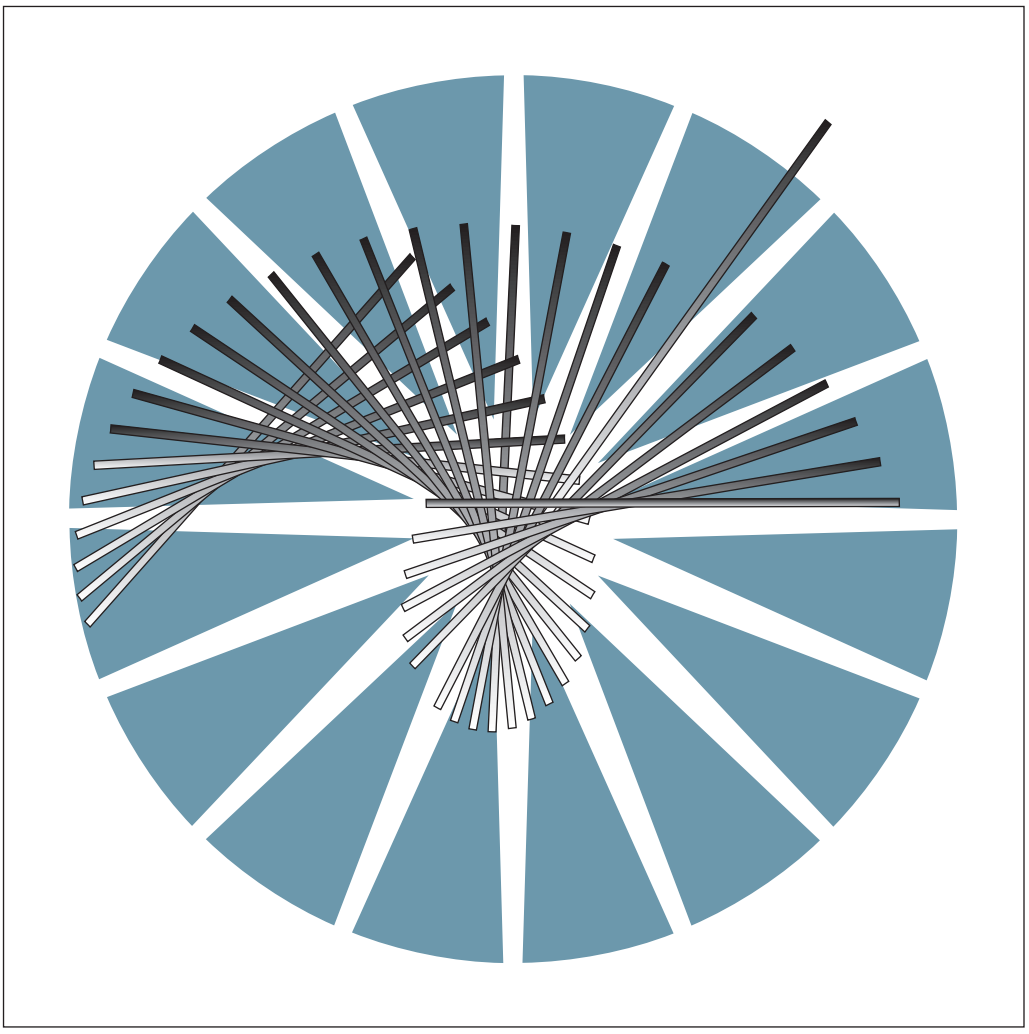
3746 Nways Multiprotocol Controller
Model 900

Installation Guide



SY33-2114-03

3746 Nways Multiprotocol Controller
Model 900

Installation Guide

SY33-2114-03

Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page xiii.

Fourth Edition (October 1998)

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Year 2000 Statement

This product is Year 2000 ready. When used in accordance with its associated documentation, it is capable of correctly processing, providing, and/or receiving date data within and between the 20th and 21st centuries, provided all other products (for example, software, hardware, and firmware) used with the product properly exchange accurate date data with it.

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Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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ESCON	OS/2	VTAM
IBM	PS/2	

Product Safety Information

General Safety

This product meets IBM safety standards.

For more information, see the *IBM Telecommunication Products Safety Handbook,* GA33-0126.

Safety Notices

For *Safety Notices* refer to *IBM 3745 Communication Controller All Models*, *IBM 3746 Expansion Unit Model 900*, *IBM 3746 Nways Multiprotocol Controller Model 950*, *Safety Information*, GA33-0400.

Safety Notices for United Kingdom

1. The IBM 3746 Nways Multiprotocol Controller Model 900 is manufactured according to the International Safety Standard EN 60950 and as such is approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.
2. The network adapter interfaces housed within the IBM 3746 Nways Multiprotocol Controller Model 900 are approved separately, each one having its own independent approval number. These interface adapters, supplied by IBM, do not use or contain excessive voltages. An excessive voltage is one that exceeds 42.4 V peak ac or 60 V dc. They interface with the IBM 3746 Nways Multiprotocol Controller Model 900 using Safety Extra Low Voltages (SELV) only. In order to maintain the separate (independent) approval of the IBM adapters, it is essential that other optional cards, not supplied by IBM, do not use mains voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by IBM.

Service Inspection Procedures

The Service Inspection Procedures help service personnel check whether the 3745 conforms to IBM safety criteria. They have to be used each time the 3745 safety is suspected. The *Service Inspection Procedures* section is located at the beginning of the *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054. The 3745 areas and functions checked through service inspection procedures are:

1. External covers
2. Safety labels
3. Safety covers and shields
4. Grounding
5. Circuit breaker and protector rating
6. Input power voltage

7. Power-ON indicator
8. Emergency power OFF.

About This Book

Who Should Use This Book

The IBM personnel using this manual should be:

- Trained to service the IBM 3745 Communication Controller and the IBM 3746-900 expansion unit.
- Familiar with the 3745/3746-900 service documentation,
- Familiar with the configuration of the host system(s).

How To Use This Book

This manual provides step-by-step procedures for adding a 3746-900 to a 3745 Communication Controller (all models, 17A to 61A). **Many steps depend on previously completed instructions** before continuing the procedure. To ensure the most efficient installation:

- Read the instructions carefully before attempting to do them,
- Complete each step before going to the next one,
- Go through the chapters sequentially.

How This Book is Organized

Chapter 1 Introduces the 3745/3746-900 configuration and gives a list of what the CE must do before beginning to install. Read this chapter before any installation.

Chapter 2 Presents the procedures to connect the 3746-900 to the customer's power sources and to connect the service processor to the 3746-900 and 8228.

Chapter 3 Presents the 3746-900 power ON and test procedures that the CE must perform on the 3746-900 before installing the external cables and connecting the frame to the 3745 or 3746.

Chapter 4 Presents the procedures to:

1. Prepare the 3745-X1A to be attached to the 3746-900.
2. Attach the 3746-900 unit to the 3745-X1A or 3746 and the controller expansion (if any).
3. Route and connect the IOC/DMA bus and power control cables from the 3746-900 to the 3745-X1A or 3746.

Chapter 5 Presents the 3745-X1A power ON and test procedures

Chapter 6 Presents the procedures to:

1. Prepare the 3745-17A to be attached to the 3746-900.
2. Attach the 3746-900 unit to the 3745-17A and the controller expansion (if any).
3. Route and connect the IOC/DMA bus and power control cables from the 3746-900 to the 3745-17A.

Chapter 7 Presents the 3745-17A power ON and test procedures

Chapter 8 Presents the external cable setup procedures.

Chapter 9 Presents the procedures to install the ground plates on the 3746-900 attached to a 3745-X1A

Chapter 10 Presents the procedures to install the ground plates on the 3746-900 attached to a 3745-17A

Chapter 11 Presents the procedures to make the machine ready for the customer.

Chapter 12 Presents relocating/removing procedures for the 3746-900 attached to a 3745-X1A.

Chapter 13 Presents relocating/removing procedures for the 3746-900 attached to a 3745-17A.

Appendix A Gives an example of Ethernet parameters worksheet

Appendix b Shows the 3746-900 component locations.

Appendix C Shows the 3745-X1A/3746 component locations.

Appendix D Shows the 3745-17A/3746 component locations.

Appendix E Shows the controller expansion component locations.

A **service and customer documentation bibliography**, a **list of abbreviations**, and an **index** are provided at the end of this manual.

Where to Find More Information

For a complete list of the 3745/3746-900 customer and service information manuals, see at the end of this manual. In this *Installation Guide*, references are made to the following publications:

Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577), SY33-2115

Service Processor Installation and Maintenance (Based on 7585, 3172, and 9585), SY33-2120

3746-900 YZ Pages

3745 Communication Controller Models 210 to 61A Maintenance Information Procedures, SY33-2054

3746-900 Service Guide, SY33-2116

3746 Nways Multiprotocol Controller Models 900 and 950 External Cable References, SY33-2117

3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide, GA33-0457

Multiaccess Enclosure Installation and Maintenance Guide, SY33-2118

World Wide Web

You can access the latest news and information about IBM network products, customer service and support, and microcode upgrades via the Internet at the URL: http://www.networking.ibm.com/

Online Documentation from CD-ROM

With the service processor is now shipped a CD which contains the LIC and a copy of the 3746 web site. You will find from this web page, marketing, PE, and all information about CCP products.

To access this page:

1. Insert the CD into the CD disk drive of the SP.
2. From the MOSS-E primary menu, click on **Information**
3. Double click on **CD-ROM documentation**
4. Then if you want to display the CCP documentation, click on **Documentation**
5. Click on **La Gaude Information Development: Communication Controllers Information**

Note: To have the very last version of the web site, connect to Internet at: http://w3.lagaude.ibm.com/ccp/3746.htm

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Service Personnel Definitions

See the *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054 or *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070.

Summary of Changes

This edition gives information about:

1. The new procedures to configure NPM.
2. The connection of the 3746-900 to a new SP type 6275-560.

Chapter 1. Preparing for Installation

Overview of a 3746-900 Attached to a 3745-X1A

Note: If you are installing a 3746-900 attached to a 3745-17A, refer to “Overview of a 3746-900 Attached to a 3745-17A” on page 1-3.

The 3746-900 is physically connected to the 3745 Models A. An adapter, known as the controller bus and service adapter (CBSA) is required to connect the frames. A Service Processor provides the operator and service console support for both the 3746-900 and 3745. A network node processor (optional) provides the functions to support APPN/IP when installed. A network node processor b (optional) can be also installed.

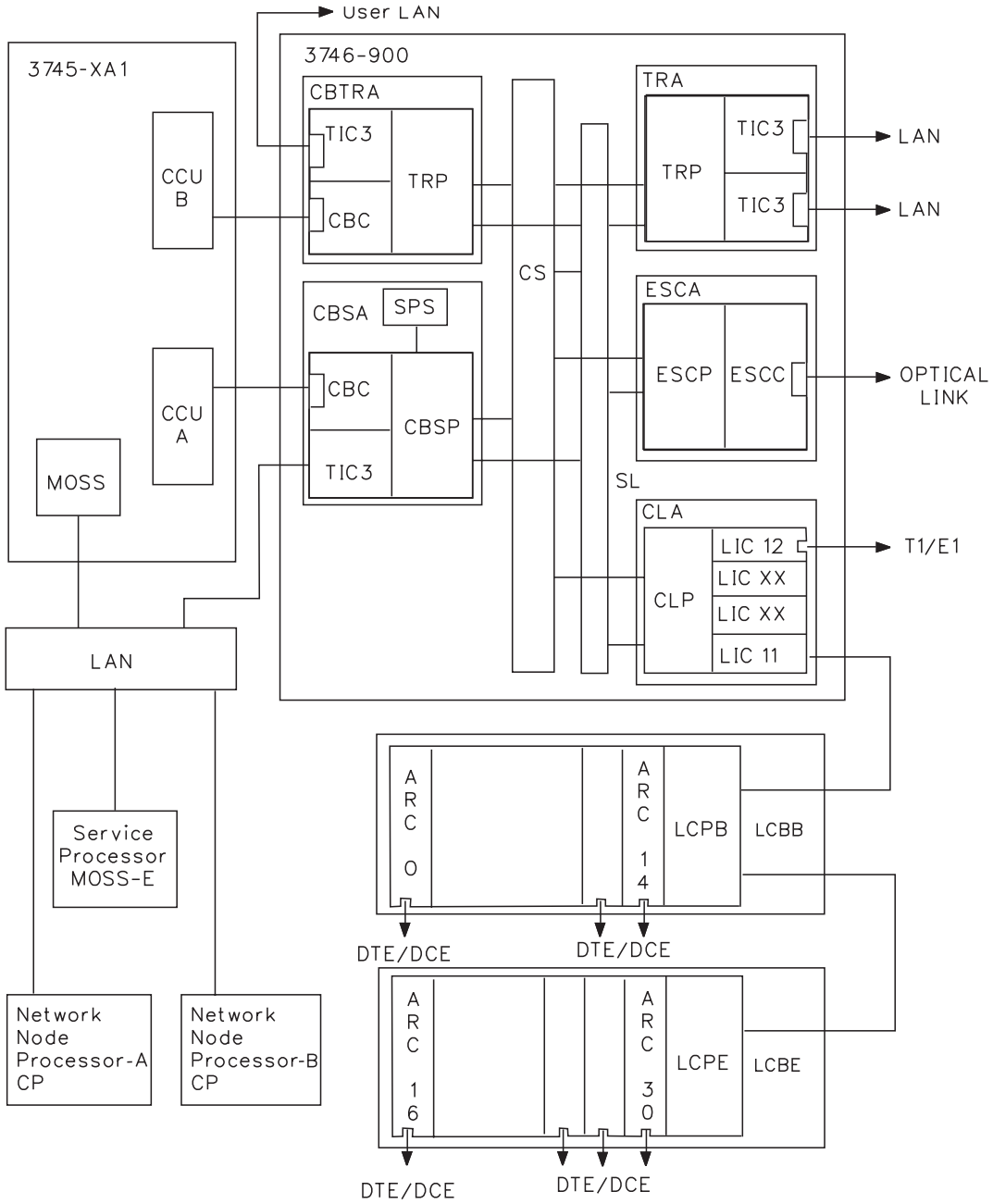


Figure 1-1. Data Flow of a 3746-900 Attached to a 3745-X1A

Overview of a 3746-900 Attached to a 3745-17A

The 3746-900 is physically connected to the 3745 Model 17A. An adapter, known as the controller bus and service adapter (CBSA) is required to connect the frames. A service processor provides the Operator and Service Console support for both the 3746-900 and 3745. A network node processor (optional) provides the functions to support APPN/IP when installed. A network node processor b (optional) can be also installed.

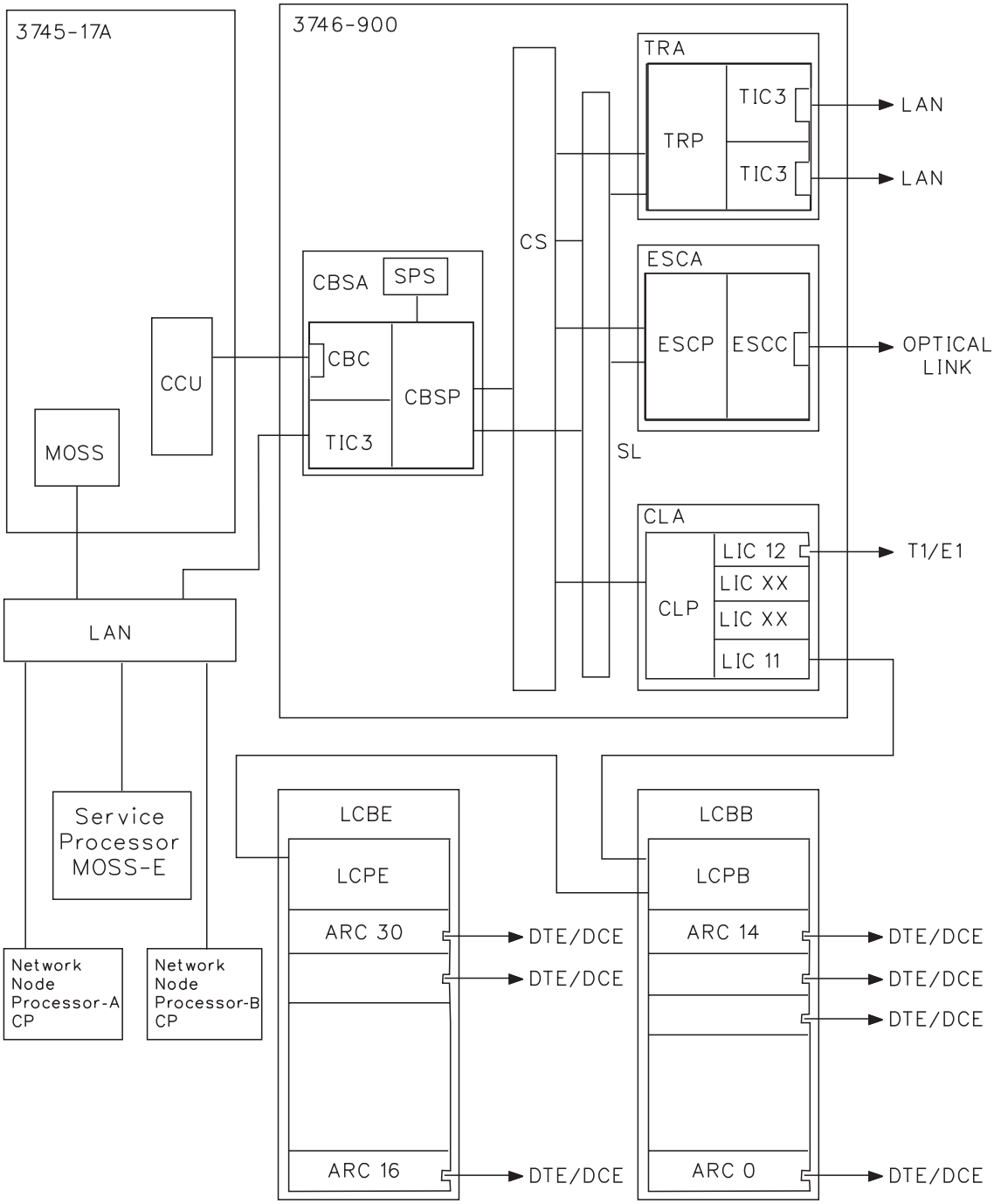


Figure 1-2. Data Flow of a 3746-900 Attached to a 3745-17A

Pre-installation Checklist

Documentation

Note: The following list gives the reference to all the documents that can be used during the installation, but depending on your installation scenario not all of the documents will be needed.

Documents used during the installations:

1. 3746-900 IG: *3746-900 Installation Guide*, SY33-2114
2. 3745-X1A IG: *3745/210-61A Installation Guide*, SY33-2057
3. 3745-17A IG: *3745/130-17A Installation Guide*, SY33-2067
4. SPIM: *Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577)*, SY33-2115 or *Service Processor Installation and Maintenance (Based on 7585, 3172, and 9585)*, SY33-2120
5. MES: 3745 MES and Field BMs for model conversion
6. *3745 Bypass Card Plugging Guide*, SY33-2097 (on line document)
7. *7855 Modem Model 10 Guide to Operation*, GA33-0160
8. *IBM 7857 Guide to Operation*, GA13-1839
9. Parameter worksheets from the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457
10. Output from the *3746-900 ESCON Generation Assistant*, or CCM.

Installation Scenarios

Depending on the machine and the MES received, determine which installation scenario you are going to perform (from **Scenario 1** to **Scenario 16**). Refer to Table 1-1 on page 1-5 and Table 1-1 on page 1-5 to see how the **installation tasks** can be distributed **between 2 CEs** and define which **document** must be used to **start the installation** and have an overview of the installation sequence.

Note: Refer to Table 1-2 on page 1-5 for more details about each scenario. If you are installing a 3745 Model 17A, the statements concerning the installation of an expansion frame and the procedures "CDF verify" and "locate bypass cards positions" are not applicable.

NOTE

You are able to install the 3746-900 first, then connect the service processor and run all diagnostics. Afterward the 3745 can be modified to model A (if necessary) and connected to the 3746-900

Table 1-1. Installation Scenarios

Machine and/or MES Received	Scenario
3745 model 170 or model 210 to 610	1
Service Processor	2
3745 MES model conversion and 3746-900	3
3745 MES model conversion and 3746-900 and service processor	4
3745 Model 17A or model 21A to 61A	5
3745 Model 17A or model 21A to 61A and service processor	6
3746-900	7
3746-900 and 3745 MES model conversion	8
3746-900 and 3745 MES and service processor	9
3746-900 and 3745 model 17A or 21A to 61A	10
3746-900 and 3745 model 17A or 21A to 61A and service processor	11
3746-950 and network node processor	12
3746-950, service processor, and network node processor	13
3746-900 MES conversion to model 3746-950 and network node processor	14
3746-900 MES conversion to model 3746-950, service processor and network node processor	15
3746-900 MES installation of APPN* and network node processor	16

Note: The installation sequence given in Table 1-2 can be modified as you are able to install the 3746-900 first and then connect to the 3745 model A. It is no more mandatory to start with the 3745 MES (to migrate to model A) or with the 3745 Installation Guide.

Scenario	CE	Tasks	Documentation	Installation Sequence
Scenario 1	1st 2nd	Install the 3745-XX0 base frame Install expansion frame (if any)	3745 Installation Guide 3745 Installation Guide	Start with the 3745 IG and install the 3745-XX0
Scenario 2	1st	Install the service processor	Service Processor Installation and Maintenance	Start with the SPIM and install the SP.
Scenario 3	1st	Install the MES model conversion	MES model conversion XX0 to XXA	Start with the MES and connect the 3745 XXA to the existing SP.
Scenario 4	1st 2nd	Install the MES model conversion Install the Service Processor	MES model conversion XX0 to XXA Service processor Installation and Maintenance	Start with the MES and using the SPIM install the SP.
Scenario 5	1st 2nd	Install the 3745-XXA base frame Install expansion frame (if any)	3745 Installation Guide 3745 Installation Guide	Start with the 3745 IG and connect the 3745-XXA to the existing SP.

Scenario	CE	Tasks	Documentation	Installation Sequence
Scenario 6	1st	Install the 3745-XXA base frame	3745 Installation Guide	Start with the 3745 IG and using the SPIM install and connect the SP.
	2nd	Install the Service Processor	Service Processor Installation and maintenance	
Scenario 7	1st	Install the 3746-900 (off line)	3746-900 Installation Guide	Start with the 3746 IG and install and connect the 3746-900 to the 3745-XXA.
	2nd	Prepare the 3745-XXA: CDF verify, Bypass Cards	3746-900 Installation Guide	
	2CEs	Connect the 3746-900 to the 3745	3746-900 Installation Guide	
Scenario 8	1st	Install the MES model conversion and prepare the 3745-XXA • CDF verify - Bypass Cards	MES model conversion XX0 to XXA 3746-900 Installation Guide	Start with the MES to convert the 3745 to model XXA, then using the 3746 IG install and connect the 3746-900
	2nd	Install the 3746-900 (off line)	3746-900 Installation Guide	
	2CEs	Connect the 3746-900 to the 3745	3746-900 Installation Guide	
Scenario 9	1st	Install the MES model conversion and prepare the 3745-XXA • CDF verify - Bypass Cards	MES model conversion XX0 to XXA 3746-900 Installation Guide	Start with the 3745 MES convert the 3745 to XXA using the SPIM install the SP, then using the 3746 IG install and connect the 3746-900
	2nd	Install the Service Processor	Service Processor Installation and maintenance	
		Install the 3746-900 (off line)	3746-900 Installation Guide	
	2CEs	Connect the 3746-900 to the 3745	3746-900 Installation Guide	
Scenario 10	1st	Install the 3745-XXA base frame	3745 Installation Guide	Start with the 3745 IG install the 3745 XXA, then using the 3746 IG install the 3746-900. The machines are connected to an existing SP.
	2nd	Install expansion frame (if any) and the 3746-900	3745 Installation Guide 3746-900 Installation Guide	
	2CEs	Connect the 3746-900 to the 3745	3746-900 Installation Guide	
Scenario 11	1st	Install the 3745-XXA base frame and the Service Processor	3745 Installation Guide Service Processor Installation	Start with the 3745 IG install the 3745 XXA, using the SPIM install the SP, then using the 3746 IG install the 3746-900.
	2nd	Install expansion frame (if any) and the 3746-900	3745 Installation Guide 3746-900 Installation Guide	
	2CEs	Connect the 3746-900 to the 3745	3746-900 Installation Guide	
Scenario 12	1st	Install the 3746-950	3746-950 Installation Guide	Start with the 3746 IG and connect the 3746 950 to the existing SP. Then using the network node processor installation and maintenance, install the NNP.
	2nd	Install the Network Node Processor	Network Node Processor Installation and Maintenance	

Scenario	CE	Tasks	Documentation	Installation Sequence
Scenario 13	1st	Install the 3746-950	3746-950 Installation Guide	Start with the 3746 IG install the 3746-950, the SPIM to install the SP, and the network node processor installation and maintenance to install the NNP.
	2nd	Install Service Processor	Service processor Installation and Maintenance	
	2nd	Install the Network Node Processor	Network Node Processor Installation and Maintenance	
Scenario 14	1st	Install the MES model conversion from 3746-900 to 3746-950	3746-900 to 3746-950 MES model conversion and the 3746-950 Installation Guide	Start with the MES then use the 3746 IG to connect the 3746-950 to an existing SP, and the network node processor installation and maintenance to install the NNP.
Scenario 15	1st	Install the MES model conversion from 3746-900 to 3746-950	3746-900 to 3746-950 MES model conversion, 3746-950 IG and the	Start with the MES and the 3746-950 IG then use the SPIM to install the SP and the network node processor installation and maintenance to install the NNP.
	2nd	Install the Service Processor	Service Processor Installation and Maintenance	
	2nd	Install the Network Node Processor	Network Node Processor Installation and Maintenance	
Scenario 16	1st	Install APPN on the 374-900 MES	MES APPN on 3746-900	Start with the MES to install APPN on the 3746-900, then use the NNPIM to install the network node processor.
	2nd	Install the Network Node Processor	Network Node Processor Installation and Maintenance	

Table 1-2. Installation Scenarios

If you are installing a:

- **3746-900 attached to a 3745-X1A**, go to “3746-900 in a 3745 Models X1A Configuration” on page 1-8
- **3746-900 attached to a 3745-17A**, go to “3746-900 in a 3745 Model 17A Configuration” on page 1-9

3746-900 in a 3745 Models X1A Configuration

Doors on the front and rear of a 3745/3746/3746-900 and controller expansion give access to the inside of the units. A clear path must be provided around the configuration to access covers. Allow enough space for future expansion, and never install the machine with its right or left side against a wall or fixed material. Keep a servicing area 0,75 m (2.5 ft) wide at front and back, and at least 0.85 m (2.80 ft) at the right and left sides to install/remove the end covers.

Note: The controller expansion can be installed detached from the 3745/46 frame, refer to Figure 1-7 on page 1-10

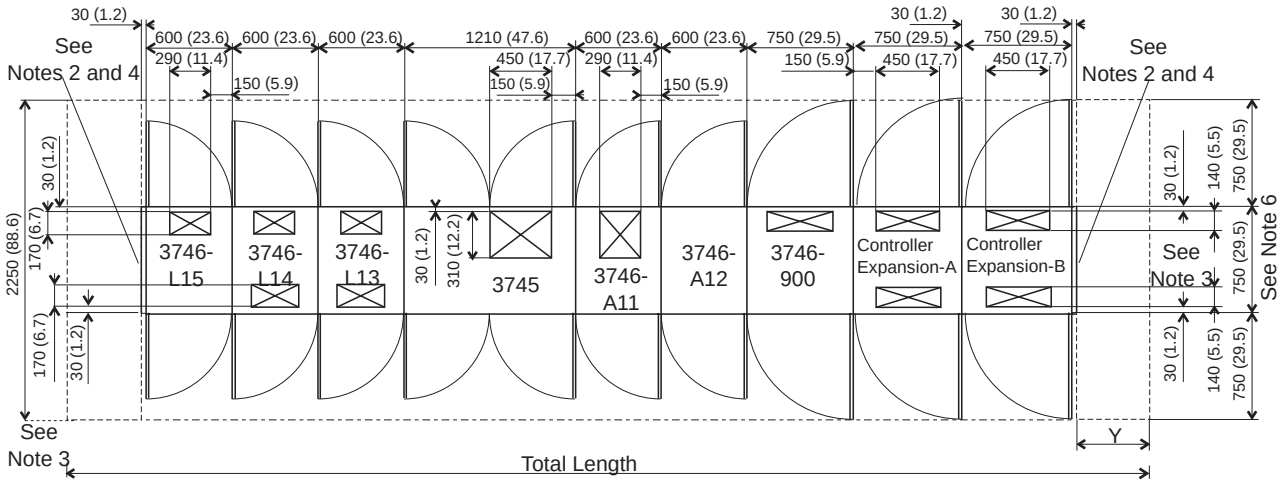


Figure 1-3. Plan View of a 3745-X1A/3746/3746-900/Controller Expansion Configuration

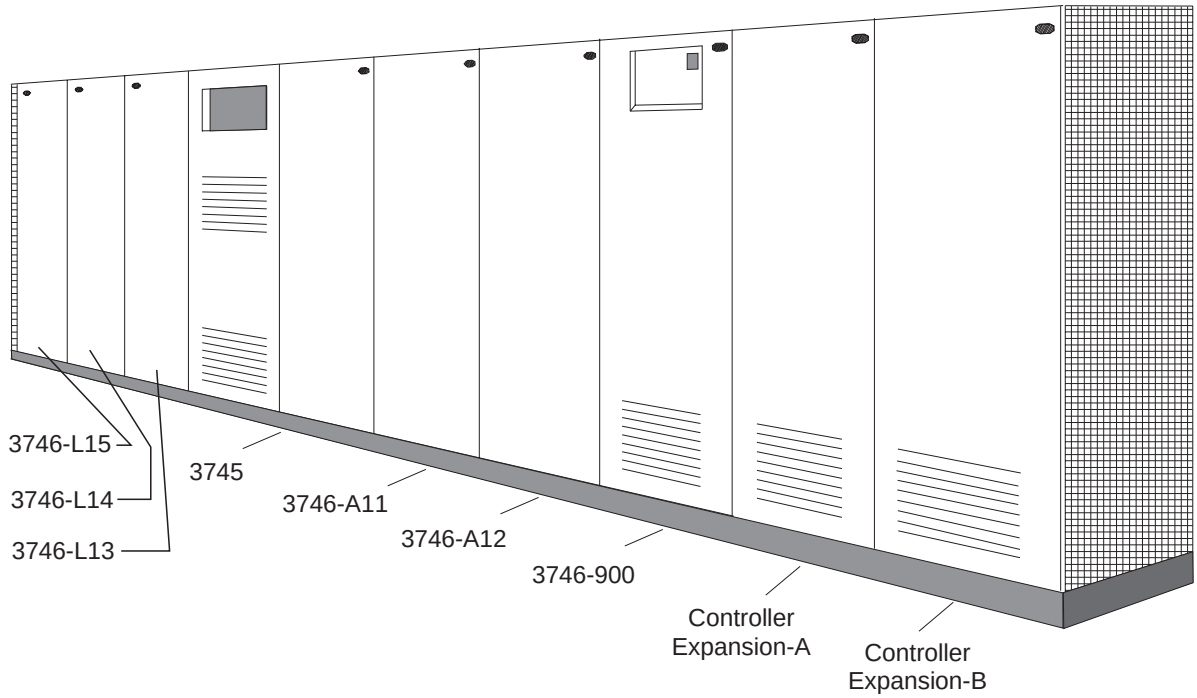


Figure 1-4. Maximum Configuration

3746-900 in a 3745 Model 17A Configuration

Doors on the front and rear of a 3745 and 3746-900 give access to the inside of the units. Keep a servicing area 0.75 m (2.5 ft) wide at front and back.

Note: The 3746-900 may be installed on the right or on the left of the 3745 Model 17A. The controller expansion is optional and can be installed detached from the 3746-900 frame see Figure 1-7 on page 1-10

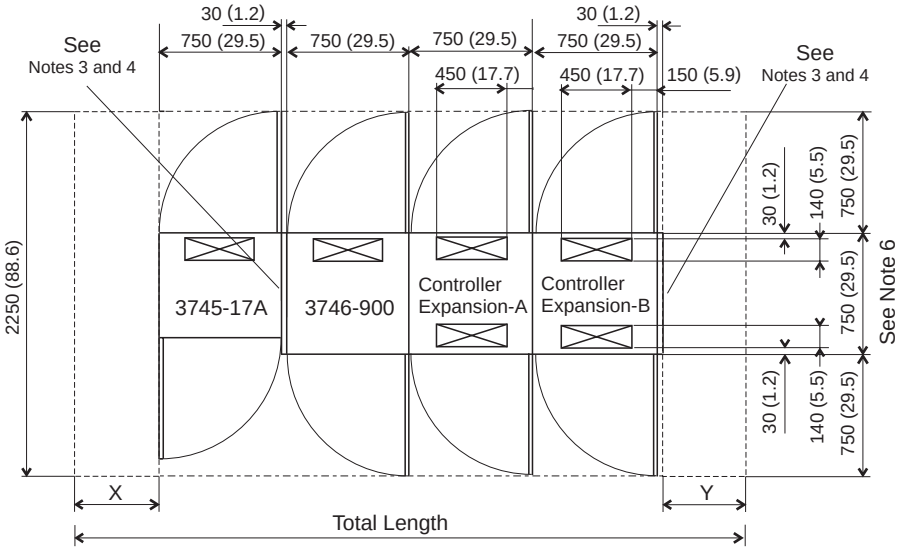


Figure 1-5. Plan View of the 3745 17A/3746-900/Controller Expansion

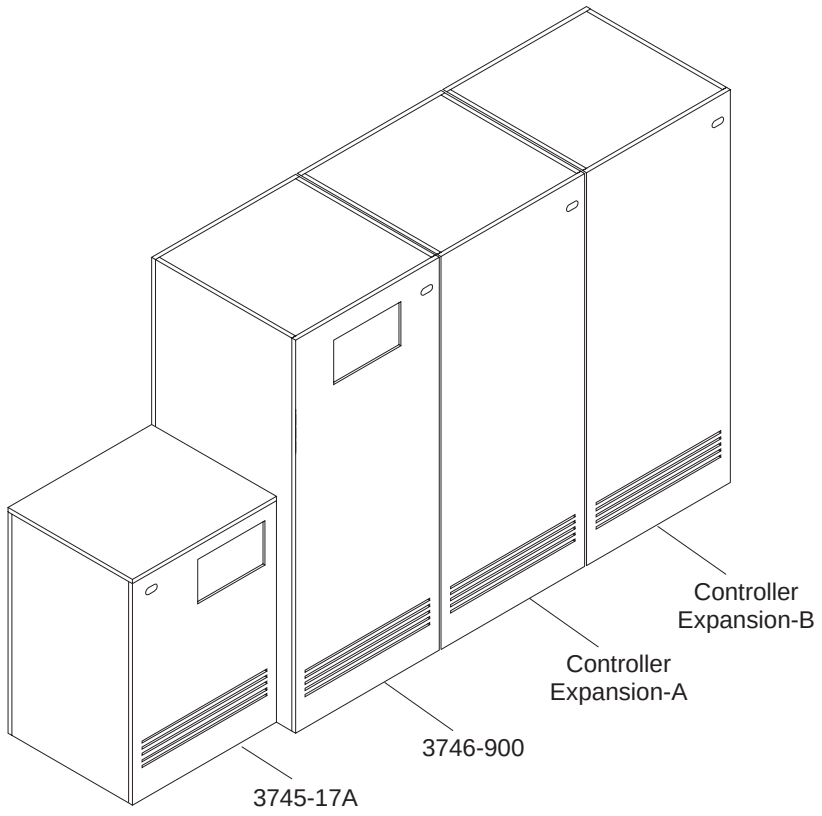


Figure 1-6. 3745-17A/3746-900/controller expansion

Controller Expansion View

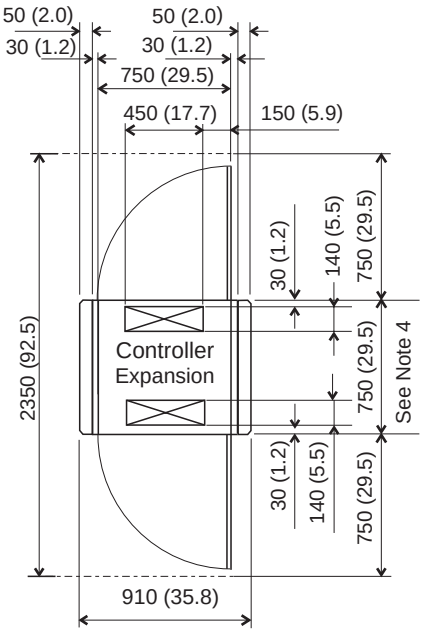


Figure 1-7. Controller Expansion Plan View

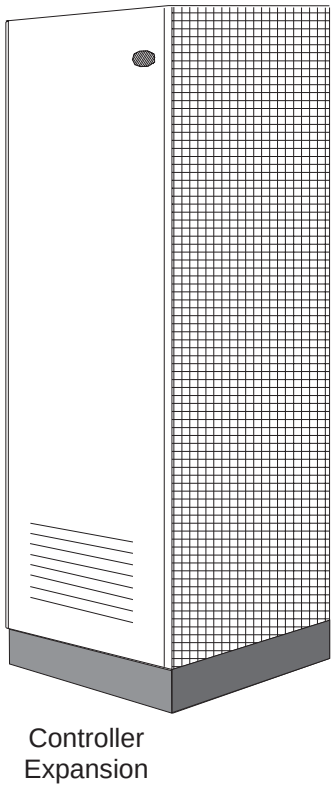


Figure 1-8. Controller Expansion View

Special Tools/Test Equipment

- A cover lock key P/N 1643894 shipped with the 3746-900.

Note: Not required but preferred for unpacking if available from branch office:

- A power screwdriver
- A 3/8" socket set

Installation Time

- The estimated hardware installation time is 6.0 hours.
- The average time for installing the external cables is 1.0 hour.
- The estimated 3745 interruption time is 3.0 hours.
- The estimated installation time for a ethernet bridge is: 1.0 hour.
- The estimated installation time for a multiaccess enclosure is: 2.45 hours.

Note: The 3746-900 installation and test procedure (part one) can be performed while the 3745 is running .

Note

Under the installation service code, only report the time spent on the procedures described in this manual. Other activities must be reported on another service code according to your general reporting instruction guide.

Making Ready to Install

(Place a check mark next to each completed step.)

Step 1. ____ Connect to the following web site http://www.lagaude.ibm.com/3746pe, and download all mandatory fixes according to the level of the code that you are going to install.

Step 2. ____ Ensure that the RSF link is installed and working.

Note: If the customer has not provided an RSF link, review or have marketing review the maintenance exposure with the customer.

Step 3. ____ Starting with 3746-900 microcode EC D46100, the 3746-900 should be registered in RETAIN in addition to the 3745-XXA.
Insure that both the 3745 and 3746 types and models are registered in RETAIN (CCPF).
For **U.S.A.** machines, please call the Raleigh Multiplexor Support Center and verify your machine's registration in CCPF for:

a. The seven digit **serial number** of the 3745/3746 is **correct**.

b. The three digit **model** designation for the 3745/3746 is **correct**.

Step 4. ____ Check all items listed on the shipping group bill of material (B/M). Verify that all parts have been received.

Step 5. ____ Make sure that all the cables specified on the cable order form have been received. Report any difference to the IBM sales representative and to the CE branch office.

Step 6. ____ Verify that the service processor access unit (8228) is available to connect the 3746-900.

Step 7. ____ Refer to the 3746-900 bibliography in the appendix of this manual. Ensure that all the customer and service manuals supplied with the 3746-900 have been received and updated with TNLs (if any) before beginning installation.

Step 8. ____ Familiarize yourself with the installation procedures in this manual. You must also be familiar with the *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, used for trouble-shooting, and the *3745/210-61A Service Functions*, SY33-2055, or the *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, used for troubleshooting, and the *3745/130-17A Service Functions*, SY33-2069.

Step 9. ____ Make sure that the installation area is in accordance with Figure 1-3 on page 1-8, or with Figure 1-5 on page 1-9. If not, inform the customer.

Note: Verify that the floor cutout size and location correspond to the plan otherwise the ESCA cable guide can't be installed.

Step 10. ____ The 3746-900 must be installed close to the 3745 or 3746 that it will be connected to, this is to avoid any problem in routing the cables between the machines.

Step 11. ____ **If you have to install specific software such as X.25**:
Verify that the instruction (PN 29H4833) is available and provides the passwords needed to enable the software features.

Step 12. ____ **If the 3746-900 has the ESCON adapter (ESCA)**:

a. ____ If you are installing a 3746-900 **with APPN**, obtain from the customer the diskette which contains the ESCON configuration produced by the Controller Configuration and Management running on a remote PS/2 (or equivalent).

b. ____ If you are installing a 3746-900 **without APPN**, obtain from the customer the diskette which contains the ESCON configuration produced by the ESCON Generation Assistant running on a remote PS/2 (or equivalent).

Step 13. ____ From the IBM system engineer or from the customer, obtain :

a. The **HONE configuration sheet**.

b. The **Parameter worksheet "Service Processor Integration"** (This worksheet is in the Appendix of the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457).

Step 14. ____ **Prepare the LAN-attached consoles**.

- You will find console installation instructions in the *Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577)*, SY33-2115.
  The setup procedure for the 3746-900 is explained in chapter “Connecting and Configuring the Service Processor” on page 2-33 of this manual.
- If the service processor is not installed in a controller expansion, the customer should provide a small table or desk, big enough to hold the

service processor and the modem for the remote support facility (RSF).

Chapter 2. Connecting the 3746-900 to the Power and Devices

Checking the 3746-900 Frame

Step 1. ____ Compare the machine serial number on the packing material with that listed on the shipping documents. Report any difference to the IBM branch office, and confirm whether the installation can continue.

Step 2. ____ Unpack the 3746-900 and ensure that all shipping material is removed. Refer to the unpacking instructions attached to the external packing.

Step 3. ____ Open the rear door. Locate the power rating plate (see Figure 2-1). **Check that the 3746-900 Basic AC power and the Optional AC power rating plate data are consistent with the customer's available voltage AC and the frequency.**
Record the power information. It will be used later in chapter “Connection to Main Power” on page 2-24

Basic Power: _____ Optional Power: _____

Step 4. ____ Inspect the 3746-900 carefully for shipping damage. Report any damage in accordance with local procedures.

Step 5. ____ Check that the serial number stamped on the frame is the same as on the serial number plate (see Figure 2-1 for location).

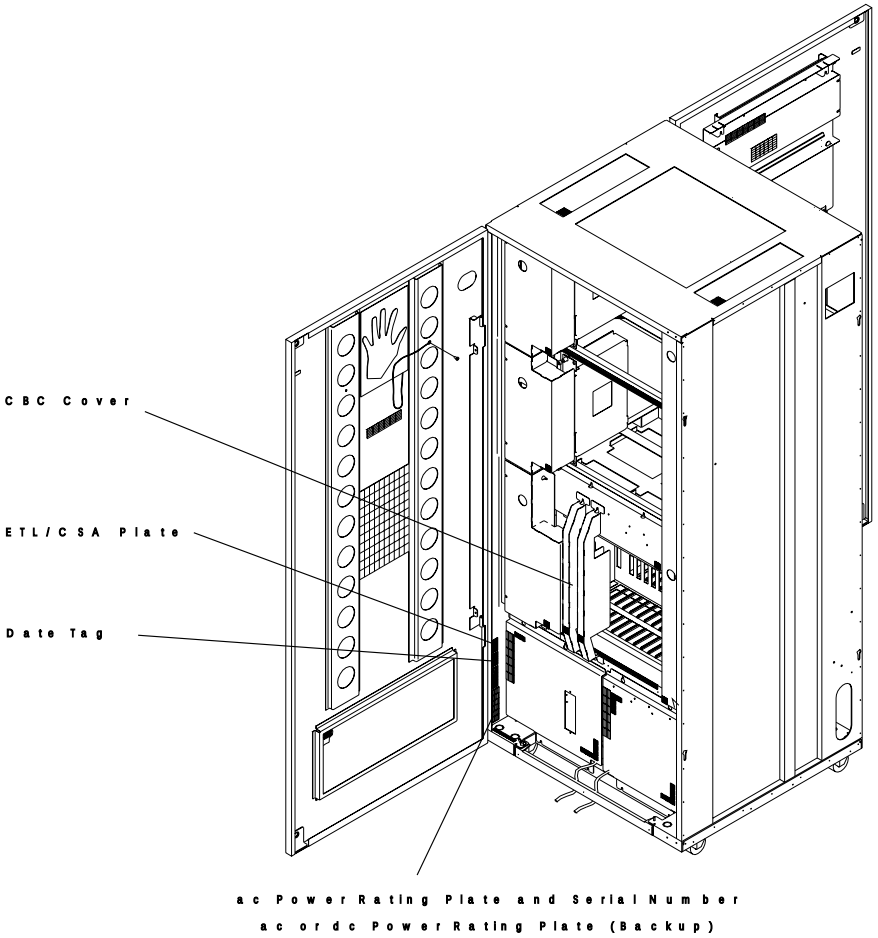


Figure 2-1. 3746-900 Power Rating Plate (Rear View)

Removing the Shipping Bars

1. ____Open the front and rear covers.
2. ____Remove the CBC covers (see Figure 2-1 on page 2-2).
3. ____Remove the screws maintaining the red shipping bars **1**
4. ____Store these bars in a safe place for further use.

Note: These red shipping bars keep the cards in the boards during the transportation and are located on the upper and lower sides of the board (front and rear sides of the 3746-900) see Figure 2-2.

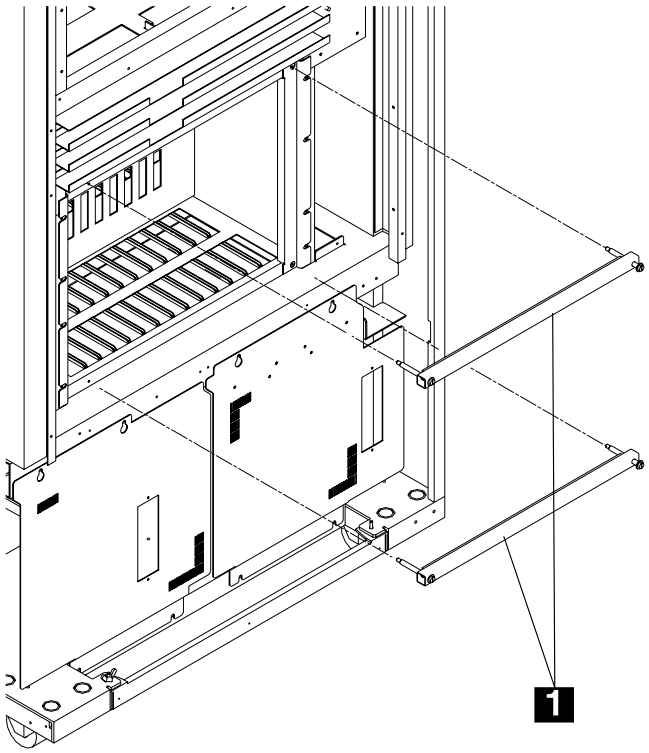


Figure 2-2. Shipping Bars

If you are installing a:

- **3746-900 attached to a 3745-17A**, go to “Installing Ground Plates on a 3746-900 Attached to a 3745-17A” on page 2-4
- **3746-900 attached to a 3745-X1A**, and you have received a **controller expansion**, go to “Installing the Controller Expansion” on page 2-5, otherwise go to “Locking the frames” on page 2-7.

Installing Ground Plates on a 3746-900 Attached to a 3745-17A

Before positioning the 3746-900 close to the 3745-17A frame, install the ground plates as follows:

1. ____Obtain from the shipping group two ground plates (PN 58G5334). See Figure 2-3.

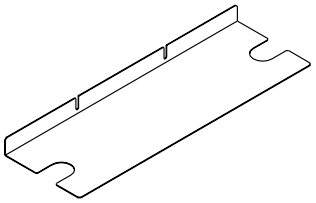


Figure 2-3. Ground Plate (PN 58G5334)

2. ____Install these plates on the bottom left and right of the 3746-900 using four screws (PN 2665527).

Note: The other ground brackets will be installed later (see Chapter 9, “Installing the Ground Brackets on a 3746-900 Attached to a 3745-X1A” on page 9-1).

Installing the Bracket-Spacer on the 3745-17A

1. ____Remove the 4 screws **1** and the 3745-17A top cover **2** (see Figure 2-4).
2. ____Install the bracket-spacer (PN 58G5428) **3** on either the left or right top side of the 3745-17A where the 3746-900 will be positioned.
3. ____Reinstall the top cover **2** and the 4 screws **1**.

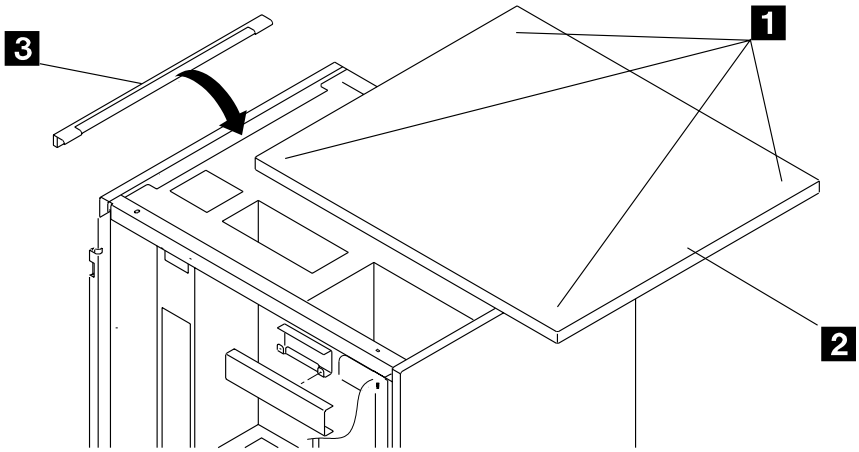


Figure 2-4. Bracket-Spacer Installation (PN 58G5428)

If you have received a **controller expansion**, go to “Installing the Controller Expansion” on page 2-5, otherwise go to “Locking the frames” on page 2-7.

Installing the Controller Expansion

The controller expansion can be installed:

- **Attached** to the 3746-900, go to “Installing the Controller Expansion Attached to the 3746-900”
- **Detached** from the 3746-900, go to “Installing the Controller Expansion Detached from the 3746-900” on page 2-6

Installing the Controller Expansion Attached to the 3746-900

1. ____Remove the right cover from the 3746-900 frame, and install this cover on the right side of the controller expansion
2. ____ Using four screws (PN 1621534) and four spacers (PN 72F0659) attach the controller expansion to the 3746-900.
3. ____ Connect the ground wire (PN 58G5691) **A** between the controller expansion frame using one screw (PN 61F4513) **B** and one washer (PN 1622347) and the building ground, then go to “Locking the frames” on page 2-7

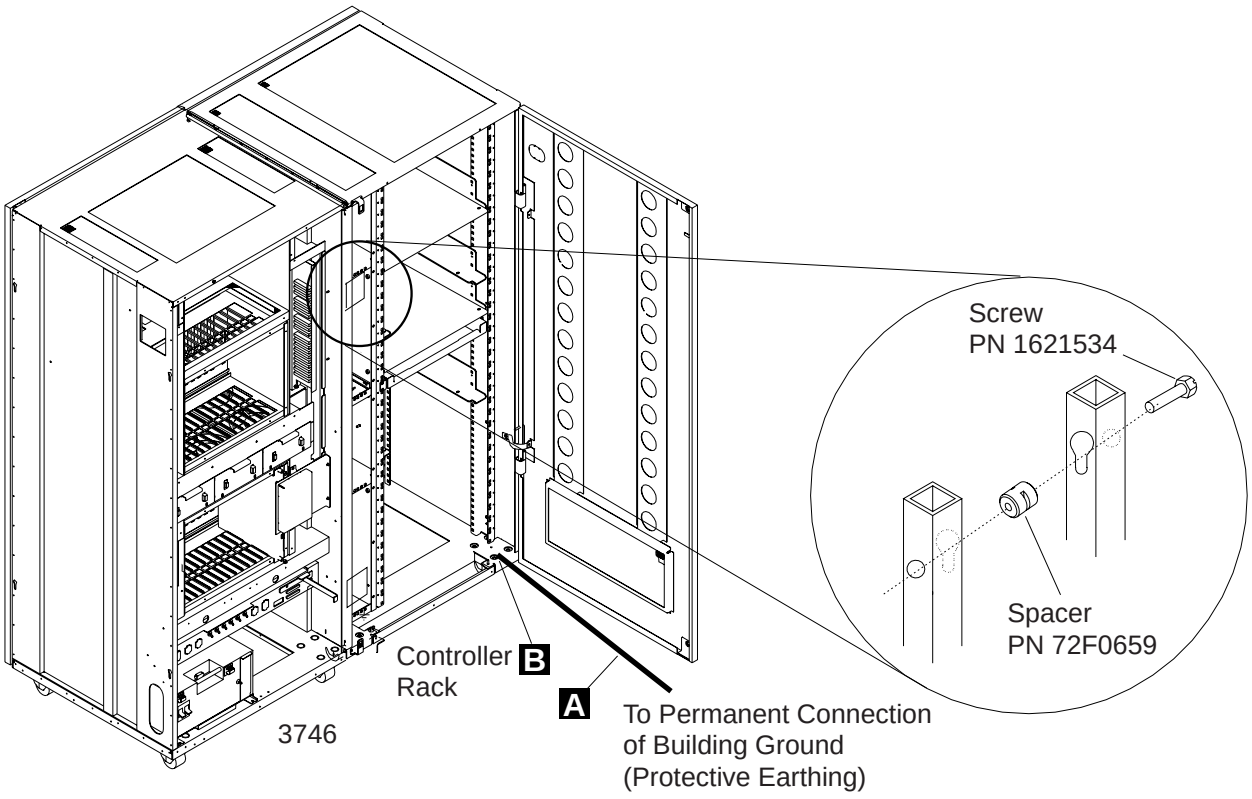


Figure 2-5. Installing the Controller Expansion Attached to the 3746-900

Installing the Controller Expansion Detached from the 3746-900

1. ____Install the controller expansion in its final position
2. ____ Connect the ground wire (PN 58G5691) **A** between the controller expansion frame and the building ground using one screw (PN 61F4513) **B** and one washer (PN 1622347), then go to “Locking the frames” on page 2-7.

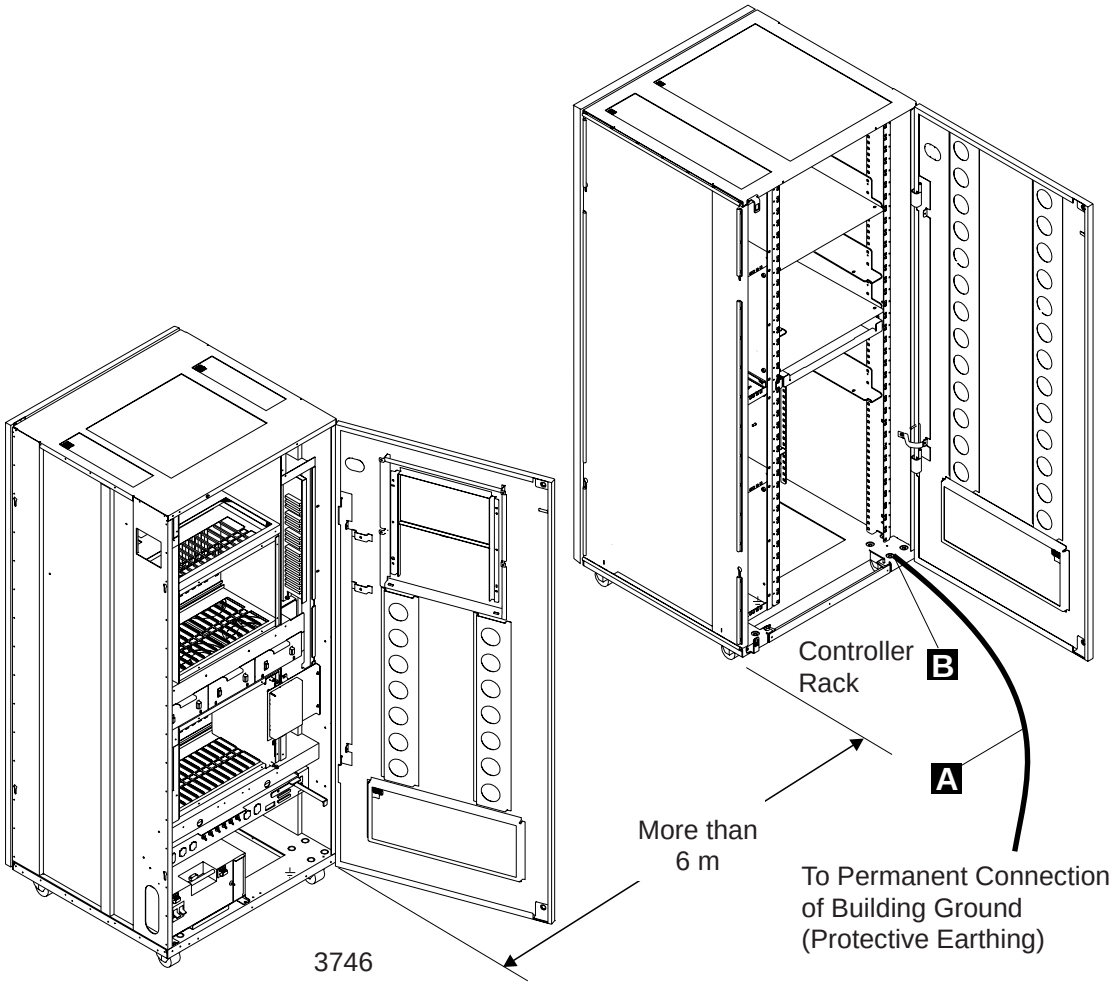


Figure 2-6. Installing the Controller Expansion Alone

Locking the frames

When the 3746-900 and controller expansion frames are on their final positions, tighten the caster lock screws (see Figure 2-7).

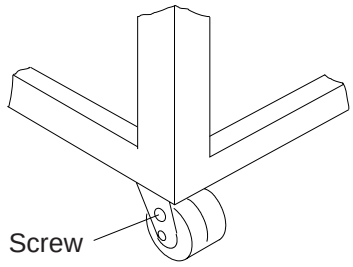


Figure 2-7. Caster lock Screw

Do you have to install Ethernet Bridge?

- **Yes**, go to “Installing the Ethernet Bridge” on page 2-8.
- **No**, go to “Connection to Main Power” on page 2-24.

Note: For any errors or unexpected message during the installation of the Ethernet Bridge, go to the START page of the *3746-900 Service Guide*, SY33-2116.

Installing the Ethernet Bridge

Notes:

1. For details refer to *8229 Bridge Manual*, GA27-4025.
2. **Two ethernet bridges** can be connected to the **same 8228** and the maximum of ethernet bridge connected to a 3746-9x0 is **four**.
3. The ethernet bridge is based on the 8229

Step 1. **Unpacking the Ethernet Bridge**

a. ____ Remove the power cord, diskette, and mounting accessories. (The mounting brackets, small package of screws, cable mounting handle, cable management bracket, and rubber feet are in the plastic bag.)

b. ____ Remove the ethernet bridge from its packaging.

c. ____ Make sure that you have everything (see Figure 2-8), then go to step 2 on page 2-9.

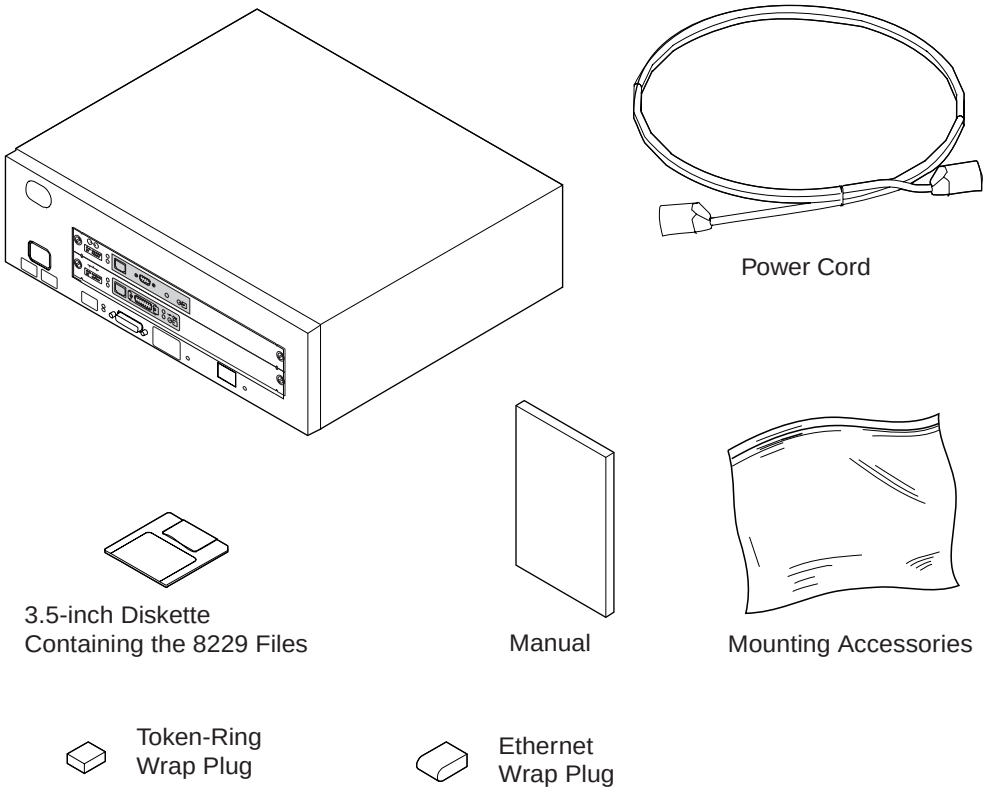


Figure 2-8. Contents of the Shipping Carton for the Ethernet Bridge.

Go to step 2 on page 2-9 .

Step 2. **Verifying the Ethernet Bridge and the Attachment Modules**

Notice the icon in the upper left-hand corner on the front. (See the matching symbol in the figures below.) Verify that the **token-ring module** is installed in the **upper slot** and the **Ethernet** in the **lower slot** of the ethernet bridge, refer to Figure 2-11 on page 2-10.

Verify the switch setting of the modules:

- For the **token-ring module**, switches **1** and **2** must be **ON** and **3** to **8 OFF**.
- For the **Ethernet module**, switch **1** must be **ON** and **2** to **8 OFF**.

  Note: Switch **7** can be set to **ON** if the customer will use a 10 Base T Ethernet cable (refer to the worksheet “Parameter worksheet for Ethernet Bridge” on page A-1).

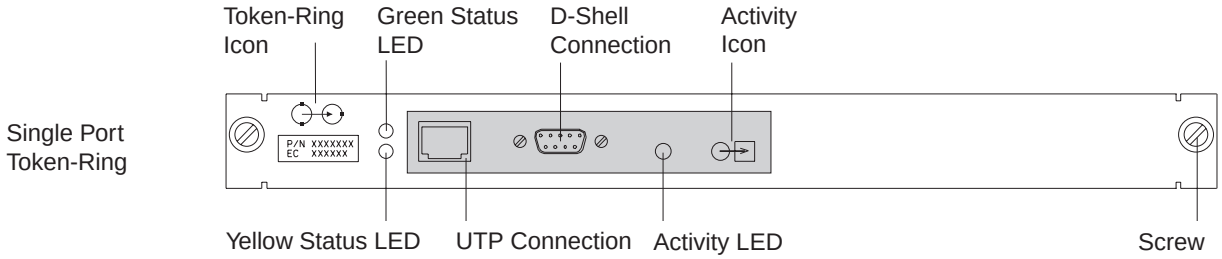


Figure 2-9. Single-Port Token-Ring Attachment Module

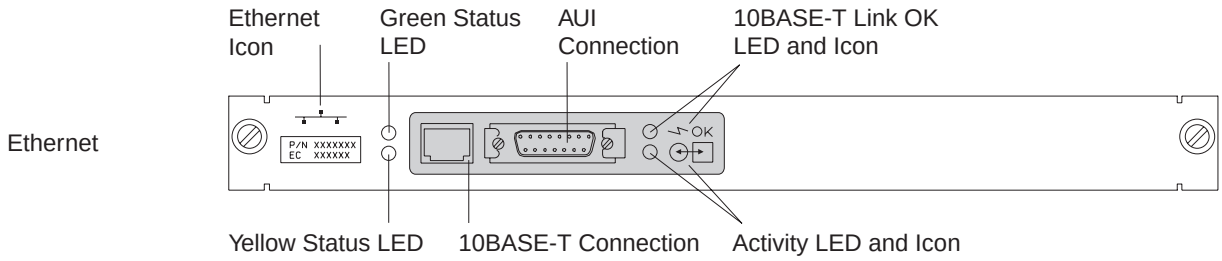


Figure 2-10. Ethernet Attachment Module

Meaning of the attachement module indicators.

Port Status Indicators Each attachment module has a pair of status LEDs for each port. The green status LED, when lit, indicates that the internal tests for the port have been successfully completed; the yellow status LED, when lit, indicates a detected internal fault.

LAN Activity Indicators Each attachment module indicates outbound activity for each port. The green activity LED indicates that the ethernet bridge is successfully connected to the respective LAN and that traffic is being forwarded by the ethernet bridge from that network.

Go to step 3 on page 2-10

Step 3. **Identifying the Ethernet Bridge front panel**

The **EIA 232** data terminal element (DTE) port is for loading operating software to the FLASH memory contained on the main logic board.

Power Light-Emitting Diode (LED) When green, indicates that power is available to the ethernet bridge.

Green Status LED Indicates that the ethernet bridge has successfully completed its basic tests and is ready for operation.

Yellow Status LED Indicates that the ethernet bridge has detected an internal fault as part of the basic tests and is inoperative. The fault code appears as a numeric display.

Numeric Display A 2-digit numeric display indicates the current status of the diagnostics in progress, or the fault code in the case of a detected fault.

Hardware Reset A recessed reset button is accessible on the front panel of the ethernet bridge. To have details about this reset button, refer to *8229 Bridge Manual*, GA27-4025, chapter 'Restarting and Resetting the 8229'.

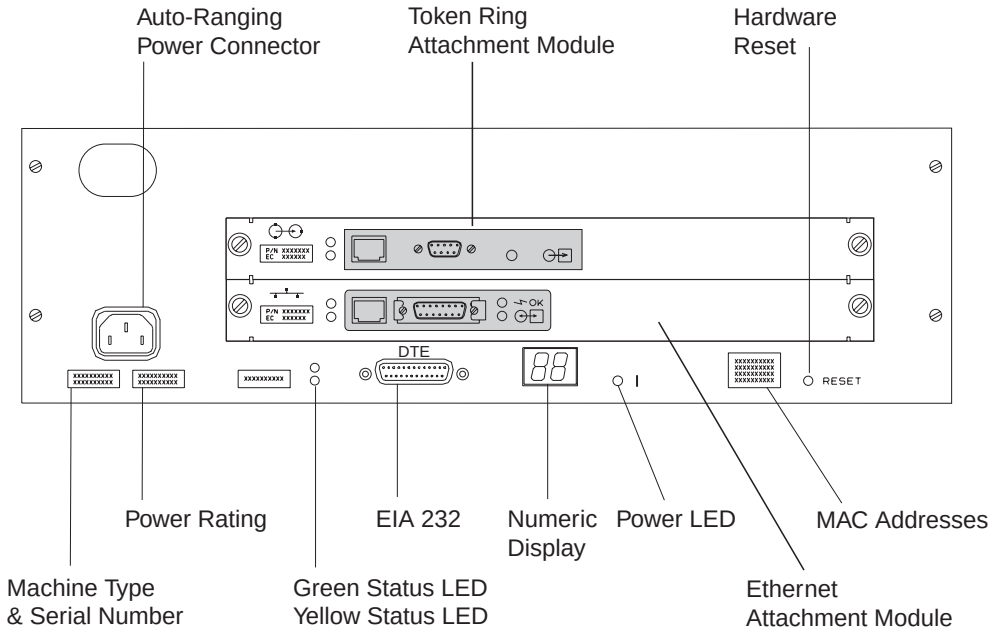


Figure 2-11. The Ethernet Bridge Front Panel

Go to step 4 on page 2-11.

Step 4. **Connecting the Ethernet Bridge to the Service Processor**

Note: The purpose of these procedures is to connect temporarily the Ethernet Bridge to the service processor in order to configure the Ethernet Bridge using the MOSS-E functions.

a. ____ Refer to Figure 2-12 and install the Ethernet Bridge on a table close to the controller expansion

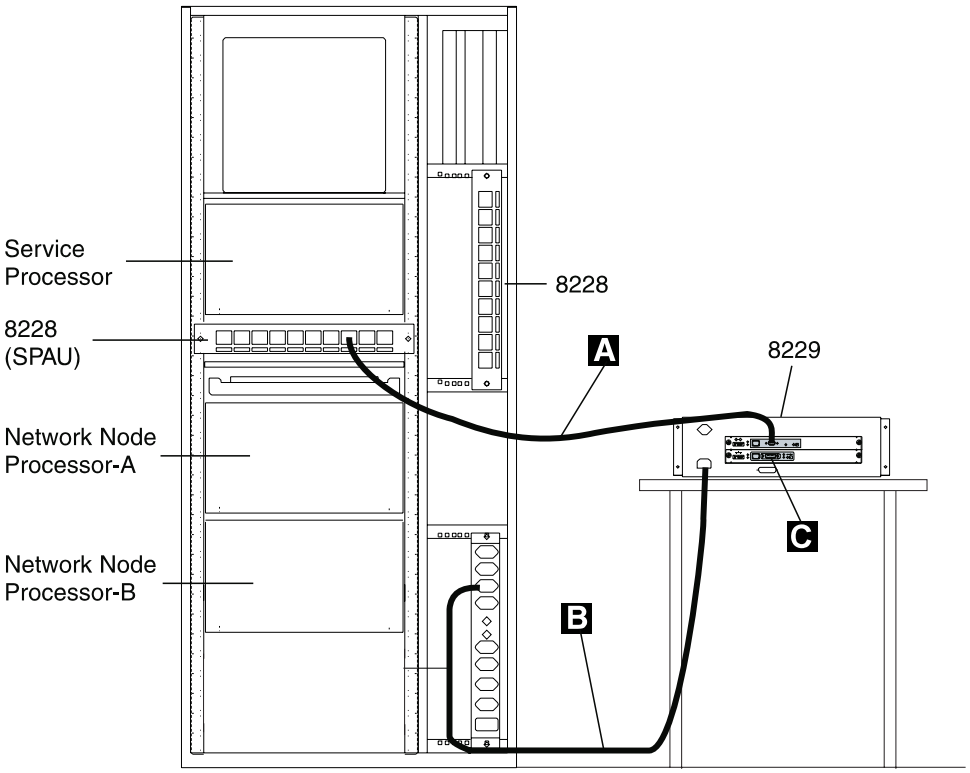


Figure 2-12. Connecting the Ethernet Bridge to the Service Processor

b. ____ Connect cable **A** (PN 6339098) from the D-Shell connector of the token ring module (refer to Figure 2-9 on page 2-9) to the SPAU (8228).

c. ____ Plug wrap plug **C** (PN 70X8670) in the AUI connector of the Ethernet module (refer to Figure 2-10 on page 2-9).

d. ____ Connect power cord **B** (PN 58G5783) first to the ac outlet distribution box and then to the Ethernet Bridge.

Note: There is no power switch. The power supply is auto-ranging (100/240 V ac 50/60 Hz). Connection of the power cord from a primary power source supplies power to the ethernet bridge.

e. ____ Observe the following bring-up sequence:

When you connect power to the ethernet bridge, it will go through a basic assurance test (BAT) that lasts about 90 seconds. All of the LEDs should light momentarily and the numeric display should show ascending values. At the conclusion of the test, the numeric display should go blank, the power and green status LEDs on the ethernet

bridge should be lit, the green status on each attachment module. should be lit, and the green status LED should be lit.

f. ____ If any number is still displayed, or if any yellow LED is lit, refer to *8229 Bridge Manual*, GA27-4025, chapter 'Problem Determination and Servicing'.

Go to step 5.

Step 5. **Setting up the Ethernet Bridge**

a. ____ On the service processor, double click on the **"Service Processor object icon"**.

b. ____ Click on **"Manage Ethernet Bridge"**.

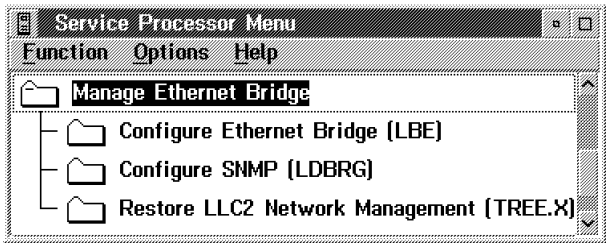


Figure 2-13. Managing the Ethernet Bridge

Note: If the Ethernet Bridge has been already configured, go to **step 5c** , otherwise go to **step 5d on page 2-13** .

c. ____ Double click on **Restore LLC2 Network Management (TREE.X)**

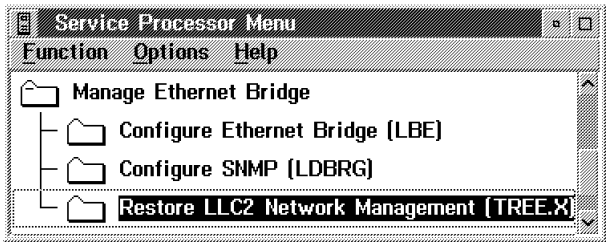


Figure 2-14. Restoring LLC2 Code

1) ____ Locate the first MAC address on top of the label on the front of the ethernet bridge (to the left of the reset button). See Figure 2-11 on page 2-10 for a view of the ethernet bridge front panel.

2) ____ Enter the MAC address recorded in step 5c1 on page 2-12, then click on **OK**. The Ethernet Bridge is reinitialized twice and it last about 3 minutes to complete.

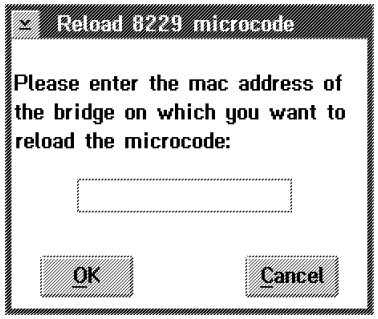


Figure 2-15. Reload 8229 microcode

d. ____ Double click on **"Configure Ethernet Bridge"**

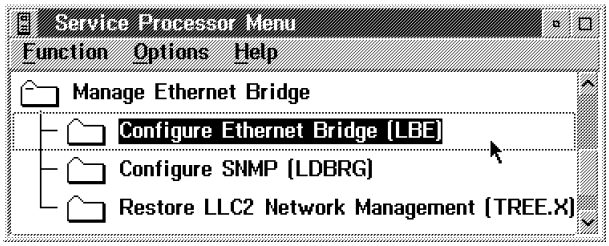


Figure 2-16. Configure Ethernet Bridge

1) ____ Refer to Figure 2-17, select option **5. Bridge definition**, then press **enter**.

```
DFIPBD10                  IBM 8229 UTILITY PROGRAM
                              Bridge Functions

Select one of the following and press Enter.

   1. Bridge profile          Display bridge status and parameters

   2. Link bridge             Establish reporting link with bridge

   3. Unlink bridge           Terminate reporting link with bridge

   4. Configure bridge        Configure bridge parameters

   5. Bridge definition       Add/Delete/View/Change bridge definitions

   6. System definition       Define bridge password

   S  Shutdown                Shut down the 8229 Utility

Enter  Esc=Cancel  F1=Help  F3=Exit
```

Figure 2-17. IBM 8229 Utility Program Main Menu

2) ____ Select option **1. New bridge definition**, then press **enter**.

a) ____ Enter the **bridge name**

b) ____ Click on the check mark to **enable the link during bring up**

c) ____ Locate the MAC addresses on the label on the front of the ethernet bridge (to the left of the reset button). See Figure 2-11 on page 2-10 for a view of the ethernet bridge front panel. **Enter the top two** MAC addresses recorded on the label. , then press **enter**.

3) ____ Press **Escape** twice.

4) ____ Press escape, select S to shutdown, enter Yes, then press enter.

5) ____ Obtain from your customer the **SNMP parameter worksheet** (refer to "Parameter worksheet for Ethernet Bridge" on page A-1).

6) ____ Double click on **"Configure SNMP"**, and modify the parameters according to the customer specifications.

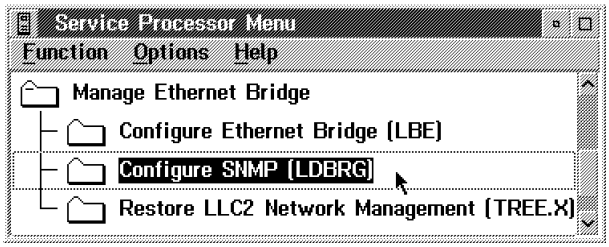


Figure 2-18. Configuring SNMP

7) ____ Select the **configuration** file from the Existing Configurations list.

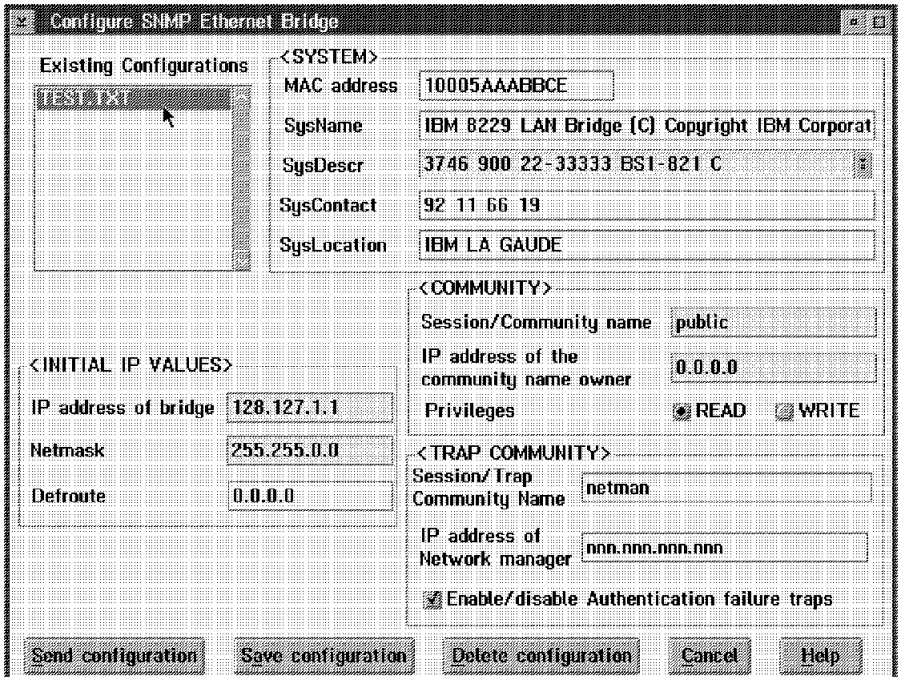


Figure 2-19. Configuring SNMP Ethernet Bridge

8) ____ In <**SYSTEM**> square box enter:
   a) ____ Click on the **SysDescr** right button
   b) ____ Select the 3746-9x0.
9) ____ In <**Community**> square box enter:
   a) Session/Community name
   b) IP address of community name owner
   c) Select privileges (read or write)
10) ____ In <**Trap Community**> square box enter:
   a) Session/Trap Community name
   b) IP address of network manager
11) ____ Click on **Save configuration** then click on **Send configuration**
12) ____ Click on OK
13) ____ Click on Cancel

Go to step 6

Step 6. **Disconnect the Ethernet Bridge**

a. ____ Refer to Figure 2-12 on page 2-11, and disconnect the power cord **B** first from the Ethernet Bridge and then from the ac outlet distribution box.

b. ____ Remove cable **A** from the SPAU (8228) plug.

Do you have to install a 8228 ?

- **Yes**, go to **step 7 on page 2-16**.
- **No**, go to **step 8 on page 2-19** .

Step 7. **Installing the 8228**

a. ____ Unpack the 8228, and then reset the 8228 ports as explained in the following steps:

Note: Use the IBM 8228 Setup Aid after you have installed the 8228 and before you connect any cables to it. Save one Setup Aid to be used later if you relocate an 8228.

b. ____ Before you begin, make sure no cables are connected to the 8228. If a cable bracket has been installed on the 8228, remove it.

c. ____ Insert the aid into receptacle 1 of the 8228. The yellow stripe should be aligned with the edge of the receptacle to ensure that the aid is firmly seated.

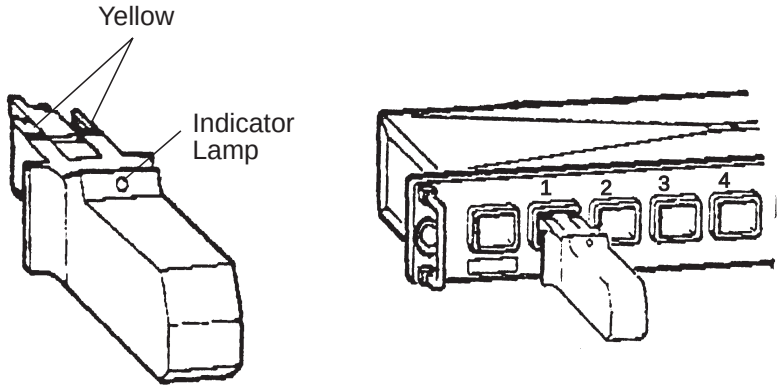


Figure 2-20. Use of the 8228 Setup Aid

The light will glow brightly when the aid is initially inserted and will gradually dim when the aid is firmly seated in the receptacle.

If the light does not glow brightly when you insert the Setup Aid, remove the screw from the aid and replace the battery. If the light still does not glow brightly after you have replaced the battery, try another Setup Aid.

d. ____ Leave the aid in the receptacle for four seconds after the light has gone out. Remove the aid from the receptacle and insert it into the next receptacle. The yellow stripe should be aligned with the edge of the receptacle to ensure that the aid is firmly seated.

Go to the next receptacle and repeat this step until you have set each receptacle, 1 through 8.

e. ____ When you have set receptacle 8, insert the aid into the RI receptacle for four seconds.

The light should glow brightly while the aid is in the receptacle. If the light does not come on or goes out while the aid is connected to the receptacle, the 8228 must be replaced. Notify your network planner or supervisor.

Note: The 8228 Setup Aid is to be used only in setting up the 8228 either initially or after relocating the 8228. It should never be used when the network is operating.

f. ____ Where are you installing the 8228?

- In the **controller expansion-A**, go to **step 7g**
- In the **controller expansion-B**, go to **step 7h on page 2-18**

g. ____ Refer to Figure 2-21, and install vertically the 8228 **A** on the rear side of the controller expansion-A using two screws (PN 1621232) and two captive nuts (PN 58G5766). Using label **B** (PN 782964), identify the 8228 as Ethernet Bridge Access Unit-A

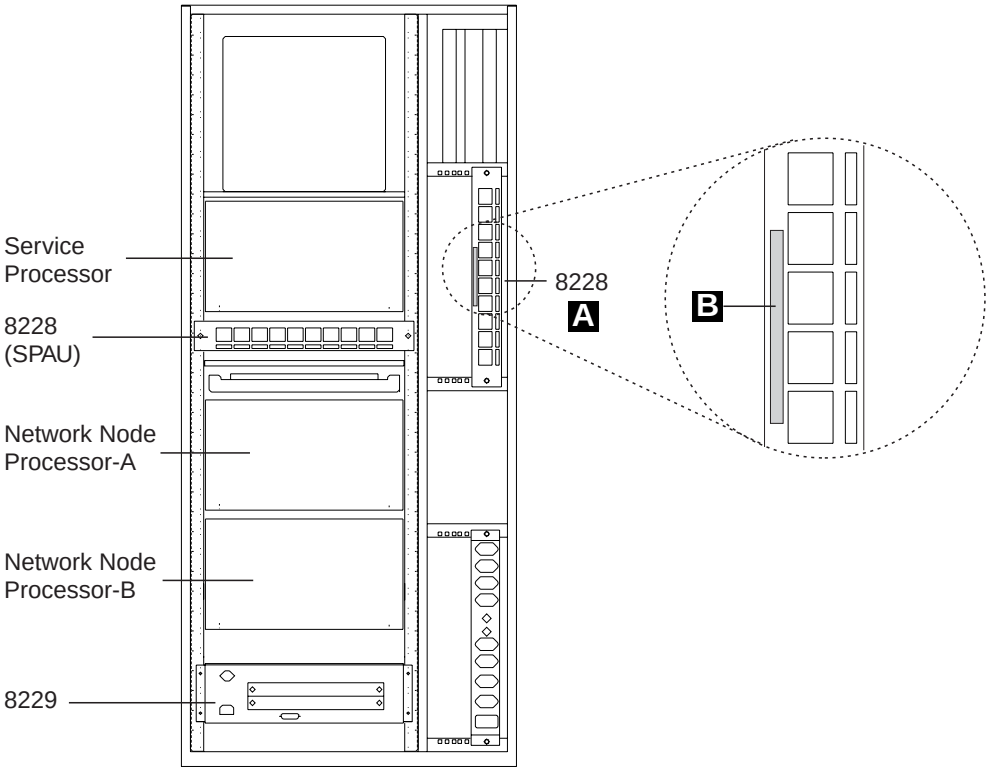


Figure 2-21. Installing One Ethernet Bridge in the Controller Expansion-A (Rear View)

Go to step 8 on page 2-19

h. ____ Refer to Figure 2-22, in this example two 8228s and four Ethernet bridges are installed (maximum configuration). Install vertically a 8228 **A** on the rear side of the controller expansion-B using two screws (PN 1621232) and two captive nuts (PN 58G5766). Using label **B** (PN 782964), identify the 8228s as Ethernet Bridge Access Unit-A and Ethernet Bridge Access Unit-B.

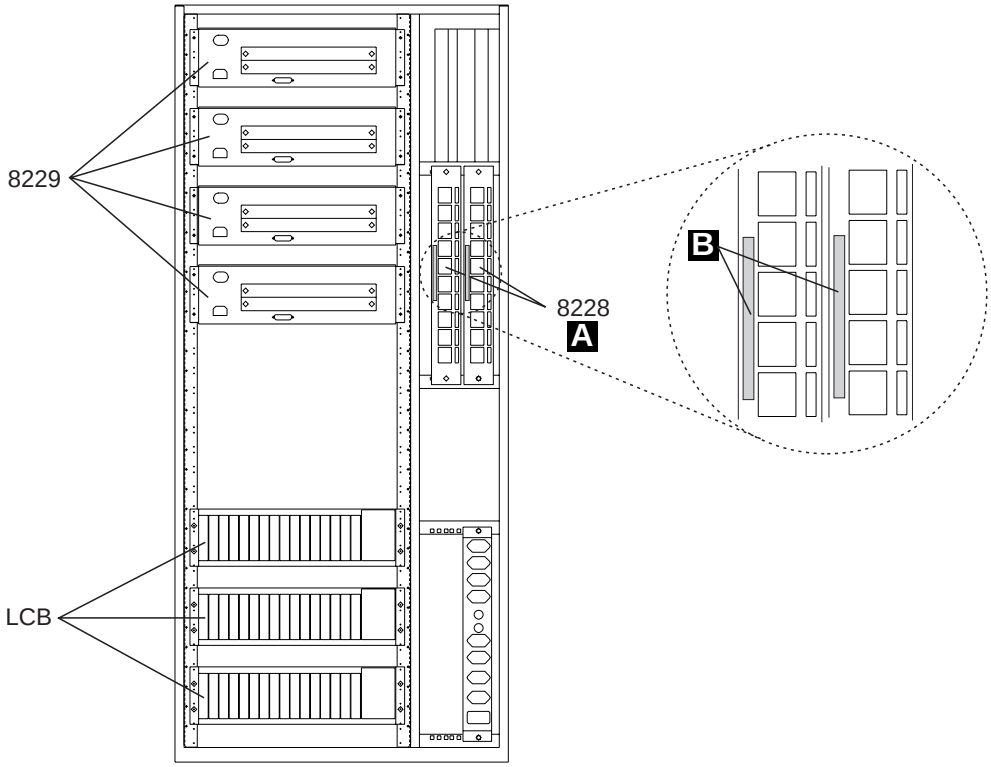


Figure 2-22. Installing Four Ethernet Bridge in the Controller Expansion-B (Rear View)

Go to step 8 on page 2-19

Step 8. **Installing the Ethernet Bridge in a Controller Expansion**

a. ____ Locate the mounting brackets **B** and small package of screws **c** which are shipped in the plastic bag.

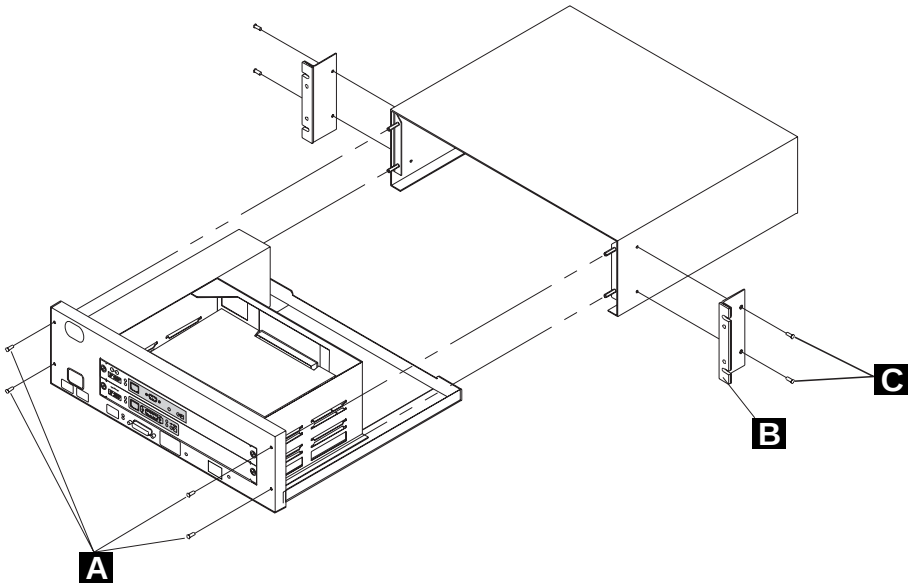


Figure 2-23. Placing the Ethernet Bridge in a Controller Expansion

b. ____ Attach the rack-mounting brackets using the four short screws. See Figure 2-23.

c. ____ If you prefer to reduce the weight of the box temporarily to facilitate installation, you can separate the cover from the inner power supply and planar board combination:

1) ____ Put the ethernet bridge on a flat surface.

2) ____ Remove the four retaining screws **A** on the front of the ethernet bridge. See Figure 2-23.

3) ____ Slide the cover off backwards.

d. ____ Examine the controller expansion inventory chart provided by the network administrator to determine where in the controller expansion the ethernet bridge should be mounted.

e. ____ Install four captive nuts **3** (PN 58G5766) in the proper locations **Z**, refer to Figure 2-24 on page 2-20.

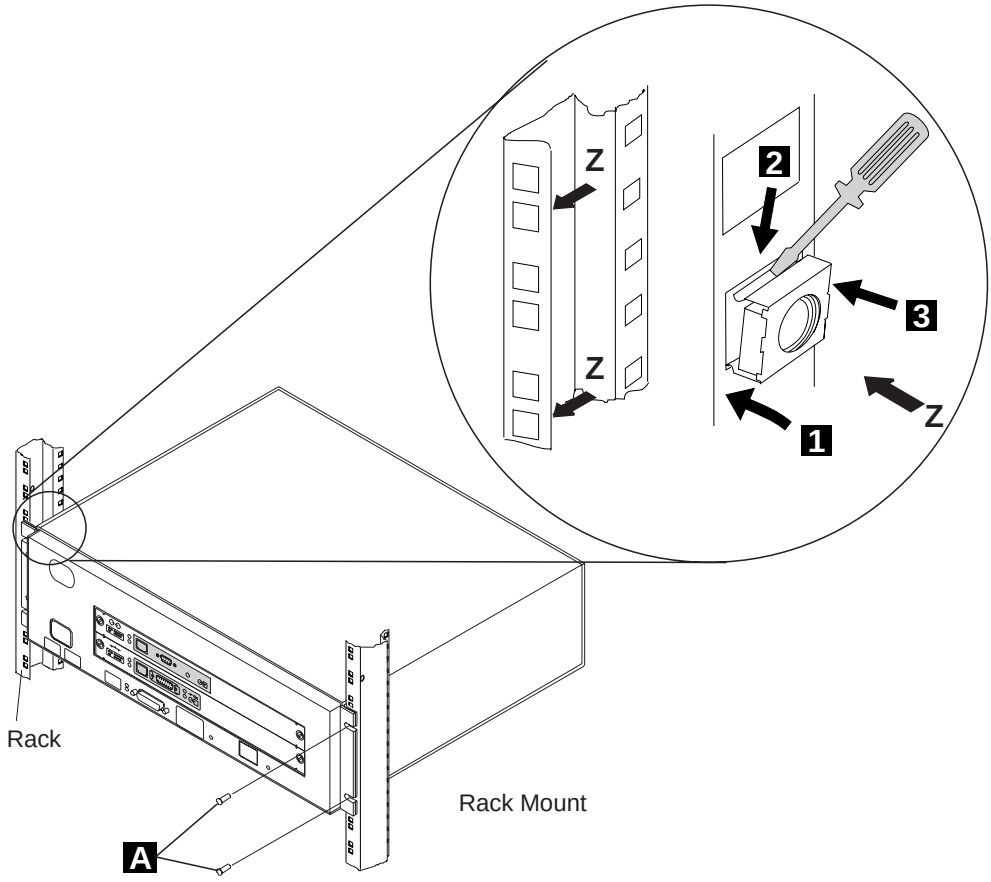


Figure 2-24. Captive Nuts and Ethernet Bridge Installation

f. ____ Mount the cover (or the entire ethernet bridge) in the controller expansion, using four screws **A** (PN 1621232).

g. ____ If you have removed the chassis (the inner power supply and planar board combination), slide it back into the cover and replace the four retaining screws, which you removed earlier. See Figure 2-23 on page 2-19.

h. ____ Record the addresses in the spaces provided on the cabling chart.

i. ____ Locate the numeric display in the center of the lower portion of the front of the ethernet bridge display.

j. ____ Remove the protective film from the numeric display.

Do not connect the power cord yet, go to step 9 on page 2-21

Step 9. **Connecting the cables**

Make certain that the ethernet bridge is powered off before you start this procedure.

a. ____ Locate the TIC3 and the 8228 where you are connecting the ethernet bridge.

b. ____ Route and connect the **8228** to the TIC3 using the token ring attachment cable PN 76F9441 (9 m, 27 ft). To route the cable, refer to Figure 2-26 on page 2-22 or Figure 2-27 on page 2-22.

c. ____ Using a sticker, identify the cable as the "8228-XX cable".

d. ____ Plug connector **1** to the TIC3

e. ____ Plug connector **2** to one of the 8228 LAN adapter plugs 1 to 8 (Refer to Figure 2-25 below).

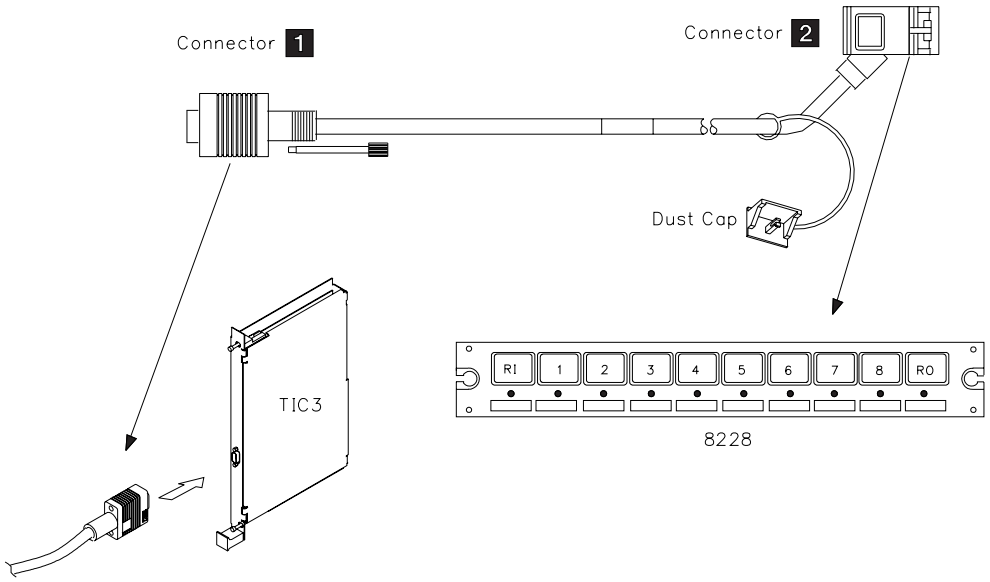


Figure 2-25. Connection of the 8228 to a TIC3

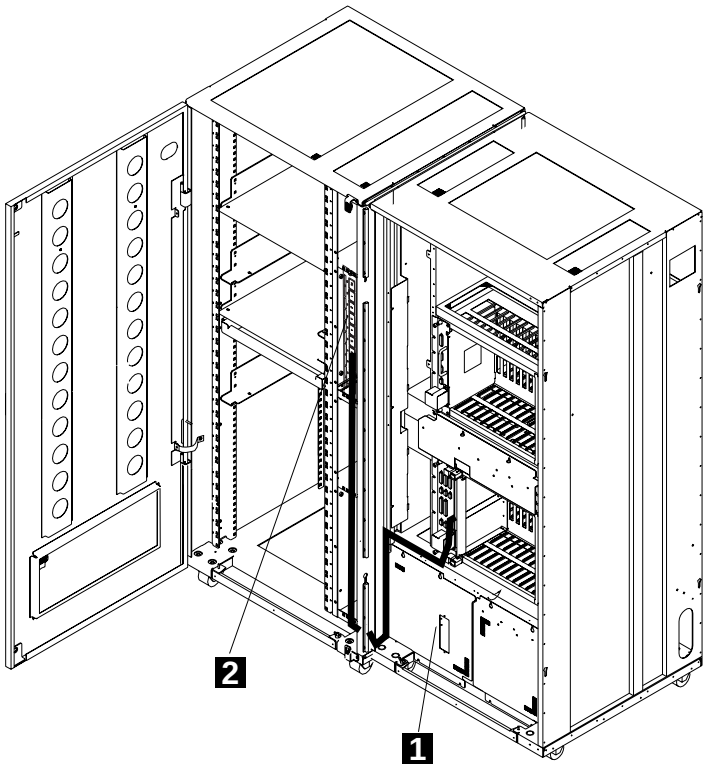


Figure 2-26. Routing the Cable from a TIC3 to a 8228 (Controller Expansion Attached)

Note: The controller expansion can be detached from the 3746-9x0 frame.

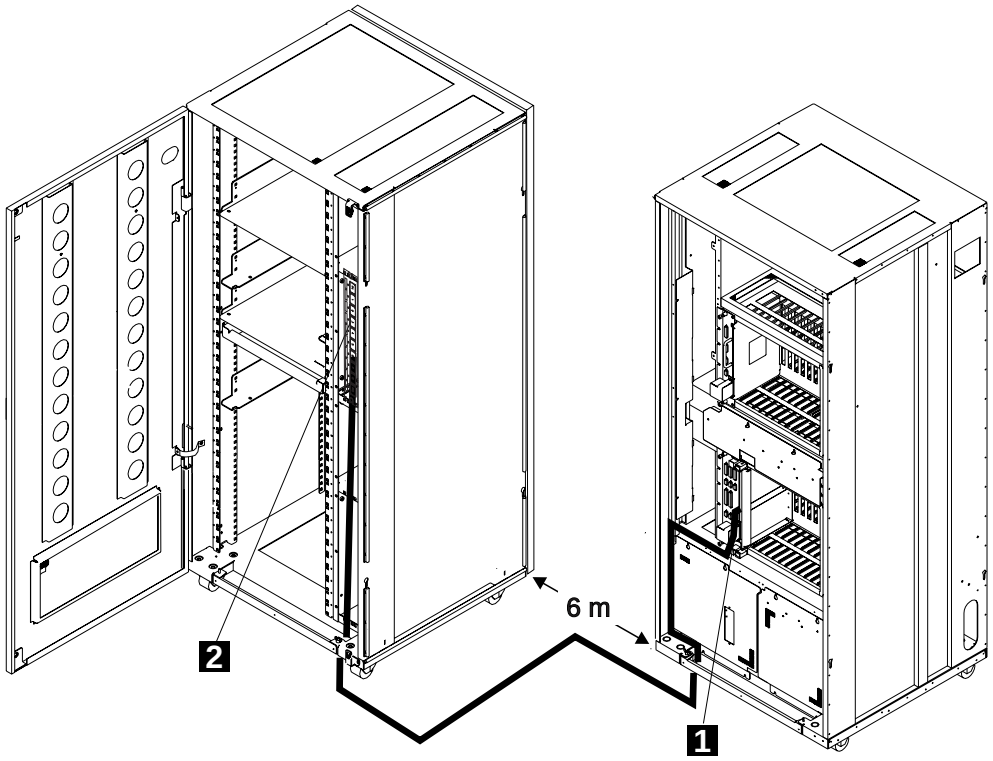


Figure 2-27. Routing the Cable from a TIC3 to a 8228 (Controller Expansion Detached)

f. ____ Connect the **ethernet bridge** to the **8228** using cable **A** PN 6339098 (2.4 m, 8ft).

g. ____ Connect the **ethernet bridge** to the ac outlet distribution box using power cable **B** PN 58G5783, and observe the bring-up sequence.

Note: At the conclusion of the test, the numeric display should go blank, the power and green status LEDs on the ethernet bridge should be lit, the green status on each attachment module. should be lit, and the green status LED should be lit.
If any number is still displayed, or if any yellow LED is lit, refer to *8229 Bridge Manual*, GA27-4025, chapter 'Problem Determination and Servicing'.

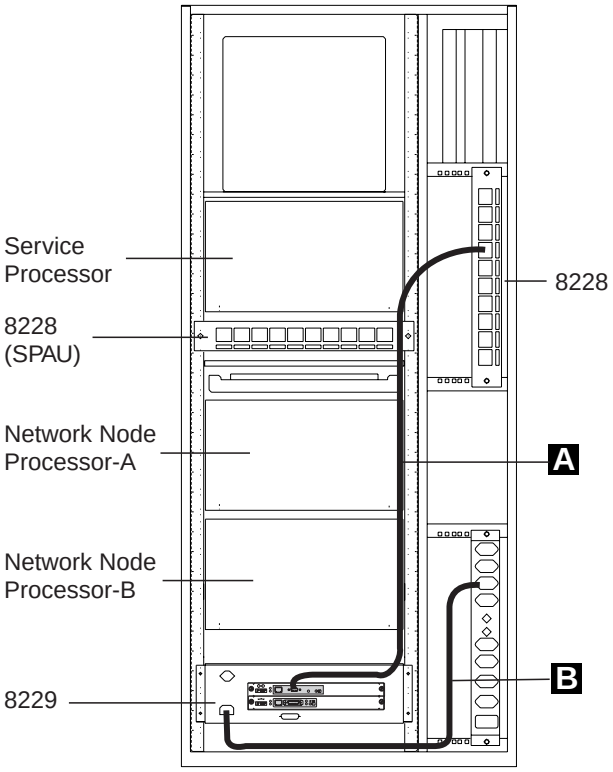


Figure 2-28. Connection of the Ethernet Bridge to the 8228 and Power

Step 10. If you have to **install another Ethernet Bridge**, return to **step1 on page 2-8** and go trough all the installation steps.

Connection to Main Power

Install the 3746-900 close to the 3745 or 3746 frame to avoid any problem later in routing the cables between the machines.

Power Description and Load Requirements

Note: The following procedures apply to both **basic** and **optional** power attachments and must be performed twice if an AC optional power attachment is installed on the machine. If you received a **controller expansion**, the customer must provide a **separate 220V ac power receptacle** to connect the units installed in the controller expansion.

Power Attachment Configuration

Basic Attachment: Single Power Supply: The **basic** attachment is **ac** connected to input **AC-1** (see Figure B-14 on page B-10).

Optional Attachment: Dual Power Supply Feature: The **optional ac** attachment is connected to the input **AC-2**
There is no internal relation (or connection) between AC-1 and AC-2.
Therefore, AC-2 voltage and frequency can be different from those of AC-1 (see Figure B-12 on page B-9 or Figure B-13 on page B-9).

Power Requirements

1. Basic AC-1 power input:
   The standard voltage input to the 3746-900 is single-phase, 200 to 240 volts 60 Hz, or 200 to 240 volts 50 Hz. The maximum power requirement is 2.5 kVA.
2. Optional AC-2 power input:
   Voltage and frequency limits are the same as for AC-1.

Note for World Trade: This product allows connection to an impedance grounded (impedance "terre" or IT) power system.
(An IT power system is a power distribution having no direct connection to earth, the exposed conductive parts of the electrical installation being grounded.)

Controller Expansion Power Requirements

The power input to the ac outlet distribution box must be between 200 to 240V with a total of 15 Amp. Maximum output per outlet is 6 Amp. A fuse of 7 Amp protect this equipment.

Measuring and Adjusting the 3746-900 Power to the Customer Supply

Measuring the Customer's Primary Power

CEs are not allowed access to the customer's **main power receptacle**. *The customer or a customer-appointed electrician may have to do some of the work involved in the following procedures, and the CE must ensure that all the steps have been completed.*

Step 1. ____ Switch or ask the customer to switch the 3746-900 branch circuit breaker to the **ON** position. Perform the following voltage measurements. *(It is recommended to use high-voltage probes to make these measurements. All voltage values should be less than 1.0 Vac.*)

a. ____ Measure the voltage between the ground pin of the customer's receptacle and the building ground.

b. ____ Measure the voltage between the exterior shell of the customer's receptacle and the building ground.

For any of the previous measurement, if the voltage is greater than 1.0 Vac, notify the customer and do not proceed until the problem is corrected.

Step 2. ____ Measure the customer's phase-to-neutral or phase-to-phase voltage. Continue only if the measured value is in accordance with the following

- For AC input (basic or optional power attachment) the input voltage must be within 180V to 260V.

Step 3. ____ Switch or ask the customer to switch the branch circuit breaker that feeds the 3746-900 **to the OFF position.**
If you are installing a **controller expansion**, go to step 4, otherwise go to “Adjusting the 3746-900 Power to the Customer's Primary Power” on page 2-26

Step 4. ____ Repeat the same procedures (from step 1 to step 3) to check the power receptacle used to connect the controller expansion.

Adjusting the 3746-900 Power to the Customer's Primary Power

AC Input Voltage

1. Remove the transformer cover located on the rear bottom of the 3746-900 frame (see Figure B-2 on page B-2).
2. According to the voltage recorded previously in step 2 on page 2-25, move the cable lead **2** from 01Q-A1 TB1-2 to TB1-3 or to TB1-4 (see Figure 2-29).

   Note: If necessary refer to page YZ246 (AC BOX schematic).

Voltage Measured	Wire Position	Nominal Voltage
From 180 to 210 Volts	TB1-2	200/208 Volts
From 210 to 230 Volts	TB1-3	220 Volts
From 230 to 260 Volts	TB1-4	240 Volts

Note: *This adjustment help reduce alarms caused by external voltage variations, and regulates the blower rotation speed (noise reduction).*

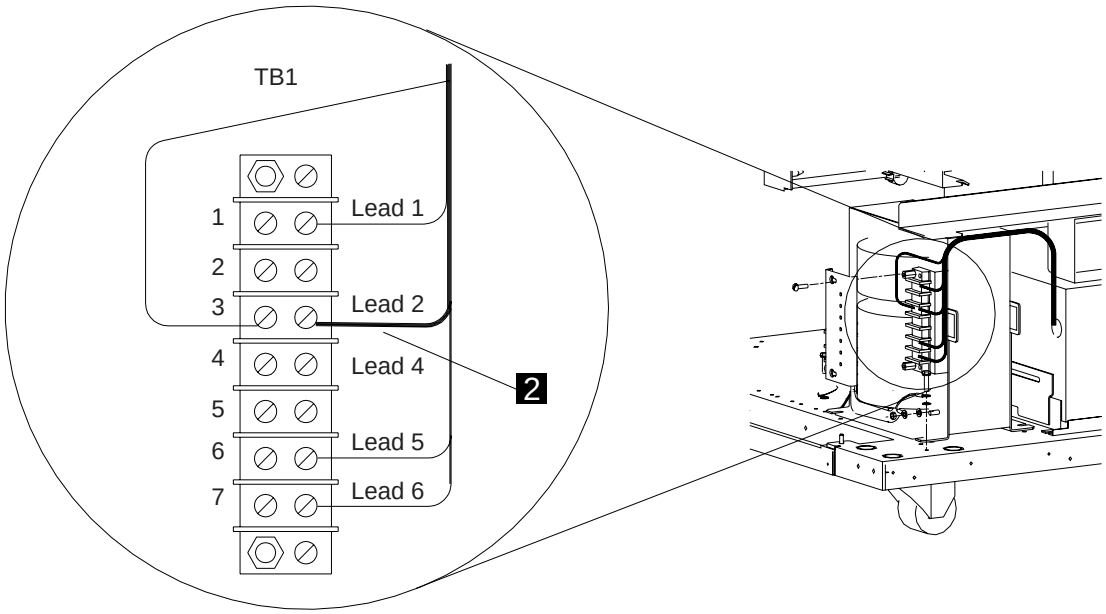


Figure 2-29. AC Power Transformer Connection

Connecting the 3746-900 to the Customer's AC Power

Notes:

1. If you have the optional power supply installed, before routing the power cables identify these cables using the labels PN 811825 to be able to locate the primary and secondary power supply cables.
2. Perform the following steps for the basic AC-1 input and, if present, for the optional AC-2 input.

Step 1. ____ Ensure that the customer's branch circuit breaker which feeds the 3746-900 primary power supply is in the **OFF position**, and that CB1(s) is switched to **OFF** in front of the 3746-900 ac power box(es) (see Figure B-14 on page B-10, and refer to Figure B-12 on page B-9).

Step 2. ____ Remove the cover in front of the AC power supply.

Step 3. ____ Unroll the power cable stored at the back of the power supply.

Step 4. ____ Route the power cable to the customer's power socket, and insert the power plug into the customer's main socket.

If you are installing a

- **controller expansion and a 3745**, go to “Connecting the ac Outlet Distribution Box of the Controller Expansion” on page 2-28,
- **3746-900 attached to a 3745-X1A**, go to “Installing the UEPO Cable and Plugs on a 3746-900 Attached to a 3745-X1A” on page 2-29
- **3746-900 attached to a 3745-17A**, go to “Installing the UEPO Cable and Plugs on a 3746-900 Attached to a 3745-17A” on page 2-30

Connecting the ac Outlet Distribution Box of the Controller Expansion

Note: The power input for the ac outlet distribution box must be within the range 200V to 240V.
Obtain the power cable shipped with the controller expansion (which is country dependant), then plug cable **A** in location 'IN' of the ac outlet distribution box, and connect the other end of the cable to the customer's power receptacle (see Figure 2-30).

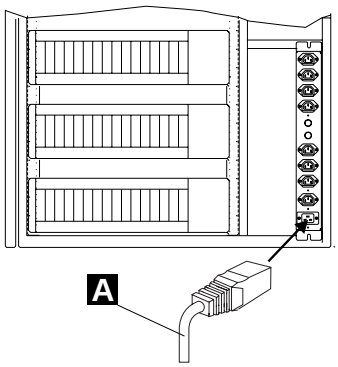


Figure 2-30. Connecting the ac Outlet Distribution Box

If you are installing a:

- **3746-900 attached to a 3745-X1A**, go to “Installing the UEPO Cable and Plugs on a 3746-900 Attached to a 3745-X1A” on page 2-29
- **3746-900 attached to a 3745-17A**, go to “Installing the UEPO Cable and Plugs on a 3746-900 Attached to a 3745-17A” on page 2-30

Installing the UEPO Cable and Plugs on a 3746-900 Attached to a 3745-X1A

Step 1. ____ Connect the UEPO cable (PN 76F9341) leads **1** and **3**, and **2** and **4** to the EPO plugs (PN 8482303) pins 1 and 2 (see Figure 2-31).

Note: Do not route the cable at this time, these four wires will be connected later to the 3745 UEPO switch see “Cabling the Unit Emergency Power Off (UEPO) Cable from the 3746-900 to the 3745-X1A” on page 4-11. **Warning:** During the following procedures the machine is not protected by any UEPO switch.

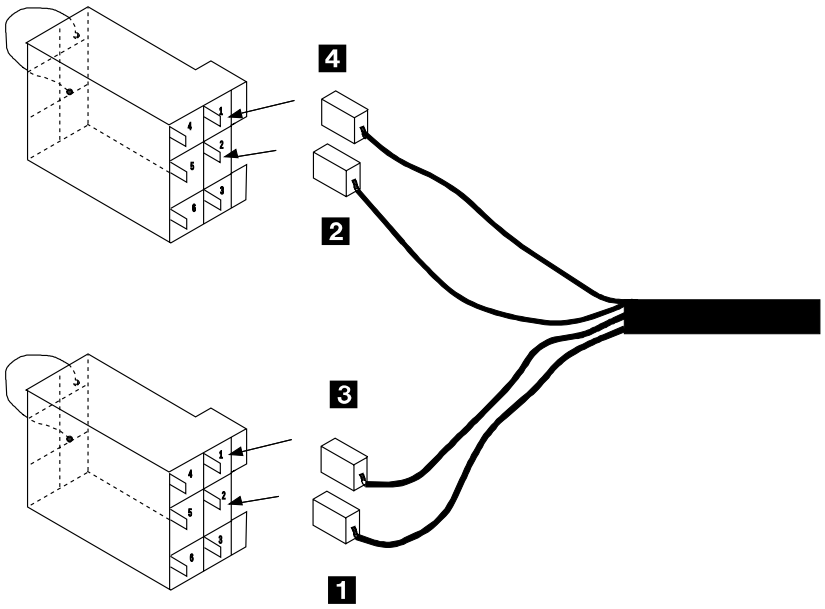


Figure 2-31. EPO Plugs (PN 8482303)

Step 2. ____ Connect the UEPO cable connector **5** to 07H-A1-J6 in the 3746-900 distribution box (see Figure 4-10 on page 4-12).

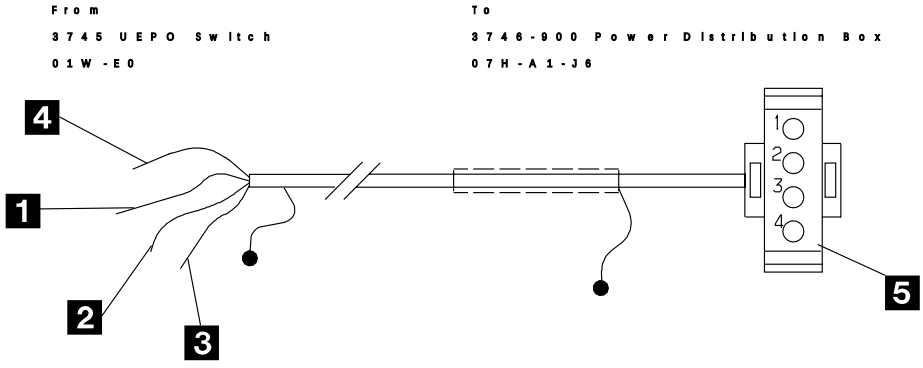


Figure 2-32. UEPO Cable (PN 76F9341) for a 3746-900 Attached to a 3745-X1A

Go to “Connecting the 3746-900 to the LAN.” on page 2-31

Installing the UEPO Cable and Plugs on a 3746-900 Attached to a 3745-17A

Step 1. ____ Connect the UEPO cable leads **1** and **3**, and **2** and **4** to the EPO plugs (PN 8482303) pins 1 and 2 (see Figure 2-33).

Note: Do not route the cable at this time. These four wires will be connected later to the 3745 UEPO switch. See "Cabling the UEPO Cable from the 3746-900 to the 3745-17A" on page 6-3.

Warning: During the following procedures, the machine is not protected by any UEPO switch.

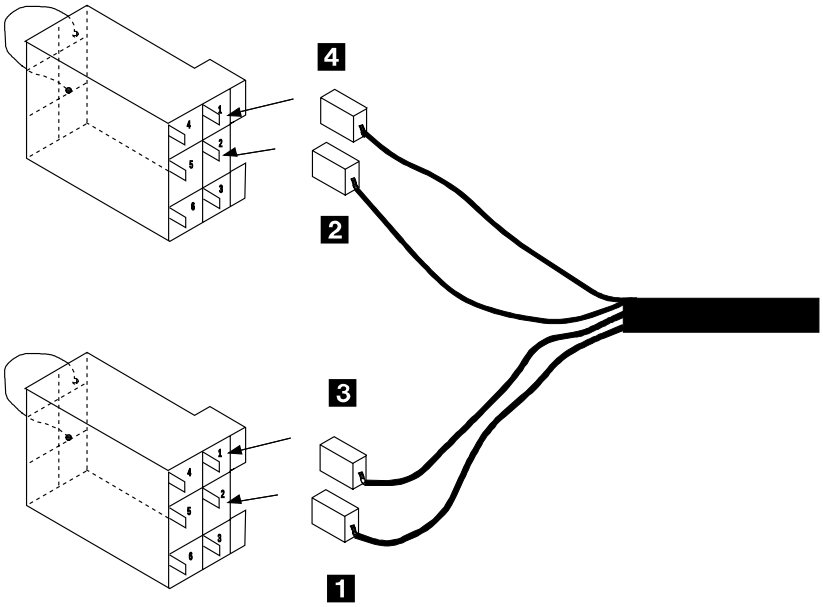


Figure 2-33. EPO Plugs

Step 2. ____ Connect the UEPO cable connector **5** to 07H-A1-J6 in the 3746-900 distribution box (see Figure B-14 on page B-10).

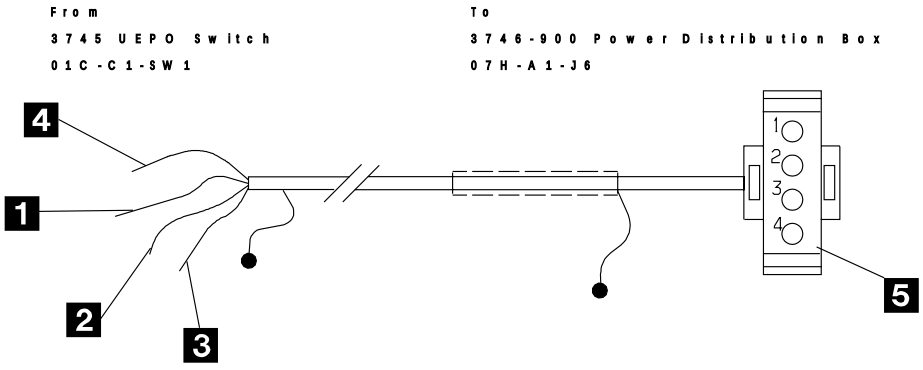


Figure 2-34. UEPO Cable (PN 17G5923) for a 3746-900 Attached to a 3745-17A

Go to "Connecting the 3746-900 to the LAN." on page 2-31

Connecting the 3746-900 to the LAN.

Connect the **3746-900** to the LAN using the token ring attachment cable PN 76F9441 (9 m, 27 ft).

Notes

1. The 8228 is provided by the customer or, ordered and shipped with the Service Processor.
2. If you install a controller expansion, and your 3746-900 is :
   - **Attached** to the controller expansion frame, refer to Figure 2-36 on page 2-32
   - **Detached** from the controller expansion frame, refer to Figure 2-37 on page 2-32

Step 1. ____Using a sticker, identify the cable as the "3746-900 cable".

Step 2. ____Locate the TIC3 plugged in 07N-A1 F1 (refer to Figure B-7 on page B-6 detail **6**)

Step 3. ____Plug **connector 1** to the TIC3 07N-A1 F1

Step 4. ____Plug **connector 2** to one of the 8228 LAN adapter plugs 1 to 8 (Refer to Figure 2-35 below).

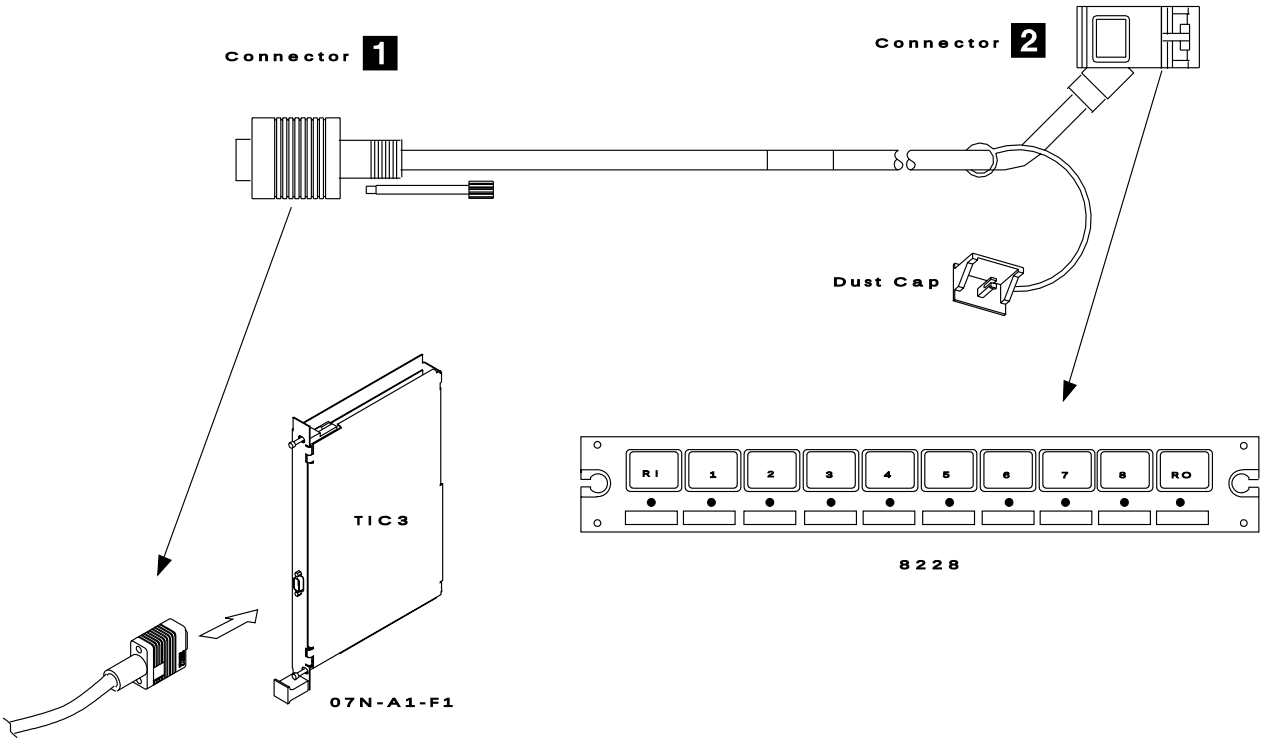


Figure 2-35. Connection of the 3746-900 to the LAN

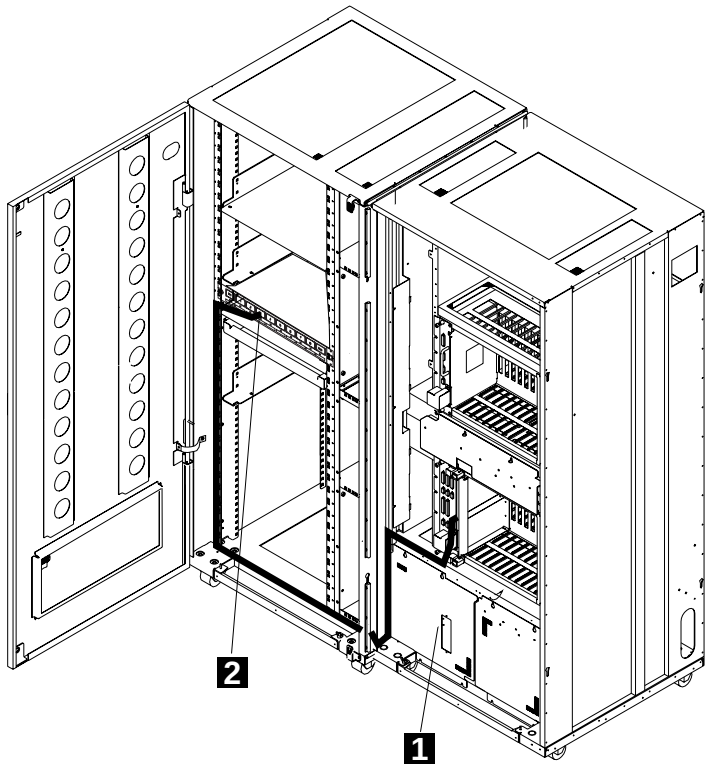


Figure 2-36. Connection of the 3746-900 to the 8228 (Controller Expansion Attached)

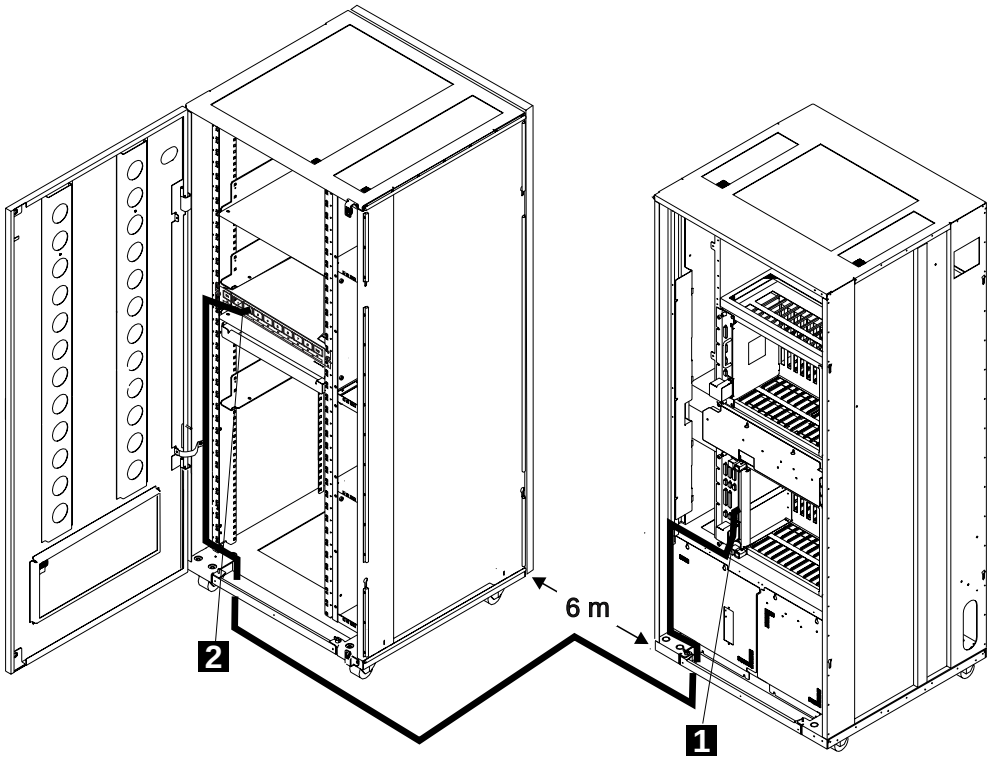


Figure 2-37. Connection of the 3746-900 to the 8228 (Controller Expansion detached)

Connecting and Configuring the Service Processor

Installing the Service Processor

The service processor can be:

- **Not installed**, using the *Service Processor Installation and Maintenance (Based on 6275)*, SY33-2125, or *Service Processor Installation and Maintenance (Based on 7585, 3172, and 9585)*, SY33-2120, install the service processor. When the service processor is installed return to this installation guide and go to “Updating the 3746-900 Code Level” on page 2-38.

- **Installed** (controlling other 3745 XXA) and you have received a controller expansion, the service processor model is a:
  - **6275**, go to “Installing a 6275 in the Controller Expansion” on page 2-34
  - **7585**, go to “Installing a 7585 in the Controller Expansion” on page 2-35
  - **3172**, go to “Installing a 3172 in the Controller Expansion” on page 2-36
  - **9585**, go to “Installing a 9585 in the Controller Expansion” on page 2-37
  - **9577**, go to “Installing a 9577 in the Controller Expansion” on page 2-38

Note: If the Customer has ordered the small keyboard PN 61G2900, all the units can be installed in the controller expansion. Use cable PN 1398014 (shipped with the keyboard) to connect the keyboard to the system unit. But to install the display and keyboard outside of controller expansion, the Customer must have ordered one extension cable for the display PN 59G1270 and the long cable PN 59G1271 for the keyboard.

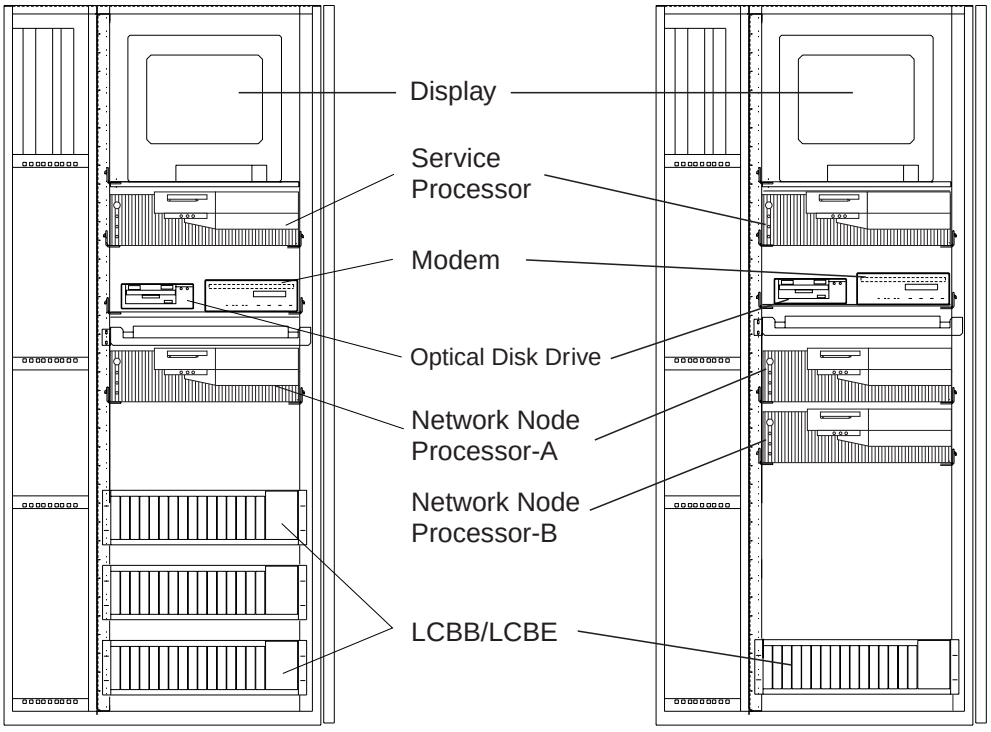
Installing a 6275 in the Controller Expansion

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display and system unit to the ac outlet distribution box (see Figure E-15 on page E-13).

Install in the controller expansion:

- The display
- The service processor unit
- The 8228
- The modem

For details refer to the SPIM shipped with the 6275, and see Figure 2-38, then go to “Updating the 3746-900 Code Level” on page 2-38.



Note: On the left side of the drawing the NNP-B is not installed.

Figure 2-38. Service Processor type 6275

Installing a 7585 in the Controller Expansion

All the units can be installed in the controller expansion or the display and keyboard can be installed outside.

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display, optical disk drive, and system unit to the ac outlet distribution box (see Figure E-15 on page E-13). If not installed in a controller expansion, install the following units in the controller expansion

- The display
- The optical disk drive
- The service processor unit
- The 8228
- The modem

For details refer to the SPIM shipped with the 7585 and see Figure 2-39, then go to “Updating the 3746-900 Code Level” on page 2-38.

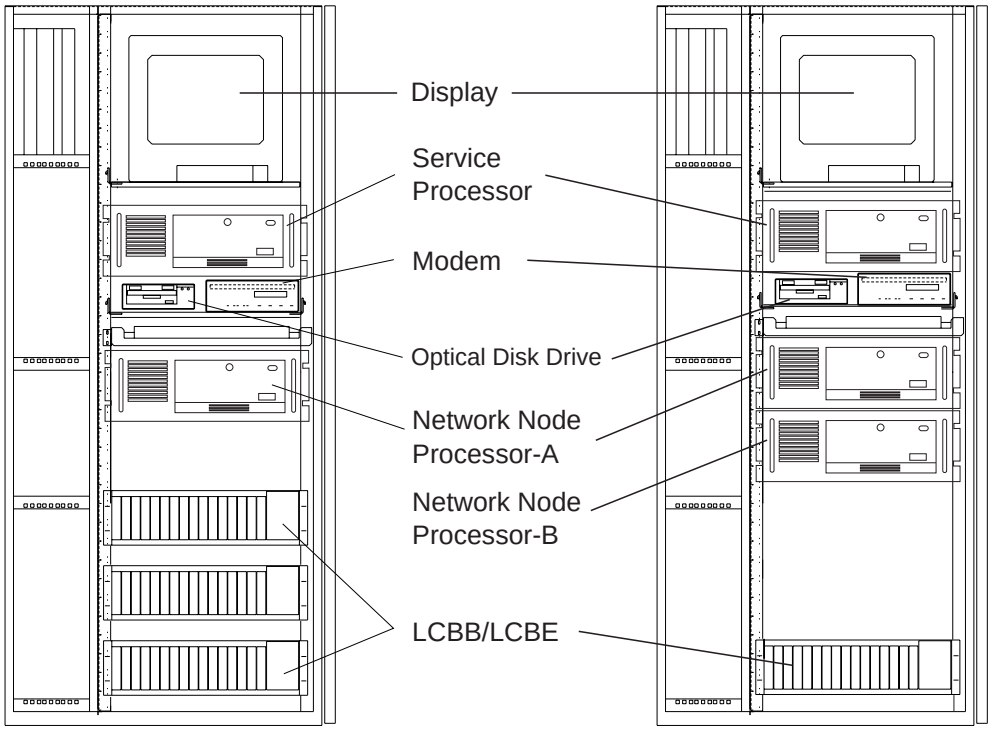


Figure 2-39. Service Processor type 7585

Note: On the left side of the drawing the NNP-B is not installed.

Installing a 3172 in the Controller Expansion

All the units can be installed in the controller expansion or the display and keyboard can be installed outside.

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display, optical disk or CD-ROM drive, and system unit to the ac outlet distribution box (see Figure E-15 on page E-13). If not installed in a controller expansion, install the following units in the controller expansion

- The display
- The optical disk or CD-ROM drive
- The service processor unit
- The 8228
- The modem

For details refer to the SPIM shipped with the 3172 and see Figure 2-40, then go to “Updating the 3746-900 Code Level” on page 2-38.

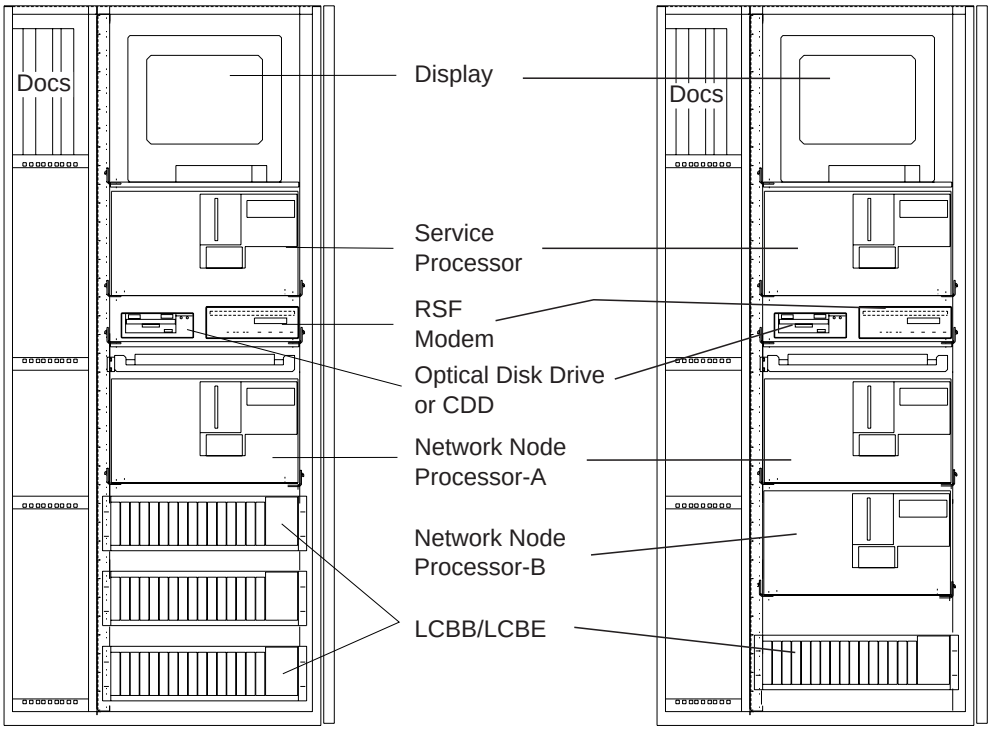


Figure 2-40. Service Processor type 3172

Note: On the left side of the drawing the NNP-B is not installed.

Installing a 9585 in the Controller Expansion

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display, the CD-ROM drive, and the system unit to the ac outlet distribution box (see Figure E-15 on page E-13).

If not installed in a controller expansion, install the following units in the controller expansion

- The display
- The service processor unit
- The 8228
- The modem
- The CD-ROM drive

For details refer to the SPIM shipped with the 9585 and see Figure 2-41 , then go to “Updating the 3746-900 Code Level” on page 2-38.

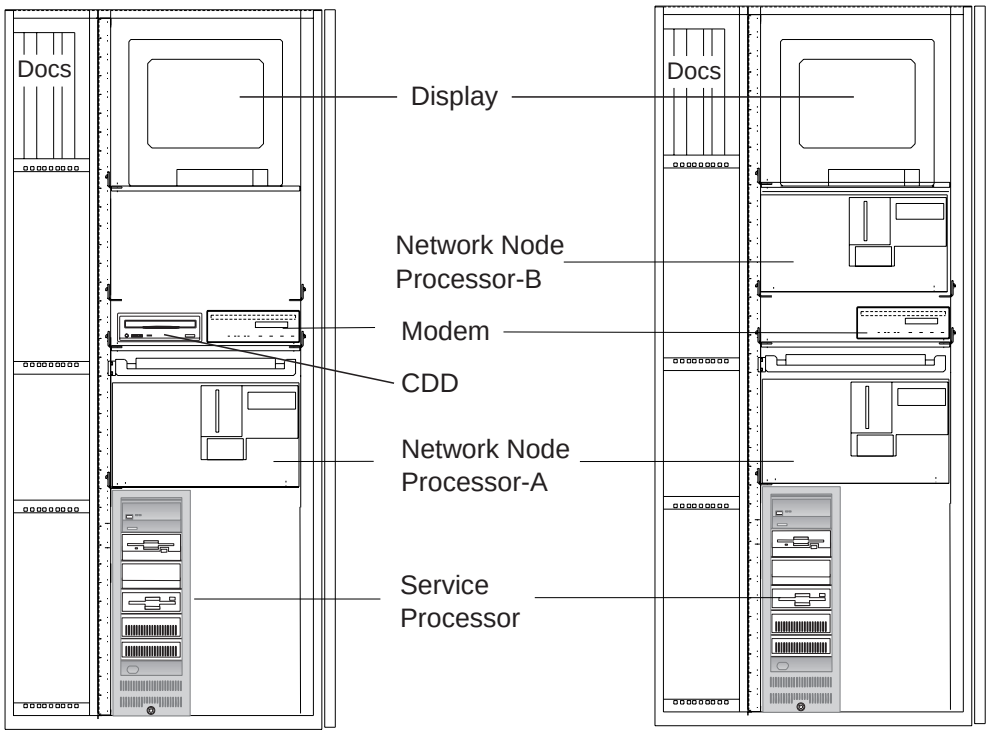


Figure 2-41. Service Processor type 9585

Note: On the left side of the drawing the NNP-B is not installed.

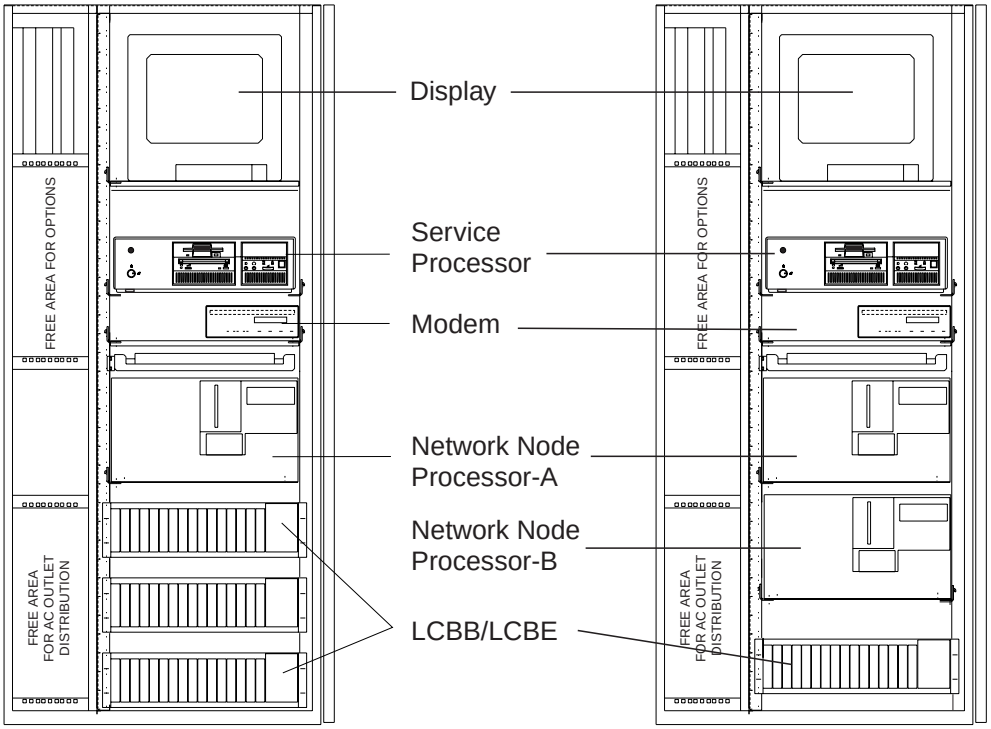
Installing a 9577 in the Controller Expansion

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display and system unit to the ac outlet distribution box (see Figure E-15 on page E-13).

If necessary, install the new hard drive in the service processor shipped with the 9577 MES, then install in the controller expansion:

- The display
- The service processor unit
- The 8228
- The modem

For details refer to the SPIM shipped with the 9577, and see Figure 2-42, then go to “Updating the 3746-900 Code Level.”



Note: On the left side of the drawing the NNP-B is not installed.

Figure 2-42. Service Processor type 9577

Updating the 3746-900 Code Level

Is the LIC available on a **CD-ROM** (EC F12380 and above):

- **YES**, go to “Updating the 3746-900 Code Level from a CD-ROM” on page 2-39.
- **NO**, go to “Updating the 3746-900 Code Level from an Optical Disk” on page 2-40.

Updating the 3746-900 Code Level from a CD-ROM

Note: During the following procedures:

1. keep the 3746-900 powered **OFF**, otherwise ALARM panels can be generated.
2. Follow the screen prompts in conjunction with the Installation Guide.

1. ____ Power on the service processor and its display screen.
2. ____ Enter the service processor maintenance password (*default is IBM3745*).
3. ____ Install the CD-ROM shipped with the machine in the CD disk drive
4. ____ Double click on the **"Service Processor object icon"**.
5. ____ Click on **"Configuration Management"**.
6. ____ Double click on **Install 3746 and NNP LIC on SP hard disk**

Figure 2-43. Service Processor Menu

7. ____ Select the 3746 (1 or 2) to be installed and if you are installing a network node processor, select the 3746 where the NNP will be installed and enter its serial number, then click on **Start LIC installation...**

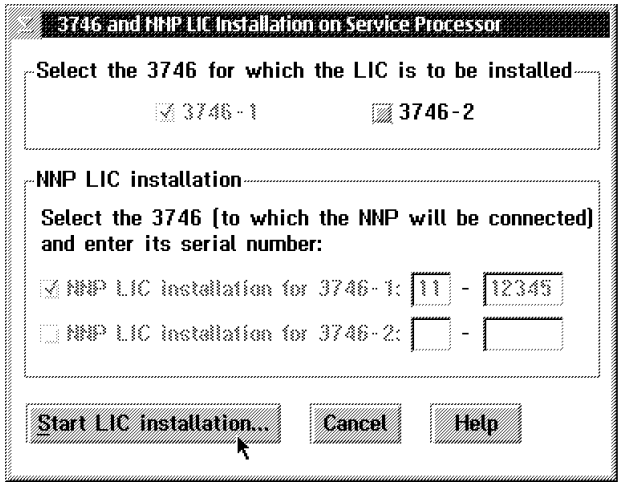


Figure 2-44. LIC Installation Menu

8. ____ when completed, click on **OK**.

Go to "Configuring the Service Processor" on page 2-41.

Updating the 3746-900 Code Level from an Optical Disk

Note: During the following procedures:

1. keep the 3746-900 powered **OFF**, otherwise ALARM panels can be generated.
2. Follow the screen prompts in conjunction with the Installation Guide.

1. ____ Install the **Service Processor installation diskette 1** in the diskette drive, and the optical disk received with the 3746-900 in the optical drive.
2. ____ **Power** the Service Processor **ON** and its display screen or press **Ctrl + Alt + Del**.
3. ____ On the 'Service Processor Installation Diskette' window, press **Enter**
4. ____ From the primary window select option **1** **Update Licensed Internal Code (LIC) when installing a 3746-9x0**

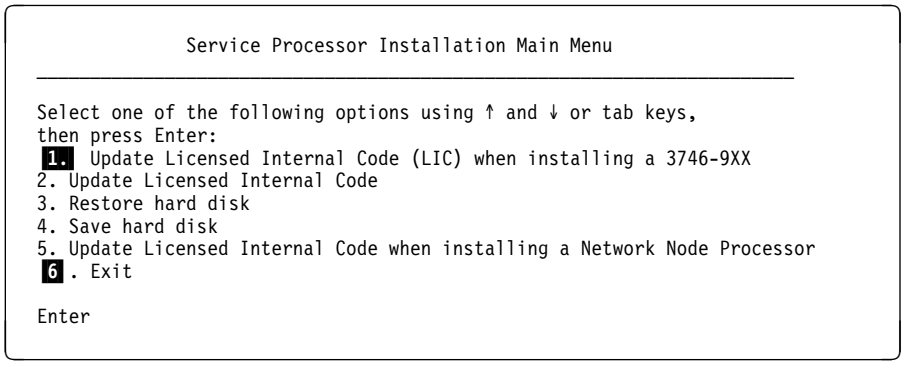


Figure 2-45. LIC Installation Main Menu

5. ____ Press **Enter** and follow the prompts. If you are intalling a network node processor, when requested select the option to **Install the Network Node Processor**

   Note: The process length will depend on the quantity of code to be upgraded.

6. ____ At the end the main menu is prompted, select option **6** **Exit** and follow the prompts.

Configuring the Service Processor

Note: If any unexpected panel code is displayed at the 3746-900 control panel, go to the START page of the *3746-900 Service Guide*, SY33-2116.

Step 1. ____**Power the 3746-900 On**

a. ____ Verify that all the 3746-900 CPs are set to the ON position (refer to Figure B-14 on page B-10).

b. ____ Turn or ask the customer to turn the branch circuit breaker which feeds the 3746-900 (and the controller expansion if present) to the **ON** position.

c. ____ Switch CB1 to **ON** in front of the 3746-900 primary power box.

Note: If the optional power supply is installed, switch its CB1 to **ON**, the power is now present in the primary power box.

d. ____ Press the Power control key repeatedly until 3 is displayed in the *Power control* window, and press the validate key. You are now in **Local Power Control mode**.

e. ____ Wait for the code **05-28-2805** at the 3746-900 control panel.

Then on the Service Processor select the following options:

Step 2. ____**Add the 3746-900**

a. ____ From the service processor configuration management menu, double click on **Manage 3745/3746-9x0 installation/Removal**

b. ____ On the Controller Installation menu, select the 3746 to be installed by clicking on the **<3746 not installed>** field near the 3745 to be attached.

c. ____ Click on **"ADD"**.

d. ____ Verify that the code **05-28-2805** is still displayed on the 3746-900 panel, then click on **"OK"**.

e. ____ Specify the model by clicking on **"900"**, then enter the 3746-900 **serial number** (format XX-XXXXX), then click on **"OK"**.

f. ____ When requested, install the 3746-900 installation parameters **diskette PN 17G5878** in the Service Processor diskette drive.

g. ____ Click on **"OK"**. The reference CDF-E is being restored.

h. ____ Enter the **Token-Ring Local address (MAC address)** according to the value recorded by the customer on the parameter worksheet: **3746 Nways Multiprotocol Controller Integration - Definition of the 3746 Nways Multiprotocol Controller Address on the Service LAN**, and click on **"OK"**.

Note: If the LAN address cannot be obtained from the customer, enter a value in the range 400000000000 to 7FFFFFFFFFF.

i. ____ Perform action according to the "Controller Installation Message", then follow the prompts.

j. ____ At the end of the process, a general IML is started and stops with a completion code **00-00-0000** displayed at the 3746-900 control panel.

IF INSTALLING	GO TO
A network node processor	"Installing the Network Node Processor (A or B)"
A multiaccess enclosure	"Installing the Multiaccess Enclosure" on page 2-45
A specific software feature	"Installing Software Feature on the 3746-900" on page 2-46
None of previous items	"Calling RETAIN" on page 2-48

Installing the Network Node Processor (A or B)

Using the *Network Node Processor Installation and Maintenance (Based on 7585 or 3172)*, SY33-2112, install the network node processor following the instructions given in chapter 1: 'Installing Your Network Node Processor'. Then, return here when done.

Is your customer going to use **NetView performance monitor?**

- **Yes**, go to "Configuring NetView Performance Monitor (NPM)" on page 2-43.
- **No**, go to step 8 on page 2-45

Configuring NetView Performance Monitor (NPM)

1. ____ Double click on the 3746-9x0 icon where you installed APPN feature.
2. ____ From the 3746-9x0 menu, click on **Network Node Processor (NNP) Management**.

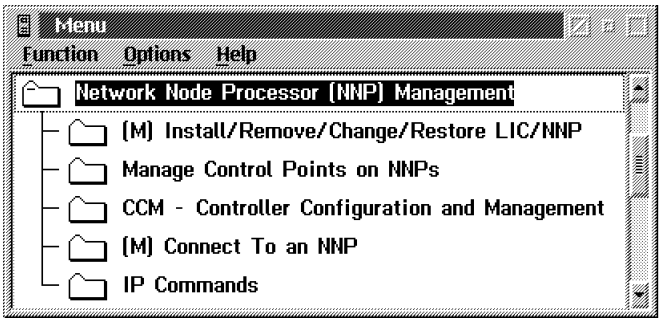


Figure 2-46. 3746-9x0 Menu

3. ____ Double click on **Manage Control Points on NNPs**.

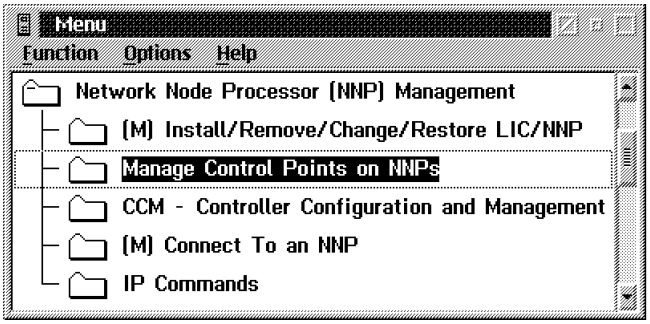


Figure 2-47. Network Node Processor Menu

4. ____ Select the network node processor A (or B) , then click on **Manage NPM**.

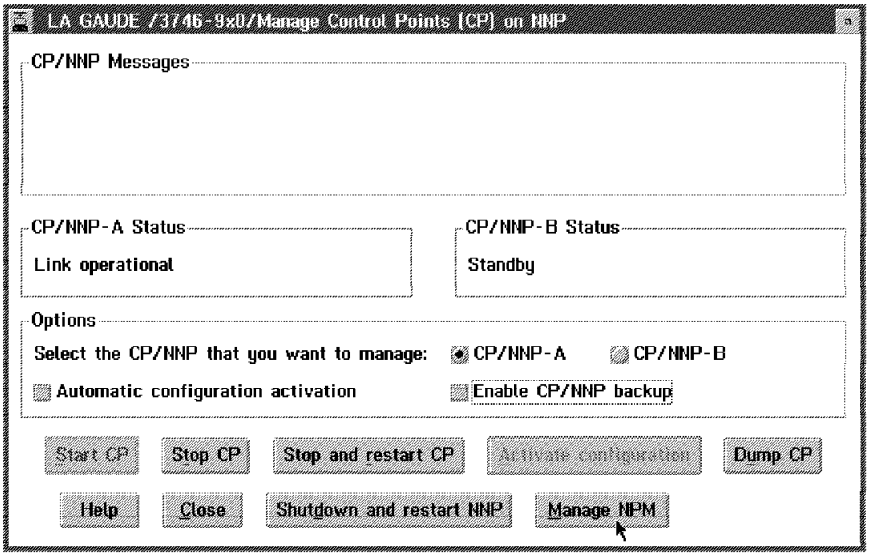


Figure 2-48. Manage Control Points on NNP

5. ____ Check **Enable NPM**, and check **Activate immediately** (according to the customer choice). Then enter the **Network ID**, **Local node name** which is the name of the local PU for NPM = PU name in switched major node (refer to Figure 2-51 on page 2-45). Modify the **LU name** (LU name for NPM defined in VTAM), then click on **OK**.

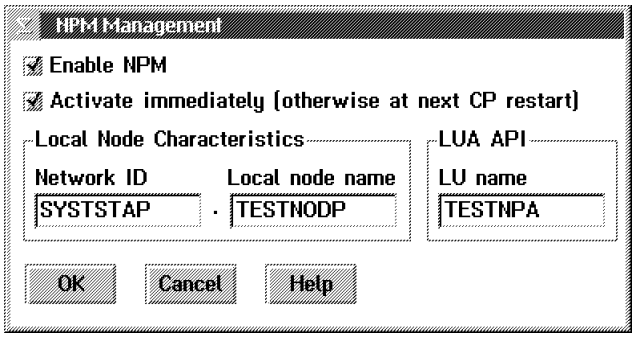


Figure 2-49. NPM Management Menu

Note: To support NPM, the customer has to define a:

a. **Switched major node**, refer to the example given in Figure 2-51 on page 2-45.
b. **Resource resolution table**, refer to the example given in Figure 2-50.

In these tables the CP and LU names must be equal to the names given in NPM management (define in Figure 2-49.):

- CPNAME (TESTNODP) = Local node name
- LUNAME (TESTNA) = LU name

```
*************************************************************************
*  DESCRIPTIVE NAME : 3746 MODEL 900 VTAMLST DEFINITION                 *
*************************************************************************
*     BUILD STATEMENT - CONTROLLER INFO                                 *
*************************************************************************
*
TESTNOD BUILD MODEL=3746-900,                                          X
               NETID=SYSTSTAP,                                         X
               NEWNAME=TESTNOD,                                        X
               NPA=(YES,DR),                                           X
               VERSION=N/A
*
*************************************************************************
*     NPM VIRTUAL RESOURCES                                             *
*************************************************************************
M900NPA  GROUP LNCTL=SDLC,                                             X
               NPARSC=YES,                                             X
               VIRTUAL=YES,                                            X
               NPACOLL=YES,                                            X
               ISTATUS=ACTIVE
TESTNODL LINE
TESTNODP    PU
TESTNPA     LU
*
*************************************************************************
*     END OF GEN SOURCE                                                 *
*************************************************************************
*
GENEND   GENEND
         END
```

Figure 2-50. Example of Resource Resolution Table

```
ERS4NPM  VBUILD TYPE=SWNET,MAXGRP=1,MAXNO=1
*--------------------------------------------------------------------*
* ERS4 : PU NNP                                                      *
*--------------------------------------------------------------------*
TESTNODP PU    ADDR=04,PUTYPE=2,CPNAME= TESTNODP
 TESTNPA  LU    LOCADDR=1
```

Figure 2-51. Example of Switched Major Node

6. ____ Click on **Yes**.

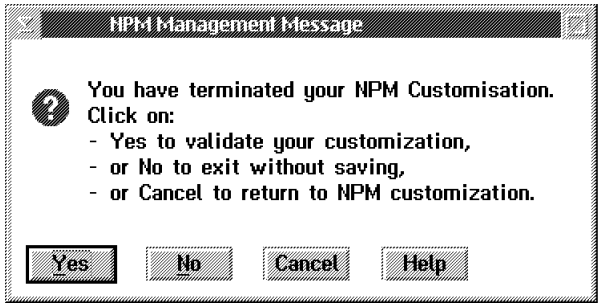


Figure 2-52. NPM Management Message

7. ____ Click on **OK**.

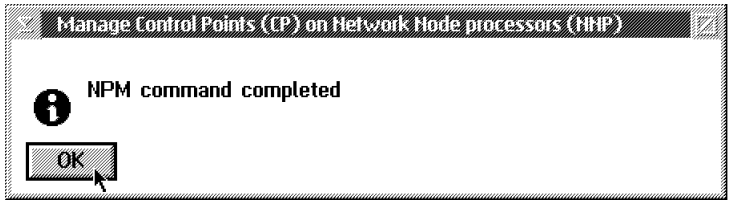


Figure 2-53. Manage Control Points on NNP

8. ____ Go to one of the following chapters:

IF INSTALLING	GO TO
A multiaccess enclosure	“Installing the Multiaccess Enclosure”
A specific software feature	“Installing Software Feature on the 3746-900” on page 2-46
None of previous items	“Calling RETAIN” on page 2-48

Installing the Multiaccess Enclosure

Using the *Multiaccess Enclosure Installation and Maintenance Guide*, SY33-2118, install the multiaccess enclosure following the instructions given in chapter 1, then, return here when done.

Do you have to install specific software?

- **Yes**, go to “Installing Software Feature on the 3746-900” on page 2-46
- **No**, go to “Calling RETAIN” on page 2-48.

Installing Software Feature on the 3746-900

1. ____ On the Controller Installation menu, select the 3746 just installed by clicking on the **<3746-900>** line, then click on **"Select Feature"**.

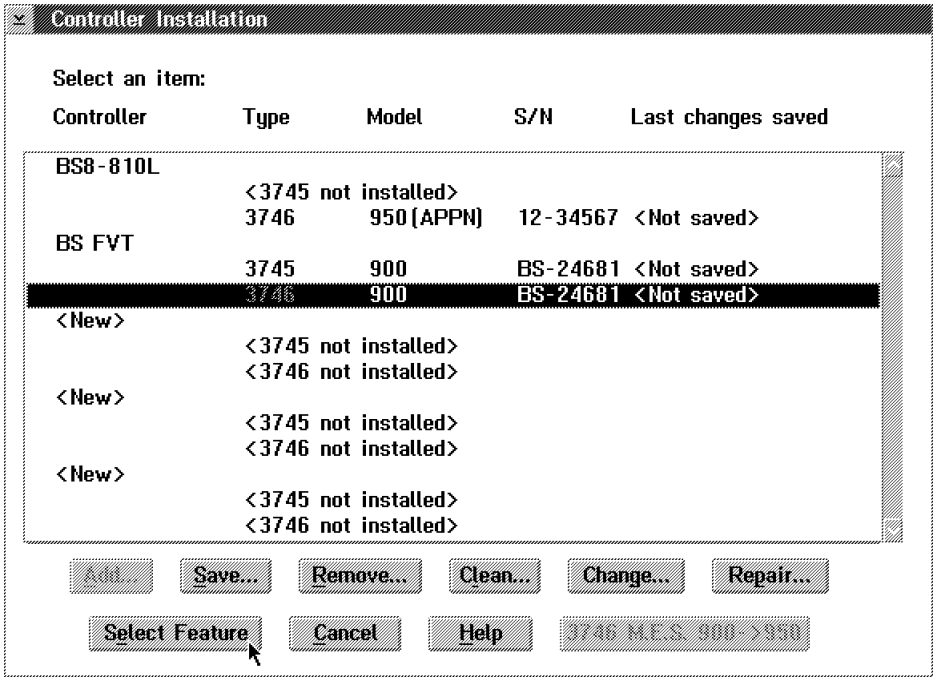


Figure 2-54. Controller Installation

2. ____ Click on the **"Features"** to be installed, enter the corresponding password, then click on **OK**. If only **ISDN** is selected, go to step**5 on page 2-47** .

   Notes:

   a. The following screen can be different if you are using a old microcode level up to D46130.

   b. The password for each feature is recorded on the installation instructions part of the shipping group.

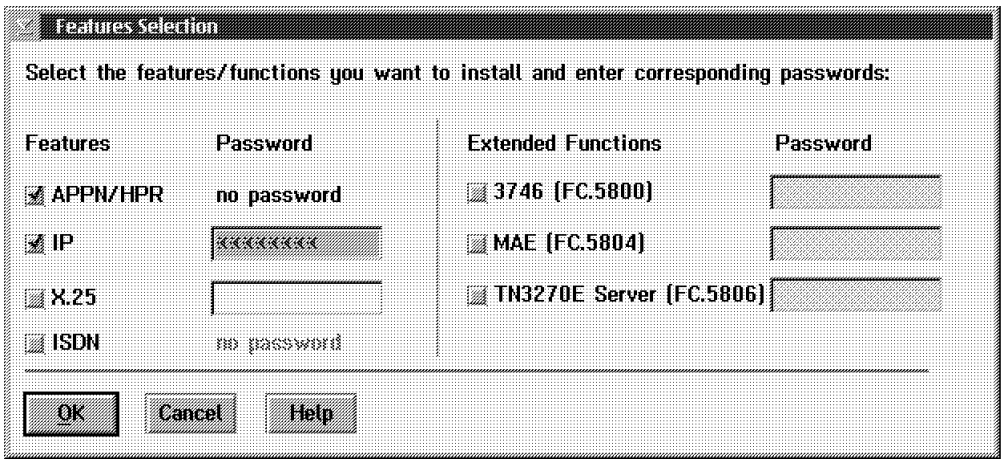


Figure 2-55. Features Selection

3. ____ According to the customer's requirement, select the protocol loaded per processor type, then click on **OK**. For details, refer to “Parameter worksheet for Processor Loading” on page A-1.

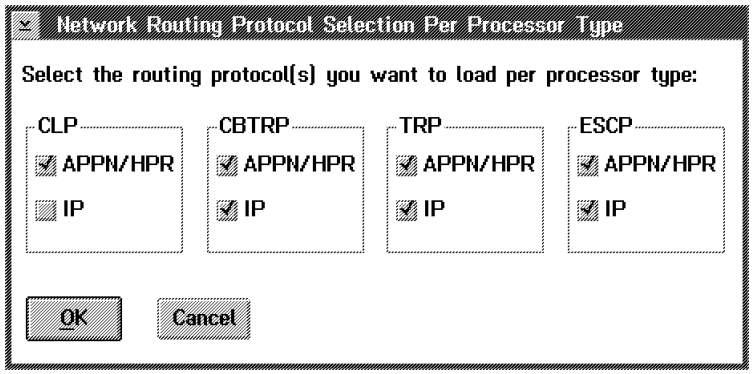


Figure 2-56. Network Routing Selection

4. ____ This information message remind you to set the NPM parameters required in communications manager if the customer is going to use NPM (for details refer to “Configuring NetView Performance Monitor (NPM)” on page 2-43), click on **"OK"**.

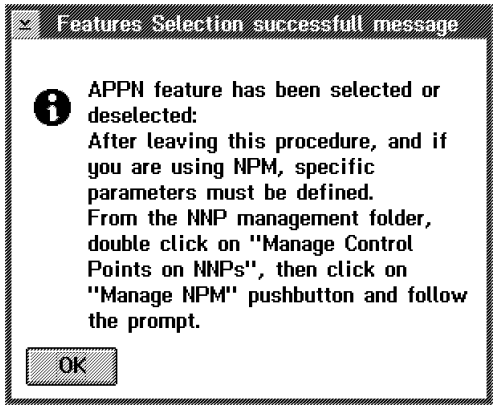


Figure 2-57. Features Selection Successfull Message

5. ____ When completed, click on **"OK"** and perform a general IML to activate the feature installed.

Calling RETAIN

Note: This procedure is used to test the link to RETAIN and to verify if the machine is correctly recorded in the RETAIN database.

1. ____ Double click on the **"3746-900 object icon"**.
2. ____ Click on **"Problem management"**.
3. ____ Double click on **"Report Problem using Remote Support Facility"**.
4. ____ See Figure 2-58, enter a **short description** "Installing the 3746-900 and testing the RSF link", then click on **"OK"**.
   Wait for the message "Call to RETAIN successful" indicating the normal end of the transmission.
   If you get the message "Call to RETAIN unsuccessful", record the Customer Problem Number (CPN) and go to the START page of the &mipaf..

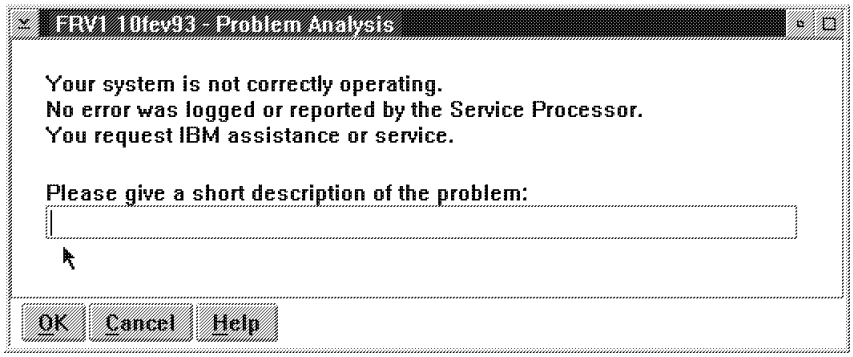


Figure 2-58. Link to RETAIN

Go to Chapter 3, "3746-900 and Service Processor Power On and Test Procedure" on page 3-1.

Chapter 3. 3746-900 and Service Processor Power On and Test Procedure

3746-900 Control Panel General Information

- The **function**, **service mode**, and the **power control** keys allow to scroll through options at their corresponding display window.

  Note:

  – When you are in **normal (0)** service mode, pressing the function key will scroll through the 3, 4, 6, and 8 functions.

  – When you are in **maintenance (1)** service mode, pressing the function key will scroll through the 3, 4, 5, 6, 7 and 8 functions.

  – To select functions 0, 1, and 2 press the following keys:

  1. **General IML** will select **function 0** (General IML).
  2. **CBSA IML** will select **function 1** (CBSA IML).
  3. **CBSA dump** will select **function 2** (CBSA dump).

  – When you are in **display error code (7)** pressing the **service mode** key will **scroll the System Reference Code (SRC) forward** and pressing the **power control** key will **scroll the SRC backward**.

- The **validate** key enables options selected with the preceding keys (digits stop blinking).
- The **exit** key cancels a scrolled option.

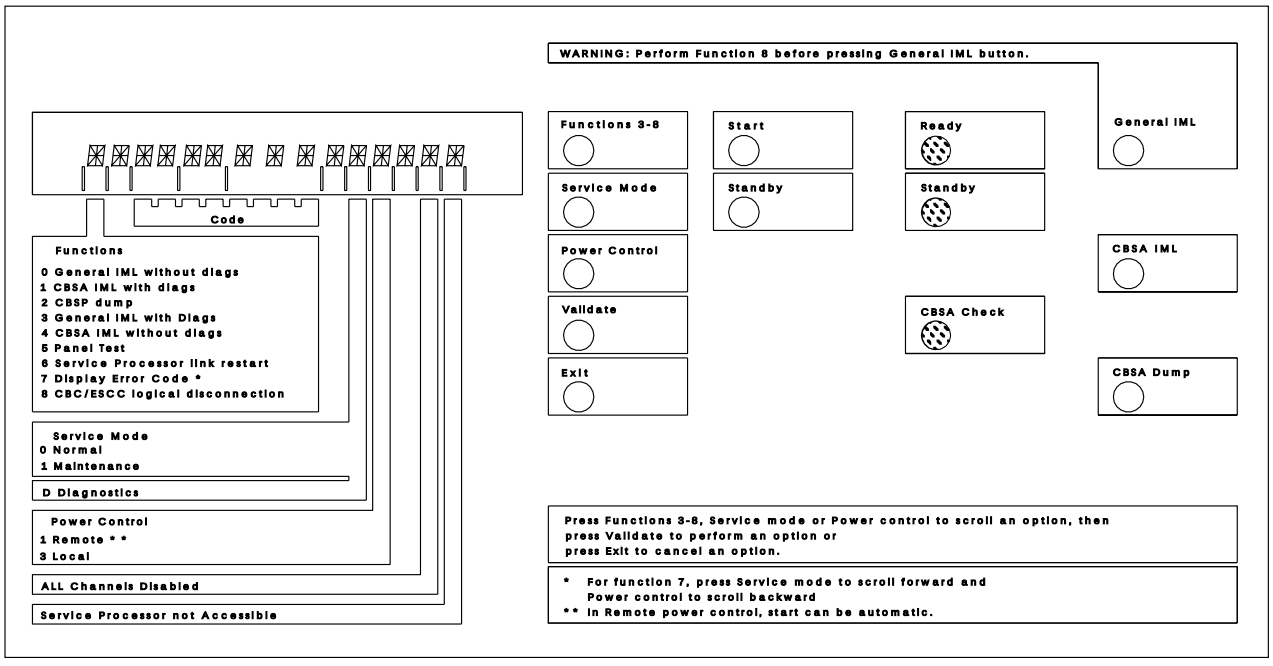


Figure 3-1. 3746-900 Control Panel Layout

For a description of the panel display values, refer to the *3746-900 Service Guide*, SY33-2116.

3746-900 Checkout Procedure

- **Ensure that you complete each step in sequence.**
- If the expected panel code is not displayed, go to the START page of the *3746-900 Service Guide*, SY33-2116.

Step 1. **____Power the 3746-900 Off**

Press the **Standby** key to power the 3746-900 off, in that state only the CBSP is power ON all the others processors are power OFF.

Step 2. **___ Verifying the 3746-900 Standby State**

At the 3746-900 control panel, check for the following indications:

- Service Mode = **0**,
- Power control = **3**,
- Progression code = **05 28 2806**
- The standby led blinks first for a few seconds and then stays **ON**

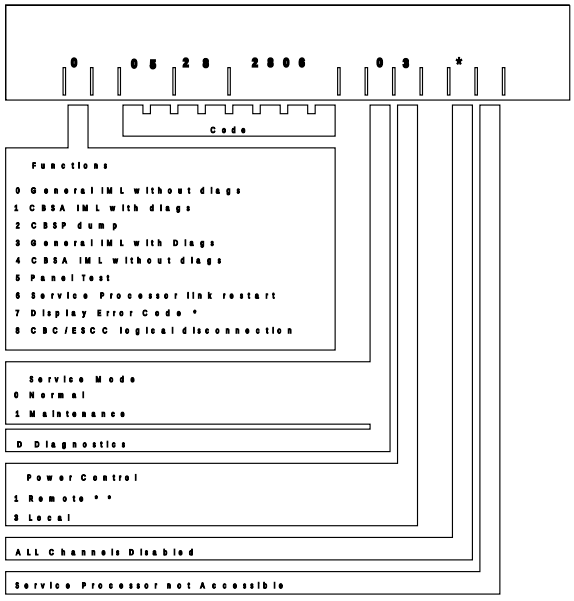


Figure 3-2. Display Part of the 3746-900 Control Panel Layout

If the conditions of the normal end of standby IML are not met, use the *3746-900 Service Guide*, SY33-2116, at the START page.

Step 3. ___ **3746-900 Control Panel Test**

For details on this test, refer to *"How to Run the Panel Test"* in the *3746-900 Service Guide*, SY33-2116.

It is not a sequential test and can be cancelled at any time, by pressing the 'Exit' key.

Notes:

a. Any inactivity lasting about 30 seconds during the panel test, will result in the test being automatically cancelled and the panel will return to operational mode.

b. During this test the control panel's audible alarm will sound for each action.

'special character': Can be described as when every possible segment of the window is lit.

a. ____ Press the '**Power Control**' key repeatedly until '3' is displayed in the power control window.

b. ____ Press the '**Validate**' key.

c. Press the '**Service mode**' key repeatedly until '**1**' is displayed in the 'service mode' window.

d. ____ Press the '**Validate**' key.

e. ____ Press the '**Function**' key repeatedly until '**5**' is displayed in the function window.

f. ____ Press the '**Validate**' key.

Observe the display: All 13 'special characters' will be displayed.

Note: If panel test code detects an error, the SRC is stacked but not displayed on the panel.

g. ____ Press the '**Function**' key repeatedly.

Observe the display: In the 'Function' window a 'special character' will be displayed and you will scroll through the 'Function' and 'Code' windows sequentially, and wrap around.

h. ____ Press the '**Service mode**' key repeatedly.

Observe the display: In the 'Service' window a 'special character' will be displayed and you will scroll through the 'Service' and 'Power Control' windows, and wrap around.

i. ____ Press the '**Power Control**' key repeatedly.

Observe the display: In the 'Console not accessible' window a 'special character' will be displayed and you will scroll through the 'All channels disabled' and 'Console not accessible' windows sequentially, and wrap around.

j. ____ Press the '**Start**' key.

Observe the display: '8' will be displayed in the 'Function' window, and the standby LED will be ON.

k. ____ Press the '**Standby**' key.

Observe the display: The display will be completely blank.

l. ____ Press the '**Exit**' key.

Observe the display: The display will present the 'Service Mode' (**1**) and 'Power Control' (**3**) indicating that the test is complete, and the panel has returned to operational mode.

Step 4. ___ **Perform the 3746-900 General IML and Build the CDF-E**

Notes

1. If any unexpected SRCs or leds are ON, go to the START page of the *3746-900 Service Guide*, SY33-2116.
2. SRC **06 00 00 D1** indicates that the link between the 3746-900 and the Service Processor has been lost and this is a normal condition during the re-IML of the machine.

a. ____ Press the **Power control Key** to select local mode **3**

b. ____ Press the **Service Mode Key** to select Maintenance Mode **1**.

c. ____ Press the **Function Key** to select General IML with Diags **3**.

d. ____ Press the **Validate Key** to execute General IML with Diags.

The progression codes are now dynamically displayed on the control panel up to the **normal end of the Standby state** which is indicated as follow:

- Ready led **OFF**.
- Standby led **ON**.
- SRC **05-28-2806** is displayed on the control panel.

e. ____ Press the **Start Key** to execute the General IML with Diags from Standby state to the normal end of Power ON IML which is indicated as follow:

- Ready led **ON**.
- Standby led **OFF**.
- SRC **00-00-0000** is displayed on the control panel.
- The 3746-900 object Icon is **green**.

Step 5. ___ **Compare the Active CDF-E To the Reference CDF-E**

From the Service Processor, select the following screen options:

a. ____ Enter the Service Processor Maintenance password (default is IBM3745).

b. ____ Double click on the "**3746-900 object icon"**.

c. ____ Click on **"Configuration Management"**.

d. ____ Double click on **"Compare reference CDF-E with active CDF-E"**. The active CDF-E is now being compared with the reference CDF-E

Note: If there is no difference, an information message is displayed. Click on the **"OK"** pushbutton to leave the function.
If there is difference, double click on the resource in error to get more details about that resource then:

1) Check that the cards are properly plugged.

2) Compare the configuration recorded in the CDF-E to the HONE installation sheets.

Step 6. ___ **Select Diagnostics to Test All the Resources**

Note: For any unexpected message go to the START page of the *3746-900 Service Guide*, SY33-2116.

a. ____ On the 3746-900 menu, click on **"Problem Management"**

b. ____ Double click on **"Set 3746-900 Online/Offline Option"**, then click on **"Yes"**.

c. ____ Click on **"OK"** when the offline request has been successfully processed.

d. ____ Press **General IML** on the 3746-900 control panel to set the 3746-900 offline.

Note: The 3746-900 object icon will become **white**, **yellow**, and finally **red** and will stay **red** as long as the 3746-900 is offline.

e. ____ From the list of Problem management functions, double click on **"Perform offline Diagnostics"**.

f. ____ Using the radio buttons define how to run a general diagnostic. Select **Whole 3746-900** and **No wrap** (normally the default options), enter the **number of cycles** that you want the test to run (one cycle can take up to 15 minutes).

g. ____ Click on the **"Start"** pushbutton (a 'stop' pushbutton is now visible). The normal end will be indicated by **"Hardware error: 0"**, **00-00-0000** displayed on the 3746-900 control panel, and the 'Start' pushbutton will be visible again.

h. ____ Click on **"Cancel"** to exit from the function.

Note: If the hardware error counter is incremented:

1) ____ Click on **"Manage Alarms/Errors/Events (SRC's)"**, the "System Reference Code Options Selection" is displayed.

2) ____ Select **"Alarms"** and click on **"OK"**.

3) ____ An **Alarms** panel is displayed, select the last alarm (at the top of the screen).

4) ____ Click on **"View"** (on the action bar), click on **Problem interpretation...**, a panel is displayed and gives the list of suspected FRUs and their defective probability.

5) ____ Click on **"Cancel(s)"** to exit from the function.

i. ____ Click on **"OK"** on the warning message which remind you to put back the 3746-900 online.

j. ____ **Resume** step 6b on page 3-6 to **put the 3746-900 ON LINE**.

k. ____ Press **General IML** on the 3746-900 control panel to set the 3746-900 online (indicated by a **green** object icon).

Did you get from your customer a configuration file recorded on diskette

- **Yes**, go to step 7.
- **No**, go to step 11 on page 3-13.

Step 7. ___ **Are you also installing a Network Node Processor**:

- **Yes**, go to step **9 on page 3-9** .
- **No**, go to step **8** .

Step 8. ___ **Import the ESCON Configuration Using EGA**

Obtain from the customer the diskette which contains the ESCON configuration generated using the EGA loaded on a remote PS/2 (or equivalent).

a. ____ Double click on the **"3746-900 object icon"**.

b. ____ Click on **"Configuration Management"**.

c. ____ Double click on **"Configure ESCON Processors"**.

d. ____ Click on **"OK"**, click on **Subset**, click on **"Import"**.

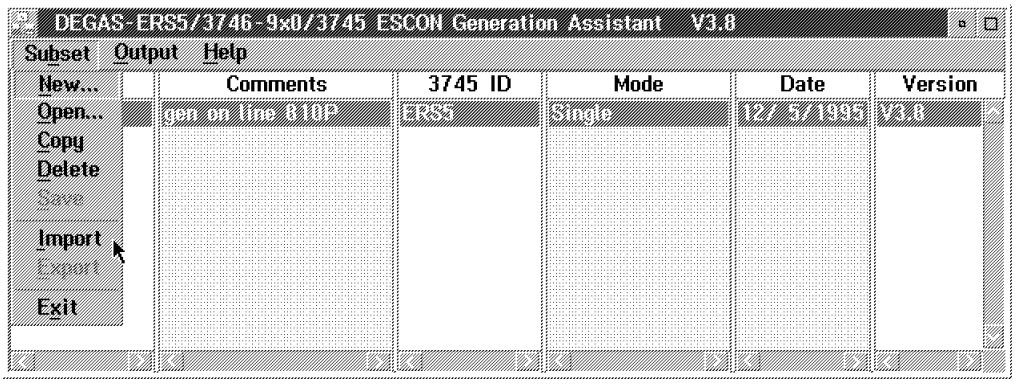


Figure 3-3. EGA Access Screen

e. ____ Insert the diskette which contains the ESCON configuration, then click on **"Yes"**.

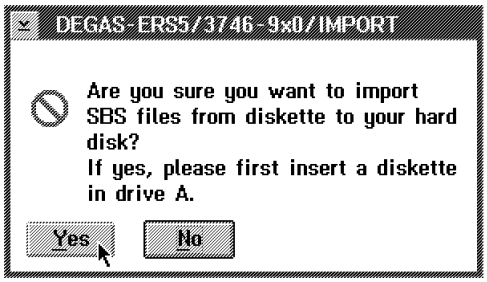


Figure 3-4. Importing The Configuration File from Diskette

f. ____ When completed, select the configuration just imported, click on **Subset**, click on **"Open"**.

g. ____ Click on **Return** click on **Subset**, click on **"Save"**, then click on **"Yes"** to load the configuration in the ESCON processors.

h. ____ Now, you can either perform a selective IML on each ESCON processor (follow the information given in the following sreen) or perform a general IML from the 3746-900 operator panel.

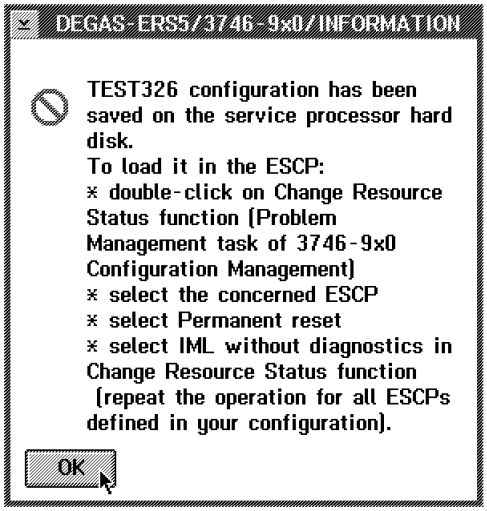


Figure 3-5. IML the ESCON Processors

i. ____ When completed, click on **Subset**, click on **"Exit"** to leave EGA, then go to **step 10 on page 3-12**

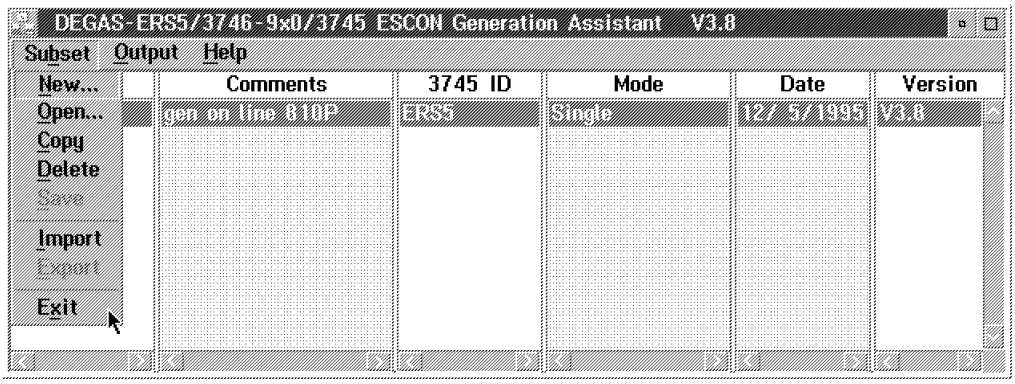


Figure 3-6. Exit EGA

Step 9. ____ **Import ESCON Configuration Using CCM**

a. ____ Double click on the **3746-9x0 object icon** .

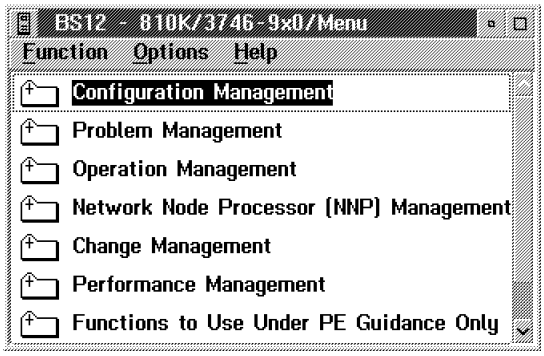


Figure 3-7. Network Node Processor Maintenance Functions

b. ____ Click on **Network Node Processor (NNP) Management**.

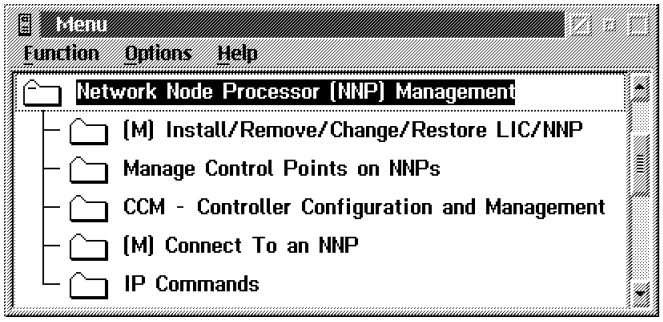


Figure 3-8. Network Node Processor Management Functions

c. ____ Double click on **CCM -Controller Configuration and Management**

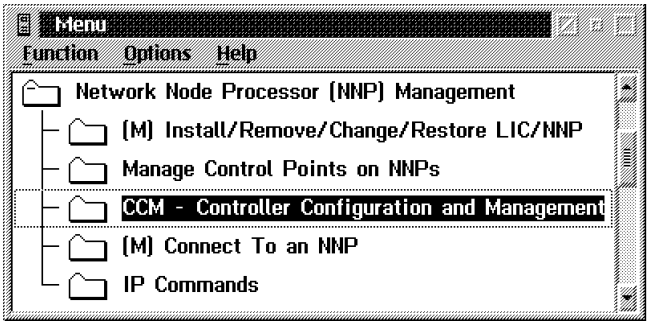


Figure 3-9. CCM

d. ____ Click on file then click on **Import a configuration** .

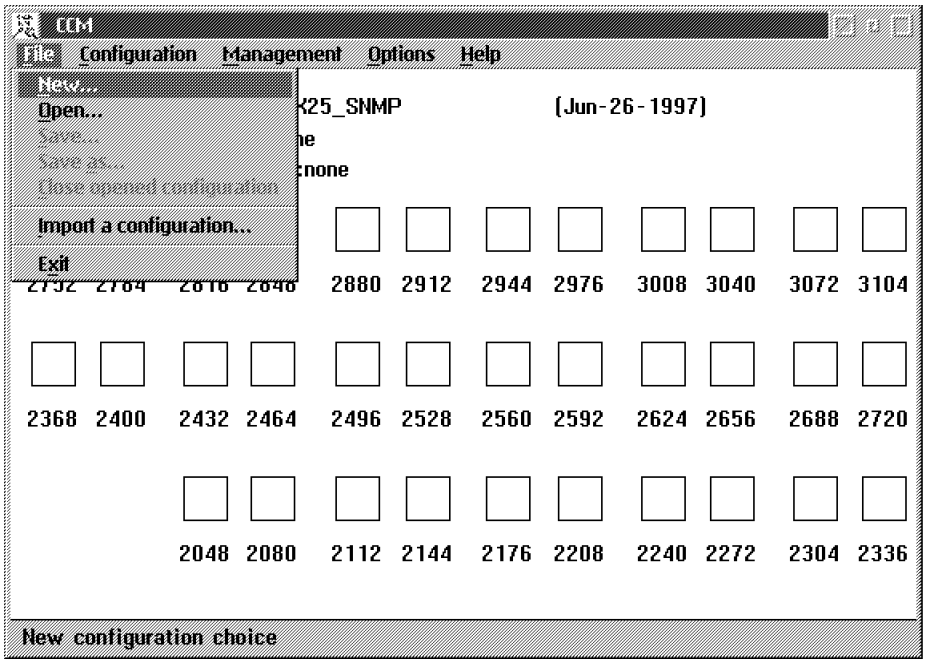


Figure 3-10. Importing a Configuration

e. ____ Insert the diskette which contains the CCM config file, then click on **OK**.

f. ____ Select the configuration to be imported , then click on **Import selected configuration** .

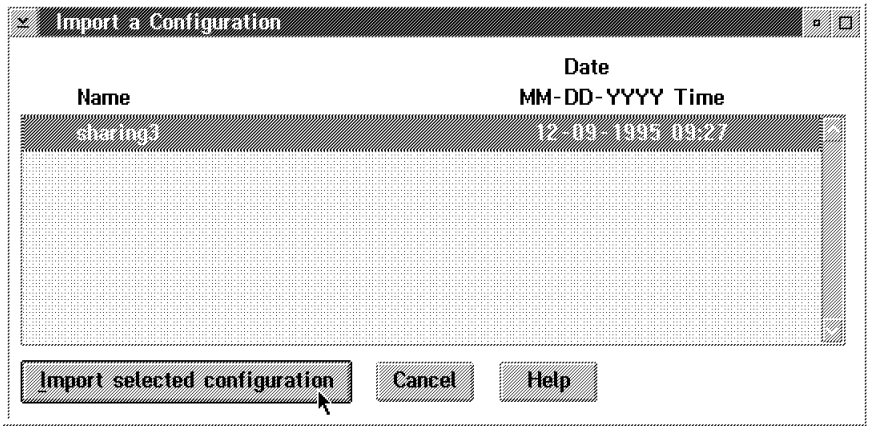


Figure 3-11. Importing a Configuration

g. ____ When completed, click on **OK** , then click on **Cancel**

h. ____ Click on **File**, click on **Open**

i. ____ Select the config file that you just imported , then click on **Activate** and verify that a "A" is displayed on the left side of the configuration activated.

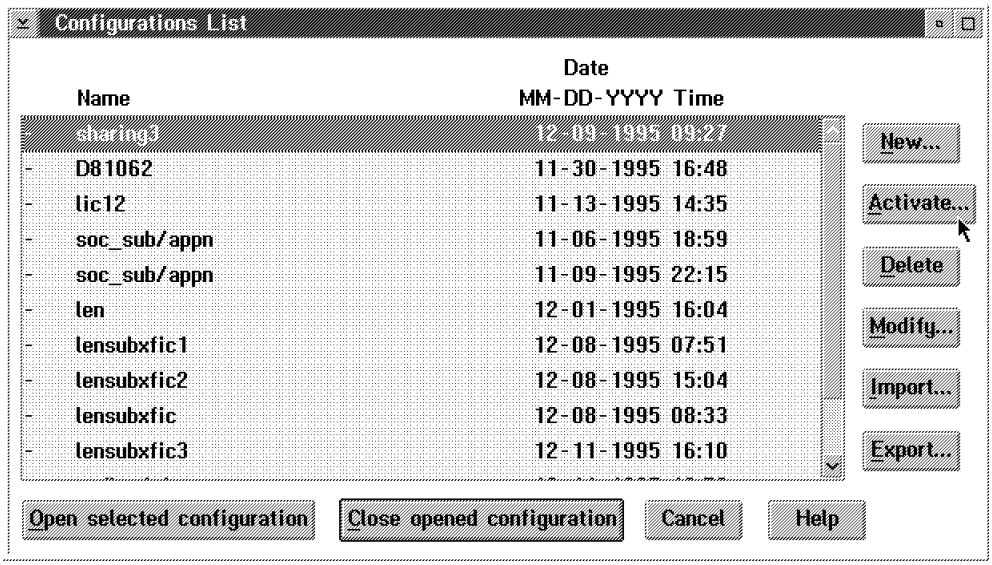


Figure 3-12. Activate a Configuration

Then **Go** to **step 10 on page 3-12**

Step 10. ___ **Test the ESCON network**

Step a. ____ Route and temporarily plug the ESCON cables of the links to be tested into the ESCC connectors. Install the cables according to the plugging sheets obtained from the customer (refer to Figure 8-5 on page 8-6 and Figure B-8 on page B-6 to locate the connectors).

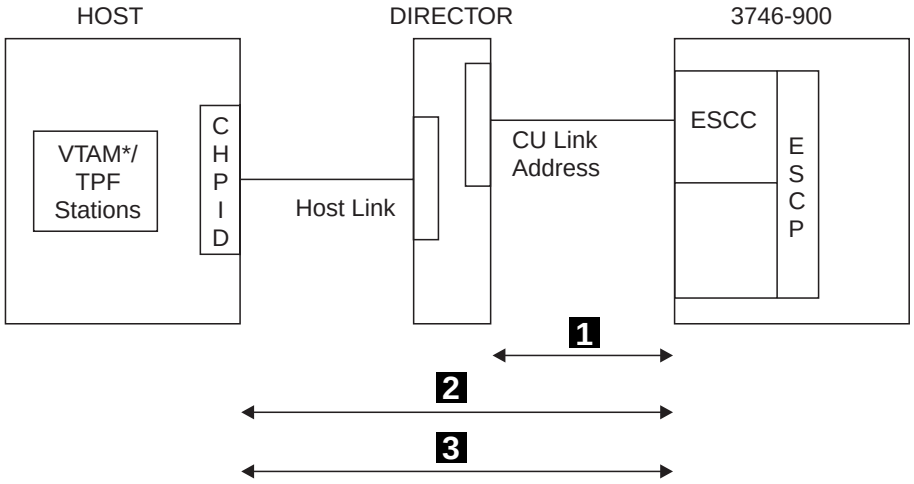


Figure 3-13. Typical ESCON Link between a 3746-9x0 and a Host

Step b. ___ To validate the link between the ESCC and the host:

From the **service processor console**, establish the path **2** from the ESCC to the Channel Path ID (CHPID) of the host, and verify that the **Path Status** of the host link is **Path**. Display the host link status as follow:

1) ____ Click on the **"3746-9x0 object icon"**.
2) ____ Click on **"Configuration Management"**.
3) ____ Double click on **"Manage ESCON processor"**.
4) ____ Double click on the **"ESCP"** to be selected.
5) ____ Click on **"Options"**, click on **Manage ESCC status**.
6) ____ Click on **"Enable"**.
7) ____ Click on **"Options"**, click on **"Send request and save"**.
8) ____ Click on **"OK"** twice.
9) ____ Click on **"Options"**, click on**"Return"**.
10) ____ Click on **"Refresh"**, click on**"One shot"**.
11) ____ Verify on the 'ESCON Configuration - Lines' screen that the **host link status** is **Path** (this means that the path is available). Then if you have an **ESCON director**, go to **step 10b12** , otherwise go to **step 10b14 on page 3-13** .
12) ____ Verify the **Control unit link address**.

To validate the Link **1** from the ESCC to the ESCON Director or to the Channel Path ID (CHPID), verify that the **Control Unit Link Address** received dynamically from the director is the same as the value entered by the customer when he defined the ESCA configuration.

13) ____ Record the **CU Link addr** (hex) value (CNTLUNIT LINK) and **Compare** this address to the output provided by the Customer.

14) ____ To leave the function, click on **"Options"** and from the pulldown menu select **Return**.

From the **MVS console**, activate the path **3** between the ESCC and the Channel Path ID (CHPID) of the host, ask the customer to **vary-ON vary-OFF** the specific device address and verify the status of the link (see example below of the MVS commands to vary on the line).

```
Enter the command:       V Path (XXX,YY), online
You will get the status: IEE3021 PATH (XXX,YY) ONLINE
```

Note: Before the 'Vary on', the path status was: **"Not physically available"**.

Step c. ___ Unplug the cables installed in step 10a on page 3-12.

Step 11. ____ If you are installing a:

- **3746-900 attached to a 3745-X1A**, and the **3745 X1A** is **ready to be connected** to the 3746-900, go to Chapter 4, “Connecting the 3746-900 to a 3745-X1A” on page 4-1 .
- **3746-900 attached to a 3745-17A** and the **3745 17A** is **ready to be connected** to the 3746-900, go to Chapter 6, “Connecting the 3746-900 to the 3745-17A” on page 6-1 .

Otherwise, go to Chapter 8, “Cable Setup” on page 8-1 and install the external cables. Then when available, install the 3745 (or convert to model X1A or 17A) and when completed return to this installation guide and go to one of these chapters to complete the 3746-900 installation:

- **Chapter 4, “Connecting the 3746-900 to a 3745-X1A” on page 4-1**
- Or, **Chapter 6, “Connecting the 3746-900 to the 3745-17A” on page 6-1**

Chapter 4. Connecting the 3746-900 to a 3745-X1A

Preparing the 3745-X1A

To have the 3745-X1A ready to be connected to the 3746-900 do the following:

Step 1. ____ **Prerequisites**

- The 3745 must be a model X1A, if the 3745 has to be upgraded install the MES model conversion X10 to X1A.
- Insure that the 3745-X1A has the prerequisite for the IOSW and SCTL cards. The FBM providing these cards should have been received with the 3746-900. Search in RETAIN* with the SAS keyword "3745AUPGRADE" to get the information.
- Ask the customer to have the proper NCP level installed to support the 3746-900.

Step 2. ____ **Checking the 3745 and 3746 Air Filters**

Check the 3745/3746 air filters, clean or plan to replace if necessary using the air filters exchange procedure described in the *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054, chapter "3745 FRU exchange".

Step 3. ____ **Powering the 3745 OFF**

a. ____ Notify the system operator.

b. ____ Press the **Power OFF** key at the 3745 control panel.

c. ____ **Switch CB1 to OFF** on the 3745 primary power box.

d. ____ Unplug the 3745 AC power plug from the customer's receptacle. If no plug is installed, ensure that the customer branch circuit breaker is switched to OFF, and labeled "NOT TO BE SWITCHED ON". Check with a meter that no voltages are still present in the machine, and that the metal frame is at 0 Vac.

Step 4. ____ **Powering the 3746-900 OFF**

a. ____ **Press** the **Standby** key to power the 3746-900 OFF (code 05-28-2806 is displayed and standby led is ON).

b. ____ **Switch** the **CB1(s) OFF** to remove the ac from the machine.

Attaching the 3746-900 Frame to the 3745 or 3746

- **Leave interconnecting cables stacked in frames for the time being.**
- **Make sure that there is no cable between the frame members when frames are bolted together.**

1. When there is **no 3746-A11** and **no 3746-A12**, the **3746-900** will be installed in **location 1**
2. When there is **a 3746-A11** and **no 3746-A12**, the **3746-900** will be installed in **location 2**.
3. When there is **a 3746-A11** and **a 3746-A12**, the **3746-900** will be installed in **location 3**.

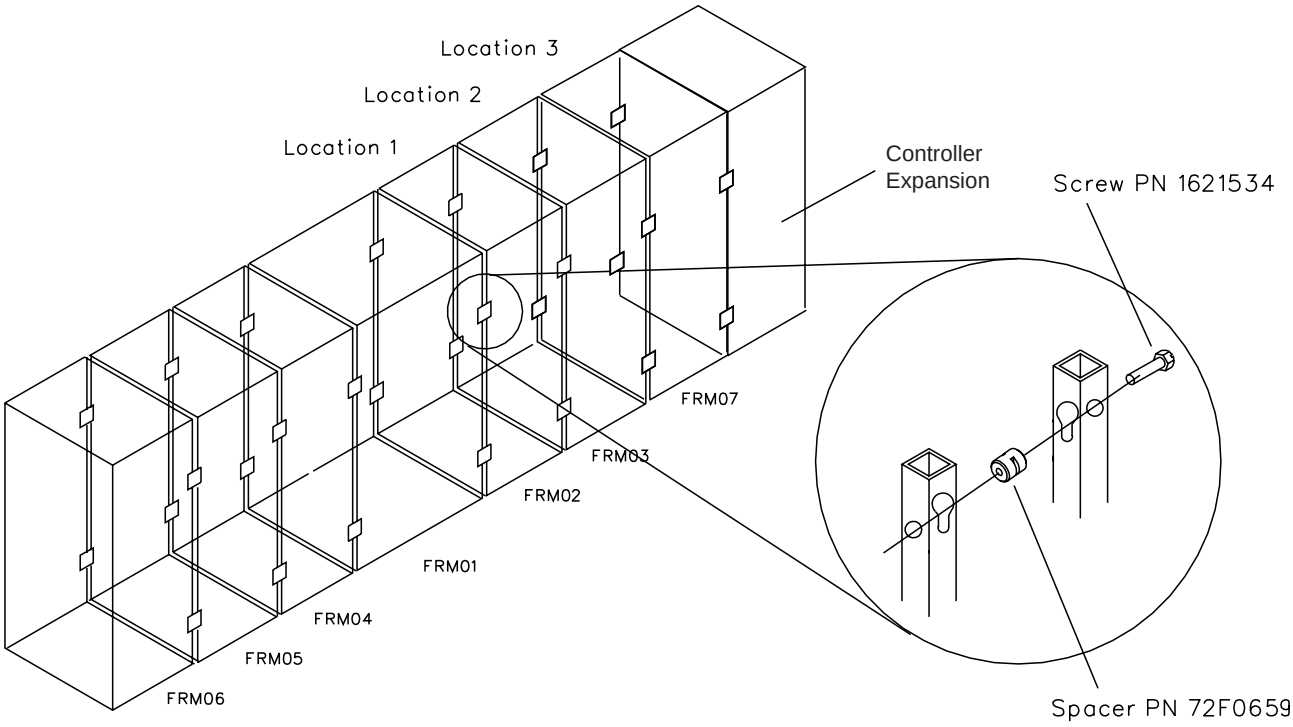


Figure 4-1. Frame Attachment

Note: The controller expansion is optional.

Perform the following actions as they apply to your installation:
If installing the 3746-900 in location 1: **Go to step 1 on page 4-4**.
If installing the 3746-900 in location 2: **Go to step 2 on page 4-5**.
If installing the 3746-900 in location 3: **Go to step 3 on page 4-6**.

1. **Installing the 3746-900 in location 1:**

   Step a. ____ **From the front right side of the 3745**, remove the right end cover and the bottom right bracket **C** PN 65X8885 if installed (see Figure 4-2). Place the bracket and cover in a safe out-of-the-way area.

   Step b. ____ Install the new ground plate **(PN 72F1046)** **D** .

   - *To remove the end cover, loosen the four retaining screws from inside the machine, using a 5/16" socket, then lift the cover from the slotted holes on the frame and pull it toward you.*
   - *To gain access to the top front screw for the 3745 right end cover, you may need to pry off the EMC gasket at the right side of the LAB1 board at 01G-A1, using a screwdriver (see Figure C-1 on page C-2 for location and Figure 4-19 on page 4-20 for detail).*

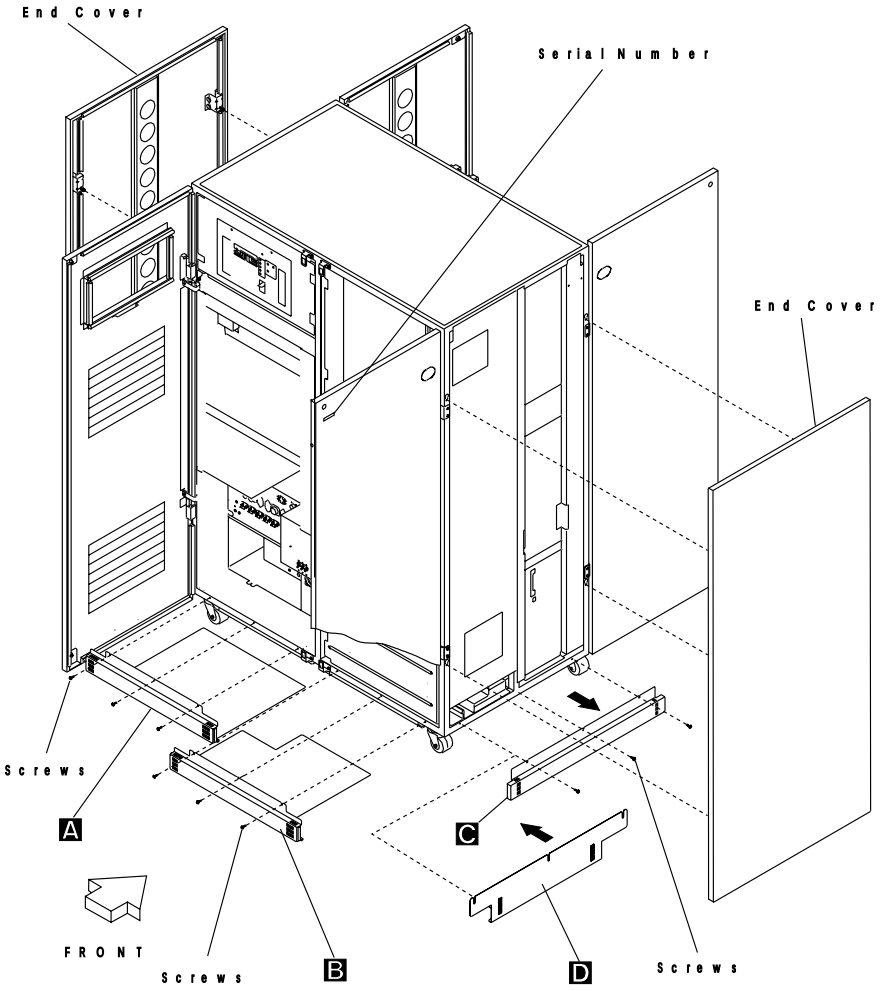


Figure 4-2. Ground Brackets on a 3745 Base Frame

   Step c. ____ Put the 4 spacers (PN 72F0659) in the 3745 base frame as shown in Figure 4-1 on page 4-3.

Step d. ____ Move the 3746-900 to its final resting position and open the front and rear doors. Tighten the caster lock screws on the front wheels (see Figure 4-3 on page 4-5).

Note: A controller expansion can be installed on the right side of the 3746-900 frame.

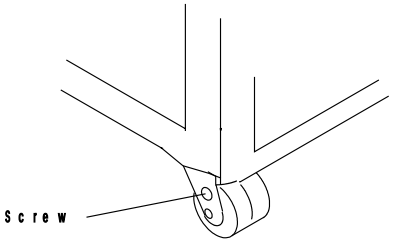


Figure 4-3. Caster Lock Screw

Note: Pads and studs are no more shipped with the new machines, if you did not received these parts, skip the following step.

Step e. ____ Install pads (PN 03F7783) and studs (PN 76F9365) and using a 7/8" wrench, make a leveling pad adjustment on the 3746-900. Align the frame bolt holes, remove the black shield covers if needed, and bolt the 3746-900 to the 3745 using screws (PN 1621534) and spacers (PN 72F0659) (see Figure 4-1 on page 4-3).

Note: Studs (PN 76F9365) may already be installed on the frame.

Step f. ____ Reinstall the transformer cover located at the rear bottom of the 3746-900 (see Figure B-2 on page B-2).

Note: *To remove a black shield cover it may be necessary to lubricate the hinge pins.*

Go to "Cabling the Power Control Cable from the 3746-900 to the 3745-X1A" on page 4-8.

2. **Installing the 3746-900 in location 2:**

Step a. ____ **From the front right side of the 3746-A11**, remove the right end cover and the bottom right bracket **C** PN 65X8885 if installed (see Figure 4-4 on page 4-7). Place the bracket and cover in a safe out-of-the-way area.

Note: To remove the end cover, loosen the four retaining screws from inside the machine, using a 5/16" socket, then lift the cover from the slotted holes on the frame and pull it outside towards you.

Step b. ____ Install the new ground plate **(PN 72F1046)** **D** .

Step c. ____ Refer to Figure 4-4 on page 4-7 if not already done **on the 3746-A11**, loosen the two retaining screws and remove the right side plate PN 6496094 shown in the figure.

Step d. ____ Put the 4 spacers (PN 72F0659) in the 3746 A11 frame as shown in Figure 4-1 on page 4-3.

Step e. .____ Move the 3746-900 to its final resting position and open the front and rear doors. Tighten the caster lock screws on the front wheels (see Figure 4-3).

Notes:

1) A controller expansion can be installed on the right side of the 3746-900 frame.

2) Pads and studs are no more shipped with the new machines, if you did not received these parts, skip the following step.

Step f. ____ Install pads (PN 03F7783) and studs (PN 76F9365) and using a 7/8" wrench, make a leveling pad adjustment on the 3746-900. Align the frame bolt holes, remove the black shield covers if needed, and bolt the 3746-900 to the 3746-A11 using screws (PN 1621534) and spacers (PN 72F0659) (see Figure 4-1 on page 4-3).

Note: Studs (PN 76F9365) may already be installed on the frame.

Step g. ____ Reinstall the transformer cover located at the rear bottom of the 3746-900 (see Figure B-2 on page B-2).

Go to "Cabling the Power Control Cable from the 3746-900 to the 3745-X1A" on page 4-8.

3. **Installing the 3746-900 in location 3:**

Step a. ____ **From the front right side of the 3746-A12**, remove the right end cover and the bottom right bracket **C** PN 65X8885 if installed (see Figure 4-4 on page 4-7). Place the bracket and cover in a safe out-of-the-way area.

Note: To remove the end cover, loosen the four retaining screws from inside the machine, using a 5/16" socket, then lift the cover from the slotted holes on the frame and pull it outside towards you.

Step b. ____ Install the new ground plate **(PN 72F1046)** **D** .

Step c. ____ Refer to Figure 4-4 on page 4-7 if not already done **on the 3746-A12**, remove the two retaining screws and remove the right side plate PN 6496094 shown in the figure.

Step d. ____ Put the 4 spacers (PN 72F0659) in the 3746 A12 frame as shown in Figure 4-1 on page 4-3.

Step e. .____ Move the 3746-900 to its final resting position and open the front and rear doors. Tighten the caster lock screws on the front wheels (see Figure 4-3 on page 4-5).

Notes:

1) A controller expansion can be installed on the right side of the 3746-900 frame.

2) Pads and studs are no more shipped with the new machines, if you did not received these parts, skip the following step.

Step f. ____ Install pads (PN 03F7783) and studs (PN 76F9365) and using a 7/8" wrench, make a leveling pad adjustment on the 3746-900. Align the frame bolt holes, remove the black shield covers if needed, and bolt the 3746-900 to the 3746-A12 using screws (PN 1621534) and spacers (PN 72F0659) (see Figure 4-1 on page 4-3).

Note: Studs (PN 76F9365) may already be installed on the frame.

Step g. ____ Reinstall the transformer cover located at the rear bottom of the 3746-900 (see Figure B-2 on page B-2).

Go to "Cabling the Power Control Cable from the 3746-900 to the 3745-X1A" on page 4-8.

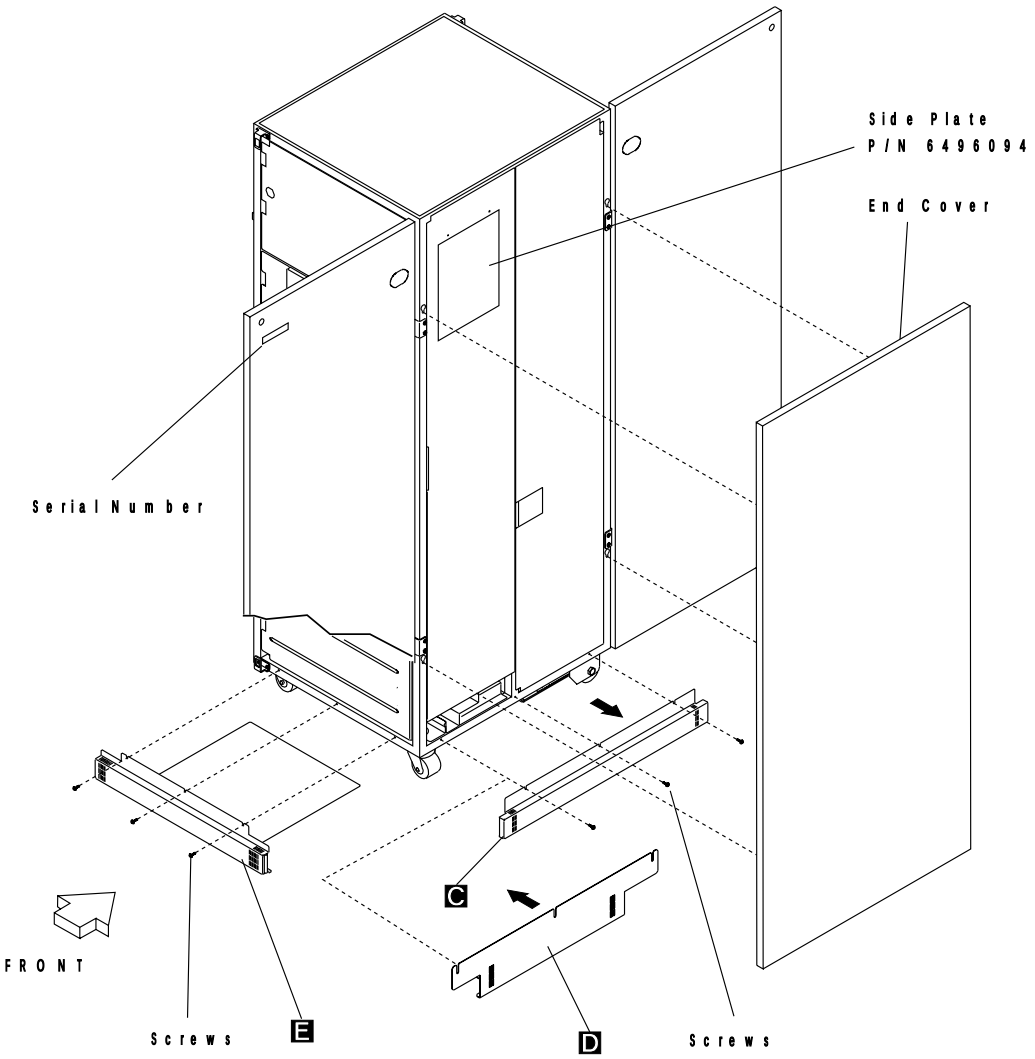


Figure 4-4. 3746-A11/A12 Expansion Unit (Front View)

Cabling the Power Control Cable from the 3746-900 to the 3745-X1A

1. **Connect the Power Control Cable (PN 03F7538) in the 3745 console tailgate as follow:**

Step a. ____ If present, remove the customer cable plugged in **4** and if necessary the console cable plugged in **6** (see Figure 4-5).

Step b. ____ Remove the console tailgate **1** from the 3745 frame by loosening the two screws **2** (see Figure 4-6 on page 4-9).

Step c. ____ Slide the cable **5** PN 03F7538 through the slot at the bottom right side of the console tailgate **1**, down to the 3745 EPO tailgate (see Figure 4-7 on page 4-9).

Step d. ____ Plug the connector **J3** to the plug **4** of the console tailgate **1** (see Figure 4-5).

Step e. ____ Install the bracket **3** on the console tailgate **1** using two screws **7** PN 1621191 (see Figure 4-6 on page 4-9).

Step f. ____ Reinstall the console tailgate **1** on the 3745 frame, tighten the two screws **2** (see Figure 4-6 on page 4-9).

Step g. ____ If removed in 1a, plug the customer cable into the connector **8** and the console cable into connector **6** (see Figure 4-6 on page 4-9).

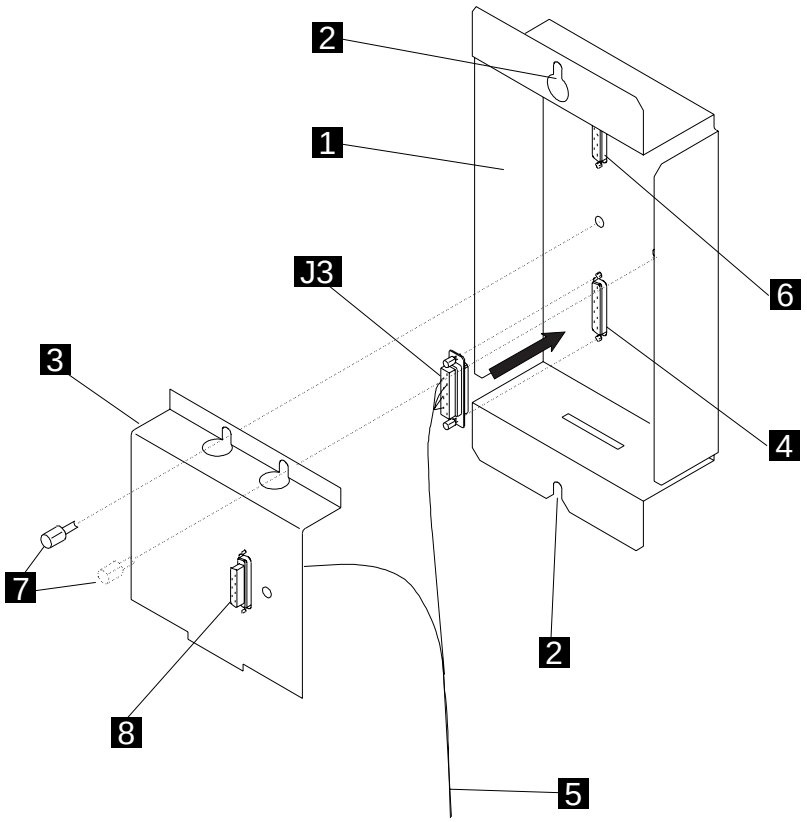


Figure 4-5. Power Control Cable Connection to the 3745 X1A Console Tailgate

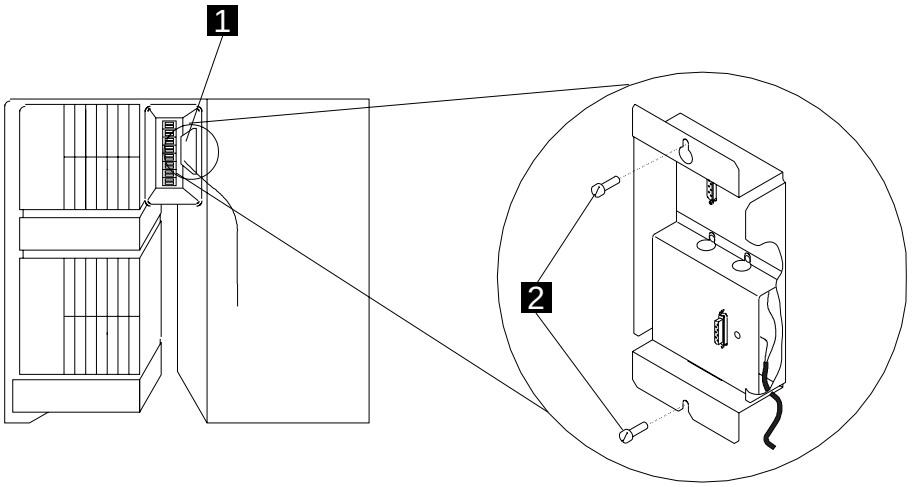


Figure 4-6. Console Tailgate of a 3745-X1A

Step h. ____ Plug the EPO connector **9** to the 3745 EPO tailgate in 01S-A0 into a free plug, any plug from **J1** to **J8** (see Figure 4-7).

Step i. ____ Connect the ground lead **10** to the plug under the EPO plug.

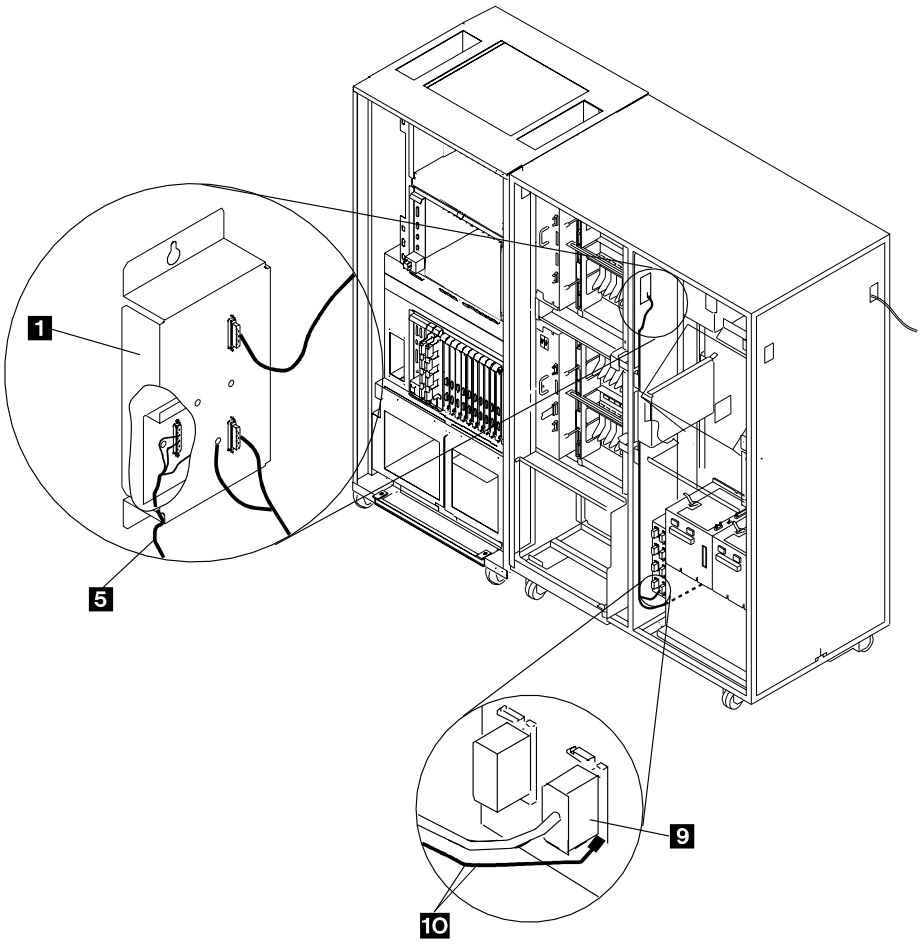


Figure 4-7. 3746-900 Power Control Cable Connection to the 3745-X1A Console Tailgate

2. **Connect the Power Control Cable (PN 03F7538) in the 3746-900 as follow:** (see Figure 4-8)

Step a. ____ If present remove the raceway cover **7** at the front bottom of the 3745 (see Figure 4-8).

Step b. ____ Go through the 3745 base frame, route the cable through the raceway at the front bottom of the 3745 base frame and up to the 3746-900 power box. (see Figure 4-8 and Figure 4-7 on page 4-9). Hold the excess length of cable in the 3745 raceway.

Step c. ____ Connect the connector **1** to 07H-A1-3745 Link of the power distribution box.

Step d. ____ Connect the connector **2** to 07K-A1-J1 of the basic power supply.

Step e. ____ Connect the connector **3** to 07J-A1-J1 of the optional power supply, or to the dummy connector **4** located on the filter box if the optional power is not installed.

Step f. ____ Secure the cable using clamps on the power supplies.

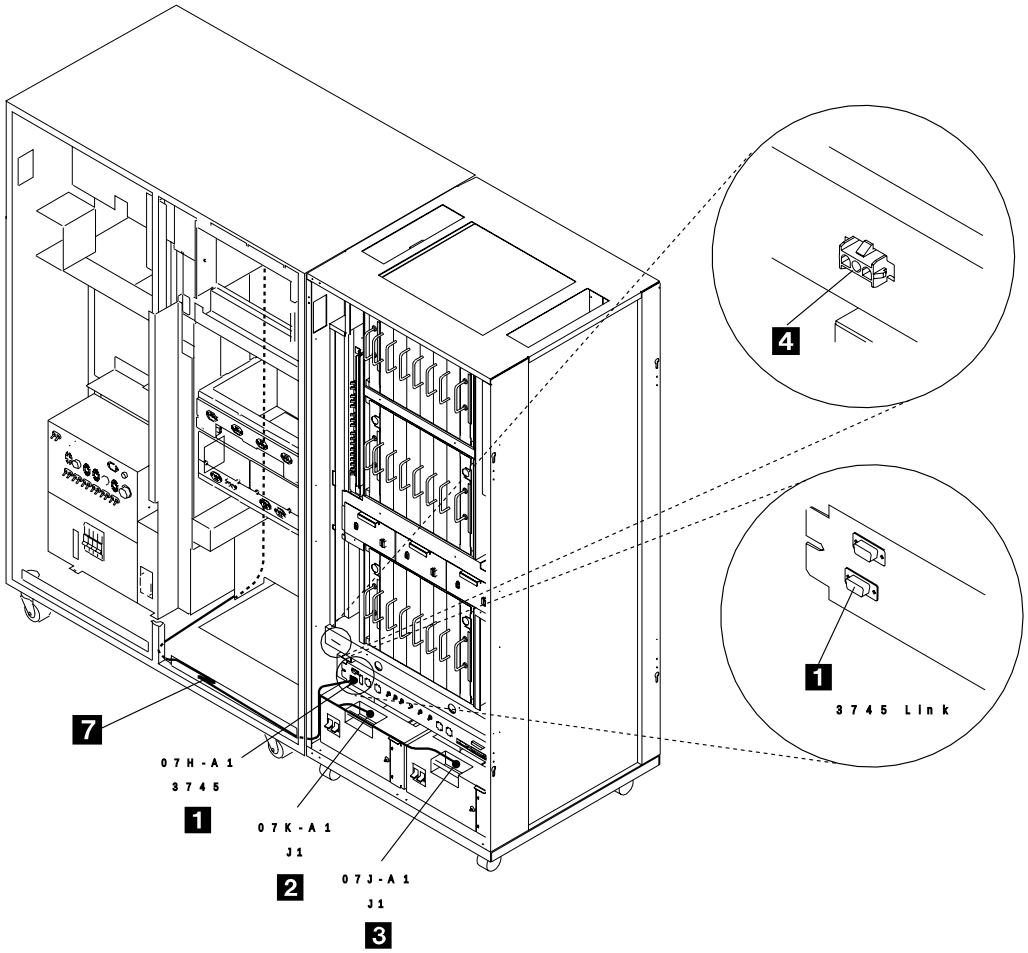


Figure 4-8. Power Control Cable Connection to the 3746-900 Power Box

Cabling the Unit Emergency Power Off (UEPO) Cable from the 3746-900 to the 3745-X1A

Step 1. ____ Plug the connector **6** of the UEPO cable (PN 76F9341) in location 07H-A1-J6 of the 3746-900 power distribution box. (refer to Figure 4-10 on page 4-12 for location)

Step 2. ____ On 3745 model 21A or 61A, remove the cover **5** in front of the CCU board.

Step 3. ____ Remove UEPO plugs from the cable leads.

Step 4. ____ Route the cable through the hole at the bottom left side of the 3746-900 (front view), along the bottom of the 3745 base frame, and up to the 3745 control panel (refer to Figure 4-10 on page 4-12).

Note: If a 3746 A11 or A12 is installed this cable is routed along the bottom of these expansion frames.

Step 5. ____ Open the 3745 control panel. Locate the unit emergency power OFF (UEPO) switch at the rear of the control panel (see Figure 4-9).

Step 6. ____ Plug the UEPO cable leads to the UEPO switch as follow:

a. **1** and **3** to **D3** and **D2**

b. **2** and **4** to **C3** and **C2**

Step 7. ____ Connect the ground cables **7** to the 3745 and 3746-900 frames using screws PN 2665527 and lockwashers PN 1622346, and store the excess of the cable in the 3746-900 frame.

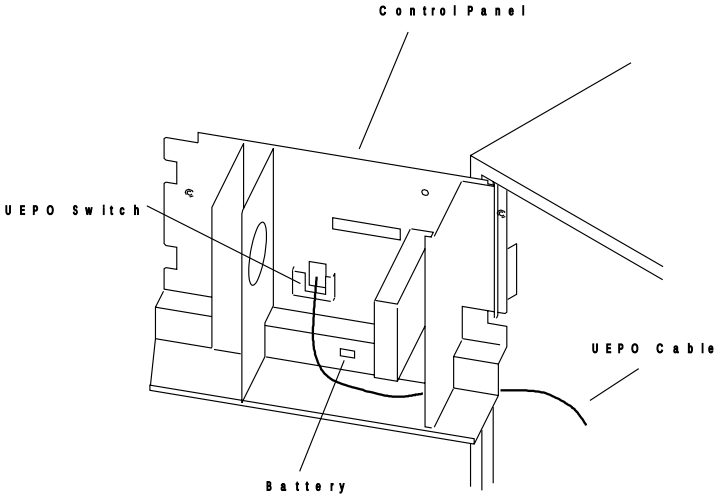


Figure 4-9. 3745-X1A Control Panel (Rear View)

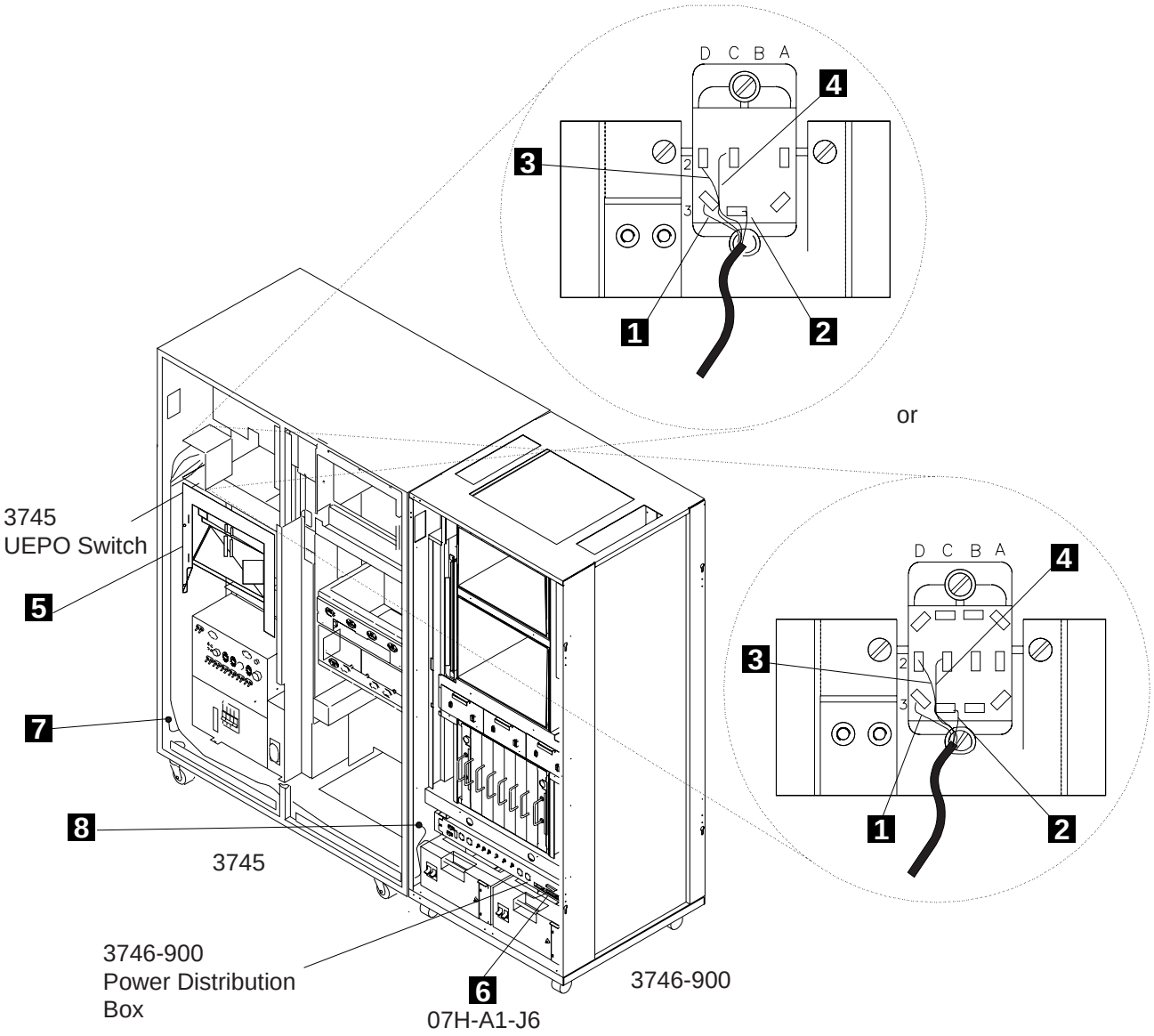


Figure 4-10. 3746-900 UEPO Cable Routing (3746-900 Attached to a 3745-X1A)

Cabling the IOC/DMA Bus Cables

Depending on the machine configuration go to the appropriate chapter.

IF THERE IS	GO TO
No 3746-A11	"Cabling the IOC/DMA Buses (3746-900 Connected to a 3745 Base Frame)" on page 4-14.
A 3746-A11 No 3746-A12	"Cabling the IOC/DMA Buses (3746-900 Connected to a 3746-A11)" on page 4-22.
A 3746-A12 A 3746-A11	"Cabling the IOC/DMA Buses (3746-900 Connected to a 3746-A12)" on page 4-32.

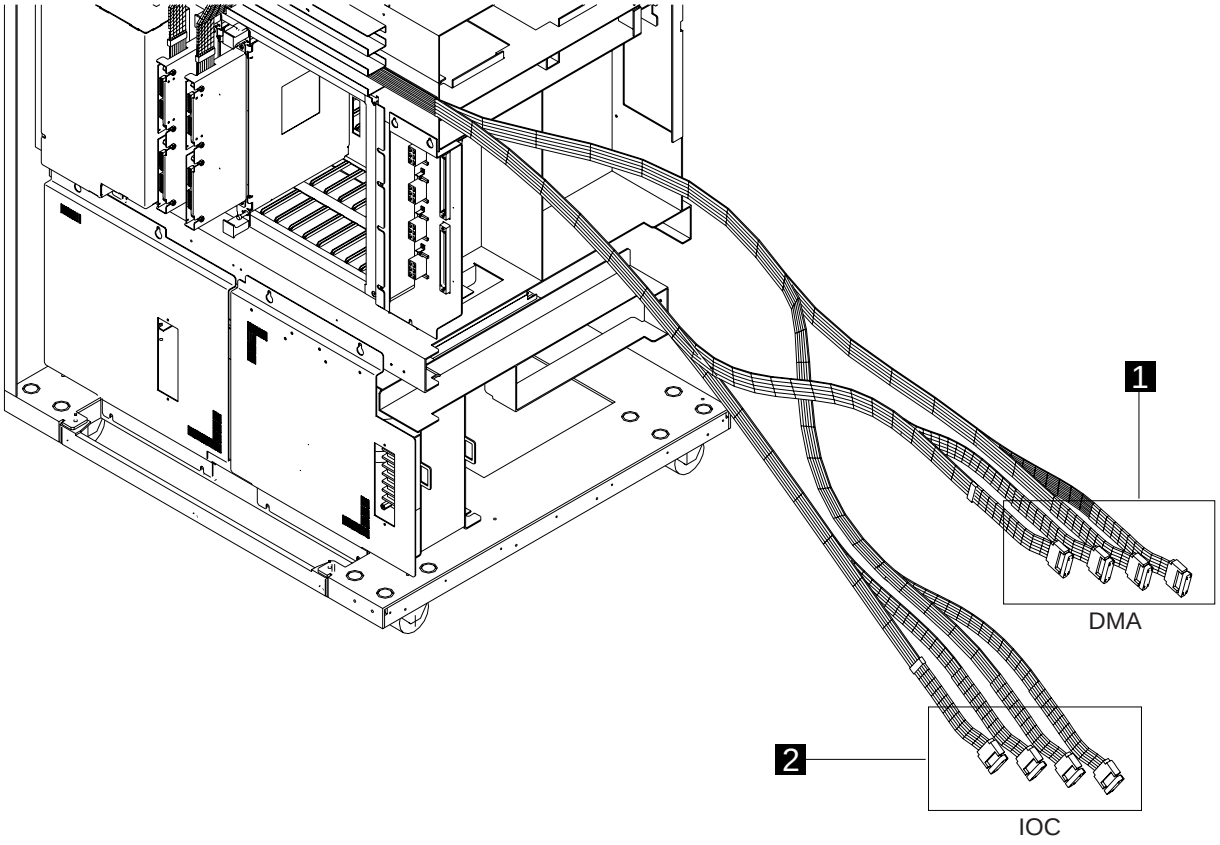


Figure 4-11. IOC and DMA Cables

Cabling the IOC/DMA Buses (3746-900 Connected to a 3745 Base Frame)

Symbol		Designation	From (in 3746-900)	To (in 3745)
CBC-1	2	IOC Bus IOC Bus	07N-A1-E1-P1 07N-A1-E1-P2	01G-A1X04 01G-A1X05
	1	DMA Bus DMA Bus	07N-A1-E1-P3 07N-A1-E1-P4	01G-A1W04 01G-A1W05
CBC-2	2 see notes	IOC Bus IOC Bus	07N-A1-G1-P1 07N-A1-G1-P2	01G-A1X02 01G-A1X03
	1 see notes	DMA Bus DMA Bus	07N-A1-G1-P3 07N-A1-G1-P4	01G-A1W02 01G-A1W03

Figure 4-12. IOC/DMA Bus Connections when the 3746-900 is Connected to a 3745 Base Frame

Notes:

1. In all cases, 8 cables must be plugged into the 3745/3746.
2. When CBC 2 is not present, these IOC and DMA cables are plugged into the terminator card (TERC) see Figure B-10 on page B-8.

Line Adapter IOC Bus Cabling

Step 1. ____ At the top right front of the 3745, locate the LAB1 board in 01G-A1 (see Figure C-1 on page C-2 for location) open the upper black cover.

Step 2. ____ Use the ESD kit, or the ESD mat fitted inside the door and remove cards and crossovers, if any, from the U and V positions on the board (these cards may be dummy cards). Put the removed cards in their protective bags, or place them on the ESD mat. Remove the terminator cards in 01G-A1W02, if any, and 01G-A1X02.

Note: Store cards in a safe place, they could be reused if the 3746-900 is disconnected.

Step 3. ____ Determine the type of the LAB1 board. The first LAB in the machine at location 01G-A1 can be either a TSST or TSSB type.
A LAB type TSSB can be identified by the presence of a board address card in 01G-A1-B2. This is a small single-position wide card. If a four-wide card or no card is present, then the board is a TSST type.
If you have a **TSSB** board obtain the DICO **cable 1** PN 43G3180, for a **TSST** board obtain **cable 2** PN 43G3181 (see Figure 4-13).

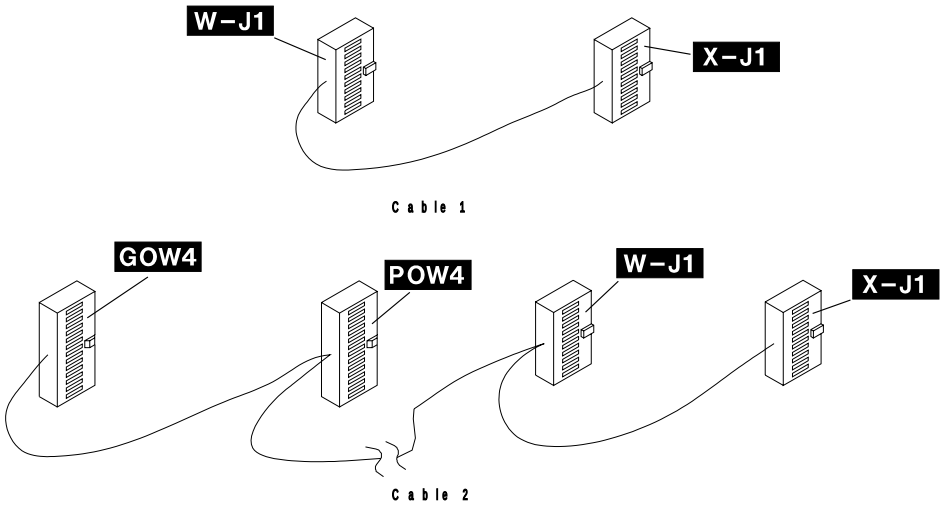


Figure 4-13. DICO Cables

Step 4. ____ Take a DICO card (PN 17G6080) , remove the four interposers plugged on top of the card , and while holding the card in your hand, plug the DICO cable 1 (or 2) lead **X-J1** to connector **5** of the DICO card PN 17G6080 (see Figure 4-14 or Figure 4-15).

Step 5. ____ Plug the DICO cable 1 (or 2) lead **W-J1** to connector **5** of the other DICO card PN 17G6080

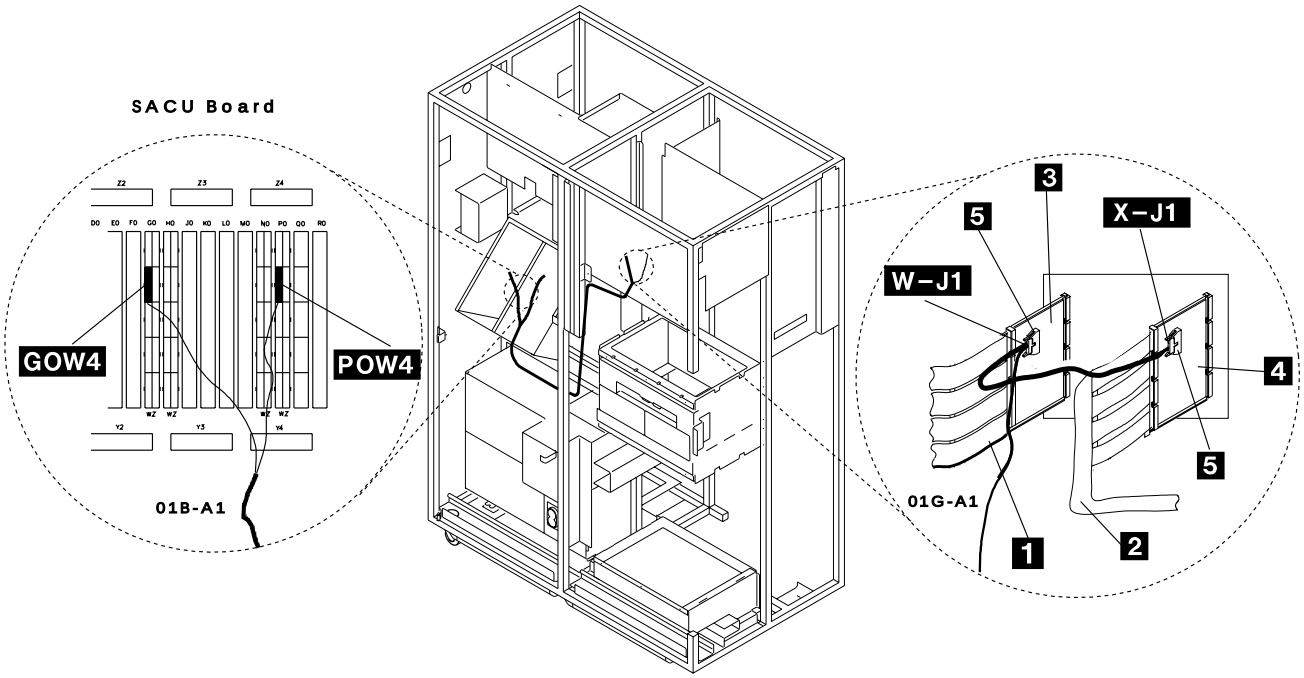


Figure 4-14. Cable 2 (PN 43G3181) Routing on a TSST Board

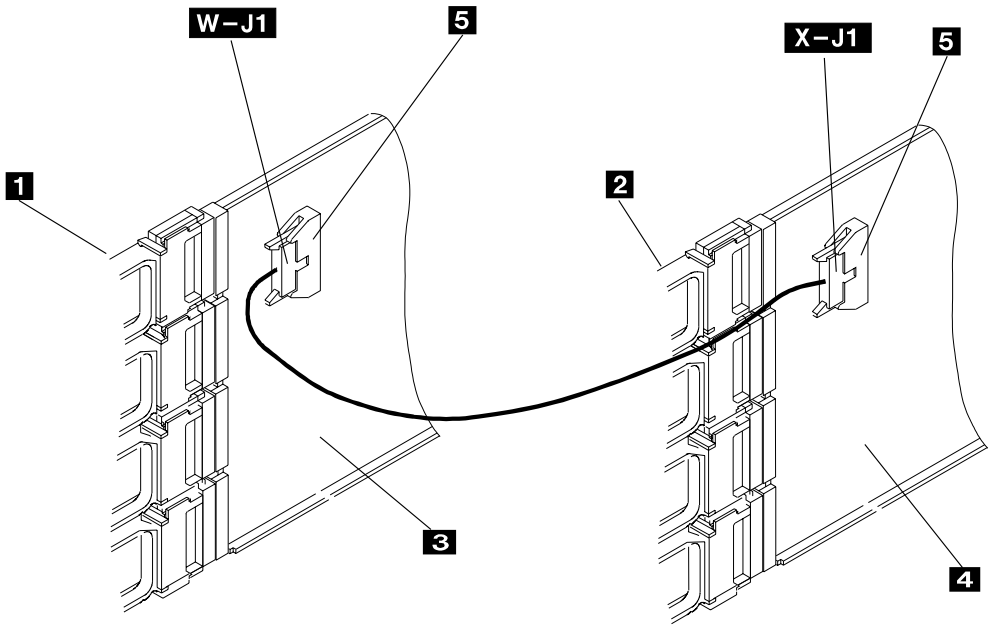


Figure 4-15. Cable 1 (PN 43G3180) Routing on a TSSB board

Step 6. ____ Position the DICO card **4** in location 01G-A1 X02, and the DICO card **3** in location 01G-A1 W02 (see Figure 4-14 on page 4-16 when plugging the card into a TSST board or see Figure 4-15 on page 4-16 when plugging the card into a TSSB board).
Warning: Make sure that the DICO cards are plugged in the right positions to ensure a proper bus continuity.

a. The DICO card **4**, plugged in **location 01G-A1 X02** must be the card where you plugged **connector X-J1** in step 4 on page 4-16.

b. The other DICO card **3**, plugged in **location 01G-A1 W02** is the card where you plugged **connector W-J1** (the other lead of the DICO cable).

Step 7. ____ Then, using a dummy card **2** PN 2733278 push and put the DICO cards **1** in place (see Figure 4-16).

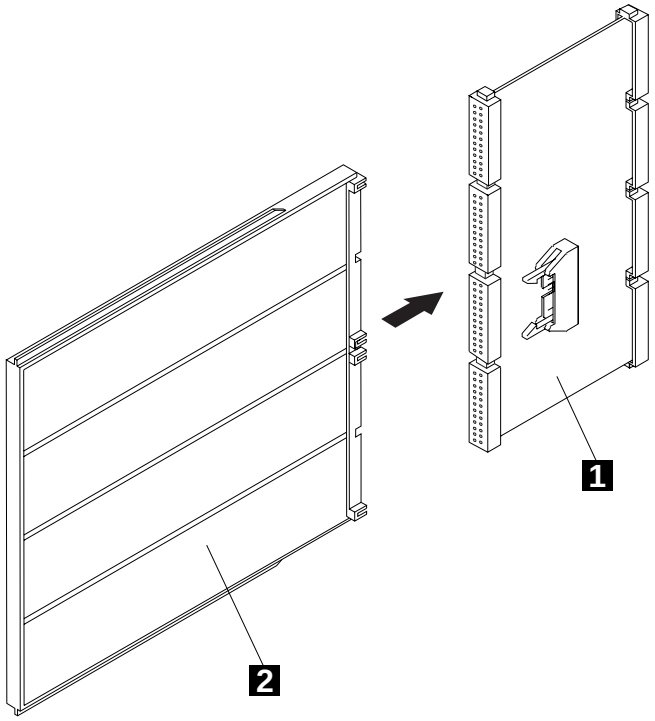


Figure 4-16. Installing a DICO Card Using a Dummy Card

If you are installing a cable PN 43G3180 go to step 12 on page 4-18

Step 8. ____ If you are installing a cable PN 43G3181 (from the TSST board) route this cable to the SACU control board. (refer to Figure 4-14 on page 4-16).

Step 9. ____ Open the cover to gain access to the SACU board

Step 10. ____ Using the tool PN 71F9877 remove the dummy connectors in locations POW4 and GOW4 of the SACU board (see Figure 4-17 on page 4-18).

Step 11. ____ Plug the connectors **P0W4** and **G0W4** in these locations.

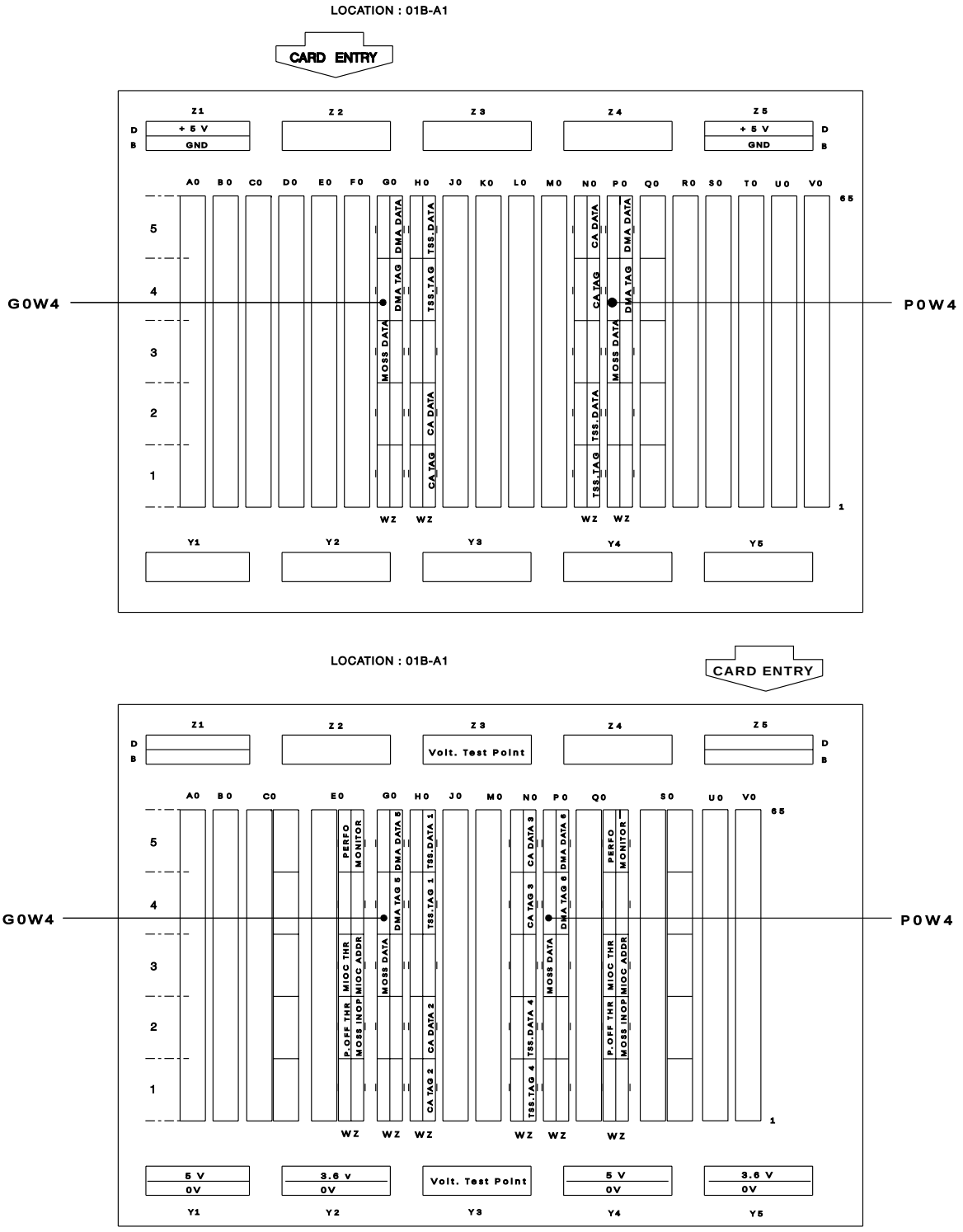


Figure 4-17. SACU Boards for 3745 Model 21A or 41A (Top) 31A or 61A (Bottom)

Step 12. ____ In the 3746-900, locate the four IOC flat cables **2** (see Figure 4-11 on page 4-13). Cables **2** should be labeled: To 3745 X02, X03, X04, and X05.

Step 13. ____ Unroll and route cables **1** and **2** through the upper side windows from the 3746-900 to the 3745 at board 01G-A1 (see Figure 4-18).
Fold the IOC cables **2** going to X02, X03, X04 and X05 according to the **red** fold marks on these cables.

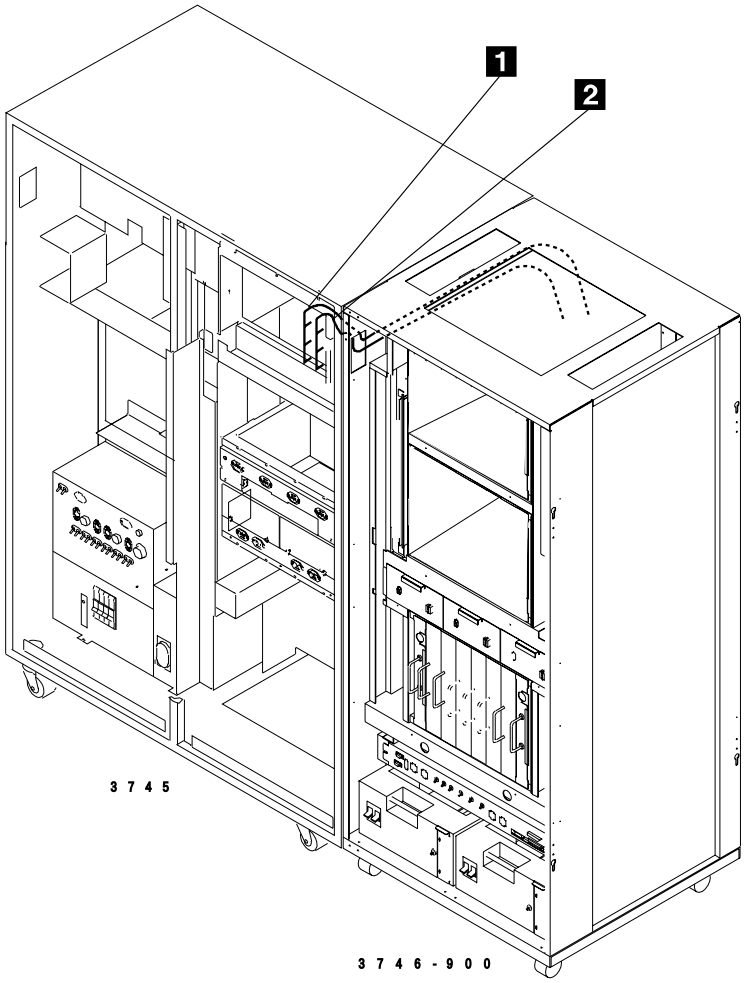


Figure 4-18. Routing of the IOC and DMA Cables From the 3746-900 to the 3745 Base Frame

Step 14. ____ Install short retainers **5** (PN 1953188) and four interposers **6** on the IOC bus cables **2** Make sure the interposers are seated completely flush with the connectors on the cables as it takes considerable pressure to seat them properly (see Figure 4-19).

Step 15. ____ Plug the cables **2** on the top of the DICO card into their respective positions from X02 to X05.

Step 16. ____ Maintain cables in raceways using retainers **3** (PN 0813519) see Figure 4-19. They will be definitively clamped when the DMA cables will be installed in the next chapter.

Step 17. ____ Secure the cable extenders using an intermix bracket **4** (PN 1953110) see Figure 4-19.

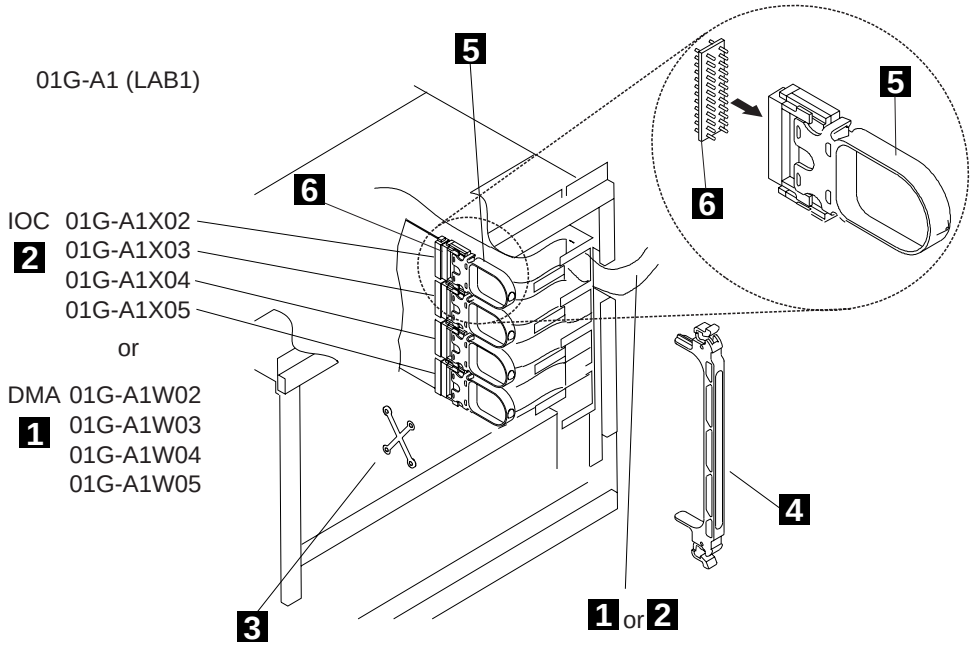


Figure 4-19. DMA and Line Adapter IOC Bus Cable Routing in the 3745 LAB1 Board

Go to "Direct Memory Access (DMA) Bus Cabling" on page 4-21.

Direct Memory Access (DMA) Bus Cabling

Step 1. ____ In the 3745, locate the four DMA flat cables **1** (see Figure 4-18 on page 4-19). Cables **1** should be labeled: To 3745 W02, W03, W04, and W05.

Step 2. ____ Fold the DMA cables according to fold marks.

Step 3. ____ Install short retainers **5** (PN 1953188) and four interposers **6** on the DMA bus cables. Make sure the interposers are seated completely flush with the connectors on the cables as it takes considerable pressure to seat them properly (see Figure 4-19 on page 4-20).

Step 4. ____ Remove the clamps **3** used to maintain the IOC cables.

Step 5. ____ Plug the DMA cables **1** on the top of the DICO card into their respective positions from W02 to W05.

Step 6. ____ Clamp cables in raceways using retainers **3** (PN 0813519) see Figure 4-19 on page 4-20.

Step 7. ____ Secure the cable extenders using an intermix bracket **4** (PN 1953110) see Figure 4-19 on page 4-20.

Step 8. ____ Re-install the cards removed in step 2 on page 4-15, in positions U and V, and any crossovers (if needed, refer to the *Maintenance Information Procedures,* SY33-2054, for crossover setting). Hold the excess length of the cables in the 3746-900 frame.

Go to "Plugging the Active and Passive Bypass Cards and Connecting the +5 V Cables" on page 4-41.

Cabling the IOC/DMA Buses (3746-900 Connected to a 3746-A11)

Symbol		Designation	From (in 3746-900)	To (in 3745/46)
CBC-1	2	IOC Bus IOC Bus	07N-A1-E1-P1 07N-A1-E1-P2	02A/02F-A1X04 (1) 02A/02F-A1X05 (1)
	1	DMA Bus DMA Bus	07N-A1-E1-P3 07N-A1-E1-P4	01G-A1W04 01G-A1W05
CBC-2	2 see notes	IOC Bus IOC Bus	07N-A1-G1-P1 07N-A1-G1-P2	02A/02F-A1X02 (1) 02A/02F-A1X03 (1)
	1 see notes	DMA Bus DMA Bus	07N-A1-G1-P3 07N-A1-G1-P4	01G-A1W02 01G-A1W03

Figure 4-20. IOC/DMA Bus Connections when the 3746-900 is Connected to a 3746-A11

Note: (1) Depending on the configuration, plug the **IOC** cables 2 in the following locations:

- If **LAB 3** is **not installed**, 02A-A1X02, X03, X04, X05 and refer to Figure 4-21 on page 4-23
- If **LAB 3** is **installed**, 02F-A1X02, X03, X04, X05 and refer to Figure 4-22 on page 4-24 and Figure 4-23 on page 4-24

Notes:

1. In all cases, 8 cables must be plugged into the 3745/3746.
2. When CBC 2 is not present, these IOC and DMA cables are plugged into the terminator card (TERC) see Figure B-10 on page B-8.

Line Adapter IOC Bus Cabling

At the top rear of the 3746-A11, check if board 02F-A1 (LAB3) is present (see Figure C-4 on page C-3 for location). If the LAB3 board is not installed on the 3746-A11, route the IOC cables to the LAB2 board in 02A-A1 on the 3746-A11 front side.

Step 1. ____ At the top rear of the 3746-A11, locate the LAB3 board in 02F-A1 (or 02A-A1 if no LAB3) and open the board cover. (See Figure C-4 on page C-3 for location.)

Step 2. ____ Use the ESD kit (refer to the *Maintenance Information Procedures*, SY33-2054) and remove cards and crossovers, if any, from the U, V, W positions on board 02F-A1 or 02A-A1 if no LAB3 (these cards may be dummy cards). Put the removed cards in their protective bags or on the ESD mat. Remove the terminator card from 02F-A1X02 (or 02A-A1X02 if no LAB3).

Note: Put the cards in the shipping group. They will be reused if the 3746-900 is removed.

Step 3. ____ In the 3746-900, locate the four IOC flat cables **2** . (see Figure 4-11 on page 4-13). These cables should be labeled: to 3745 X02, X03, X04, and X05.

Step 4. ____ Unroll and route the IOC cables **2** through the upper side windows from the 3746-900 to the rear of the 3746-A11 unit (see Figure 4-23 on page 4-24) or to the front of the 3746-A11 unit if no LAB3 (see Figure 4-21).
Cables run across the bottom and in the right front of the 02F-A1 board or 02A-A1 if no LAB3, see Figure 4-24 on page 4-25. Fold the cables according to the **black** fold marks.

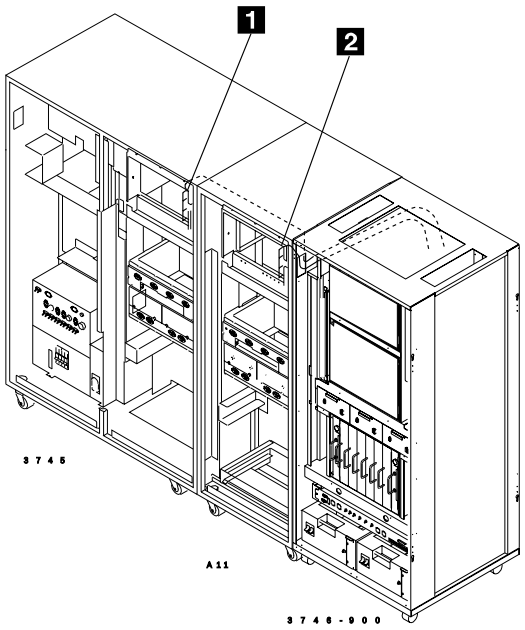


Figure 4-21. Cabling from the 3746-900 to the 3745 and 3746-A11 (IOC to LAB2, DMA to LAB1) (Front View)

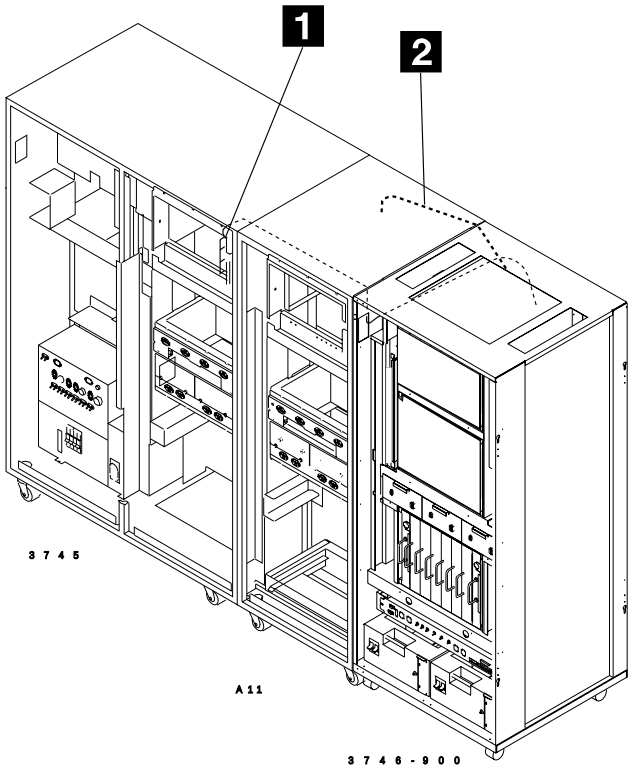


Figure 4-22. Cabling from the 3746-900 to the 3745 and 3746-A11 (IOC to LAB3, DMA to LAB1) (Front View)

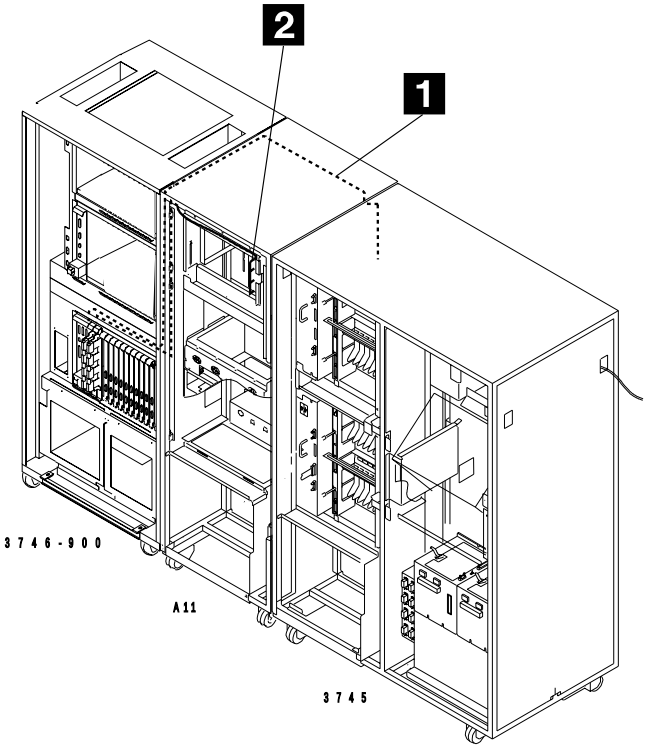


Figure 4-23. Cabling from the 3746-900 to the 3745 and 3746-A11 (IOC to LAB3, DMA to LAB1) (Rear View)

Step 5. ____ Plug the IOC cables **2** into their respective sockets 02F-A1 X02 to X05 or 02A-A1 X02 to X05 if no LAB3. Secure the cable extenders using an intermix bracket (PN 1953110), and secure them in the raceway using cross retainers (PN 0813519) (See Figure 4-24 on page 4-25.)

Step 6. ____ Re-install the cards removed in step 2 on page 4-23, and any crossovers, in positions U, V, W (if needed, refer to the *Maintenance Information Procedures,* SY33-2054, for crossover setting).

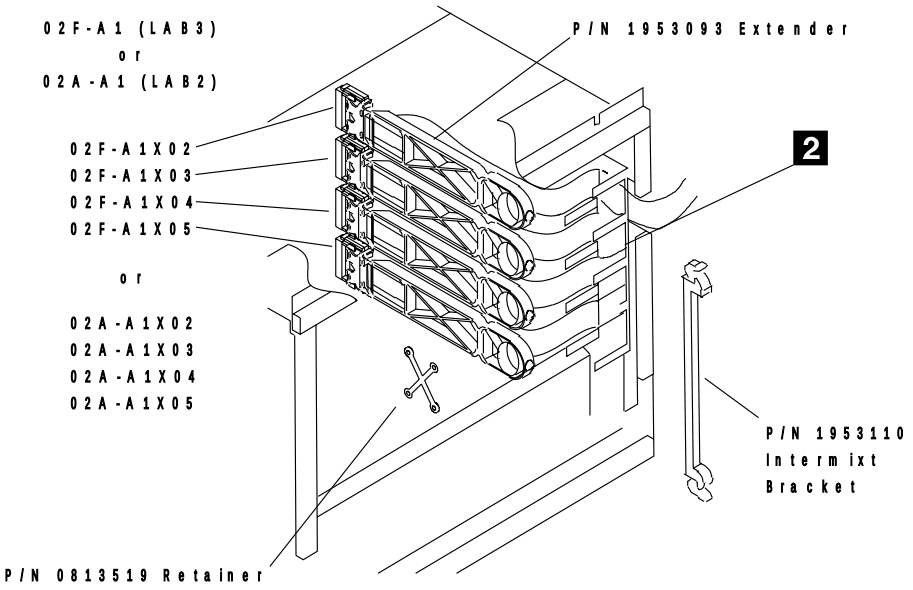


Figure 4-24. Line Adapter IOC Bus Cable Routing in the 3746-A11

Go to "Direct Memory Access (DMA) Bus Cabling" on page 4-26.

Direct Memory Access (DMA) Bus Cabling

Step 1. ____ At the top right front of the 3745, locate the LAB1 board in 01G-A1 (see Figure C-1 on page C-2 for location) and remove the upper cover.

Step 2. ____ Use the ESD kit, or the ESD mat fitted inside the door and remove cards and crossovers, if any, from the U and V positions on the board (these cards may be dummy cards). Put the removed cards in their protective bags, or place them on the ESD mat. Remove the terminator card in 01G-A1W02 and the cables in 01G-A1X02, X03, X04, and X05. Remove the long retainers from the cables.

Note: Store the cards in a safe place, they could be reused if the 3746-900 is disconnected.

Step 3. ____ Determine the type of the LAB1 board. The first LAB in the machine at location 01G-A1 can either be a TSST or TSSB type. A LAB type TSSB can be identified by the presence of a board address card in 01G-A1-B2. This is a small single-position wide card. If a four-wide card or no card is present, then the board is a TSST type. If you have a **TSSB** board obtain the DICO **cable 1** PN 43G3180, for a TSST board obtain **cable 2** PN 43G3181 (see Figure 4-25).

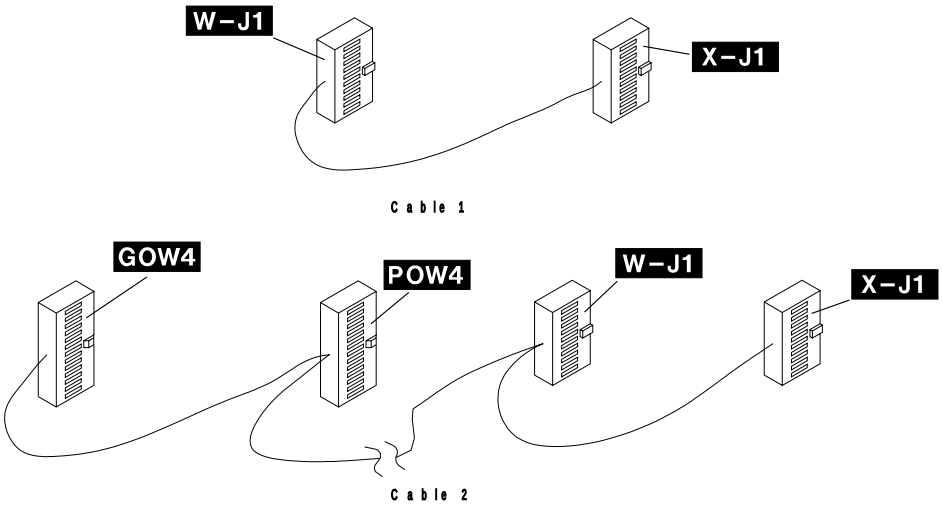


Figure 4-25. DICO Cables

Step 4. ____ Take a DICO card (PN 17G6080) , remove the four interposers plugged on top of the card , while holding the card in your hand, plug the DICO cable 1 (or 2) lead **X-J1** to connector **5** of the DICO card PN 17G6080. (see Figure 4-26 or Figure 4-27).

Step 5. ____ Plug cable 1 (or 2) lead **W-J1** to connector **5** of the other DICO card PN 17G6080.

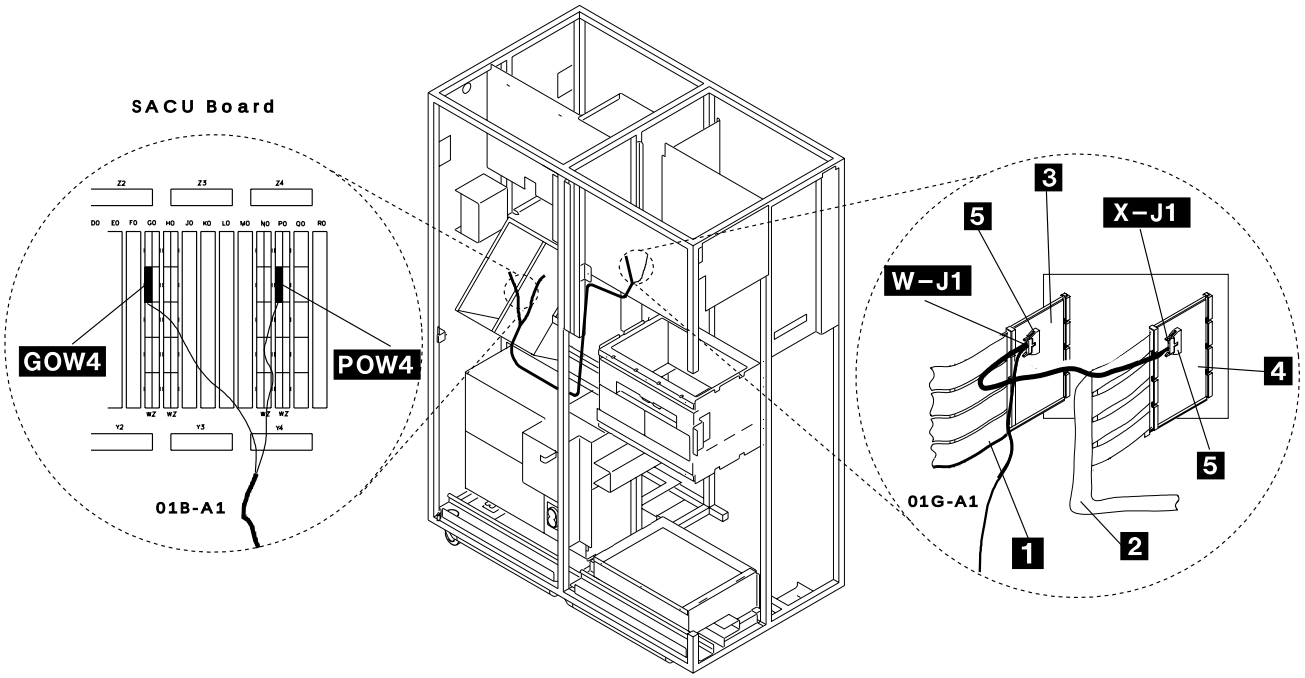


Figure 4-26. Cable 2 (PN 43G3181) Routing on a TSST Board

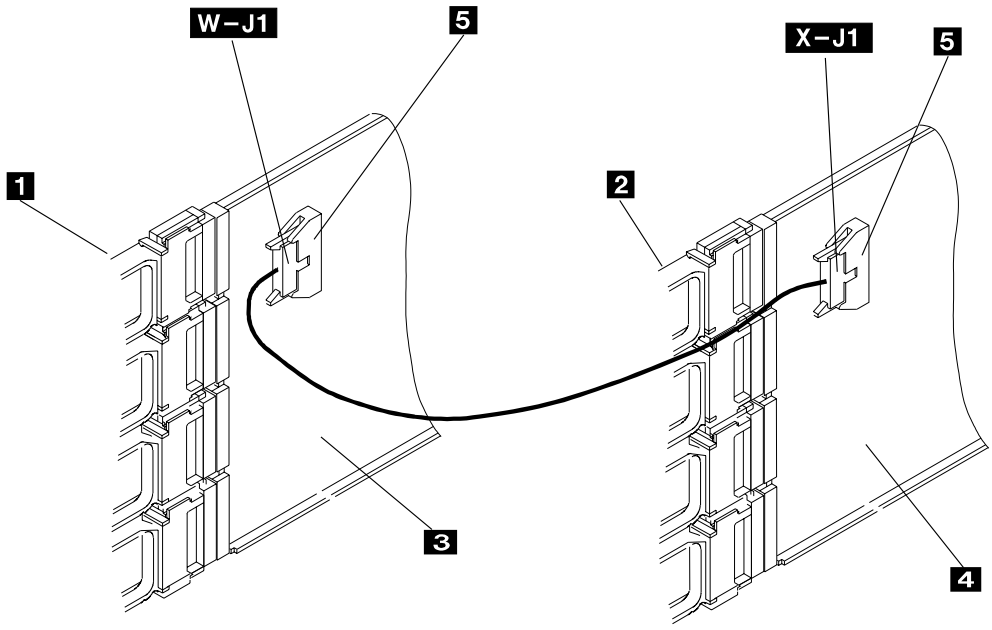


Figure 4-27. Cable 1 (PN 43G3180) Routing on a TSSB board

Step 6. ____ Position the DICO card **4** in location 01G-A1 X02, and the DICO card **3** in location 01G-A1 W02 (see Figure 4-26 on page 4-27 when plugging the card into a TSST board or see Figure 4-27 on page 4-27 when plugging the card into a TSSB board).
Warning: Make sure that the DICO cards are plugged in the right positions to ensure a proper bus continuity.

a. The DICO card **4**, plugged in **location 01G-A1 X02** must be the card where you plugged **connector X-J1** in step 4 on page 4-16.

b. The other DICO card **3**, plugged in **location 01G-A1 W02** is the card where you plugged **connector W-J1** (the other lead of the DICO cable).

Step 7. ____ Then, using a dummy card **2** PN 2733278 push and put the DICO cards **1** in place (see Figure 4-28).

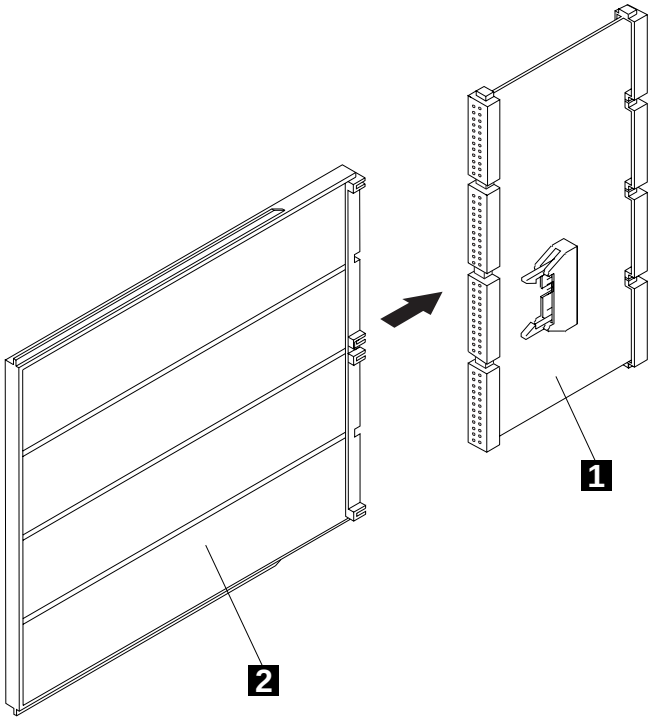


Figure 4-28. Installing a DICO Card Using a Dummy Card

If you are installing a cable PN 43G3180 go to step 12 on page 4-30

Step 8. ____ If you are installing a cable PN 43G3181 (from the TSST board) route this cable to the SACU control board. (refer to Figure 4-14 on page 4-16).

Step 9. ____ Open the cover to gain access to the SACU board

Step 10. ____ Using the tool PN 71F9877 remove the dummy connectors in locations POW4 and GOW4 of the SACU board (see Figure 4-29 on page 4-29).

Step 11. ____ Plug the connectors **P0W4** and **G0W4** in these locations

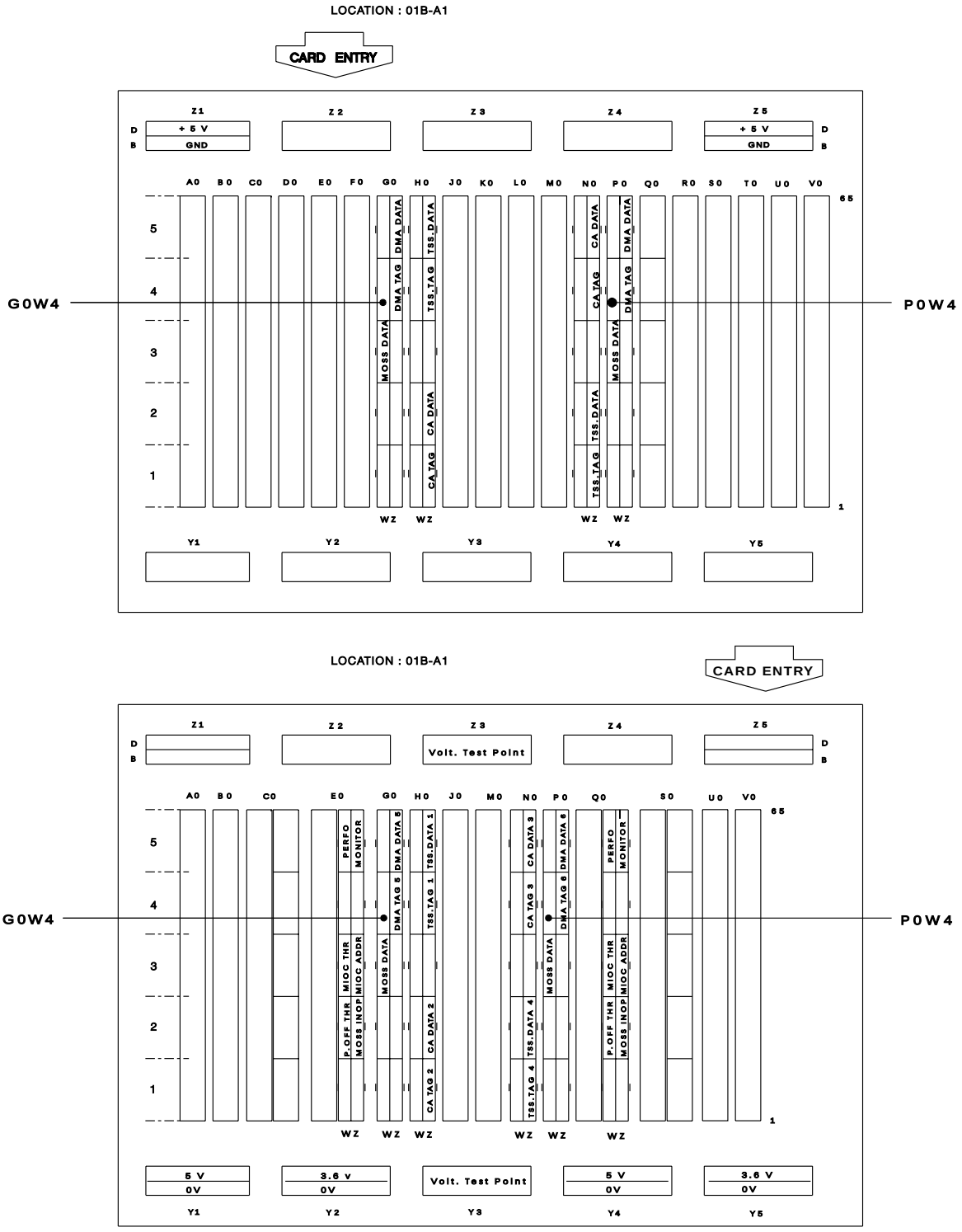


Figure 4-29. SACU Boards for 3745 Model 21A or 41A (Top) 31A or 61A (Bottom)

Step 12. ____ Install short retainers **5** (PN 1953188) and four interposers **6** on the IOC bus cables **2** removed from 01G-A1 X02, X03, X04, and X05. Make sure the interposers are seated completely flush with the connectors on the cables as it takes considerable pressure to seat them properly (see Figure 4-30).

Step 13. ____ Refold to the appropriate length and plug the cables on the top of the DICO card into their respective positions from X02 to X05.

Step 14. ____ Secure the cable extenders using an intermix bracket **4** PN 1953110.

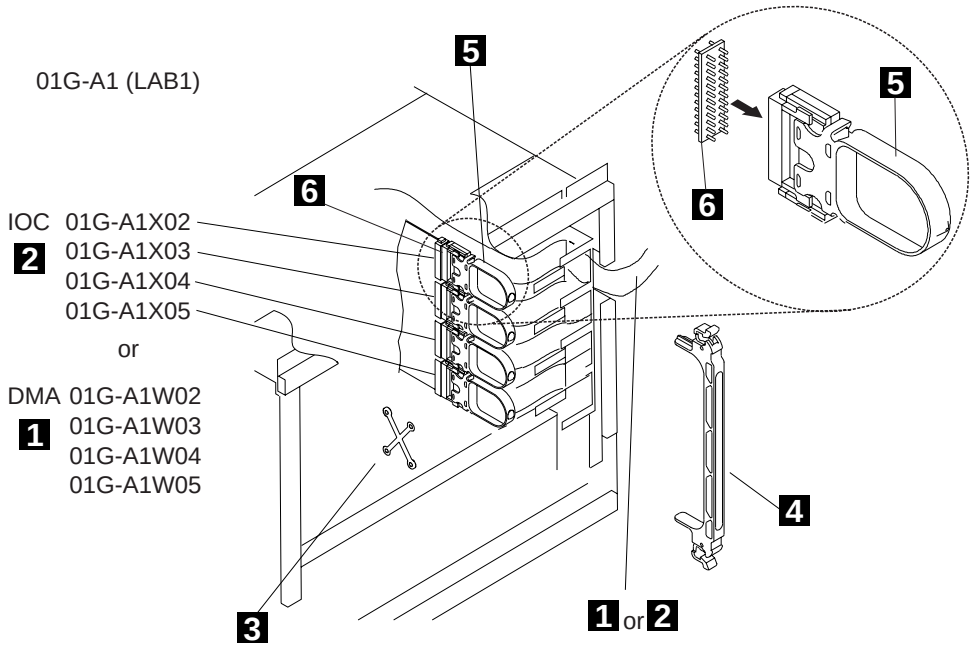


Figure 4-30. Plugging of the DMA and IOC Cables in LAB1

Step 15. ____ In the 3746-900, locate the four DMA flat cables **1** (see Figure 4-11 on page 4-13). Cables **1** should be labeled: To 3745 W02, W03, W04, and W05.

Step 16. ____ Unroll and route these DMA cables through the upper side windows and through the 3746-A11 from the 3746-900 to the 3745 board 01G-A1 (see Figure 4-22 on page 4-24). Fold the DMA cables going to W02, W03, W04 and W05 according to the fold marks on these cables.

Step 17. ____ Install short retainers **5** (PN 1953188) and four interposers **6** on the DMA bus cables. Make sure the interposers are seated completely flush with the connectors on the cables as it takes considerable pressure to seat them properly (see Figure 4-30).

Step 18. ____ Plug the DMA cables **1** on the top of the DICO card into their respective positions from W02 to W05.

Step 19. ____ Clamp cables in raceways using retainers **3** (PN 0813519) see Figure 4-30.

Step 20. ____ Secure the cable extenders using an intermix bracket **4** (PN 1953110) see Figure 4-19 on page 4-20.

Step 21. ____ Re-install the cards removed in step 2 on page 4-26, in positions U and V, and any crossovers (if needed, refer to the *Maintenance Information Procedures,* SY33-2054, for crossover setting). Hold the excess length of the cables in the 3746-900 frame.

Go to "Plugging the Active and Passive Bypass Cards and Connecting the +5 V Cables" on page 4-41.

Cabling the IOC/DMA Buses (3746-900 Connected to a 3746-A12)

	Symbol	Designation	From (in 3746-900)	To (in 3745/46)
CBC-1	2	IOC Bus IOC Bus	07N-A1-E1-P1 07N-A1-E1-P2	03F-A1X04 03F-A1X05
	1	DMA Bus DMA Bus	07N-A1-E1-P3 07N-A1-E1-P4	01G-A1W04 01G-A1W05
CBC-2	2 see notes	IOC Bus IOC Bus	07N-A1-G1-P1 07N-A1-G1-P2	03F-A1X02 03F-A1X03
	1 see notes	DMA Bus DMA Bus	07N-A1-G1-P3 07N-A1-G1-P4	01G-A1W02 01G-A1W03

Figure 4-31. IOC/DMA Bus Connections when the 3746-900 is Connected to a 3746-A12

Notes:

1. In all cases, 8 cables must be plugged into the 3745/3746.
2. When CBC 2 is not present, these IOC and DMA cables are plugged into the terminator card (TERC) see Figure B-10 on page B-8.

Line Adapter IOC Bus Cabling

Step 1. ____ At the top right rear of the 3746-A12, locate the LAB4 board in 03F-A1 (see Figure C-5 on page C-4 for location) and remove the upper cover. Using a screwdriver, pry off the EMC gasket from the right side of the board enclosure (see Figure 4-34 on page 4-35).

Step 2. ____ Use the ESD kit, or the ESD mat fitted inside the door and remove cards and crossovers, if any, from the U and V positions on the board (these cards may be dummy cards). Put the removed cards in their protective bags, or place them on the ESD mat. Remove the terminator cards in 03F-A1W02, if any, and 03F-A1X02.

Note: Store the cards in a safe place, they could be reused if the 3746-900 is disconnected.

Step 3. ____ In the 3746-900, locate the four IOC flat cables **2** (see Figure 4-11 on page 4-13). Cables **2** should be labeled: To 3745 X02, X03, X04, and X05.

Step 4. ____ Unroll and route these IOC cables **2** through the upper side windows from the 3746-900 to the 3746-A12 at board 03F-A1 (see Figure 4-33 on page 4-34). Fold the cables going to X02, X03, X04 and X05 according to the **black** fold marks on these cables. Clamp cables in raceways using retainers PN 0813519 (see Figure 4-34 on page 4-35). Plug cables **2** into their respective positions.

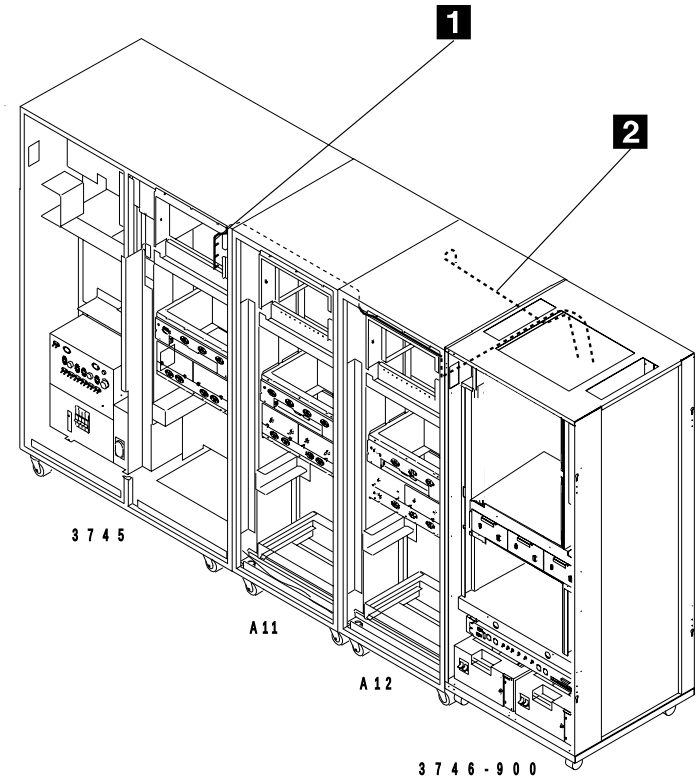


Figure 4-32. Cabling From the 3746-900 to the 3745 and 3746-A12 (Front View)

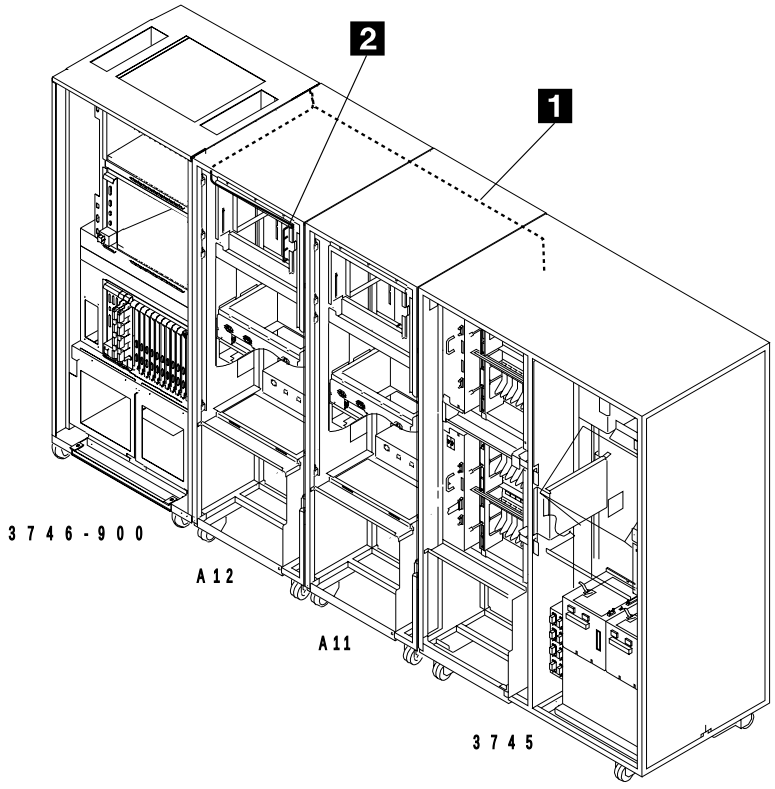


Figure 4-33. Cabling From the 3746-900 to the 3745 and 3746-A12 (Rear View)

Step 5. ____ Secure the cable extenders using an intermix bracket PN 1953110 (see Figure 4-34). On the board's right side, re-install the EMC gasket previously removed.

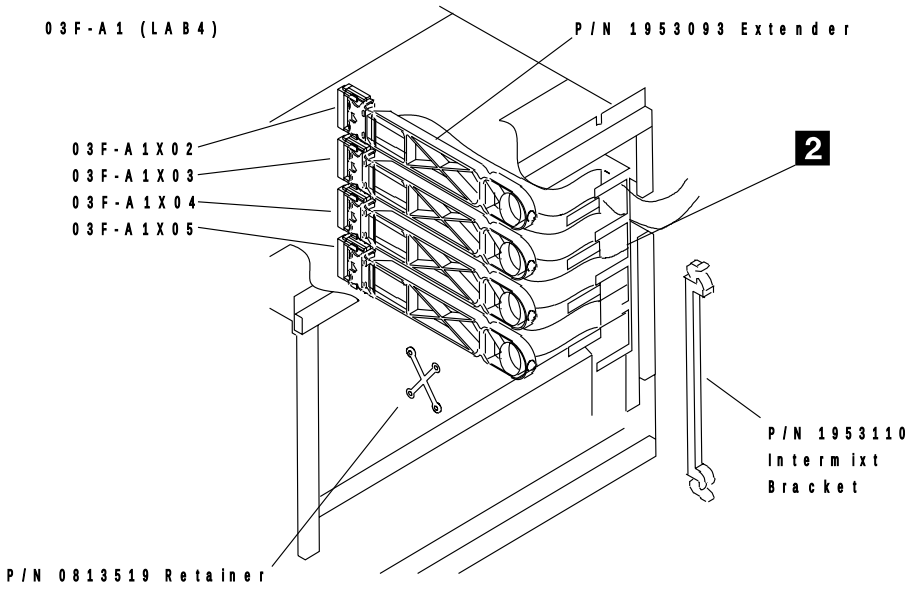


Figure 4-34. IOC Bus Cable Routing in the 3746-A12

Step 6. ____ Re-install the cards removed in step 2 on page 4-33, and any crossovers, in positions U, V, W (if needed, refer to the *Maintenance Information Procedures,* SY33-2054, for crossover setting).

Go to "Direct Memory Access (DMA) Bus Cabling" on page 4-36.

Direct Memory Access (DMA) Bus Cabling

Step 1. ____ At the top right front of the 3745, locate the LAB1 board in 01G-A1 (see Figure C-1 on page C-2 for location) and remove the upper cover. Using a screwdriver, pry off the EMC gasket from the right side of the board enclosure (see Figure 4-19 on page 4-20).

Step 2. ____ Use the ESD kit, or the ESD mat fitted inside the door and remove cards and crossovers, if any, from the U and V positions on the board (these cards may be dummy cards). Put the removed cards in their protective bags, or place them on the ESD mat. Remove the terminator card in 01G-A1W02, if any and the cables in 01G-A1X02, X03, X04, and X05. Remove the long retainers from the cables.

Note: Put the cards in the shipping group. They will be reused if the 3746-900 is removed.

Step 3. ____ Determine the type of the LAB1 board. The first LAB in the machine at location 01G-A1 can be either a TSST or TSSB type.
A LAB type TSSB can be identified by the presence of a board address card in 01G-A1-B2. This is a small single-position wide card. If a four-wide card or no card is present, then the board is a TSST type.
If you have a **TSSB** board obtain the DICO **cable 1** PN 43G3180, for a TSST board obtain **cable 2** PN 43G3181.

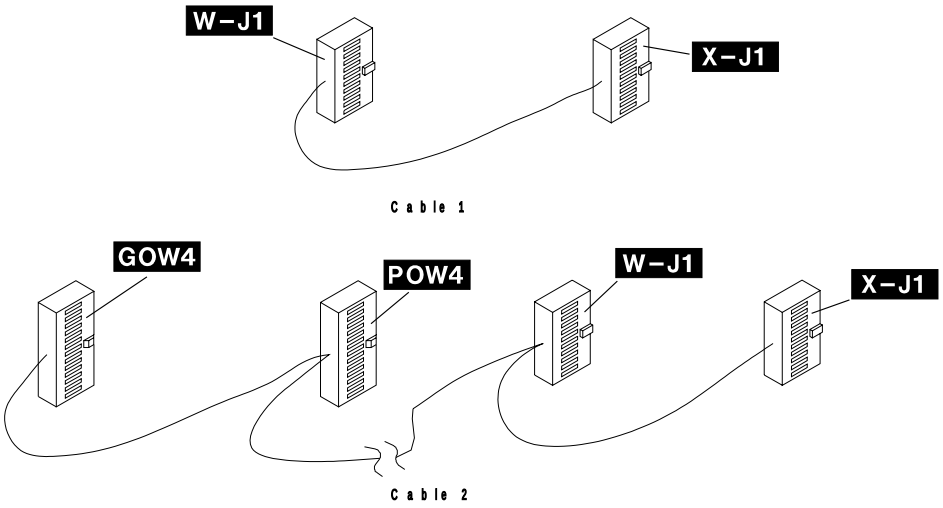


Figure 4-35. DICO Cables

Step 4. ____ Take a DICO card (17G6080), , remove the four interposers plugged on top of the card while holding the card in your hand, plug the DICO cable 1 (or 2) lead **X-J1** to connector **5** of the DICO card PN 17G6080. (see Figure 4-36 or Figure 4-37).

Step 5. ____ Plug cable 1 (or 2) lead **W-J1** to connector **5** of the other DICO card PN 17G6080.

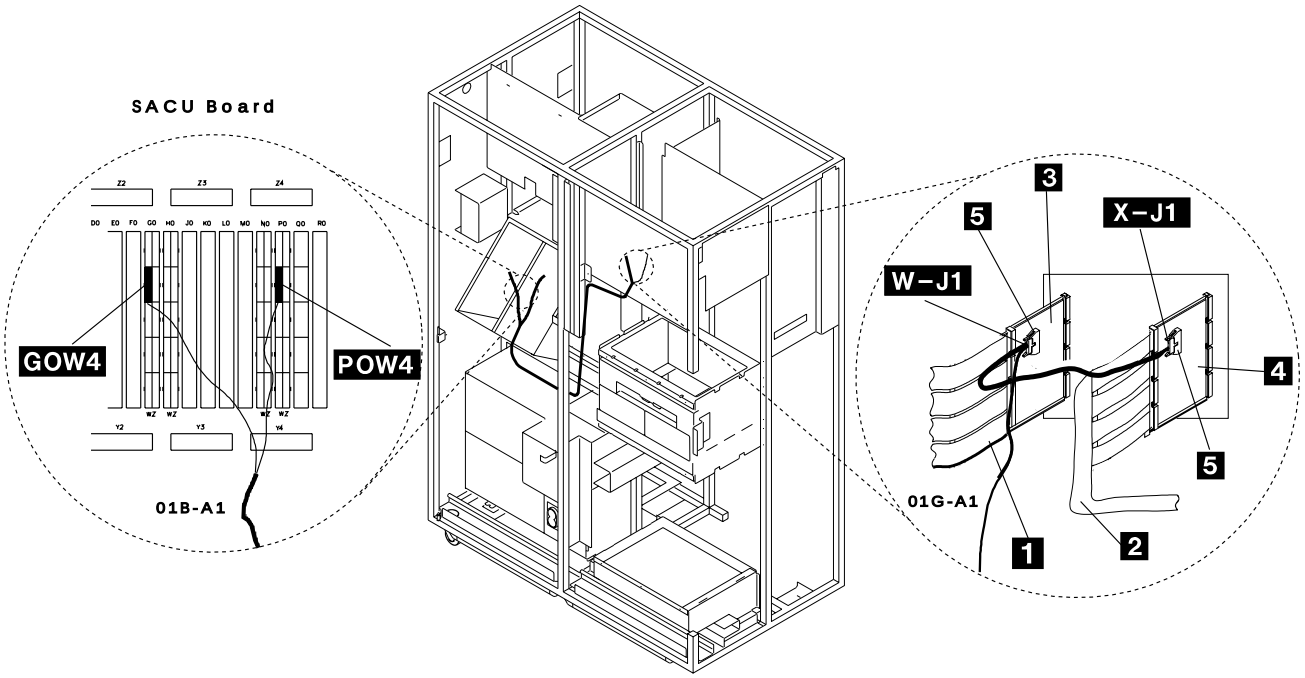


Figure 4-36. Cable 2 (PN 43G3181) Routing on a TSST Board

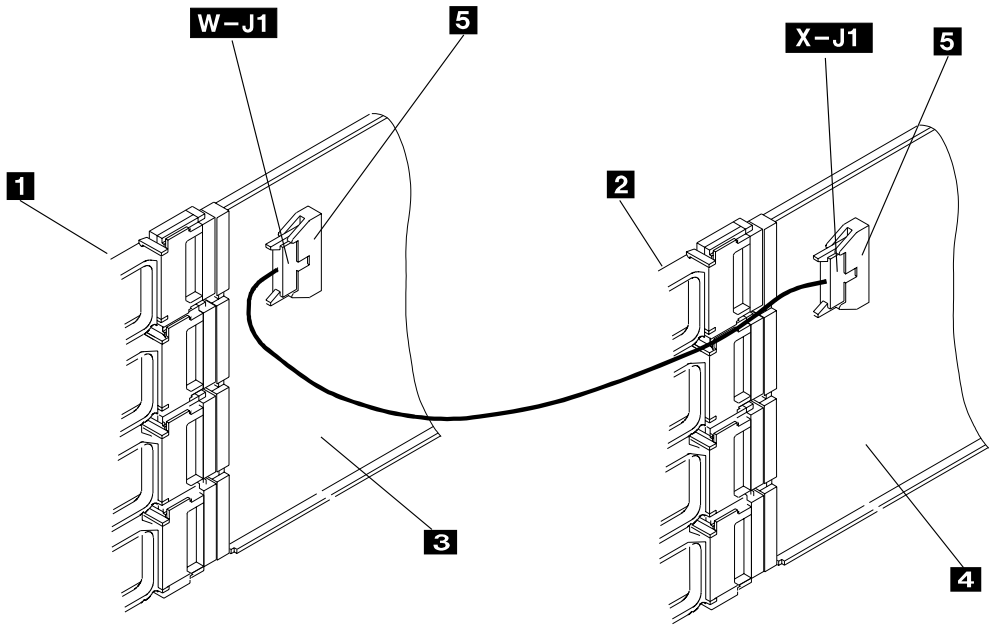


Figure 4-37. Cable 1 (PN 43G3180) Routing on a TSSB board

Step 6. ____ Position the DICO card **4** in location 01G-A1 X02, and the DICO card **3** in location 01G-A1 W02 (see Figure 4-36 on page 4-37 when plugging the card into a TSST board or see Figure 4-37 on page 4-37 when plugging the card into a TSSB board).
Warning: Make sure that the DICO cards are plugged in the right positions to ensure a proper bus continuity.

a. The DICO card **4**, plugged in **location 01G-A1 X02** must be the card where you plugged **connector X-J1** in step 4 on page 4-16.

b. The other DICO card **3**, plugged in **location 01G-A1 W02** is the card where you plugged **connector W-J1** (the other lead of the DICO cable).

Step 7. ____ Then, using a dummy card **2** PN 2733278 push and put the DICO cards **1** in place (see Figure 4-38).

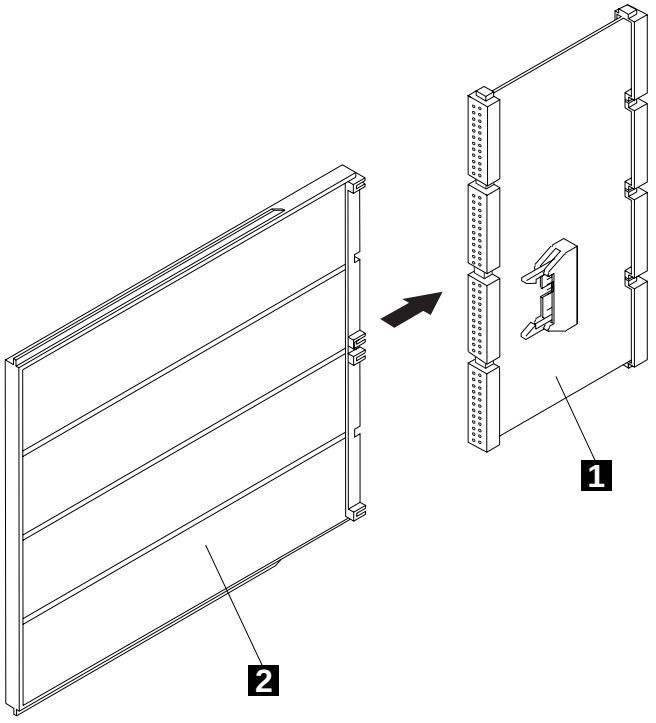


Figure 4-38. Installing a DICO Card Using a Dummy Card

If you are installing a cable PN 43G3180 go to step 12 on page 4-40

Step 8. ____ If you are installing a cable PN 43G3181 (from the TSST board) route this cable to the SACU control board. (refer to Figure 4-36 on page 4-37).

Step 9. ____ Open the cover to gain access to the SACU board

Step 10. ____ Using the tool PN 71F9877 remove the dummy connectors in locations POW4 and GOW4 of the SACU board (see Figure 4-39 on page 4-39).

Step 11. ____ Plug the connectors **P0W4** and **G0W4** in these locations.

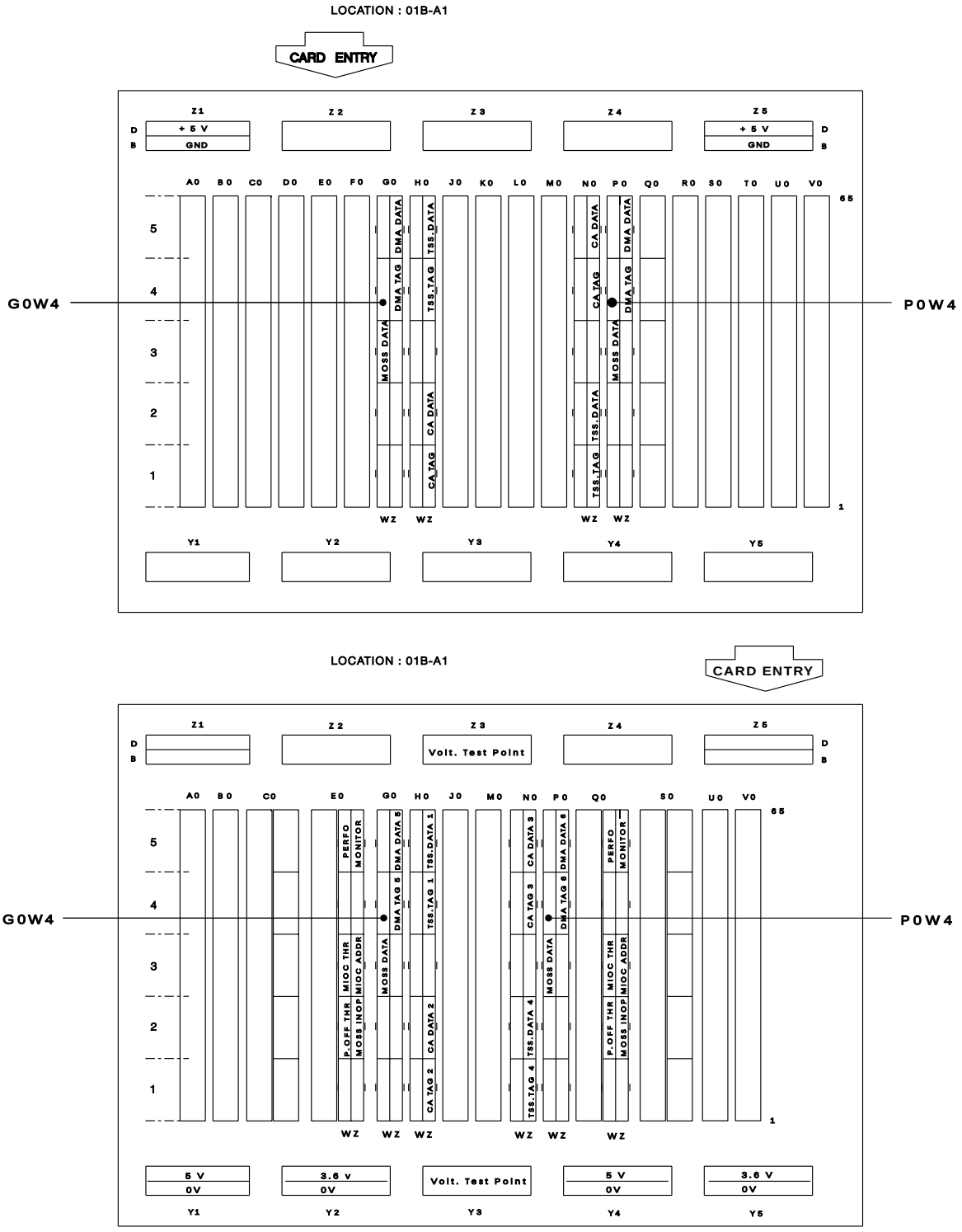


Figure 4-39. SACU Boards for 3745 Model 21A or 41A (Top) 31A or 61A (Bottom)

Step 12. ____ Install short retainers **5** (PN 1953188) and four interposers **6** on the IOC bus cables removed from 01G-A1 X02, X03, X04, and X05. Make sure the interposers are seated completely flush with the connectors on the cables as it takes considerable pressure to seat them properly (see Figure 4-40).

Step 13. ____ Refold to the appropriate length and plug the cables on the top of the DICO card into their respective positions from X02 to X05.

Step 14. ____ Secure the cable extenders using an intermix bracket **4** (PN 1953110).

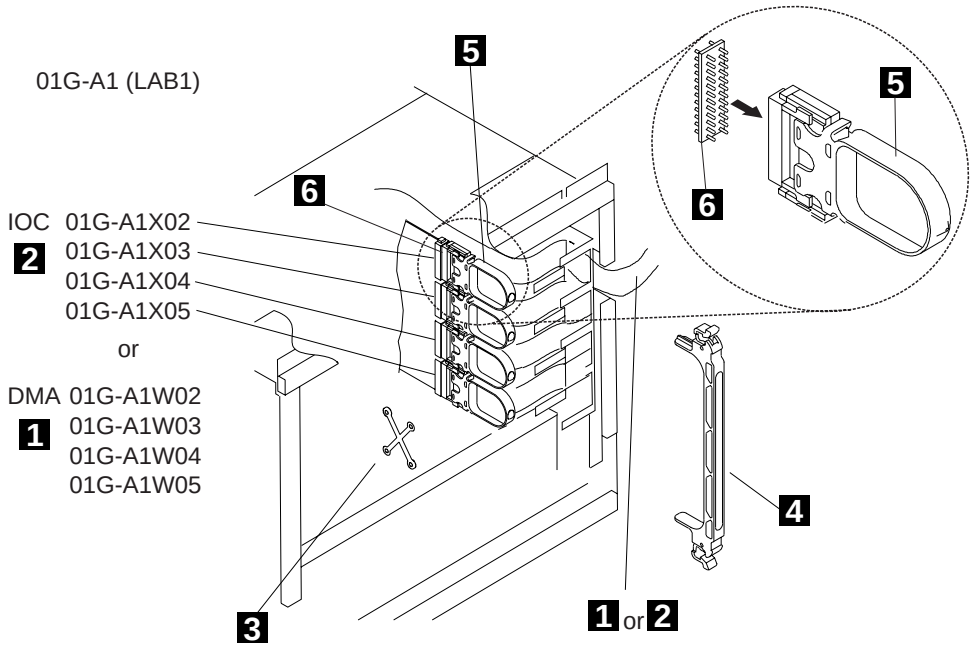


Figure 4-40. Plugging of the DMA and IOC Cables in LAB1

Step 15. ____ In the 3746-900, locate the four DMA flat cables **1** (see Figure 4-11 on page 4-13). Cables **1** should be labeled: To 3745 W02, W03, W04, and W05.

Step 16. ____ Unroll and route these DMA cables through the upper side windows through the 3746-A11 and through the 3746-A12 from the 3746-900 to the 3745 at board 01G-A1 (see Figure 4-32 on page 4-34). Fold the DMA cables going to W02, W03, W04 and W05 according to fold marks on these cables.

Step 17. ____ Install short retainers **5** (PN 1953188) and four interposers **6** on the DMA bus cables.

Step 18. ____ Plug the DMA cables **1** on the top of the DICO card into their respective positions from W02 to W05. Make sure the interposers are seated completely flush with the connectors on the cables as it takes considerable pressure to seat them properly

Step 19. ____ Clamp cables in raceways using retainers **3** (PN 0813519) see Figure 4-40.

Step 20. ____ Secure the cable extenders using an intermix bracket **4** (PN 1953110) see Figure 4-40.

Step 21. ____ Re-install the cards removed in step 2 on page 4-36, in positions U and V, and any crossovers (if needed, refer to the *Maintenance Information Procedures,* SY33-2054, for crossover setting). Hold the excess length of the cables in the 3746-900 frame.

Go to "Plugging the Active and Passive Bypass Cards and Connecting the +5 V Cables."

Plugging the Active and Passive Bypass Cards and Connecting the +5 V Cables

Step 1. ____ From the 3745 menu, click on **"Operation Management"**

Step 2. ____ Double click on **"Locate Bypass Card Position"**, the function is running.

Note: If the configuration does not require a bypass card you will get an information message (see Figure 4-41). In that case, click on **"OK"** to return to the 3745 menu.

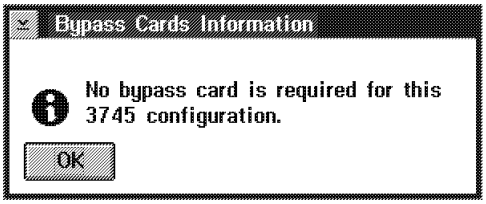


Figure 4-41. Information Message

Step 3. ____ **Record** the card positions (if any) for the active (ABP1 and ABP2) and passive (BPC1) bypass cards

Step 4. ____**Obtain** the required cards and cables from the shipping group according to your 3745 configuration (save the unused parts in a safe place for further needs).
In the shipping group you have received:

a. 2 Active bypass cards ABP1 PN 58G2308.

b. 2 Active bypass cards ABP2 PN 58G2309.

c. 18 Passive bypass cards BPC1 PN 03F4372.

d. 2 Cables PN 76F9338

e. 2 Cables PN 76F9339

f. 18 Intermix brackets PN 1953110

g. 18 Extenders PN 1953093

h. 4 Dummy cards PN 398482

i. 4 Holders PN 1953172

Step 5. ____**Install** the holders PN 1953093 on the BPC1 cards.

Step 6. ____**Install** the holders PN 1953172 on the ABP1 and ABP2 cards (if any).

Note: When installing ABP1 card, install dummy card (PN 398482) and holder (PN 1953172) on top of the card before plugging this card into the socket.

Step 7. ____ **Plug** the cards in the Line Adapter Board(s) according to the card lists displayed (as example see Figure 4-42).

Note: Ensure that the dummy card does not press against either row of pins.

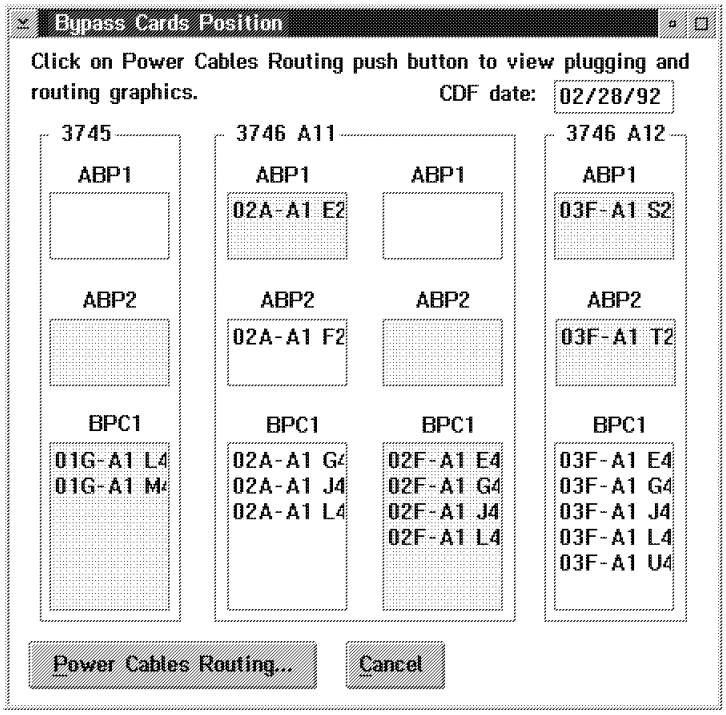


Figure 4-42. Example of "Bypass Card position" Window

Step 8. ____If you have plugged active bypass cards (ABP1 and ABP2), click on **"Power Cables Routing"** (see Figure 4-42) and go to step 9.
If not, click on **"Cancel"** to return to the 3745 menu and go to step 11 on page 4-43.

Step 9. ____Plug and route the +5 V power cables: (see Figure 4-43 on page 4-43 as example of cable routing on ADB1).

a. ____Install the cables on **adapter bus 1** (ADB1), read the installation instructions and press **"Enter"** to see the cable routing.

1) Connect and route cable 76F9338 from the CBSP (07G-A1-F3) to the ABP1 plugged on the ADB1 bus.

2) Connect cable 76F9339 between the ABP1 and ABP2 cards.

If you have plugged active bypass cards on **ADB4** (2 ABP1 and 2 ABP2 specified in the plugging list), press **Enter** or click on ADB4/LABX and go to step 9b.
If **not**, press **Enter** and go to step 10 on page 4-43.

b. ____Install the cables on **adapter bus 4**, read the installation instructions then press **Enter** to see the cable routing.

1) Connect and route cable 76F9338 from the TRP (07G-A1-H3) to the ABP1 plugged on the ADB4 bus.

2) Connect cable 76F9339 between the ABP1 and ABP2 cards.

Step 10. ____ Press **"Enter"** and read the instruction to leave the bypass card plugging guide.

Step 11. ____ **Install** the **intermix brackets PN 1953110** on the active and passive bypass cards installed.

Step 12. ____Re-install all the board covers.

Go to Chapter 5, "3745-X1A Power On and Test Procedures" on page 5-1.

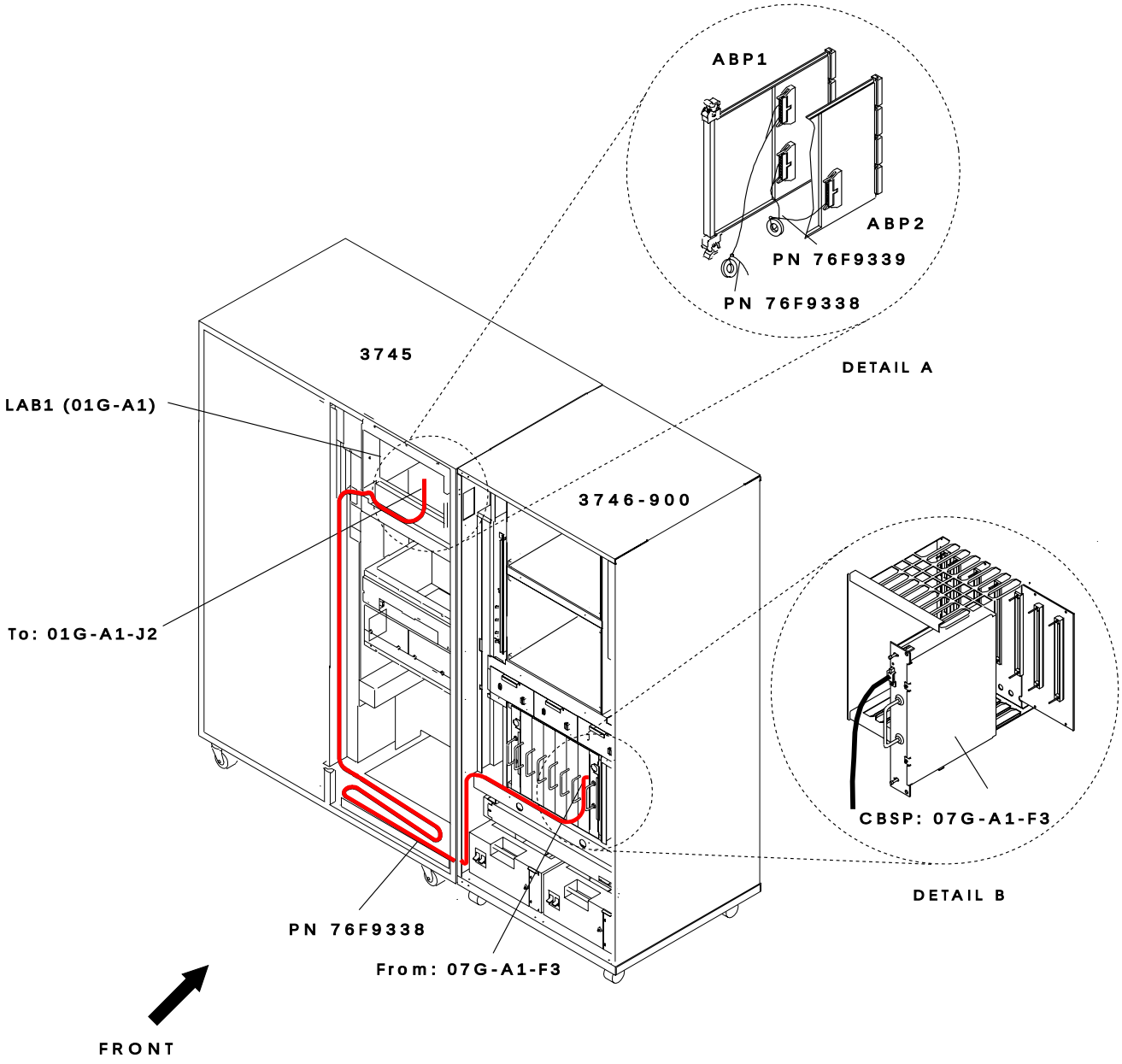


Figure 4-43. Example of Power Distribution To the ABP1 and ABP2 Cards Plugged on ADB1

Chapter 5. 3745-X1A Power On and Test Procedures

3745-X1A Checkout Procedure

Step 1. ____ **Powering the 3745-X1A and the 3746-900 ON**

a. ____ Ensure that all circuit protectors (CPs) are set to the ON position in the 3745, 3746 (if any), and 3746-900. (For locating all the 3745/3746 CPs, refer to the *3745/210-61A Installation Guide*, SY33-2057)

b. ____ Ask the customer, or turn the branch circuit breakers that feeds the 3745 and the 3746-900 to the **ON** position yourself. **AC is now present in the primary power box.**

c. ____ Switch all CB1s to **ON** at the 3745 and 3746-900 primary power boxes.

d. ____ Using the 3746-900 control panel, set the 3746-900 to remote power control mode.

- ____ Press the **Power control key** to select remote **mode 1**
- ____ Press the **Validate key** to set the power remote mode

e. ____ Using the 3745 control panel, set the 3745 in local power control mode.

- ____ Press the **Power control key** to select local **mode 3**
- ____ Press **Validate key** to set the power local mode

f. ____ On the 3745-X1A control panel:

- ____ Press the **Select key** to select function 1
- ____ Press the **Validate key**.
- ____ Press the **Power on key**.

The 3745, 3746 (if any), and the 3746-900 are now power ON and being IMLed.

Step 2. ____ **Verifying the Configuration Data File (CDF)**

For details, refer to the chapter "CDF Verify" of the *3745/210-61A Service Functions*, SY33-2055, or to the *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054 in case of CDF problem.

a. ____ When the IML is terminated, **00-00-0000** and **1F0E** are displayed on the 3746-900 and 3745 control panels.

b. ____ From the MOSS-E View primary window, double click on the **"3745 object icon"**.

c. ____ Double click on **"MOSS Console"** (see Figure 5-1)

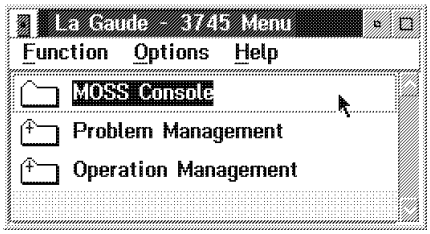


Figure 5-1. 3745 Menu

d. ____ From the MOSS primary menu (see Figure 5-2), **type** *CDF* and **press ENTER.**

Figure 5-2. MOSS Primary Menu

e. ____ From the CDF function selection screen, **call option 4** and press **ENTER**.

The verification phase is automatically initialized and will last approximately three minutes. Any discrepancy between the CDF information and the machine status produces a message, for acknowledgement or updating.

- For an FRU level problem, contact your local support structure.
- For a presence or type discrepancy, make a visual check.

Note: If you get the following message *Warning: a change in 3746 presence status has been made. 3746-900 has been installed* enter **2** to continue the process and record the 3746-900 presence.
Wait for the message *"CDF VERIFY COMPLETED"* see Figure 5-3 on page 5-4

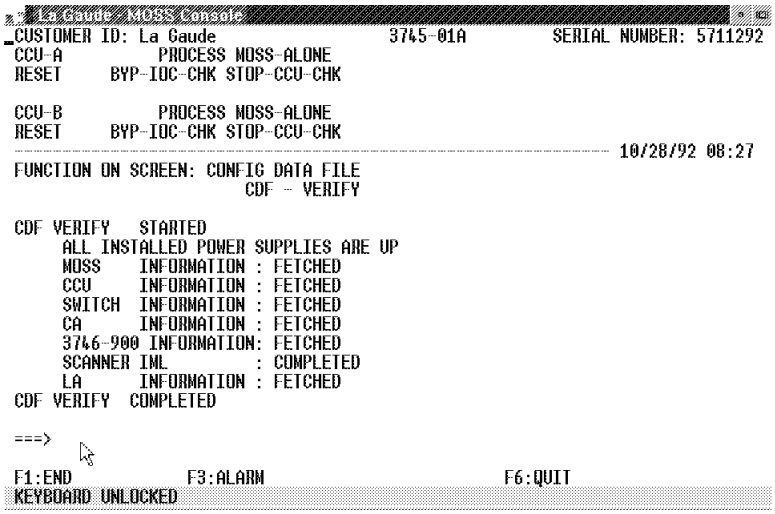


Figure 5-3. MOSS Primary Menu

f. ____ Press **F6** to end CDF verify.

Step 3. ____ **Displaying the CDF to Verify the 3746-900 Presence**

a. ____ From the CDF functions menu, call option **1** (display/update), and **press ENTER**.

b. ____ From the CDF display/update screen, select option **0** (3746-900).

c. ____ You will now display the CBC(s) entry(ies), verify the 'Y' for the CBC(s) installed.

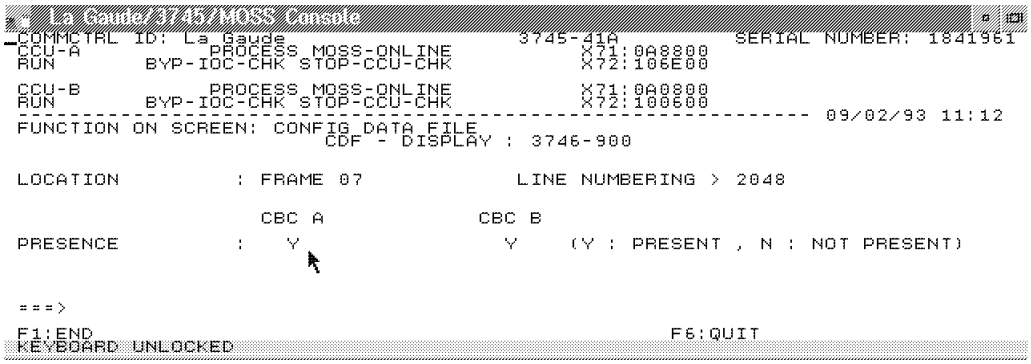


Figure 5-4. CDF Display

d. ____ Press **"F1"** to end CDF display.

Step 4. ___ **Saving the 3745 MOSS Disk to Diskette**

For details see "How to Save the 3745 Disk Contents onto Diskettes" in Chapter 11 of the Service Functions.

This step will be run **twice**, once for the **normal set** of diskettes, and once for the **backup set.** This gives you two sets:

- One **normal** set of diskettes for CE/customer use. These diskettes will be upgraded by hardware or microcode changes.
- One **backup** set of diskettes to save. These diskettes keep the machine configuration at the time of installation.

a. ____**Press F4** to get Menu 1.

b. ____**Enter** *DIF*, and press **ENTER.**

c. ___From the disk function selection screen, **call option 2** and press **ENTER.**

d. ___On the disk save function screen, **enter a save-id** of your choice (up to 8 characters identifying the level of the saving diskette set). Press **ENTER.**

e. ___For each diskette, **messages on the screen will prompt you for the required actions** (insert/remove diskette). Information or error messages will keep you informed of the progress.

f. ___When the disk has been correctly saved, use a felt-tipped pen to **write the date and identifiers** on the diskette labels.

g. ___**Press F1**.

h. ___Run steps 4b to 4g again, using the second diskette set.

Step 5. ____ **Controller Bus Adapter (CBA) and IOC Tests**

Notes

1. The 3746-900 must be IMLed and ready before starting these tests. If any unexpected panel code is displayed when running the following tests, go to the START page of the *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054.
2. To validate the 3746-900/3745 connection, run the Internal Function Tests (IFT) on the IOC and on the Controller Bus Adapter (CBA). Refer to the *3745/210-61A Service Functions*, SY33-2055 chapter "diagnostics" to calculate the run time of the IOC test which depends on the configuration.
3. To get details to select and run the IFT refer to *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054 chapter "How to Run Diagnostics".

a. ____ Type **ODG** and press **ENTER**

b. ____ On the diags menu (see Figure 5-5), enter:

1) **"3"** in the Diag input field to test the 3745 IOC Bus **(DIAG ==> 3)** and press **"ENTER"**
2) Then enter **"ID"** and press **"ENTER"** to test the **IOC bus 1 / coupler 1**.
3) And if the 3746-900 is connected to a **3745 twin CCU**, enter **"JD"** and press **"ENTER"** to test the **IOC bus 4 / coupler 2**.

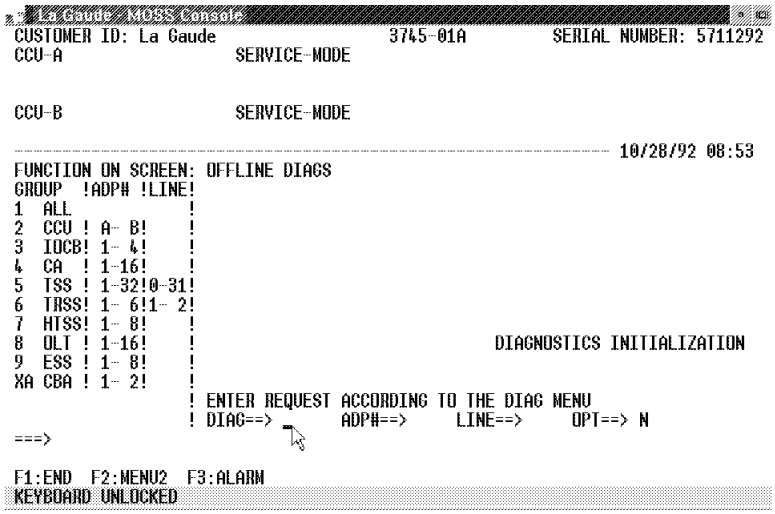


Figure 5-5. 3745 Offline Diags Menu

Note: Wait for the message *"NO ERROR FOUND"*. If any error is detected before investigating further, verify that the following cards have been plugged in the right positions:

1) The **DICO cards**. Depending on your configuration, these cards have been plugged using the procedures described in page 4-15, 4-23, or 4-33.
2) The **bypass cards**, these cards have been plugged using the procedures described in the chapter “Plugging the Active and Passive Bypass Cards and Connecting the +5 V Cables” on page 4-41.

c. ____ Enter **"XA** to test the CBA **(DIAG ==> XA)**, **press ENTER.**, then wait for the message *"NO ERROR FOUND"*.

Note: If the 3746-900 is connected to a 3745 twin CCU, it can be usefull to test the CBC separately, to select enter 01 then 02 in the ADP input filed. This can help you to fix an error.

Go to Chapter 8, “Cable Setup” on page 8-1

Chapter 6. Connecting the 3746-900 to the 3745-17A

Preparing the 3745-17A

To have the 3745-17A ready to be connected to the 3746-900, do the following:

Step 1. ____ **Prerequisites**

- The 3745 must be a model 17A. If the 3745 has to be upgraded, install the MES model conversion 1X0 to 17A.
- Ask the customer to have the proper NCP level installed to support the 3746-900.

Step 2. ____ **Checking the 3745 Air Filters**

Check the 3745 air filters, clean or plan to replace if necessary using the air filters exchange procedure described in the *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070, chapter "3745 FRU exchange".

Step 3. ____ **Powering the 3745 OFF**

a. At the control panel, press the **Power OFF key.**

b. Switch **CB1 to OFF** at the primary power box, and place the customer's branch circuit breaker that feeds the 3745 receptacle to **the OFF position,** with a warning label attached.

Step 4. ___ **Powering the 3746-900 OFF**

a. **Press** the **Standby** key to power the 3746-900 OFF (code 05-28-2806 is displayed and standby led is ON).

b. **Switch** the **CB1(s) OFF** to remove the ac from the machine.

Step 5. ___ **Routing the Inter-Machine Cables**

The cables are routed between the 3746-900 and the 3745-17A using external brackets, see Figure 10-1 on page 10-3 to prepare your cables during the following steps.

Cabling the UEPO Cable from the 3746-900 to the 3745-17A

Step 1. ____ Remove the UEPO plugs from the cable leads.

Step 2. ____ Connect the ground cable **5** to the 3746-900 frame using screws (PN 1621191) and lockwashers (PN 17G5852) refer to Figure 6-1 for the location.

Step 3. ____ Route the cable (PN 17G5923) through the 3746-900, along the bottom of the 3746-900 and 3745 base frames, through the 3745 frame, and up to the 3745 control panel. Refer to Figure 6-2 on page 6-4, cable **2** . The ground lead **3** will be installed later when the power control cable will be connected.

Step 4. ____ Open the 3745 control panel. Locate the unit emergency power OFF (UEPO) switch at the rear of the control panel (see Figure 6-1) .

Step 5. ____ Plug the UEPO cable leads to the UEPO switch as follows:

a. **1** and **3** to **D3** and **D2**

b. **2** and **4** to **C3** and **C2**

Step 6. ____ Store the excess of the cable in the 3746-900 frame.

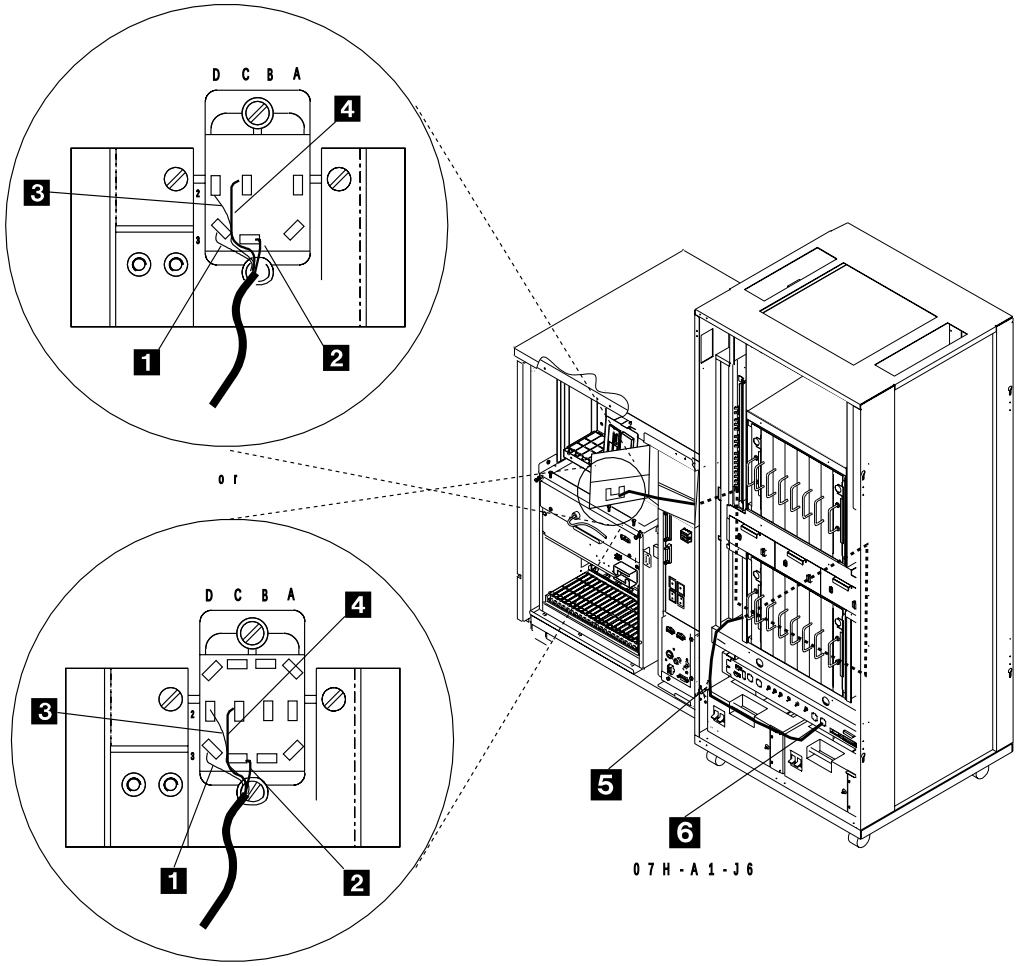


Figure 6-1. UEPO Cable Routing (3746-900 Attached to a 3745-17A)

Cabling the Power Control Cable from the 3746-900 to the 3745-17A

1. **Connect the Power Control Cable (PN 17G5924) into the 3745 as follows:**

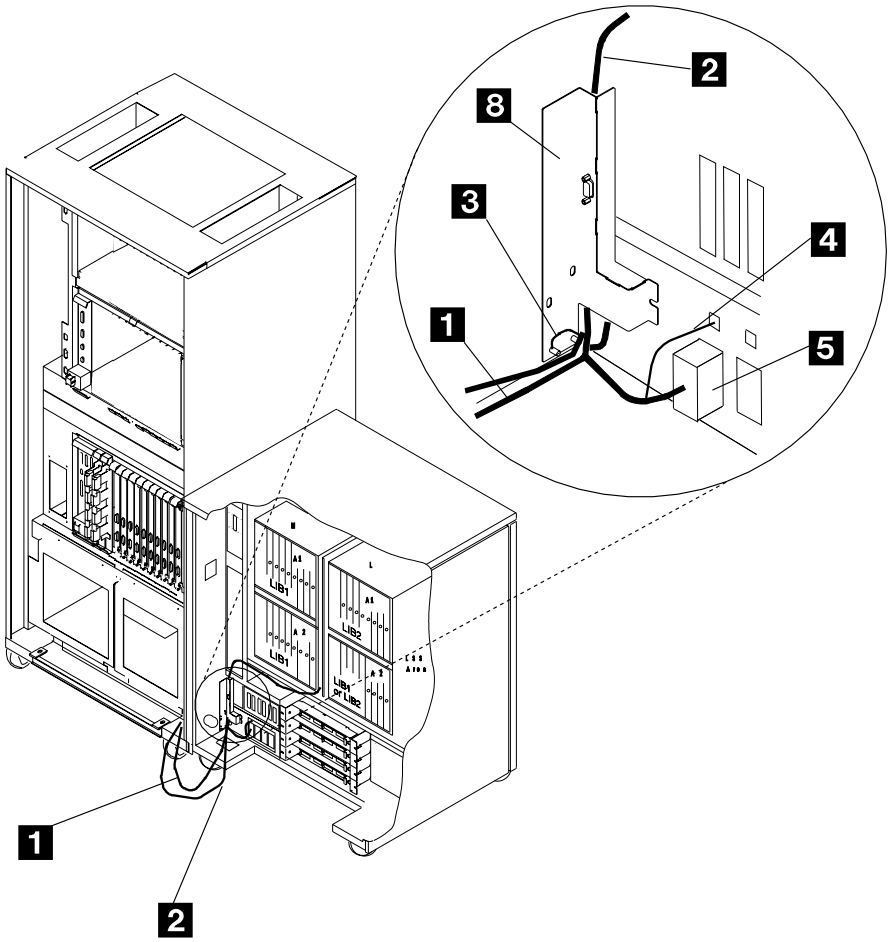


Figure 6-2. Power Control Cable Connection to the 3746-900 Power Box

Step a. ____ Route the power control cable from the rear side of 3745 (grounding area 01W) to the rear side of the 3746-900, then through the 3746-900 frame (see Figure 6-2, cable **1** , and Figure 6-4 on page 6-6).

Step b. ____ Plug connector **5** to any free position of the EPO plug.

Step c. ____ Connect the ground lead **4** to the plug above the EPO.

Step d. ____ Remove the customer power cable plugged in J2 (if any).

Step e. ____ Plug connector **6** to J2 located on the 3745 frame (see Figure 6-3).

Step f. ____ Install two washers (PN 17G5853) **9** on the 3745 pins.

Step g. ____ Remove the screw **13** from the 3745.

Step h. ____ Install plate **8** using two nuts **11** (PN 1622404) and reinstall the screw **13** removed on step 1g.

Step i. ____ Route the UEPO cable **1** behind the plate **8** and install clamp **10** (PN 303538) to maintain the cable in place.

Step j. ____ Connect the ground lead of the UEPO cable **12** using lockwasher PN 17G5853 and nut PN 1622404.

Step k. ____ Reinstall the customer power cable on J2 (if any) located on the power control cable plate.

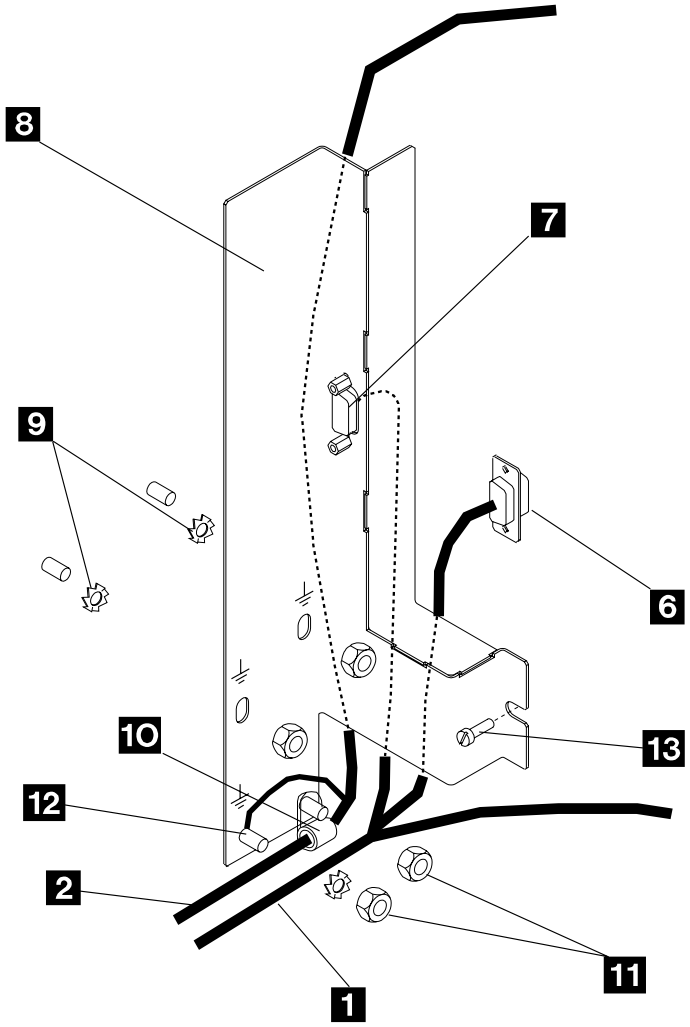


Figure 6-3. Power Control Cable Cover Installation

2. **Connect the Power Control Cable (PN 17G5924) in the 3746-900 as follows:**

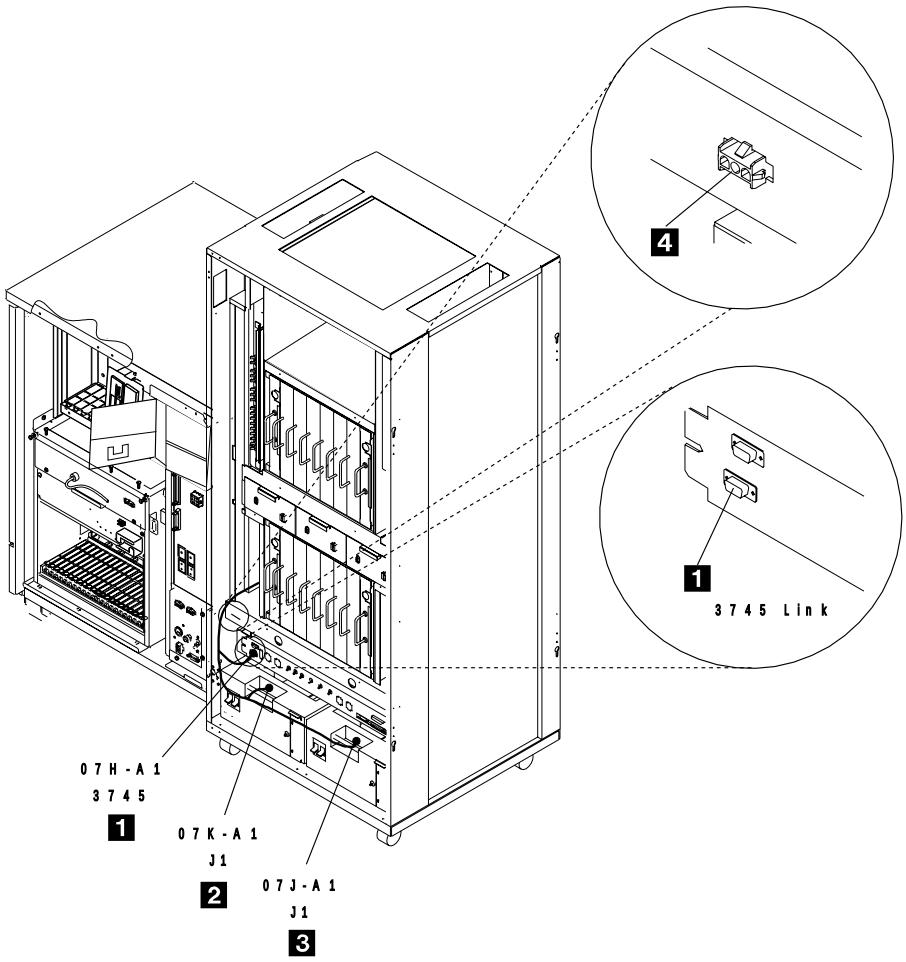


Figure 6-4. Power Control Cable Connection to the 3746-900 Power Box

Step a. ____ Connect the connector **1** to 07H-A1-3745 link of the power distribution box.

Step b. ____ Connect the connector **2** to 07K-A1-J1 of the basic power supply.

Step c. ____ Connect the connector **3** to 07J-A1-J1 of the optional power supply, or to the dummy connector **4** located on the filter box if the optional power is not installed.

Step d. ____ Secure the cable using clamps on the power supplies.

Cabling the IOC/DMA Bus Cables

Designation	From (in 3746-900)	To (in 3745)
IOC Bus IOC Bus	07N-A1-E1-J1 07N-A1-E1-J2	01G-A1ZB 01G-A1ZA
DMA Bus DMA Bus	07N-A1-E1-J3 07N-A1-E1-J4	01G-A1YK 01G-A1YJ

Figure 6-5. IOC/DMA Bus Connections From the 3746-900 to the 3745 Model 17A

Step 1. ____ At the bottom right rear of the 3745, locate the basic board 01G-A1 (see Figure 6-6).

Step 2. ____ Remove cover **1** (see Figure 6-6).

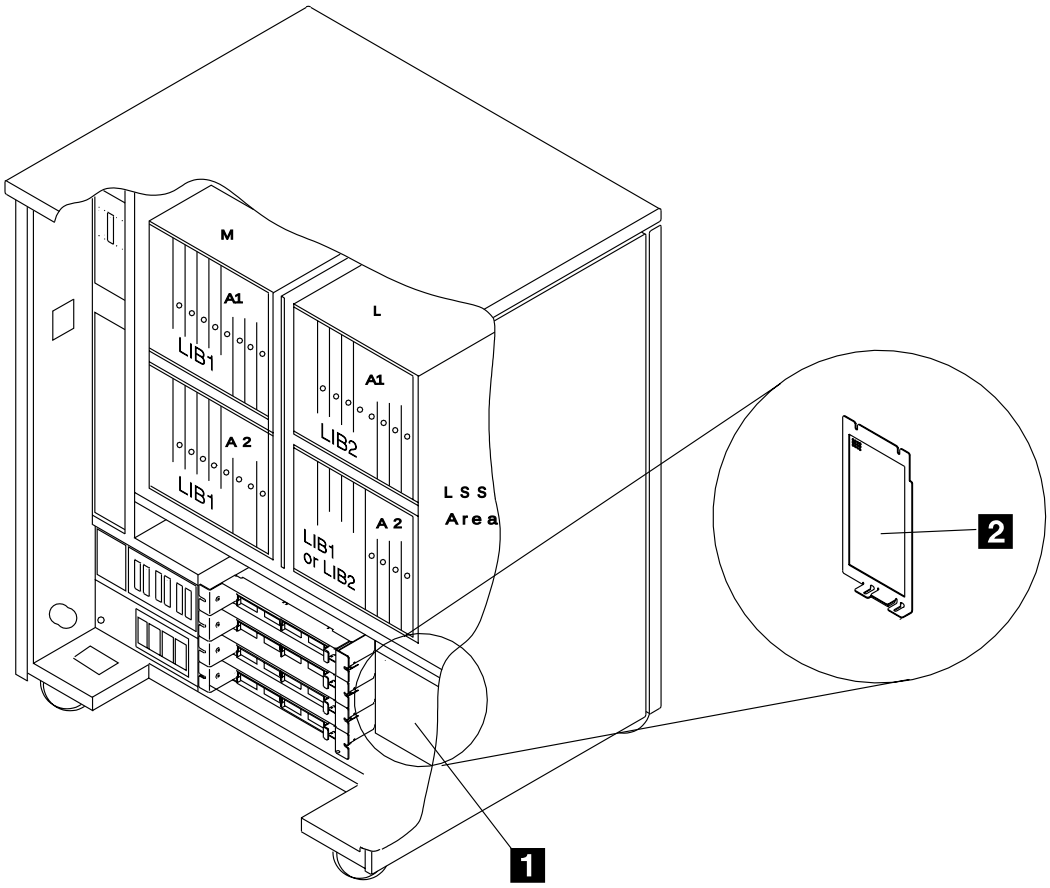


Figure 6-6. Basic Board Cover (Rear Model 17A)

Step 3. ____ Locate the connector positions 01G-A1 ZB, ZA, YK, and YJ (see Figure 6-7 on page 6-8).

Step 4. ____ Loosen and remove the retainers which maintain the terminator cards plugged in locations 01G-A1 ZA-ZB and 01G-A1 YJ-YK.

Step 5. ____ Remove these terminator cards.

Step 6. ____ Unroll and route the IOC and DMA cables along the bottom of the 3745 and 3746-900 frames (see Figure 6-7).

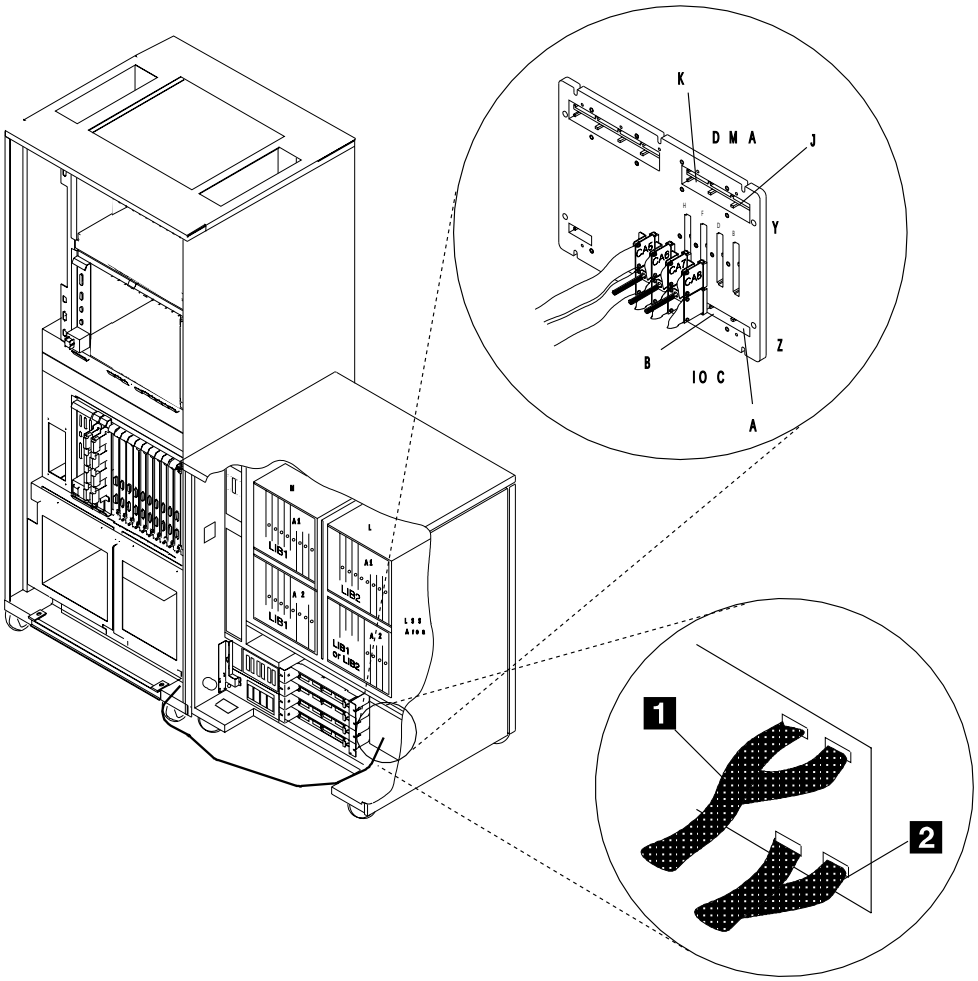


Figure 6-7. Routing of the IOC and DMA Cables

Step 7. ____ Fold the cables according to the fold marks and plug them into their respective sockets 01G-A1 ZB and ZA for the IOC **2** and YK and YJ for the DMA **1**.

Step 8. ____ Install the new retainers (PN 58G5313) on top of the cables using the screws used to maintain the old retainers.

Step 9. ____ Install the new cover **2** (PN 58G5305) in place of the cover removed in step 2 on page 6-7 (see Figure 6-6 on page 6-7).

Step 10. ____ Store the cover, the retainers, and the terminator cards in a safe place.

Plugging the BPC1 and BPC2 Bypass Cards in a 3745-17A

Two types of bypass cards are required:

1. **BPC1**: PN 03F4372
2. **BPC2**: PN 11F5465

1. **Determine the number of bypass cards required:**

   a. ____ A **BPC1** is required in all the free positions normally occupied by a **CSC**, **CSP**, or **FESH** card (position 01G-A1 M4 to 01G-A1 U4, see Figure 6-8 **1**).

   b. ____ A **BPC2** is required in position 01G-A1 L4 if the **TRM** card is not installed in this location (see Figure 6-8 **2**).

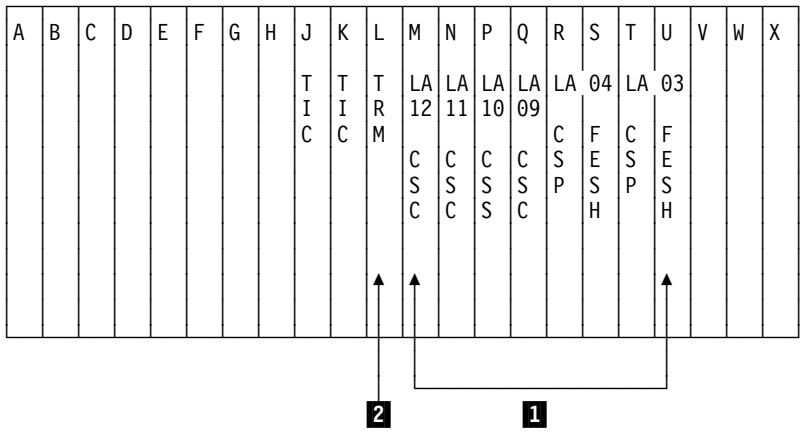


Figure 6-8. Basic Board of a 3745 Model 17A (01G-A1)

2. **Plug the bypass cards as follows:**

   a. ____ Obtain from the shipping group the BPC1(s) (up to 8) and the BPC2 (if required).

   b. ____ Install extender **PN 1953093** **3** on top of the **BPC1** cards (see Figure 6-9).

   c. ____ Plug a **BPC1** in all the free positions from location 01G-A1 M4 to 01G-A1 U4 (see Figure 6-8 **1**).

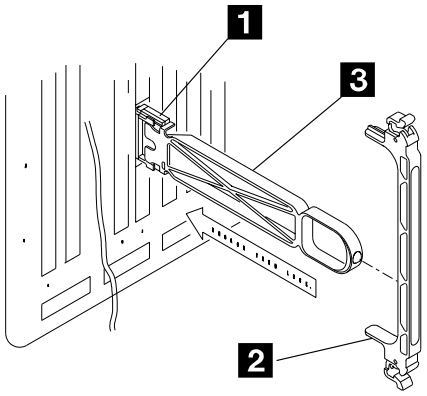


Figure 6-9. Installing a BPC1

d. ____ Install extender **PN 1953093** **1** on top of the **BPC2** card.

e. ____ Plug the **BPC2** card in location 01G-A1 L4 (if this location is empty, see Figure 6-8 on page 6-9 **2**).

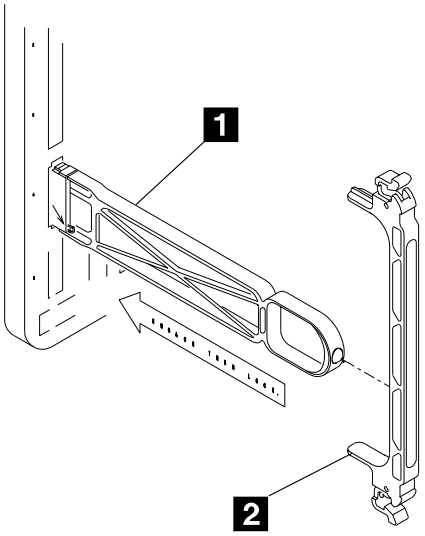


Figure 6-10. Installing a BPC2

f. ____ Install the intermix brackets PN 1953110 **2** on the BPC1 and BPC2 cards installed.

g. ____ Store the unused cards in a safe place for further needs.

Go to Chapter 7, "3745-17A and 3746-900 Power On and Test Procedures" on page 7-1

Chapter 7. 3745-17A and 3746-900 Power On and Test Procedures

3745-17A Checkout Procedure

Step 1. ____ **Powering the 3745-17A and the 3746-900 ON**

a. ____ Ensure that all circuit protectors (CPs) are set to the ON position in the 3745 and 3746-900.

b. ____ Ask the customer, or turn the branch circuit breakers that feeds the 3745 and the 3746-900 to the **ON** position yourself. **ac is now present in the primary power box.**

c. ____ Switch all CB1s to **ON** at the 3745 and 3746-900 primary power boxes.

d. ____ Using the 3746-900 control panel, set the 3746-900 to remote power control mode.

- ____ Press the **Power control key** to select remote **mode 1**.
- ____ Press the **Validate key** to set the power remote mode.

e. ____ Using the 3745 control panel, set the 3745 in local power control mode.

- ____ Press the **Power control key** to select local **mode 3**.
- ____ Press **Validate key** to set the power local mode.

f. ____ On the 3745 control panel:

- ____ Press the **Select key** to select function 1.
- ____ Press the **Validate key**.
- ____ Press the **Power on key**.

The 3745 and the 3746-900 are now powered ON and being IMLed.

Step 2. ____ **Verifying the Configuration Data File (CDF)**

For details, refer to the chapter "CDF Verify" of the *3745/130-17A Service Functions*, SY33-2069, or to the *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070 in case of CDF problem.

a. ____ When the IML is terminated, **00-00-0000** and **1F0E** are displayed on the 3746-900 and 3745 control panels.

b. ____ From the MOSS-E View primary window, double click on the **"3745 object icon"**.

c. ____ Double click on **"MOSS Console"**. (see Figure 7-1 on page 7-3)

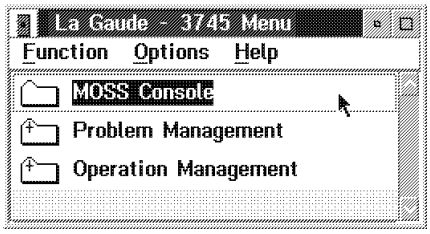


Figure 7-1. 3745 Menu

d. ____ From the MOSS primary menu (see Figure 7-2), **type** *CDF* and **press ENTER.**

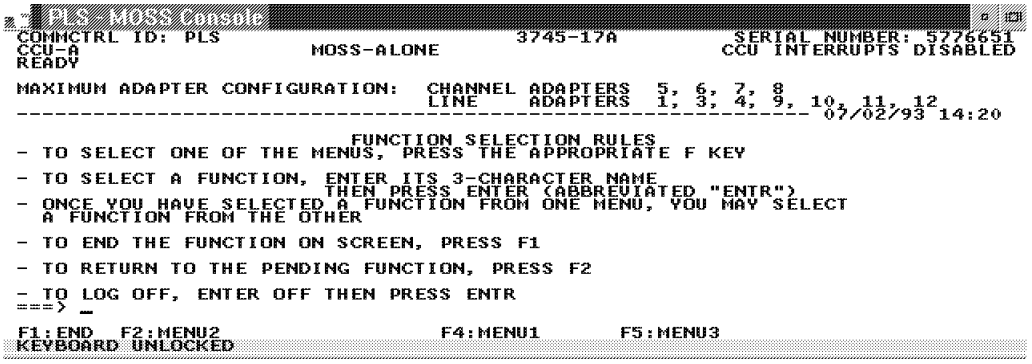


Figure 7-2. MOSS Primary Menu

e. ____ From the CDF function selection screen, call **option 4** and press **ENTER**. The verification phase is automatically initialized and will last approximately three minutes. Any discrepancy between the CDF information and the machine status produces a message, for acknowledgement or updating.

- For an FRU level problem, contact your local support structure.
- For a presence or type discrepancy, make a visual check.

Note: If you get the following message *Warning: a change in 3746 presence status has been made. 3746-900 has been installed* enter **2** to continue the process and record the 3746-900 presence.
Wait for the message *"CDF VERIFY COMPLETED"* (see Figure 7-3).

Figure 7-3. CDF Verify MOSS Menu

f. ____ Press **F6** to end CDF verify.

Step 3. ____ **Displaying the CDF to Verify the 3746-900 Presence**

a. ____ From the CDF functions menu, call option **1** (display/update), and press **ENTER**.

b. ____ From the CDF display/update screen, select option **0** (3746-900).

c. ____ You will now display the CBC entry, verify the 'Y' for the CBC present.

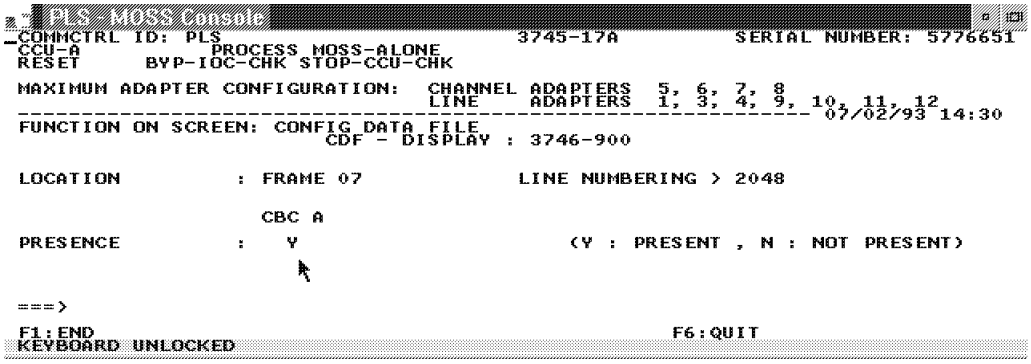


Figure 7-4. CDF Display 3746-900

d. ____ Press **F1** to end CDF display.

Step 4. ___ **Saving the 3745 MOSS Disk to Diskettes**

For details see chapter "Save Disk Contents onto Diskettes" of the *Service Functions*, SY33-2069.

This step will be run **twice**, once for the **normal set** of diskettes, and once for the **backup set**. This gives you two sets:

- One **normal** set of diskettes for CE/customer use. These diskettes will be upgraded by hardware or microcode changes.
- One **backup** set of diskettes to save. These diskettes keep the machine configuration at the time of installation.

a. ___**Press F4** to get Menu 1.
b. ___From Menu 1, **enter** *DIF* and press **ENTER.**
c. ___From the disk function selection screen, **call option 2** and press **ENTER.**
d. ___On the disk save function screen, enter a **save-id** of your choice (up to 8 characters identifying the level of the saving diskette set). Press **ENTER.**
e. ___For each diskette, **messages on the screen will prompt you for the required actions** (insert/remove diskette). Information or error messages will keep you informed of the progress.
f. ___When the disk has been correctly saved, using a felt-tipped pen write the **date** and **identifiers** on the diskette labels.
g. ___**Press F1**.
h. ___Run steps 4b to 4g again to save the disk on the second diskette set.

Step 5. ____ **Controller Bus Adapter (CBA) and IOC Tests**

Notes

1. The 3746-900 must be IMLed and ready before starting these tests. If any unexpected panel code is displayed when running the following tests, go to the START page of the *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070.
2. To validate the 3746-900/3745 connection, run the Internal Function Tests (IFT) on the IOC and on the Controller Bus Adapter (CBA). Refer to the *3745/130-17A Service Functions*, SY33-2069 Chapter "Diagnostics" to calculate the run time of the IOC test which depends on the configuration.
3. For details about selecting and running the IFT, refer to *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070 Chapter "How to Run Diagnostics".

a. ____ Type **ODG** and press **ENTER**.

b. ____ On the diags menu (see Figure 7-5), enter **"3"** in the 'Diag' input field to test the 3745 IOC Bus and press **"ENTER"**

Note: This option is invalid if NO adapters are installed (TSS or CAs).

c. ____ Then enter **"ID"** in the 'Diag' input field to test the IOC Bus/coupler and press **"ENTER"**

Note: Wait for the message *"NO ERROR FOUND"*. If any error is detected before investigating further, verify that the bypass cards are plugged in the right positions. These cards have been plugged using the procedures described in the chapter “Plugging the Active and Passive Bypass Cards and Connecting the +5 V Cables” on page 4-41.

d. ____ Enter **XA** to test the CBA **(DIAG ==> XA)** and press **ENTER.**

Note: Wait for the message *"NO ERROR FOUND"*.

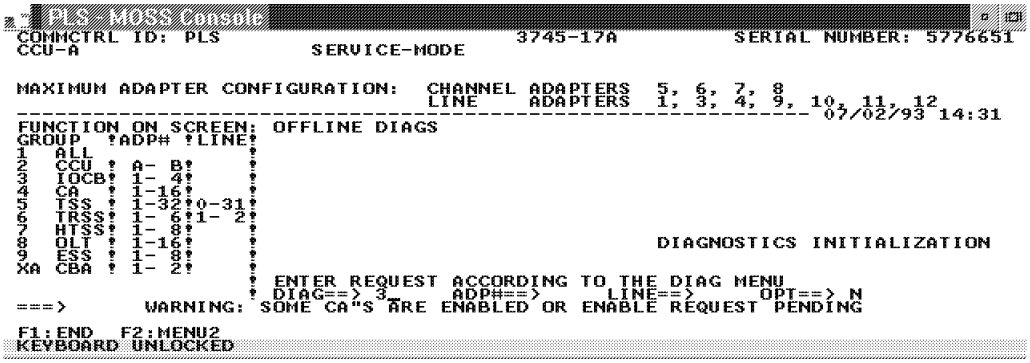


Figure 7-5. 3745 Off-Line Diags Menu

Go to Chapter 8, “Cable Setup” on page 8-1

Chapter 8. Cable Setup

Which cables are to be installed?

- If **TRA** cables, go to **"Installing the TRA Cables" on page 8-2** .
- If **ESCA** cables, go to **"Installing the ESCA Cables" on page 8-4** .
- If **RVX** cables, go to **"Installing the RVX Cables" on page 8-8** .
- If **ISDN** cables, go to **"ISDN Cables Installation" on page 8-24** .

Installing the TRA Cables

Note: If you are going to install **unshielded twisted-pair (UTP)** cables, go to “Unshielded Twisted-Pair Cables” on page 8-3

Shielded Cables

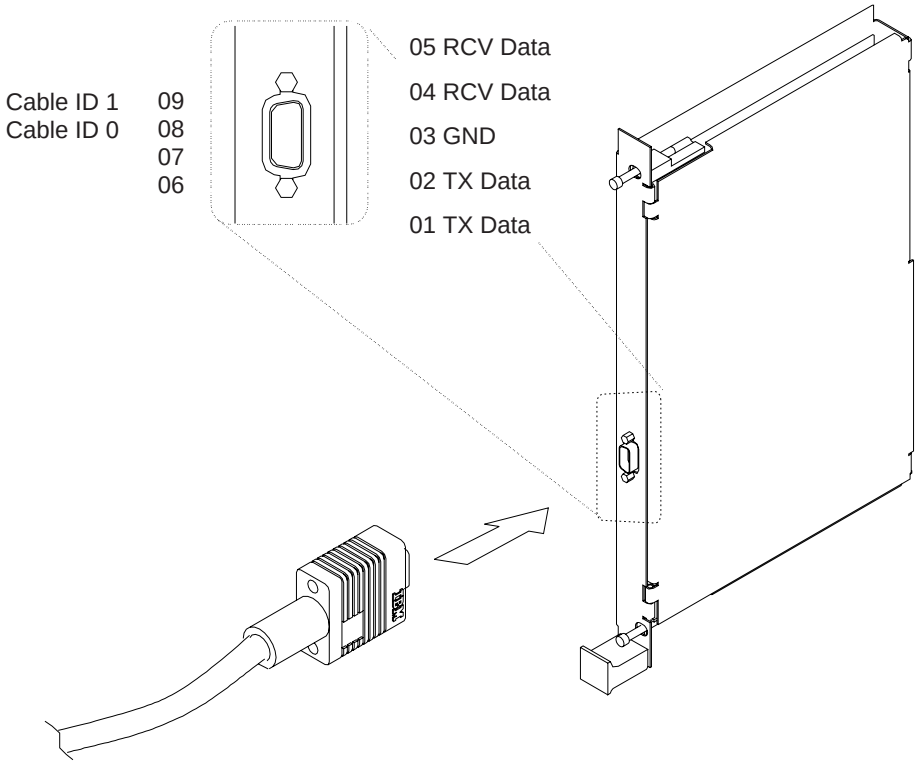


Figure 8-1. TIC3 (Token-Ring 16Mbps)

Step 1. ___ Obtain the plugging sheets from the customer (prepared using the *3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide*).

Step 2. ___ Plug the TRA cables into the TIC3 couplers accordingly.

For the coupler location, refer to Figure B-8 on page B-6.

Unshielded Twisted-Pair Cables

The token-ring Multistation Access Unit (MAU) may be attached to a TIC3 using unshielded twisted-pair cables with 100-ohm impedance. In that case, a token-ring UTP Media Filter (PN 43G3875) is installed between the TIC3 connector and the cable (see Figure 8-2).

Step 1. ___ Obtain from the shipping group the Token-Ring UTP media filters and plug these filters into the appropriate location according to the plugging sheet (prepared using the *3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide*).

Step 2. ___ Plug the UTP cables into the filters.

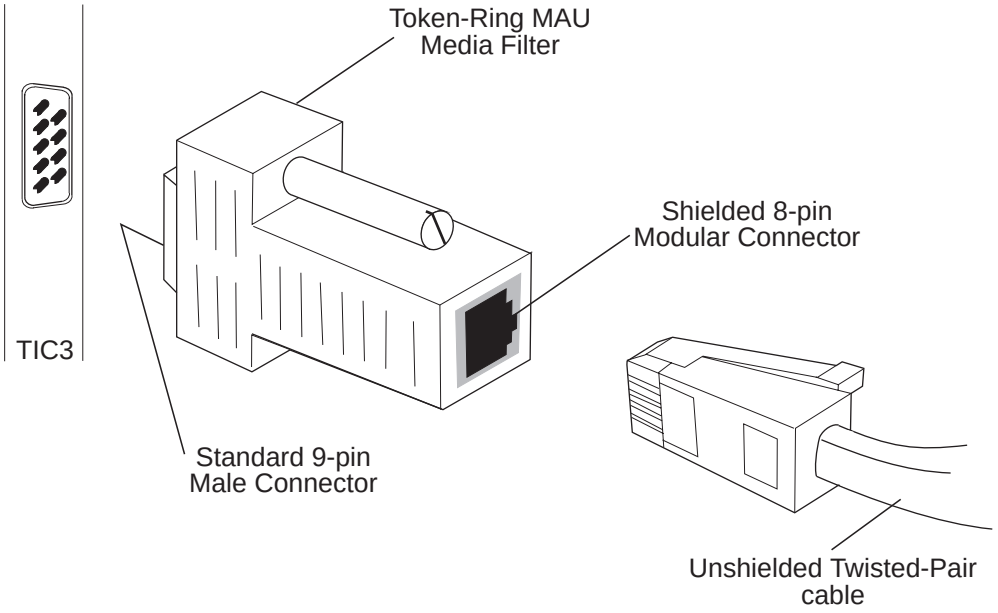


Figure 8-2. Connecting The UTP Cables

Which other cables do you have to install?

- If **ESCA** cables, go to **"Installing the ESCA Cables" on page 8-4** .
- If **RVX** cables, go to **"Installing the RVX Cables" on page 8-8** .
- If **ISDN** cables, go to **"ISDN Cables Installation" on page 8-24** .
- If there are **No more** cables to be installed. Go to **Chapter 9, "Installing the Ground Brackets on a 3746-900 Attached to a 3745-X1A" on page 9-1** .

Installing the ESCA Cables

Note: With the new machines, brackets PN 76F9407 and 58G5503 are no more shipped, if you did not received any of these brackets, go to step 2 on page 8-6.

1. **If there is a raised floor and:**

   - **If you have a bracket 2 with PN 76F9407 and the guide 3 with PN 69F2204 (see Figure 8-3) install as follows**:

     Step a. ___ **loosen** the 2 screws 1 maintaining the cover of the AC 1 power supply

     Step b. ___ **Install** the bracket 2 (PN 76F9407), tighten the 2 screws 1. See Figure 8-3

     Step c. ___ **Slide** the optical fiber guide 3 (PN 69F2204) in the bracket 2, tighten the screw 4.

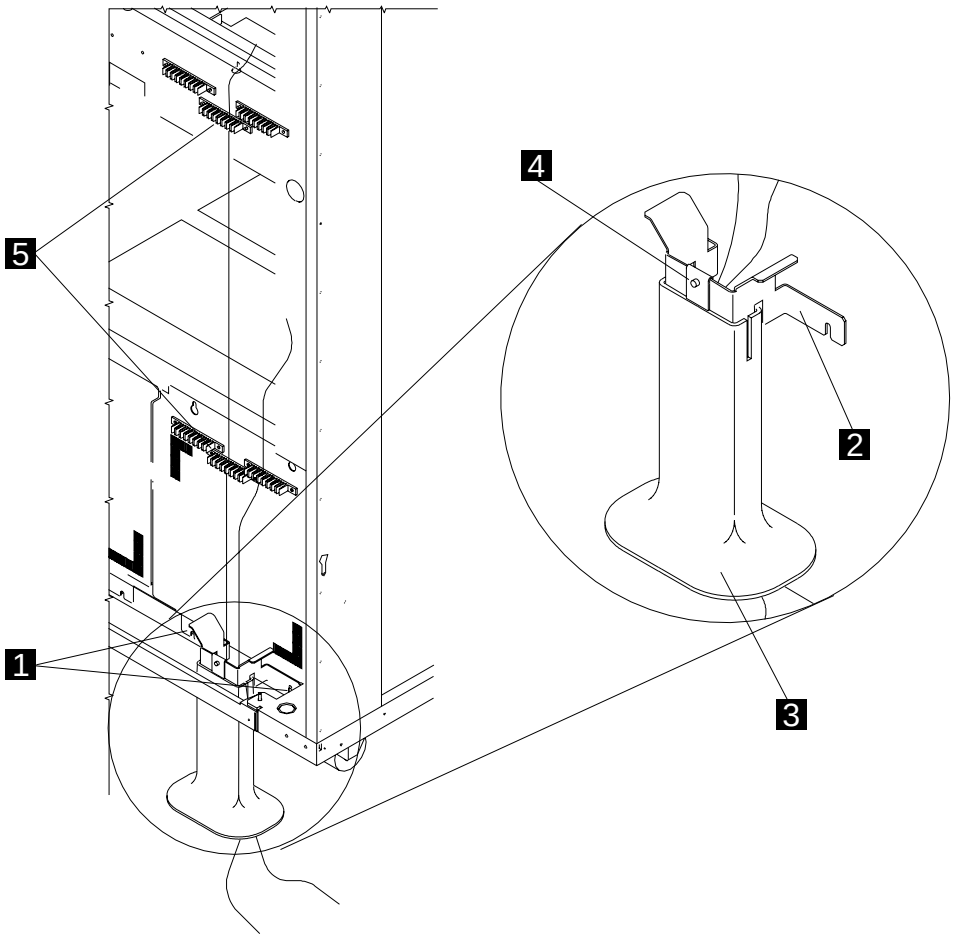


Figure 8-3. Routing the Optical Fibers

- **If you have a bracket 2 with PN 58G5503 and the guide 3 with PN 58G5504 (see Figure 8-4) install as follows**:

  Step a. ___ **Remove** the 2 screws 6 maintaining the cover of the AC 1 power supply

  Step b. ___ **Install** the two spacers 4 (PN 58G5711) and the bracket 2 (PN 58G5503) using two screws 1 (PN 1621214) See Figure 8-4

  Step c. ___ **Install** the optical fiber guide 3 (PN 58G5504) and tighten the 2 screws 1 .

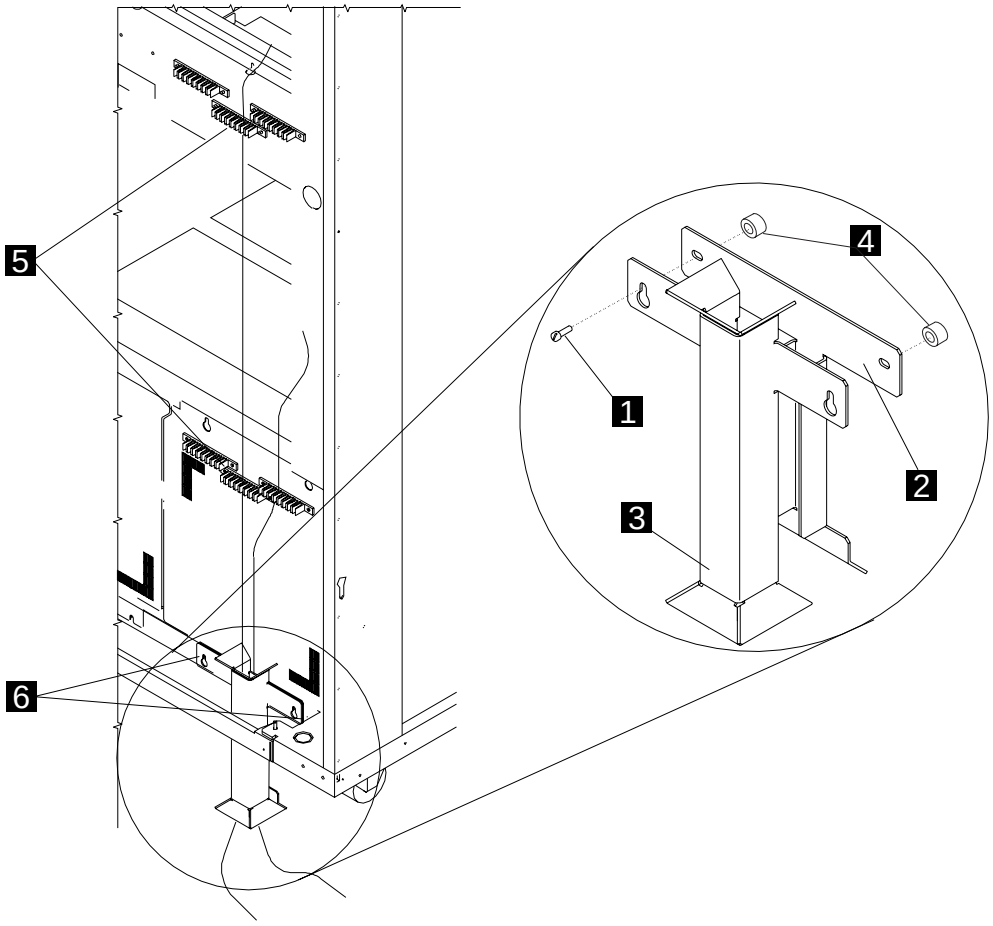


Figure 8-4. Routing the Optical Fibers

2. **Obtain the plugging sheets from the customer (prepared using the** *3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide***) and plug the ESCA cables as follows: (see Figure 8-5)**

   Step a. ___ **Route** the cables through the optical fiber guide if installed and insert the cables into the retaining strips **5** . (see Figure 8-3 on page 8-4 or Figure 8-3 on page 8-4)

   Step b. ___ **Loosen** the screws **1** .

   Step c. ___ **Slide** the bracket **2** upwards, plug the ESCA cable into the cassette.

   Note: To properly plug the ESCA connectors, apply pressure simultaneously to both grooved angled shoulders on the connectors.

   Step d. ___ **Slide** the bracket **2** downwards, then tighten the screws **1**

   For the coupler location refer to Figure B-8 on page B-6.

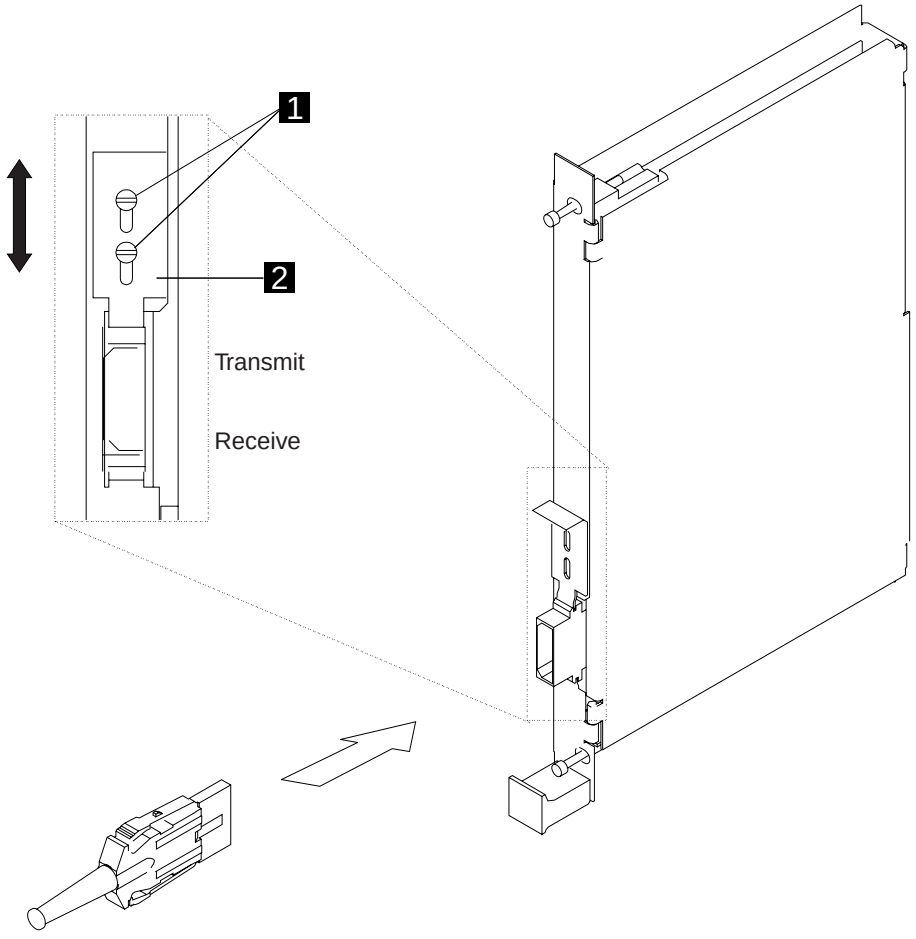


Figure 8-5. ESCA Cable Plugging

Do you have to install other cables?

- If **RVX** cables, go to **"Installing the RVX Cables" on page 8-8** .
- If **ISDN** cables, go to **"ISDN Cables Installation" on page 8-24** .
- If **No**, go to **Chapter 9, "Installing the Ground Brackets on a 3746-900 Attached to a 3745-X1A" on page 9-1** .

Installing the RVX Cables

Obtain (from the customer) the plugging sheets described in the appendix of the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457, where all the information required to install the LCBs and cables is recorded.

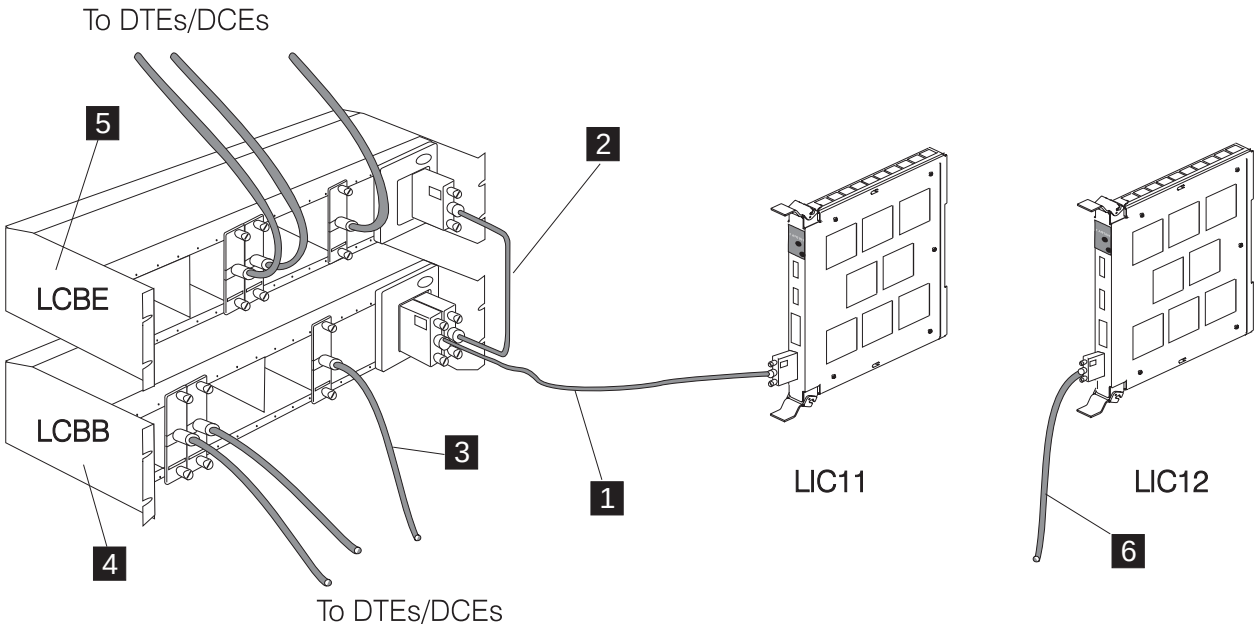


Figure 8-6. RVX Cables

There are **two** different **Line Interface Couplers** (LIC11 and LIC12):

1. The **LIC11** is connected to the DTE/DCE using the following cables:
   a. Cable **1** is used to connect the LIC11s to the LCBB (see “Installing the Cables From LIC11-to-LCBB” on page 8-10 for details of the installation).
   b. Cable **2** is used to connect the LCBBs to the LCBEs (see “Installing the LCBs and Cable from the LCBB to LCBE” on page 8-9 for details of the installation).
   c. Cable **3** is used to connect the LCBB/LCBE ARC location to the DTE/DCE (see “Installing the ARCs and Cables” on page 8-11 for details of the installation).

      Note: This cable is connected to the ARC plugged in the LCB or, if the ARC is part of the cable, it is directly connected into the LCB.
2. The **LIC12** is connected to the DTE/DCE using the following cable:
   - Cable **6** is used to directly connect the LIC12 to the DTE/DCE (see “LIC12 Cable Installation” on page 8-20 for details of the installation).

There are **two** types of **Line Connection Boxes** (LCB):

1. The **Line Connection Box Base** **4** (LCBB)
2. The **Line Connection Box Expansion** **5** (LCBE)

Note: Two LCBs (two LCBBs or one LCBB+ one LCBE) can be installed in the 3746-900 frame in locations 07D-A1 and 07D-B1 (see Figure B-1 on page B-1). These LCBs are installed by manufacturing.

Installing the LCBs and Cable from the LCBB to LCBE

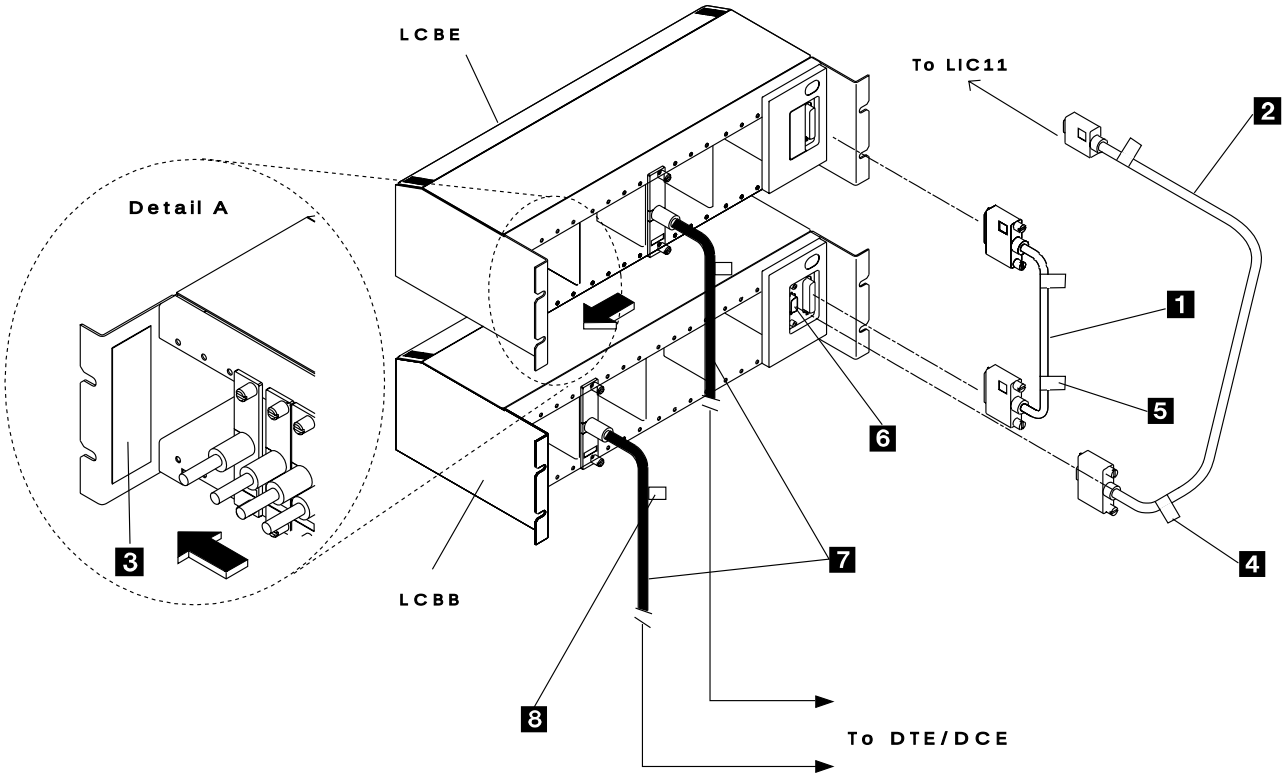


Figure 8-7. LCBB and LCBE Connection

1. ____ **Unpack** the LCB and obtain (from the shipping group) the different labels which will be used to identify the LCB and cables (at the end of the installation, save the unused labels for further needs).
2. ____ Start **installing** the LCBs **from the bottom** of the rack. The LCBE is always installed on top of its associated LCBB (see Figure 8-7).
3. ____ Refer to Figure E-5 on page E-6, and **install** and **fasten** the LCB in the 19 in. rack-mount using four captive nuts (PN 58G5766) and four screws (PN 1621230).
4. ____ Using the label **3** (PN 63F2503), **identify** this LCB by recording the following information:

   a. The **3746-900 name**.
   b. The **LCB number/location** (up to 25 characters).
   c. The **NCP range address** (see following note)

   Note: Record the same address on the other labels used to identify the (LIC11 to LCB) cable and the ARC/cable of the same link.

5. ____ **Stick** the label on the LCB (see detail A 3 in Figure 8-7).
6. ____ If you have installed one LCBB and one LCBE, **install** cable 1 (PN 58G5700) between the LCBB and the LCBE. This cable is part of the LCBE shipping group (see cable 1 in Figure 8-7 on page 8-9).

Note: When installing an empty LCBE, it will not be detected in the CDF-E before an ARC is plugged or a CLP IML is performed.

Installing the Cables From LIC11-to-LCBB

Obtain (from the shipping group) the low/medium speed line attachment cables ordered by the customer (see Table 8-1 for cable characteristics).

Table 8-1. Low/Medium-Speed Line Attachment Cables

Cable Part Number		Feature Code	Length Meters (Feet)
World Wide	**World Wide Except Canada**		
58G5601 (1) 17G5915 (2) 58G5602 17G5916 (2) 58G5603 17G5917 (2) 58G5604 17G5918 (2) 58G5605 17G5919 (2) 58G5606	58G5705 (1) 58G5717 (2) 58G5706 58G5718 (2) 58G5707 58G5719 (2) 58G5708 58G5720 (2) 58G5709 58G5721 (2) 58G5710	9913 (1) 9715 (3) 9714 (3) 9717 (3) 9716 (3) 5219 5218 5221 5220 5223 5222	1.3 (4) 7 (23) 7 (23) 15 (50) 15 (50) 35 (115) 35 (115) 70 (230) 70 (230) 105 (345) 105 (345)

Note:

1. This cable is connected from a LIC11 to the LCBB installed in the 3746-900 frame and it is identified by a specify code.
2. Plenum cable for U.S.A. and Canada only.
3. This code is a specify code.

For each LCBB installed in the 3746-900 frame, the cable (PN 17G5826) is already connected in the LCBB. Connect the LIC side of the cable to the appropriate LIC11 according to the worksheet information.

Install the LIC11-to-LCBB cables (see cable 2 in Figure 8-7 on page 8-9) as follows:

1. ____ Using two labels 4 (PN 63F2504), **identify** the cables by recording the following information:
   a. The **3746-900 name**.
   b. The **LCB number/location** (up to 25 characters).
   c. The **NCP range address**.
2. ____ **Stick** the labels 4 on the two leads of the cable at about 220 mm (9 in.) from the edges.
3. ____ **Connect** the cable 2 from the LCBB connector 6 to the LIC11 connector according to the plugging sheet information.

   Note: For the LIC11 location, refer to Figure B-8 on page B-6.

Installing the ARCs and Cables

Obtain (from the 3746-900 shipping group) the ARC and cables ordered by the customer (see tables on the following pages).

Notes:

1. The ARC can be part of the cable (assembly A) or separate from the cable (assembly B). See Figure 8-8.
2. When the ARC and cables will be plugged, using tie wraps to route properly the cables along the frame and allow easy access for further repair actions.

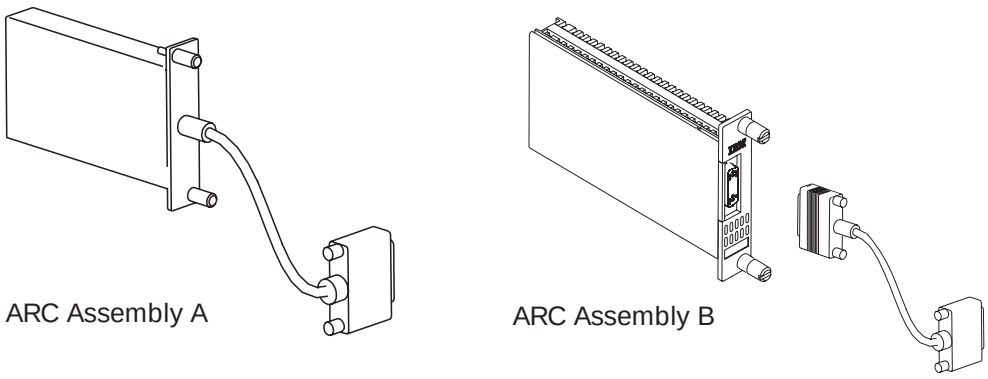


Figure 8-8. ARC Assembly A and B

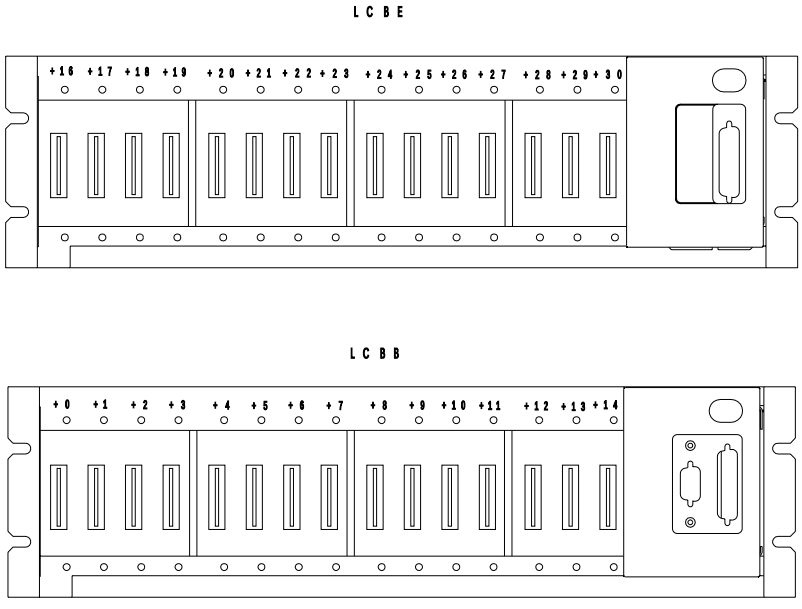


Figure 8-9. ARC Location in the LCBB and LCBE

Active Remote Connector (ARC) Assembly A

Table 8-2. Active Remote Connector (ARC) Assembly A

ARC Type	ARC Name	Feature Code	Length m (ft)	Wrap Plug
ARC V.24 DTE	ARC1B	6400	15 (50)	61F4523
ARC V.24 DCE	ARC1A1 ARC1A2	6405 6415	5 (16) 12 (40)	61F4522 61F4522
ARC V.35 DTE (see Note 1)	ARC3B	6500	15 (50)	61F4527
ARC V.35 DCE (see Note 2)	ARC3A1 ARC3A2	6505 6515	5 (16) 15 (50)	61F4526 61F4526
ARC X.21 DTE	ARC4B	6600	15 (50)	61F4530
ARC X.21 DCE	ARC4A1 ARC4A2	6605 6615	5 (16) 15 (50)	61F4529 61F4529
ARC X.21 DCE Transfix	ARC4A3 ARC4A4	6630 6635	5 (16) 15 (50)	61F4529 61F4529
ARC/3745 V.24 DTE (see Note 3)	ARC1D	**(NLP)**	5 (16)	61F4525
ARC/3745 V.24 DCE (see Note 3)	ARC1C	6485	5 (16)	61F4525
ARC/3745 V.35 DTE (see Note 3)	ARC3D	**(NLP)**	5 (16)	61F4578
ARC/3745 V.35 DCE (see Note 3)	ARC3C	6585	5 (16)	61F4528
ARC/3745 X.21 DTE (see Note 3)	ARC4D	**(NLP)**	5 (16)	65X8927
ARC/3745 X.21 DCE (see Note 3)	ARC4C	6625	5 (16)	65X8927

Note:

1. When connected to a **French DTE**, connect the adapter (PN 65X9899) between the cable and the DTE.
2. When connected to a **French DCE**, connect the adapter (PN 1749352) between the cable and the DCE.
3. Connect these cables to the 3745 cables according to the ARC type. If 3745 RPQ plenum cables must be connected, see: *Migration and Planning Guide*, GA33-0183

Note: (NLP) No longer provided.

Active Remote Connector (ARC) Assembly B with Cables

Table 8-3. ARC V.24 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
V.24 V.24 V.24 V.24	DCE DCE DCE DCE	ARC1A0	1.2 (4) 2.4 (8) 5 (17) 12 (40)	6406 6404 6405 6415
V.24	DTE	ARC1B0	15 (50)	6400
V.24 (3745)	DCE		5 (17)	6485

Table 8-4. ARC V.35 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
V.35 (see Note 1) V.35 (see Note 1) V.35 (see Note 1) V.35 (see Note 1)	DCE DCE DCE DCE	ARC3A0	1.2 (4) 2.4 (8) 5 (17) 15 (50)	6506 6504 6505 6515
V.35 (see Note 2)	DTE	ARC3B0	15 (50)	6500
V.35 (3745)	DCE		5 (17)	6585

Note:

1. When connected to a **French DTE**, connect the adapter (PN 65X9899) between the cable and the DTE.
2. When connected to a **French DCE**, connect the adapter (PN 1749352) between the cable and the DCE.

Table 8-5. ARC X.21 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
X.21 X.21 X.21 X.21	DCE DCE DCE DCE	ARC4A0	1.2 (4) 2.4 (8) 5 (17) 15 (50)	6606 6604 6605 6615
X.21	DTE	ARC4B0	15 (50)	6600
X.21 (Transfix)	DCE	ARC4E0	15 (50)	6635
X.21 (3745)	DCE		5 (17)	6625

Cables for ARC Assembly B

Table 8-6. Standard Cables for ARC

Cable Type	To	Length m (ft)	Current Part Number	Old Part Number (See Note 1)
V.24	DCE	.6 (2)	(NLP)	58G5610
V.24	DCE	1.2 (4)	02L3280	58G5611
V.24	DCE	2.4 (8)	02L3281	58G5612
V.24	DCE	5 (17)	02L3281	58G5613
V.24	DCE	10 (33)	(NLP)	58G5614
V.24	DCE	12 (40)	02L3283	58G5615
V.24	DTE	15 (50)	02L3284	58G5616
V.24 (3745)	DCE	.6 (2)	(NLP)	58G5640
V.24 (3745)	DCE	1.2 (4)	(NLP)	58G5641
V.24 (3745)	DCE	2.4 (8)	(NLP)	58G5642
V.24 (3745)	DCE	5 (17)	58G5643	58G5643
V.24 (3745)	DTE	5 (17)	(NLP)	58G5644
V.35	DCE	.6 (2)	(NLP)	58G5620
V.35	DCE	1.2 (4)	02L3285	58G5621
V.35	DCE	2.4 (8)	02L3286	58G5622
V.35	DCE	5 (17)	02L3287	58G5623
V.35	DCE	10 (33)	(NLP)	58G5624
V.35	DCE	15 (50)	02L3288	58G5625
V.35	DTE	15 (50)	02L3289	58G5626
V.35 (3745)	DCE	.6 (2)	(NLP)	58G5645
V.35 (3745)	DCE	1.2 (4)	(NLP)	58G5646
V.35 (3745)	DCE	2.4 (8)	(NLP)	58G5647
V.35 (3745)	DCE	5 (17)	58G5648	58G5648
V.35 (3745)	DTE	5 (17)	(NLP)	58G5649
X.21	DCE	.6 (2)	(NLP)	58G5630
X.21	DCE	1.2 (4)	02L3290	58G5631
X.21	DCE	2.4 (8)	02L3291	58G5632
X.21	DCE	5 (17)	02L3292	58G5633
X.21	DCE	10 (33)	(NLP)	58G5634
X.21	DCE	15 (50)	02L3293	58G5635
X.21	DTE	15 (50)	02L3294	58G5636
X.21 (Transfix)	DCE	5 (17)	(NLP)	58G5637
X.21 (Transfix)	DCE	15 (50)	02L3295	58G5638
X.21 (3745)	DTE	5 (17)	(NLP)	58G5654
X.21 (3745)	DCE	.6 (2)	(NLP)	58G5650
X.21 (3745)	DCE	1.2 (4)	(NLP)	58G5651
X.21 (3745)	DCE	2.4 (8)	(NLP)	58G5652
X.21 (3745)	DCE	5 (17)	56G5653	58G5653

Notes:

1. Old cables can be used but not ordered for 3746-9x0.
2. NLP: This cable is no longer provided.

Depending on the ARC assembly received, go to the corresponding pages:

- **ARC assembly A**: “Connecting the ARC Assembly A to the LCBB/LCBE” on page 8-16.
- **ARC assembly B**: “Connecting the ARC Assembly B to the LCBB/LCBE” on page 8-17.

Connecting the ARC Assembly A to the LCBB/LCBE

According to the plugging sheet information, install the ARC/cables as follows (see Figure 8-7 on page 8-9):

1. ____ Using two labels 8 (PN 63F2505), **identify** the cables by recording the following information:
   a. The **3746-900 name**.
   b. The **LCB number/location** (up to 25 characters).
   c. The **NCP range address**.
   d. The **connector position** (+0 to +14 or +16 to +30).
   e. The **symbolic line name** (up to eight characters).
2. ____ **Stick** the labels 8 on the two leads of the cable at about 220 mm (9 in.) from the edges.
3. ____ **Plug** the cable into the LCBB/LCBE ARC position (+0 to +14 for the LCBB, or +16 to +30 for the LCBE). See Figure 8-9 on page 8-11.

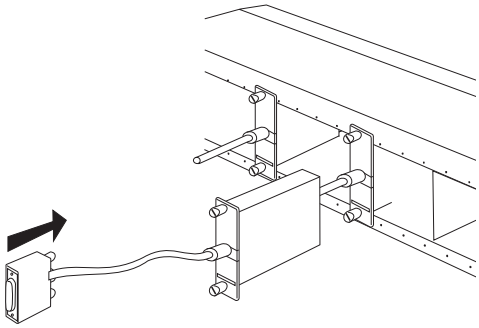


Figure 8-10. ARC/Cable Installation

4. ____Determine the ARC connection type: 3746-900 or 3745.

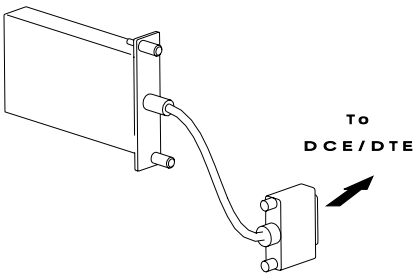


Figure 8-11. ARC Connection Type 3746-900

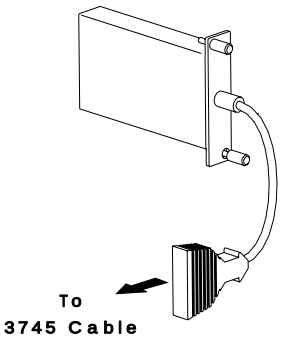


Figure 8-12. ARC Connection Type 3745

To connect an ARC connection type:

- **3746-900**: go to “Connecting the Cable Connector Type 3746-900 to the DCE/DTE” on page 8-19.
- **3745**: go to “Connecting the Cable Connector Type 3745 to the DCE/DTE” on page 8-20.

Connecting the ARC Assembly B to the LCBB/LCBE

1. ____ According to the plugging sheet information, identify the ARC type (see Figure 8-13, note that ARC V.35 DTE is no more provided) and plug the ARC in the LCBB/LCBE locations (see Figure 8-9 on page 8-11).

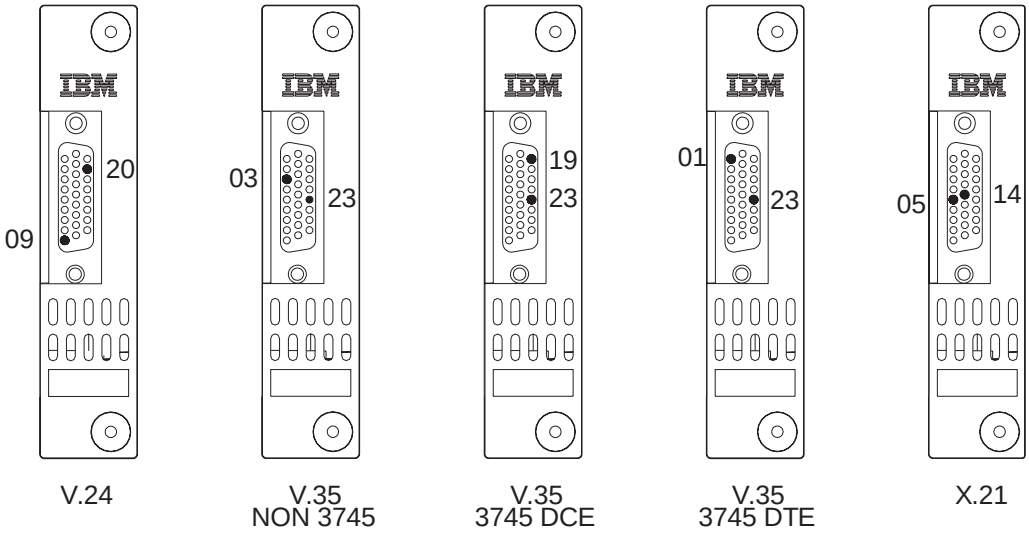


Figure 8-13. ARC Type

Note: The different ARCs are identified by labels and key pins which avoid plugging a wrong cable in a specific ARC type.

2. ____ Tighten screws **A** to secure the ARC cassette.

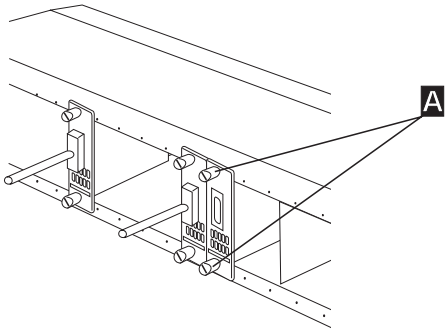


Figure 8-14. ARC Installation

3. ____ Obtain the corresponding cables to the ARCs installed in Step 1. Using two labels (PN 63F2505), **identify** these cables by recording the following information:

   a. The **3746-900 name**.

   b. The **LCB number/location** (up to 25 characters).

   c. The **NCP range address**.

   d. The **connector position** (+0 to +14 or +16 to +30)

   e. The **symbolic line name** (up to eight characters).

4. ____ **Stick** the labels on the two leads of the cable at about 220 mm (9 in.) from the edges.
5. ____ **Connect** the cable into the ARC plugged in positions (+0 to +14 for the LCBB, or +16 to +30 for the LCBE). See Figure 8-9 on page 8-11. Tighten these cables with two screws **G** .

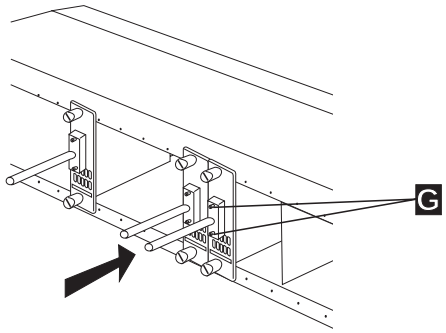


Figure 8-15. Cable Installation

6. ____ Determine the cable connector type plugged on the ARCs (see Figure 8-16 and Figure 8-17).

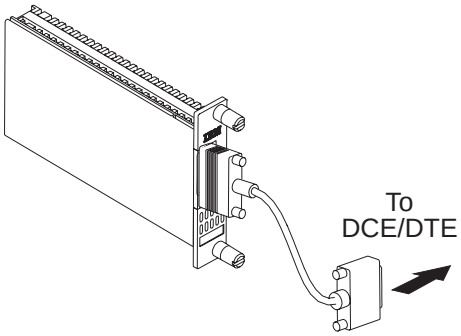


Figure 8-16. Cable Connector Type 3746-900

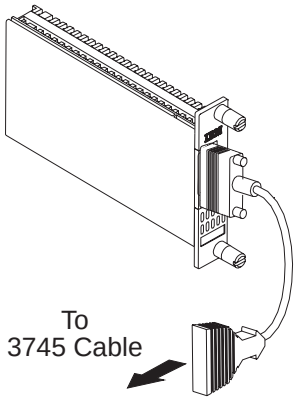


Figure 8-17. Cable Connector Type 3745

To connect a cable type:

- **3746-900**: go to “Connecting the Cable Connector Type 3746-900 to the DCE/DTE” on page 8-19.
- **3745**: go to “Connecting the Cable Connector Type 3745 to the DCE/DTE” on page 8-20

Connecting the Cable Connector Type 3746-900 to the DCE/DTE

Plug cable connectors **type 3746-900** (ARC 1A1, 1A2, 3A1, and 3A2) to the DCEs. Plug cables ARC 1B and 3B to the DTEs.
The **adapters** (PN 1749352 and PN 65X9899) plugged between the cable and the DTE/DCE are optional. They are country dependant (see the following notes):

1. If you are connecting a **V.35 DCE (ARC 3A1 or 3A2)** to a **French modem**, connect one adapter (PN 1749352) between the modem and the cable (see Figure 8-18). Connect **connector 1** to the **cable** and **connector 2** to the **modem**.

Figure 8-18. Adapter for ARC 3A1 or 3A2 (PN 1749352)

2. If you are connecting a **V.35 DTE (ARC 3B)** to a **French terminal**, connect one adapter (PN 65X9899) between the terminal and the cable (see Figure 8-19). Connect **connector 1** to the **cable** and **connector 2** to the **terminal**.

   Note: This ARC 3B is no more provided.

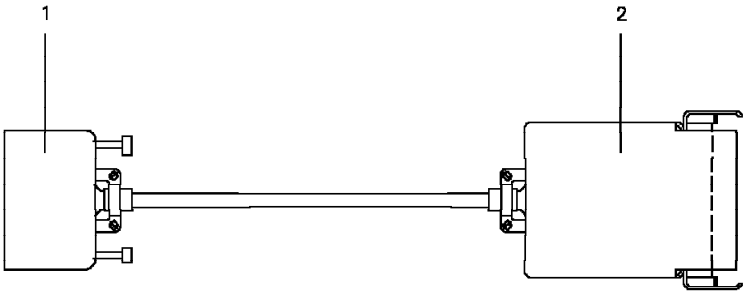


Figure 8-19. Adapter for ARC 3B (PN 65X9899)

Connecting the Cable Connector Type 3745 to the DCE/DTE

Plug cable connectors **type 3745** (ARC 1C, 1D, 3C, and 3D) directly to the 3745 cables as follows (see Figure 8-20):

1. ____Remove the seal **1** from the ARC/cable.
2. ____Place the seal on the end of connector **3** .
3. ____Plug the connector **2** into connector **3** firmly until you hear a click.

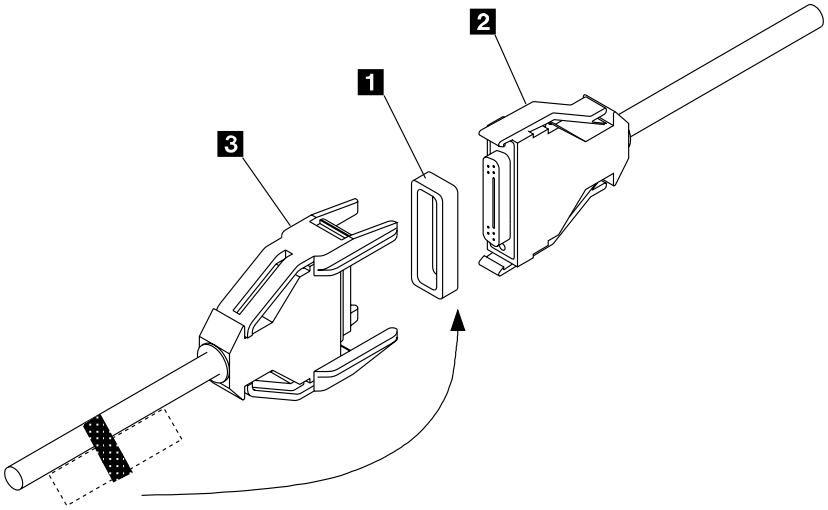


Figure 8-20. Connection of the Cable Type 3745

LIC12 Cable Installation

Obtain (from the 3746-900 shipping group) the LIC cables ordered by the customer (see Table 8-7).

Table 8-7. High-Speed Line Attachment Cables

Part Number	Cable Type	Cable Group	Fixed Length m (ft)	Variable Length m (ft)	
				Short Cable	Long Cable
58X9344	V.35 DCE	5831	10 (33)	Up to 10 (33)	Up to 35 (115)
76F8633 (1)	V.35 DCE	7007	10 (33)	Up to 10 (33)	Up to 35 (115)
58X9345	X.21 DCE	5833	10 (33)	Up to 10 (33)	Up to 100 (328)
76F8634 (1)	X.21 DCE	7009	10 (33)	Up to 10 (33)	Up to 100 (328)
58X9347	V.35 DTE	5837	10 (33)	Up to 10 (33)	Up to 35 (115)
76F8635 (1)	V.35 DTE	7011	10 (33)	Up to 10 (33)	Up to 35 (115)
58X9348	X.21 DTE	5839	10 (33)	Up to 10 (33)	Up to 100 (328)
76F8636 (1)	X.21 DTE	7013	10 (33)	Up to 10 (33)	Up to 100 (328)
58X9346 (2)	X.21 Transfix	5835	10 (33)	Up to 10 (33)	
11F4837	X.21 EIA-547 DCE	5844	10 (33)	Up to 10 (33)	
76F8637 (1)	X.21 EIA-547 DCE	7015	10 (33)	Up to 10 (33)	
11F4838	X.21 EIA-547 DTE	5845	10 (33)	Up to 10 (33)	
76F8638 (1)	X.21 EIA-547 DTE	7017	10 (33)	Up to 10 (33)	

Note: (1) Plenum cable for U.S.A and Canada only - (2) X.21 Transfix is available in France only.

According to the plugging sheet information:

1. ____**Connect** the cables to the LIC12 (for location, refer to Figure B-8 on page B-6).
2. ____**Connect** the other end of the cable to the DCE or DTE, depending on the cable type (refer to Table 8-7).

Updating and Saving the CDF-E

These procedures are **required** only when **RVX cables** (LCB and ARC) are **installed**. During these procedures you must record and test the new resources, display and update the created CDF-E, and save this new CDF-E on diskette.

1. **To IML the 3746-900 to record the LCB and ARC information:**
   a. ____Obtain (from the customer) the **"Plugging Sheet for 3746-900 LIC11"** (this sheet is available in the *3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide*).
   b. ____Double click on the **"3746-900 object icon"**.
   c. ____Click on the **"Operation Management"**.
   d. ____Double click on **"Perform General IML"**.
   e. ____Click on **"Yes"** two times, to execute a **General IML with Diagnostics**.
   f. ____Click on **"OK"**, and wait for the end of IML indicated by a **green** '3746-900 object icon'.
2. **To display and update the active CDF-E:**
   a. ____Click on **"Configuration Management"**.
   b. ____Double click on **"Display/Update Active Configuration (CDF-E)"**.
   c. ____Verify (on the display screen) the presence of the LCBs and ARCs installed in previous steps (when an LCB and ARC is detected installed, the CDF-E displays **"LCB/ARC"** on the right side of the associated LIC11. If there is **no ARC** installed, only **"LCB"** is displayed).

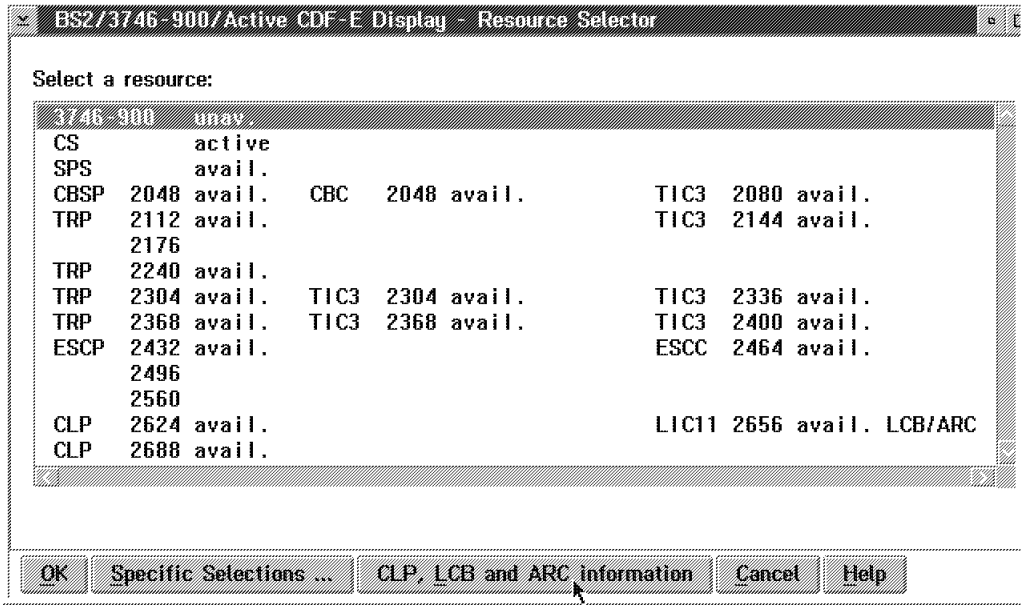


Figure 8-21. CLP Display

   d. ____Click on **"CLP, LCB and ARC information"**.
   e. ____Click on the **"LIC11-LCB"** line, then enter the **"LCB number / location"** of the LCB (or LCBE) according to the plugging sheet.

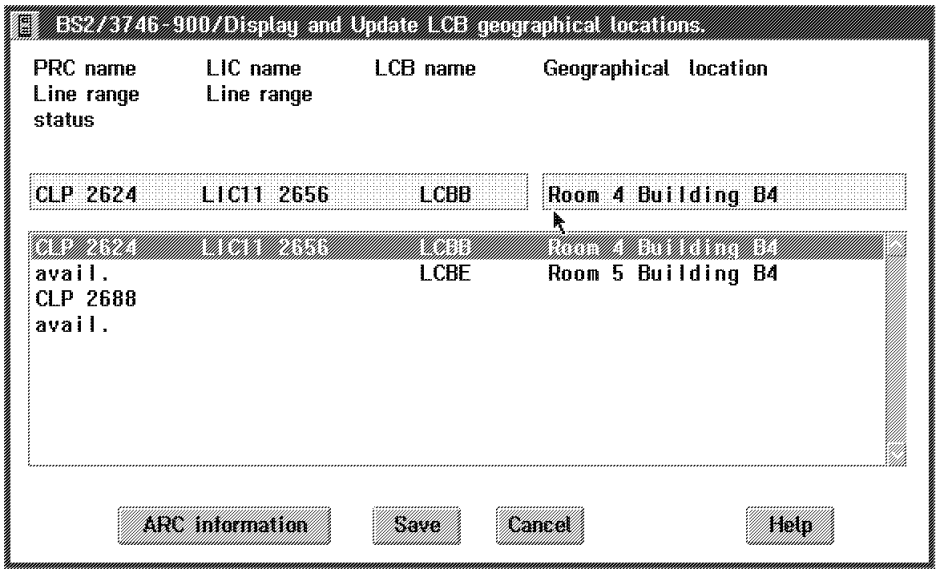


Figure 8-22. LCB Display

f. ____If you have to enter the information for only one LCB, click on **"Save"**, then click on **"OK"**. If you have to define more than one LCB, press **"Enter"**, then return to Step 2e on page 8-21. Then click on **"ARC information"**.

g. ____Click on the first **"ARC"** line and enter the **"Symbolic Line Name"** according to the customer information. Press **"Enter"**, then click on the other ARC lines and enter their symbolic line names.

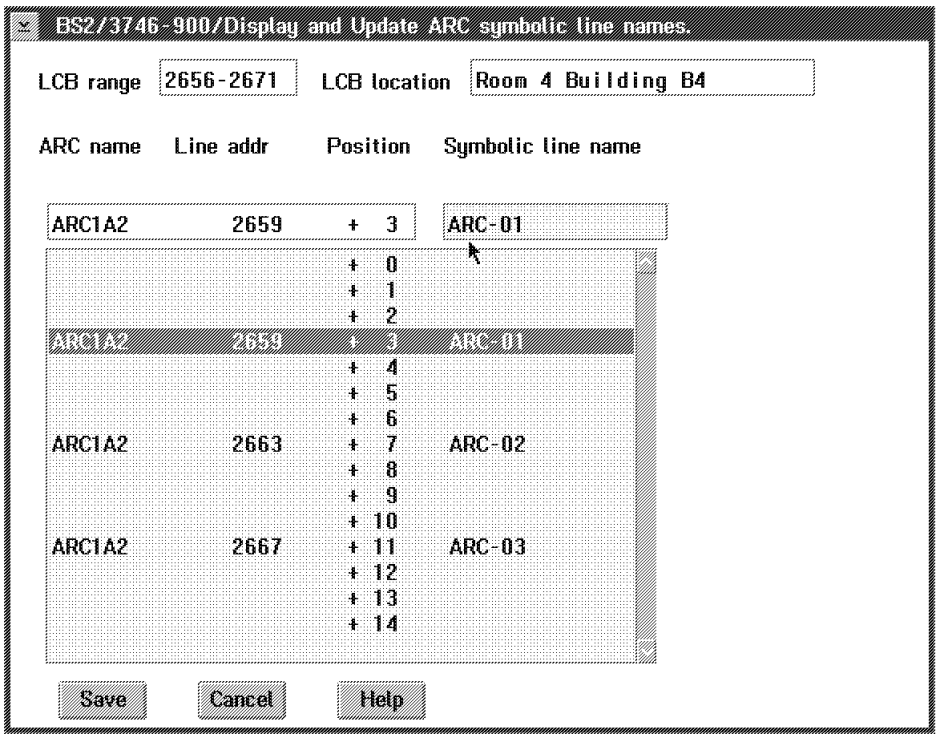


Figure 8-23. ARC Display

h. ____When all the ARCs are identified, click on **"Save"**, then click on **"OK"**.

i. ____Click on **"Cancel"** (3 times) to exit from the function.

3. **To save the reference CDF-E on diskette:**

   a. ____Double click on **"Save Active CDF-E as Reference"**.

   b. ____Click on **"OK"**.

   c. ____When the save is completed, double click on **"Copy Reference on diskette"**.

   d. ____Click on **"OK"**, insert the 3746-900 installation parameter diskette, then follow the prompts.

Do you have to install ISDN cables?

- If **Yes**, go to **"ISDN Cables Installation" on page 8-24** .
- If **No**, go to **Chapter 9, "Installing the Ground Brackets on a 3746-900 Attached to a 3745-X1A" on page 9-1** .

ISDN Cables Installation

Step 1. ___ Obtain the plugging sheets from the customer (prepared using the *3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide*).

Step 2. ___ Plug the LIC16 cable into the couplers accordingly.

Table 8-8. LIC16 Cable

Cable Type	Length m(ft)	Part Number
E1	30 (100)	80G3984

If you are installing a:

- **3746-900 attached to a 3745-X1A**, go to Chapter 9, “Installing the Ground Brackets on a 3746-900 Attached to a 3745-X1A” on page 9-1.
- **3746-900 attached to a 3745-17A**, go to Chapter 10, “Installing the Ground Brackets on a 3746-900 Attached to a 3745-17A” on page 10-1.

Chapter 9. Installing the Ground Brackets on a 3746-900 Attached to a 3745-X1A

If you are installing a 3746-900:

- **Without** a controller expansion, go to “Installing the 3746-900 Ground Brackets” on page 9-3
- **With** a controller expansion which can be:
  - **Attached** to the 3746-900 frame go to “Installing the 3746-900 and Controller Expansion Ground Brackets” on page 9-5
  - **Detached** rom the 3746-900 frame, go to “Installing the 3746-900 Ground Brackets” on page 9-3 and then go to “Installing the Controller Expansion Ground Brackets” on page 9-4.

Note: The ground brackets reduce the possibility of radio frequency interference that might be produced by the operating machine. A proper installation of the ground brackets is necessary to meet FCC requirements, and to conduct electrostatic discharges to ground.

Installing the 3746-900 Ground Brackets

Step 1. ____ Install the front ground plate **2** PN 63F2606 and right ground plate **1** PN 63F2608 using screws PN 2665527 (refer to Figure 9-1).

Before securing the ground plate screws, push down on the plate to give it maximum contact with the floor.

Step 2. ____ Install the rear bracket **3** PN 63F2607 using screws PN 2665527.

Step 3. ____ Install the right end cover previously removed from the 3745, from the 3746-A11, or from the 3746-A12 on the 3746-900 right side.

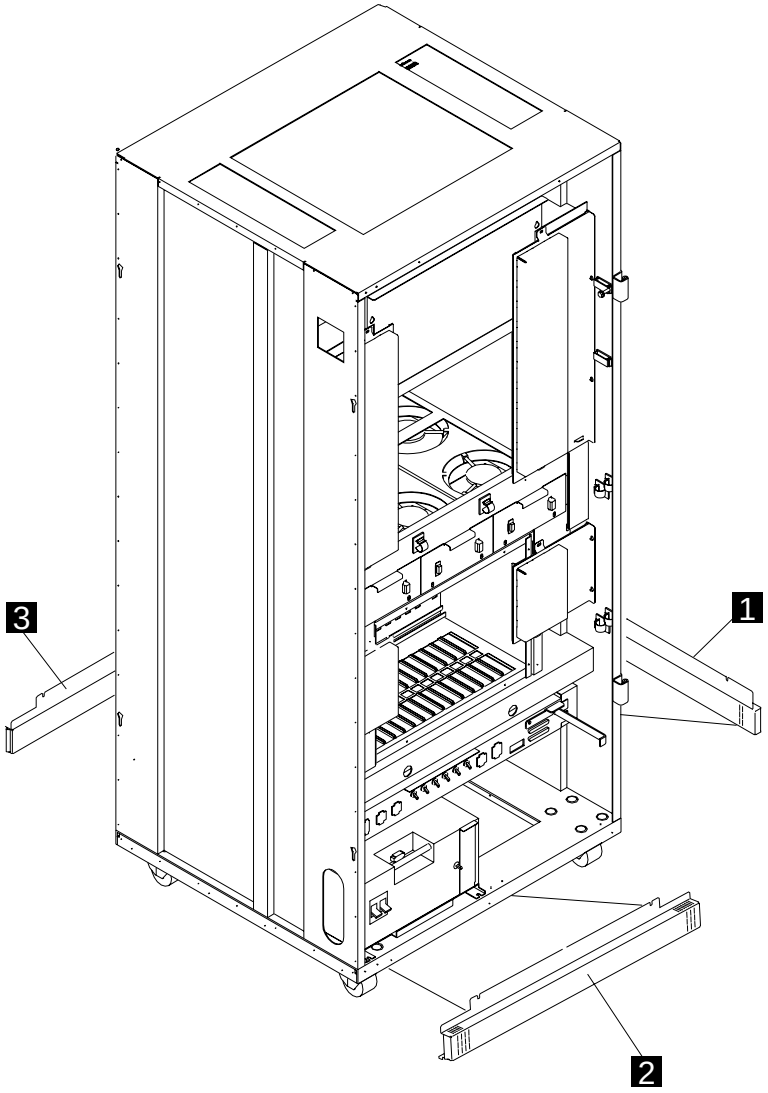


Figure 9-1. 3746-900 Ground Brackets (Front View)

If you are installing a **controller expansion** detached from the 3746-900, go to **"Installing the Controller Expansion Ground Brackets" on page 9-4** , otherwise go to **Chapter 11, "Making the Machine Ready for the Customer" on page 11-1** .

Installing the Controller Expansion Ground Brackets

Step 1. ____ If installed, remove the two covers **4** by loosing their mounting screws.

Step 2. ____ Install the right and left brackets **1** (PN 58G5676) using screws (PN 2665527).
Before securing the ground plate screws, push down on the plate to give it maximum contact with the floor.

Step 3. ____ Install the front ground plate **2** (PN 58G5675) and rear ground plate **3** (PN 58G5675) using screws (PN 2665527) then re-installed covers **4** .

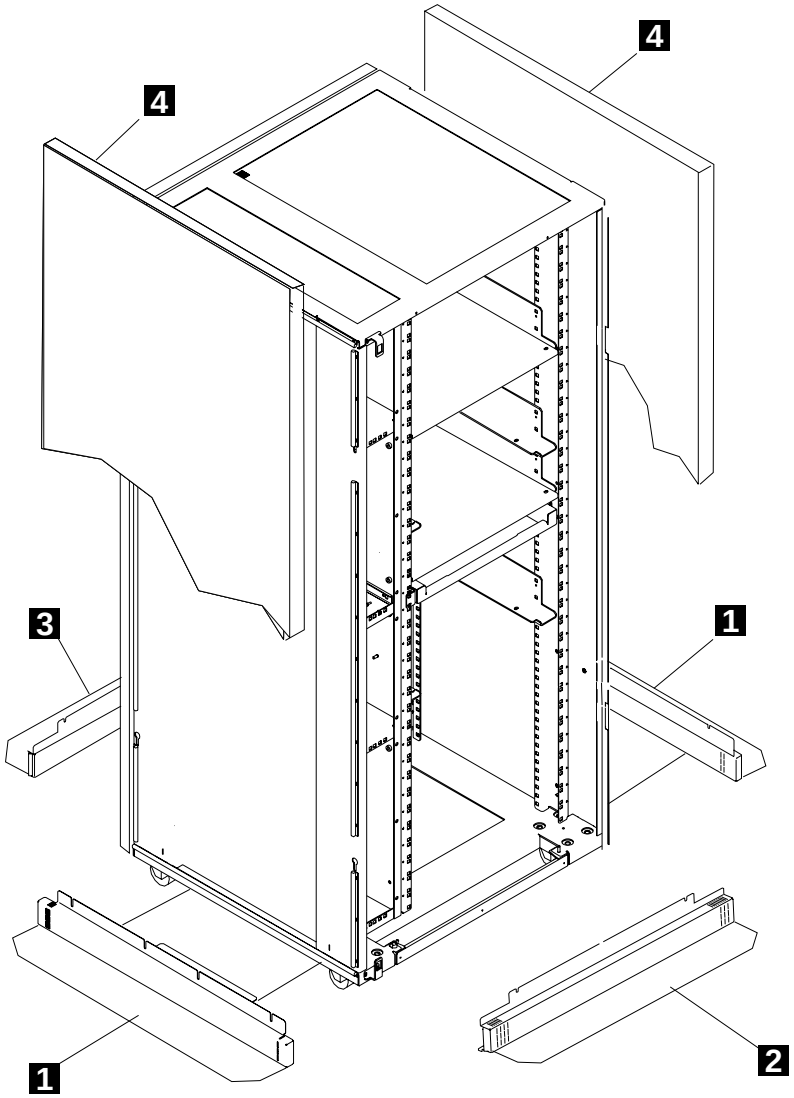


Figure 9-2. Controller Expansion Ground Brackets (Front View)

Go to Chapter 11, "Making the Machine Ready for the Customer" on page 11-1 .

Installing the 3746-900 and Controller Expansion Ground Brackets

Step 1. On the **3746-900 frame**:

a. ____ Install the front ground plate **2** (PN 58G5677) using screws (PN 2665527)

Note: Before securing the ground plate screws, push down on the plate to give it maximum contact with the floor.

b. ____ Install the rear bracket **3** (PN 58G5675) using screws (PN 2665527).

Step 2. On the **controller expansion frame**:

a. ____ Install the front ground plate **4** (PN 58G5675) and left ground plate **1** (PN 58G5676) using screws (PN 2665527) (refer to Figure 9-3).

b. ____ Install the rear bracket **3** (PN 58G5675) using screws (PN 2665527), then re-installed covers **4** .

c. ____ Re-installed cover **5** on the rigth side of the rack and tighten the mounting screws.

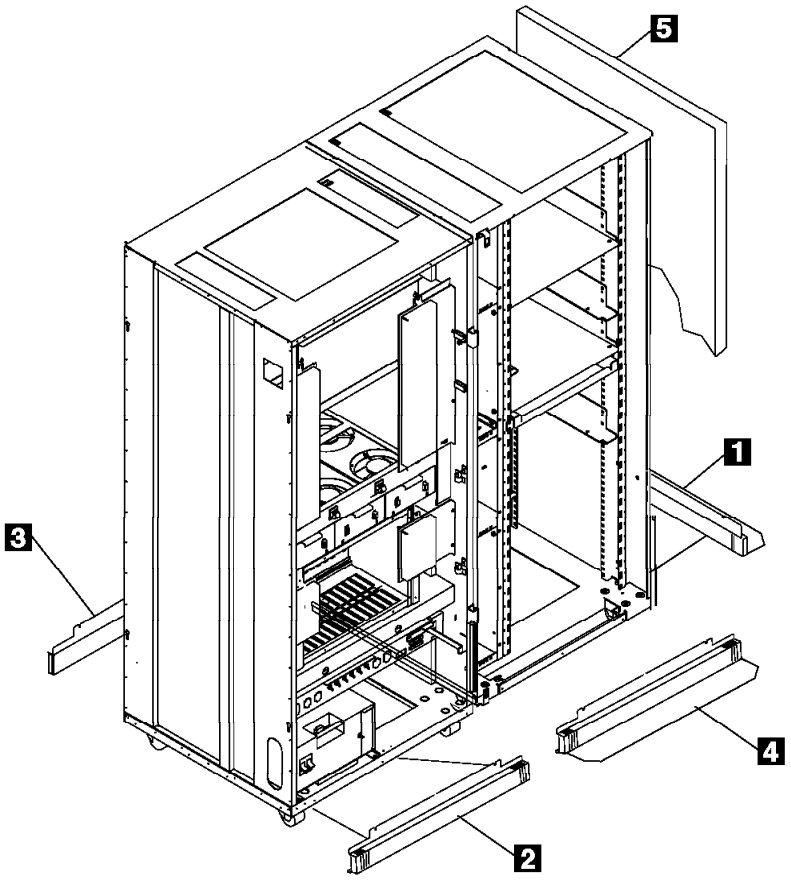


Figure 9-3. 3746-900 and Controller Expansion Ground Brackets (Front View)

Go to Chapter 11, "Making the Machine Ready for the Customer" on page 11-1 .

Chapter 10. Installing the Ground Brackets on a 3746-900 Attached to a 3745-17A

If you are installing a 3746-900 and a 3745-17A:

- **Without** a controller expansion, go to “Installing the Ground Brackets on a 3746-900 and a 3745-17A”
- **With** a controller expansion which can be:
  - **Attached** to the 3746-900 frame go to “Installing the Ground Brackets on 3746-900/3745-17A/Controller Expansion” on page 10-5
  - **Detached** rom the 3746-900 frame, go to “Installing the Ground Brackets on a 3746-900 and a 3745-17A” and then go to “Installing the Controller Expansion Ground Brackets” on page 10-4.

Note: The ground brackets reduce the possibility of radio frequency interference that might be produced by the operating machine. A proper installation of the ground brackets is necessary to meet FCC requirements, and to conduct electrostatic discharges to ground.

Installing the Ground Brackets on a 3746-900 and a 3745-17A

All the following procedures can be used to install the ground plates when the 3746-900 is installed on the other side of the 3745 (refer to Figure 10-1 on page 10-3).

Step 1. ____ Remove brackets **1** from the ground plates **2** and **4** (PN 58G5307 and PN 58G5306). Refer to Figure 10-1 on page 10-3.

Step 2. ____ Install the spacer **3** (PN 58G5341) on the right side of the ground plate **2** using two screws (PN 1621191).

Step 3. ____ Install the ground plate **2** and the spacer **3** on the bottom rear frame of the 3746-900 using three screws (PN 2665527). Do not tighten the screws now.

Step 4. ____ Install the ground plate **4** (PN 58G5306) on the bottom rear frame of the 3745 using three screws (PN 1621210). Do not tighten the screws now.

Step 5. ____ Route the inter-machine cables into the slots and along the path provided by the ground plates installed.

Step 6. ____ Install covers **5** (PN 58G5336) and **6** (PN 58G5340) on top of the ground plates **2** and **4**.

Step 7. ____ Secure these covers (**5** and **6**) by sliding brackets **1** in the screws **8**. When the brackets are in place, tighten all the screws which maintain the ground plates **2** and **4**.

Step 8. ____ Install plates **7** (PN 58G5308) on the edges of the ground plates installed using four screws (PN 1621191).

Notes:

a. Ground plate **2** must always be installed on the 3746-900.

b. Ground plate **4** must always be installed on the 3745-17A.

c. Cover **5** must always be installed on the right machine and cover **6** must always be installed on the left machine.

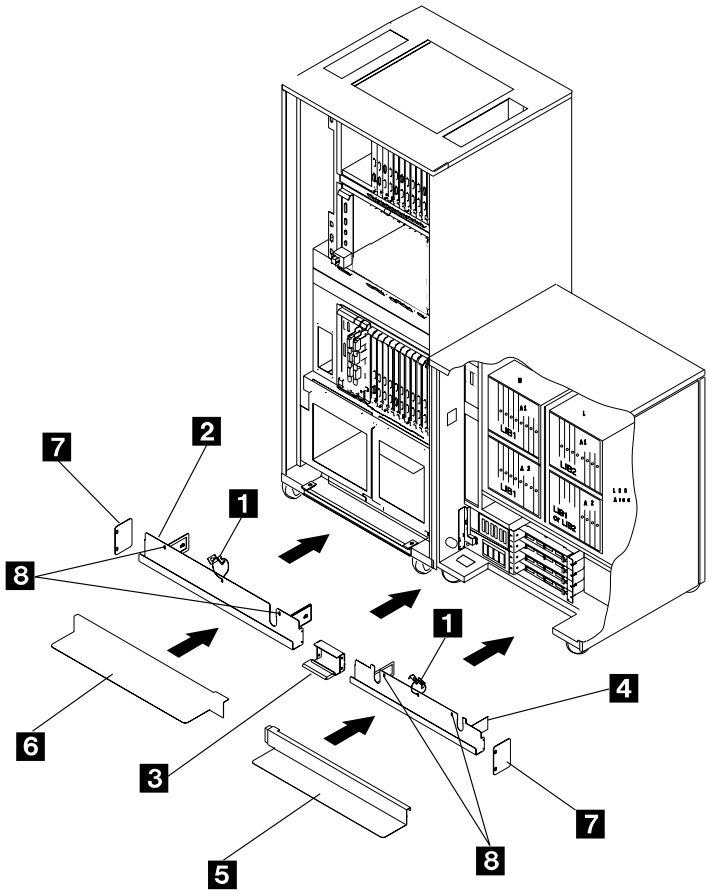


Figure 10-1. 3746-900 and 3745 17A Ground Brackets (Rear View)

Step 9. ____ Install plate PN 58G5335 on the front bottom of the 3746-900 (see Figure 10-2).

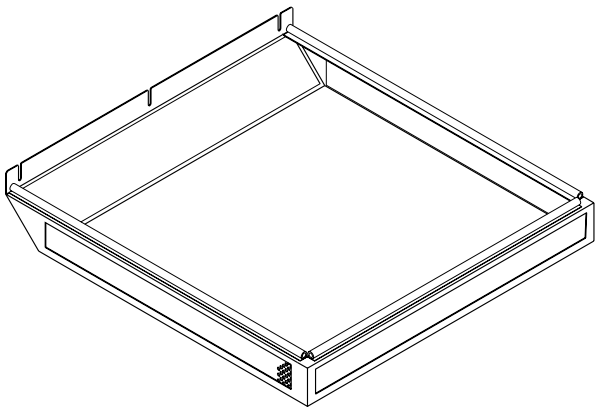


Figure 10-2. 3746-900 Front Ground Plate

Go to Chapter 11, "Making the Machine Ready for the Customer" on page 11-1.

Installing the Controller Expansion Ground Brackets

Step 1. ____ If installed, remove the two covers **4** by loosing their mounting screws.

Step 2. ____ Install the right and left brackets **1** (PN 58G5676) using screws (PN 2665527).
Before securing the ground plate screws, push down on the plate to give it maximum contact with the floor.

Step 3. ____ Install the front ground plate **2** (PN 58G5675) and rear ground plate **3** (PN 58G5675) using screws (PN 2665527) then re-installed covers **4** .

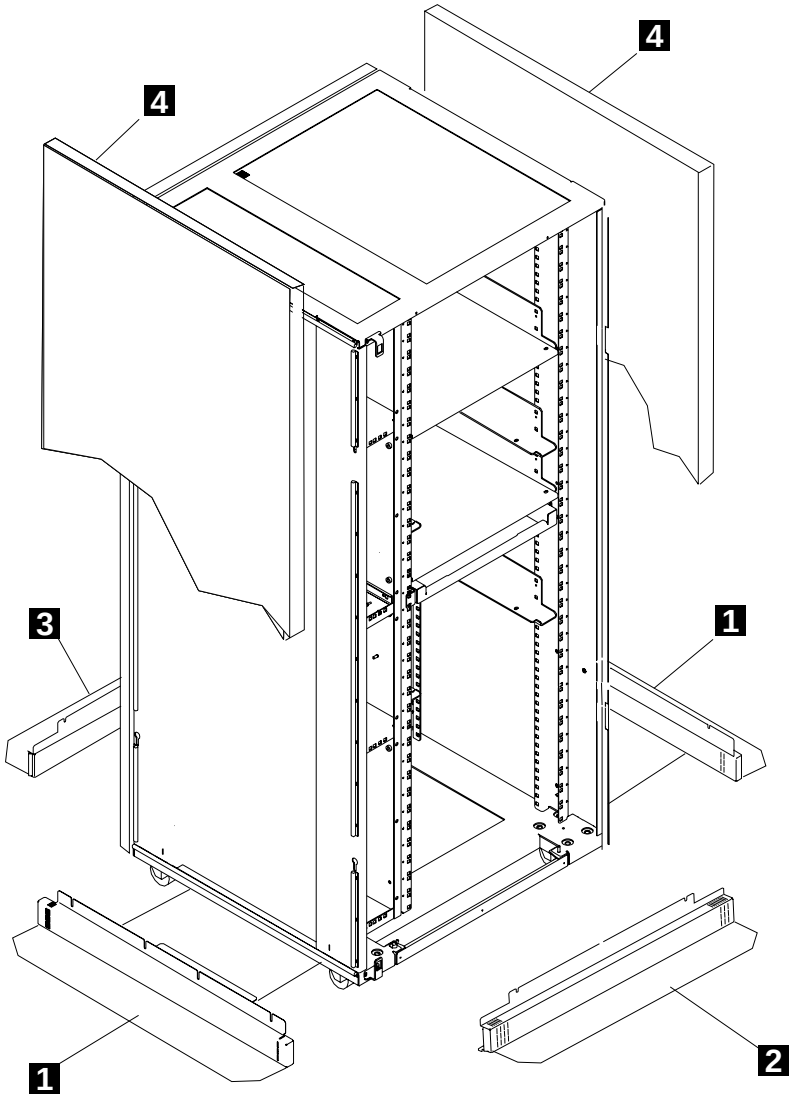


Figure 10-3. Controller Expansion Ground Brackets (Front View)

Go to Chapter 11, "Making the Machine Ready for the Customer" on page 11-1 .

Installing the Ground Brackets on 3746-900/3745-17A/Controller Expansion

Refer to “Installing the 3746-900 Ground Brackets” on page 9-3 to install the ground brackets on the 3746-900 and 3745 frames and refer to “Installing the Controller Expansion Ground Brackets” on page 9-4 to install the ground brackets on the controller expansion, then go to Chapter 11, “Making the Machine Ready for the Customer” on page 11-1.

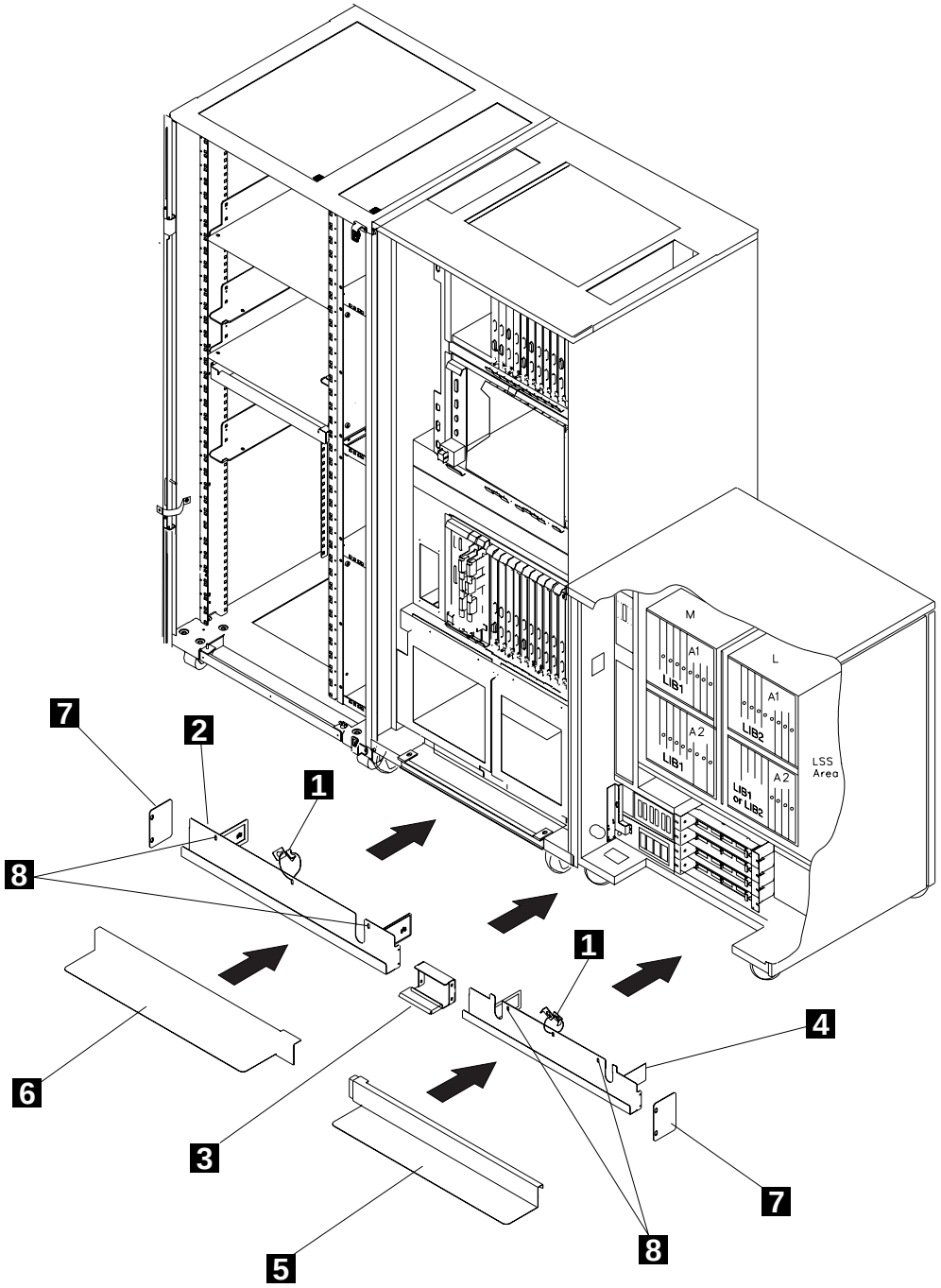


Figure 10-4. controller expansion/3746-900/3745-17A Ground Brackets (Front View)

Chapter 11. Making the Machine Ready for the Customer

Making Machine Ready for Customer

Is the LIC available on a **CD-ROM** (EC F12380 and above):

- **Yes**, go to step 1
- **No**, go to step 4

1. **Save the configuration parameters on diskette**
   a. ____Double click on the **"service processor object icon"**.
   b. ____Click on **"Operation Management"**.
   c. ____Double click on **"Manage Disks and Databases"**.
   d. ____Click on **"Save databases on diskette"**, and click on **"OK"**.
   e. ____Insert the **configuration parameters diskette** (1.44 diskette, PN 02L3427) and follow the prompts.
   f. ____When the save is completed, click on **"Cancel"** to exit from the function.
2. ____ Do you have a **"Backup"** Service Processor?
   - **Yes**, go to step 3.
   - **No**, go to step 7 on page 11-3
3. ____ **Update the "Backup" Service Processor**

   To have the same image of the information recorded on the "active" and "backup" service processors:
   a. Install the same level of code (LIC) on the backup and active SP:
      1) Insert the CD-ROM in the CD drive
      2) Double click on the **service processor object icon.**
      3) Click on **change management**
      4) Double click on **update SP (& NNP) LIC on non-active version**, the code is being copied from the CD to the SP hard drive
   b. Restore the configuration data:
      1) ____From the SP menu, click on **"Operation Management"**.
      2) ____Double click on **"Manage Disks and Databases"**.
      3) ____Click on **"Restore databases from diskette"**, and click on **"OK"**.
      4) ____Insert the **configuration parameters diskette** and follow the prompts.
      5) ____When the restore is completed, click on **"Cancel"** to exit from the function.

   Go to **step 7 on page 11-3**
4. **Save the service processor hard disk on the optical disk drive**

Use the procedure **Saving the service processor hard disk on the optical disk** described in chapter 3 of the *Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577)*, SY33-2115.

5. ____ Do you have a **"Backup"** Service Processor?
   - **Yes**, go to step 6.
   - **No**, go to step 7
6. ____ **Update the "Backup" Service Processor**

   To have the same image of the information recorded on the "active" and "backup" service processors, copy the backup optical disk on the backup service processor hard disk.
   Use the procedure **Restoring the service processor hard disk from the optical disk** described in chapter 3 of the *Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577)*, SY33-2115.
7. ____**Clean up the SRC database for the 3746-900 installed**
   a. ____ Double click on the **"3746-900 object icon"**.
   b. ____ Click on **"Problem Management"**.
   c. ____ Double click on the **"Manage Alarms/Errors/Events (SRCs)"** function.
   d. ____ Select **"all alarms, errors, events"**, and click on **"OK"**.
   e. ____ Click on **"Options"** on the action bar.
   f. ____ From the pulldown menu, click on **"Delete SRCs from database"**.
   g. ____ Confirm your selection by clicking on the **YES** pushbutton.
   h. ____ Click on **"Cancel"** to leave the function.
8. ____ **Shutdown your service processor**
   a. ____ On the MOSS-E view, click on **"Program"**, then select **Shutdown**.
   b. ____ **Enter** the administrator password to exit from MOSS-E view.
9. ____ **Reinitialize the Service Processor**
   a. ____ Press **Ctrl**, **Alt**, and **Del** simultaneously, to reinitialize the Service Processor.

      Note: While the initialization is in progress, start the 3746-900 initialization (go to Step 10).
   b. ____ Open the MOSS-E session.
      1) Enter the **administrator password** (default is IBM3745).
      2) Click on '**OK**' or press **ENTER**.
10. ____ **IML the 3746-900,** at the 3746-900 control panel
    a. Set **Service Mode = 0** and validate.
    b. Set **Power Control = 1**.
    c. Press the **General IML** push button to select **Function 0**. A general IML is started.
       A successful completion will display code **00-00-0000** at the 3746-900 control panel. When the IML is completed, go to Step 11 on page 11-4.

11. ____ **IPL the 3745,** at the 3745 control panel
    a. Set **Service Mode = 0** and validate.
    b. Set **Power Control** according to the customer's option, and validate.
    c. Set **Function = 0**, and validate. A general IPL is started. A successful completion will display code **FF4** at the 3745 control panel.
12. ____ **Verify** that the IML/IPL are completed
    a. ____ Wait for the **green** 3746-900 **object icon** indicating that IML has completed successfully. Panel code displayed **00-00-0000**
    b. ____ Wait for the **pink** 3745 **object icon** indicating that IPL has completed successfully. Panel code displayed **FF4**.
13. ____ **Ensure** that the control panel gates are closed and secured.
14. ____ **Ensure** that all internal covers, shields, and parts previously removed are re-installed.
15. ___ **Place** the optical disk and diskettes in the storage box located in the 3745 X1A frame below the control panel, or in the service drawer if you have installed a controller expansion.
16. ___ **Close** the external doors. Using the cover lock key, **push and turn** the camlocks to fasten the doors.
17. ___ **Clean up** the installation area.
18. ___ If necessary, ask the customer to:
    a. **Change the passwords** using the function **Manage Passwords** (for details refer to *Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577)*, SY33-2115, chapter 'Maintaining the Service Processor').
    b. **Set or reset the automatic configuration activation**, refer to Figure 11-1 on page 11-5.
    c. **Enable the CP/NNP backup** if the nnp-b is installed, refer to Figure 11-1 on page 11-5.

    Note: These options referenced in steps 18b and 18c are accessible from 'Network Node Processor (NNP) Management' using the function **Manage Control Points on NNPs**. For details refer to *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457, chapter 'Working with the NNP Functions'.

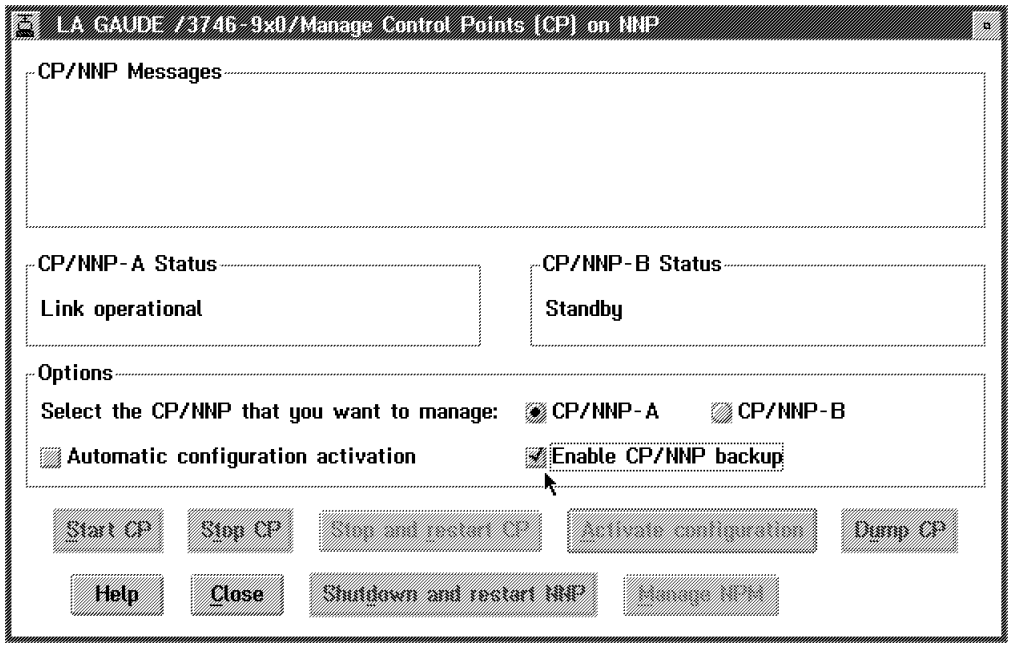


Figure 11-1. Manage the Control Points

End of Installation

Chapter 12. Removal or Relocation of the 3746-900 Attached to a 3745-X1A

Before Removing the 3746-900

The sales branch office must determine if packaging materials and instructions are required and must obtain applicable bill(s) of material. This should normally be ordered 90 days before the anticipated removal date.

Note: In the U.S.A the CE orders this package.

It may be necessary for the customer, or a customer-appointed electrician to do all or some of the work involved in the following steps. The CE must ensure that all of the following steps have been completed.

Go through the following procedures sequentially.

Updating the Service Processor Network Configuration

Step 1. ____ If you are going to remove the 3746-900 used to report the alerts to NetView, modify the mainstream error reporting by defining an other path using the Service Processor Installation and Maintenance.

Step 2. ____ If not logged, enter the Service Processor maintenance password. (default password IBM3745).

Note: If you have a power allegiance recorded for the 3746-900 (to verify, display the 3746-900 status), remove it using the **"Manage MOSS-E Power Allegiance"** function before trying to remove the 3746-900.

Step 3. ____ Double click on the **"Service Processor Object Icon"**.

Step 4. ____ Click on **"Configuration Management"**.

Step 5. ____ Double click on **"Manage 3745/3746-9x0 installation/removal"**.

Step 6. ____ Select **the 3746-900** to be removed.

Step 7. ____ Click on **"Save"** and insert the 3746-900 installation parameters diskette to save the data.

Note: This diskette must be shipped with the machine.

Step 8. ____ Re-select the 3746-900 to be removed and click on **"Remove"**.

Step 9. ____ Check and confirm the delete option. At the end, the Service Processor is reinitialized.

Disconnecting the Mainline Power

Step 1. ____ At the control panel, ensure that the Power Control window displays '3' (Local), and then push the Standby key.

Step 2. ____ **Switch** the main circuit breaker CB1 **OFF** at the 3746-900 primary power box. (See Figure B-12 on page B-9, or Figure B-13 on page B-9 if the optional power feature is installed).

Step 3. ____ Ensure that the customer's branch-circuit breakers feeding the 3746-900 receptacle are **turned OFF.**

Step 4. ____ Unplug the 3746-900 main power cable, or ask the customer to disconnect the 3746-900 power cable from its ac power receptacle (or dc power if any).

Note: If you have to remove a controller expansion, you have to disconnect its power cable following the same procedures.

Step 5. ____ Coil the disconnected power cable inside the 3746-900.

Disconnecting the Interface Cables

Step 1. ____ If the machines are being relocated, label and remove all data set cables from the TRA and ESCA adapters.

Note: It is advisable to disconnect the cables, starting at the top of the gate (expansion board 07M-A1), and working down.

Step 2. ____ Remove the cable (PN 76F9440 or 76F9441) from the 8228 LAN adapter (plugs 1 to 8) to the 3746-900 01N-A1 F1.

Disconnecting Inter-Machine Cabling

Step 1. ____ Proceed in reverse order, as for the installation (see Chapter 4, “Connecting the 3746-900 to a 3745-X1A” on page 4-1), and disconnect the following inter-machine cables:

a. ____ Power control cable (PN 03F7538) from the 3745, and then coil it up.

b. ____ UEPO cable (PN 76F9341) from the 3745.

c. ____ +5V cables, if they exist (two for PN 76F9338 and two for PN 76F9339), from the 3745 or 3746 frames.

d. ____ IOC and DMA bus flat cables. Roll and secure them in the 3746-900 frame.

Step 2. In the 3745 or 3746 boards:

a. ____ Where the IOC and DMA cables have been removed, remove the dico cards (PN 17G6080) then plug the LA bus terminator cards into the same locations.

b. ____ Using the function 'Locate Bypass Card Position', locate the active and passive bypass cards (PN 09G2862, 09G2864, and 6264604). Remove these cards and put them in the 3746-900 shipping group.

Step 3. ____ Remove the frame-to-frame screws (PN 1621596) and spacers (PN 72F0659) see Figure 4-1 on page 4-3. Put these parts into an envelope. Write the part number on the envelope, and place it in the shipping group.

Preparing Machines for Shipment

Step 1. ____ Remove the end cover on the right side. Loosen the four retaining screws using a 5/16" socket from inside the machine. Then lift the cover from the slotted holes on the frame and pull it towards you.

Step 2. ____ Re-install the end cover at the right side of the 3745 base frame, 3746-A11, or 3746-A12, depending on the 3745 configuration.

Step 3. ____ Re-install all parts removed from frames, covers, and doors.

Step 4. ____ Re-install the shipment bars on the upper and lower ends of the basic board (and expansion board if any, see Figure 2-2 on page 2-3)

Step 5. ____ Pack the machine using the pack/unpack instructions.

Step 6. ____ Pack the customer's parts and documentation in one package and label it: "Customer Package".

Step 7. ____ Pack other parts and all maintenance documentation in another package and label it: "Maintenance Package". Hold for use by IBM Service Representative.

Step 8. ____ Coil all removed cables and store them alongside the machine.

Step 9. ____ Complete the removal records according to existing procedures. Inform the IBM Branch Office that the machines are ready for shipment.

Testing the 3745

Step 1. ____ Run **CDF verify** (see step 2 on page 5-2 for details).

Step 2. ____ Run the IOC and DMA diagnostics (see step 5 on page 5-5 for details).

Step 3. ____ Ask the customer to re-start and check the network.

Chapter 13. Removal or Relocation of a 3746-900 Attached to a 3745-17A

Go through the following procedures sequentially.

Updating the Service Processor Network Configuration

Step 1. ____ Modify the mainstream error reporting to NetView (if necessary).

Step 2. ____ If not logged on, enter the Service Processor maintenance password (default password IBM3745).

Note: If you have a power allegiance recorded for the 3746-900 (to verify, display the 3746-900 status), remove it using the **"Manage MOSS-E Power Allegiance"** function before trying to remove the 3746-900.

Step 3. ____ Double click on the **"Service Processor Object Icon"**.

Step 4. ____ Click on **"Configuration Management"**.

Step 5. ____ Double click on **"Manage 3745/3746-9x0 installation/removal"**.

Step 6. ____ Select **the 3746-900** to be removed.

Step 7. ____ Click on **"Save"** and insert the 3746-900 installation parameters diskette to save the data.

Note: This diskette must be shipped with the machine.

Step 8. ____ Re-select **the 3746-900** to be removed and click on **"Remove"**.

Step 9. ____ Check and confirm the delete option. At the end, the Service Processor is reinitialized.

Disconnecting the Mainline Power

Step 1. ____ At the control panel, ensure that the Power Control window displays '3' (Local), and push the Standby key.

Step 2. ____ **Switch** the main circuit breaker CB1 **OFF** at the 3746-900 primary power box. (See Figure B-12 on page B-9 or Figure B-13 on page B-9, if the optional power feature is installed)

Step 3. ____ Ensure that the customer's branch-circuit breakers, feeding the 3746-900 receptacle, are **turned OFF.**

Step 4. ____ Unplug the 3746-900 main power cable, or ask the customer to disconnect the 3746-900 power cable from its ac power receptacle (or dc power, if any).

Step 5. ____ Coil the disconnected power cable inside the 3746-900.

Disconnecting the Interface Cables

Step 1. ____ If the machines are being relocated, label and remove all data set cables from the TRA, ESCA, and CLA adapters.

Note: It is advisable to disconnect the cables starting at the top of the gate (board 01D-A1), and working down.

Step 2. ____ Remove the cable (PN 76F9440 or 76F9441) from the 8228 LAN adapter to the 3746-900 01N-A1 F1.

Disconnecting Inter-Machine Cabling

Step 1. ____ Proceed in reverse order as for the installation (see Chapter 6, “Connecting the 3746-900 to the 3745-17A” on page 6-1), and disconnect the following inter-machine cables:

a. ____ Power control cable (PN 17G5924) from the 3745, and coil it up.

b. ____ UEPO cable (PN 17G5923) from the 3745.

c. ____ IOC and DMA bus flat cables. Roll and secure them in the 3746-900 frame.

Step 2. In the 3745 board:

a. ____ Plug the LA bus terminator cards in the boards where the IOC and DMA cables have been removed.

Preparing Machines for Shipment

Step 1. ____ Re-install all parts removed from frames, covers, and doors.

Step 2. ____ Re-install the shipment bars on the upper and lower ends of the basic and expansion board if any (see Figure 2-2 on page 2-3).

Step 3. ____ Pack the machine using the pack/unpack instructions.

Step 4. ____ Pack the customer's parts and documentation in one package and label it: "Customer Package".

Step 5. ____ Pack other parts and all maintenance documentation in another package and label it: "Maintenance Package. Hold for use by IBM Service Representative."

Step 6. ____ Coil all removed cables and store them alongside the machine.

Step 7. ____ Complete the removal records according to existing procedures. Inform the IBM Branch Office that the machines are ready for shipment.

Testing the 3745

Step 1. ____ Run **CDF verify** (see step 2 on page 7-2 for details).

Step 2. ____ Run the IOC and DMA diagnostics (see step 5 on page 7-5 for details).

Step 3. ____ Ask the customer to re-start and check the network.

Appendix A. Parameter Worksheets

Parameter worksheet for Processor Loading

For details about these parameters, refer to chapter 'Network Routing Protocol for each Processor Type' in *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457.

Select a routing protocol for each type of processor that you have.

Parameter worksheet for Ethernet Bridge

Location and Cable Type

Ethernet bridge name	
Ethernet attachment type	□ 10 Base T □ *AUI*
TIC3 location	
8229 location	□ controller expansion A □ controller expansion B

SNMP Community Name

Community name	
IP address (in dotted notation) of the community name owner	
Privilege	□ Read □ Write

SNMP Trap Community Name

Trap community name	
IP address (in dotted notation) of the network manager	
Authentication of failure traps	□ Enable □ Disable

Appendix B. 3746-900 Component Locations

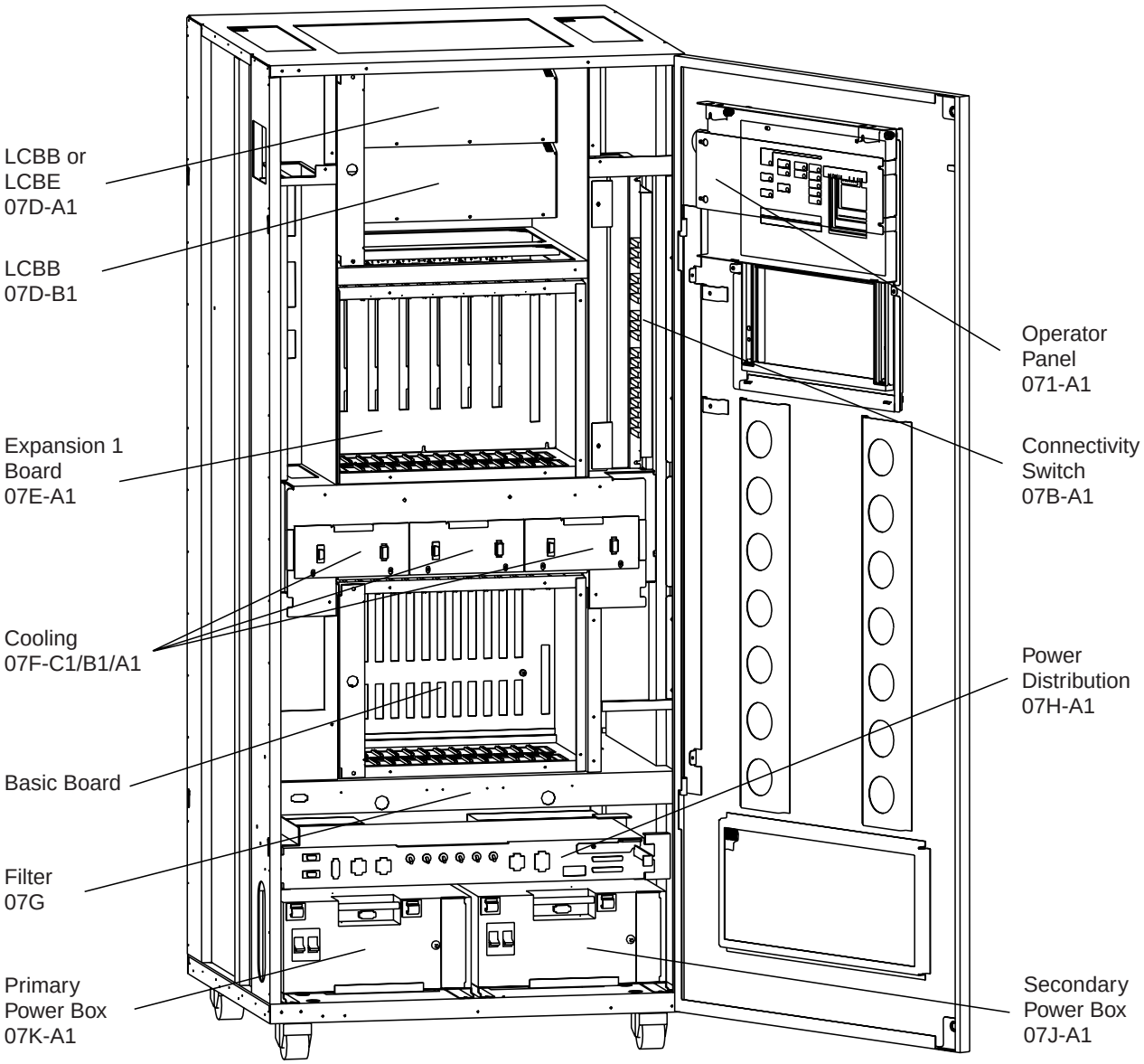


Figure B-1. 3746-900 Locations (Front)

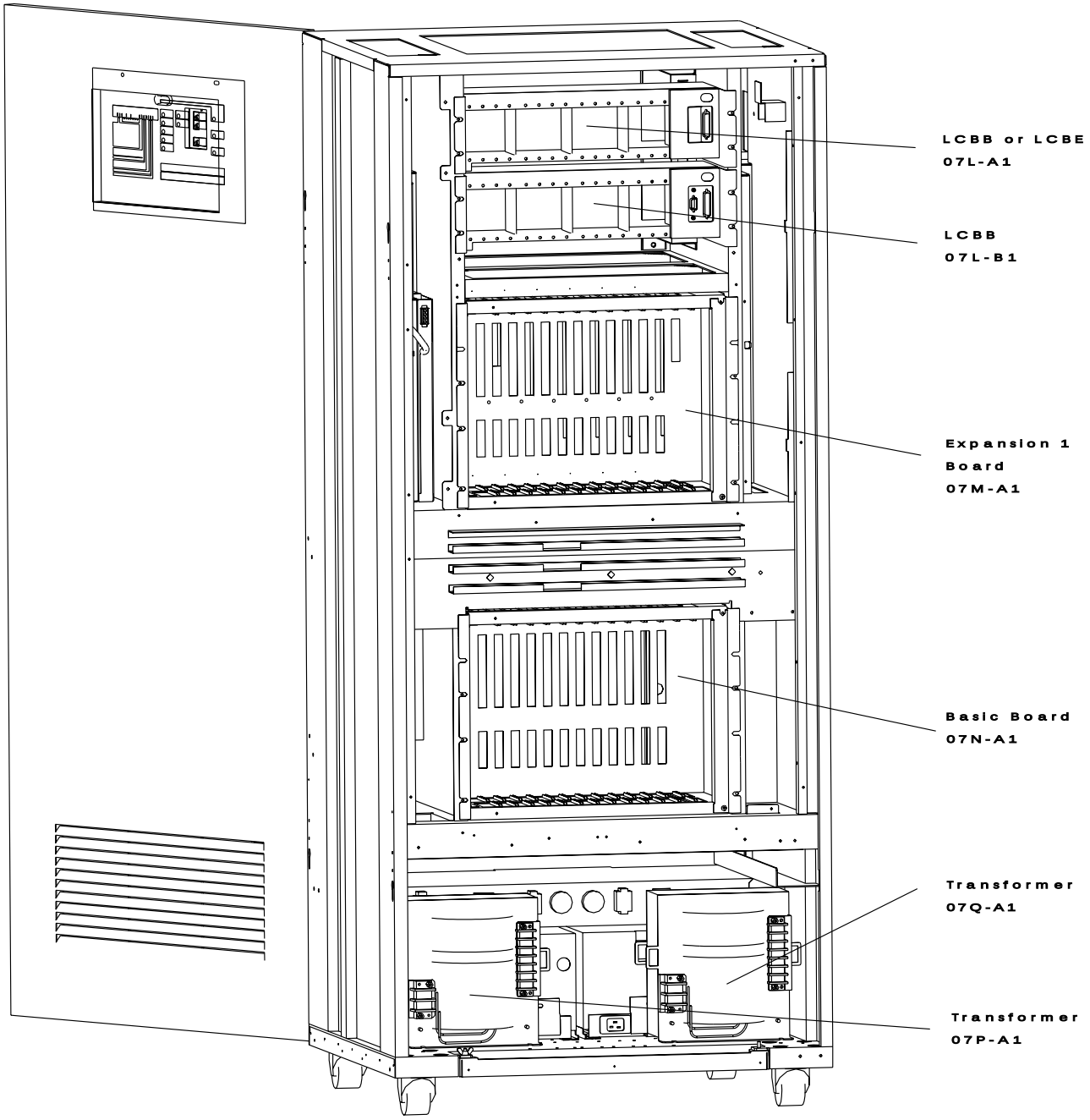


Figure B-2. 3746-900 Locations (Rear)

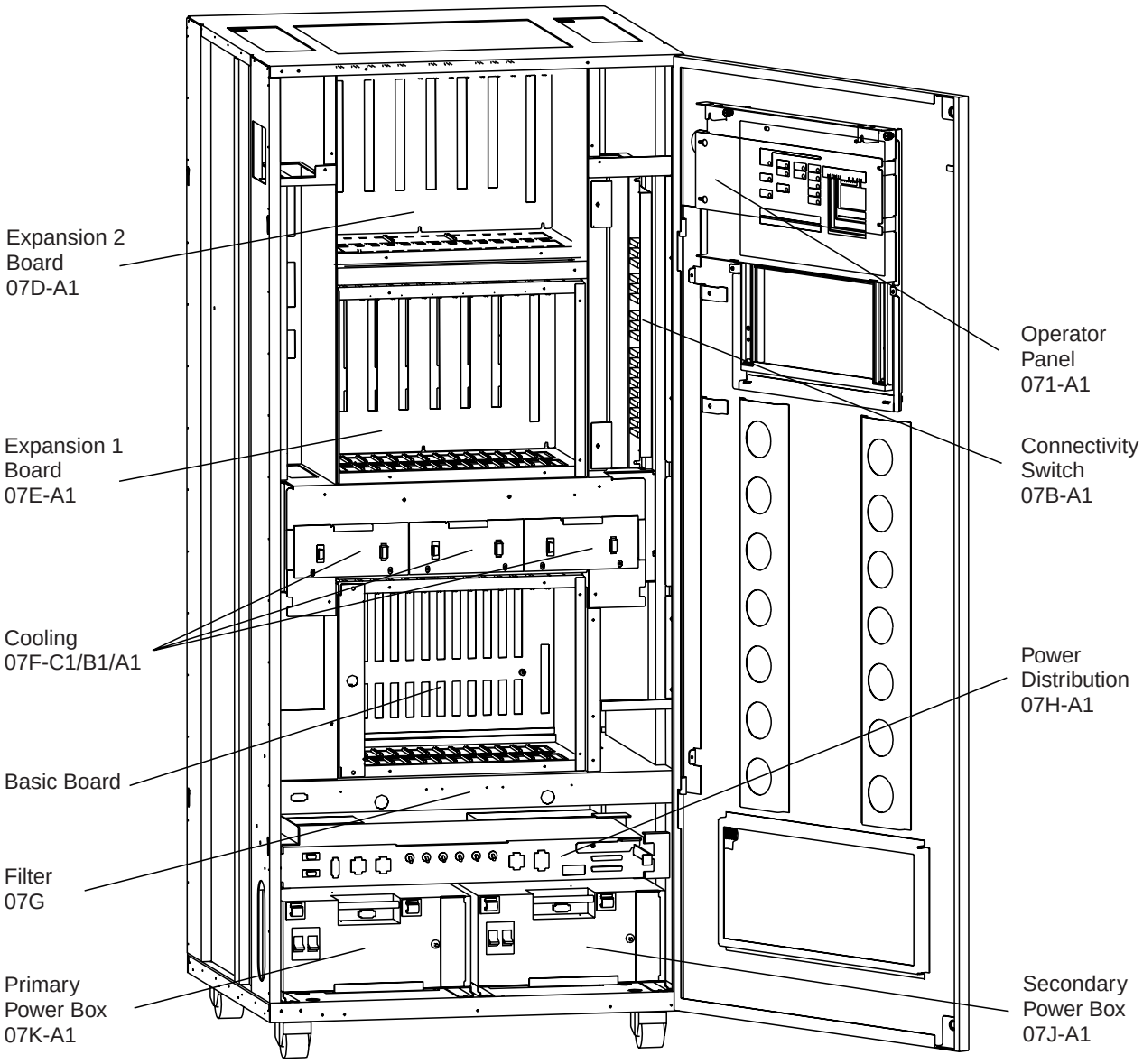


Figure B-3. 3746-900 Locations with Enclosure Expansion 2 Installed (Front)

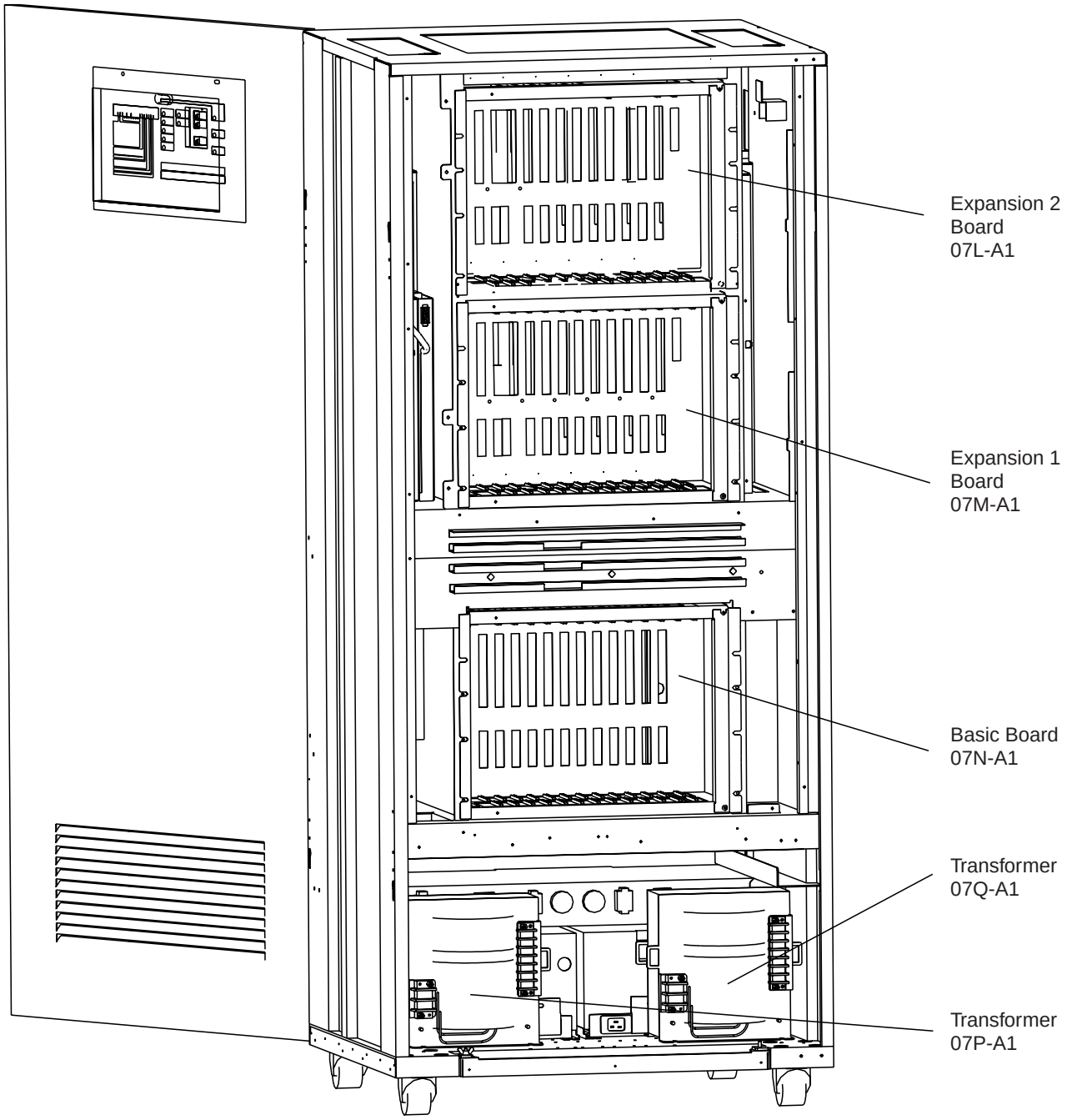


Figure B-4. 3746-900 Locations with Enclosure Expansion 2 Installed (Rear)

Board Locations

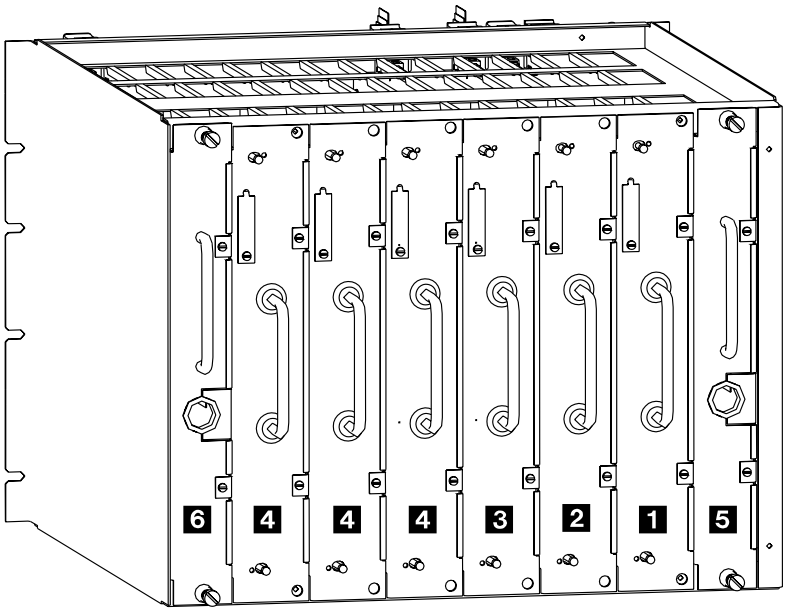


Figure B-5. Basic Board 07G-A1 Locations (Processor Side, 3746-900 Front View)

- **1** 07G-A1 D3, SPS card
- **2** 07G-A1 F3, CBSP
- **3** 07G-A1 H3, TRP or any processor
- **4** from 07G-A1 K3 to P3 any processor type
- **5** 07G-A1 B3, CSCE
- **6** not used

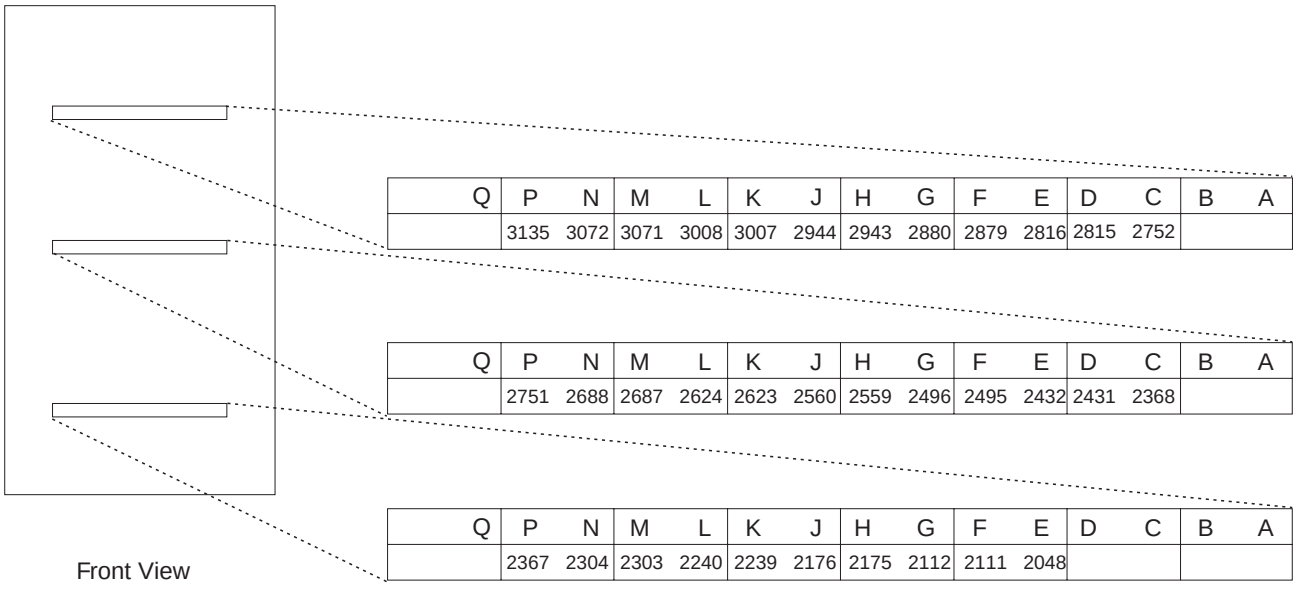


Figure B-6. 3746-900 Labels (Front Side)

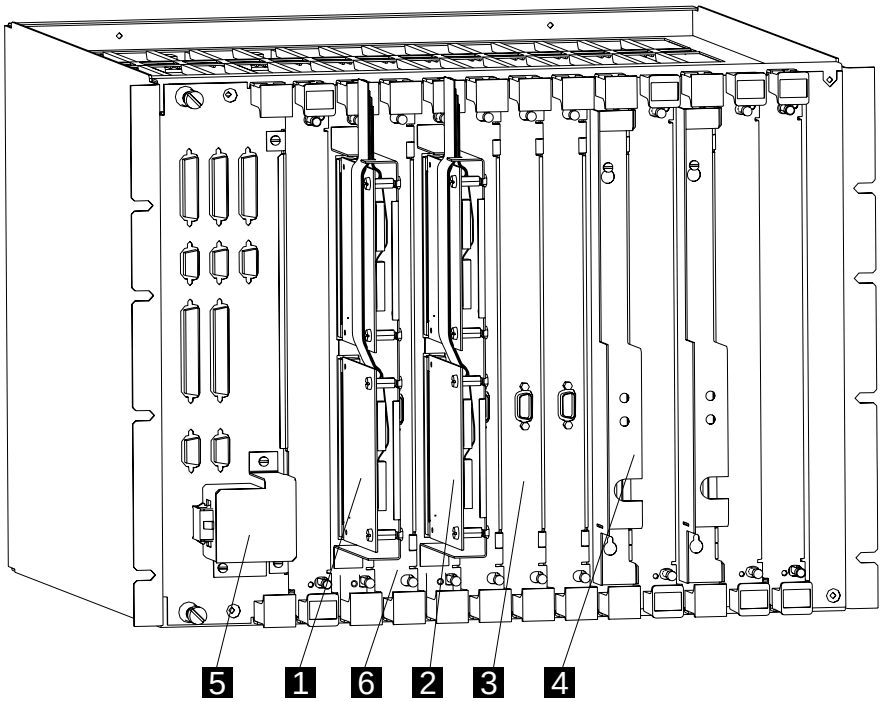


Figure B-7. Basic Board 07N-A1 Locations (Coupler Side, 3746-900 Rear View)

- **1** 07N-A1 E1, CBC 1
- **2** 07N-A1 G1, CBC 2, TIC3, LIC, or ESCC
- **3** 07N-A1 J1, TIC3
- **4** 07N-A1 L1, ESCC
- **5** 07N-A1 A1, SPD1
- **6** 07N-A1 F1, TIC3 for 3746-900 connection
- note: From 07N-A1 G1 to P1, any coupler type can be plugged

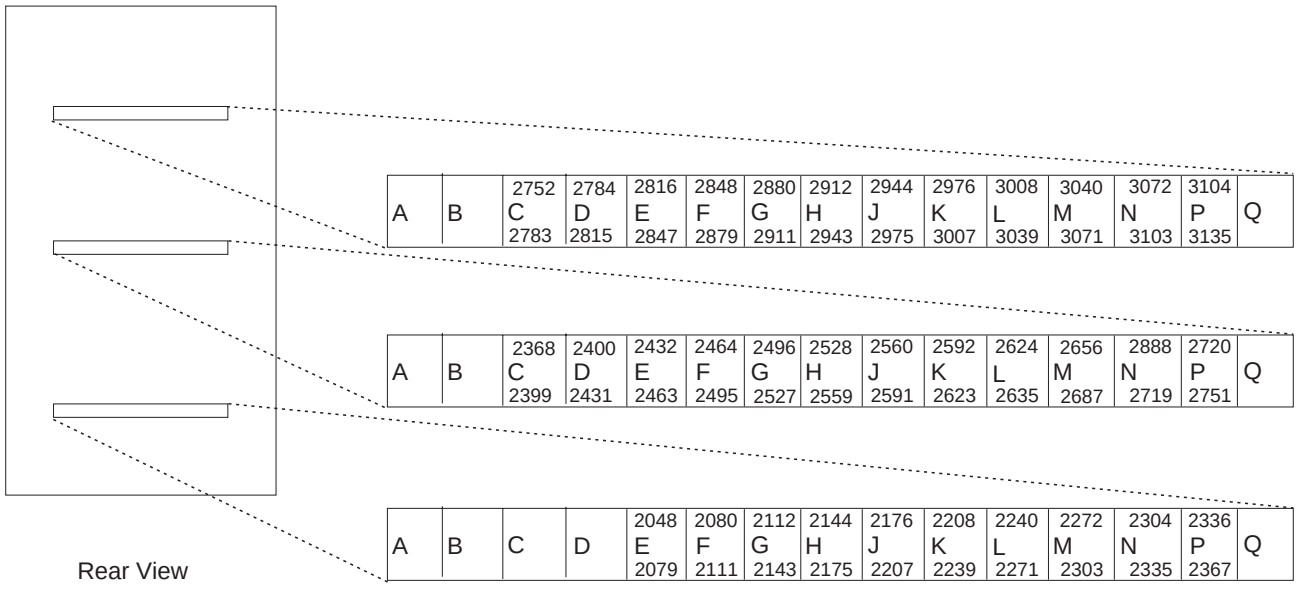


Figure B-8. Range Addresses for Couplers, Labels Rear Side

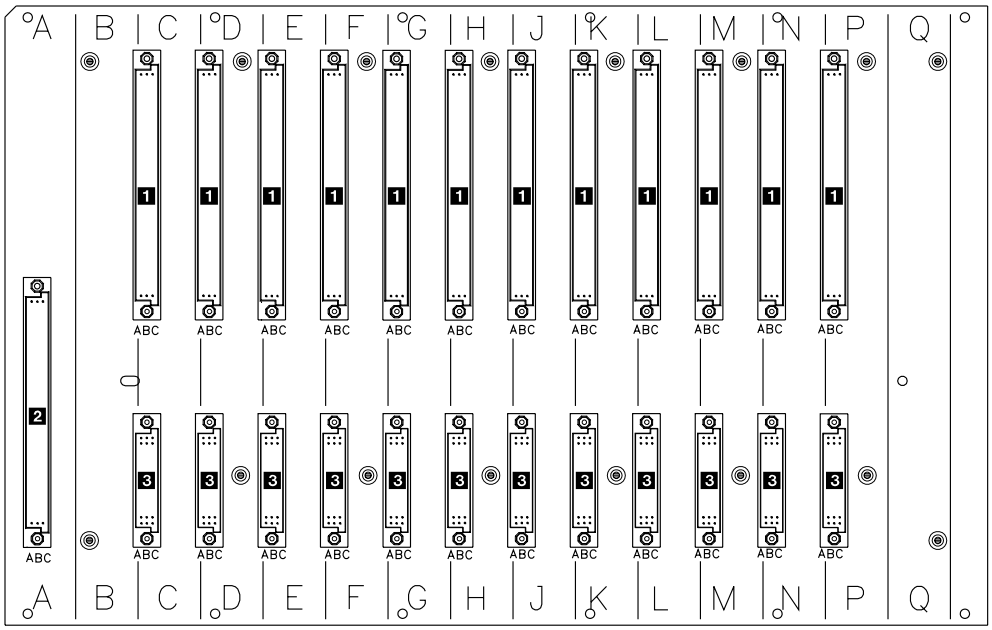


Figure B-9. Expansion Board 07M-A1 / 07L-A1 Locations (Coupler Side)

- **1** TIC3, ESCC, LIC11, or LIC12 sockets
- **2** SPD2 location
- **3** Not Used

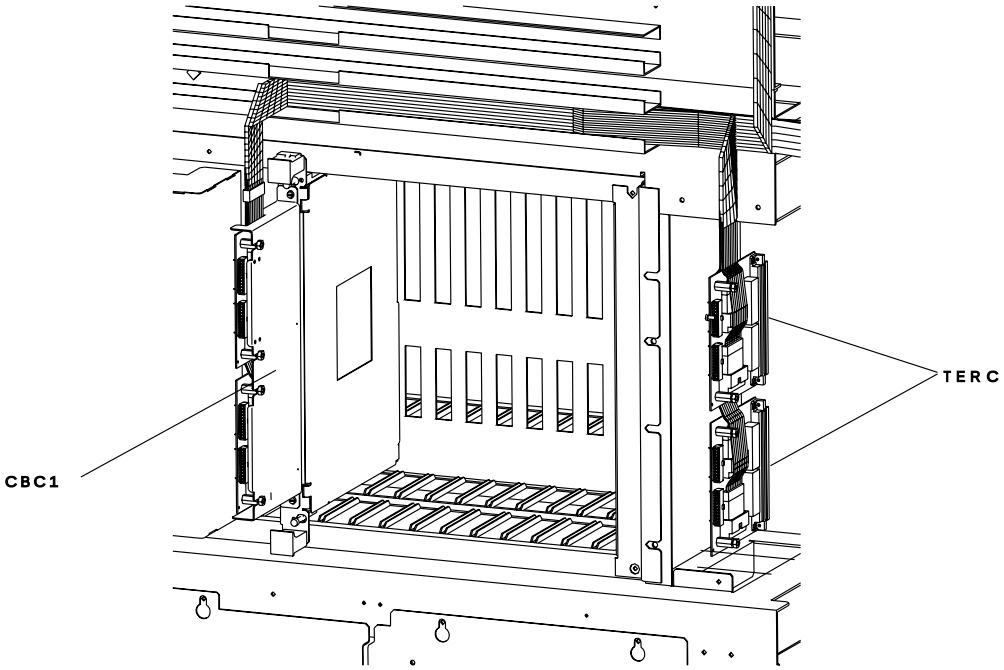


Figure B-10. One CBC Configuration (Coupler Side, 3746-900 Rear View)

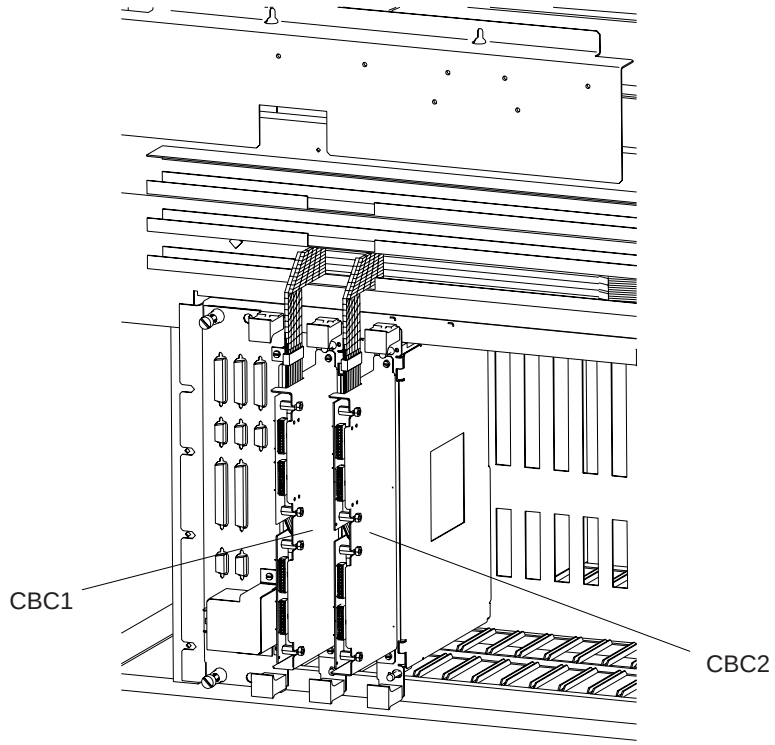


Figure B-11. Two CBC Configuration (Coupler Side, 3746-900 Rear View)

AC and DC Power Box Locations

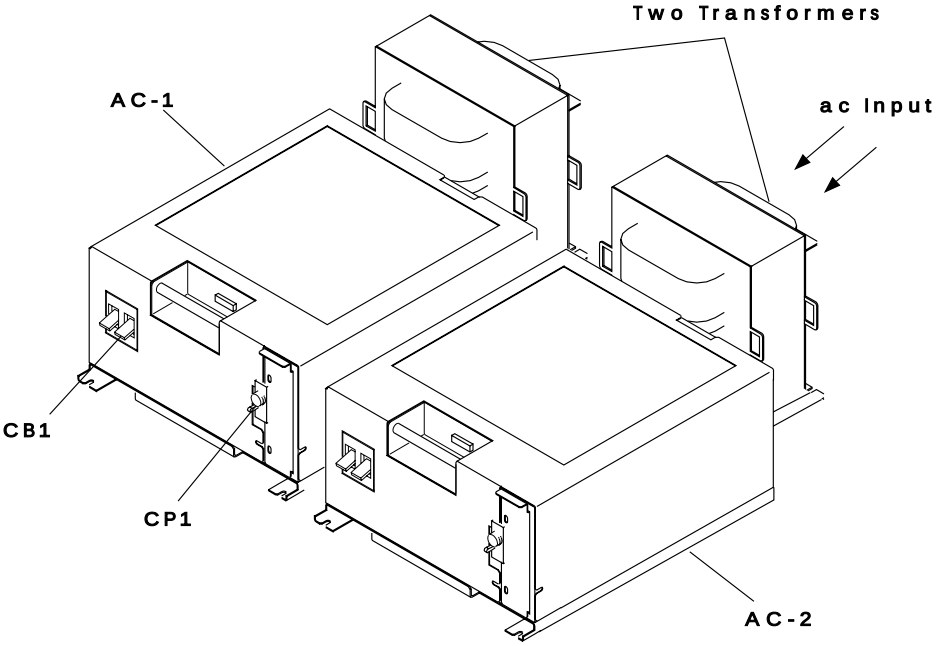


Figure B-12. 3746-900 Power Area with 2 AC (AC-2 is Optional)

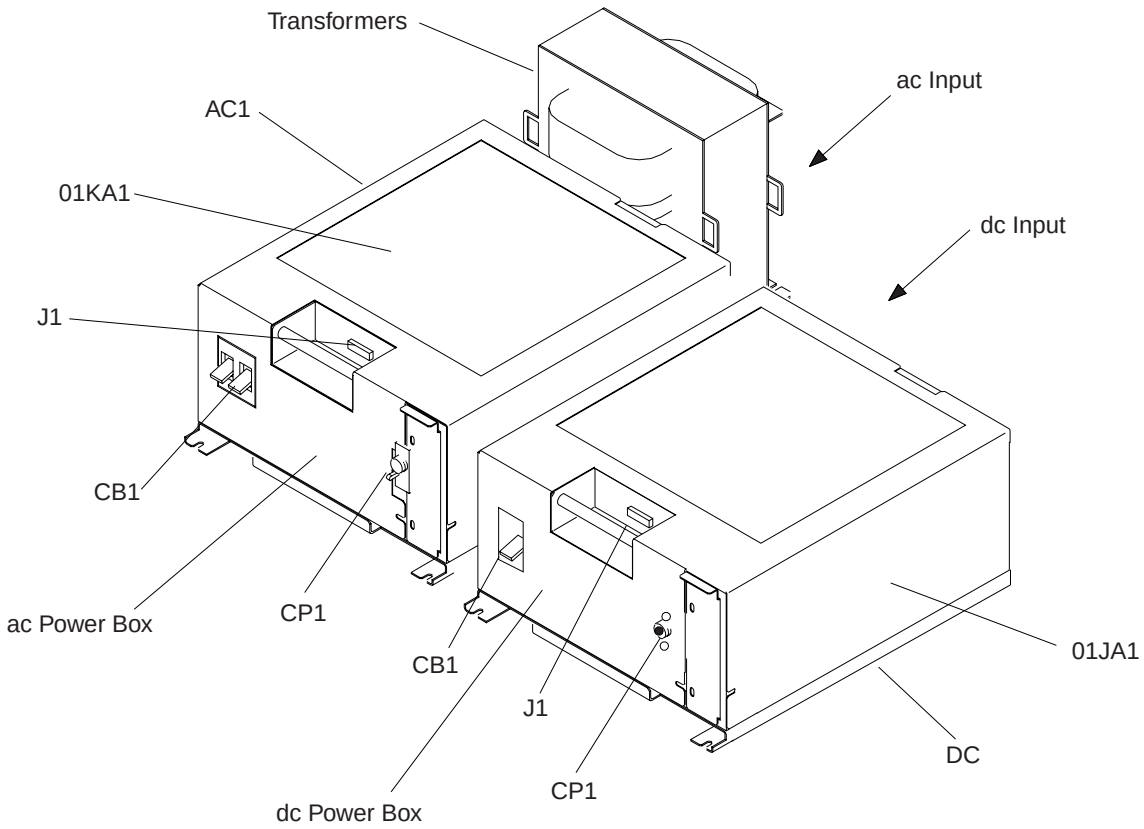
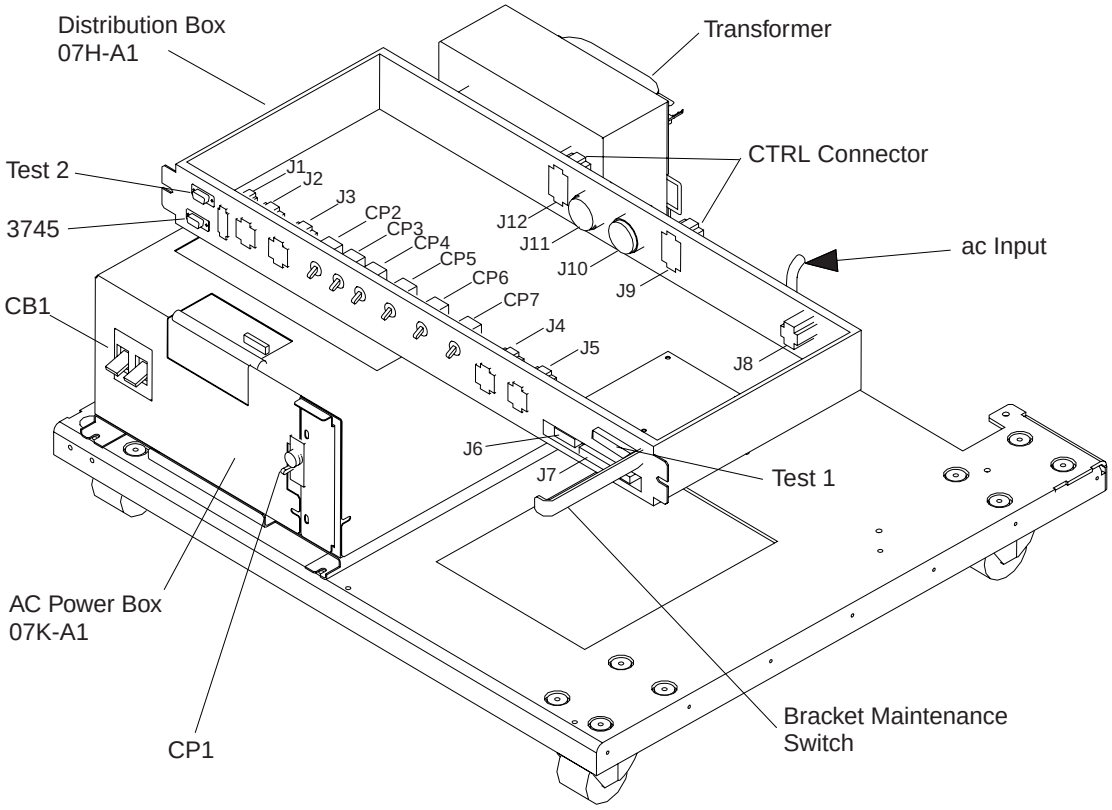


Figure B-13. 3746-900 Power Area with 1 AC + 1 DC (DC Power is Optional)

Distribution Box and AC-1 Power Box Locations



Note: The bracket maintenance switch is used to keep the 3746-900 power ON when the SPS card is removed.

Figure B-14. Power Area

Appendix C. 3745-X1A Component Locations

Location prefix numbers depend on the units as follows:

Location prefix number **01** is used in **frame 01** (3745-X1A)

Location prefix number **02** is used in **frame 02** (3746-A11)

Location prefix number **03** is used in **frame 03** (3746-A12).

3745-X1A Component Locations (Front)

Note: *Location prefix number* **01** *is for frame 01 (3745).*

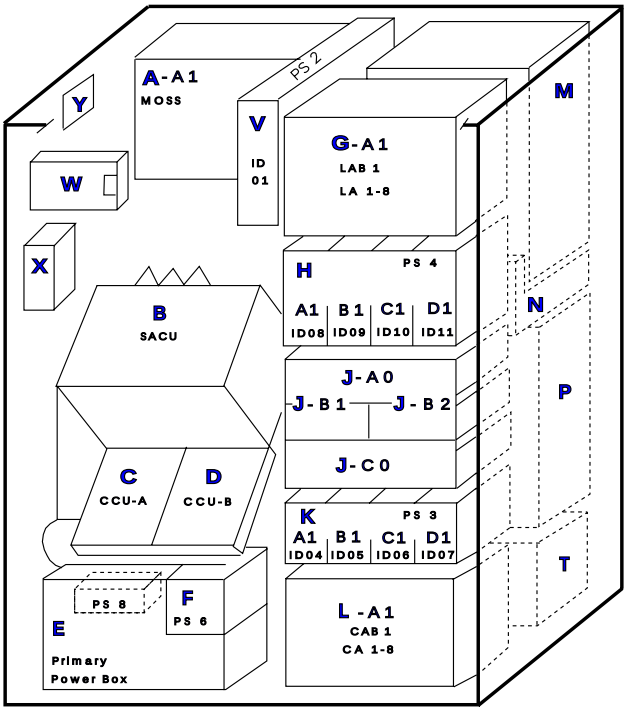


Figure C-1. 3745-X1A Component Locations (Front)

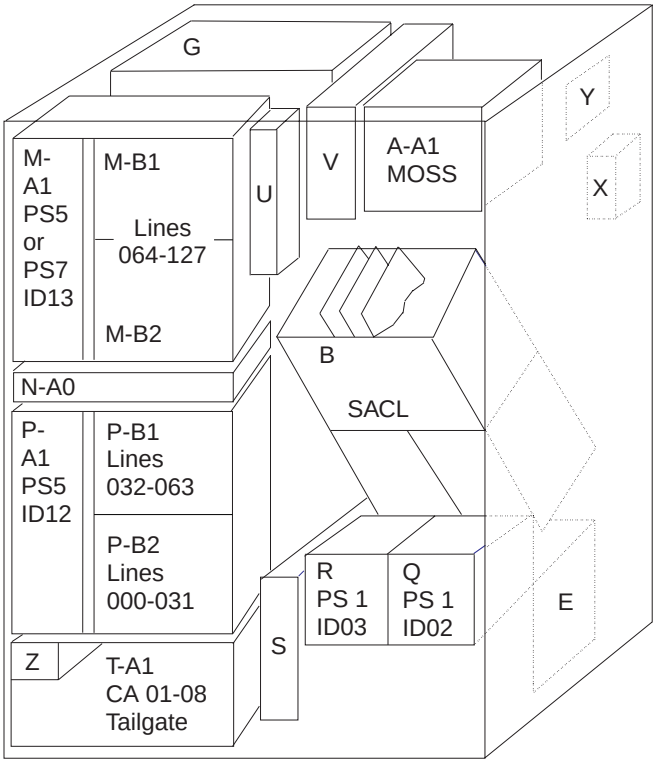


Figure C-2. 3745-X1A Component Locations (Rear)

01A MOSS board and fan

01B CCU control board

01E Primary power box

01F PS type 6 (PS for power supply controls)

01G Line adapter board 1 (LAB1) for LAs 01 to 08

01H PS type 4 for LAs (up to four PS)

01J AC and DC distribution

01K PS type 3 for CAs (up to four PS)

01L Channel adapter board 1 (CAB1) for CAs 01 to 08

01V PS type 2 (PS for MOSS)

01W Control panel and diskette

01X Hard disk drive (HDD)

01Y AC and DC auxiliary outlets

01M 01M-A1: PS type 5 for LIU1 or PS type 7 for LIU2
01M-B: If LIU1 unit: lines 064 to 127
If LIU2 unit: lines 064 to 095

01N Fan for LIC unit

01P 01P-A1: PS type 5 for LIU1 unit
01P-B: LIU1 unit (lines 000 through 063)

01Q PS type 1 or 1B (PS for CCU-A)

01R PS type 1 or 1B (PS for CCU-B)

01S EPO connector tailgate

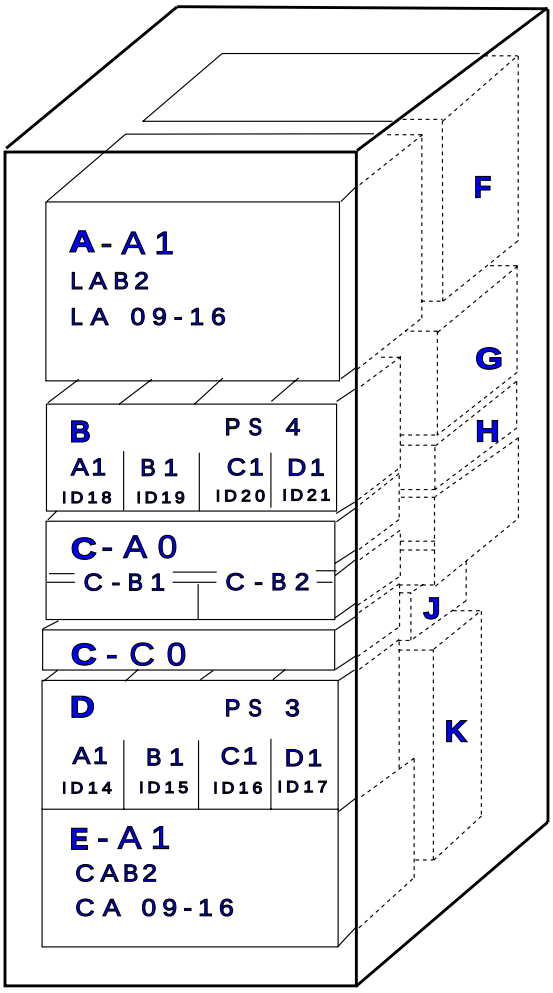
01T Tailgate for CAs 01 to 08

01U 01U-A: HSS/TRA/ELA tailgate
01U-B: Console and customer power control connectors

01Z Auxiliary power box

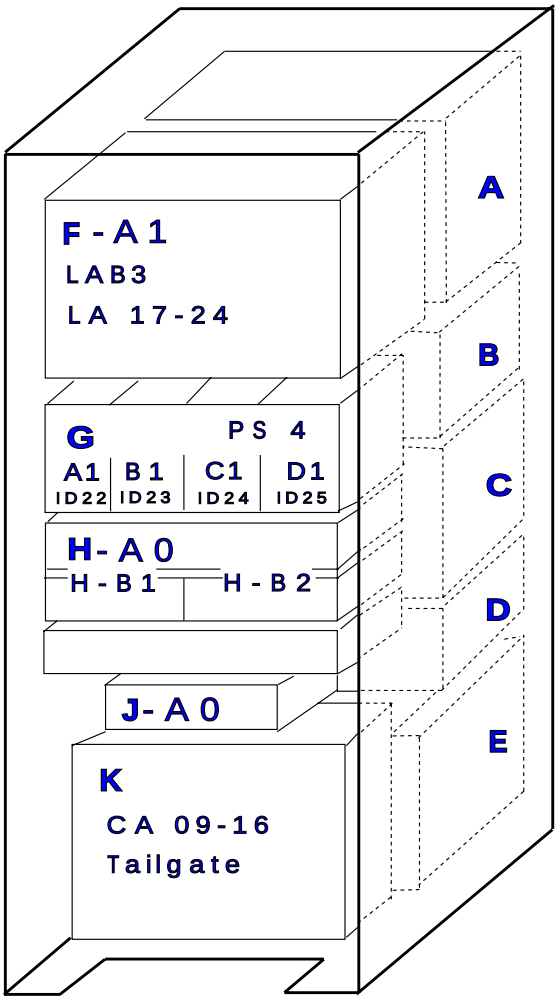
3746-A11 Component Locations

Note: *Location prefix number* **02** *is for frame 02 (3746-A11).*



Front View

Figure C-3. 3746-A11 Locations (Front)



Rear View

Figure C-4. 3746-A11 Locations (Rear)

02A	LA board 2 (LAB2) for LAs 09 to 16
02B	PS type 4 for LAs (up to four PS)
02C	AC and DC distribution
02D	PS type 3 for CAs (up to four PS)
02E	CA board 2 (CAB2) for CAs 09 to 16

02F	LA board 3 (LAB3) for LAs 17 to 24
02G	PS type 4 for LAs (up to four PS)
02H	AC and DC distribution
02J	Auxiliary power box
02K	Tailgate for CAs 09 to 16

3746-A12 Component Locations

Note: *Location prefix number* **03** *is for frame 03 (3746-A12).*

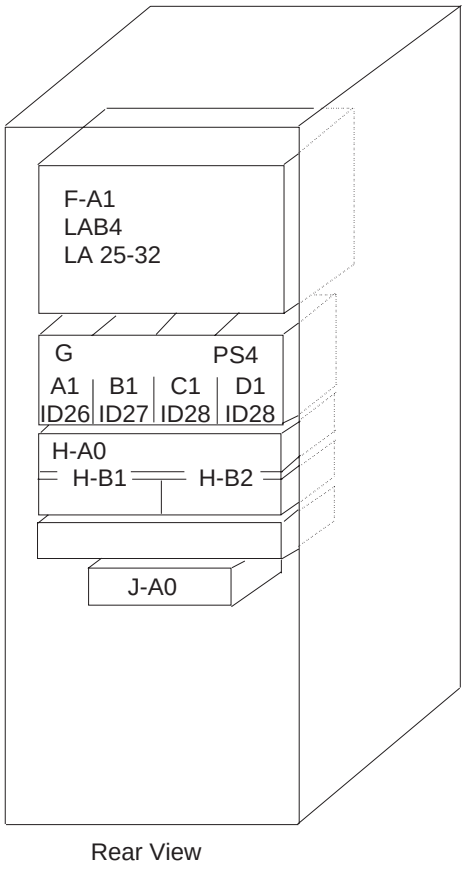


Figure C-5. 3746-A12 Locations (Rear)

03F Line adapter board 4 (LAB4) for LAs 25 to 32

03G PS type 4 for LAs (up to four PS)

03H AC and DC distribution

03J Auxiliary power box

Appendix D. 3745-17A Component Locations (Front)

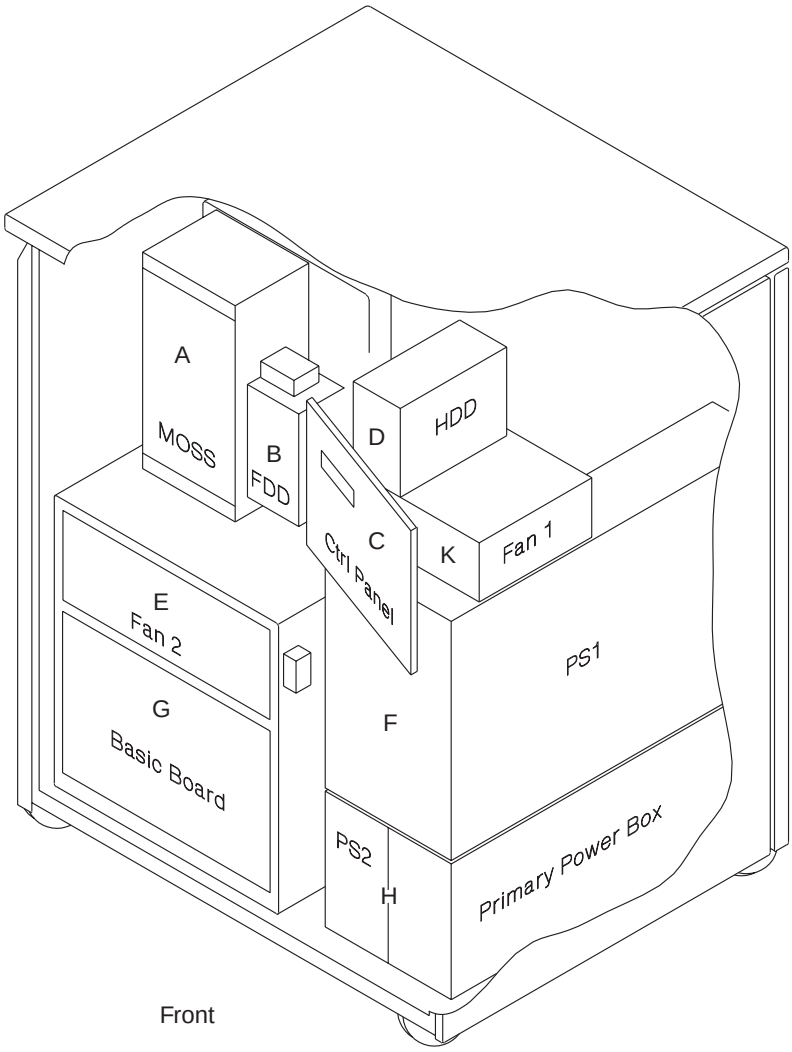


Figure D-1. 3745-17A Component Locations (Front - All Models)

01A MOSS unit

01B Flexible diskette drive (FDD)

01C Control panel

01D Hard disk drive (HDD)

01E Fan unit 2

01F Power supply 1 (PS1)

01G Logic card board (CAs/LAs/CCU)

01H Primary power box and power supply 2 (PS2)

01K Fan unit 1.

3745-17A Component Locations (Rear)

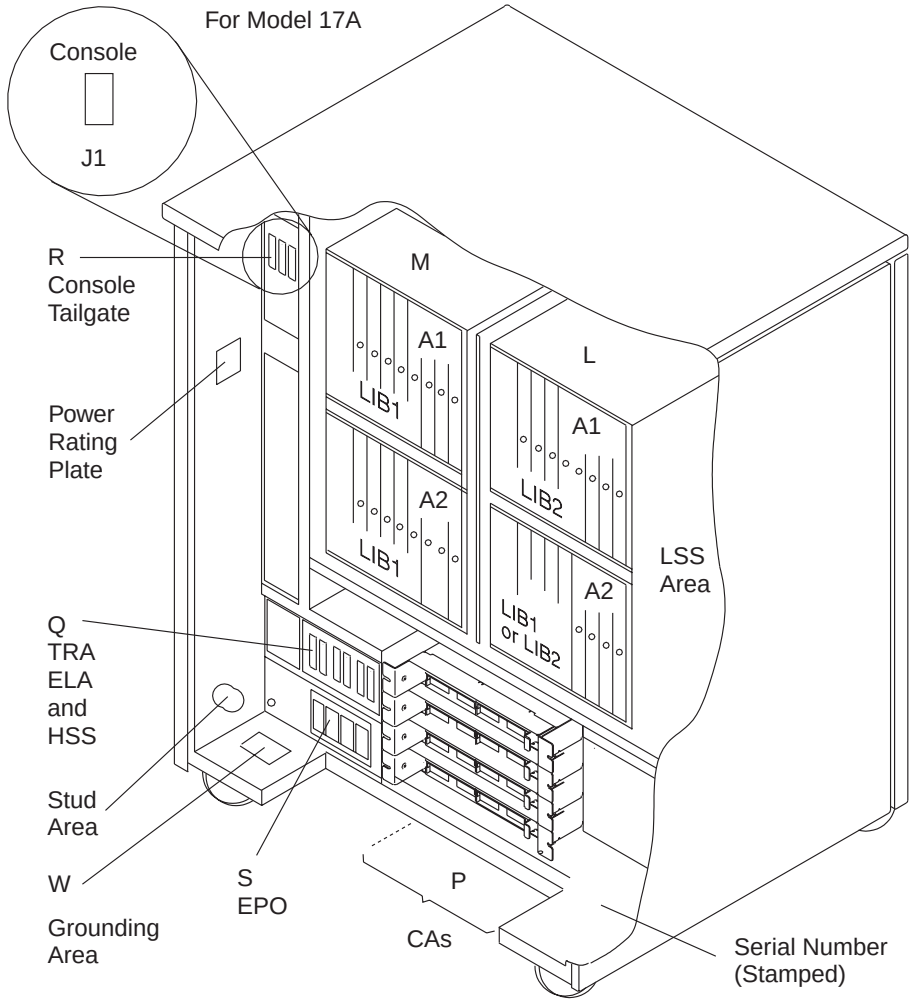


Figure D-2. 3745 Component Locations (Rear - Model 170 and 17A)

Notes:

1. *A 3745 Model 130 has no LIB board.*
2. *A 3745 Model 150 has no CA, and no LIB board in 01M-A1 and 01L-A2.*

01L 01L-A1: LIB2 board (lines 080 through 095)
01L-A2: If LIB1 (lines 128 through 159)
If LIB2 (lines 064 through 079)

01M 01M-A1: LIB1 board (lines 032 through 063)
01M-A2: LIB1 board (lines 000 through 031)

01P Tailgate for CAs (numbered 05 to 08)

01Q TRA, ELA, and HSS tailgate

01R Console tailgate

01S EPO connector tailgate

01W Grounding area.

Appendix E. Controller Expansion Component Locations

If you want more information about:	Refer to
• Positioning the units in the front side of the controller expansion	• Figure E-1 on page E-2
• Positioning the units in the rear side of the controller expansion	• Figure E-2 on page E-3
• Installing captive nuts and brackets (for 7585)	• Figure E-3 on page E-4
• Installing captive nuts and brackets (for 3172, 9585, or 9577)	• Figure E-4 on page E-5
• Installing captive nuts for LCBs	• Figure E-5 on page E-6
• Installing captive nuts for 8229s	• Figure E-6 on page E-7
• Installing captive nuts and brackets for MAE	• Figure E-7 on page E-8
• Installing brackets for processor type 7585	• Figure E-8 on page E-9
• Installing brackets for processor type 3172	• Figure E-9 on page E-10
• Example of units installation (processor type 7585)	• Figure E-10 on page E-11
• Example of units installation (processor type 7585 + MAE)	• Figure E-11 on page E-11
• Example of units installation (processor type 3172)	• Figure E-12 on page E-12
• Example of units installation (processor type 9585)	• Figure E-13 on page E-12
• Example of units installation (processor type 9577)	• Figure E-14 on page E-13
• Connecting the units to the ac Outlet Distribution Box.	• Figure E-15 on page E-13

Use this drawing to setup the **units** on the **front side** of the controller expansion, for the units that can be installed on the rear, refer to Figure E-2 on page E-3.

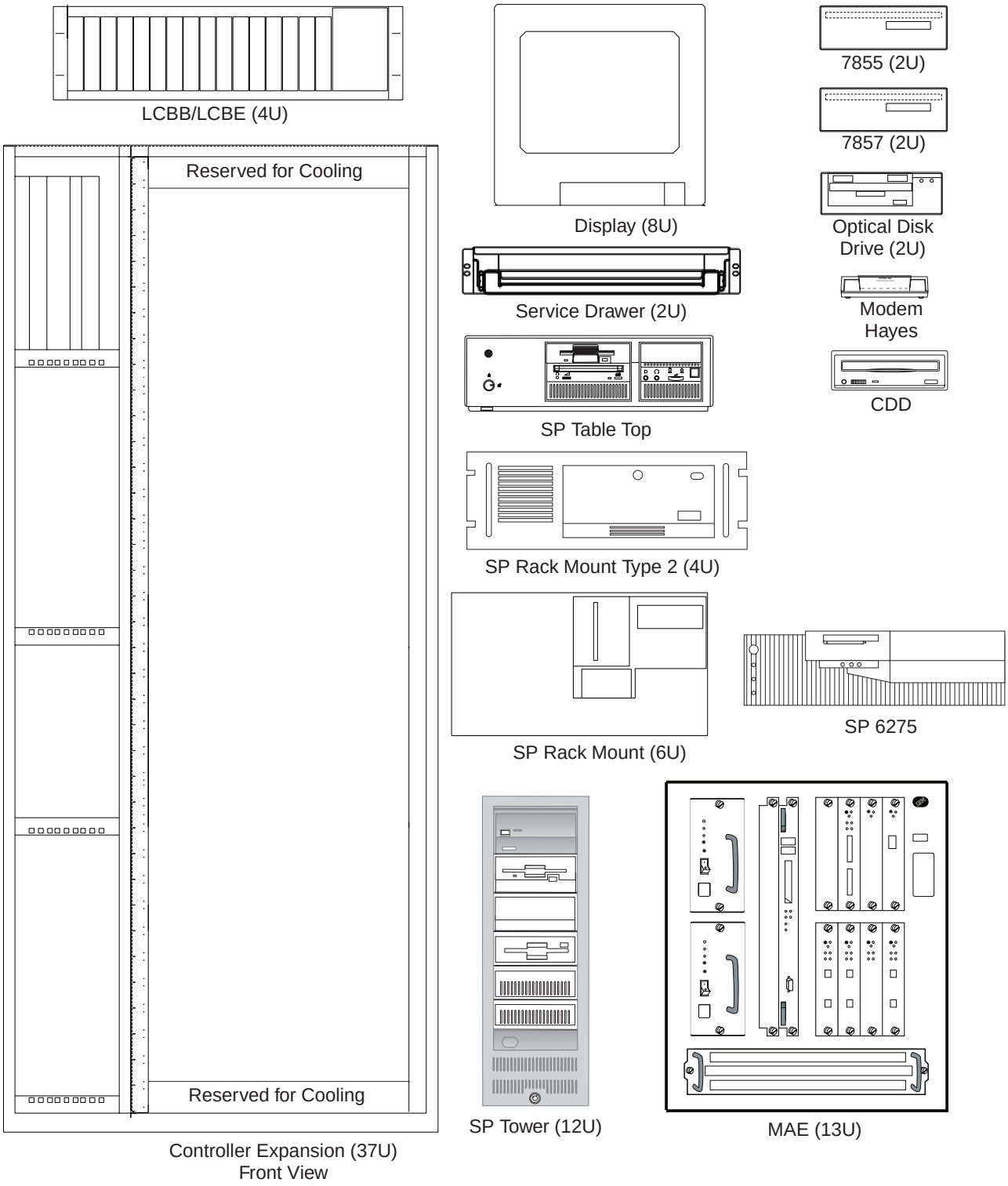


Figure E-1. Controller Expansion Inventory Chart (Front View).

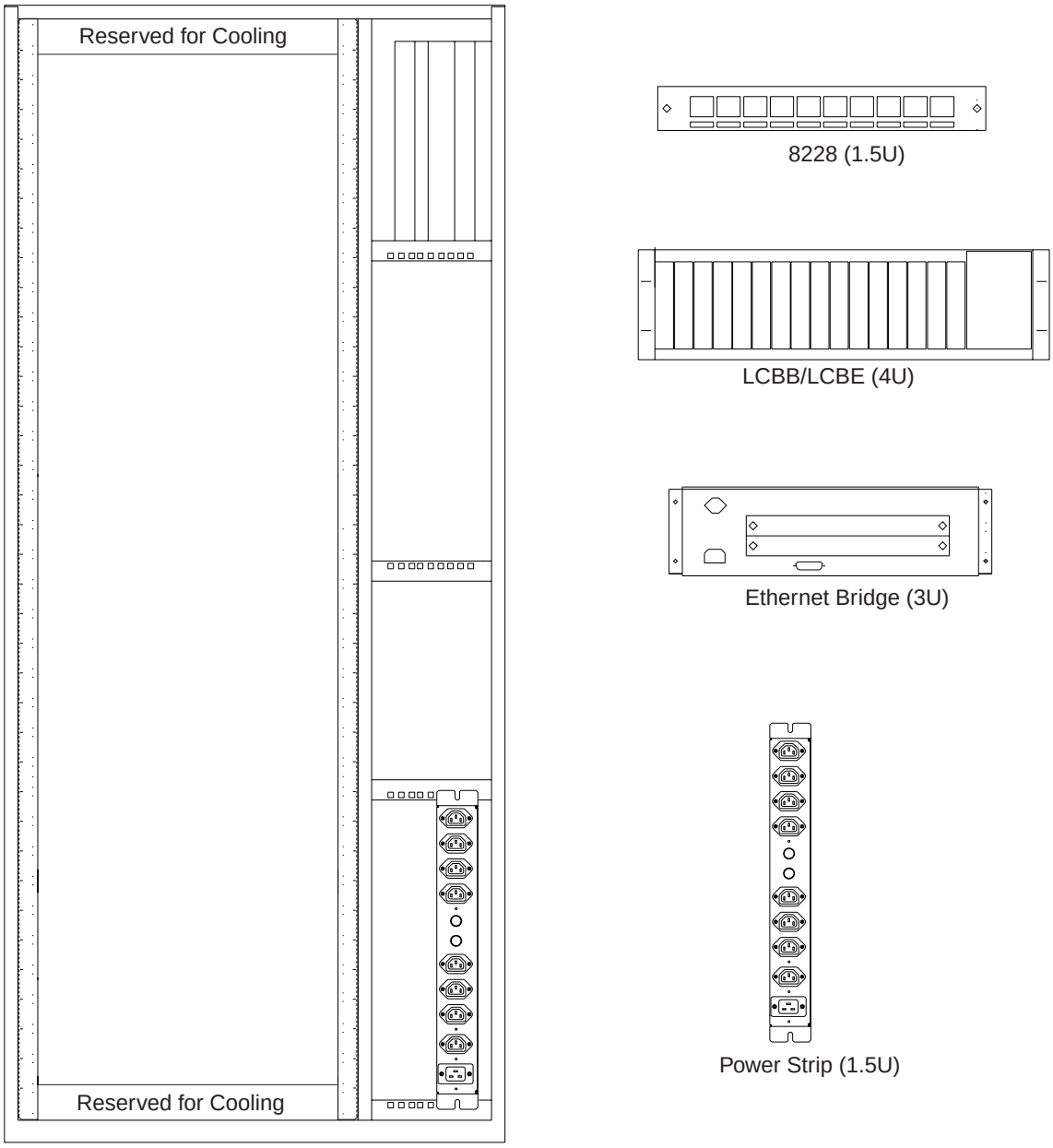


Figure E-2. Controller Expansion Inventory Chart (Rear View).

Notes:

1. The units dimensions are scaled to the size of the controller expansion diagram. The values represent the size used to setup the units in the controller expansion, it is not the size of the units themself.
2. The attachment holes along each side of the controller expansion are divided into units of measure called EIA units. Each EIA unit (U) equals 44.5 millimeters (1.75 inches).
3. The controller expansion is 37 U high but only 35 are usable, one U must be reserved at the top and at the bottom for proper cooling.

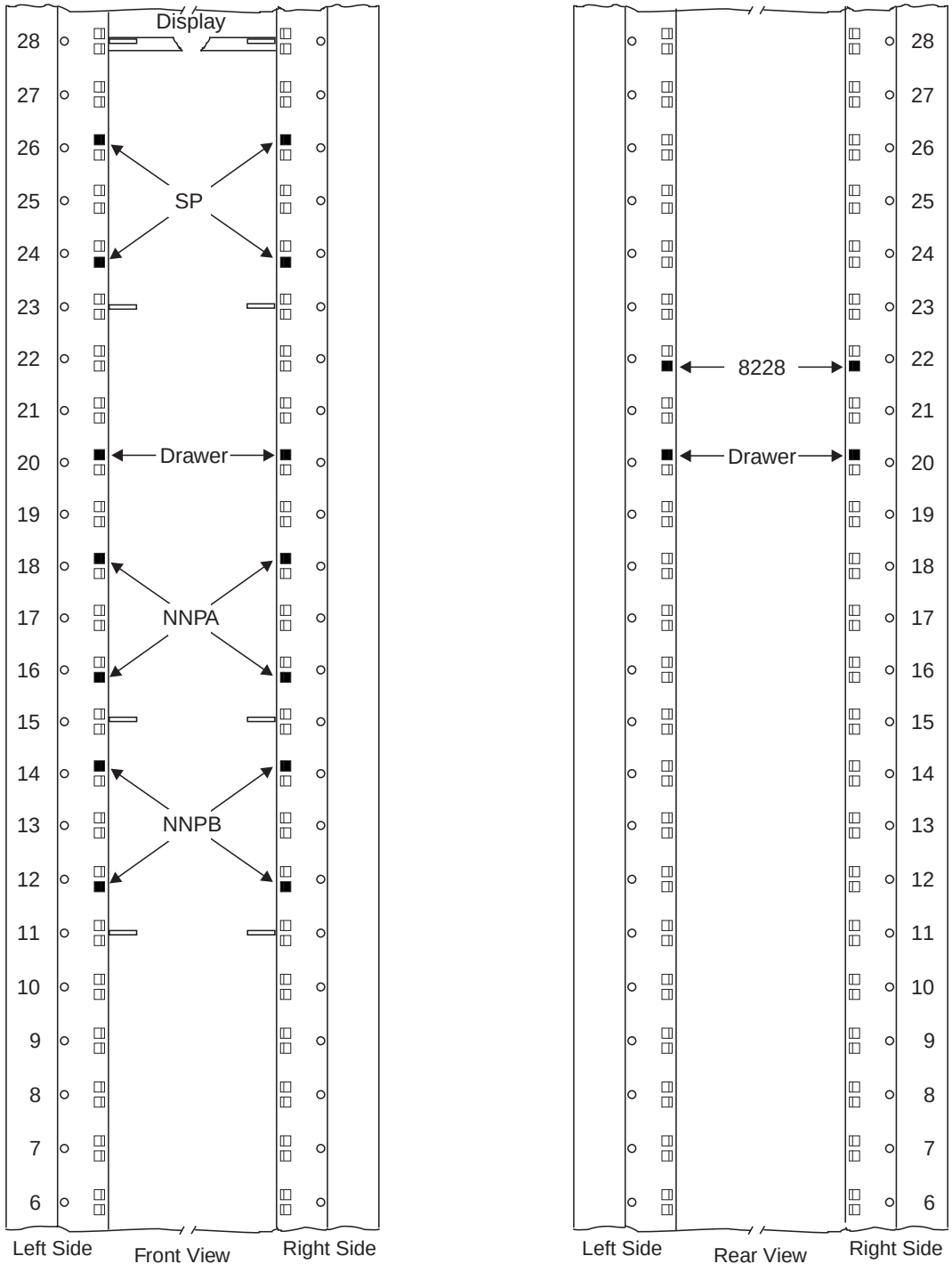


Figure E-3. Installing Captive Nuts and Brackets for the Display, Drawer, SP and NNP Type 7585

Note: This symbol '■' identify the locations to install the captive nuts.

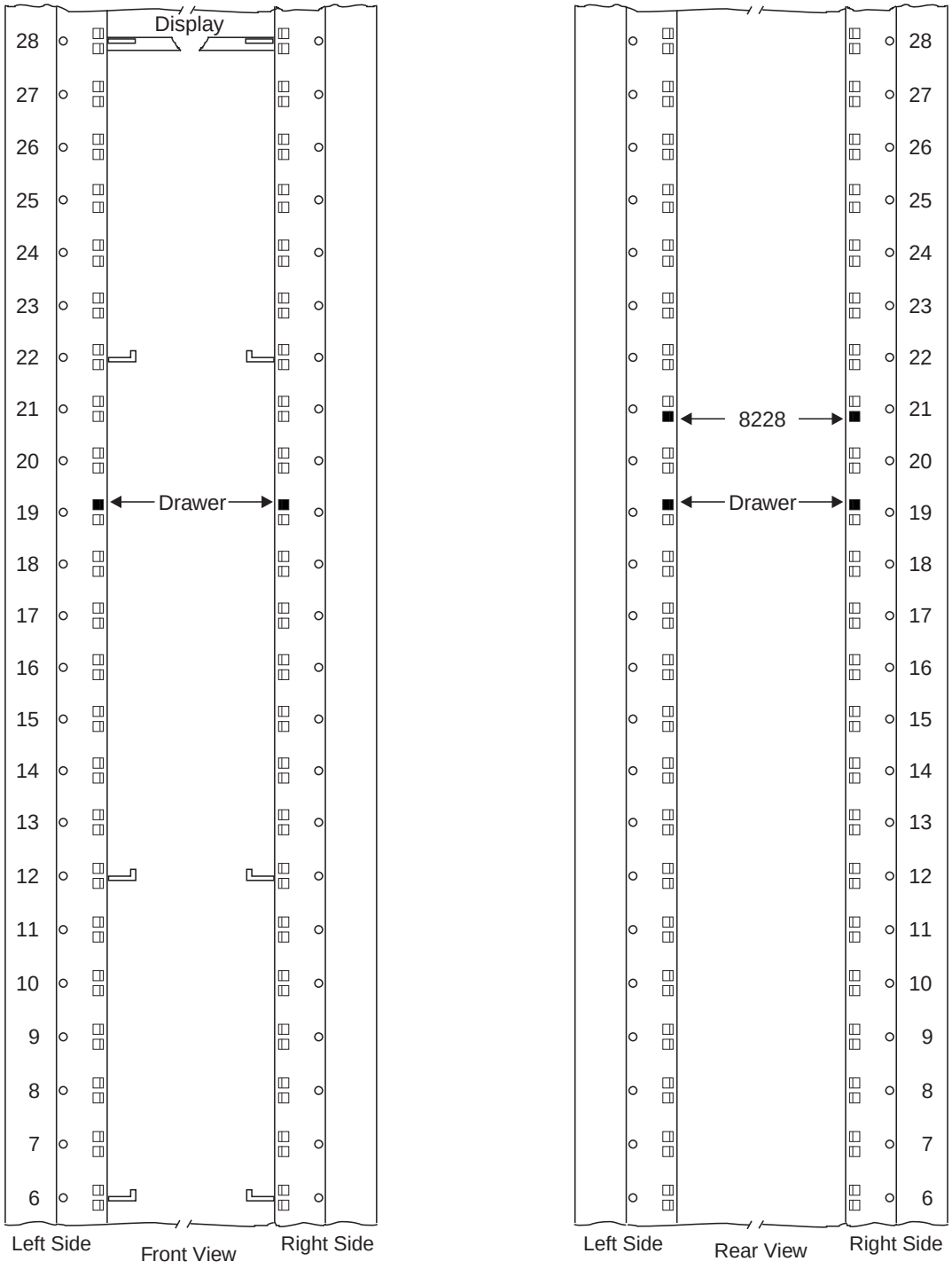


Figure E-4. Installing Captive Nuts and Brackets for the Display, Drawer, SP and NNP Type 3172

Notes:

1. This drawing can be used to setup the SP type **9585** or **9577**
2. This symbol '■' identify the locations to install the captive nuts.

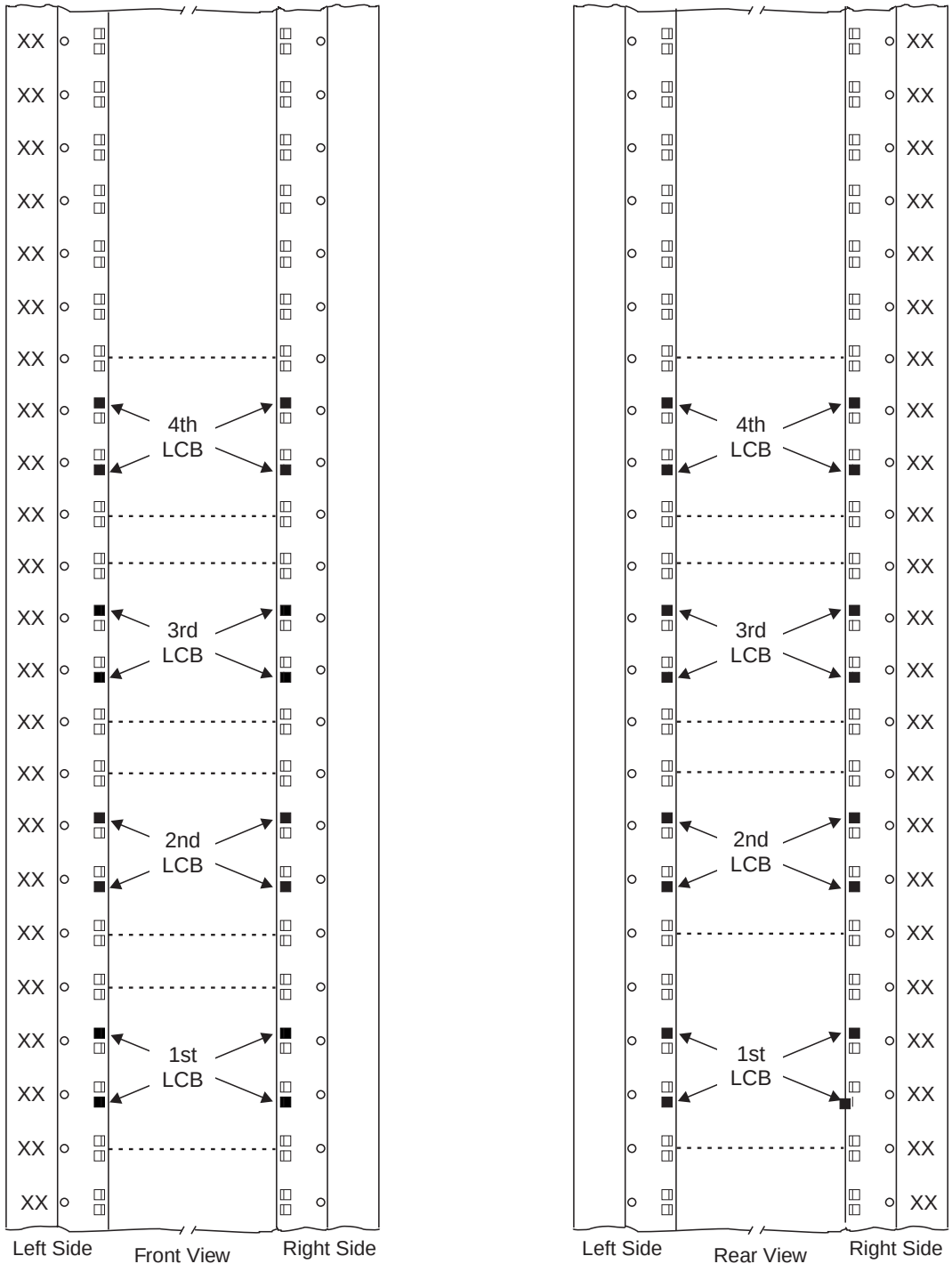


Figure E-5. Installing Captive Nuts for LCBs

Note: This symbol '■' identify the locations to install the captive nuts.

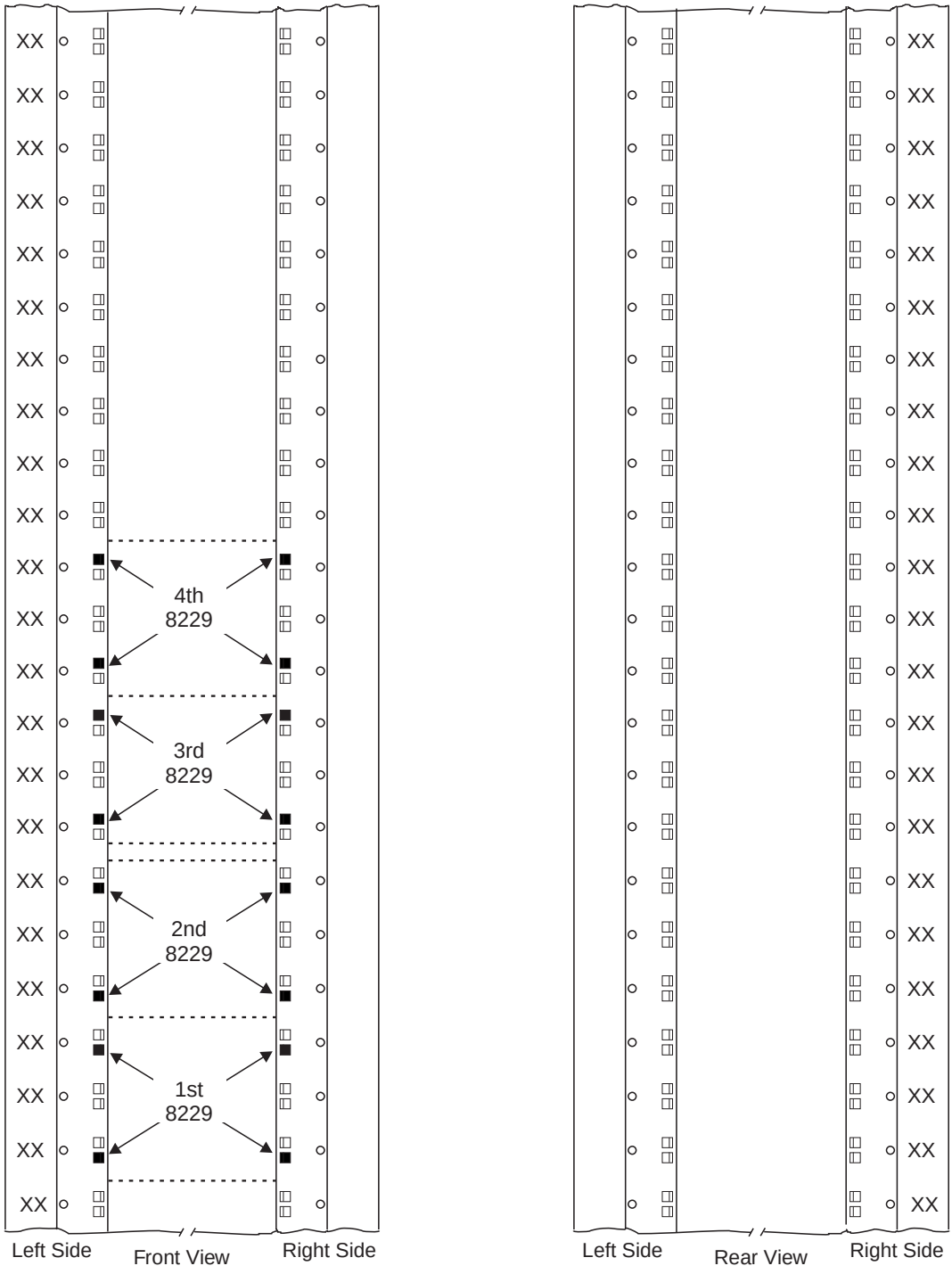


Figure E-6. Installing Captive Nuts for 8229s

Note: This symbol '■' identify the locations to install the captive nuts.

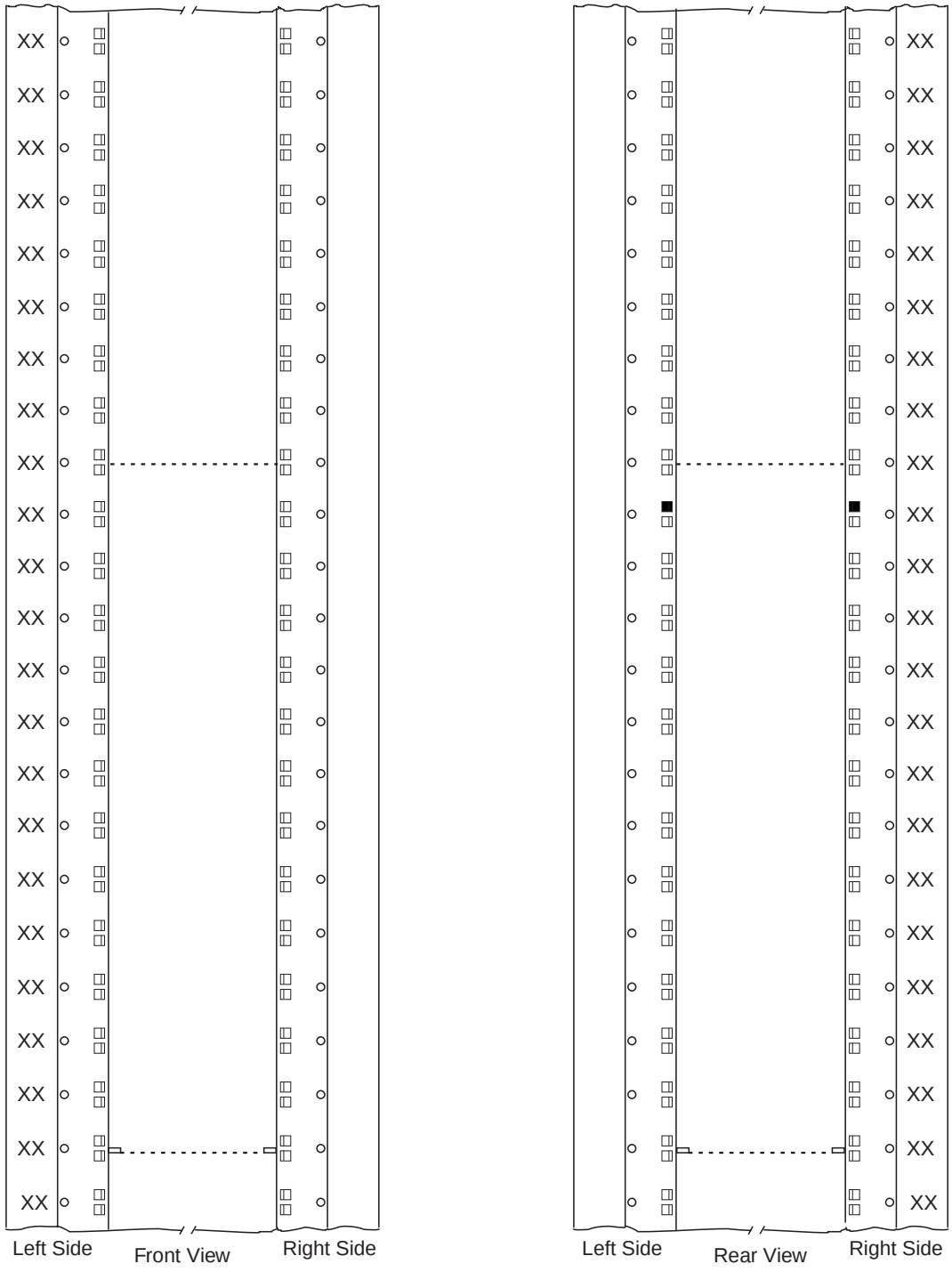


Figure E-7. Installing Captive Nuts and Brackets for MAE

Note: This symbol '■' identify the locations to install the captive nuts.

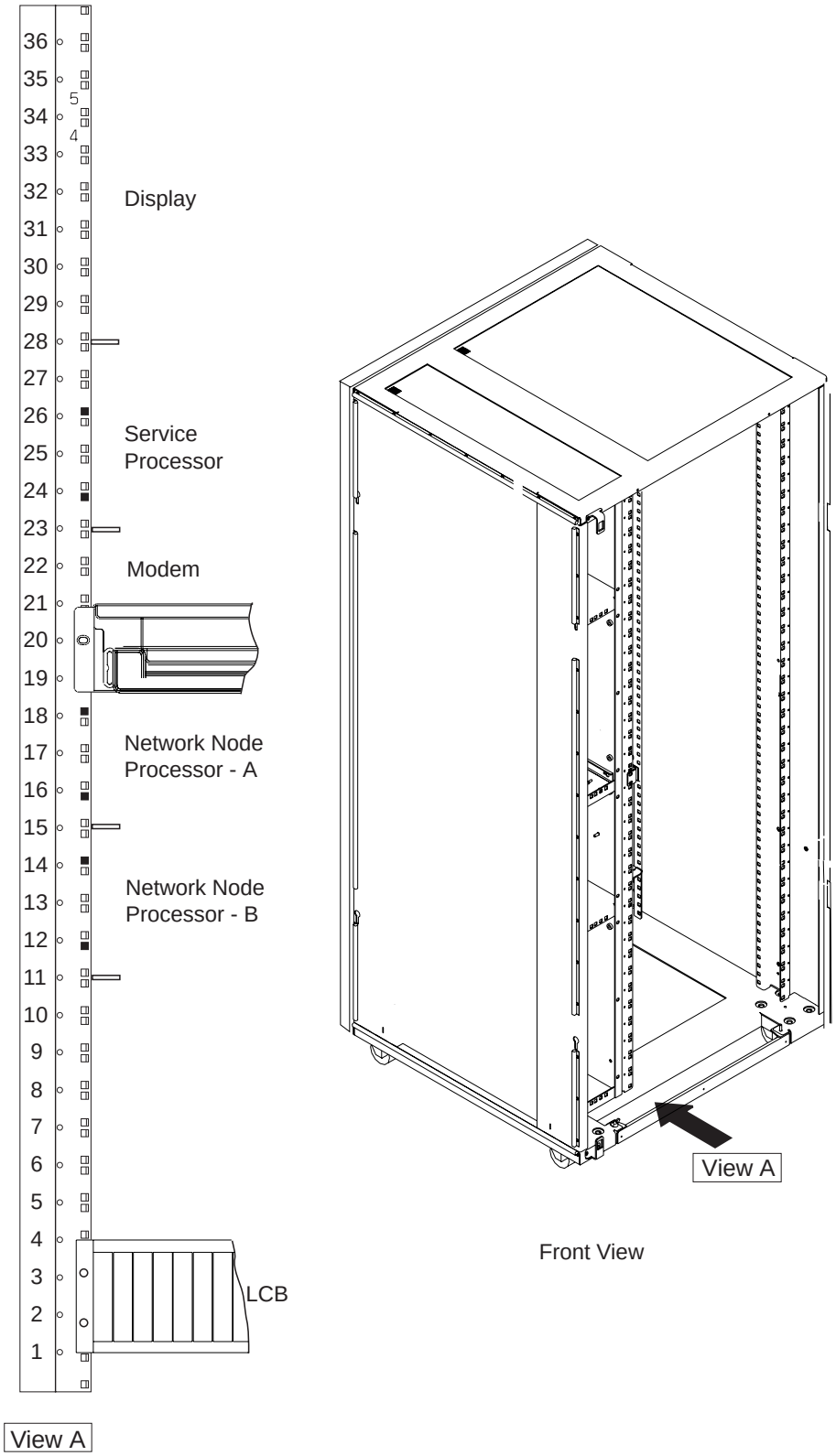


Figure E-8. Installing Brackets (PN 58G5752) for Processor Type 7585

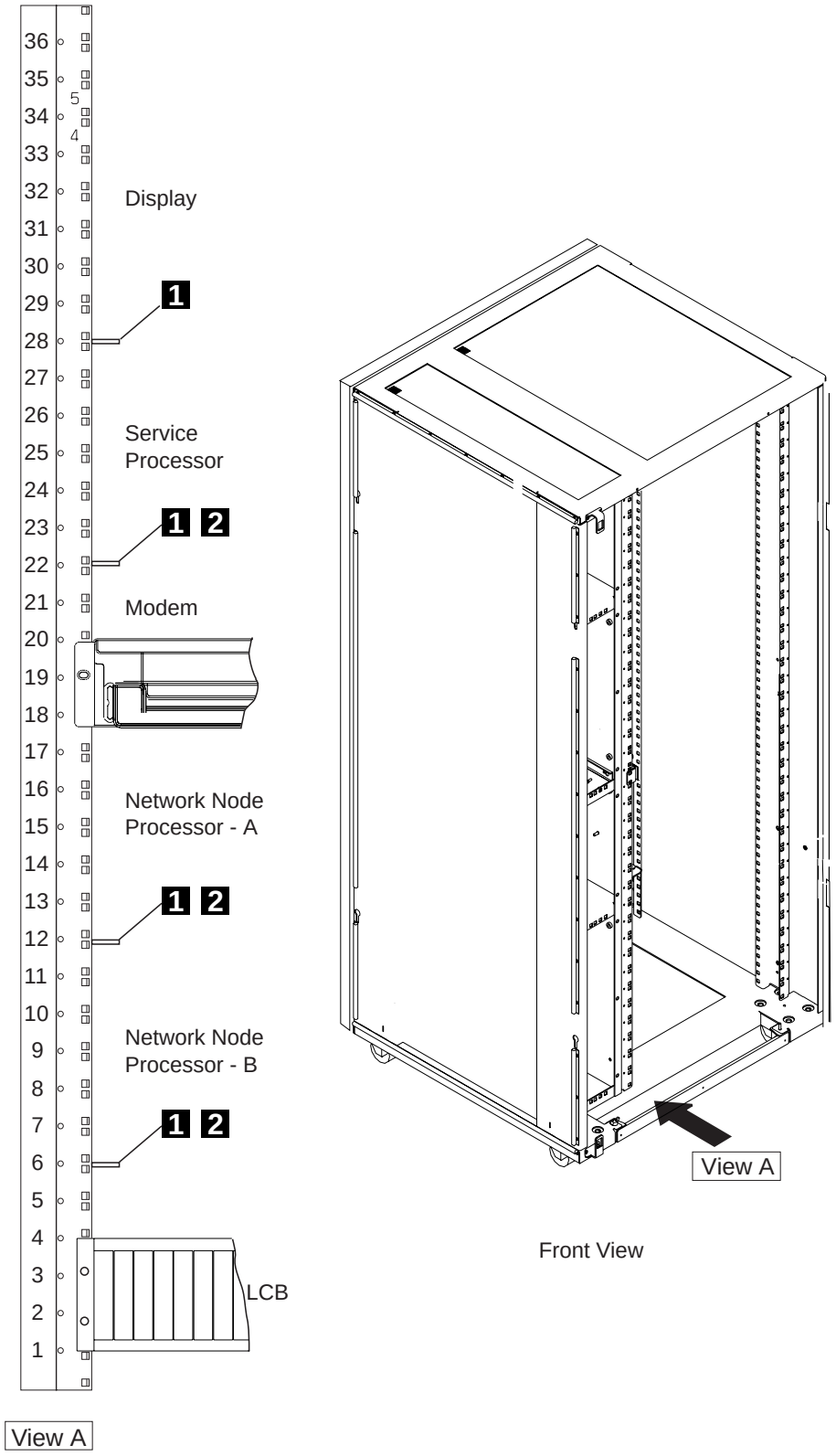


Figure E-9. Installing Brackets for Processor Type 3172

- **1** bracket used to install the display (PN 58G5752)
- **2** screws used to install the SP and NNP (PN 0782986)

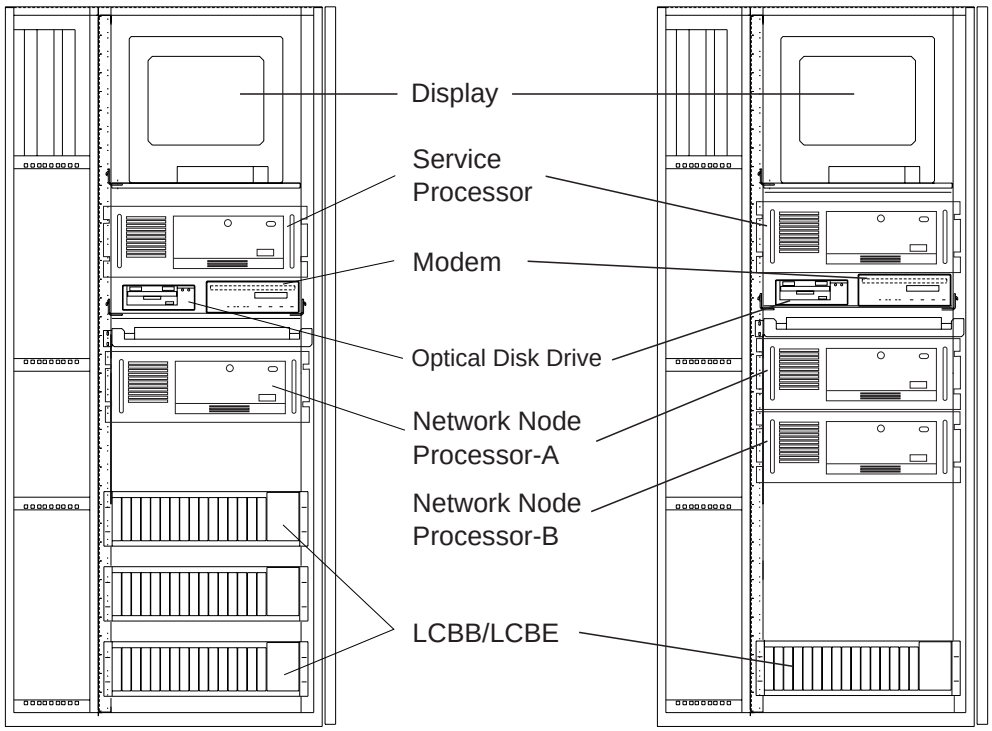


Figure E-10. Units Installation in the Controller Expansion (SP Type 7585)

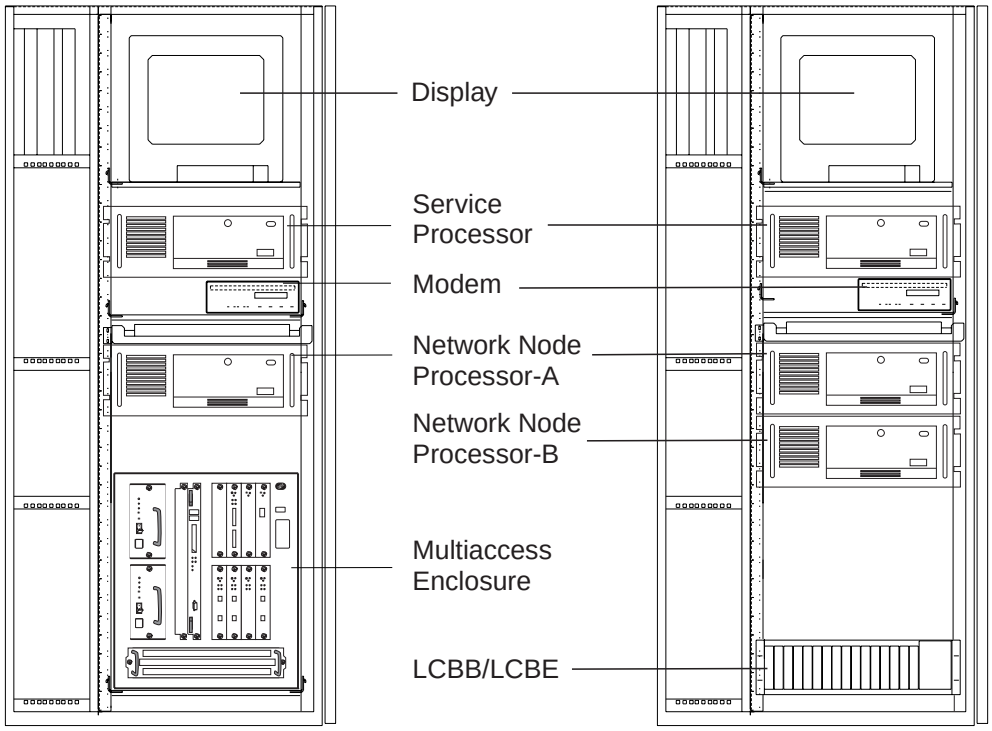


Figure E-11. Units Installation in the Controller Expansion (SP Type 7585 + MAE)

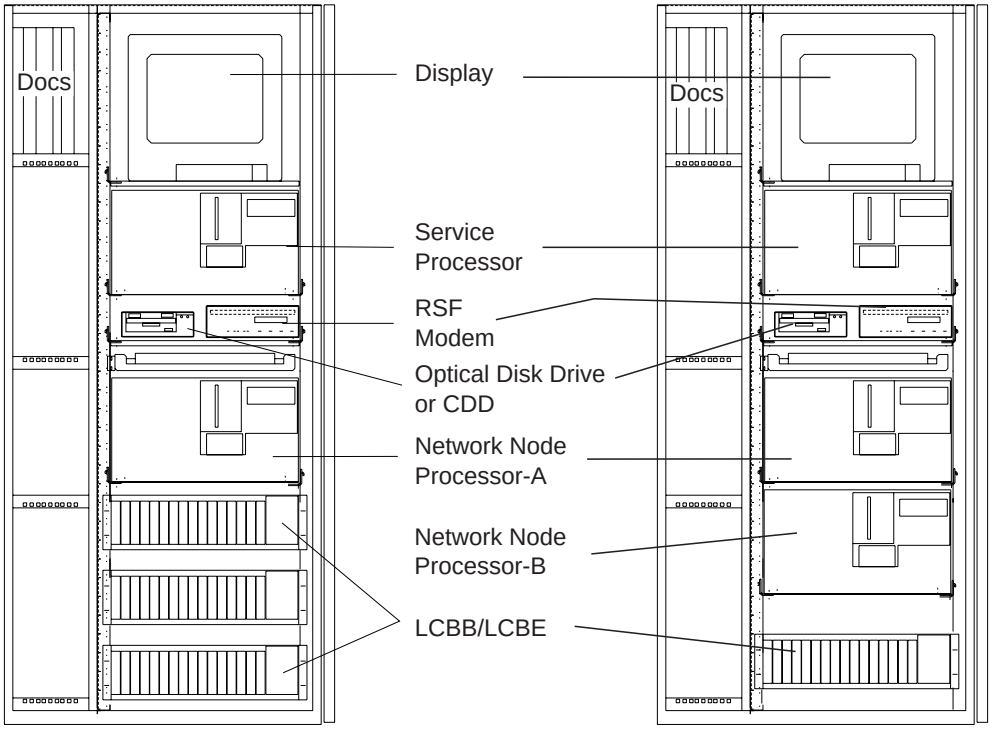


Figure E-12. Units Installation in the Controller Expansion (SP Type 3172)

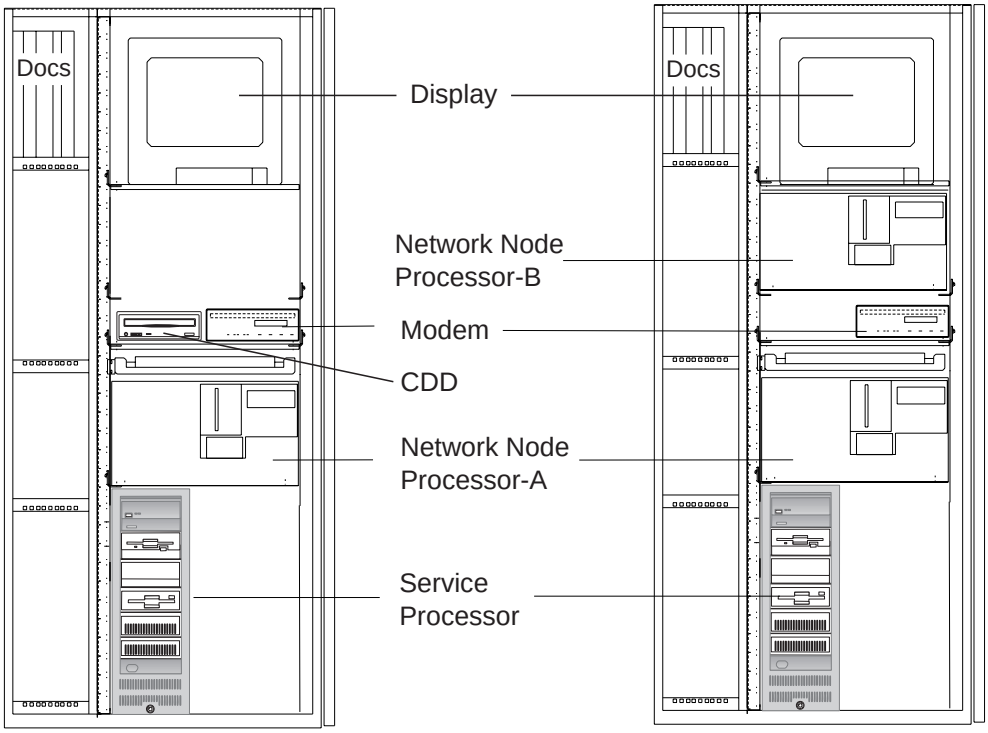


Figure E-13. Units Installation in the Controller Expansion (SP Type 9585)

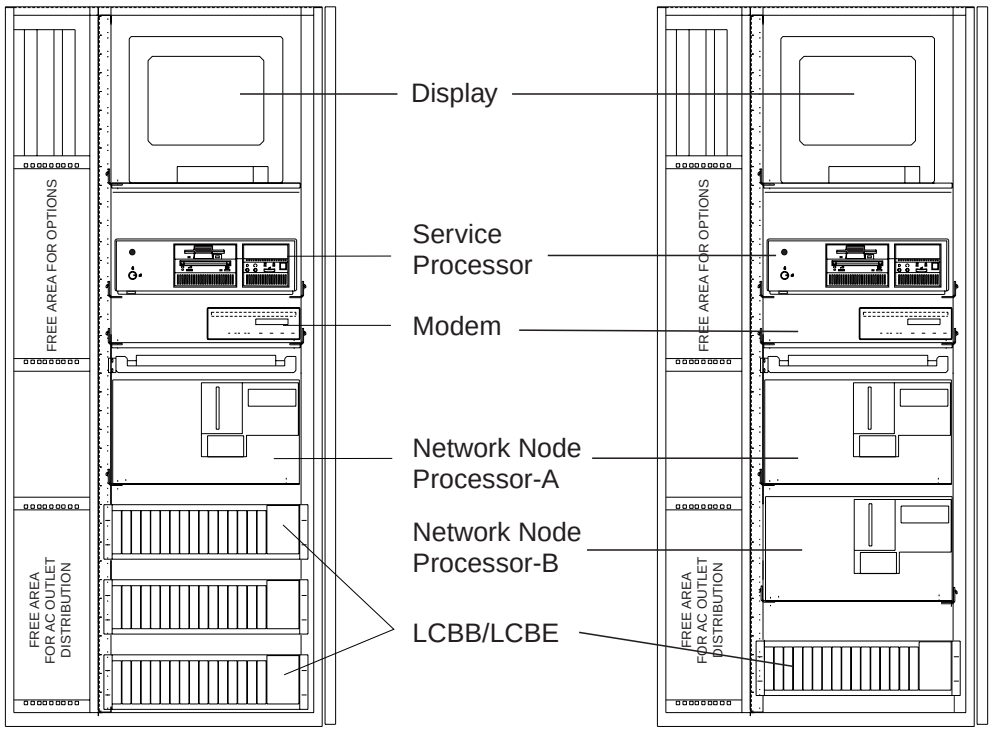


Figure E-14. Units Installation in the Controller Expansion (SP Type 9577)

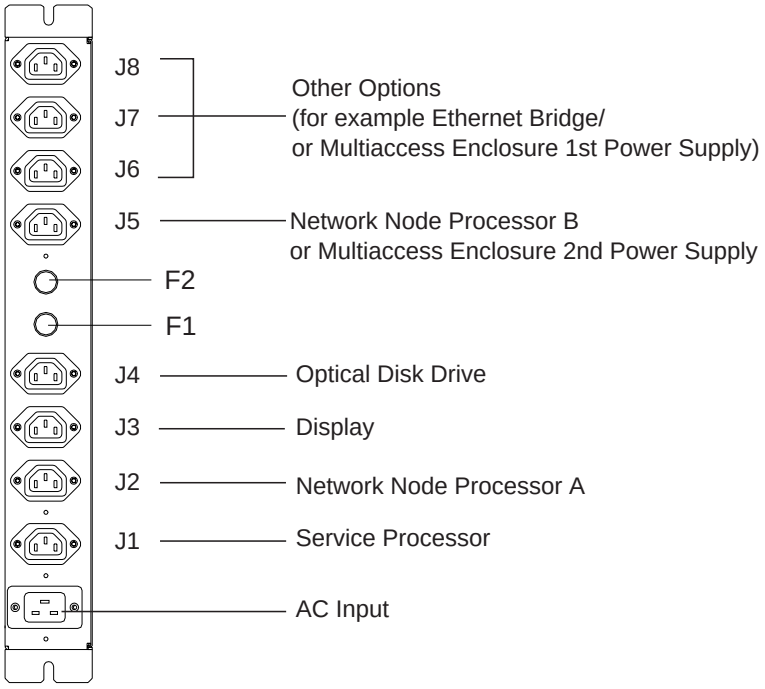


Figure E-15. Connecting the Units to the ac Outlet Distribution Box.

Glossary

ac. alternating current

ACPW. AC power (box)

AFD. airflow detector

alarm. A message sent to the MOSS console. In case of an error a reference code identifies the nature of the error.

alert. A message sent to the host console. In case of an error a reference code identifies the nature of the error.

AMD. air moving device

APPN. advanced peer-to-peer networking

ARC. active remote connector

ARC1A1. ARC V.24 DCE attachment with 5 meter tethered cable

ARC1A2. ARC V.24 DCE attachment with 15 meter tethered cable

ARC1B. ARC V.24 DTE attachment with 15 meter tethered cable

ARC1C. ARC V.24 DCE 3745 interface with 5 meter tethered cable

ARC1D. ARC V.24 DTE 3745 interface with 5 meter tethered cable

ARC1E. ARC V.24 3174 AEA interface (1)

ARC1F. ARC V.24 3174 PCA EIA interface (1)

ARC2A. ARC V.25 autocall interface with 5 meter tethered cable

ARC2C. ARC V.25 autocall interface 3745 with 5 meter tethered cable

ARC3A1. ARC V.35 DCE attachment with 5 meter tethered cable

ARC3A2. ARC V.35 DCE attachment with 15 meter tethered cable

ARC3B. ARC V.35 DTE attachment with 15 meter tethered cable

ARC3C. ARC V.35 DCE 3745 interface with 5 meter tethered cable

ARC3D. ARC V.35 DTE 3745 interface with 5 meter tethered cable

ARC4A1. ARC X.21 DCE attachment with 5 meter tethered cable

ARC4A2. ARC X.21 DCE attachment with 15 meter tethered cable

ARC4B. ARC X.21 DTE attachment with 15 meter tethered cable

ARC4C. ARC V.21 DCE 3745 interface with 5 meter tethered cable

ARC4D. ARC V.21 DTE 3745 interface with 5 meter tethered cable

ARC5A. Reserved

ARC5B. Reserved

ARC5C. ARC RS-422 3708 interface (or RJ-11 connection) (1)

ARC5D. ARC RS-422 IBM Cabling System interface (1)

ARC6A. ARC V.25 autocall interface with 15 meter tethered cable

ARC6C. ARC V.25 autocall 3745 interface with 15 meter tethered cable

BA. basic access

BAS. basic board

BATS. basic assurance tests

BER. box event record

BLPU. basic level packaging unit

BMI. bit multiplex interface

box event record (BER). Information about an event detected by the controller. It is recorded on the disk/diskette and can be displayed on the operator console for event analysis.

bps. bits per second

BSC. binary synchronous communication

BSI. bus synchronism interface

C. Celsius

C&SM. customer and service information

CA. channel adapter

cache. A high-speed buffer storage that contains frequently accessed instructions and data; it is used to reduce access time.

CB. circuit breaker

CBA. controller bus adapter

CBC. controller bus coupler

CBR. circuit burst request

CBSA. controller bus and service adapter (CBSP+CBC+TIC3)

CBSP. controller bus and service processor

CBTRA. controller bus and token-ring adapter (TRP+CBC+TIC3)

CBTRM. cable terminator (IOC and DMA buses)

CCITT. Comite Consultatif International Telephonique et telegraphique

CCU. central control unit

CDF. configuration data file (3745)

CDF-E. configuration data file extended (37CS)

CE. customer engineer

CEPT. Comite Europeen des Postes et Telecommunications

CLA. communication line adapter (CLP+LICnn)

CLDP. controller load/dump program

clear channel. Mode of data transmission where the data passes through the DCE and network, and arrives at the receiving communication controller (for example, the IBM 3745) unchanged from the data transmitted. The DCE or network can modify the data during transmission because of certain network restrictions, but must ensure the received data stream is the same as the transmitted data stream.

CLP. communication line processor

CMIP. common management interface protocol

CNM. communication network management

CP. 1.communication processor 2.control program 3.circuit protector 4.control point

CPLR. coupler

CPN. customer problem number

CPx. FRU name of circuit protector

CRC. cyclic redundancy check character

CS. connectivity switch

CSA. common subassembly

CSB. connectivity switch bus

CSC. connectivity switch cable

CSCE. connectivity switch cable extension

CSM. centralized support module

CSP. central service point

CSS. control subsystem (3745)

CTDA. configuration target device (processor) address

dc. direct current

DCAF. Distributed Console Access Facility (licensed program)

DCCS. DC to connectivity subsystem

DCE. data circuit-terminating equipment

DCDP. DC distribution and protection (box)

DCM. diagnostic control monitor

DCPW. DC power box

DICO. DMA IOC connection card

DM. distribution manager

DMA. direct memory access

DS. data storage

DSB. data storage bus

DSI. data storage interface

DSM. data storage manager

DSS. data storage interface for SBA

DSU. data service unit (DCE-like for high-speed communication lines)

DTE. data terminal equipment

EC. engineering change

EE. extended edition

EIA. Electronic Industries Association

EPO. emergency power-off

EPROM. eraseable PROM

ESCA. ESCON adapter

ESCC. ESCON coupler

ESCON*. Enterprise Systems Connection

ESCP. ESCON processor

ESD. electrostatic discharge

EXP. expansion enclosure

EXP1. first expansion enclosure

EXP2. second expansion enclosure

FCS. frame check sequence

FRU. field-replaceable unit

HCS. Hardware Central Service

HDLC. high-level data link control

hex. hexadecimal

host processor. (1) A processor that controls all or part of a user application network. (2) In a network, the processing unit in which the access method for the network resides. (3) In an SNA network, the processing unit that contains a system services control point (SSCP). (4) A processing unit that executes the access method for attached communication controllers. Also called *host.*

HPPB. high-performance parallel bus

HSC. hardware support center

HSF. hardware service facility

Hz. Hertz

IBM service representative. An individual in IBM who performs maintenance services for IBM products or systems.

IEEE. Institute of Electrical and Electronics Engineers

IML. initial microcode load

initial microcode load (IML). The process of loading the microcode into a scanner or into MOSS.

initial program load (IPL). The initialization procedure that causes the 3745 control program to commence operation.

IO. input/output

IOC. input/output control

IOCB. input/output control bus

IPL. initial program load

IRAM. instruction random access memory

ISO. International Organization for Standardization

kbps. kilobits per second

LA. line adapter

LAN. local area network

LCB. line connection box

LED. light-emitting diode

LIC. line interface coupler

LICx. FRU name of line interface coupler type x (3745)

LLC. logical link control

LS. local storage

LSA. link service architecture

LSCT. LIM software configuration table

LSM. local storage manager

LSSD. level-sensitive scan design (total hardware latches chain collection)

LU. logical unit

MAC. medium access control

MAE. Multiaccess enclosure

MAP. maintenance analysis-procedure

MAU. multistation access unit

MB. megabyte; 1 048 576 bytes

MCF. microcode fix

MCL. microcode change level

MES. miscellaneous equipment specification

MG. motor generator

MI. maskable interrupt

microcode. A program, that is loaded in a processor (for example, the MOSS processor)

MLA. MOSS LAN adapter

MMIO. memory mapped input/output

maintenance and operator subsystem (MOSS). The part of the controller that provides operating and servicing facilities to the customer's operator and the IBM service representative.

MOSS. maintenance and operator subsystem (3745)

MOSS-E. maintenance and operator subsystem extended (37CS)

NA. network addressable

NCP. Network Control Program

NDM. netview distribution manager

NetView. An IBM licensed program used to monitor a network, manage it, and diagnose its problems.

Network Control Program (NCP). An IBM licensed program that provides communication controller support for single-domain, multiple-domain, and interconnected network capability.

NMI. non-maskable interrupt

NMVT. network management vector transport

NNP. network node processor

NODA. next origin device (processor) address

NPM. NetView performance monitor

NTDA. next target device (processor) address

OEMI. original equipment manufacturer's interface

OLT. online test

online tests. Testing of a remote data station concurrently with the execution of the user's programs (that is, with only minimal effect on the user's normal operation).

OSI. open system interconnect

PA. primary access

PBC. packet burst control

PBG. packet burst grant

PCR. 1.pico-processor command register 2.power check reset

PICA. process and intertask communication architecture

PMH. problem management hardware

PN. part number

PNL. control panel

POR. power-ON reset

PP. pico-processor

PPB. primary power box

PPC. PowerPC (system card of MAE)

PRC. processor

PRDA. packet request device (processor) address

PROM. programable read-only memory

PS. power supply

PSI. packet switch interface

PSN. public switched network

PTCE. product-trained CE

PTF. program temporary fix

PTT. Post, Telephone and Telegraph (agency)

PU. physical unit

RETAIN. Remote Technical Assistance Information Network

RNR. receiver not ready

RPL. remote program load

RPO. remote power-off

RSC. remote service center

RSF. remote support facility

RVX. stands for RS232, RS422, V.24-35, X.21-2x connections

SAC. switch adapter card

SATS. specific assurance tests

SBA. switch bus adapter

SBI. switch bus interface

SC. switch control

SDLC. synchronous data link control

SIE. switch interface extender

SL. service logic

SNA. Systems Network Architecture

SNMP. Simple network management protocol

SPD1. signal and power distribution type 1

SPD2. signal and power distribution type 2

SPDL. signal and power distribution card in LCB

SPS. service and power support

SQL. structured query language

SRC. system reference code

SSA. system service architecture

SSCP. system services control point

STCn. signal transfer card n

SSS. subsystem support service

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information through a user application network. The structure of SNA allows the users to be independent of specific telecommunication facilities.

TB. terminator block

TDM. time division multiplexing

TDR. technical data record

TERC. terminator card

TIC1. token-ring interface coupler type 1 (3745) running at speed of 4 Mbits

TIC2. token-ring interface coupler type 2 (3745) running at speed of 4 or 16 Mbits

TIC3. token-ring interface coupler type 3 (37CS) running at speed of 4 or 16 Mbits

time out. The time interval allotted for certain operations to occur.

TPS. two-processor switch

TR. token-ring

TRA. token-ring adapter (TRP+TIC3)

TRFM. transformer

TRP. token-ring processor

TRS. transmitter/receiver subassembly

UEPO. unit emergency power-off

URSF. universal remote support facility

UTP. Unshielded twisted pair cable

V. volt

V.24. CCITT V.24 recommendation

V.25. CCITT V.25 recommendation

V.28. CCITT V.28 recommendation

V.35. CCITT V.35 recommendation

VPD. vital product data

VTAM*. Virtual Telecommunications Access Method

VTL. vendor technology logic

W. watt

X.21. CCITT X.21 recommendation

X.25. CCITT X.25 recommendation

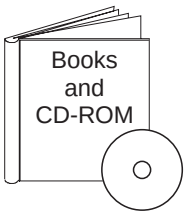
YZxxx. wiring diagram

Bibliography

Service Documentation for the IBM 3745 (Models 210, 21A, 310, 31A, 410, 41A, 610, and 61A) and 3746 (Model 900)

Table X-1 (Page 1 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

This service documentation has the following formats:



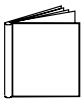
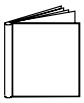
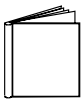
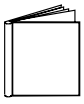
		3745 Models A and 3746 Books Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.
	SY33-2080	***IBM 3745 Communication Controller Models 210 to 61A*** ***Service Master Index***[1] Provides references for finding information in the IBM 3745 Models X10 and X1A shipping group documentation.
	SY33-2057	***IBM 3745 Communication Controller Models 210 to 61A*** ***Installation Guide***[1] Provides instructions for installing or relocating the IBM 3745 Models X10 and X1A.
	SY33-2114	***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Installation Guide***[2] Provides instructions for installing or relocating a 3746-900.
	SY33-2116	***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Service Guide***[2] Provides procedures for isolating and fixing the IBM 3746-900 problems.

Table X-1 (Page 2 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

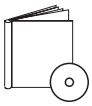
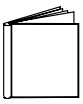
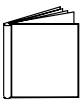
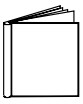
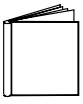
 SY33-2055	***IBM 3745 Communication Controller Models 210, 310, 410, and 610*** ***IBM 3746 Expansion Units Models A11, A12, L13, L14, and L15*** ***Service Functions***[1] Describes MOSS functions using the IBM 3745 Models X10 and X1A consoles.
 SY33-2054	***IBM 3745 Communication Controller Models 210 to 61A*** ***Maintenance Information Procedures***[1] Provides procedures for isolating and fixing the IBM 3745 Models X10 and X1A problems.
 SY33-2115	***IBM 3745 Communication Controller Models A***[3] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Service Processor Installation and Maintenance***[4] ***(Based on the 7585, 3172, 9585, or 9577)*** Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, 9585, or 9577. Can be for systems with microcode that has up to and including EC D46130 (any level) installed.
 SY33-2120	***IBM 3745 Communication Controller Models A***[3] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Service Processor Installation and Maintenance***[4] ***(Based on the 7585, 3172, or 9585)*** Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, or 9585. Can be for systems with microcode EC F12380 or higher installed.
 SY33-2125	***IBM 3745 Communication Controller Models A***[3] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Service Processor Installation and Maintenance***[4] ***(Based on the 6275)*** Provides information on installing and maintaining the service processor based on PS/2 Type 6275. Can be for systems with microcode EC F12380 or higher installed.

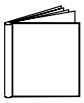
Table X-1 (Page 3 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

SY33-2127

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor and Network Node Processor[4]
Service User's Guide

Provides information on installing and maintaining the operational code on service processor, or network node processor.
Can be for systems with microcode EC F12380 or higher installed.

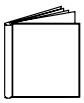


SY33-2118

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Multiaccess Enclosure Installation and Maintenance[4]

Provides information on installing and maintaining the Multiaccess Enclosure (MAE).

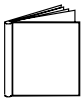


SY33-2124

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Multiaccess Enclosure Installation and Maintenance[4]
(Starting from EC F12430 and Above)

Provides information on installing and maintaining the Multiaccess Enclosure (MAE). For systems with microcode EC F12430 or higher installed.

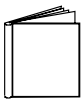


SY33-2112

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Network Node Processor Installation and Maintenance[4]
(Based on the 7585 or 3172)

Provides information on installing and maintaining the network node processor based on the PS/2 Type 7585 or 3172.

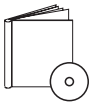


SY33-2126

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Network Node Processor Installation and Maintenance[4]
(Based on 6275)

Provides information on installing and maintaining the network node processor based on the PS/2 Type 6275.

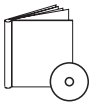


SY33-2056

IBM 3745 Communication Controller
Models 210 to 61A

Maintenance Information Reference[1]

Provides in-depth hardware reference information on the IBM 3745 Models X10 and X1A.



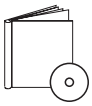
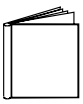
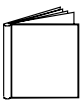
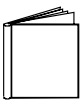
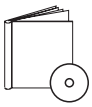
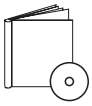
SY33-2075

IBM 3745 Communication Controller
All Models[5]

External Cable References[1]

Provides references to console and line cables used for connecting the IBM 3745 Models 130 to 61A.

Table X-1 (Page 4 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

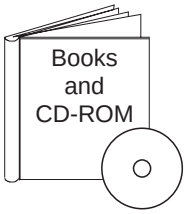
 SY33-2117	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***External Cable Reference***[6] Provides references to console and line cables used for connecting the IBM 3746 Models 900 and 950.
 S135-2015	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Parts Catalog***[6] Provides reference information for ordering parts for the IBM 3746 Models 900 and 950.
 S135-2010	***IBM 3745 Communication Controller Models 210 to 61A*** ***Parts Catalog***[1] Provides reference information for ordering IBM 3745 Models X10 and X1A parts.
 S135-2014	***IBM Controller Expansion*** ***Parts Catalog*** Provides reference information for ordering parts for the controller expansion attached to the IBM 3745 Models A[3], and 3746 Models 900 and 950.
CD-ROM Bibliography	
 ZK2T-8214	***IBM Networking Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. EMEA version.
 ZK2T-8187	***IBM Networking Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. US version.

[1] Documentation shipped with the 3745.
[2] Documentation shipped with the 3746-900.
[3] 3745 Models 17A to 61A.
[4] Documentation shipped with the processor.
[5] 3745 Models 130 to 61A.
[6] Documentation shipped with the 3746 Models 900 and 950.

Additional Service Documentation for the IBM 3745 Models 130, 150, 160, 170, and 17A

Table X-2 (Page 1 of 2). Additional Service Documentation for the 3745 Models 1x0 and 17A

This service documentation has the following formats:

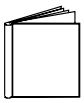


SY33-2079

IBM 3745 Communication Controller Models 130, 150, 160, 170, and 17A

Service Master Index[1]

Provides references for finding information in the IBM 3745 Models 1X0 and 17A shipping group documentation.

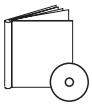


SY33-2067

IBM 3745 Communication Controller Models 130, 150, 160, 170, and 17A

Installation Guide[1]

Provides instructions for installing or relocating the IBM 3745 Models 1X0 and 17A.

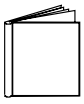


SY33-2069

IBM 3745 Communication Controller Models 130, 150, 160, and 170

Service Functions[1]

Describes MOSS functions using the IBM 3745 Models 1x0 and 17A consoles.

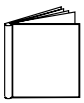


SY33-2070

IBM 3745 Communication Controller Models 130 to 17A

Maintenance Information Procedures[1]

Provides procedures for isolating and fixing the IBM 3745 Models 1X0 and 17A problems.



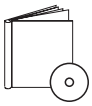
S135-2012

IBM 3745 Communication Controller Models 130 to 17A

Parts Catalog[1]

Provides reference information for ordering IBM 3745 Models 1X0 and 17A parts.

Table X-2 (Page 2 of 2). Additional Service Documentation for the 3745 Models 1x0 and 17A



SY33-2066

IBM 3745 Communication Controller
Models 130, 150, 160, and 170

Hardware Maintenance Reference[1]

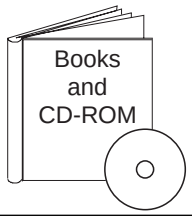
Provides in-depth hardware reference information on the IBM 3745 Models 1X0 and 17A.

[1] Documentation shipped with the 3745.

Customer Documentation for the 3745 (Models 210, 310, 410, 610, 21A, 31A, 41A, and 61A), and 3746 (Model 900)

Table X-3 (Page 1 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

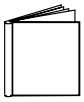
This customer documentation has the following formats:



Finding Information

3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.

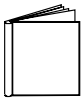


SA33-0172 — ***IBM 3745 Communication Controller Models 210 to 61A***
IBM 3746 Expansion Unit Model 900

Customer Master Index[1]

Provides references for finding information in the customer documentation library.

Evaluating and Configuring

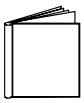


GA33-0092 — ***IBM 3745 Communication Controller Models 210, 310, 410, and 610***

Introduction

Gives an introduction of the IBM Models 210 to 610 capabilities.

For Models A refer to the *Overview*, GA33-0180.



GA33-0180 — ***IBM 3745 Communication Controller Models A***[2]
IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Overview

Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.

Table X-3 (Page 2 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

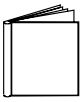
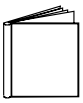
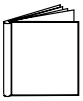
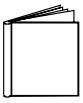
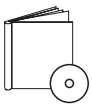
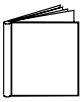
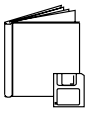
	GA33-0457	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Expansion Unit Model 900*** ***Models 900 and 950*** ***Planning Guide*** Planning for: • Field upgrades • Service processor and alert management configuration • Network integration (NCP, APPN, and IP control) • Physical installation.
Preparing Your Site		
	GC22-7064	***IBM System/360, System/370, 4300 Processor*** ***Input/Output Equipment Installation Manual-Physical Planning*** (Including Technical News Letter GN22-5490) Provides information for physical installation for the 3745 Models 130 to 610. For 3745 Models A and 3746 Model 900, refer to the *Planning Guide*, GA33-0457.
	GA33-0127	***IBM 3745 Communication Controller*** ***Models 210, 310, 410, and 610*** ***Preparing for Connection*** Helps for preparing the 3745 Models 210 to 610 cable installation. For 3745 Models A refer to the *Connection and Integration Guide*, SA33-0129.
Preparing for Operation		
	GA33-0400	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Safety Information***[1] Provides general safety guidelines.
	SA33-0129	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Connection and Integration Guide***[1] Contains information for connecting hardware and integrating network of the 3745 and 3746-900 after installation.
	SA33-0416	***Line Interface Coupler Type 5 and Type 6*** ***Portable Keypad Display*** ***Migration and Integration Guide*** Contains information for moving and testing LIC types 5 and 6.

Table X-3 (Page 3 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900



SA33-0158

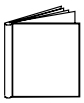
IBM 3745 Communication Controller All Models[3]
IBM 3746 Nways Multiprotocol Controller Model 900

Console Setup Guide[1]

Provides information for:

- Installing local, alternate, or remote consoles for 3745 Models 130 to 610
- Configuring user workstations to remotely control the service processor for 3745 Models A and 3746 Model 900 using:
  - DCAF program
  - Telnet Client program.

Customizing Your Control Program



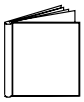
SA33-0178

Guide to Timed IPL and Rename Load Module

Provides VTAM procedures for:

- Scheduling an automatic reload of the 3745
- Getting 3745 load module changes transparent to the operations staff.

Operating and Testing

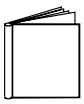


SA33-0098

IBM 3745 Communication Controller
All Models[4]

Basic Operations Guide[1]

Provides instructions for daily routine operations on the 3745 Models 130 to 610.

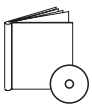


SA33-0177

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller Model 900

Basic Operations Guide[1]

Provides instructions for daily routine operations on the 3745 Models 17A to 61A, and 3746 Model 900 operating as an SNA node (using NCP), APPN/HPR Network Node, and IP Router.



SA33-0097

IBM 3745 Communication Controller
All Models[3]

Advanced Operations Guide[1]

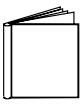
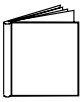
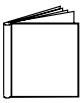
Provides instructions for advanced operations and testing, using the 3745 MOSS console.

On-line Information

Controller Configuration and Management Application

Provides a graphical user interface for configuring and managing a 3746 APPN/HPR Network Node and IP Router, and its resources.
Is also available as a stand-alone application, using an OS/2 workstation.
Defines and explains all the 3746 Network Node and IP Router configuration parameters through its online help.

Table X-3 (Page 4 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

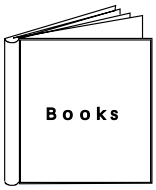
	SH11-3081	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Controller Configuration and Management: User's Guide***[5] Explains how to use CCM and gives examples of the configuration process.
Managing Problems		
	SA33-0096	***IBM 3745 Communication Controller All Models***[3] ***Problem Determination Guide***[1] A guide to perform problem determination on the 3745 Models 130 to 61A.
	On-line Information	***Problem Analysis Guide*** An online guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
	SA33-0175	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Alert Reference Guide*** Provides information about events or errors reported by alerts for: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

[1] Documentation shipped with the 3745.
[2] 3745 Models 17A to 61A.
[3] 3745 Models 130 to 61A.
[4] Except 3745 Models A.
[5] Documentation shipped with the 3746-900.

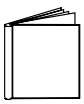
Additional Customer Documentation for the 3745 Models 130, 150, 160, 170, and 17A

Table X-4. Additional Customer Documentation for the 3745 Models 130 to 17A

This customer documentation has the following format:



Finding Information



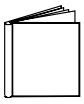
SA33-0142

IBM 3745 Communication Controller
Models 130, 150, 160, 170, and 17A
IBM 3746 Nways Multiprotocol Controller Model 900

Customer Master Index[1]

Provides references for finding information in the customer documentation library.

Evaluating and Configuring



GA33-0138

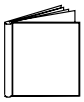
IBM 3745 Communication Controller
Models 130, 150, and 170

Introduction

Gives an introduction about the IBM Models 130 to 170 capabilities, including Model 160.

For Model 17A refer to the *Overview*, GA33-0180.

Preparing Your Site



GA33-0140

IBM 3745 Communication Controller
Models 130, 150, 160, and 170

Preparing for Connection

Helps for preparing the 3745 Models 130 to 170 cable installation.

For 3745 Model 17A refer to the *Connection and Integration Guide*, SA33-0129.

[1] Documentation shipped with the 3745.

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Model 900
Installation Guide

Publication No. SY33-2114-03

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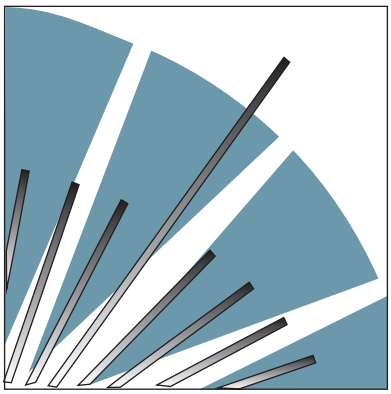

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