

Field Feature Bill of Material

PN 29H4175

**Install Controller Expansion (FC 5023)
on IBM 3745-XXA or 3746-900.**

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Before Installation (Steps 1-8)

1.0 Machines Affected

IBM 3745-XXA or 3746-900.

2.0 Related BMs and ECs

2.1 Prerequisites.

(Must be installed prior to this installation)
None.

2.2 Concurrent.

(Must be installed together)

- 220/240V Power cords based on the country rules:

FFBM	US/Canada/Mexico Specify Code
80G4742	Without 9986
80G4743	9986 (Chicago)
Note: Two cords are provided per FFBM	

FFBM	Japan (CC= 760) Specify Code
80G4744	9893 (No locking plug - 50Hz) 9895 (No locking plug - 60 Hz)
80G4745	9892 (locking plug - 50Hz) 9894 (locking plug - 60 Hz)
Note: Two cords are provided per FFBM	

FFBM	EMEA, AFE except Canada/Japan
80G4740	616.
80G4741	613.
80G4746	619, 621, 629, 631, 663, 681, 683, 731, 732, 733, 735, 759, 791, 799, 811, 815, 818, 829, 856, 858, 859, 871.
80G4747	615, 646, 652, 808, 864.
80G4748	698, 655, 758, 772.
80G4749	756.
80G4750	796.
80G4751	620, 627, 643, 661, 666, 677, 680, 725, 738, 744, 752, 754, 764, 767, 778, 780, 799, 802, 805, 823, 833, 834, 851, 883.
80G4752	610, 612, 614, 618, 624, 644, 654, 656, 660, 664, 668, 679, 682, 702, 706, 724, 726, 732, 740, 742, 749, 750, 757, 766, 768, 773, 774, 776, 777, 782, 783, 784, 786, 788, 794, 802, 806, 813, 820, 821, 822, 824, 826, 832, 838, 840, 842, 846, 850, 853, 862, 865, 869, 876.
80G4753	678, 762, 866, 848.
Note: Two cords are provided per FFBM	

Note: Only one of the above FFBM will be received, depending on the base machine country code and specify code.

2.3 Companion.

(May be installed together)

- Side Covers - FFBM 29H4177

Note: Will be received only when FC 5024 (Side covers for stand-alone rack) has been ordered.

3.0 BMs to be Installed

- Controller Expansion - FFBM 29H4174

4.0 Preparation

1. Familiarize yourself with the purpose and details of the installation instruction before negotiating machine time with the customer.
2. The Controller Expansion should be installed:
 - **attached** to the 3745 or 3746, on the left or right side, or
 - **Detached or Stand-alone** (Maximum 6 meters from the 3745 or 3746).
3. Check all items listed on the BM(s) to determine that all parts have been received.
4. The set-up of the Controller Expansion has no impact on customer operations.

5.0 Programming

None.

6.0 Purpose and Description

6.1 Purpose

These instructions explain how to install the Controller Expansion, detached or attached, to a 3745 model XXA or 3746 models 900.

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6.2 Description

The installation of the controller expansion is divided in two main procedures:

- Installing the controller expansion.
- Installing additional equipment.

7.0 Installation Time

FFBM	Machine Hrs.	System Hrs.	Nbr of CEs
29H4174	0.0	0.0	1

No impact on 3745/3746 customer operations.

8.0 Tools/Material Required

None.

Installation (Steps 9-11)

9.0 Safety

See *Safety Notices* located at the beginning of 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, or
- *3746-950 Service Guide*, SY33-2108.

10.0 Details of Installation.

10.1 Installing the Controller Expansion

The Controller Expansion can be installed:

- **Attached** go to step 1.
 - **Detached** go to step 5 on page 7.
1. From the right or left side of the 3745 or 3746 frame were the controller expansion will be attached:
 - ___ a. Remove the side cover,
 - ___ b. Remove the ground bracket and the two attaching screws.
 - ___ c. put them in a safe place.
 2. Move the controller expansion to its final resting position,
 - ___ a. Tighten the caster lock screws on the front wheels, then
 - ___ b. Bolt it to the 3745 or 3746 frame using 4 spacer (PN 72F0659) and 4 screws (PN 1621534).
 3. Connect the ground wire (PN 58G5691) **A** to the controller expansion frame **B** using one screw (PN 61F4513) and one washer (PN 1622347) and the other end to the building ground.

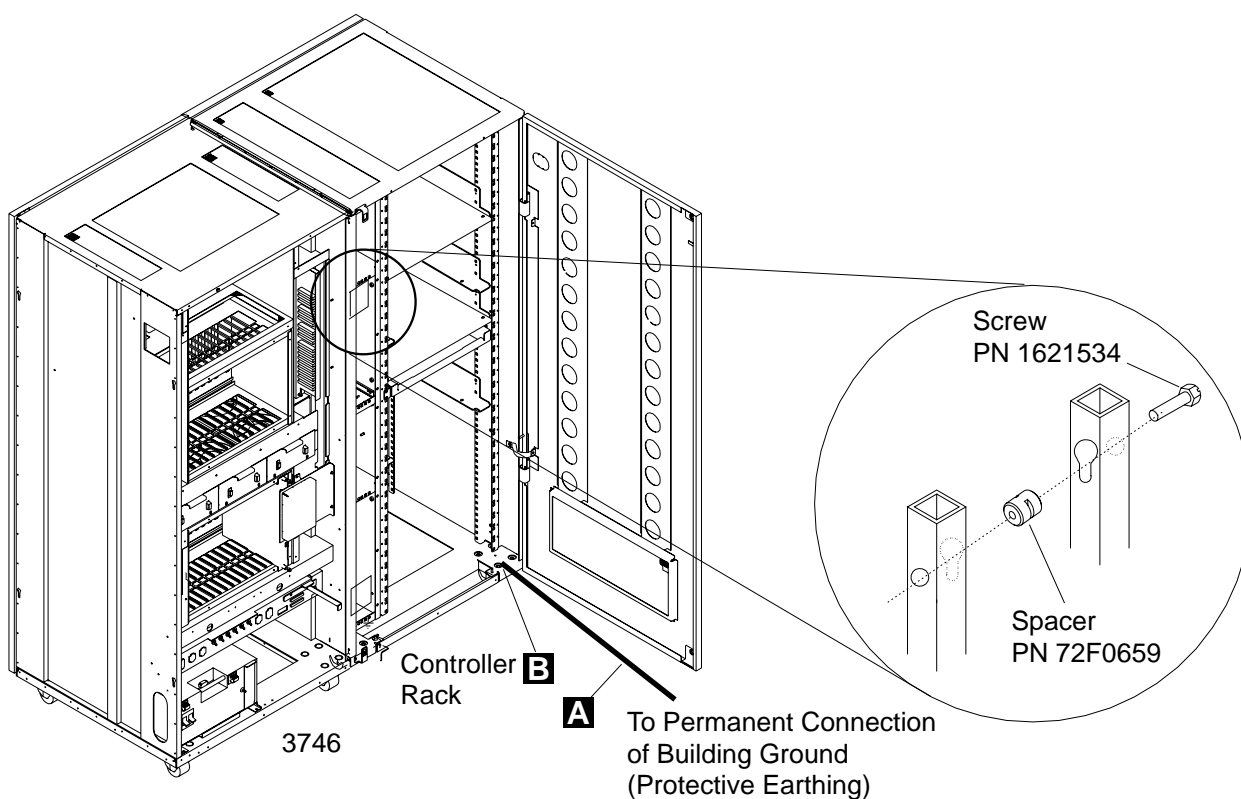


Figure 1. Controller Expansion Attached to 3746-900 (Front View)

4. Go to step 10.1.1, "Measuring the Customer's Primary Power" on page 9.
5. Install the controller expansion a maximum of 6 meters from the 3745 base frame or the 3746 Model 900.
 - ___ a. Move the controller expansion to its final resting position, then
 - ___ b. Tighten the caster lock screws on the front wheels.
6. Connect the ground wire (PN 58G5691) **A** to the controller expansion frame **B** using one screw (PN 61F4513) and one washer (PN 1622347) and the other end to the building ground.

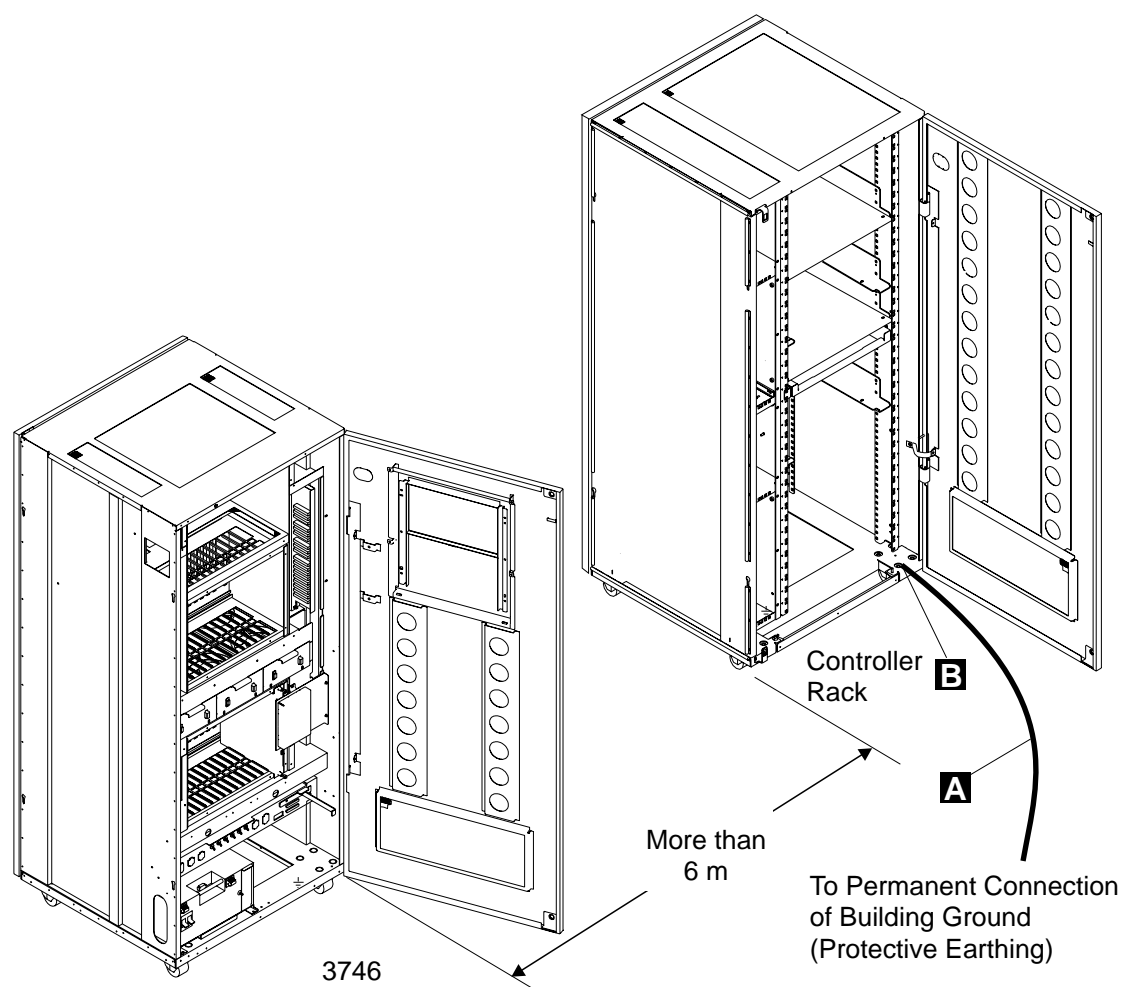


Figure 2. Installing the controller expansion alone.

10.1.1 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.*

- ___ 1. Switch or ask the customer to switch the controller expansion 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.
 - c. (World Trade only) Measure the voltage between the neutral of the customer's receptacle (if present) 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.

- ___ 2. Measure the customer's phase-to-neutral or phase-to-phase voltage. Continue only if the measured AC input voltage is within 180V to 260V.
- ___ 3. Switch or ask the customer to switch the branch circuit breaker that feeds the controller expansion **to the OFF position**.

10.1.2 Installing the Power Cord(s).

- ___ 1. Plug one power cord **A**, provided with the MES, onto the ac outlet distribution box in location **I** (See Figure 3),

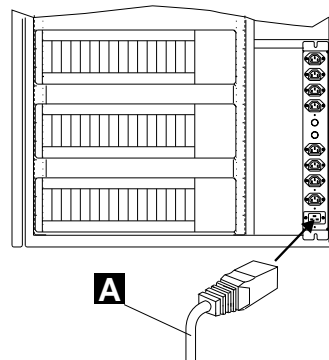


Figure 3. Installing the power cord.

- ___ 2. Route the power cord to the customer's power socket, and
- ___ 3. Insert the power plug into the customer's main socket.
- ___ 4. Secure the not used power cords for further usage.

- 5. Switch or ask the customer to switch the branch circuit breaker that feeds the controller expansion to the **ON** position.

10.1.3 Installing the Ground Brackets and Side Cover(s).

If the controller expansion. is:

- **Attached** go to 1.
 - **Detached** go to 4 on page 12.
1. Install the front and rear ground brackets **1** (PN 58G5675) using 3 screws (PN 2665527) per ground bracket. (refer to Figure 4).
 2. Re-install the side right ground brackets **2** (PN 58G5676), secured at step 1 on page 6
 3. Re-installed the side cover **3**, secured at step 1 on page 6

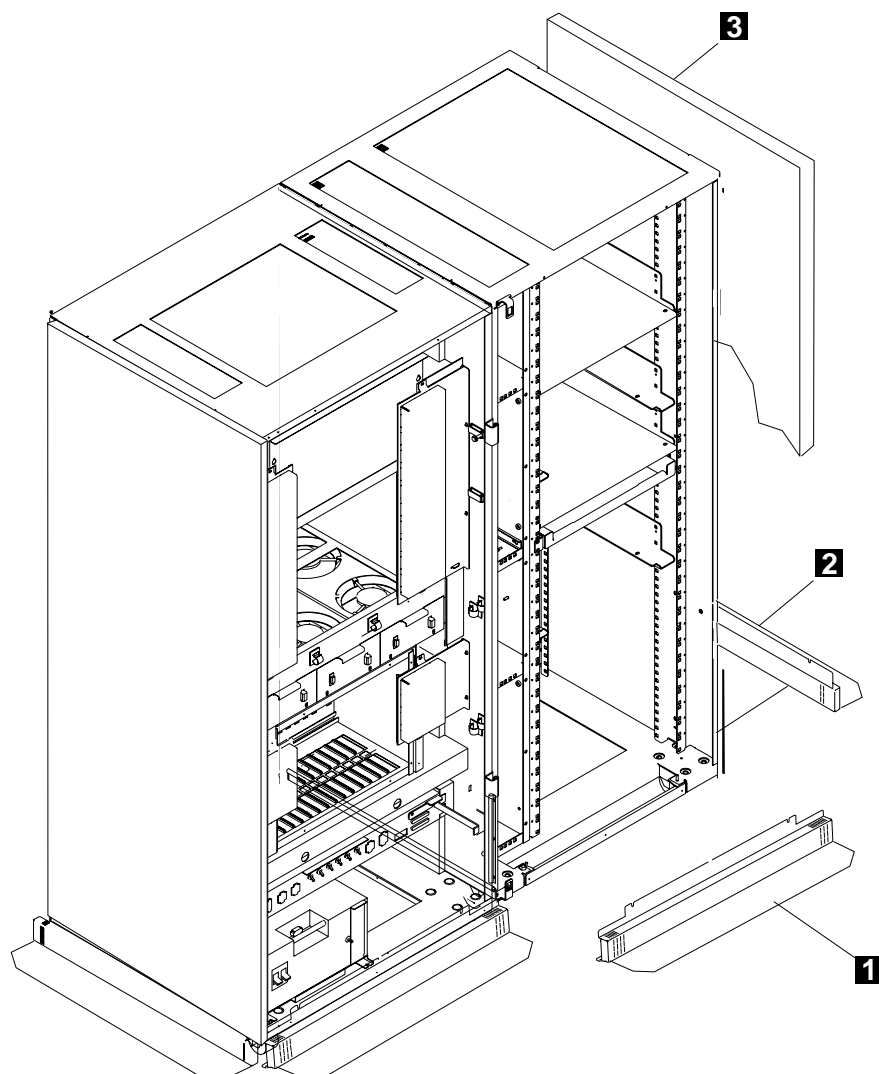


Figure 4. Controller Expansion Attached. Ground Brackets (Front View)

Go to 10.2, “Installing Additional Equipment.” on page 13.

4. If installed, remove the two covers **4** :

- Loosen the 4 mounting screws
- remove the covers.

5. Install the right and left ground brackets **1** (PN 58G5676) using 3 screws (PN 2665527) per ground bracket.

Note: Before securing the ground plate screws, push down on the plate to give it maximum contact with the floor.

6. Install the front and rear ground brackets **2** (PN 58G5675) using 3 screws (PN 2665527) per ground bracket,

7. Re-installed covers **4** .

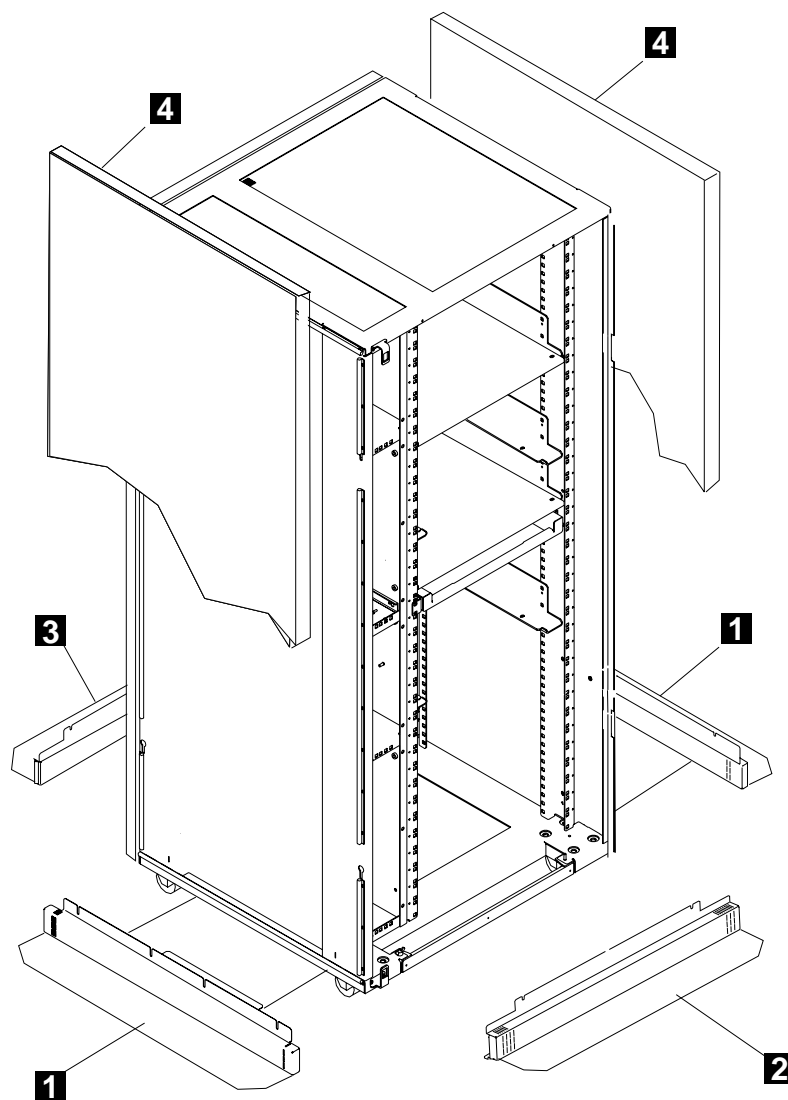


Figure 5. Controller Expansion Alone. Ground Brackets (Front View)

10.2 Installing Additional Equipment.

The Controller Expansion is now ready to receive different equipments, before ending the installation ask the customer if any of the following equipment needs to be installed in the rack. such as:

- The Service Processor and/or
- The SPAU (IBM 8228) and/or
- The RSF Modem and/or
- LCBB/LCBE.

Very Important

The ac outlet distribution box is connected to 220/240V power source, all the units must be set to support this voltage.

The following figures show were to install the different equipment.

- To install the Service Processor in the Controller Expansion, depending on the type, as shown in Figure 6 on page 14, Figure 8 on page 14, or Figure 9 on page 14 using the corresponding documentation:
 - *Service Processor Installation and Maintenance Based on PS/2 9577, SY33-2095, or*
 - *Service Processor Installation and Maintenance Based on PS/2 9585, SY33-2109, or*
 - *Service Processor Installation and Maintenance Based on PS/2 3172, SY33-2111.*

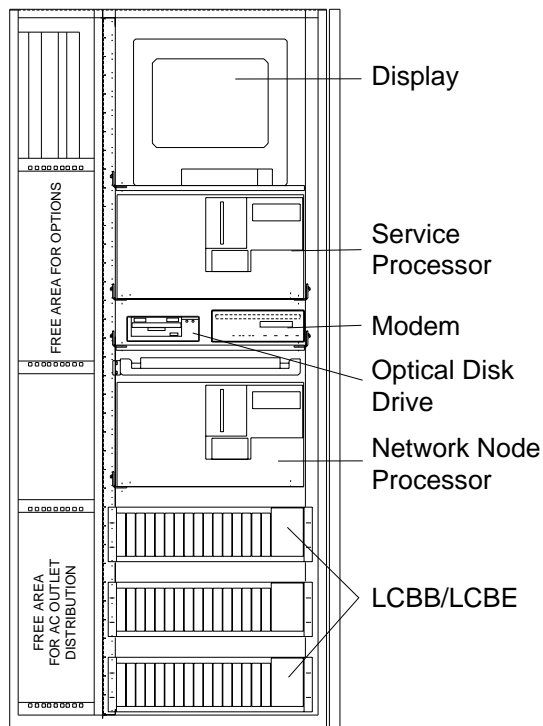


Figure 6. Service Processor type 3172.

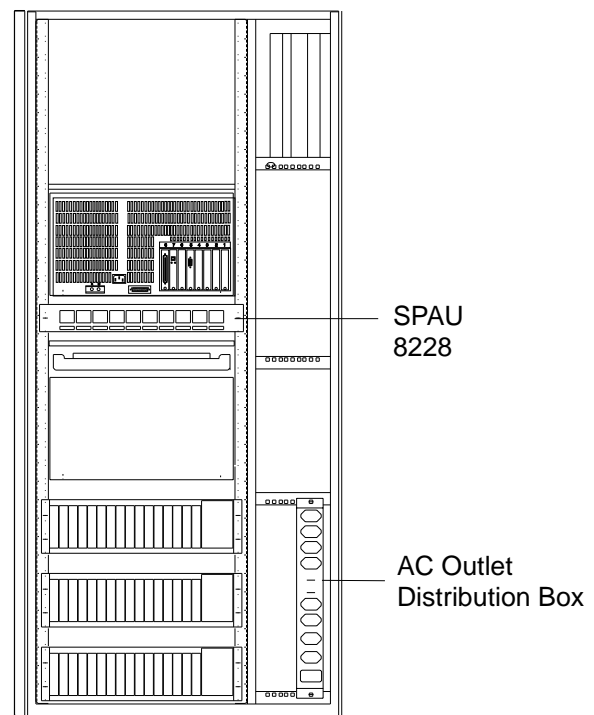


Figure 7. Controller Rack Locations (Rear Side)

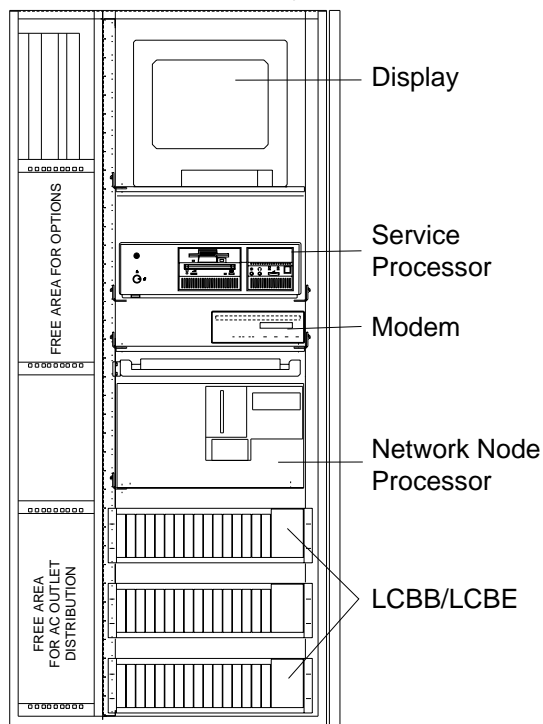


Figure 8. Service Processor type 9577

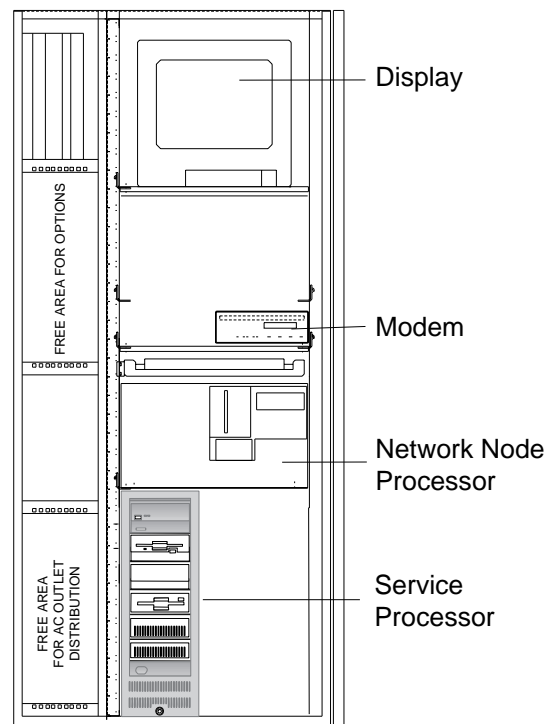


Figure 9. Service Processor type 9585

- To install the RSF modem use *7855 Modem Model 10 Guide to Operation*, GA33-0160.

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- To install the SPAU and Connect the 3746-9XX, depending on the Service processor type, refer to:
 - *Service Processor Installation and Maintenance Based on PS/2 9577, SY33-2095, or*
 - *Service Processor Installation and Maintenance Based on PS/2 9585, SY33-2109, or*
 - *Service Processor Installation and Maintenance Based on PS/2 3172, SY33-2111.*

Connect the **3746-900** to the SPAU using the token ring attachment cable PN 76F9441 (9 m, 27 ft) for **World Trade** or PN 76F9440 for the **US**.

- ___ 1. Using a sticker, identify the cable as the "3746-900. cable".

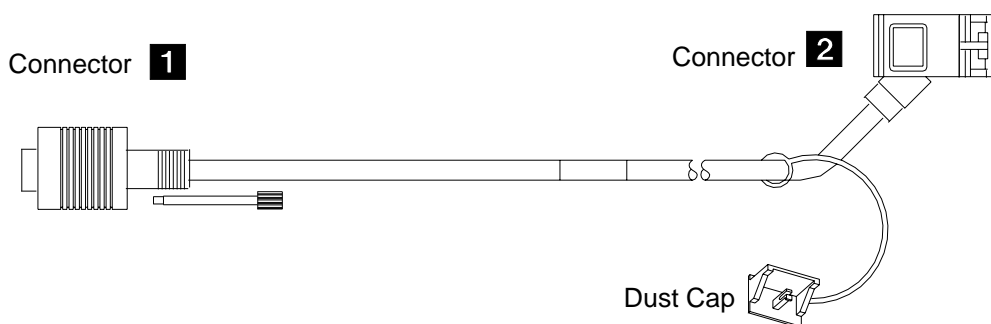


Figure 10. Token Ring Cable

- ___ 2. Locate the TIC3 plugged in 07N-A1 F1 (refer to 3746-900 Component Locations)
If the Controller rack is:
 - **Attached** refer to Figure 11 on page 16
 - **Detached** refer to Figure 12 on page 17
- ___ 3. Plug **connector 1** to the TIC3 07N-A1 F1
- ___ 4. Plug **connector 2** to one of the 8228 LAN adapter plugs 1 to 8

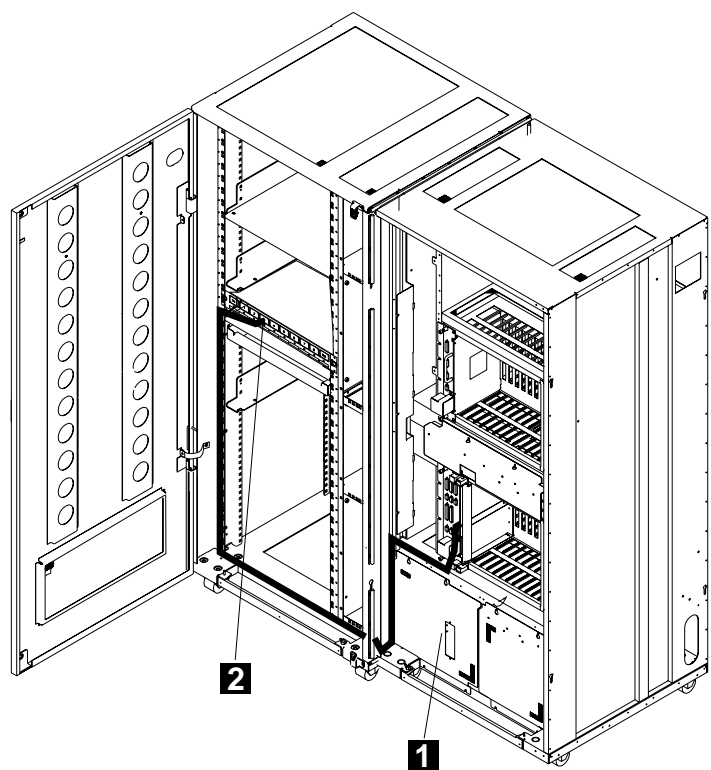


Figure 11. Connection of the 3746-900 to the 8228 (Rack Attached)

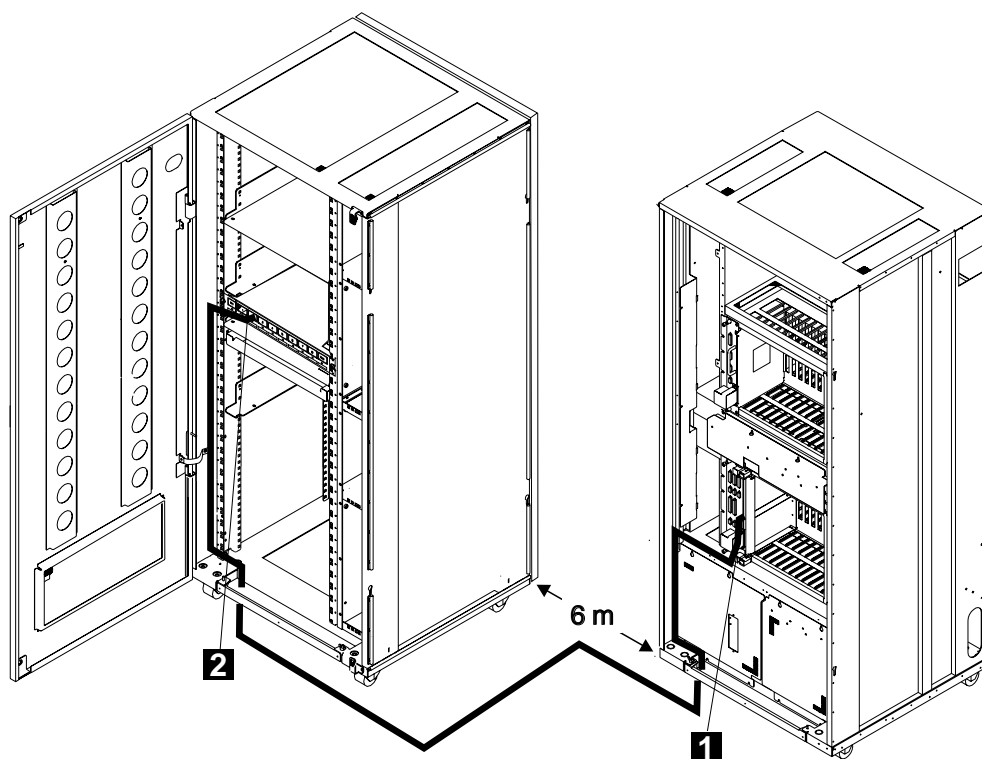


Figure 12. Connection of the 3746-900 to the 8228 (Rack detached)

- To install the LCBB/LCBE use 3745-900 *Installation Guide*, SY33-2088 or 3745-950 *Installation Guide*, SY33-2107.

11.0 Test Procedures

No test required.

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After Installation (steps 12-15)

12.0 Field Updating

None.

13.0 Publications Update

None.

14.0 Parts Disposition

14.1 Purchased Machines

Refer to the parts ownership matrix to determine the correct owner of removed/unused parts.

- For EMEA/APG/AG Areas, refer to *Hardware and General Service Code Description*.
- For Domestic Areas, return parts to the customer.

15.0 Machine Records

- Install the new **MACHINE HISTORY** supplied.
- Report installation and quality problems using existing procedures.

End of instructions.