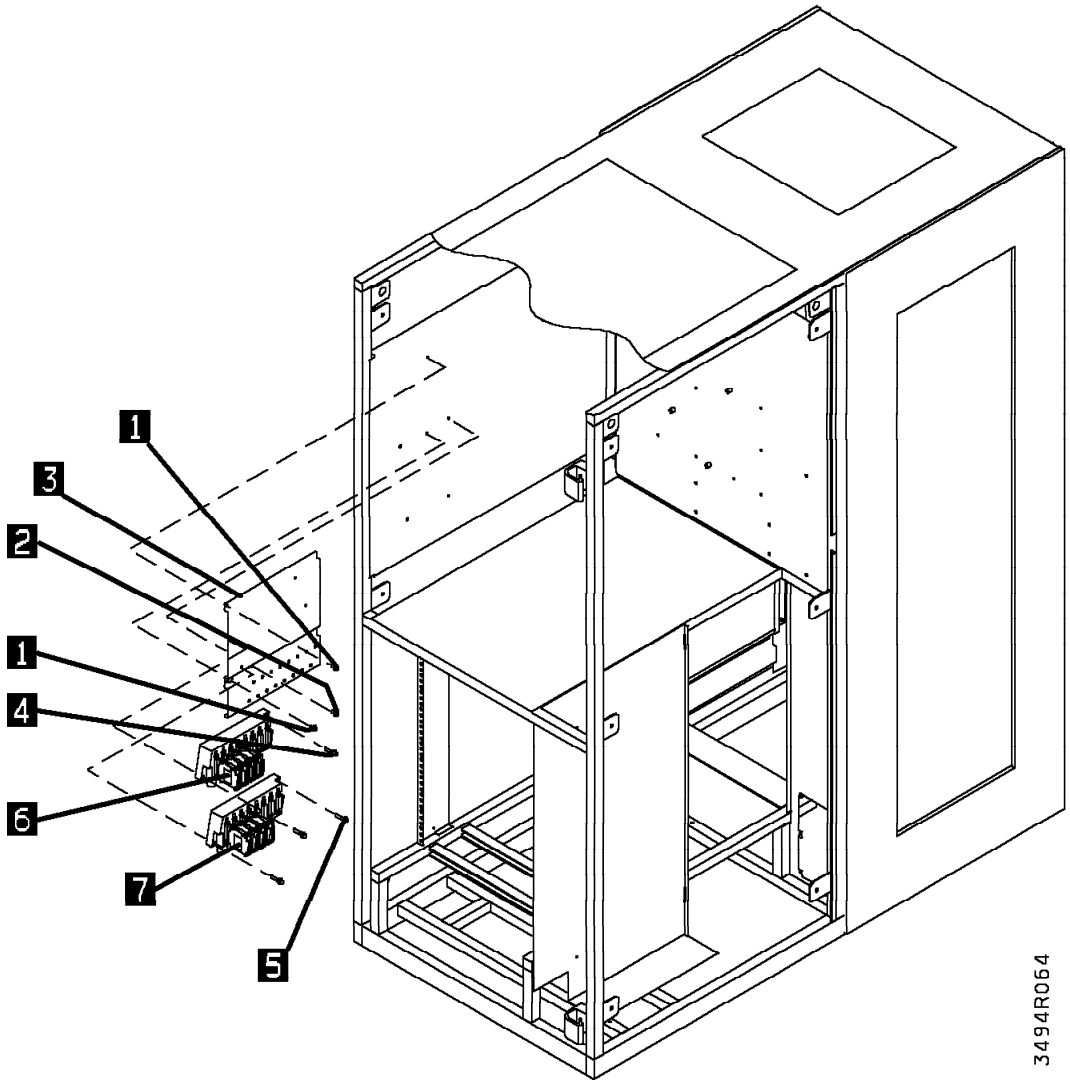


Figure 14. Breakout Box Bracket Relocation

10.7 Install the Card Panel Adapter

EC CHECKPOINTS:

- *EC C88519*: MIC card is sitting on a metal pan.
- *EC C35035*: MIC card reflects part number 05H8144.

Proceed to 10.7.1, “Remove MIC1 Card” if **NEITHER EC C88519 (“MIC2 Card Assembly”) AND EC C35035 (“MIC3 Card Assembly”) ARE INSTALLED**; OR

Proceed to 10.7.2, “Remove MIC2 Card” on page 48 if EC C88519 (“MIC2 Card Assembly”) **IS CURRENTLY INSTALLED**.

10.7.1 Remove MIC1 Card

See Figure 15 on page 43 when performing the following steps.

__ 1. Unplug the cables from the LCC card **66** and the MIC1 card **60** .

__ 2. Remove the LCC card **66** :

__ a. Remove the screws holding the card.

__ b. Unclip the card from the nylon clips.

__ c. Unplug the card from the MIC1 card.

__ d. Remove the MIC1 card **60** :

__ e. Set the card to the side for parts disposition as defined within Section 14.0, “Parts Disposition” on page 55.

__ a. Remove the screws holding the card.

__ b. Unclip the card from the nylon clips.

__ c. Set the card aside for disposal.

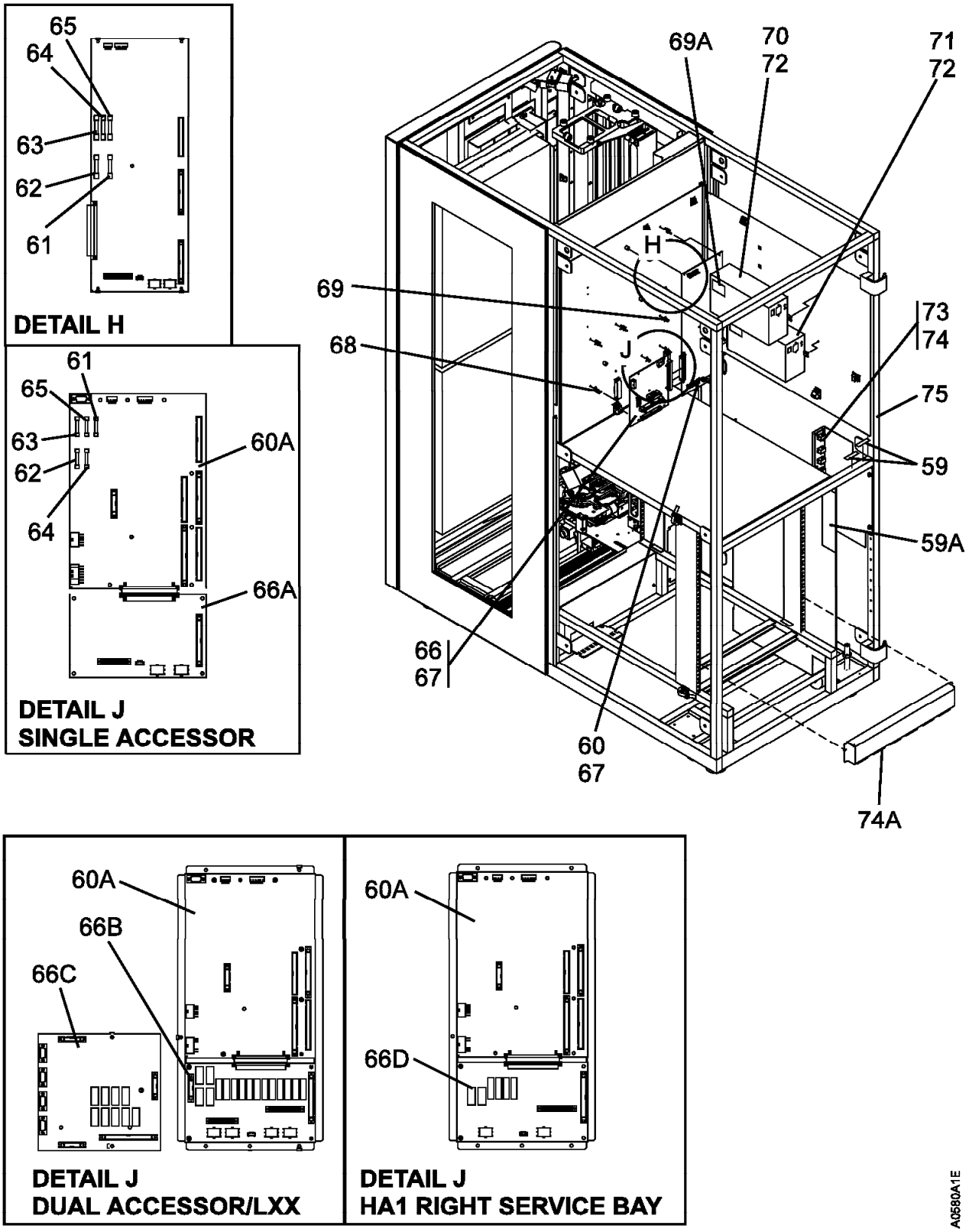


Figure 15. 3494 Control Unit Frame (Rear View)

See Figure 16 when performing the following steps.

__ 3. Before you can install the card panel adapter (P/N 05H8255, supplied), perform the following described trimming of the spacers and support clips on the rear panel located behind the previously installed MIC1 card:

__ a. Be sure to trim the spacers and support clips close enough to the rear panel to allow the card panel adapter to contact the rear panel.

__ b. You must also trim the one cable clamp on the rear panel, which is located just above the card/pan assembly **1** (P/N 05H8147, supplied). Open the cable clamp, remove the cables and trim the clamp to allow the card panel to contact the rear panel **2** .

__ 4. Place the top lip of the card panel adapter **2** (P/N 05H8255, supplied) over the top edge of the rear panel, and secure as follows:

__ a. Using the three pan head screws (P/N 1621190, provided) and three star washers (P/N 1622346, provided), secure the card panel adapter to the three standoffs on the rear panel

__ b. Install the two support clips (P/N 34G8117, provided) into the two free holes on the right side of the card panel adapter.

__ 5. Using three allen head screws (P/N 1621511, supplied), attach the MIC3 card to the card panel adapter.

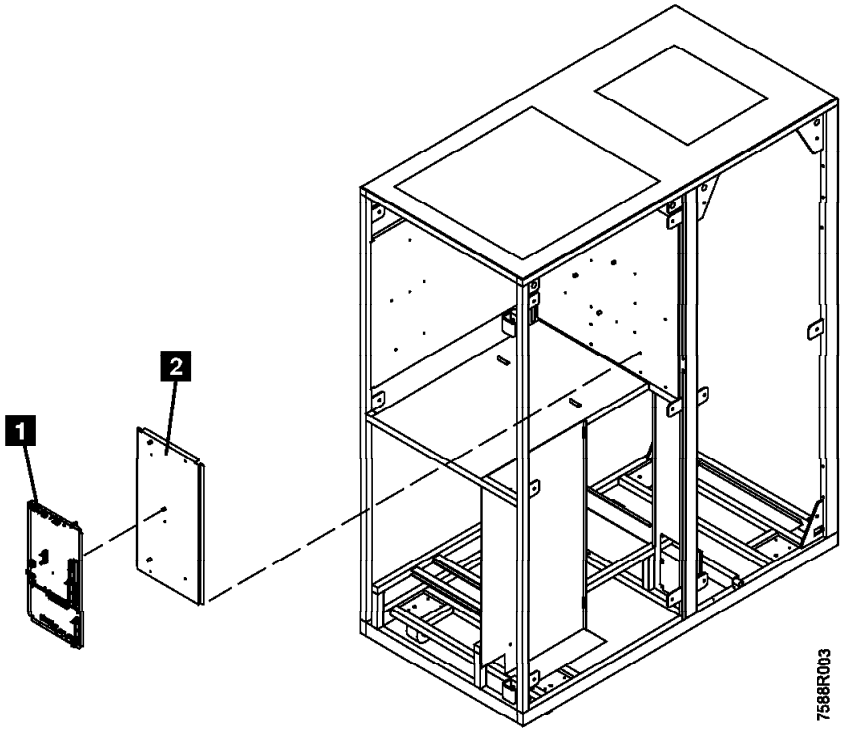


Figure 16. Install Card Panel Adapter

Refer to Figure 17 on page 46 and Figure 18 on page 47 for the new connector locations.

__ 6. Plug the cables into the card assembly. Re-fold the cables and change the connector labels as appropriate.

__ a. Plug 36V cable connector labeled MIC P2 into MIC3 P2 **2** .

__ b. Plug 24V cable connector labeled MIC P3 into MIC3 P3 **4** .

__ c. Plug cable connector labeled MIC P4 into MIC3 P4 **8** .

__ d. Plug cable connector labeled MIC P5 into MIC3 P5 **7** .

__ e. Plug cable connector labeled MIC P6 into LPC3 P6 **3** . Change the cable label to LPC P6.

__ f. Plug cable connector labeled MIC P7 into LPC3 P7 **11** . Change the cable label to LPC P7.

__ g. Plug cable connector labeled MIC P8 into LPC3 P8 **10** . Change the cable label to LPC P8.

__ h. Plug cable connector labeled MIC P9 into LPC3 P9 **5** . Change the cable label to LPC P9.

__ i. Plug cable connector labeled MIC P10 into LPC3 P10 **8** . Change the cable label to LPC P10.

__ j. Plug cable connector labeled LCC P1 into MIC3 P12 **10** . Change the cable label to MIC P12.

Note: It may be necessary to route the following to the right side of the Library Manager shelf.

__ k. Plug cable connector labeled LCC P2 into MIC3 P14 **14** . Change the cable label to MIC P14.

__ l. Plug cable connector labeled LCC P3 into MIC3 P15 **15** . Change the cable label to MIC P15.

__ m. Plug cable connector labeled LCC P4 into MIC3 P13 **18** . Re-fold this cable in the middle inline with the card connector so the cable connector is past the card connector, then fold the cable connector back under the cable and plug it into the card connector. Change the cable label to MIC P13.

__ n. Plug cable connector labeled LCC P5 into MIC3 P1 **9** . Change the cable label to MIC P1.

__ o. Plug cable connector labeled LCC P7 into MIC3 P16 **1** . Change the cable label to MIC P16.

Go to Section 10.8, “Install Industrial Computer System Unit” on page 50.

1. CR5 LED (24V power control)
2. P18 connector
3. P6 connector
4. K4 Relay (UEPO return)
5. P9 connector
6. K3 Relay (UEPO return)
7. K2 Relay (UEPO return)
8. P10 connector
9. K1 Relay (UEPO return)
10. P8 connector
11. P7 connector

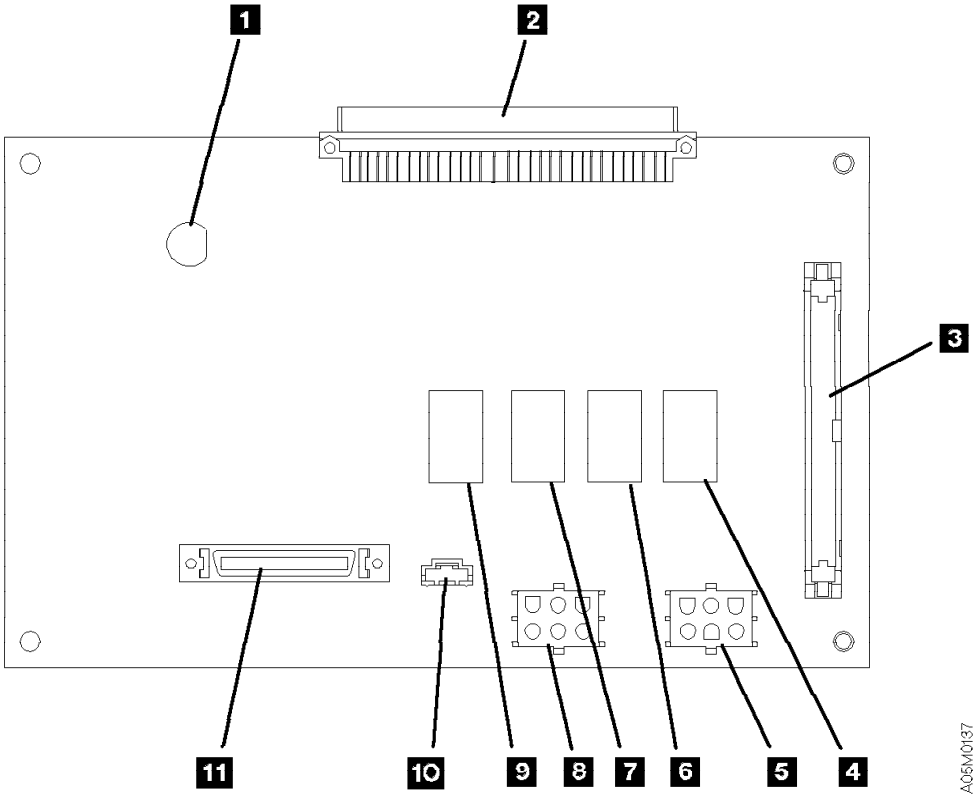


Figure 17. Library Power Control Card (LPC)

1. P16 connector
2. P2 connector
3. K3 Relay (reset safety interlock)
4. P3 connector
5. K4 Relay (24V from door switches)
6. P11 connector (no removable cable)
7. P5 connector
8. P4 connector
9. P1 connector
10. P12 connector
11. P17 connector
12. K2 Relay (X motor back EMF)
13. K1 Relay (Y motor back EMF)
14. P14 connector
15. P15 connector
16. CR12 LED (K2 picked)
17. CR10 LED (K1 picked)
18. P13 connector
19. K5 Relay (servo power on)
20. K6 Relay (power sequence)
21. CR7 LED (K4 picked)
22. CR6 LED (K6 picked)
23. CR5 LED (K3 picked)
24. F5 1.5A SB fuse (24V motors/solenoid)
25. F3 5A fuse (36V servo)
26. CR4 LED (K5 picked)
27. F4 1.5A SB fuse (24V UEPO detect)
28. F1 1.5A SB fuse (24V operator panel)
29. F2 1.5A SB fuse (24V sensors)

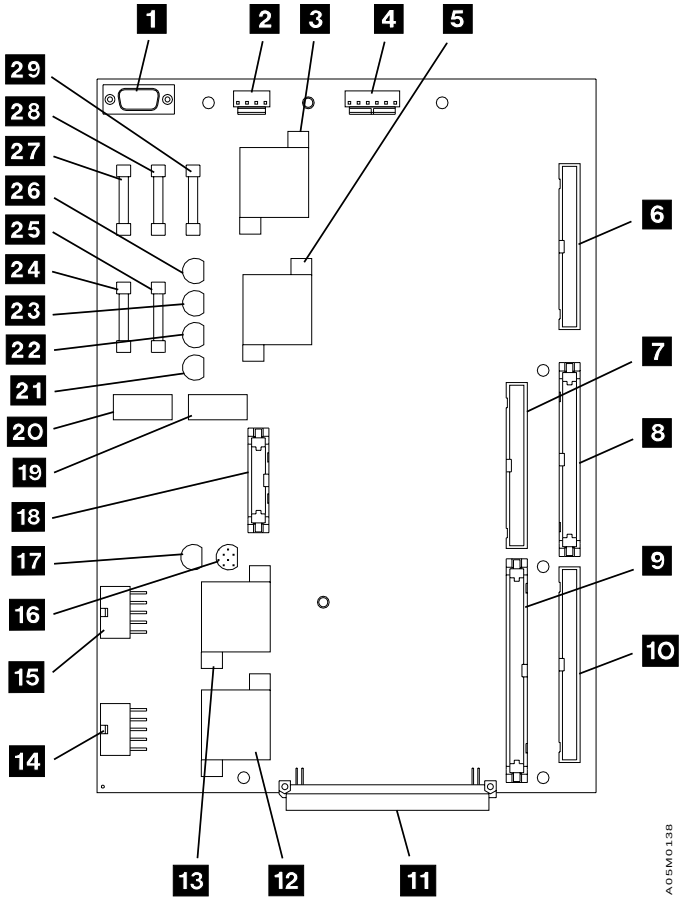


Figure 18. Machine Interface Control Card 2 (MIC3)

10.7.2 Remove MIC2 Card

__ 1. Disconnect the cables to the MIC card (up to ten cables), and then disconnect the cables from the LPC card (up to five cables).

__ 2. Remove the following allen head screws. Set the parts to the side for parts disposition as defined within Section 14.0, “Parts Disposition” on page 55.

__ a. From the upper and lower left corners of the card pan.

__ b. From the center of the MIC card.

__ 3. Free the card/pan assembly from the support clips, and place the card/pan assembly to the side for parts disposition as defined within Section 14.0, “Parts Disposition” on page 55.

See Figure 19 on page 49 when performing the following steps.

__ 4. Before you can install the card panel adapter (P/N 05H8255, supplied), perform the following described trimming of the spacers and support clips on the rear panel located behind the card/pan assembly:

__ a. Be sure to trim the spacers and support clips close enough to the rear panel to allow the card panel adapter to contact the rear panel.

__ b. You must also trim the one cable clamp on the rear panel, which is located just above the card/pan assembly. Open the cable clamp, remove the cables and trim the clamp to allow the card panel to contact the rear panel.

__ 5. Place the top lip of the card panel adapter **2** (P/N 05H8255, supplied) over the top edge of the rear panel, and secure as follows:

__ a. Using the three pan head screws (P/N 1621190, provided) and three star washers (P/N 1622346, provided), secure the card panel adapter to the three standoffs on the rear panel

__ b. Install the two support clips (P/N 34G8117, provided) into the two free holes on the right side of the card panel adapter.

__ 6. Using three allen head screws (P/N 1621511, supplied), attach the card/pan assembly **1** (P/N 05H8147, supplied) to the card panel adapter **2** .

__ 7. Using the 3590 MI's to ensure that the cables have been attached correctly, reattach the cables to the MIC and LPC cards.

Go to Section 10.8, “Install Industrial Computer System Unit” on page 50.

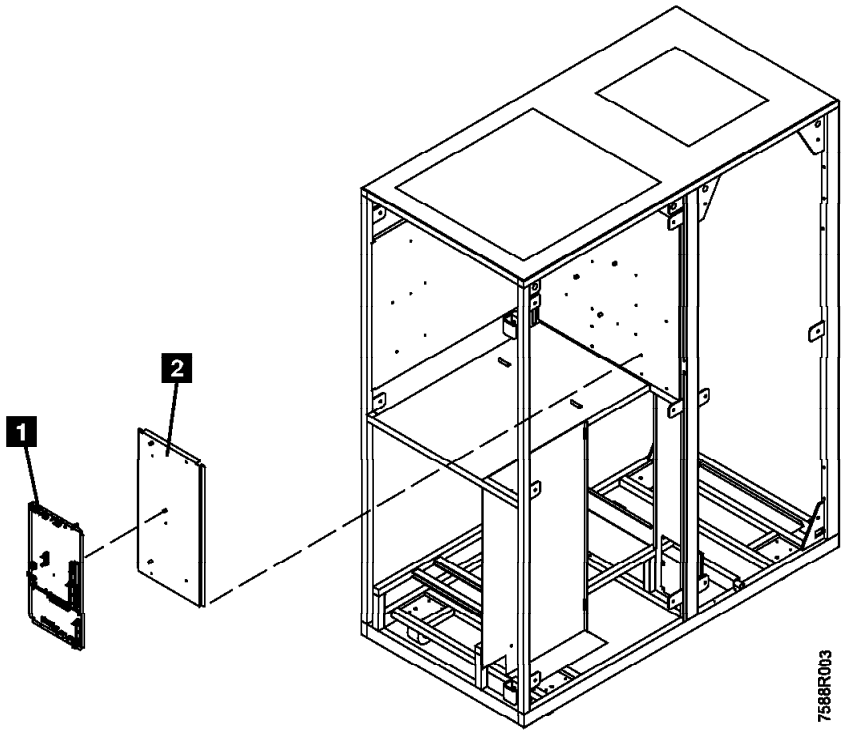


Figure 19. Install Card Panel Adapter

10.8 Install Industrial Computer System Unit

__ 1. Move the new *Model 7588 Industrial Computer System Unit* to the 3494 control unit.

See Figure 20 on page 51 when performing the following step.

__ 2. From the new Enhanced Library Manager, connect the DI/DO cables and flat panel display:

__ a. Reconnect the DI/DO cable connector **1** to the MIC card.

__ b. Using the existing cable clamps, secure the DI/DO cables.

Note: Skip to step 3 *if the Library Manger you just replaced was a* Model 7588 Industrial Computer System Unit.

__ c. Using the two screws previously removed within step 3c on page 18, *carefully lift* and install the new flat panel display.

__ 3. Attach the new braided strap (P/N 50G1046, supplied) to the top-left power supply screw at the back of the new Enhanced Library Manager.

__ 4. With the exception of the ground strap, attach the rest of the Library Manager cables.

Note: Refer to the *7588 Industrial Computer Information, Installation, Operation and Hardware Maintenance*; and to the *Industrial Computer System Unit* figure display in the **LOC** Section of the 3494 Maintenance Information Manual.

__ 5. Reconnect the Servo Control cables to the MIC card **2**.

__ 6. Reinstall the DI/DO and Servo Control cables by using the clamps **3**.

__ 7. Reinstall the AC power cable.

Go to Section 10.9, “Install Latest Software (Microcode) Revision” on page 52.

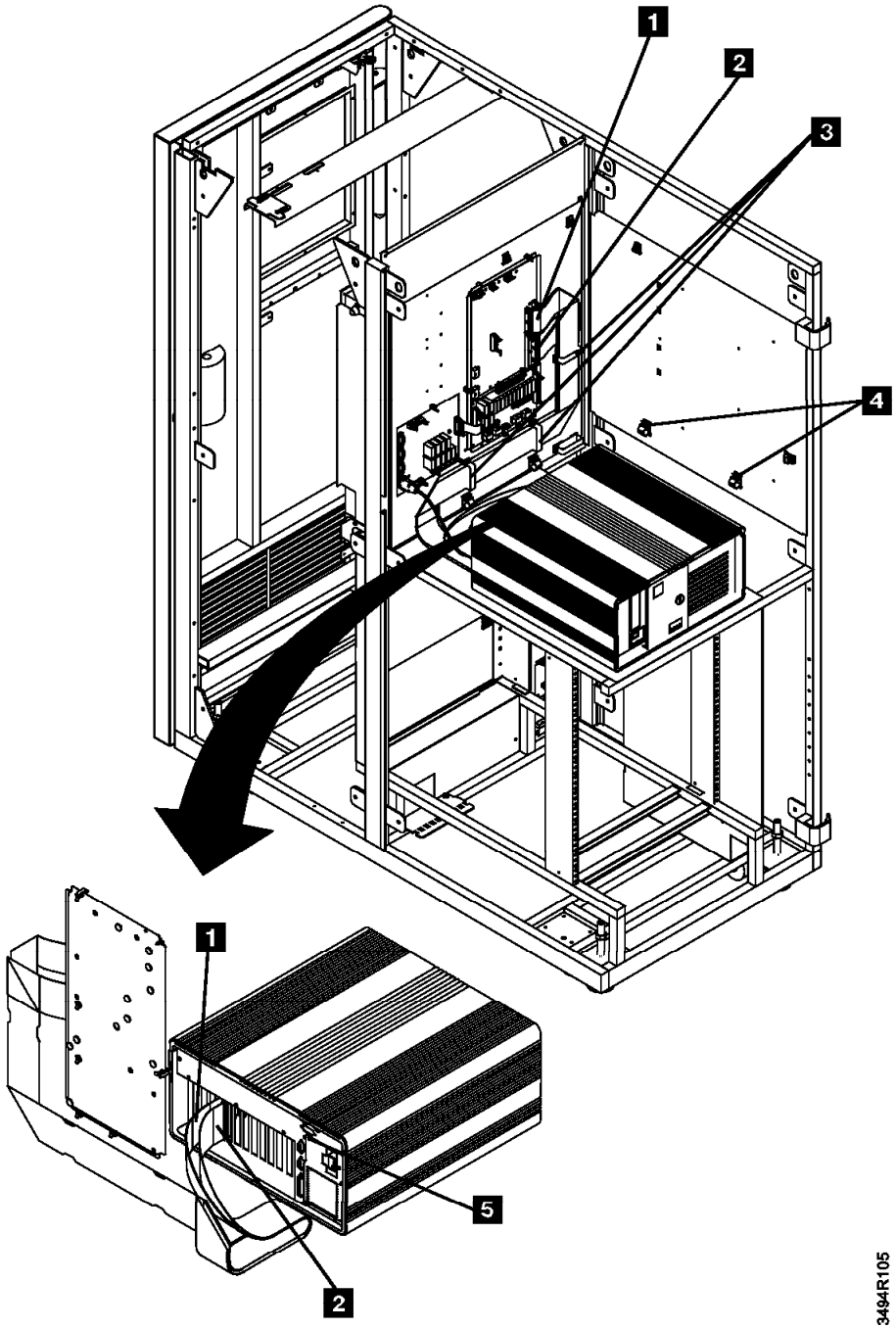


Figure 20. DI/DO and Servo Control cabling to MIC1 Card (Interior View)

10.9 Install Latest Software (Microcode) Revision

__ 1. Power up the library manager, and bring up **Pause Offline**.

   __ a. Check the currently installed version of Library Manager microcode by selecting **Help** and **About**.

   __ b. Shutdown the library manager.

   __ c. Proceed to Section 10.10, "Restore and Migrate Library Manager Database" if the current level of microcode is reflected as 516.09 (or higher).

   __ d. Otherwise, proceed to step 2 for the proper steps to update the Library Manager.

__ 2. To install the latest microcode revision plus fix pack follow the "Software Revision Installation" procedure listed within the **CARR** Section of the 3494 MI. Complete all steps except DO NOT re-start the Library Manager when instructed. Use the latest level of 3494 Library Manager Diskettes available. Revision 516.09 is the earliest level which will support this MES installation process, and will be supplied within the HA1 ship group.

Proceed to Section 10.10, "Restore and Migrate Library Manager Database."

10.10 Restore and Migrate Library Manager Database

Note: Skip the following section, and proceed to section 10.11, "Recovery Procedure" on page 53 if you were **UNABLE** to successfully complete the export step within Section 9.2, "Subsystem Power" on page 13.

__ 1. From the *SHUTDOWN WINDOW* select **Service window**. You will need the first disk of the Library Manager fix pack code (level 516.09) OR Library Manager base code level 517 or higher in the A: drive. Within this OS/2 window enter **A:\DROPEM** to prepare the Library Manager for restoration and migration of your original database exported earlier.

__ 2. Insert the first disk from the backup disks (created in step 17 on page 17 in Section 9.2, "Subsystem Power" on page 13) in the *A* drive. Within the service window on the LM, enter "**RESTOLD**" to restore and migrate the original database export taken before the machine was shut down for hardware conversion.

__ 3. Please follow the instructions carefully and to the letter. You will be asked to insert the disk(s) from the export you created earlier. Your key to success will be the system response "*Database/System File restore successful*". All steps must complete without error or "*Re-Inventory Complete System*" will be necessary later.

Note: It is very important to remember to remove your diskette.

__ 4. On the LM, select **Shutdown for reboot** from the 3494 Tape Library Dataserver Shutdown window.

__ 5. When the "Shutdown has completed" message appears on the display, reboot the library manager by pressing **Ctrl-Alt-Del**.

If the **RESTOLD** failed proceed to Section 10.11, "Recovery Procedure" on page 53; or else

If either FC 5219, FC 5220 and/or FC 5226 is currently installed, proceed to Section 10.12, "Configure LAN Features" on page 54; or else

If FC 5214 is currently installed, proceed to Section 10.13, "Creating a Delta Image File" on page 54; or else

Go to Section 11.0, "Test Procedure" on page 54.

10.11 Recovery Procedure

If the **"RESTOLD"** procedure **FAILED**, there are two options:

- Continue to step 1 and perform a Teach New.
- Call the next level of support for instructions.

1. **Teach New option**

   a. You **MUST** run **"Teach new configuration"** to identify all devices, racks, I/O, Service Bays, etc. This will **not** maintain existing cartridge/volume tables from the initial subsystem.

      Note: Refer to the table you completed from step 7 on page 13 to determine the configuration values.

   b. After the Teach New re-start has completed and step 18 on page 17 was performed, execute the following to restore the customer's volser ranges:

      Shutdown the Library Manager.

      From the shutdown menu select "Open a service window". Insert the floppy disk that was created from step 18 on page 17. From the service window type in the following:
      copy a:\sysrange.pri c:\lm\pri and press enter.
      copy a:\sysrange.sec d:\lm\sec and press enter.

      If the library contains no VTS, restart the Library Manager and go to step 1g.

      If the library Manager contains a VTS and you completed steps 19 on page 17 through 22 on page 18, go to the next step. Else, go to step 1g.

   c. Insert the floppy disk that was created from step 19 on page 17. From the service window type in the following command to restore the file sysvtsmp.pri from the diskette to the library manager:
      copy a:\sysvtsmp.pri c:\lm\pri and press enter.
      copy a:\sysvtsmp.sec d:\lm\sec and press enter.

   d. restart the Library Manager workstation and bring up **Pause- offline.**

   e. To restore the customer's logical types perform the following: From the Library Manage menu select

      - **Commands**
      - **System management**
      - **Insert VTS logical volumes...**

      A "Insert Logical Volumes" window will appear. You will need to query the listdb.xxx files that were created from step 21 on page 17 to determine the volser ranges and cartridge type to be inserted.

      Note: Inserting 100,000 logical volumes takes approximately on hour.

   f. If the customer had any Fast Ready categories defined, perform the following: From the Library Manage menu select

      - **Commands**
      - **System management**
      - **Set VTS category attributes...**

      A "Define Fast Ready Categories" window will appear, type in the appropriate category from the data saved during step 22 on page 18 and Add the Category. Perform this operation for each category defined.

   g. After the Teach new configuration has completed successfully, an **Inventory New Storage"** must be run.

      Note: The Host will have to update category data on the inserted logicals.

2. After the **Teach** and **Inventory** have completed refer to the **Checkout** procedure in the **INST** section of the 3494 MI's currently on page **INST-107** and complete steps 17 thru 23.

If either FC 5219, FC 5220 and/or FC 5226 is currently installed, proceed to Section 10.12, “Configure LAN Features” on page 54; or else

If FC 5214 is currently installed, proceed to Section 10.13, “Creating a Delta Image File” on page 54; or else

Go to Section 11.0, “Test Procedure.”

10.12 Configure LAN Features

Note: Refer to the **INST** section in the *IBM Magstar 3494 Tape Library MI* for the following steps.

__ 1. Referring to the “LAN features” procedure (currently located on page **INST 109**), begin at the sentence “If the LAN adapter card is installed in your library manager.....” and perform steps 1 through 9.

   __ a. If Locally Administered Address (LAA) is used requiring step 1d to be performed, use **mpts** instead of **laps**. This 7588 Industrial Computer System Unit has Operating System/2 version 4.00 or higher already installed.

__ 2. If the library manager will be connected to LAN-attached hosts, you must configure the library by following the instructions in Appendix A of the FC 5219/5220 installation instructions (PN 05H4083).

If FC 5214 is currently installed, proceed to Section 10.13, “Creating a Delta Image File”; or else

Go to Section 11.0, “Test Procedure.”

10.13 Creating a Delta Image File

__ 1. Create a delta image on the **D:partition** (hard drive 2) of the **C:partition** (hard drive 1). This provides a faster way to restore hard drive 1 if it should fail.

   __ a. Ensure that the 3494 Image CD-ROM is inserted in the CD-ROM drive.

   __ b. Open a Service Window, and at **C:** enter **H: deltaimg**.

   __ c. Follow the instructions to create a delta image file.

Go to Section 11.0, “Test Procedure.”

11.0 Test Procedure

Using the **SERVICE** menu, invoke and run the “Verify Installation“ procedure.

Go to Section 12.0, “Field Updating” on page 55.

After Installation (Sections 12 through 15)

12.0 Field Updating

None

13.0 Field Support Publications

Replace existing 3494 MI's with those supplied within this MES.

14.0 Parts Disposition

All removed parts will remain as the property of the customer.

15.0 Machine Records

__ 1. Update all field records to reflect that:

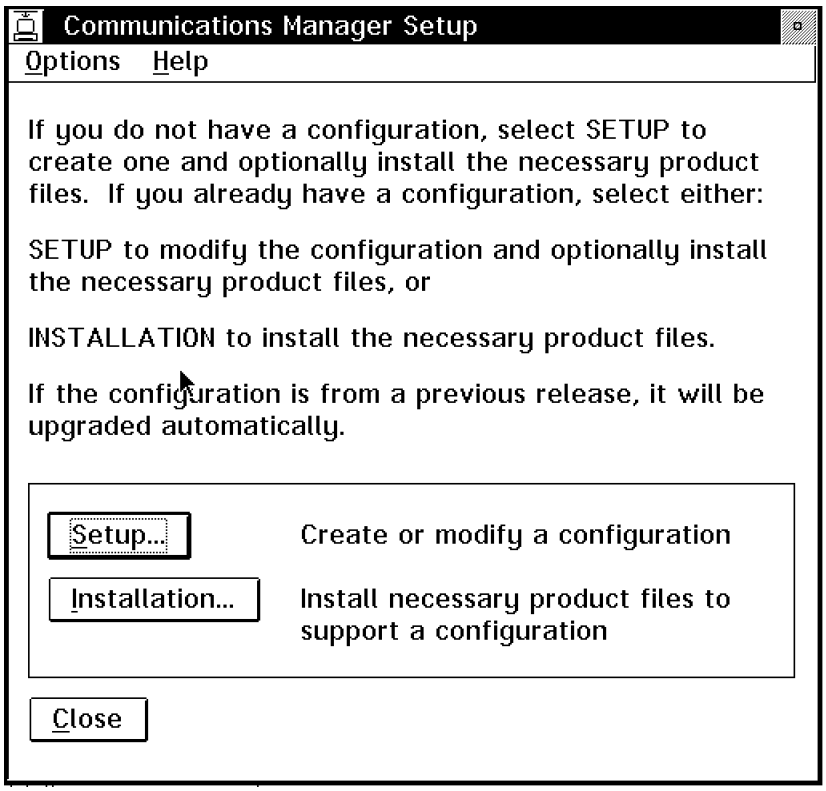
- __ a. FC 5045 “Enhanced Library Manager” has been installed; and
- __ b. FC 5214 “2nd Hard Drive” has been installed *if the feature code was ordered on the same MES as FC 5045*; and/or
- __ c. FC 5219 “IBM Token Ring LAN Attachment” has been installed *if the feature code was ordered on the same MES as FC 5045*; and/or
- __ d. FC 5220 “Ethernet LAN Attachment” has been installed *if the feature code was ordered on the same MES as FC 5045*; and/or
- __ e. FC 5229 “Expansion Attachment” has been installed *if the feature code was ordered on the same MES as FC 5045*.

__ 2. Using existing procedures to report the installation and quality.

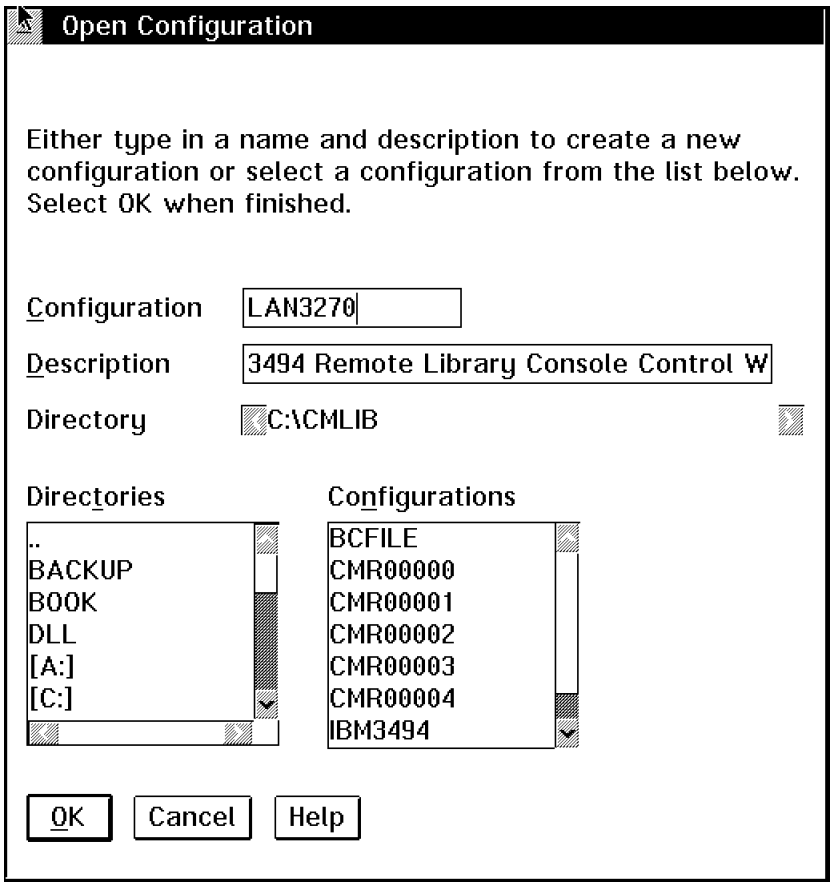
16.0 Appendix A

Before the old Library Manager was removed you were asked to save the fully qualified adjacent cp name in the form of xxx.yyy. (for example MIDRLM.MIDRLM1A in this example MIDRLM is the network ID and MIDRLM1A is the Link Name) You will need the Link Name and the Partner LU Alias to delete the old configuration.

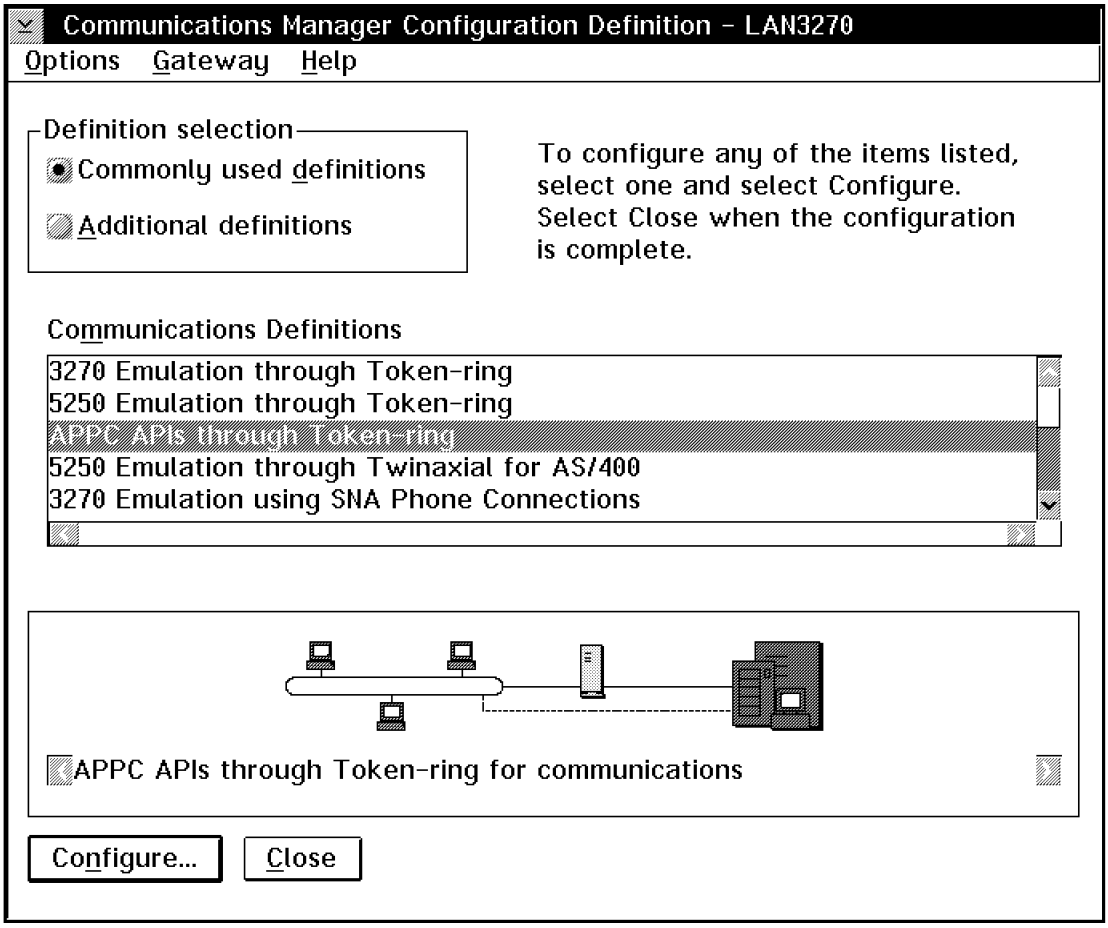
1. On the controlling workstation you need to edit the ndf file to get the Partner LU Alias
   a. To get the name of the ndf file being used type **type c:\cmlib\cm.ini**. The configuration file being used is the name following CMDefaultCFG=. (for example CMDefaultCFG=REMTCONS)
   b. Type **EPM c:\cmlib\zzzzz.ndf** where zzzzz is the configuration file name (in this example remtcons).
   c. Search for the line DEFINE_PARTNER_LU FQ_PARTNER_LU_NAME(xxx.yyy) where xxx.yyy is the fully qualified adjacent cp name you saved from the old Library Manager.
   d. The line following this line will say PARTNER_LU_ALIAS(wwwww) you need to save the Partner LU alias.
2. To delete the old configuration type **cmsetup** at the command prompt in an OS/2 window on the controlling workstation.



   a. In the Communication Manager Setup Window click on **Setup**.



b. In the Open Configuration window select the correct configuration file name from the list in the Configurations box and click on **OK**.



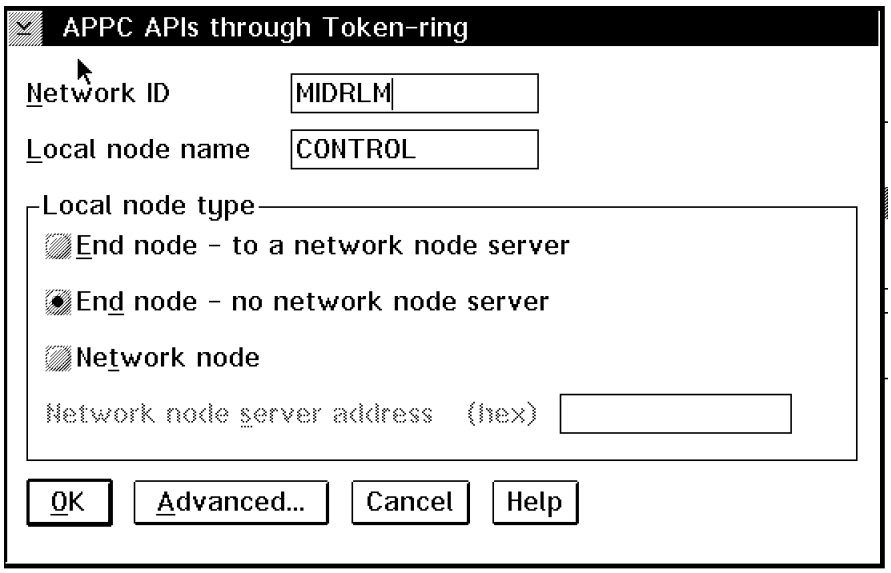
c. In the Communications Manager Configuration Definition window

1) Select **Commonly Used Definitions**.

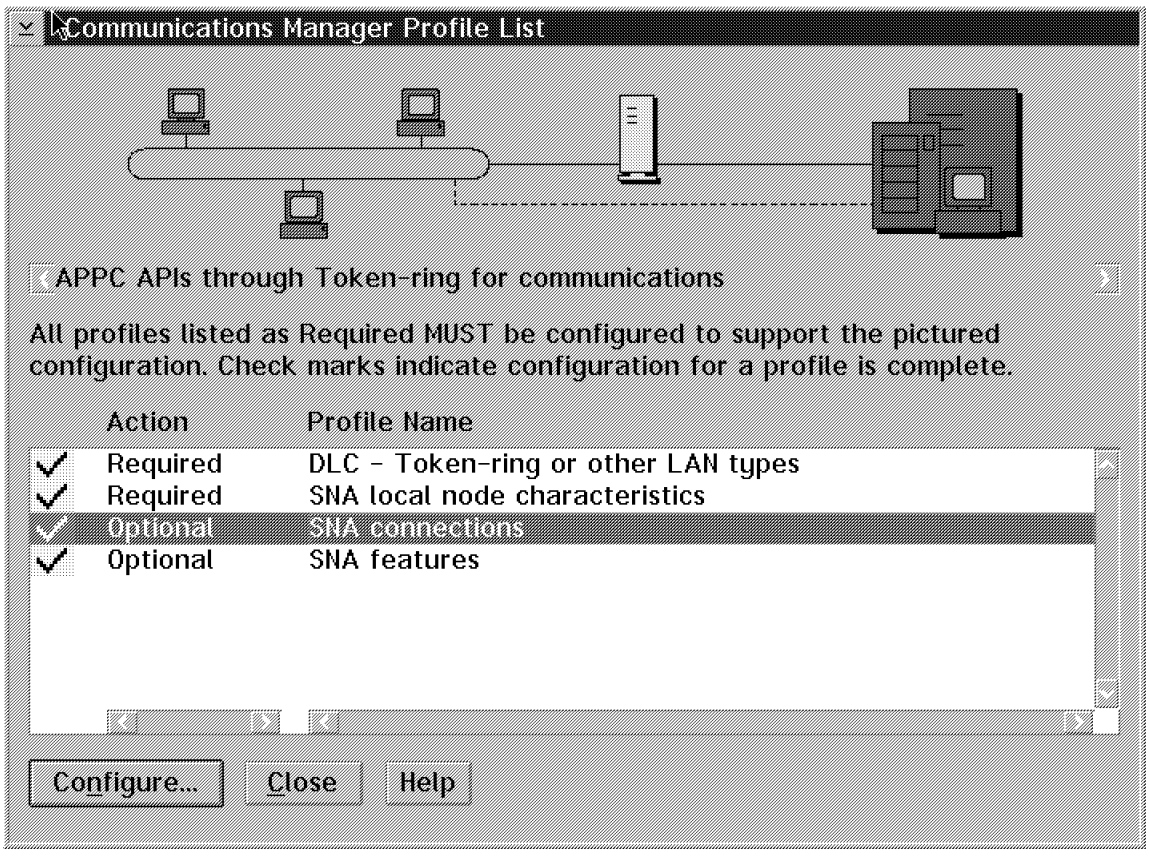
2) Select **APPC APIs through Token-Ring** if the lan is token-ring or **APPC APIs through Ethernet (ETHERAND) Network** if the lan is ethernet.

Note: : If you are using Communications Server you will select **APPC APIs over Token-Ring** or **APPC APIs over Ethernet Network**.
:

3) Click on **Configure...**



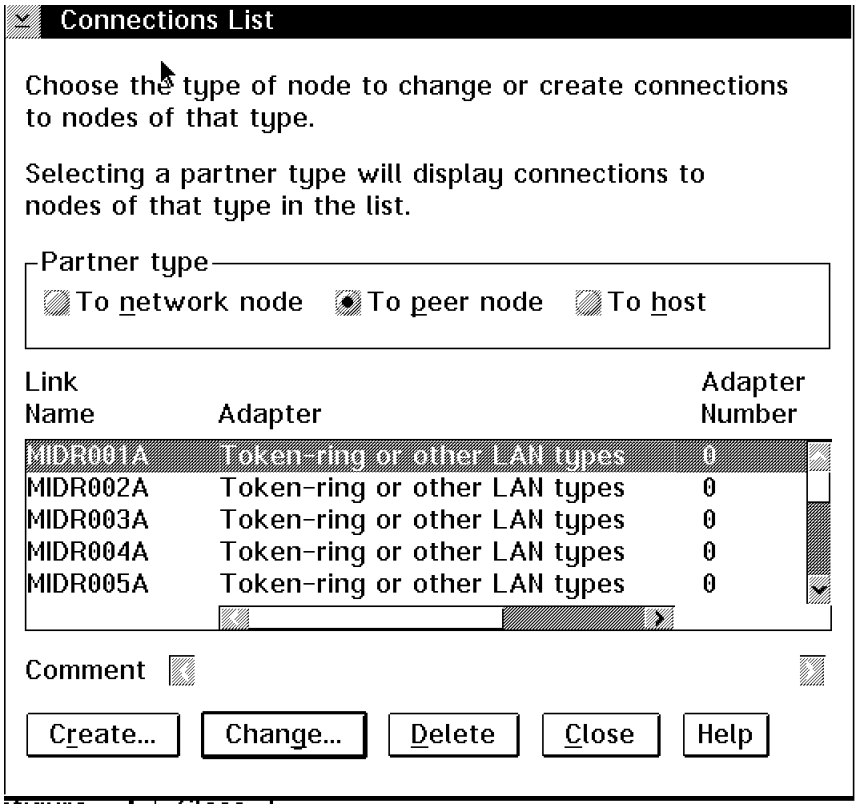
d. In the APPC API's through Token-Ring/Ethernet window click on **Advanced...**.



e. In the Communications Manager Profile List window

1) Select **Optional SNA Connections**.

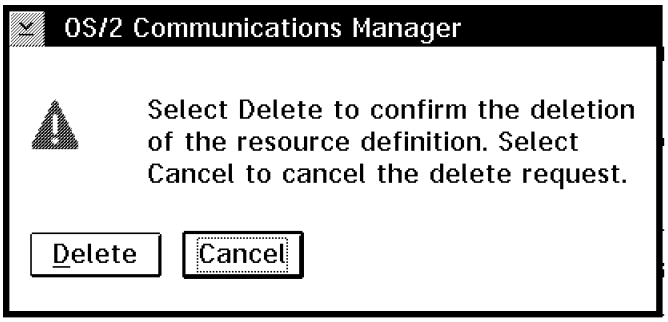
2) Click on **Configure...**



f. In the Connections List Window

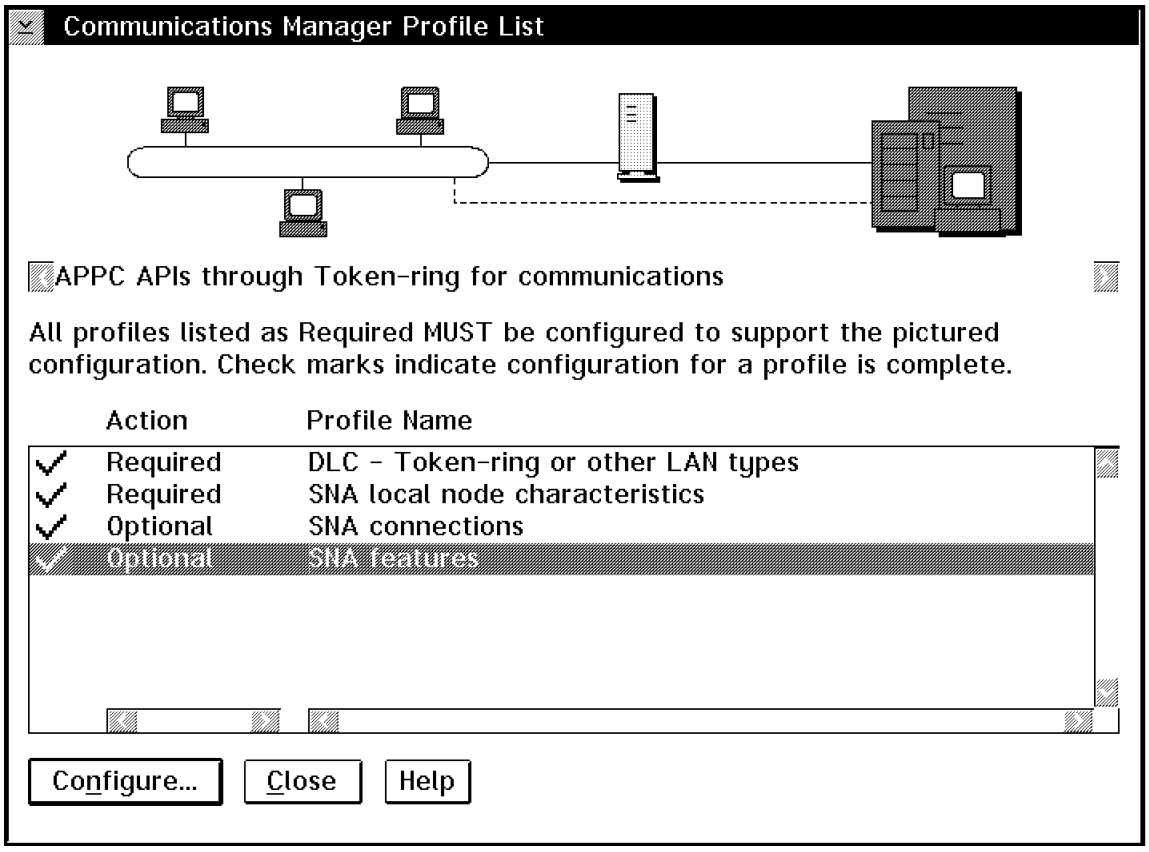
1) Select the Link Name you want to delete (this will be the name you saved from the old Library Manager)

2) Click on **Delete**



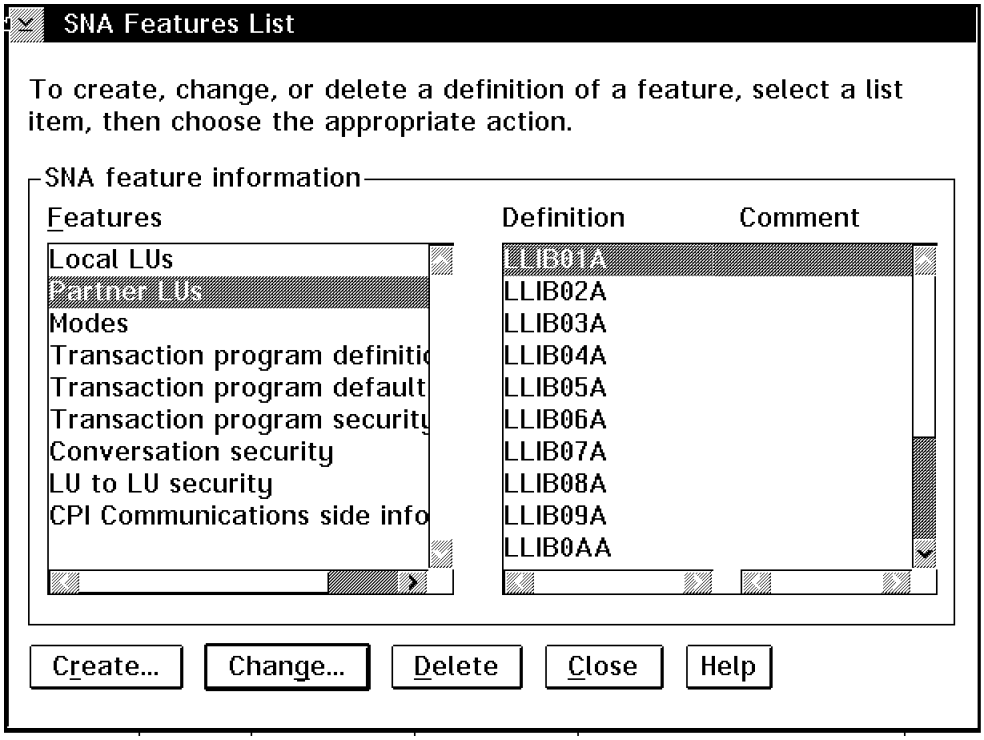
3) In the OS/2 Communications Manager window click on **Delete**

4) In the Connections List window click on **Close**.



g. In the Communications Manager Profile List window

1) Select **Optional SNA features**.
2) Click on **Configure...**

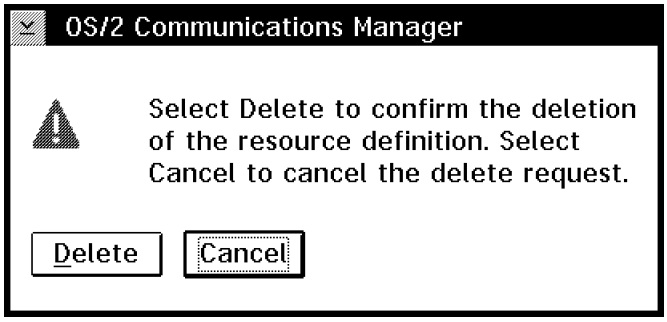


h. In the SNA features List window

1) Select **Partner LUs**

2) Select the Definition you want to delete (this will be the name you were instructed to save in 1d on page 56)

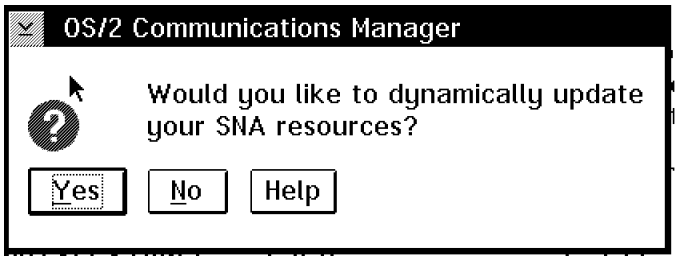
3) Click on **Delete**



4) In the OS/2 Communications Manager window click on **Delete**

i. In the SNA Features List window click on **Close**

j. In the Communications Manager Profile window click on **Close**



k. In the OS/2 Communications Manager window click on **OK** to dynamically update the SNA resources.

l. In the Communications Manager Setup window click on **Close**.

17.0 Appendix B

Table 1 (Page 1 of 2). Teach Configuration	
Teach Parameter	**Value for Library S/N _____**
Total number of boxes	
High-Capacity I/O Facility	_____, Rack ____, ____ cells
RTIC Card Configuration	Card 1 - ____DAs ____CUs, Card 2 - ____DAs ____CUs
Box 1	Model L_____-_____ ____RTIC ____LAN
Box 2	Model _____-_____ ____RTIC ____LAN
Box 3	Model _____-_____ ____RTIC ____LAN
Box 4	Model _____-_____ ____RTIC ____LAN
Box 5	Model _____-_____ ____RTIC ____LAN
Box 6	Model _____-_____ ____RTIC ____LAN
Box 7	Model _____-_____ ____RTIC ____LAN
Box 8	Model _____-_____ ____RTIC ____LAN
Box 9	Model _____-_____ ____RTIC ____LAN
Box 10	Model _____-_____ ____RTIC ____LAN
Box 11	Model _____-_____ ____RTIC ____LAN
Box 12	Model _____-_____ ____RTIC ____LAN
Box 13	Model _____-_____ ____RTIC ____LAN
Box 14	Model _____-_____ ____RTIC ____LAN
Box 15	Model _____-_____ ____RTIC ____LAN
Box 16	Model _____-_____ ____RTIC ____LAN
Non-VTS Library sequence number	
VTS 1 Library sequence number	
VTS 2 Library sequence number	
Plant of manufacture	13
Customer Identifier	
Dual Grippers	____Installed ____Not Installed
Default Cartridge Type	____CST ____ECCST ____HPCT ____EHPCT ____None
Convenience I/O	____Installed (10) ____Installed (30) ____Not Installed
Password required?	____Yes ____No
Home Cell Mode	____Fixed ____Floating

Table 1 (Page 2 of 2). Teach Configuration

Teach Parameter	**Value for Library S/N** _____
Dual Accessors	____Installed ____Not Installed
Adjacent frame inventory update?	____Yes ____No
Device Identifiers:	
Box 1	0_____ 1_____
Box 2	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 3	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 4	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 5	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 6	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 7	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 8	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 9	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 10	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 11	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 12	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 13	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 14	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 15	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
Box 16	0_____ 1_____ 2_____ 3_____ 4_____ 5_____
VTS 1 Virtual Device Identifiers:	
Virtual Subsystem 1	0 _____
Virtual Subsystem 2	0 _____
Virtual Subsystem 3	0 _____
Virtual Subsystem 4	0 _____
VTS 2 Virtual Device Identifiers:	
Virtual Subsystem 1	0 _____
Virtual Subsystem 2	0 _____
Virtual Subsystem 3	0 _____
Virtual Subsystem 4	0 _____

Table 2. Remote Console Worksheet	
TCP/IP Configuration Values Library Manager A	
Host Name	
Domain Name	
Nameserver	
TCP/IP Address	
Subnet Mask	
Router	
TCP/IP Configuration Values Library Manager B	
Host Name	
Domain Name	
Nameserver	
TCP/IP Address	
Subnet Mask	
Router	

Table 3. Remote Console Worksheet	
APPC Configuration Values Library Manager A	
Adapter 0 Token Ring Address	
CP Name	
APPC Configuration Values Library Manager B	
Adapter 0 Token Ring Address	
CP Name	