NEC

ND-43177-002 (E)
ISSUE 3

NEAX®1400 IMS

Installation and Test Manual

NEC America, Inc.
OCTOBER, 1991

LIABILITY DISCLAIMER

NEC America, Inc. reserves the right to change the specifications, functions, or features, at any time, without notice.

NEC America, Inc.

Printed in the U.S.A.

NOTICE

The NEAX1400 IMS is in full compliance with Underwriters Laboratories (UL 1459, 2nd Edition) standards.

The following safety precautions, to be observed when installing a NEAX1400 IMS, are issued in accordance with the Underwriters Laboratories standards:

a) Telephone wiring must never be installed during a lightning storm.

b) Telephone jacks must never be installed in wet locations, unless the jacks are specifically designed for wet locations.

c) Uninsulated telephone wires or terminals must never be touched, unless the telephone line has been disconnected at the network interface.

d) Caution must be exercised when installing or modifying telephone lines.

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CHAPTER 1 INTRODUCTION

1. PURPOSE

This manual explains the procedures for installing and testing a NEAX1400 IMS. Before the installation, the installer is required to inventory and check the equipment and the site conditions described in General Information [ND- 43177-001 (E)]. Thereafter, the installer should perform each step of the installation according to the procedures described in Chapter 2, Section 2, "Procedure". Chapter 2, Section 3, "Procedure for System Expansion" should also be referenced.

2. REFERENCE MANUALS

The manuals listed below should be referenced during the installation:

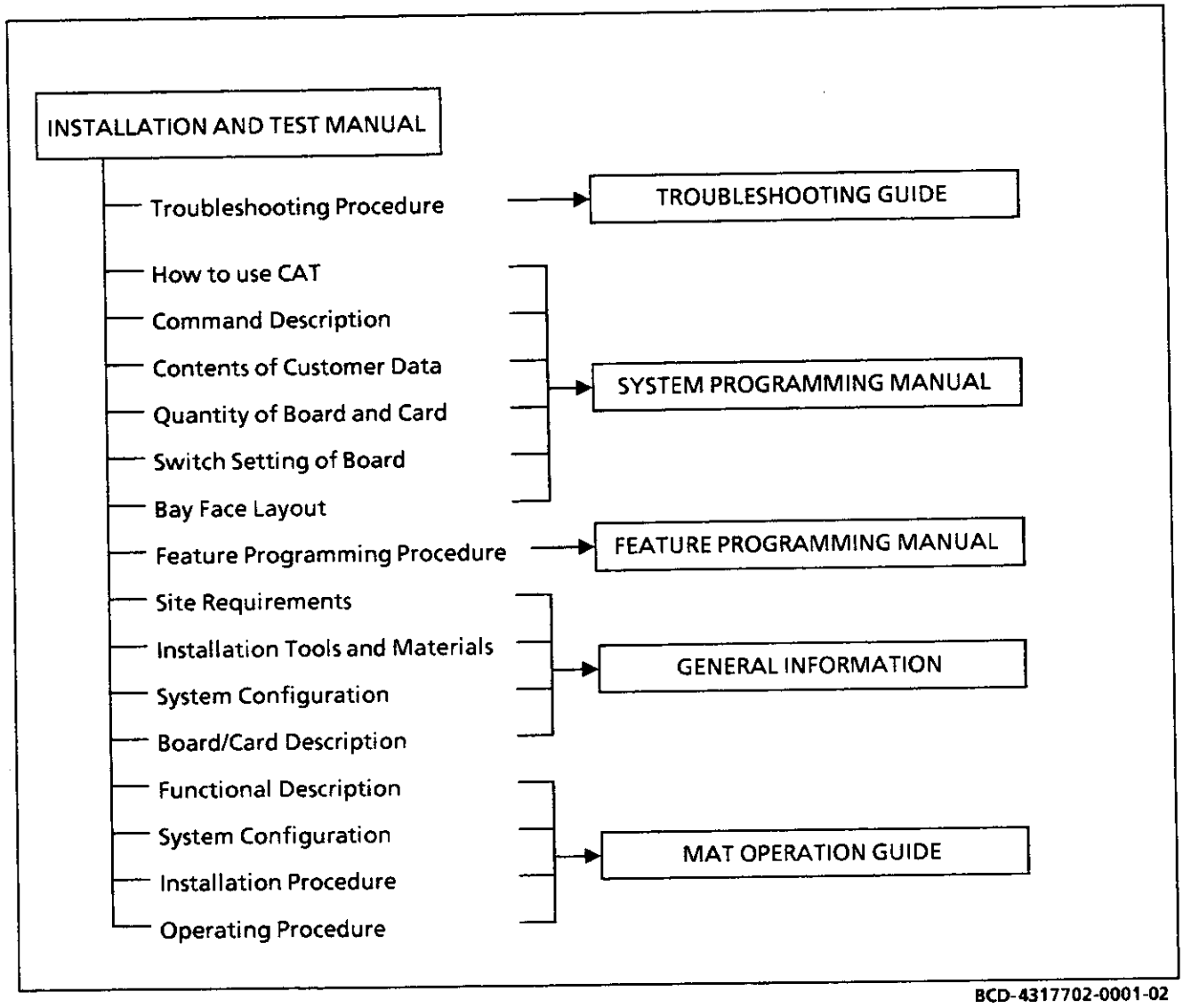

Figure 1-1 Reference Manuals for Installation

3. HOW TO FOLLOW THIS MANUAL

The installation procedure is shown through flowcharts, with a NAP (NEC Action Procedure) number, and detailed steps which are described in the sheet(s) corresponding to the NAP number.

4. THE SCOPE OF INSTALLATION PROCEDURES

This manual covers the installation of the equipment shown in Figure 1-2.

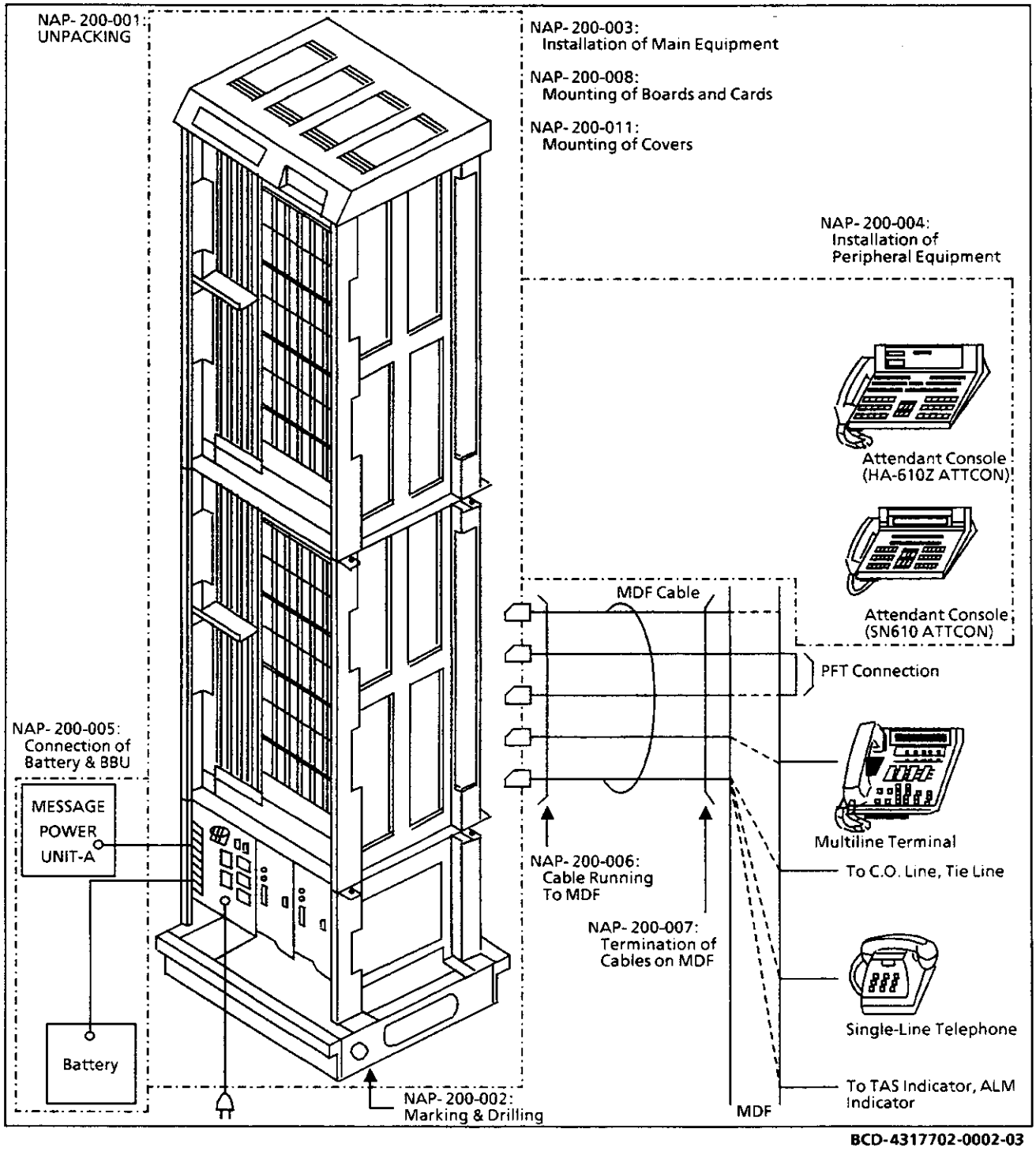

Figure 1-2 Scope of Installation Procedures

CHAPTER 2 INSTALLATION PROCEDURE

1. PRECAUTIONS

1.1 Static Charge Prevention

The installer must wear a grounded wrist strap to prevent the destruction of a board or card by static charging.

The installer must perform those installation procedures, which involve handling boards and cards, on a grounded conductive work surface. The conductive work surface should be wired to the frame of the main equipment and grounded through the AC power cable.

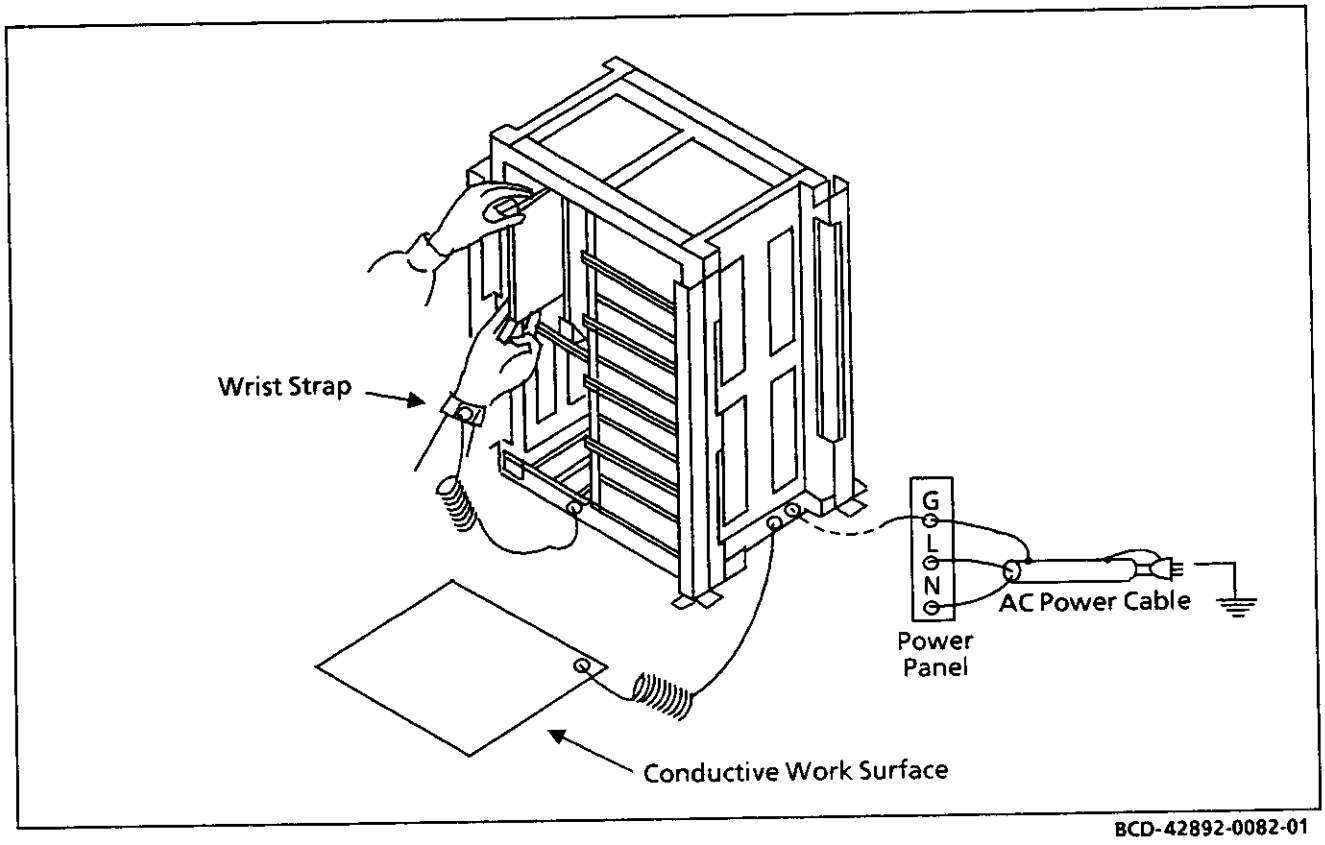

Figure 2-1 Static Charge Prevention

1.2 Procedure for the Removal/Installation of a Board.

When removing/installing a board from/in a PIM, follow the procedure given in Table 2-1 below.

Never touch the exposed contacts of the board with bare hands.

Table 2-1 Procedure for Removal/Installation of a Board

BOARD	PROCEDURE		CONDITION
	INSTALLING	REMOVING	
• MP • MEM • PWR A • PWR B	Power off ↓ install ↓ Power on	Power off ↓ remove ↓ Power on	These boards should be removed or installed only when the power is off.
• FP • SPI • ATI • AP	Power off or MB switch on ↓ install ↓ Power on or MB switch off	Power off or MB switch on ↓ remove ↓ Power on	These boards should be removed or installed under the Make Busy condition or with the power off.

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1.3 HA-610Z ATTCON Cable Connection

While connecting/disconnecting an Attendant Console cable to/from the system, the power to the system should be turned off. This will prevent damage to the Attendant Console. However, if the Make Busy switch on the ATI board is turned on, the Attendant Console can be safely connected.

1.4 Connection of Ground to the System

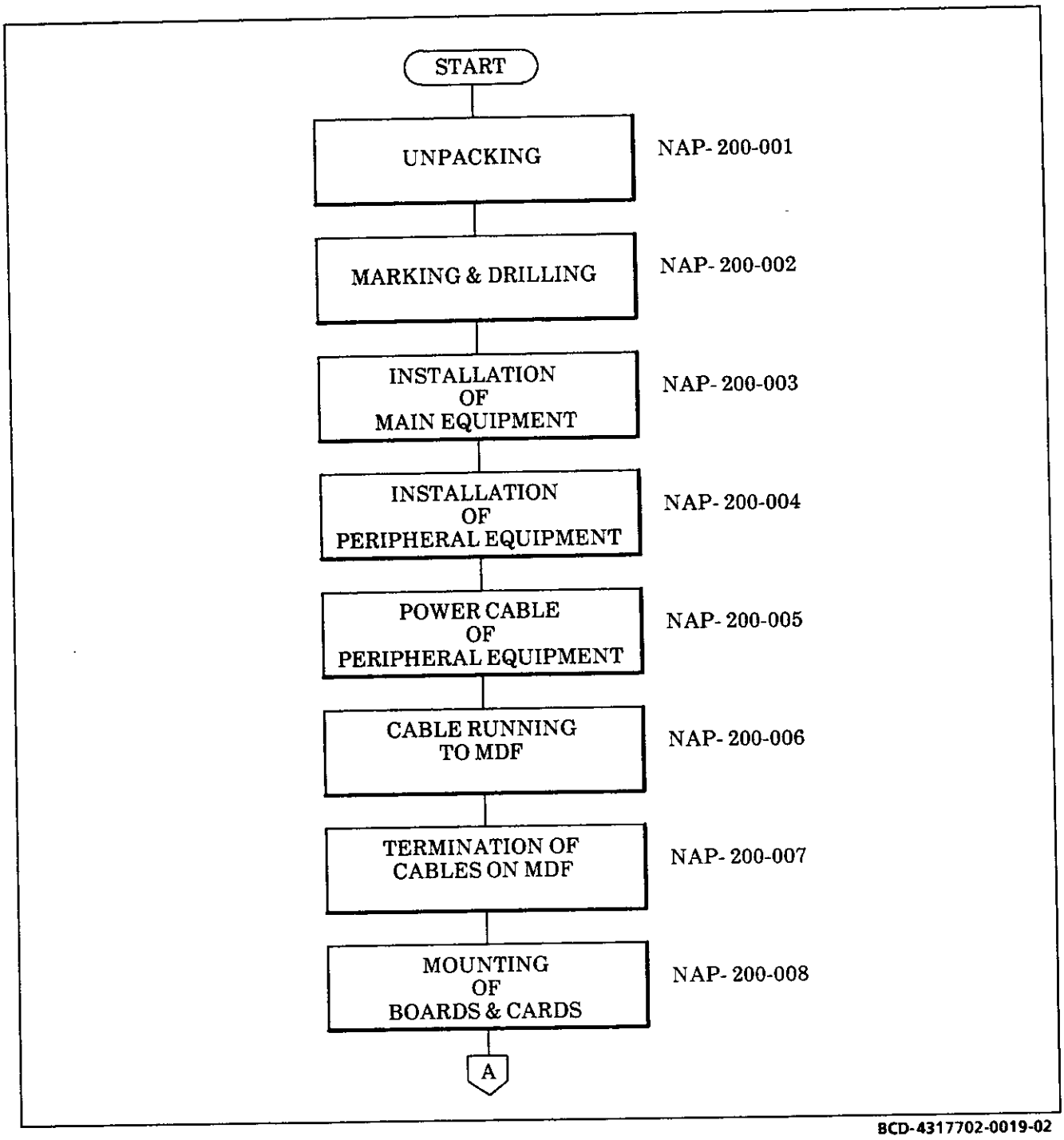
It is not necessary to provide an external ground to the system, when installing a NEAX1400 IMS, because the system receives an earth ground through the AC connector.

If the ground is suspect, an external earth ground may be connected to the ground lug provided at the rear of the system. This is not required under normal conditions. A qualified electrician should correct the ground fault.

If additional grounding is required, after verifying a good AC ground, then the external grounding may be used. The installer must ensure that a ground loop condition is not created by the use of the additional ground. Under normal idle condition, no current flow should exist in the ground wire.

2. PROCEDURE

This section will explain the procedures and details of the installation steps for the NEAX1400 IMS. To ensure a smooth installation, the installer must follow the steps shown in the following flowchart. In the flowchart, the NAP (NEC Action Procedure) number is given to the right of each step. The NAP number is useful in referring to the detailed instructions for a procedure.



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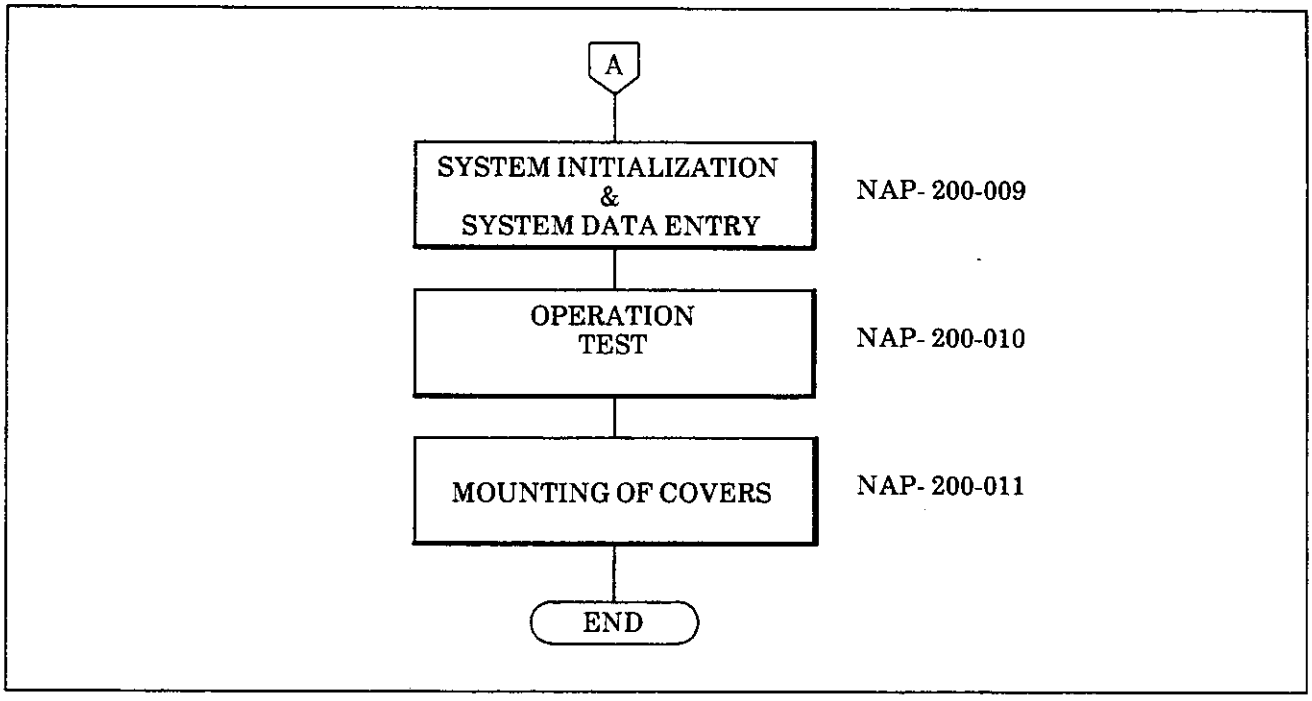

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The label below appears on a NAP sheet when either boards or cards that are static sensitive are handled. The installer must avoid any static discharge when handling these boards or cards. Refer to Chapter 2, Paragraph 1.1, "Static Charge Prevention".

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NAP- 200-001
Sheet 1/6
Unpacking

1. Check the quantity of cartons, which contain the NEAX1400 IMS, with the quantity of cartons appearing on the shipping invoice.

2. Check the cartons for external damage incurred during transport, and record the damage as necessary.

3. Remove the contents of the cartons.

   - A charge-guard wrist band should be worn while unpacking the carton(s) which contain boards and cards.

4. Check the quantity of equipment and materials unpacked with the shipping invoice.

5. Perform a visual inspection for the following items:

   - Modules and Units
     - Overall distortion
     - Scratches and dents on the surface
     - Scratches and cracks on the PIM backplane
     - Broken or bent pins on the PIM backplane
   - Covers
     - Scratches and dents
   - Boards and Cards
     - Overall distortion
     - Scratches and cracks
     - Loss or damage of parts on the boards or cards
   - Attendant Console
     - Scratches and cracks on the keyboard
     - Overall distortion
     - Damage to keys and lamps

NAP- 200-001
Sheet 2/6
Unpacking

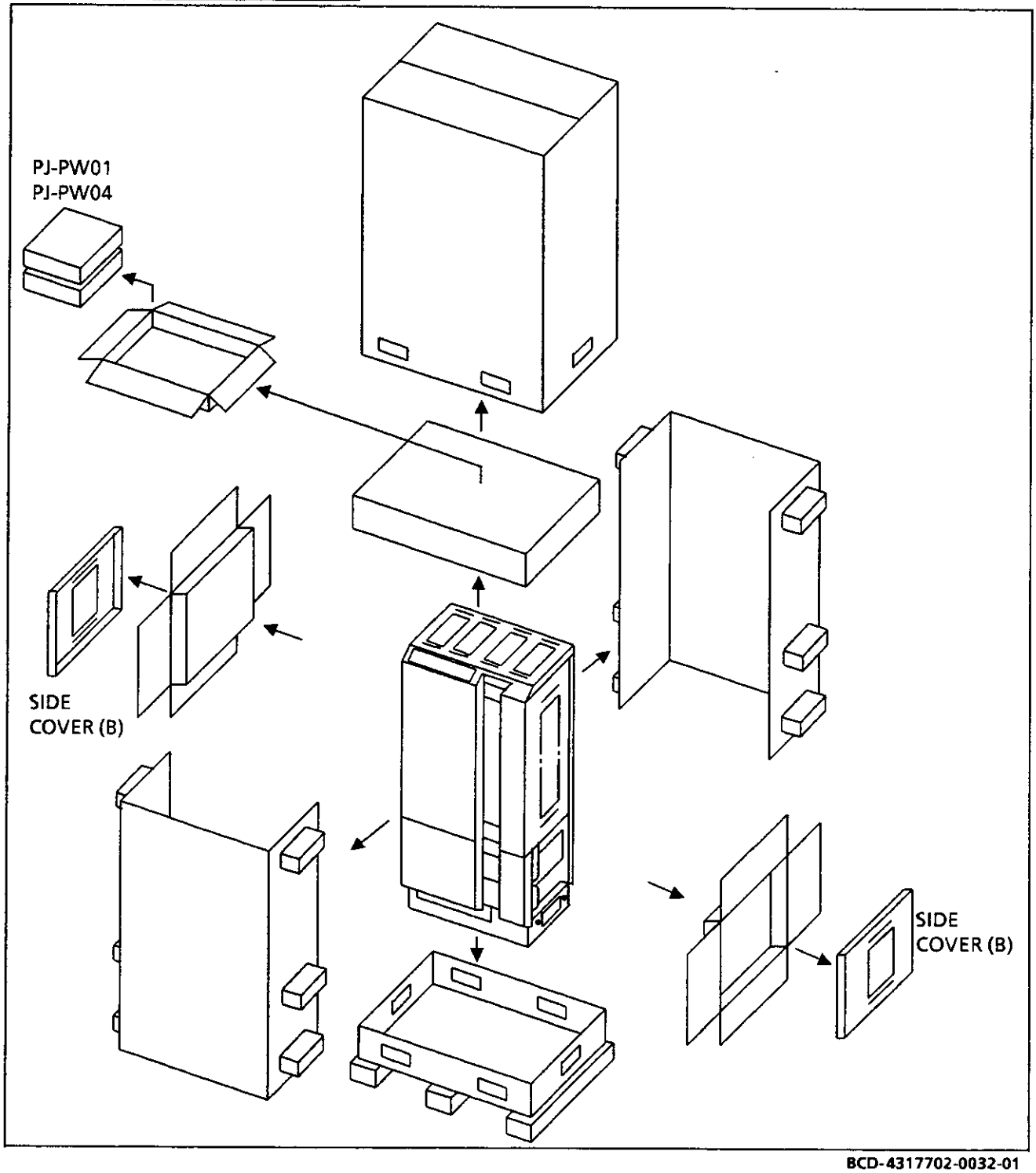

Figure 001-1 Unpacking the Basic System - E/F

NAP- 200-001
Sheet 3/6
Unpacking

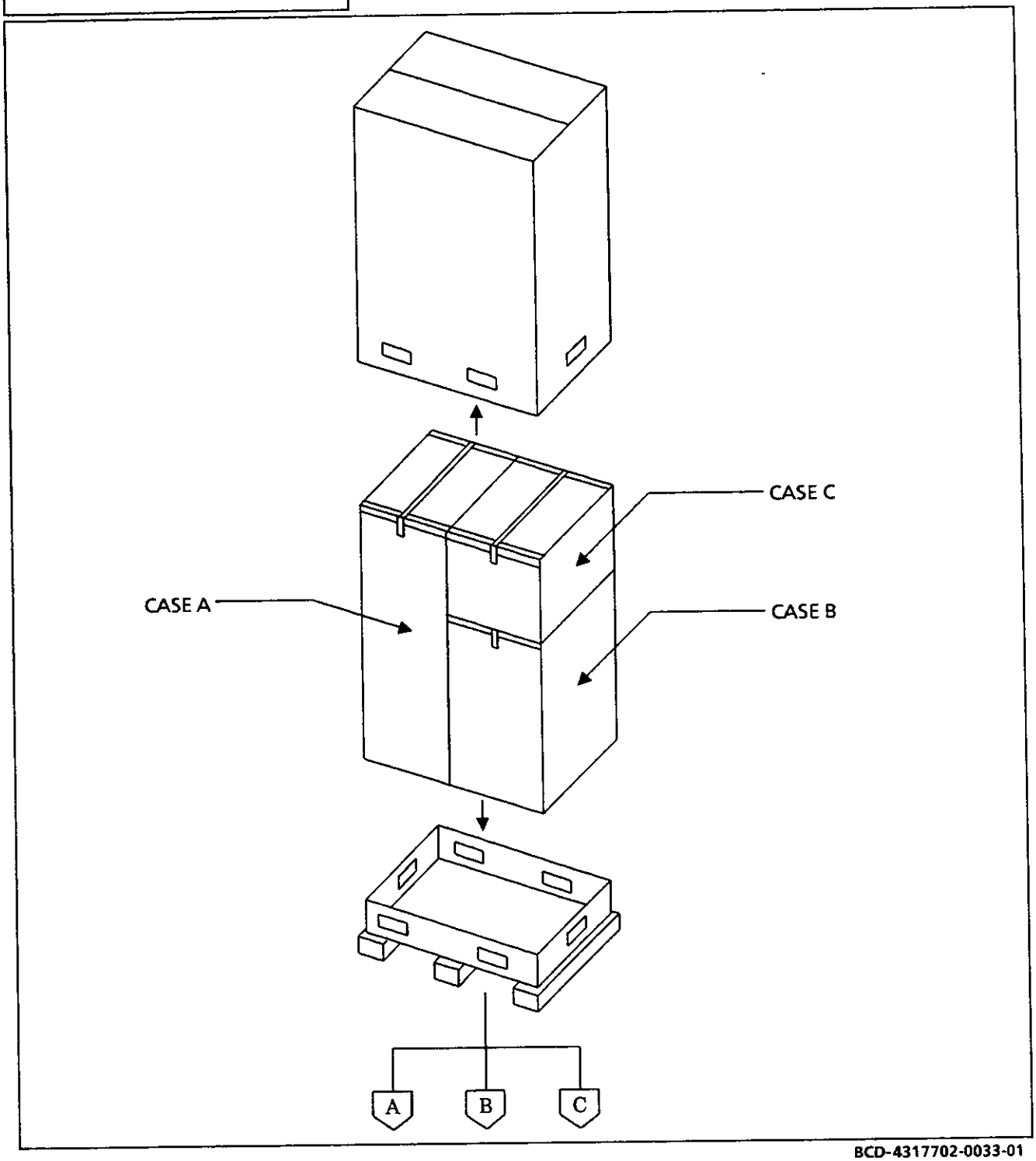

Figure 001-2 Unpacking of Basic System - G (1/4)

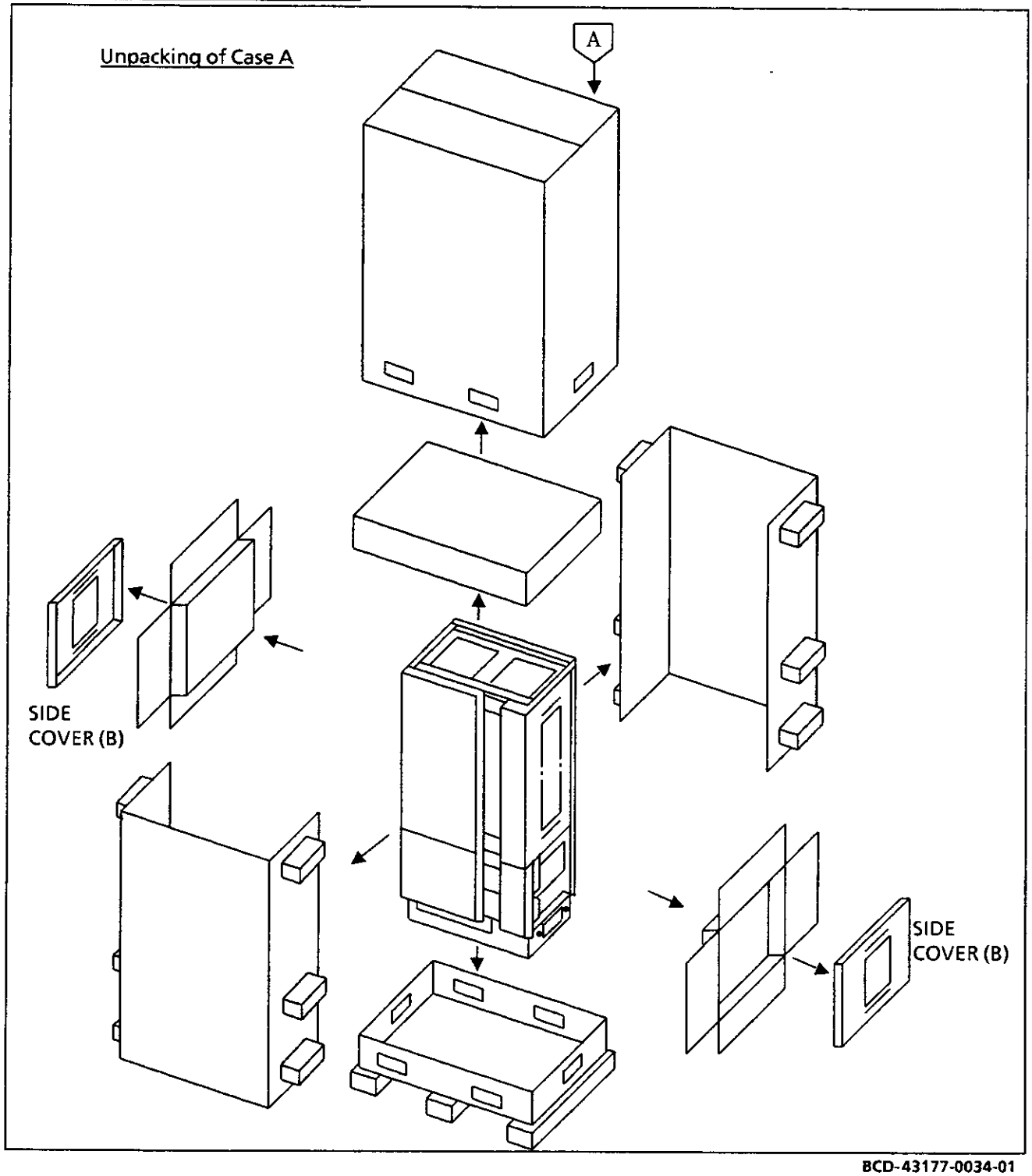

Figure 001-3 Unpacking of Basic System - G (2/4)

NAP- 200-001
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Unpacking

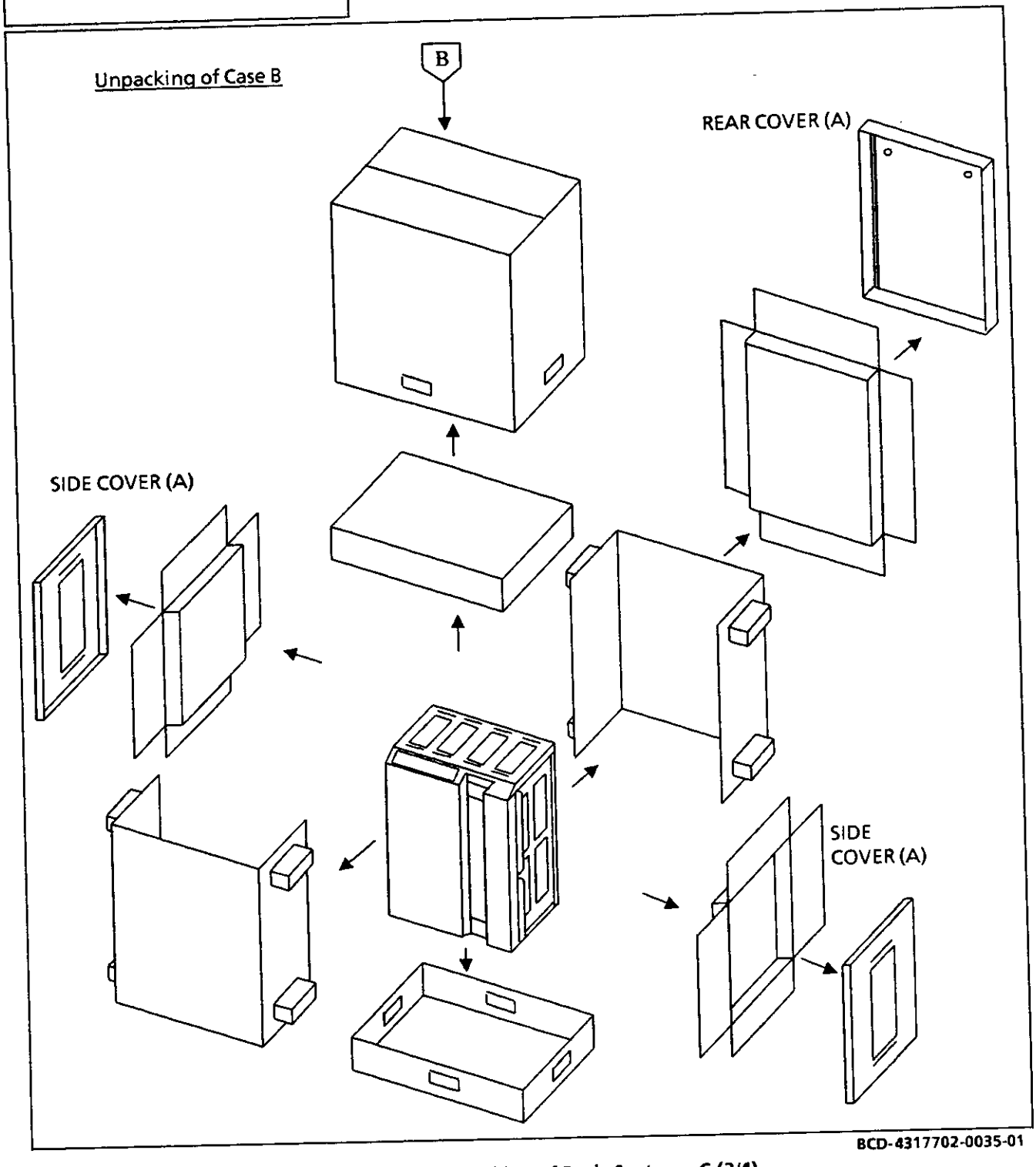

Figure 001-4 Unpacking of Basic System - G (3/4)

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Unpacking

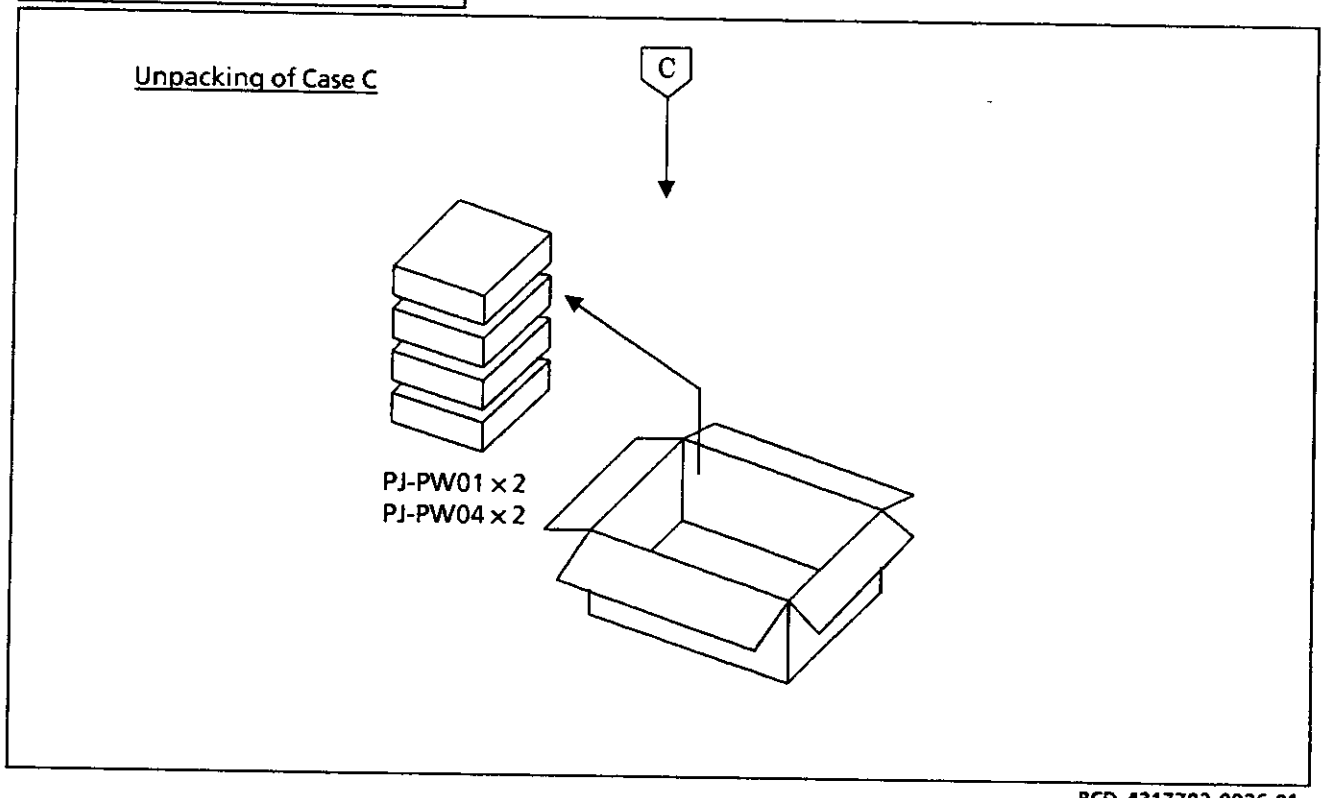

Figure 001-5 Unpacking of Basic System - G (4/4)

1. Allocation of floor space:

   Allow at least 5 ft. (1500 mm) in front of the cabinet, and at least 2 ft. (600 mm) at both sides and behind the cabinet.

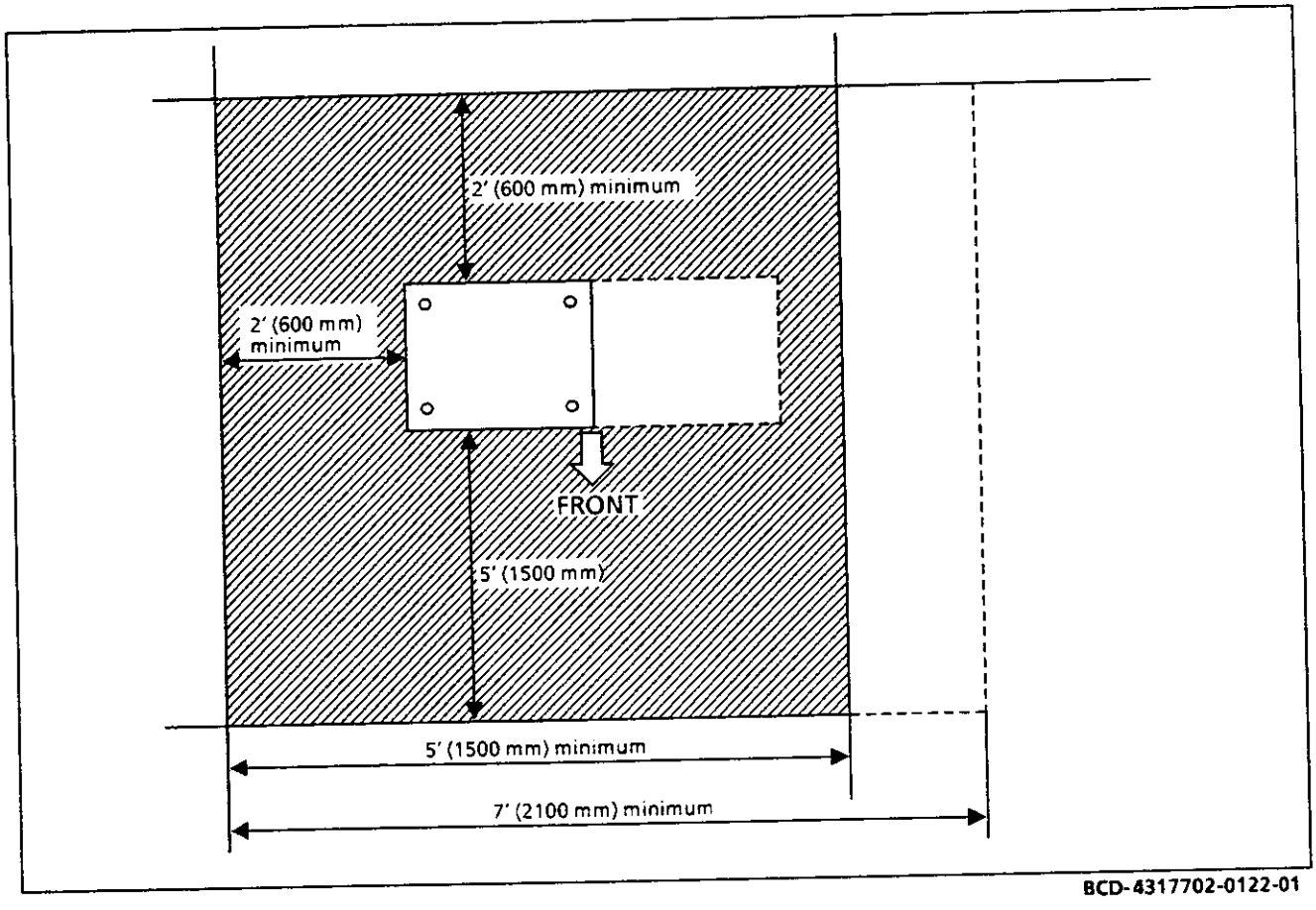

Figure 002-1 Floor Space

2. Marking

- By referring to Figure 002-2, mark the installation holes for the switching equipment.
- Mark the installation holes for the MDF, if required.

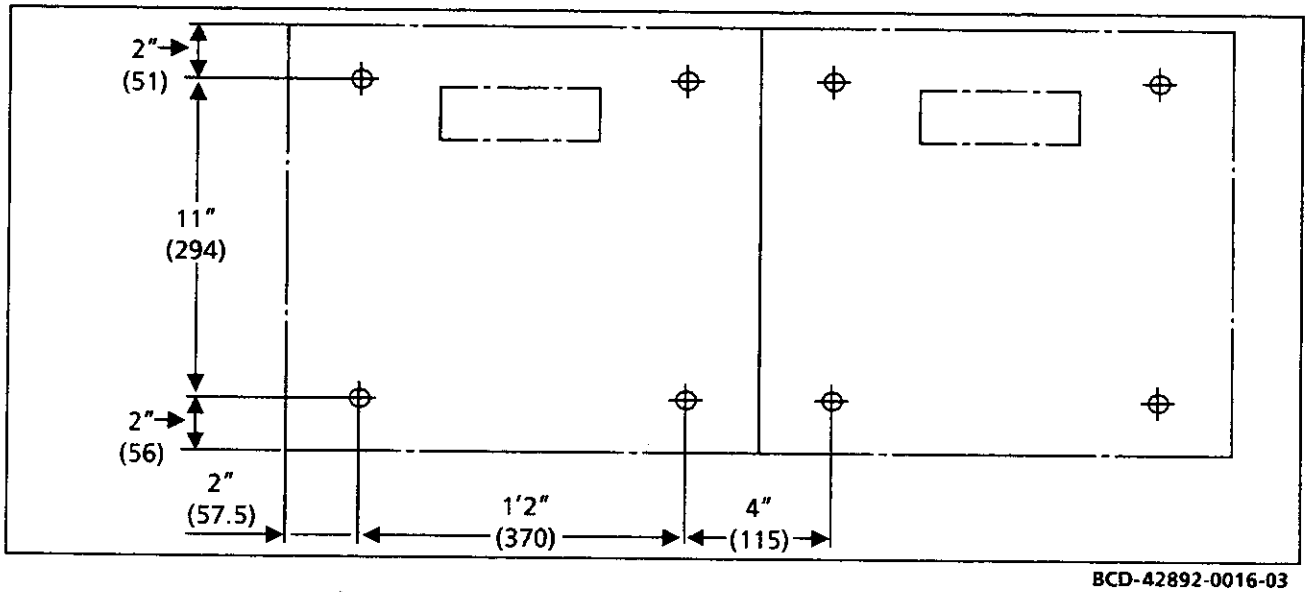

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Figure 002-2 Floor Marking for the Main Equipment

3. Drilling

- Drill and sink anchor bolts.

(1) Drill, with a drill suitable for a plug bolt, a hole in the concrete floor. The hole should be slightly deeper than the length of the plug bolt.

(2) Insert the anchor bolt into the hole.

(3) Push the plug bolt and the nut stays permanently in place.

(4) Turn the anchor bolt counterclockwise to remove it.

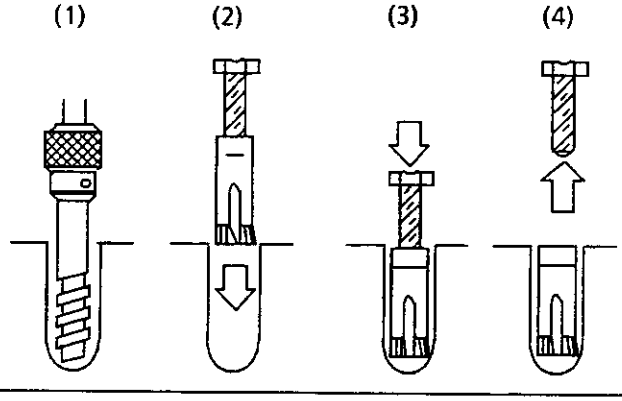

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Figure 002-3 Instructions for Anchor Bolt

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Installation of Main Equipment

1. There are five (5) patterns for the configuration of a switch, as shown below:

Confirm the configuration of the system to be installed and the pattern number.

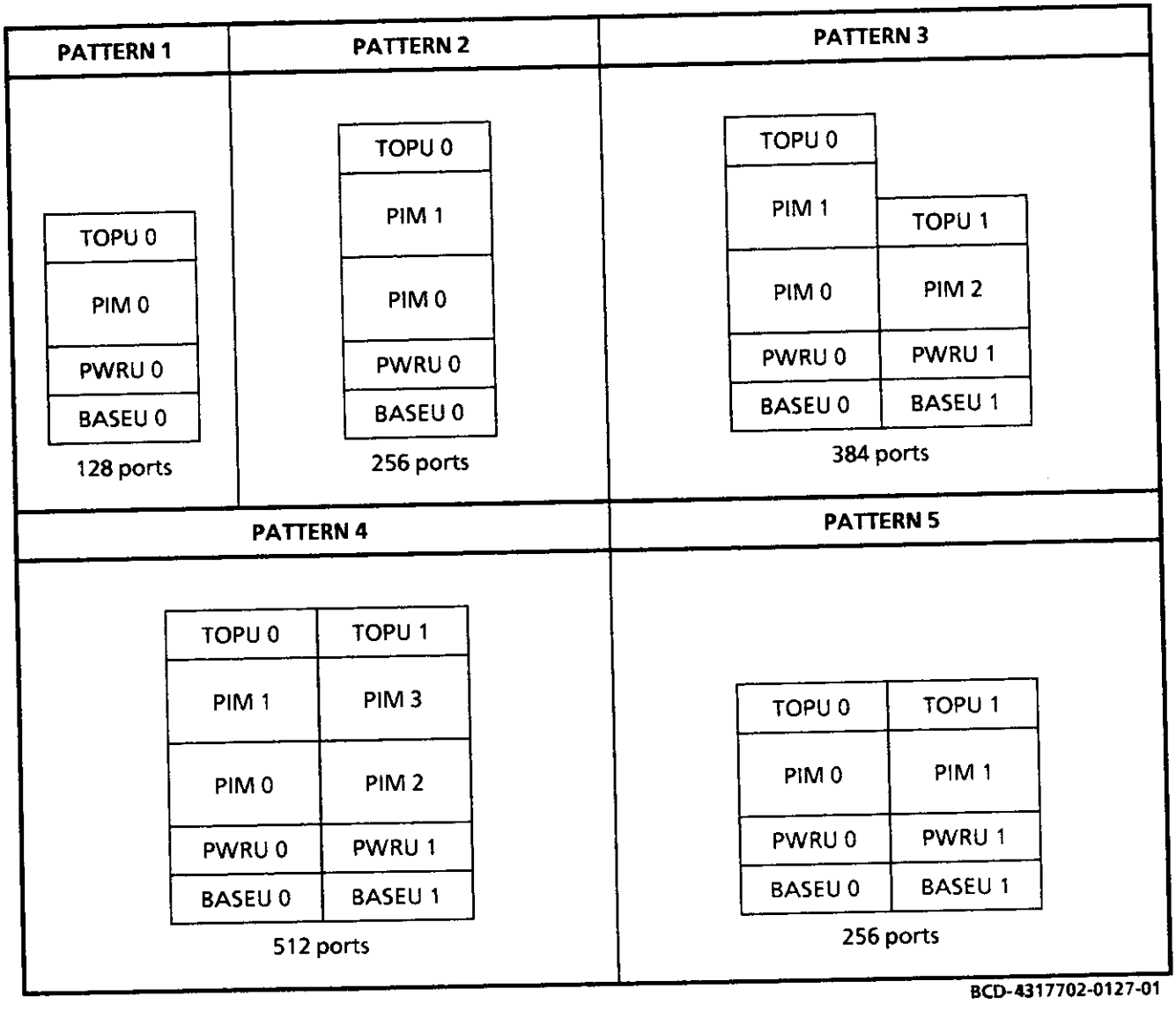
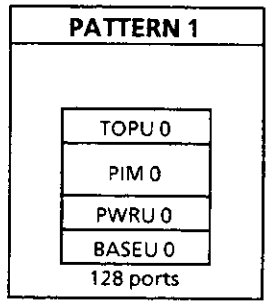


Figure 003-1 Patterns of Main Equipment



2. Installation Procedures:

Based on the desired pattern number, install the main equipment according to the following procedures:

- Pattern 1

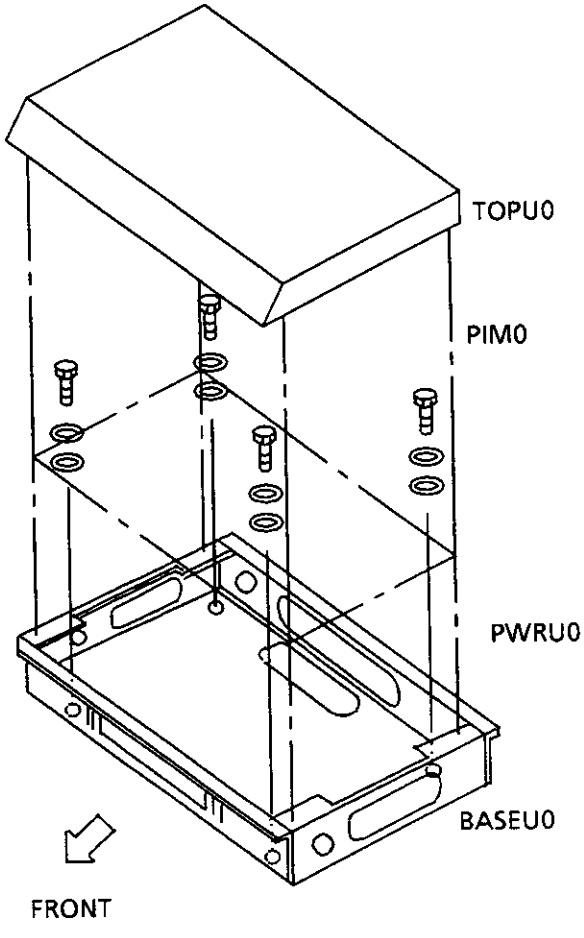
1. Attach the BASEU of the Basic System - E/F to the floor without removing PWRU0, PIM0 and TOPU0. — Figure 003-2
   - Set the BASEU over the drilled holes.
   - Attach the BASEU with anchor bolts.

2. Mount PWRM1 in PWRU0, and secure it with the three screws provided, if required. — Figure 003-3, Figure 003-4

3. Connect the AC power cable into "AC IN", located on PWR PANEL0, and secure it by tightening the screw clamps. — Figure 003-5
   White (Neutral) to N, Black (Line) to L, Green (Ground) to G.

   Note: *The cable connection should be provided with strain relief in order to maintain the integrity of the connection.*

4. Connect PWRM1 to PWR PANEL0, if required. For connecting the DC Connecter (DC1) and AC connector (AC1), the DC and AC Cables, furnished with PWRM1, are used if required. — Figure 003-6, Figure 003-7



Basic System - E/F

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Figure 003-2 Attaching the BASEU of the Basic System - E/F

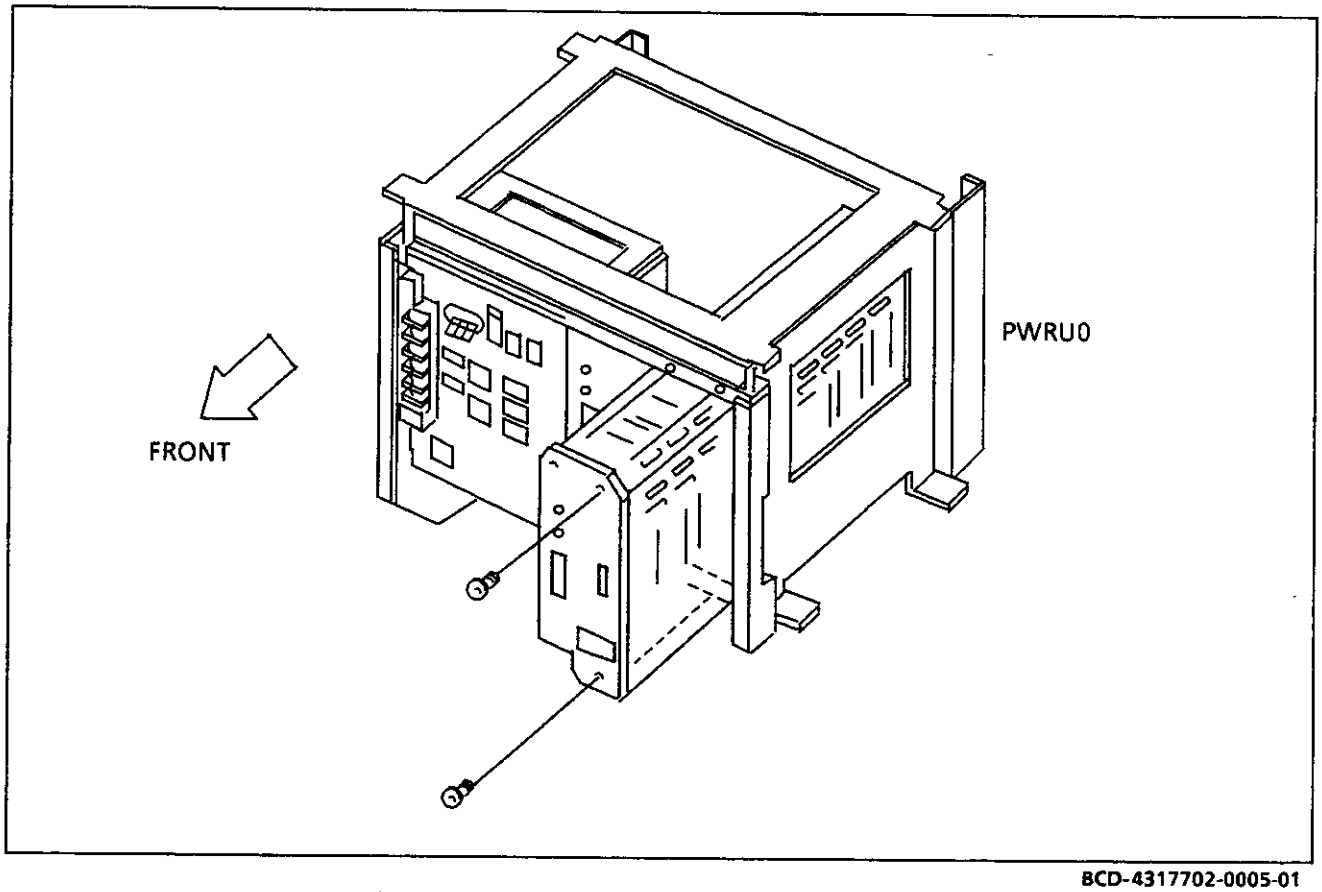

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Figure 003-3 Mounting a PWRM in the PWRU0

When using a PWRM-B, the following installation is required:

- Set the "AC INPUT" switch to the downward position for 100 – 117 volts A.C.
- Set the "EQUL/FLOAT" switch according to the type of battery connected.
  - No Battery/Sealed Battery···"FLOAT"
  - Lead-Acid Battery··· "EQUL" (Equalizing Charge) "FLOAT" (Floating Charge)

When changing the EQUL/FLOAT mode, with multiple PWRMs, the changes should be done as simultaneously as is possible.

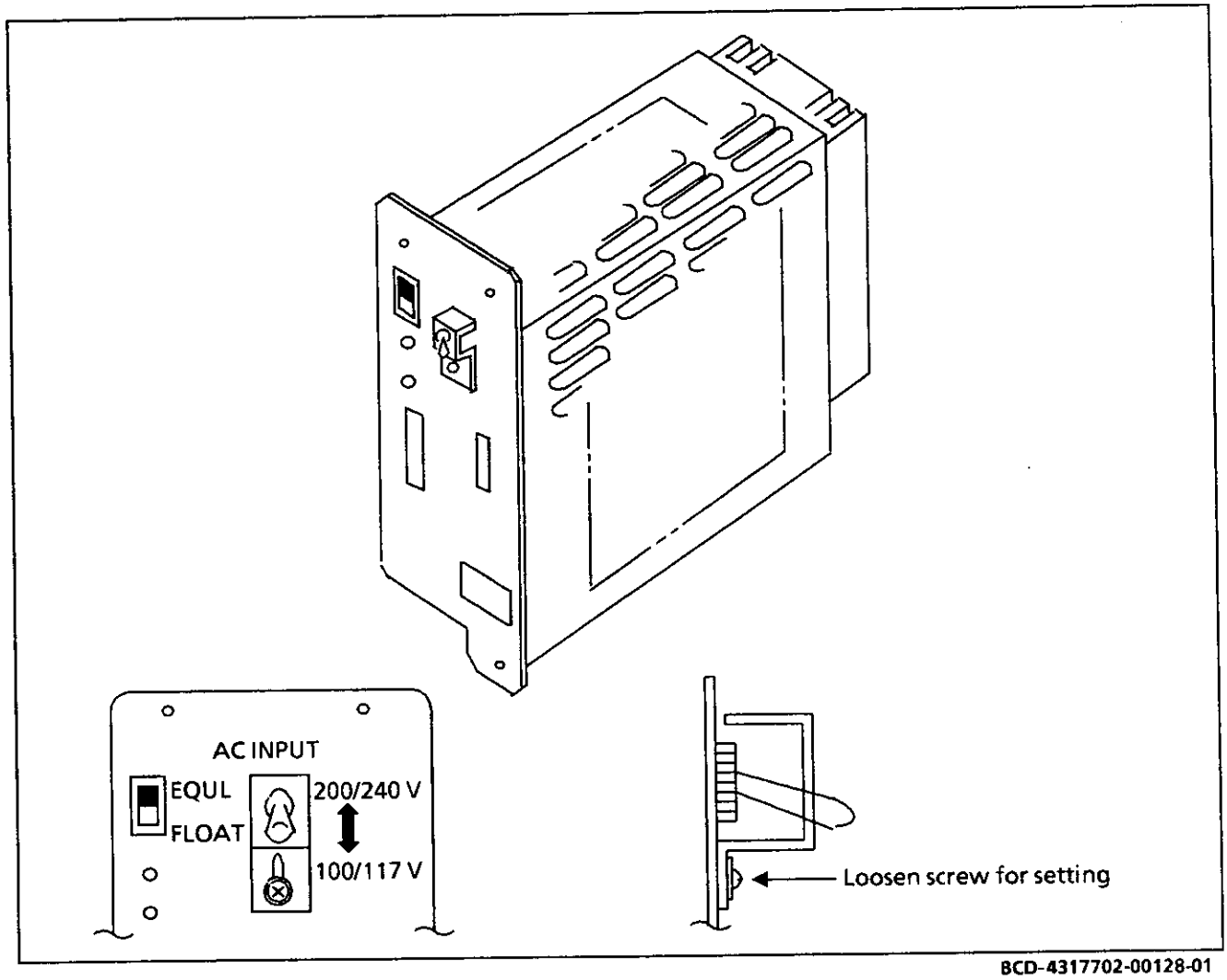

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Figure 003-4 Outer View of a PWRM-B

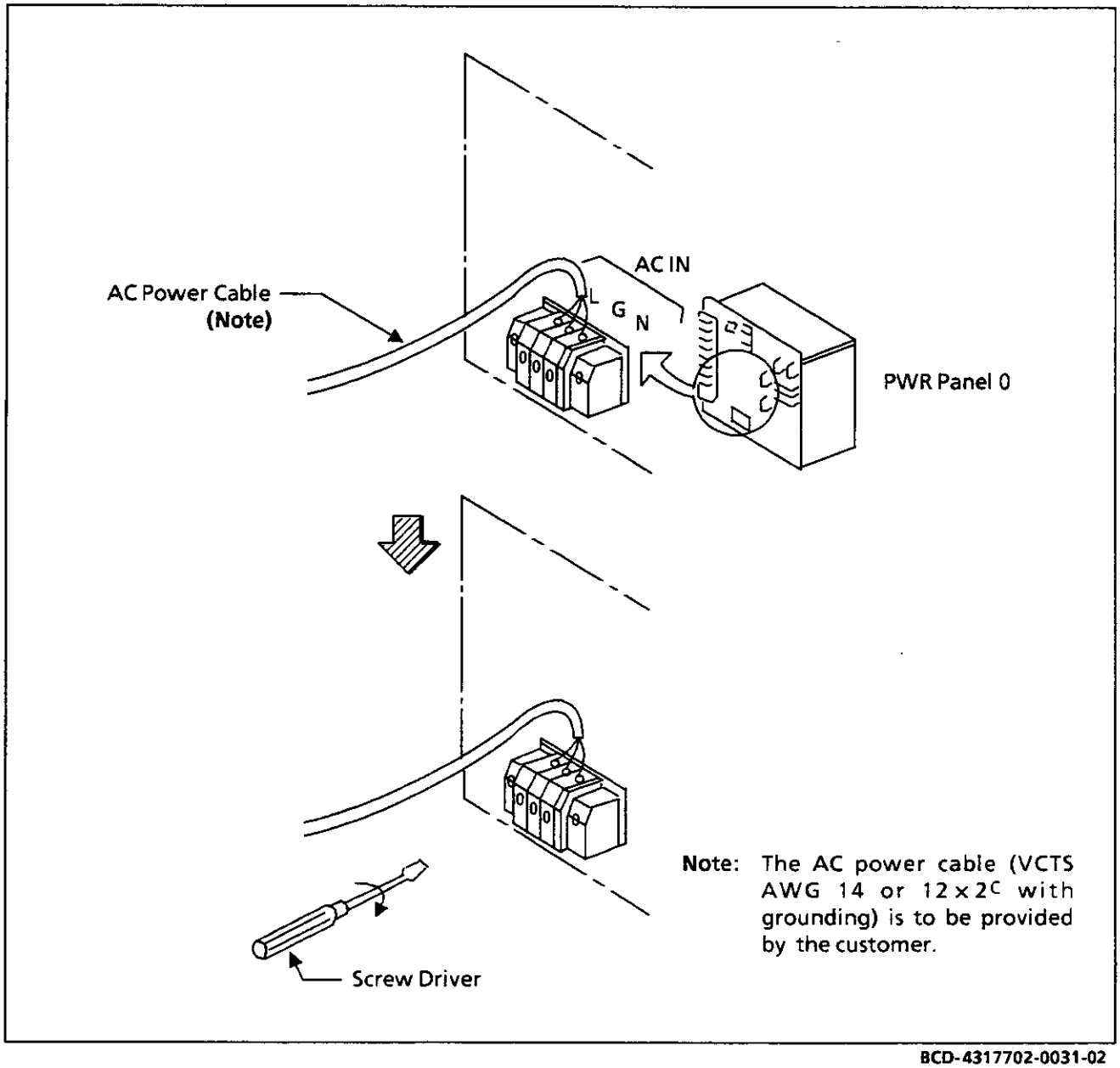

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Figure 003-5 Connecting the AC Power Cable

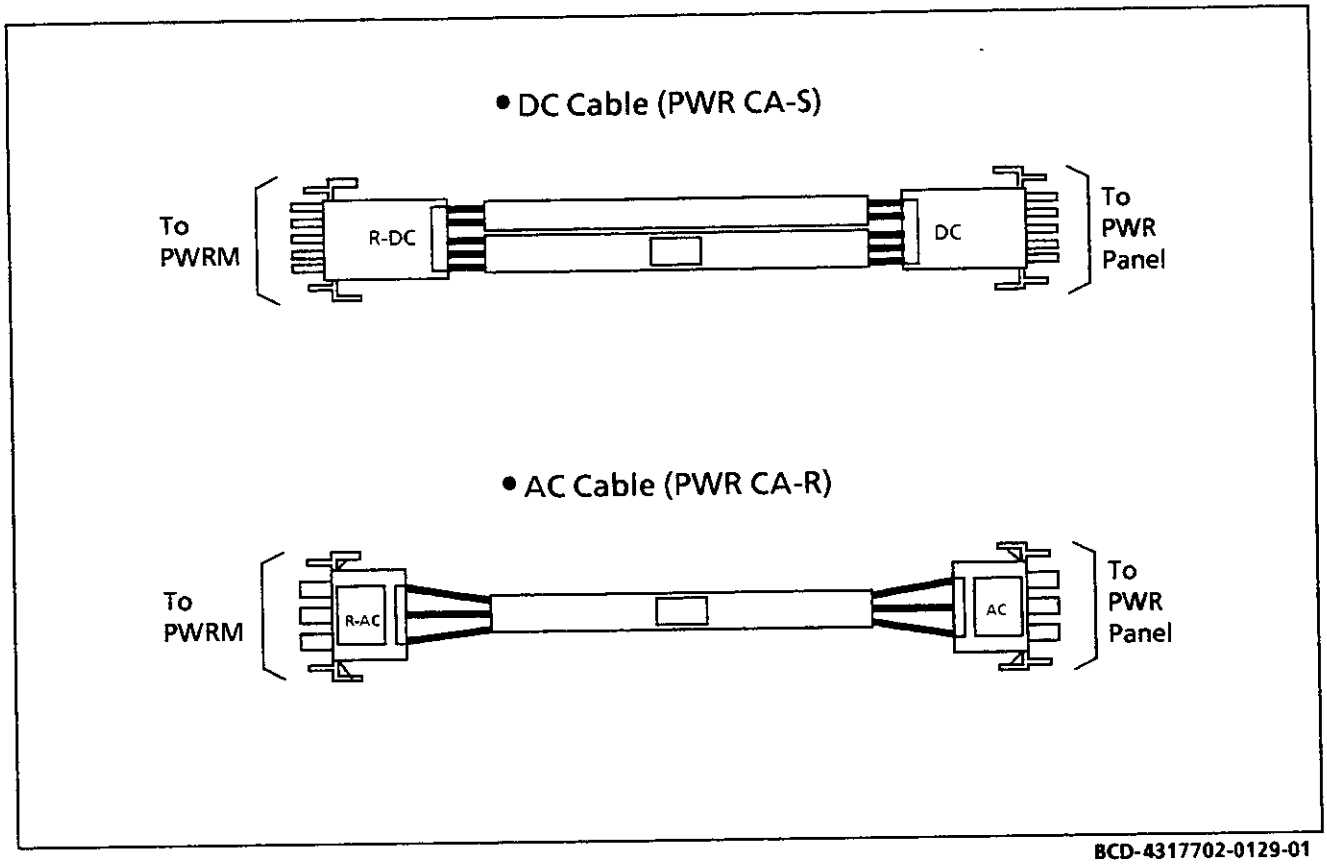

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Figure 003-6 DC Cable, AC Cable

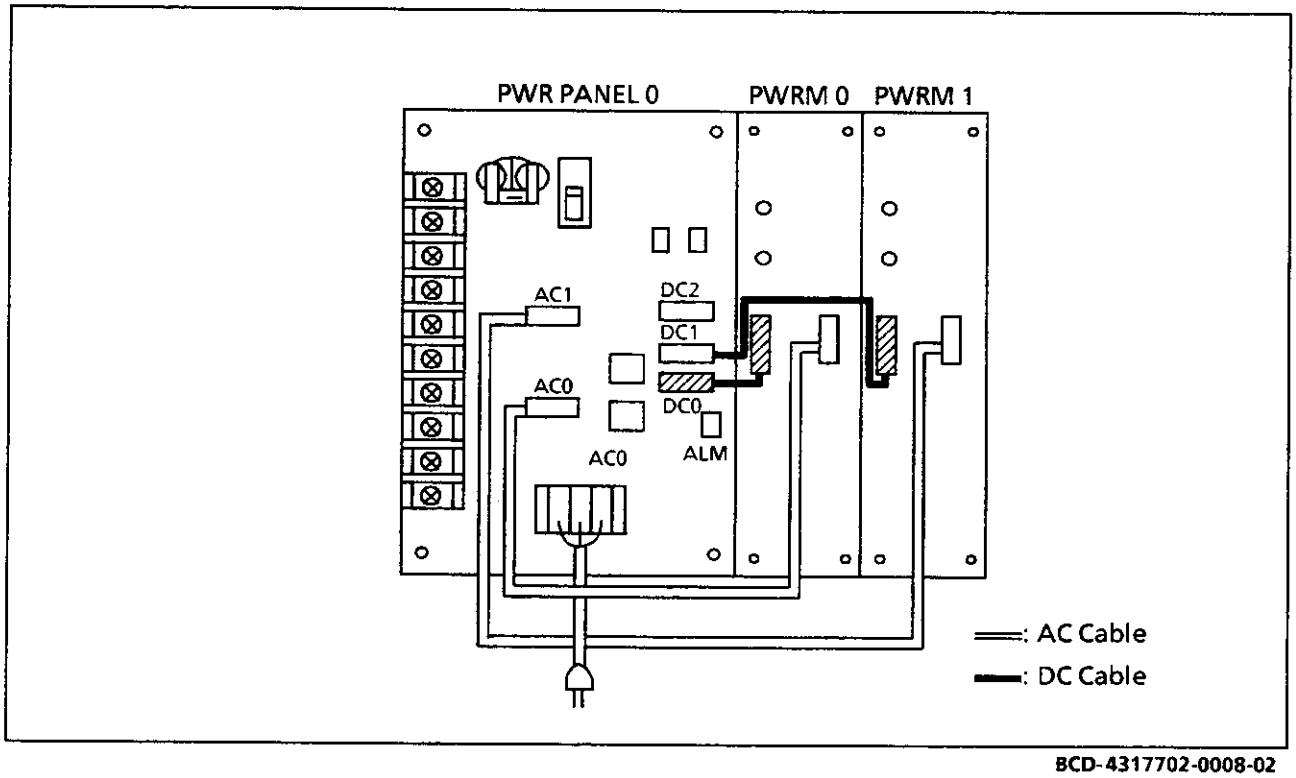

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Figure 003-7 Cable Connection on PWRU0

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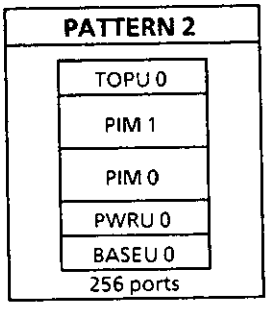
Sheet 9/104
Installation of Main Equipment



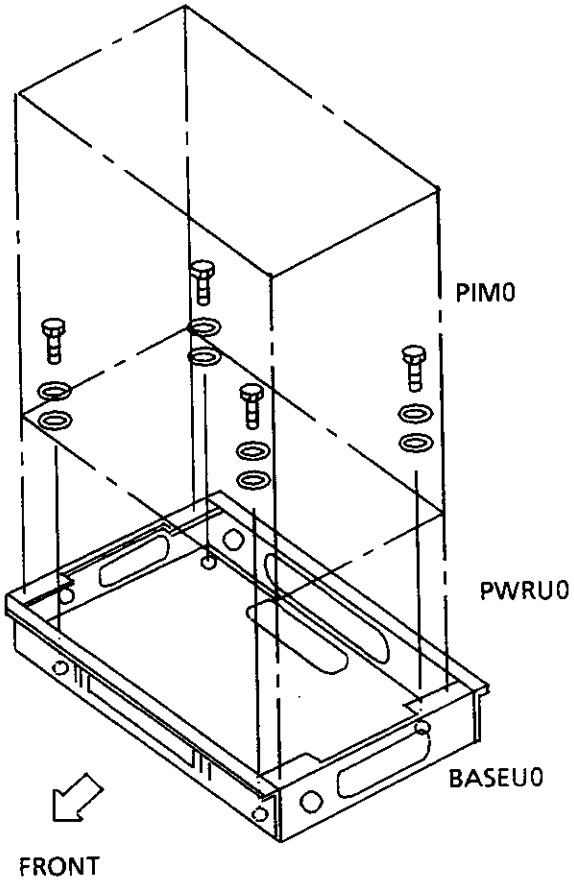
- Pattern 2

1. Attach the BASEU0 of the Basic System - G to the floor without removing PWRU0 and PIM0. — Figure 003-8
   - Set BASEU0 over the drilled holes.
   - Attach BASEU0 with anchor bolts.
2. Mount PIM1 with TOPU0 on top of PIM0 and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-9
3. Connect BRACKET (F) to the front side of PIM0 and PIM1, and connect BRACKET (R) to the rear side of PIM0. — Figure 003-10, Figure 003-11
4. Connect the Frame Ground cables (FE CA-A) furnished with PIM0 to PIM1. — Figure 003-12, Figure 003-13
5. Connect the PWR CA-K cable furnished with the "EXT" connector, located on the front of PWR PANEL0, to the "PWR0" connector, located on the rear of PIM1, and connect the LED CD provided with TOPU0 to the "LAMP" connector, located on the rear of PIM0. — Figure 003-14
6. Connect PIM0 with PIM1 with BUS CA-A as shown in Figure 003-15. — Figure 003-15
7. If required, mount a PFT panel at the bottom (front) of PIM1 using the 3 screws which are provided and connect PFT0 (PFTB Connector) and PFT1 (PFTA Connector) according to Figure 003-17 using PFT CA-C cables. — Figure 003-16, Figure 003-17
8. If required, mount PWRM1 into PWRU0, and secure each one using the 3 screws which are provided. — Figure 003-18, Figure 003-19

9. Connect the AC power cable into "AC IN" located on PWR PANEL0 and secure it by tightening the screw clamps. White (Neutral) to N, Black (Line) to L, Green (Ground) to G. — Figure 003-20

   Note: *The cable connection should be provided with strain relief in order to maintain the integrity of the connection.*

10. Connect PWRM1, if required, to the PWR PANEL0 panel via the AC and DC connector cables provided with PWRM1. — Figure 003-21, Figure 003-22



Basic System - G

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Figure 003-8 Attaching the BASEU of the Basic System - G

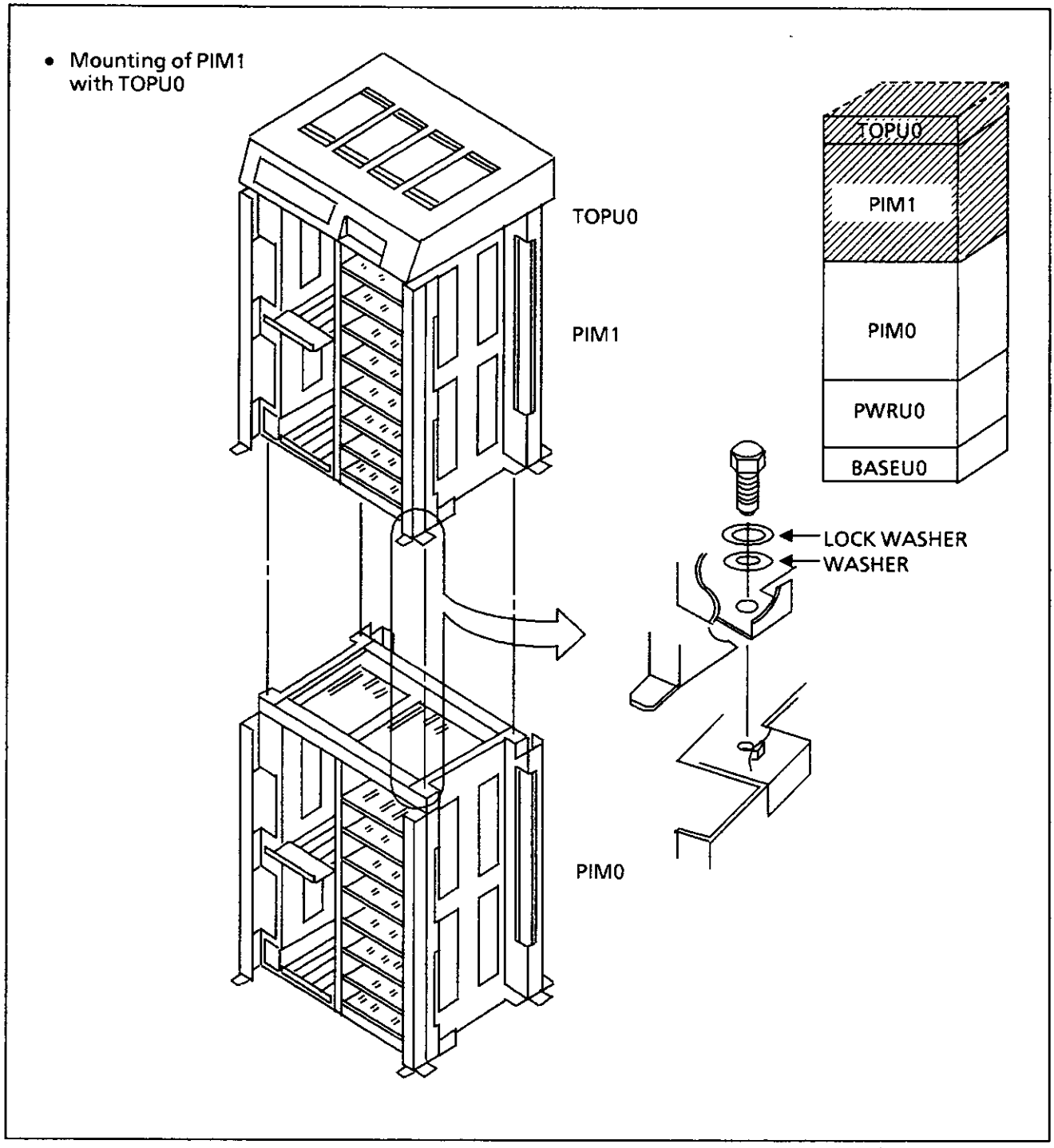

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Figure 003-9 Mounting PIM1 with TOPU0

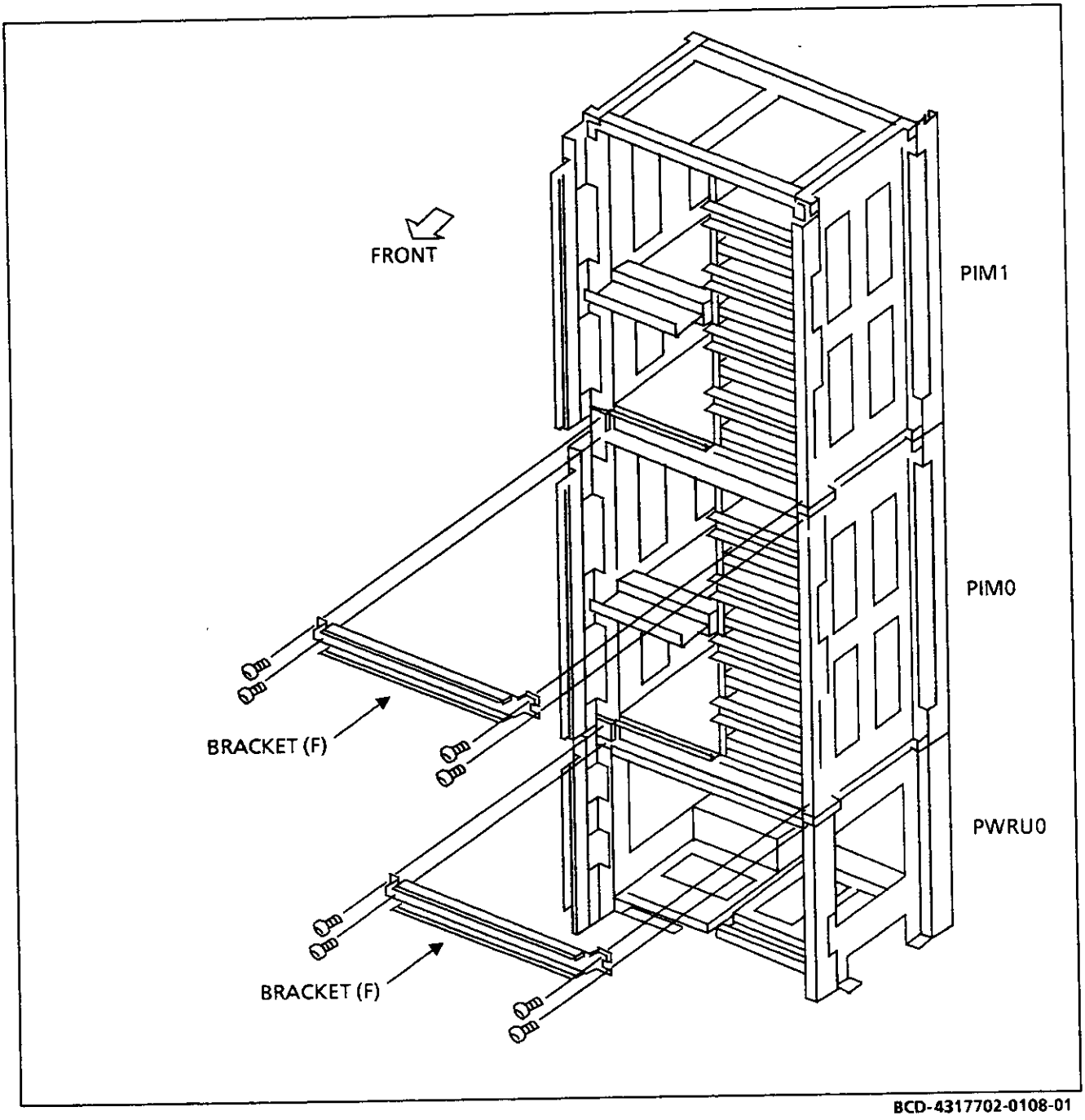

Figure 003-10 Connecting the Brackets for the Front Covers

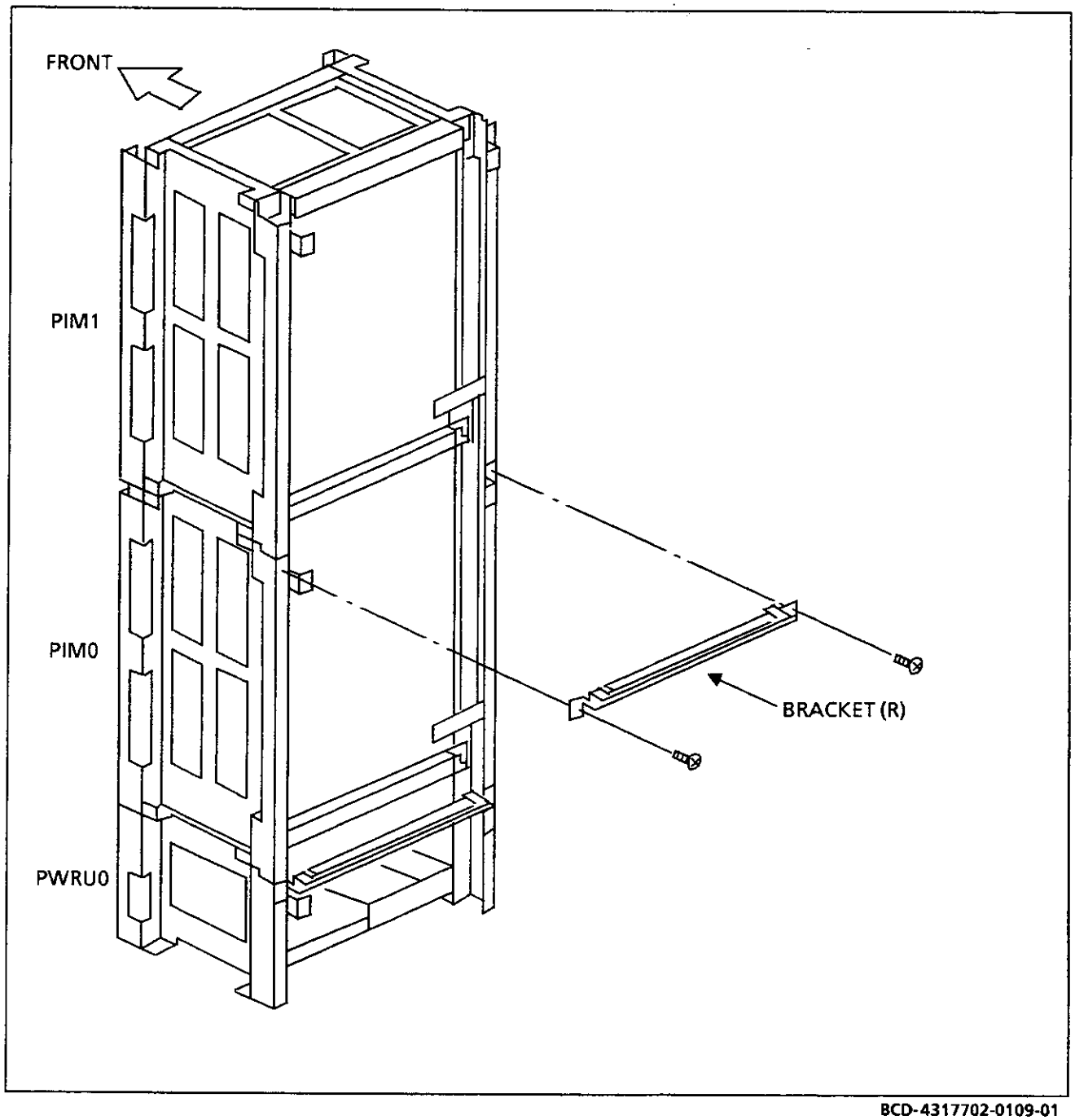

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Figure 003-11 Connecting the Bracket for the Rear Cover

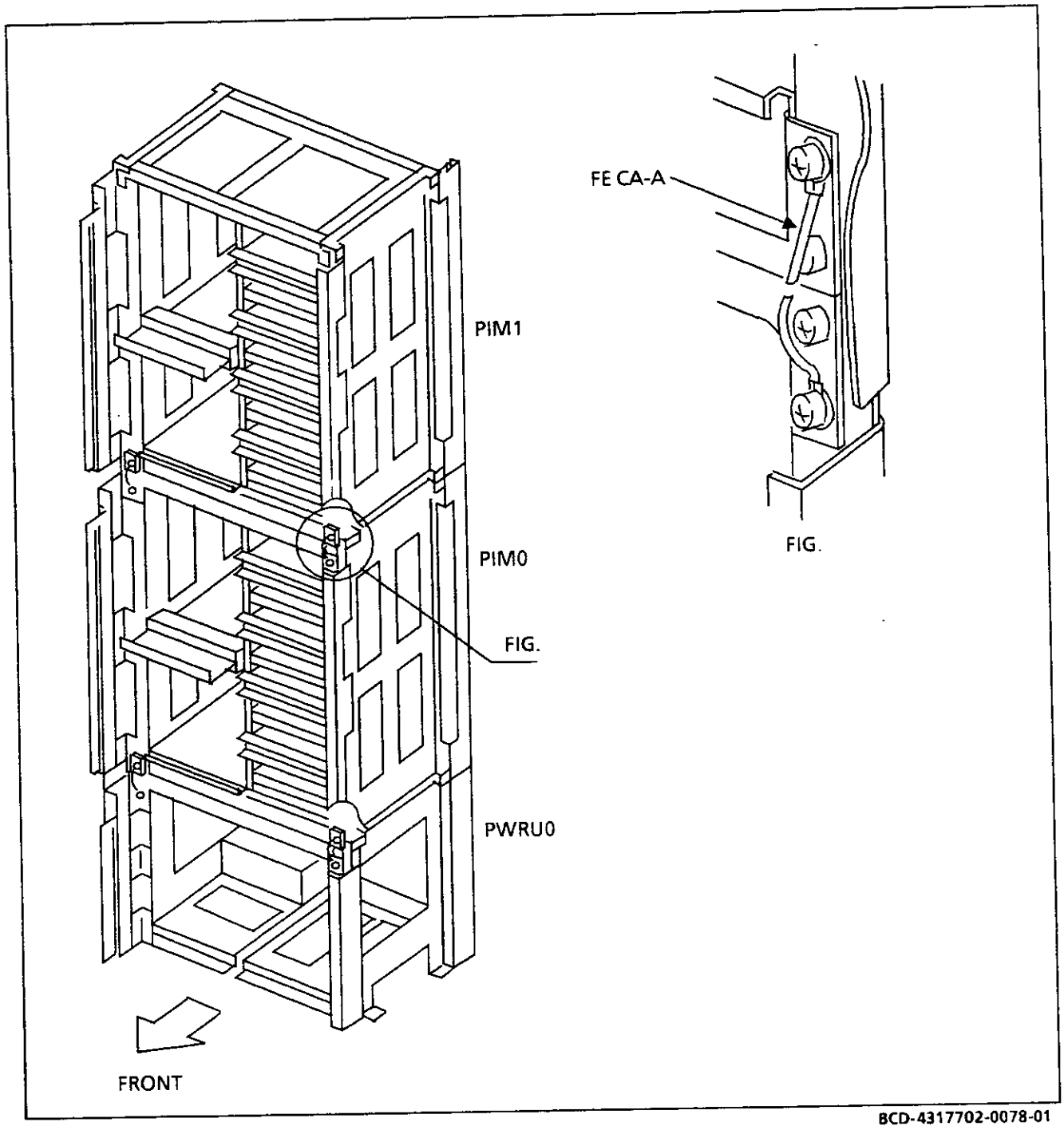

Figure 003-12 Connecting the Frame Ground Cables (Front Side)

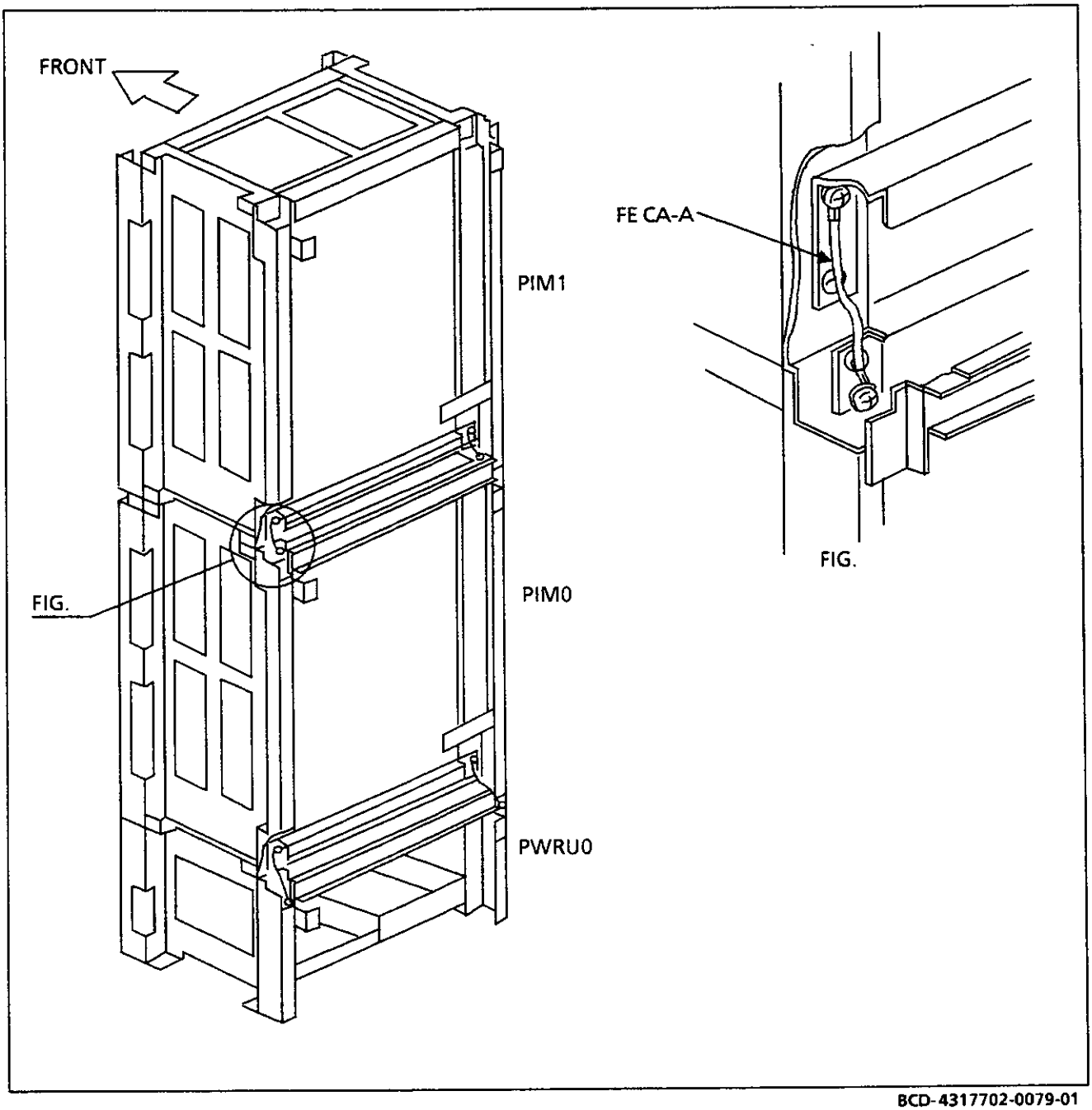

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Figure 003-13 Connecting the Frame Ground Cables (Rear Side)

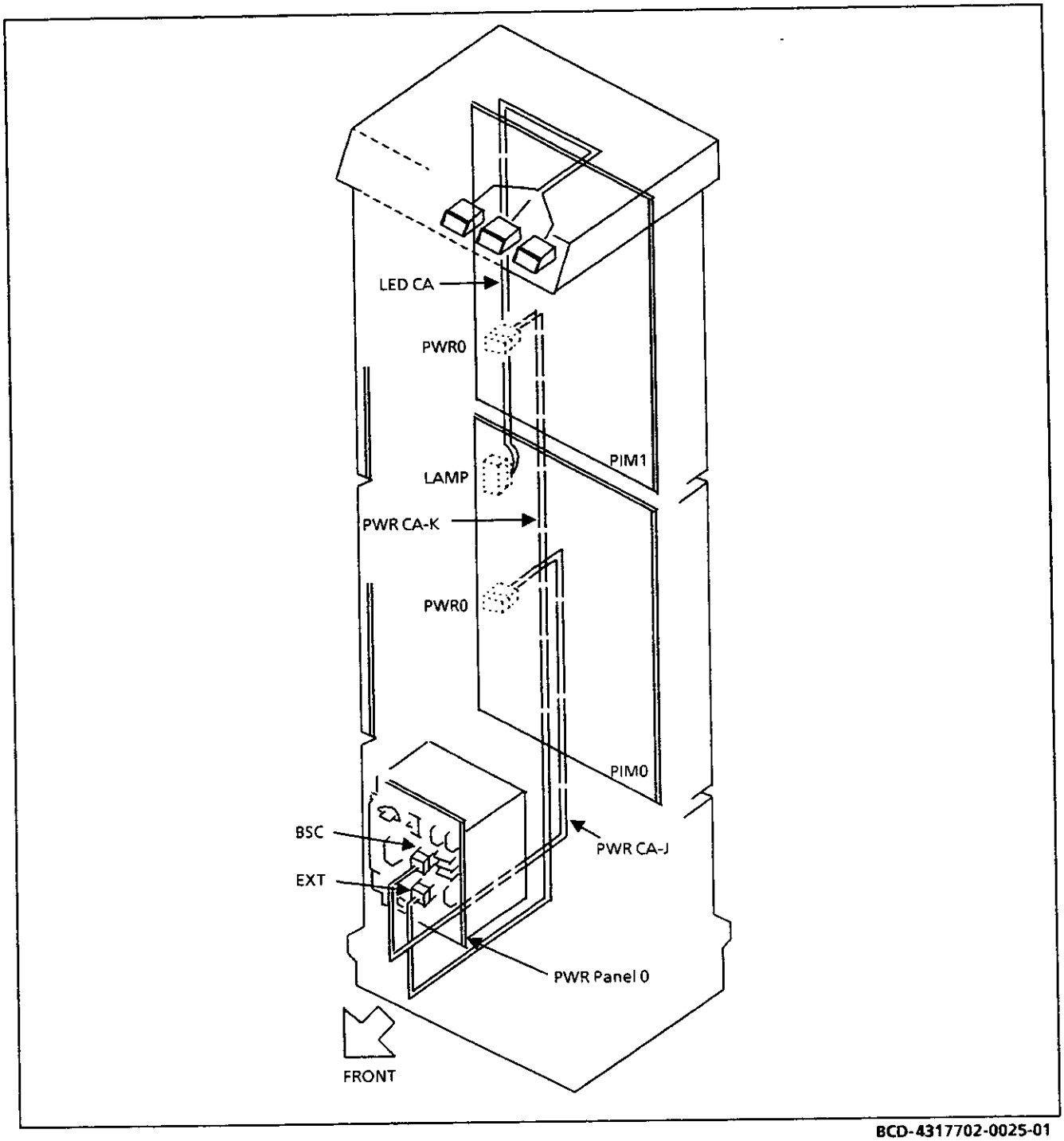

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Figure 003-14 Cable Connections between PIM1 and PWR Panel 0

PATTERN 2

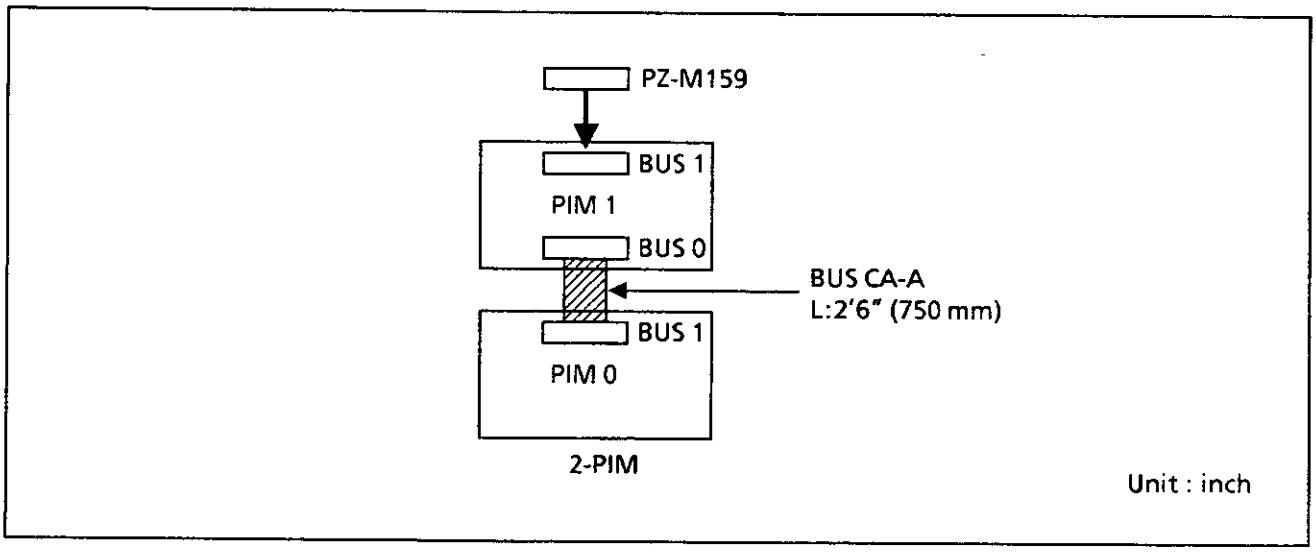

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Figure 003-15 BUS Cable Connection for Pattern 2

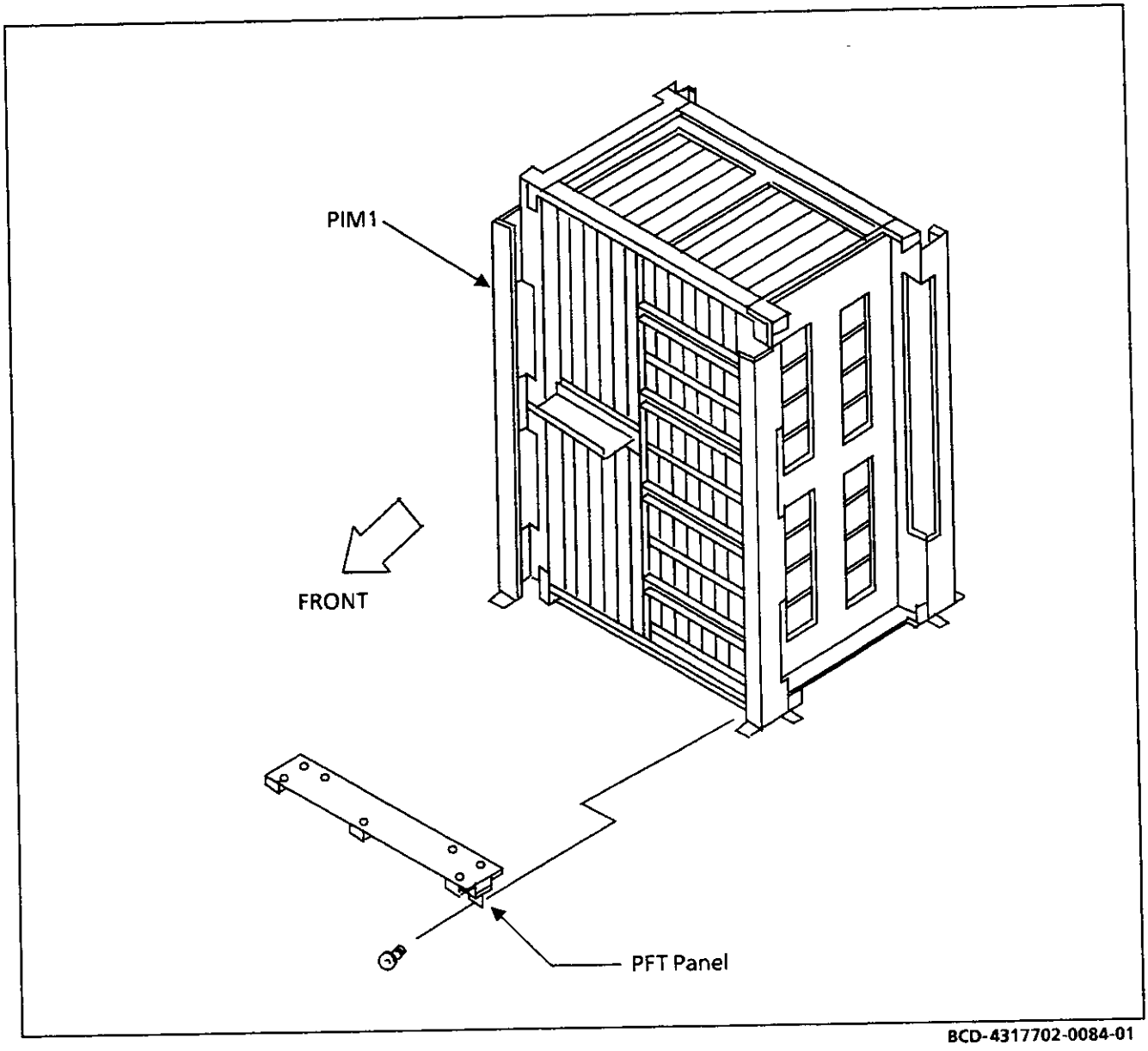

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Figure 003-16 Mounting the PFT Panel on PIM1

PATTERN 2

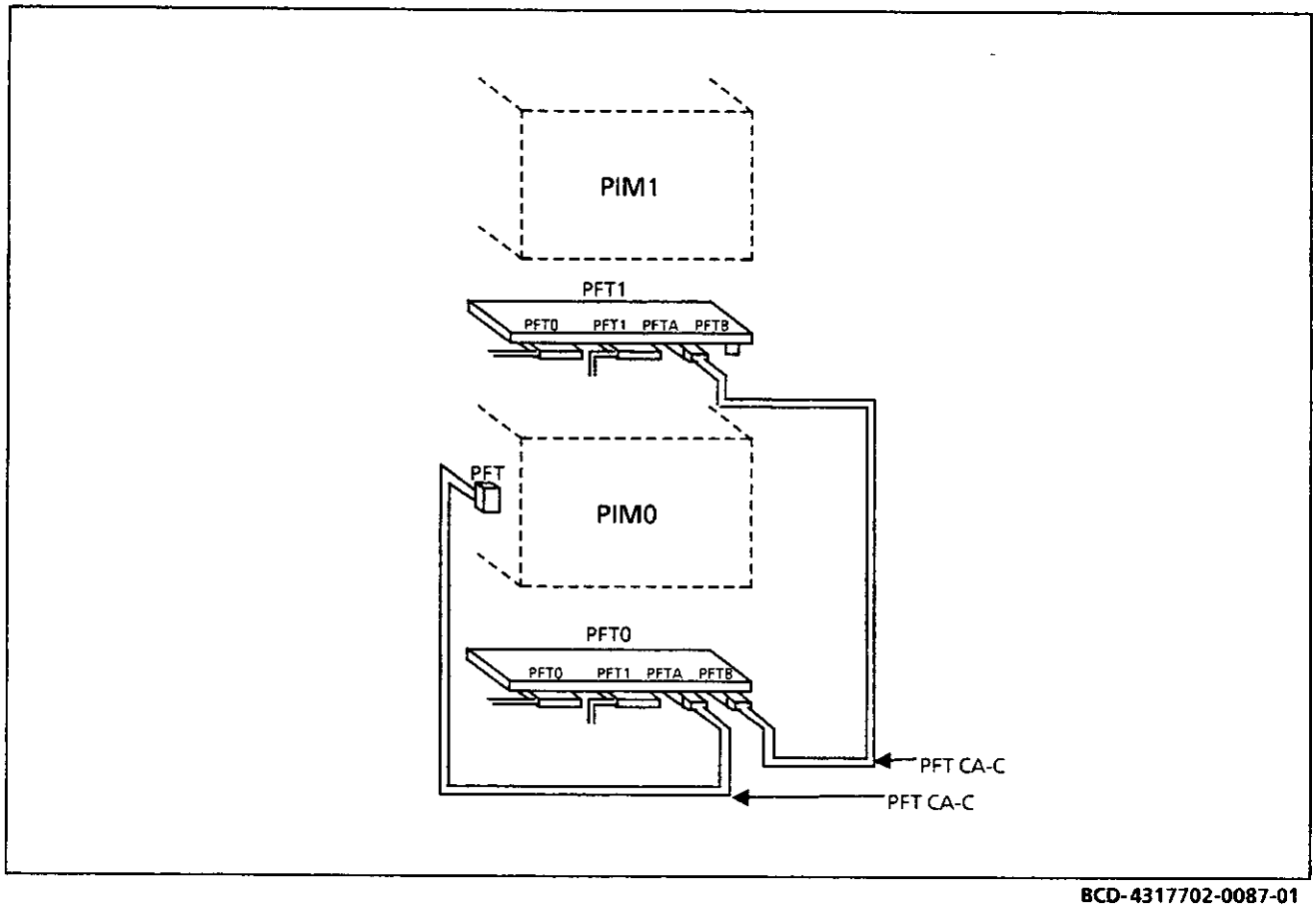

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Figure 003-17 PFT Connections for Pattern 2 (Front View)

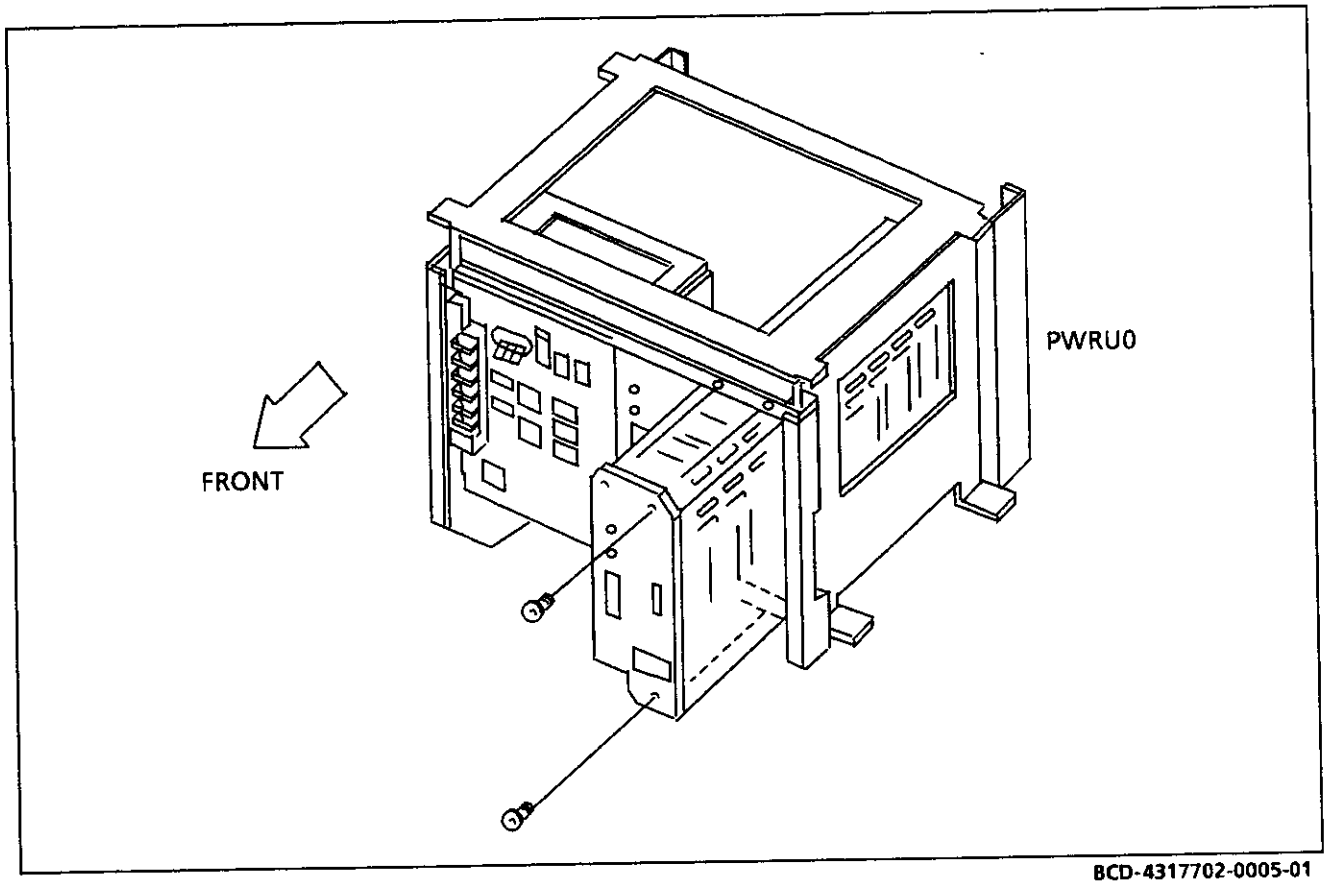

Figure 003-18 Mounting a PWRM in the PWRU0

PATTERN 2

When using a PWRM-B, the following installation is required:

- Set the "AC INPUT" switch to the downward position for 100 – 117 volts A.C.
- Set the "EQUL/FLOAT" switch according to the type of battery connected.
  - No Battery/Sealed Battery···"FLOAT"
  - Lead-Acid Battery··· "EQUL" (Equalizing Charge) "FLOAT" (Floating Charge)

When changing the EQUL/FLOAT mode, with multiple PWRMs, the changes should be done as simultaneously as is possible.

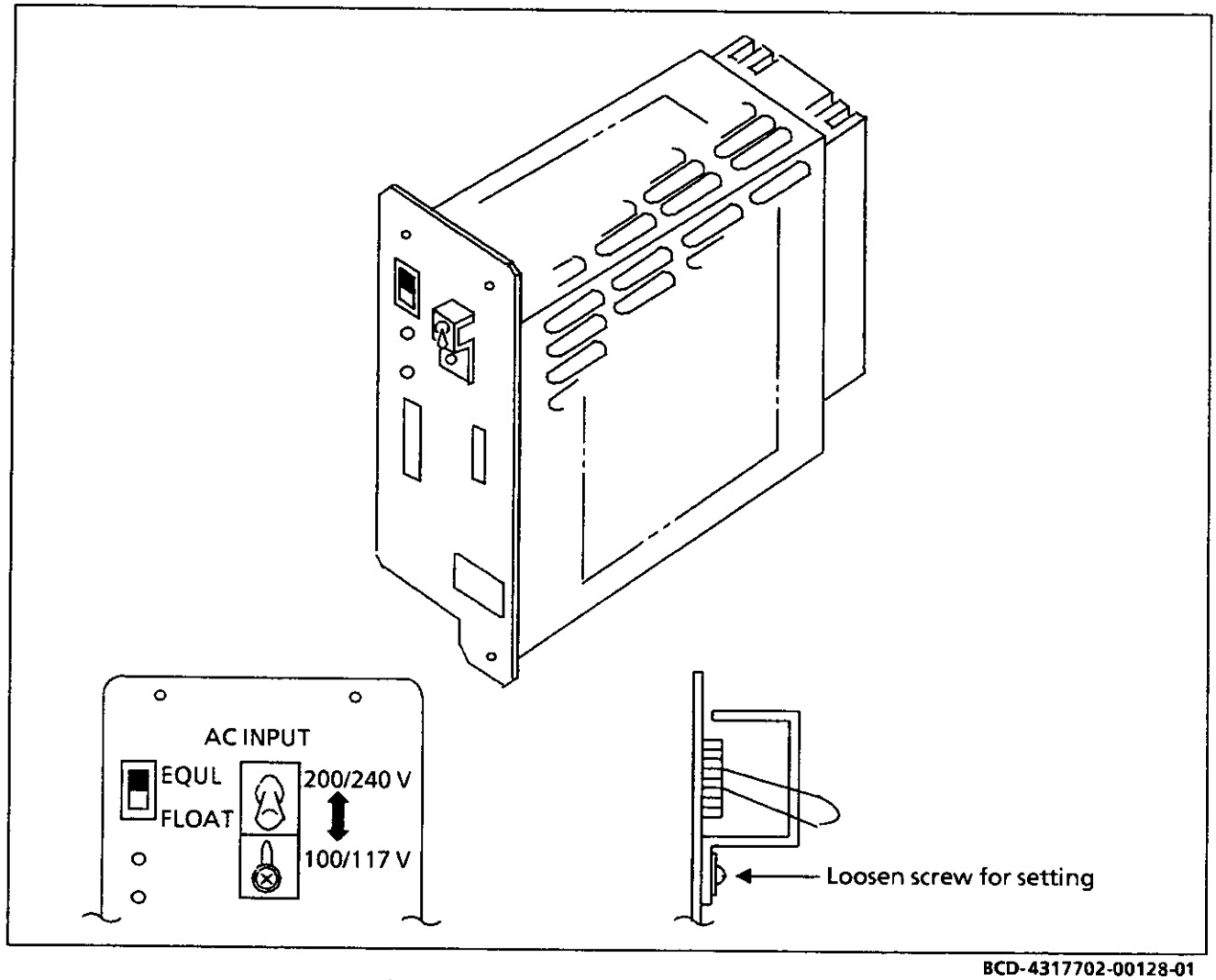

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Figure 003-19 Outer View of a PWRM-B

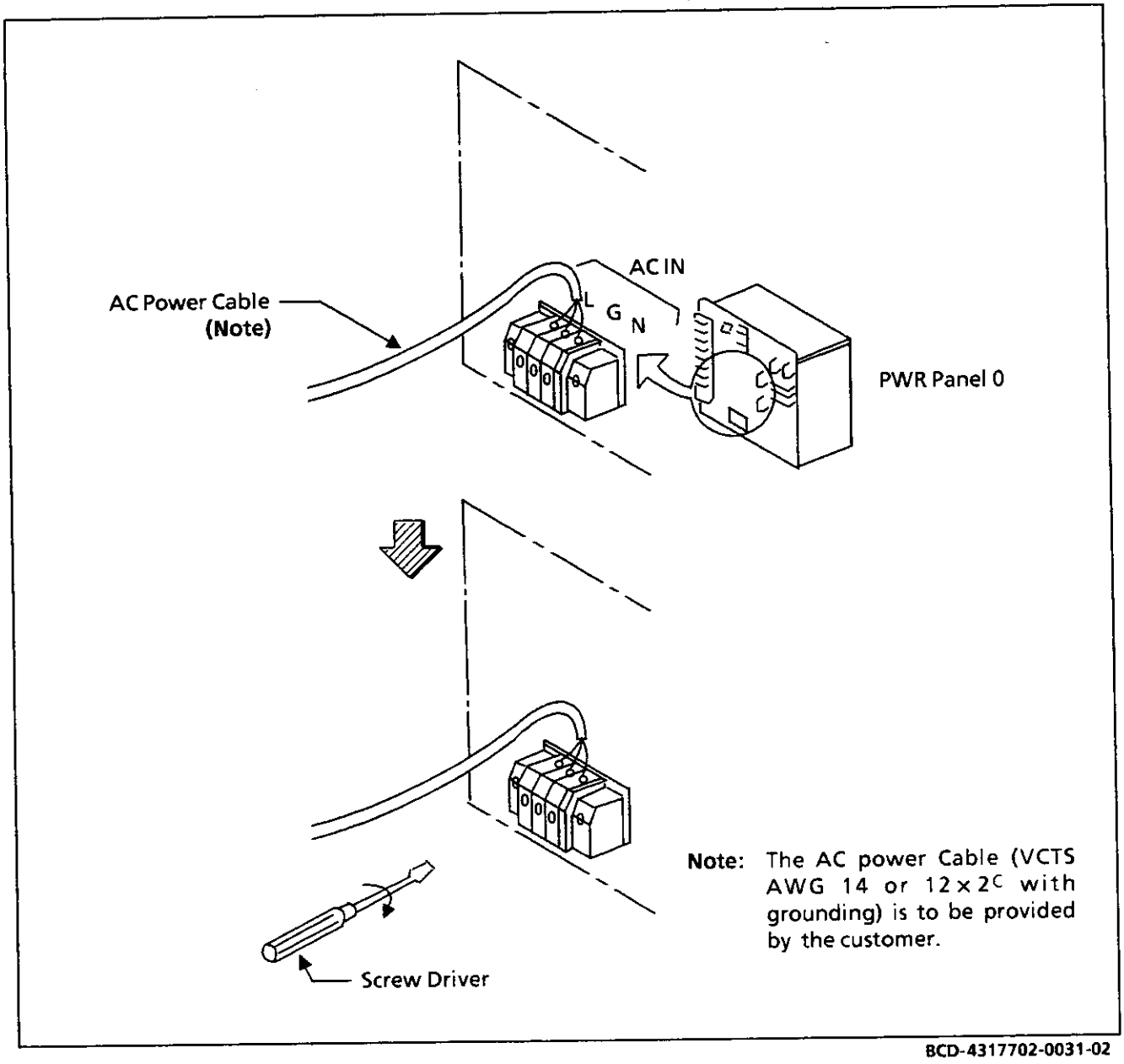

Figure 003-20 Connecting the AC Power Cable

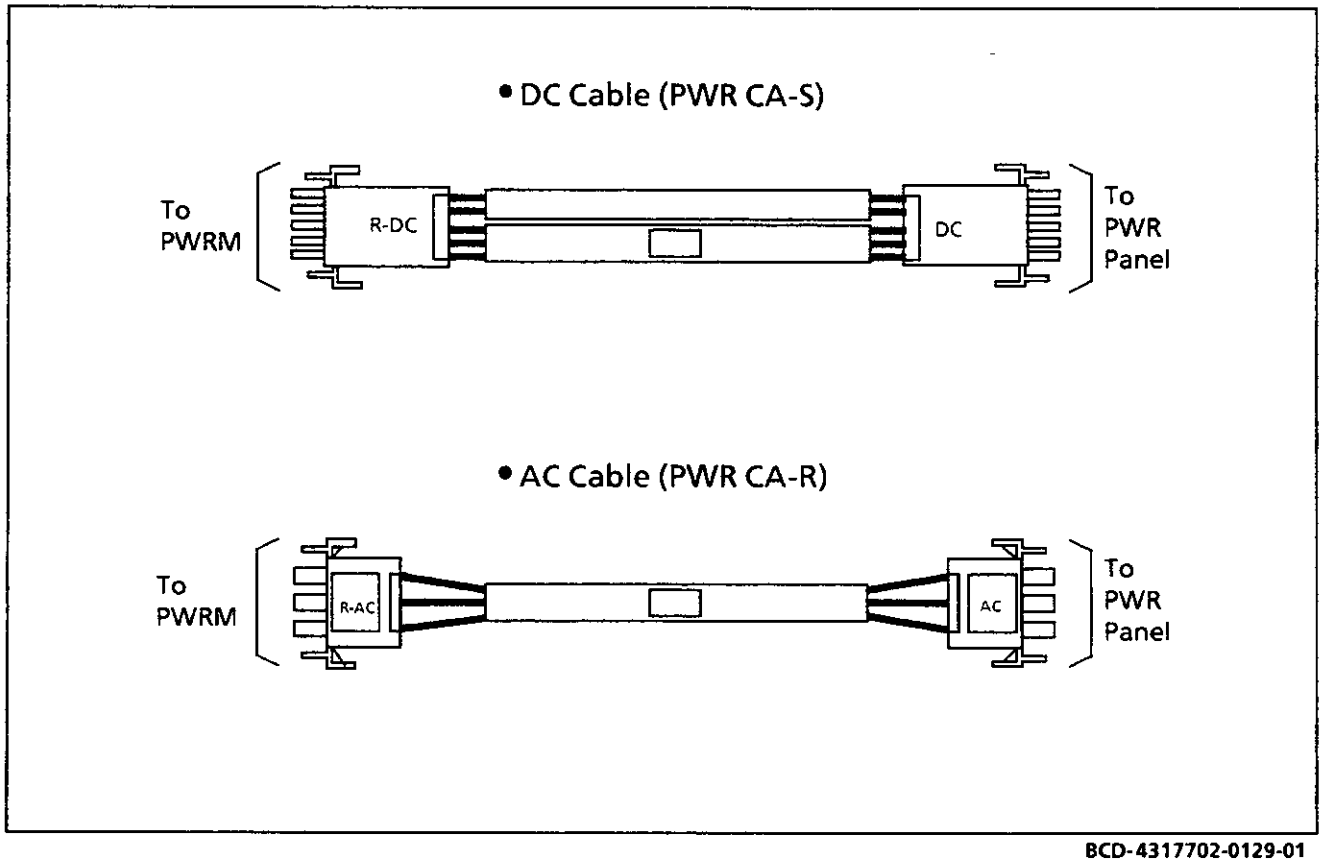

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Figure 003-21 DC Cable, AC Cable

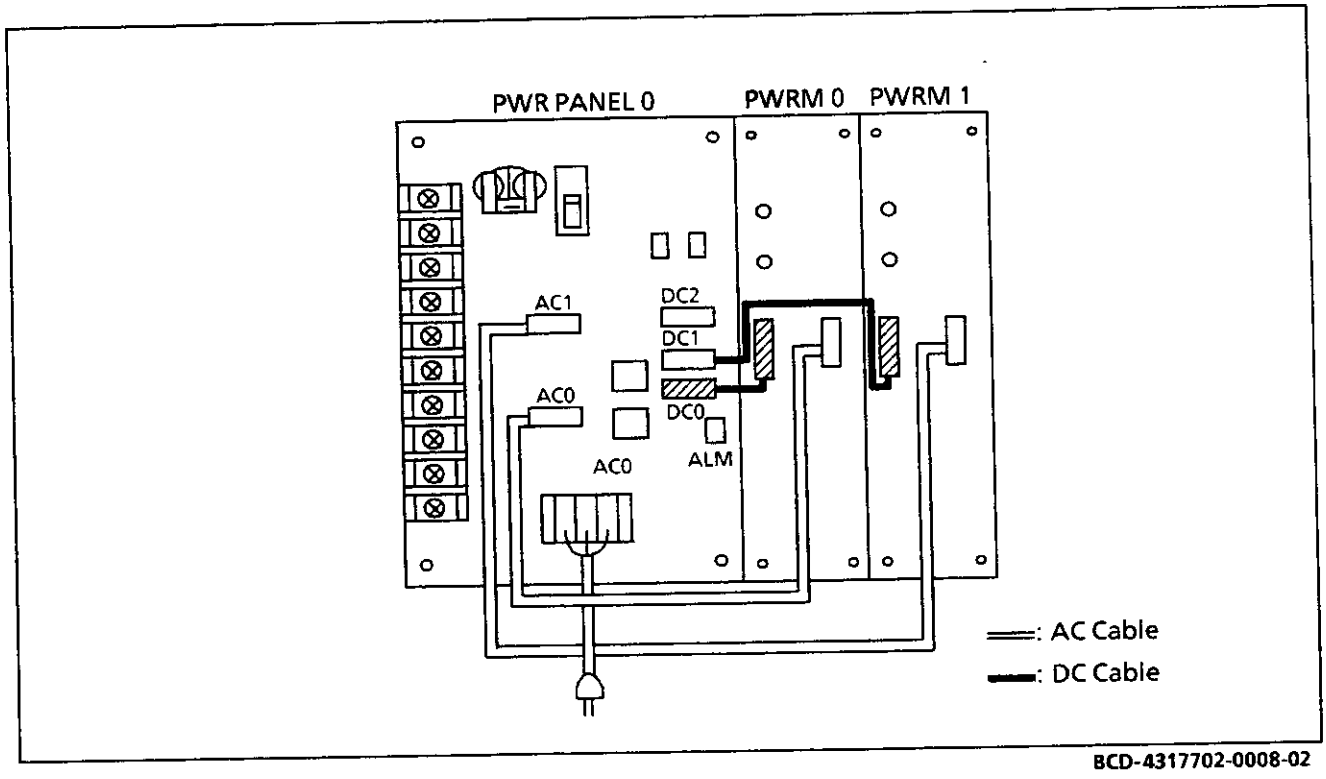
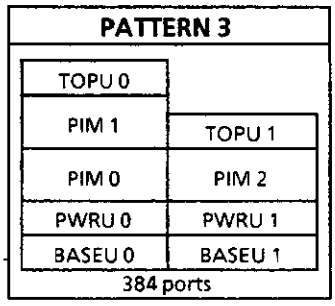


Figure 003-22 Cable Connections on the PWRU0



- Pattern 3

1. Attach the BASEU0 of the Basic System-G to the floor without removing PWR0 and PIM0. — Figure 003-23
   - Set BASEU0 over the drilled holes.
   - Attach the BASEU0 with anchor bolts.
2. Mount PIM1 with TOPU0 on top of PIM0 and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-24
3. Attach BASEU1 to the floor. — Figure 003-25
   - Set BASEU1 over the drilled holes.
   - Attach BASEU1 with anchor bolts.
4. Mount PWRU1 on top of BASEU1, and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-26
5. Mount PIM2 on top of PWRU1 and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-27
6. Mount TOPU1 on top of PIM2 and secure it with the 10 screws, 10 washers and 10 lock washers which are provided. — Figure 003-28
7. Connect BRACKET (F) to the front side of PIM0 and PIM1, PIM2 and PWRU1 and BASEU1, and connect BRACKET (R) to the rear side of PIM0 and PWRU1. — Figure 003-29, Figure 003-30, Figure 003-31, Figure 003-32
8. Connect the Frame Ground cables (FE CA-A) provided in PIM0, PIM2 to PIM0 and PWRU1. — Figure 003-33, Figure 003-34
9. Attach both PWRUs, PIM0 and PIM2 together using the Connecting Bracket provided. — Figure 003-35
10. Cover the LAMP window of TOPU1 with the Lamp Faceplate provided. — Figure 003-36

11. Connect the PWR CA-K cable furnished with the "EXT" connector, located on the front of PWR PANEL0, to the "PWR0" connector, located on the rear of PIM1, and connect the LED CA, provided with TOPU0, to the "LAMP" connector, located on the rear of PIM0.
Connect the PWR CA-J cable, furnished with the "BSC" connector located on the front of PWR PANEL1, to the "PWR0" connector, located on the rear of PIM 2.
The connection of the LED CA provided with TOPU1 is not necessary. — Figure 003-37

12. Connect the PIMs to each other with BUS CA-A and BUS CA-B as shown in Figure 003-38. Unplug the PZ-M159 card from PIM1 and plug the PZ-M159 card in the "BUS 1" connector on PIM2. — Figure 003-38, Figure 003-39

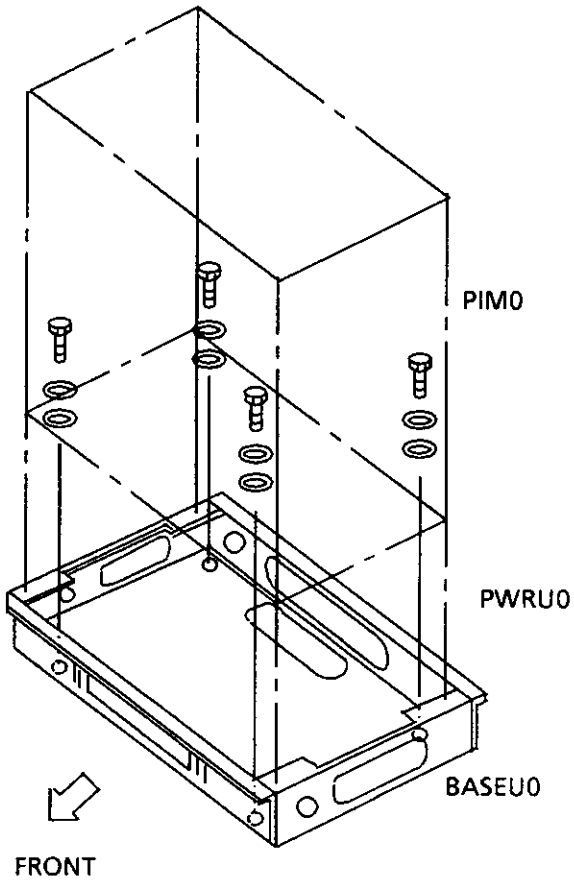
13. If required, mount PFT Panels at the bottom (front) of PIM1/PIM2, using the 3 screws which are provided, and connect them together in series according to Figure 003-41, using PFT CA-C cables. — Figure 003-40, Figure 003-41

14. If required, mount PWRMs (Power Module) into PWRUs, and secure each one using the 3 screws which are provided. — Figure 003-42, Figure 003-43

15. Connect the AC power cables into "AC IN", located on PWR PANEL0, and secure them by tightening the screw clamps.
White (Neutral) to N, Black (Line) to L, Green (Ground) to G.
In the case of a three-PWRM configuration, connect a second AC power cable into "AC IN", located on PWR PANEL1. — Figure 003-44

    Note: *The cable connection should be provided with strain relief in order to maintain the integrity of the connection.*

16. Connect the PWRMs, if required, to their associated PWR Panel via the AC and DC connector cables provided with each PWRM. — Figure 003-45, Figure 003-46, Figure 003-47



Basic System - G

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Figure 003-23 Attaching the BASEU of the Basic System - G

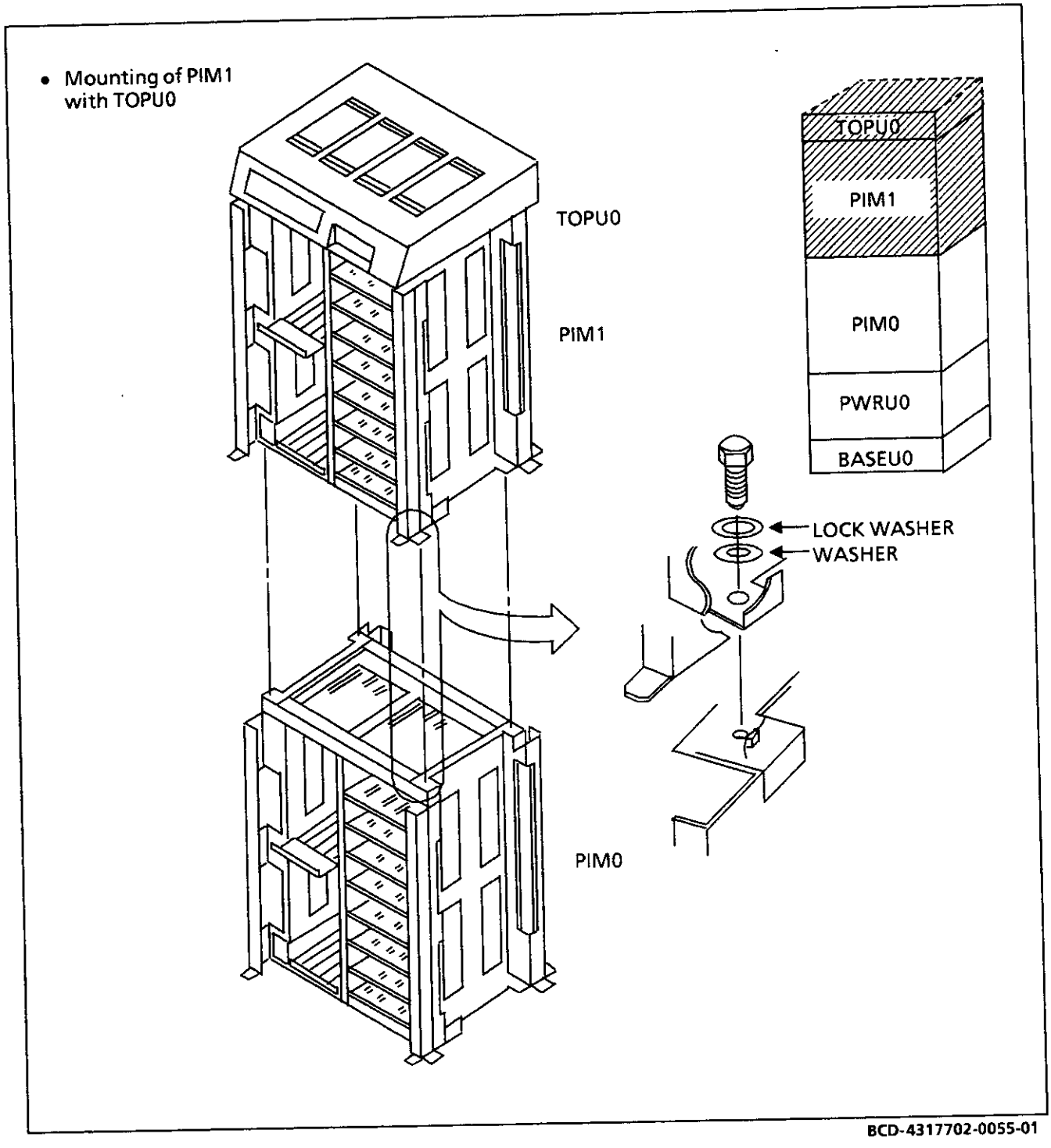

Figure 003-24 Mounting PIM1 with TOPU0

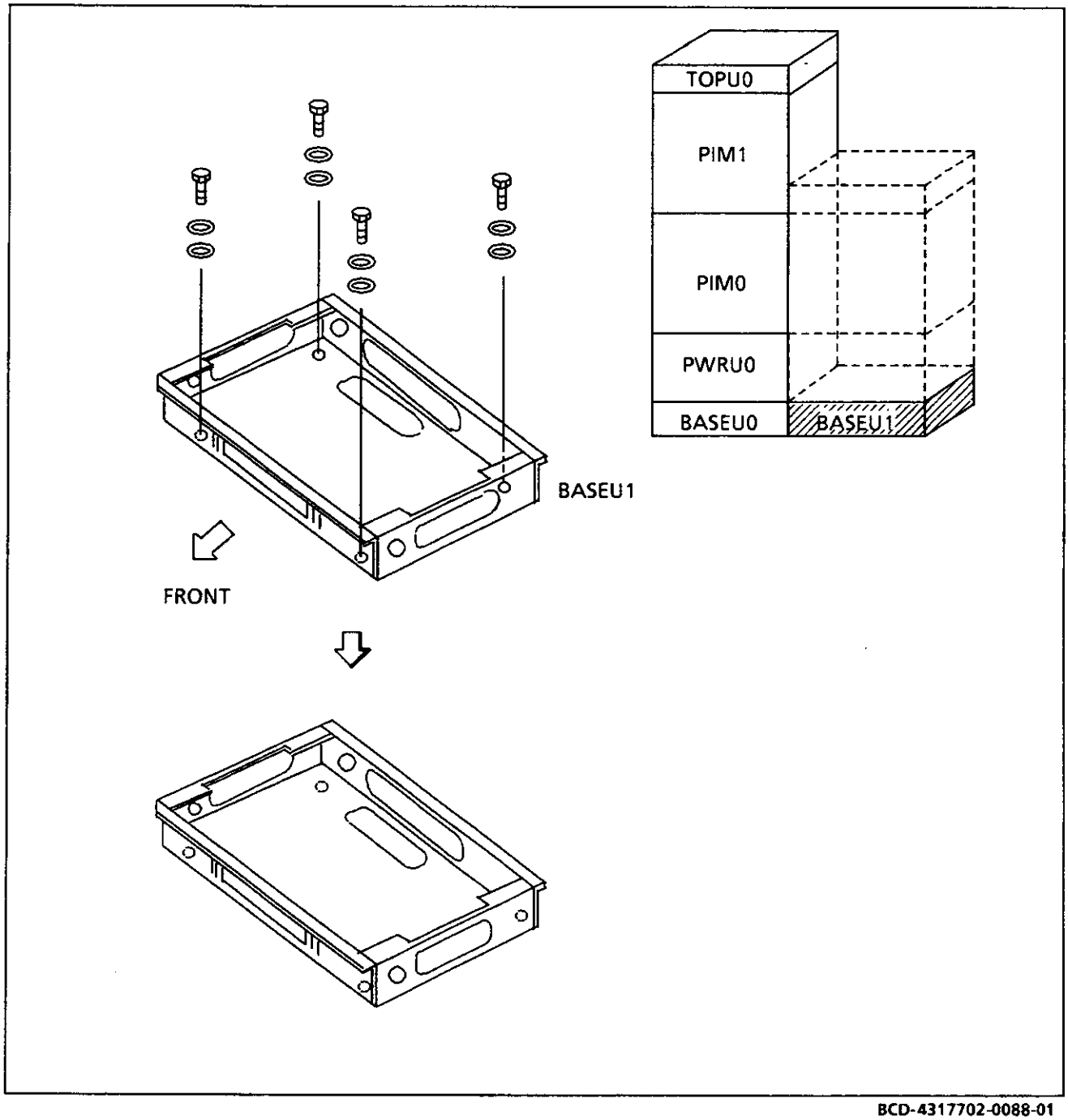

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Figure 003-25 Attaching BASEU1

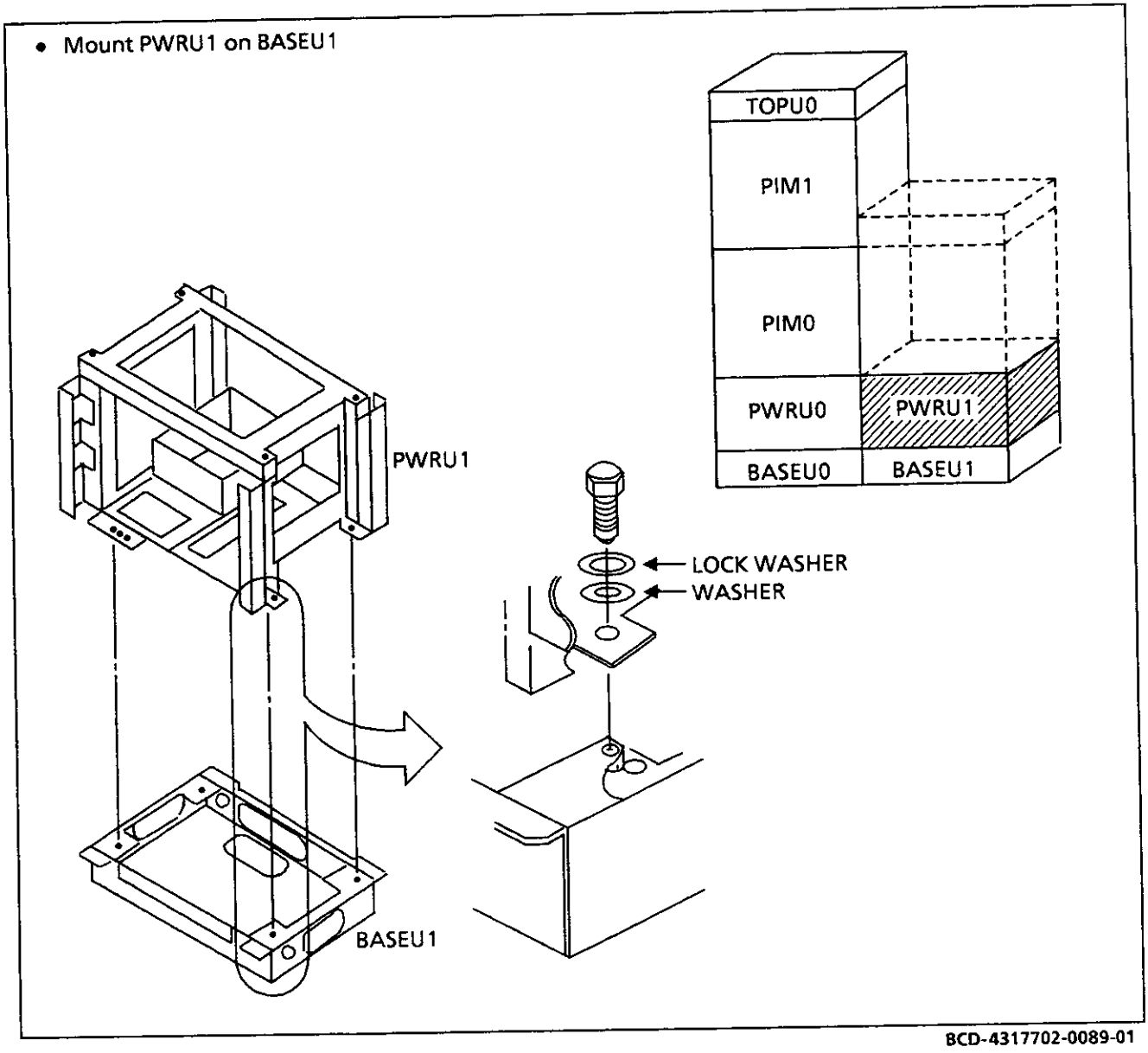

Figure 003-26 Mounting PWRU1

- Mount PIM2 on top of PWRU1

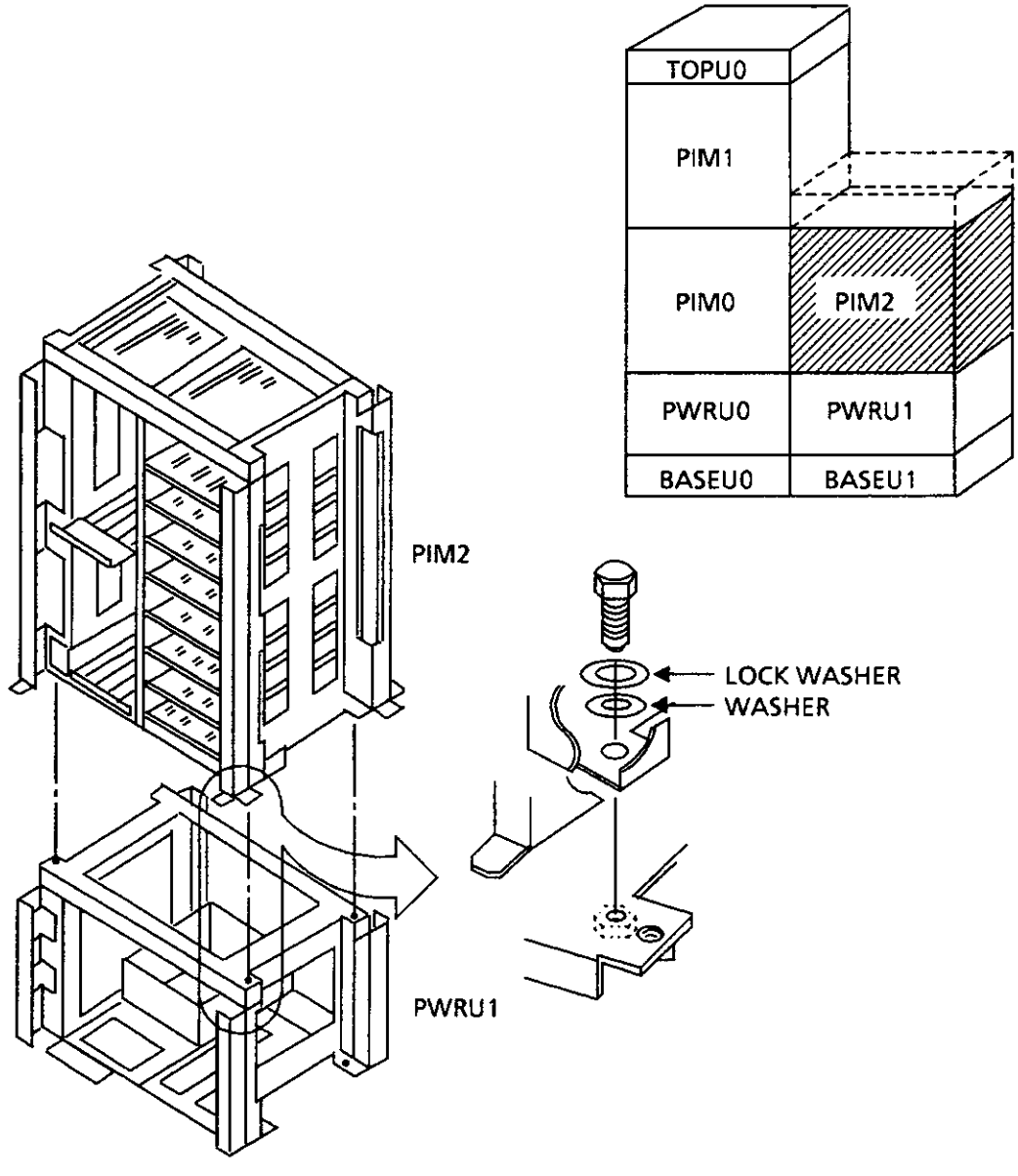

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Figure 003-27 Mounting PIM2

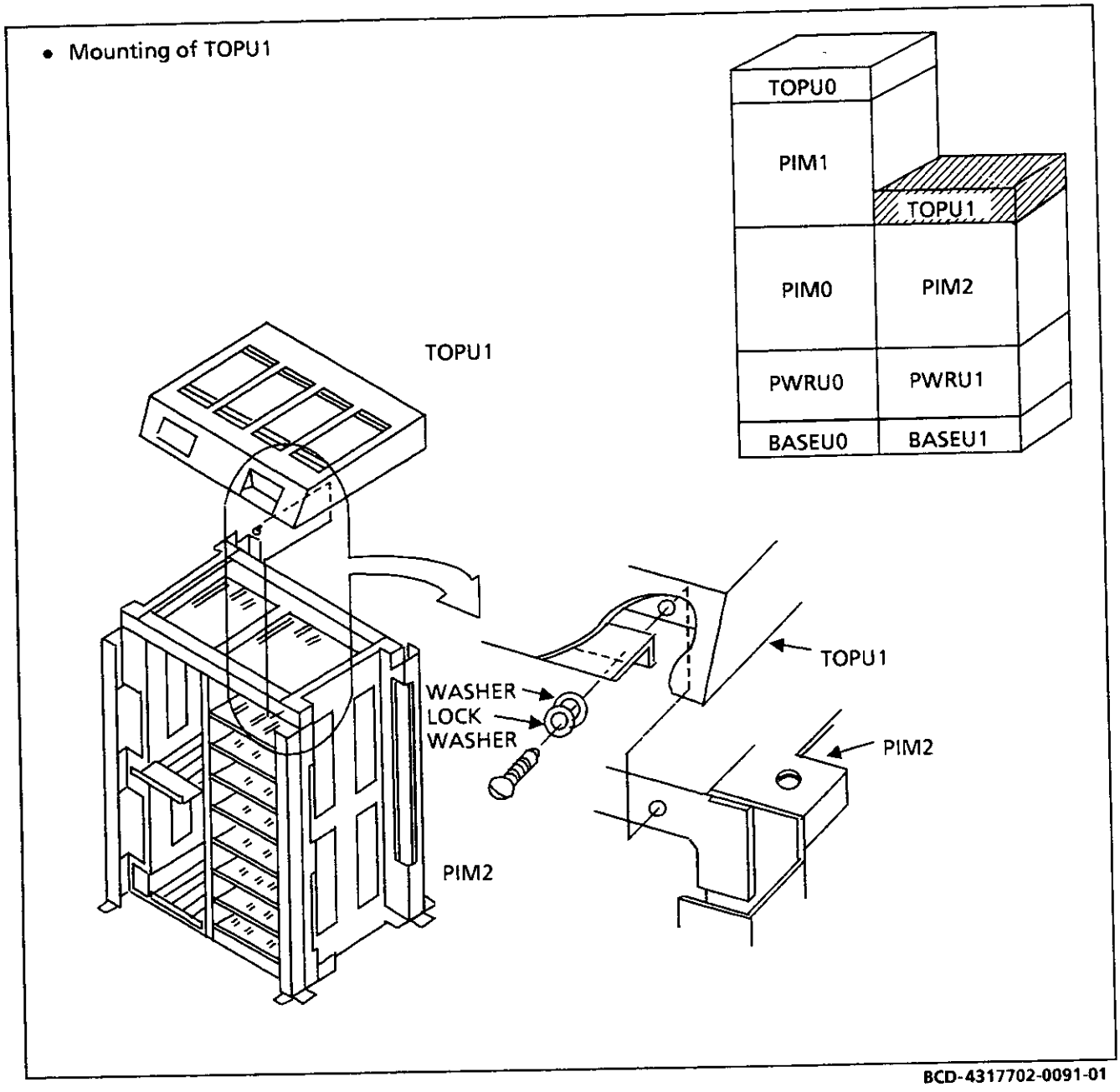

Figure 003-28 Mounting TOPU1

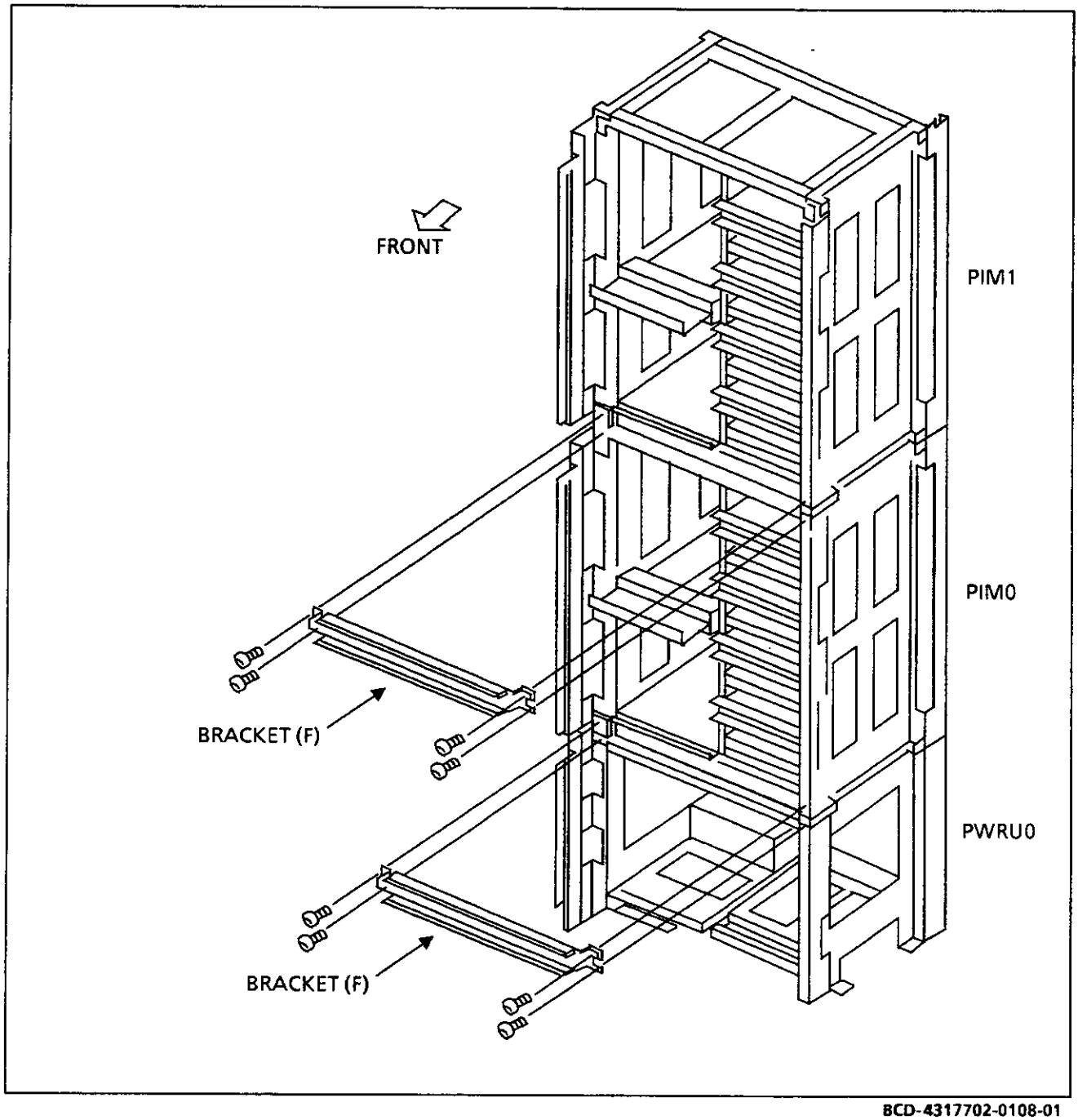

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Figure 003-29 Connecting the Brackets for the Front Covers

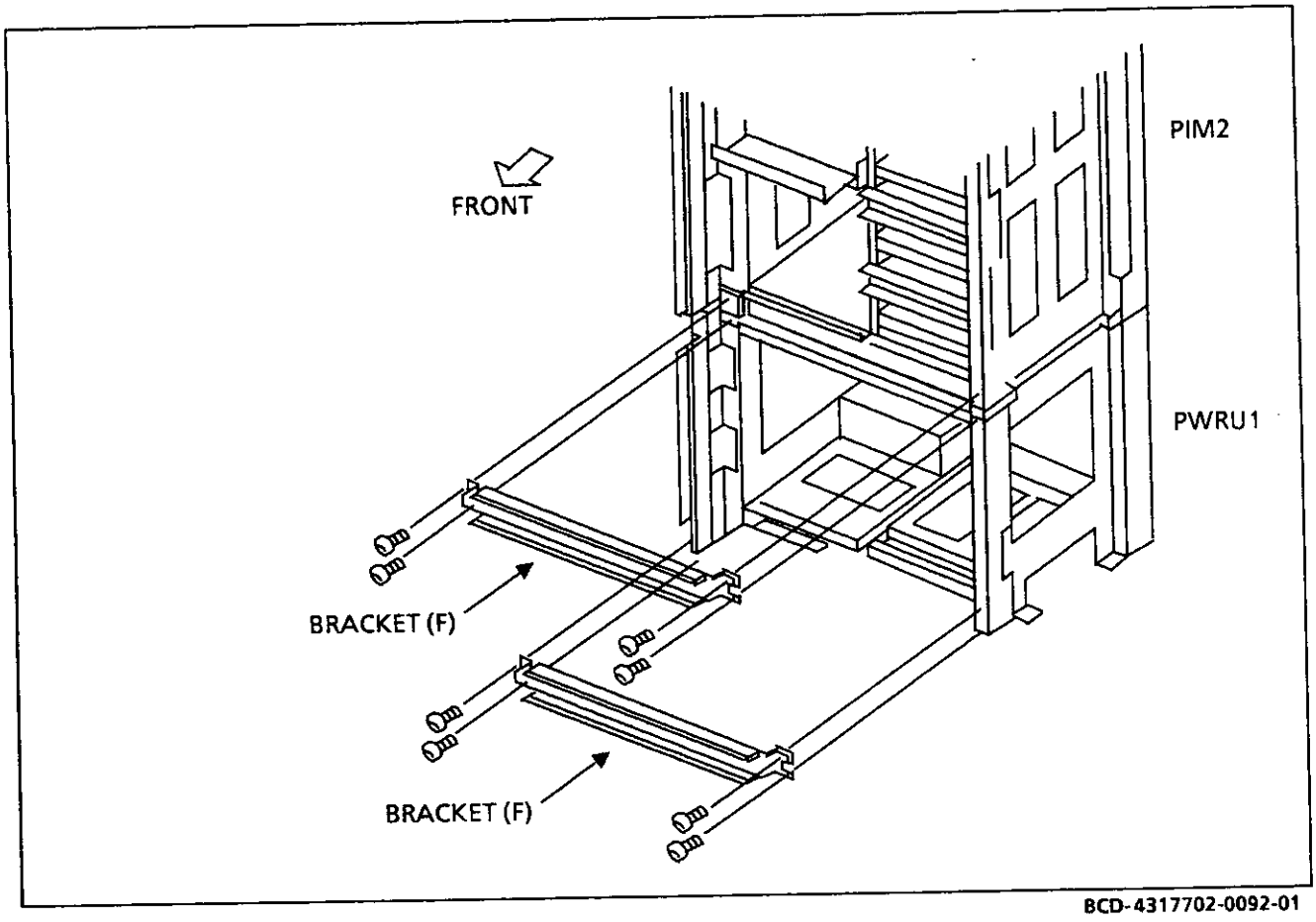

Figure 003-30 Connecting the Brackets for the Front Covers

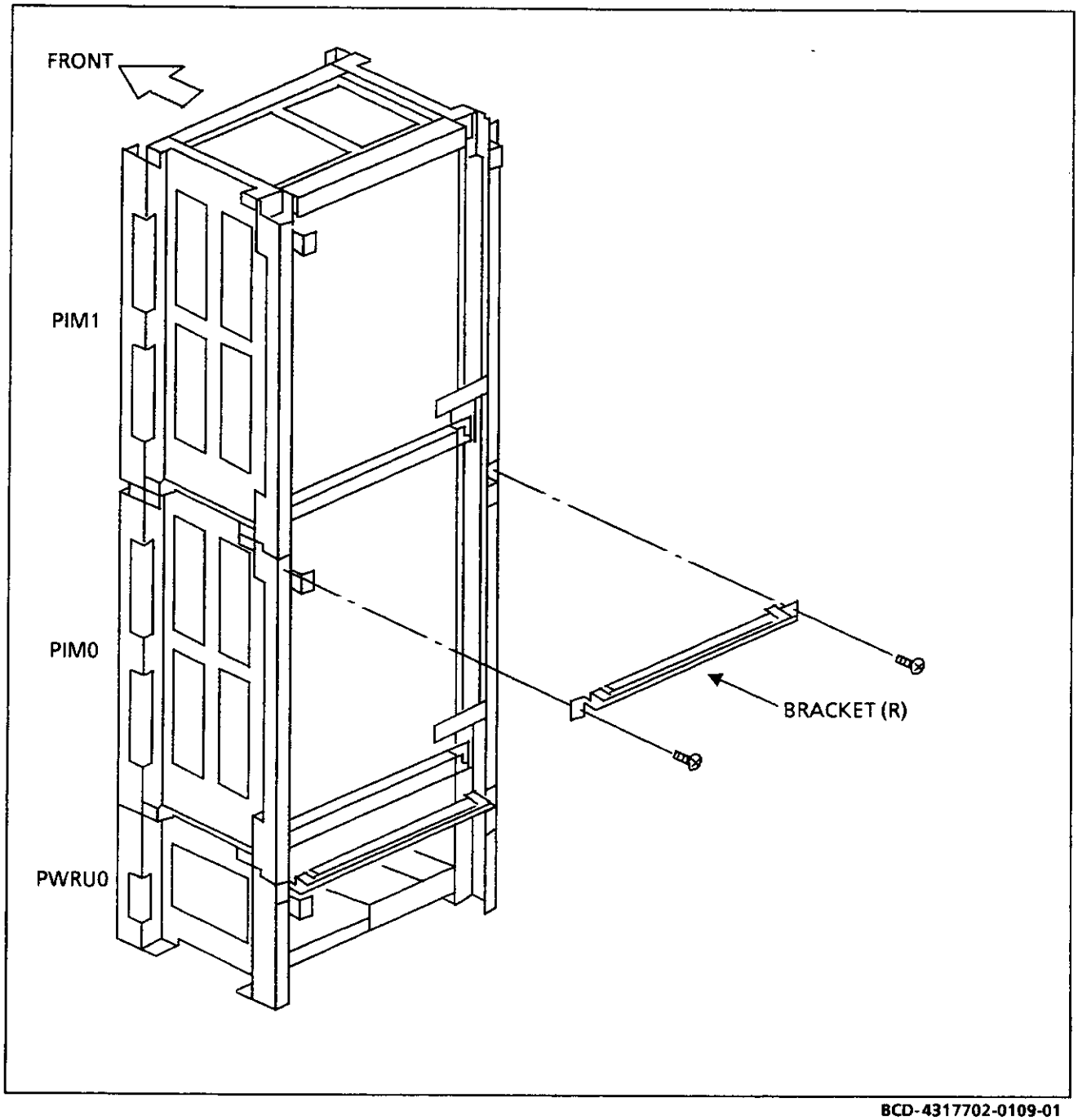

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Figure 003-31 Connecting the Bracket for the Rear Cover

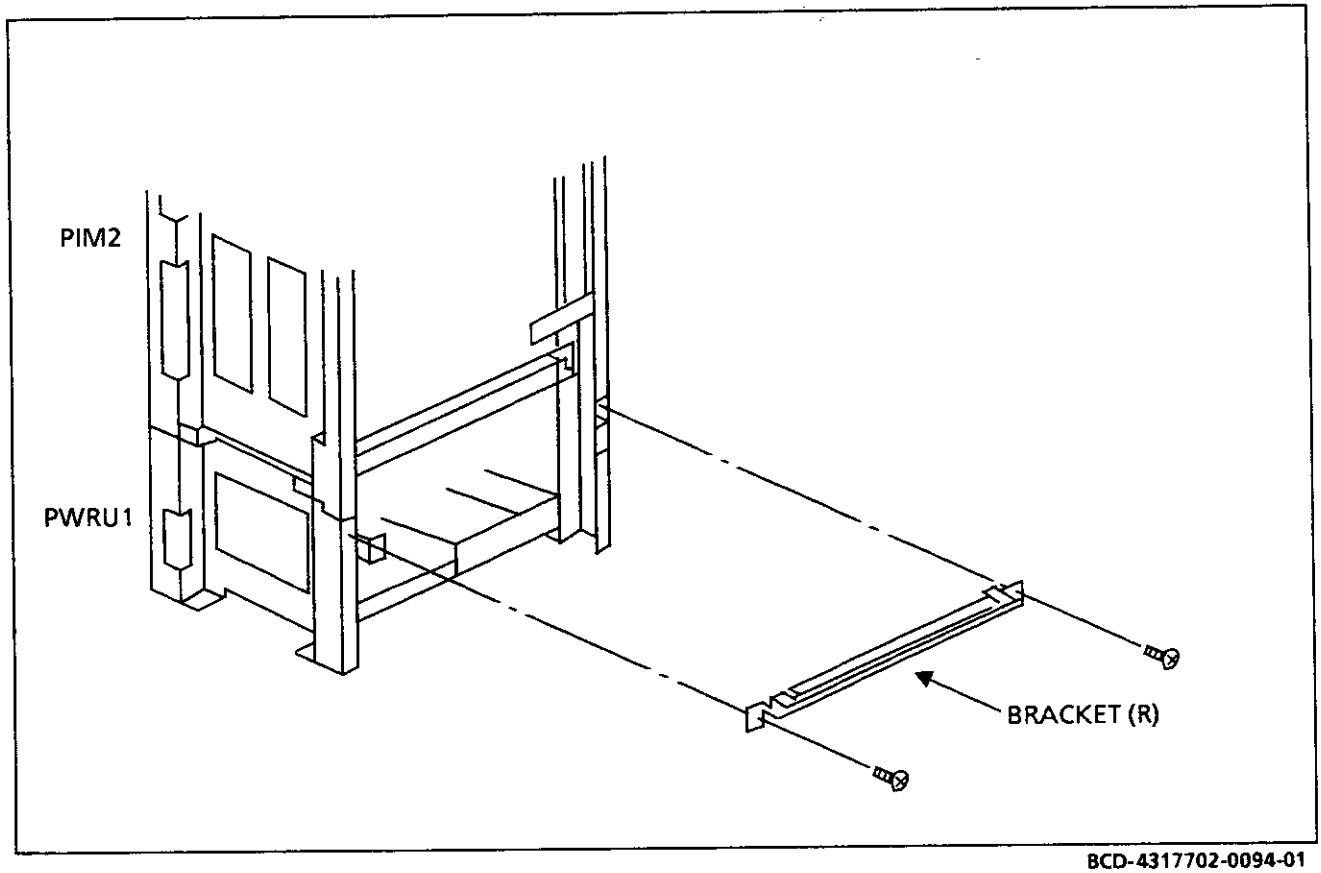

Figure 003-32 Connecting the Bracket for the Rear Cover

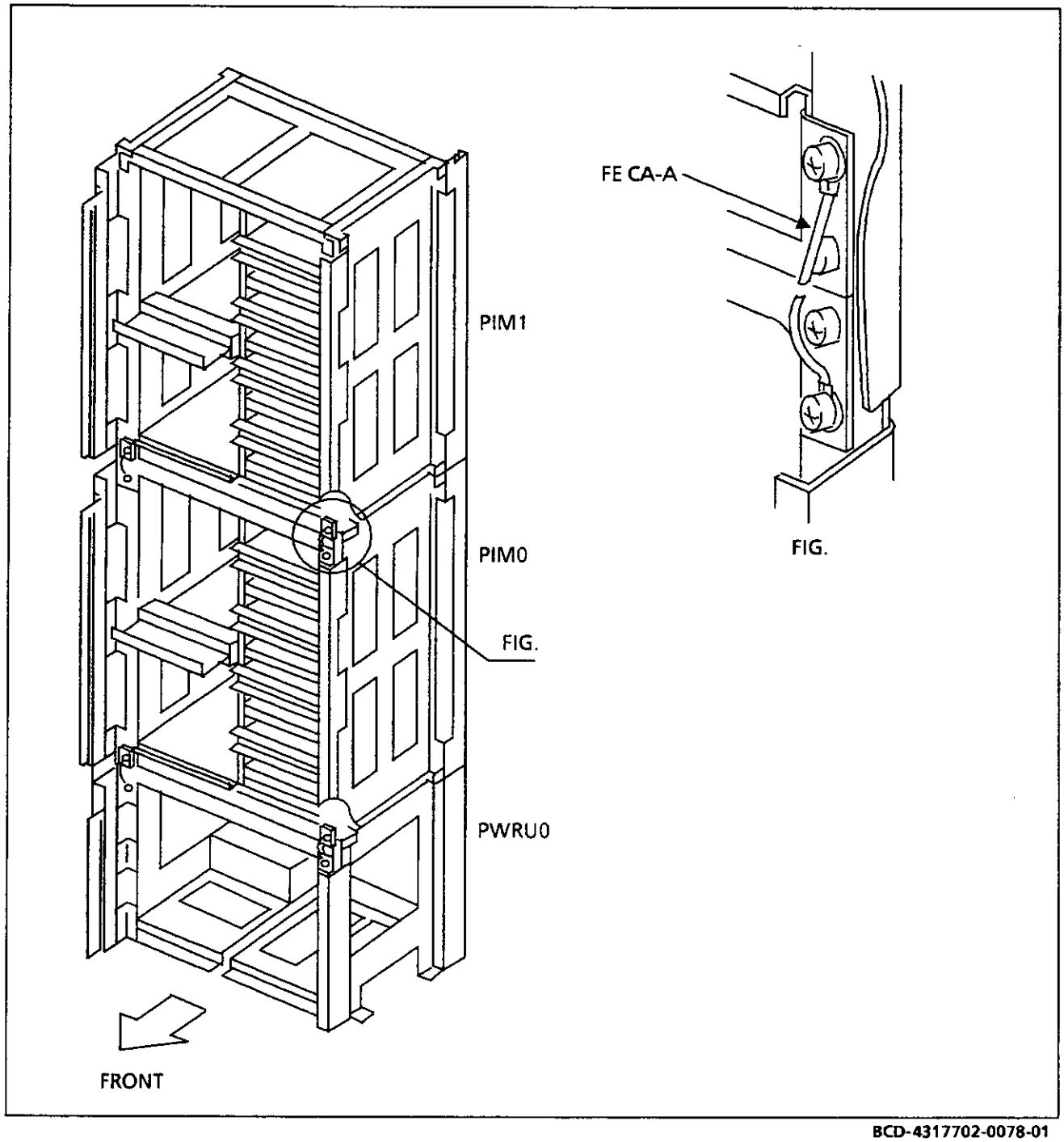

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Figure 003-33 Connecting the Frame Ground Cables (Front Side)

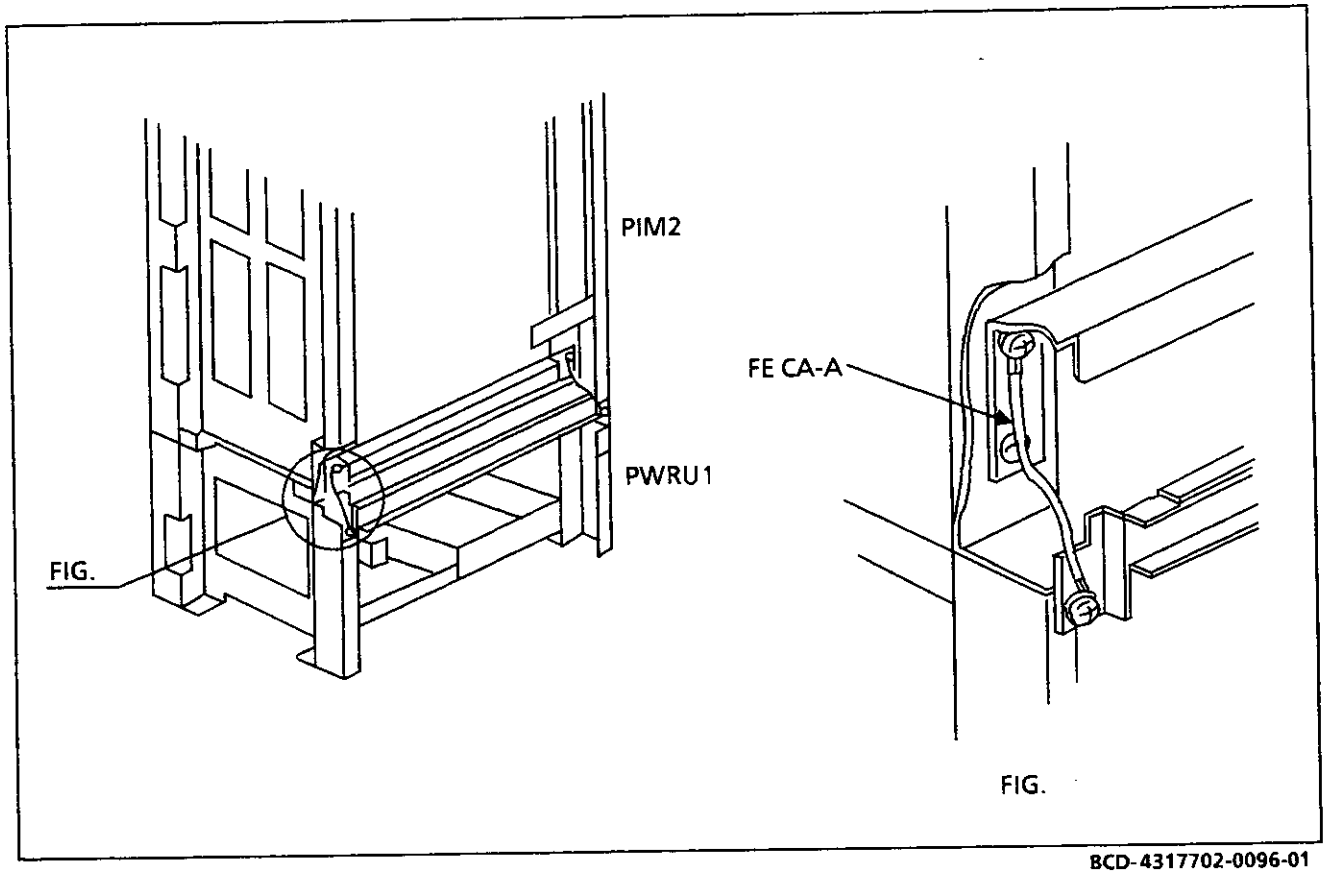

Figure 003-34 Connecting the Frame Ground Cables (Rear Side)

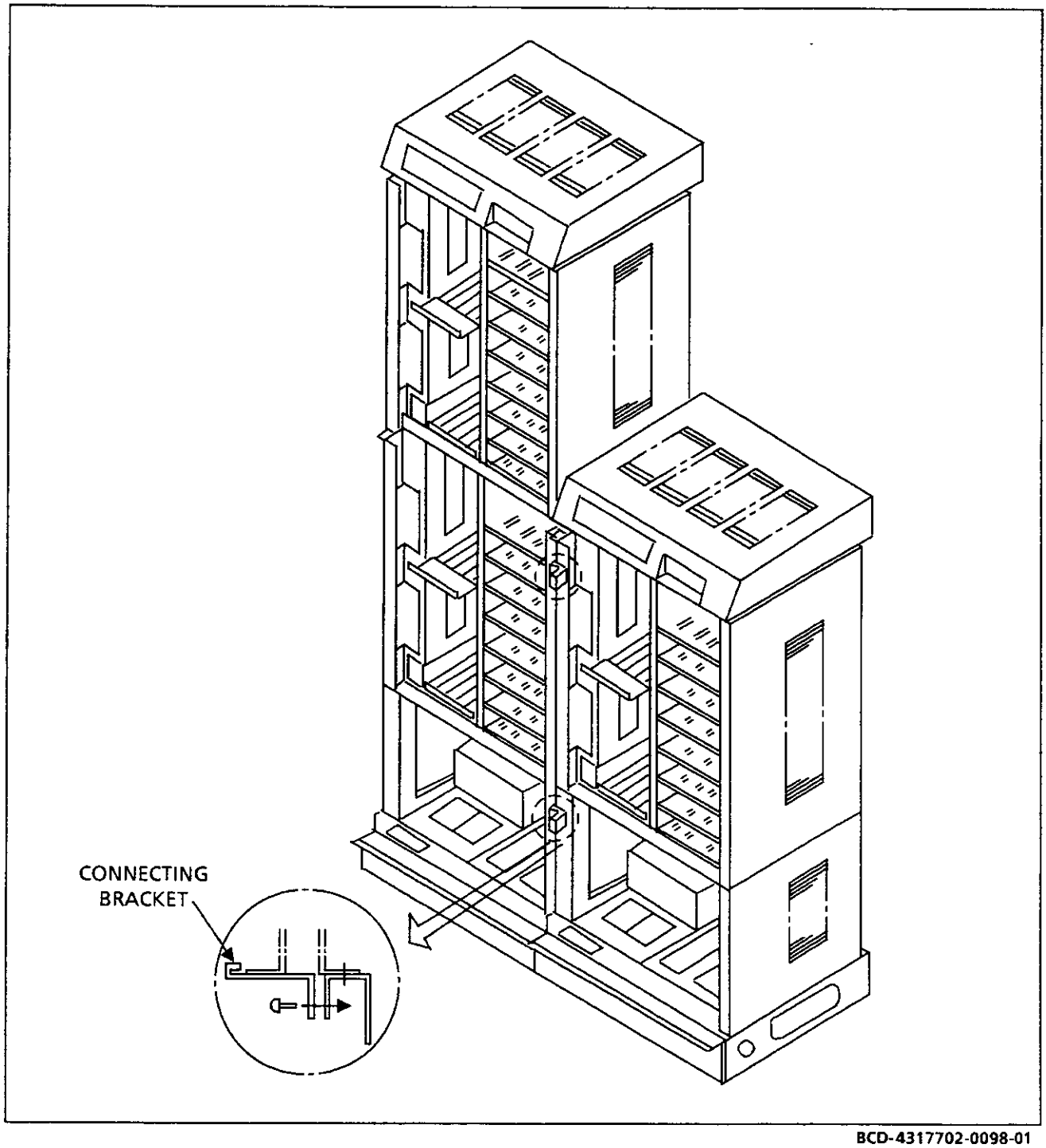

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Figure 003-35 Attaching Modules and Units

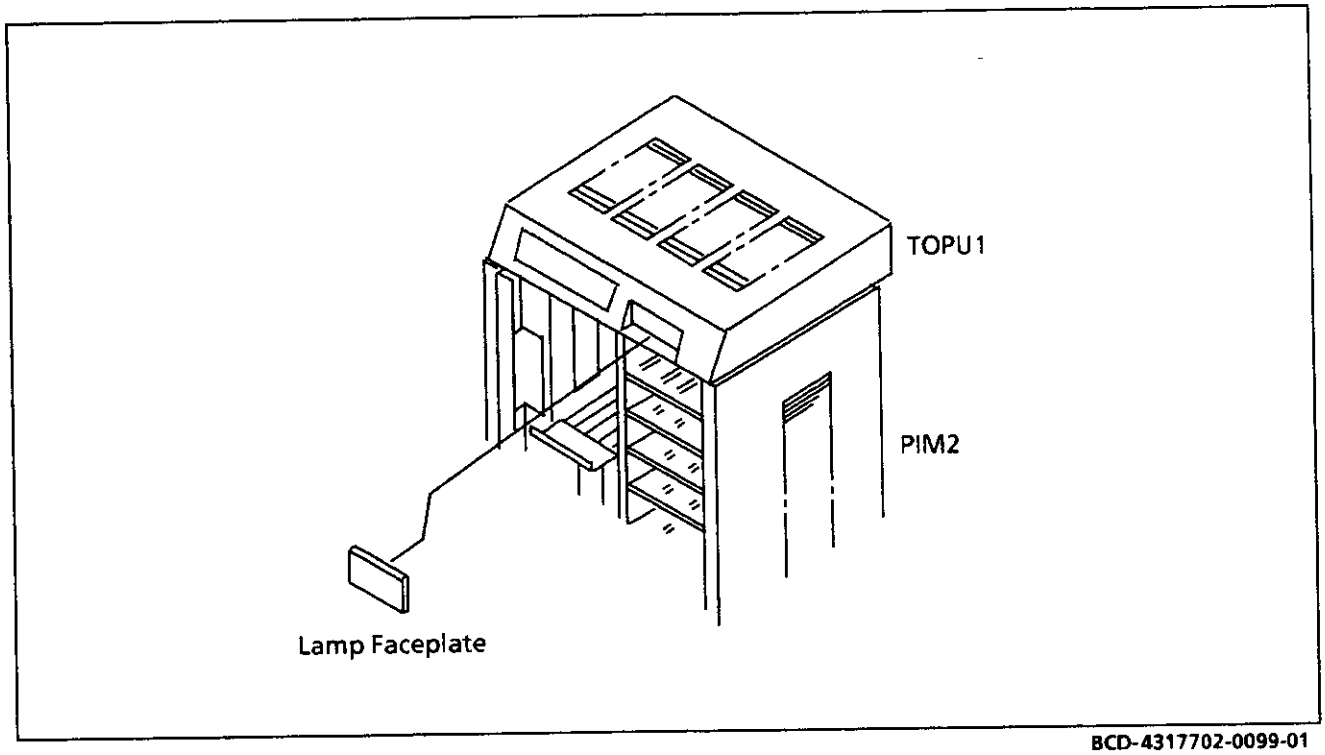

Figure 003-36 Installing the Lamp Faceplate

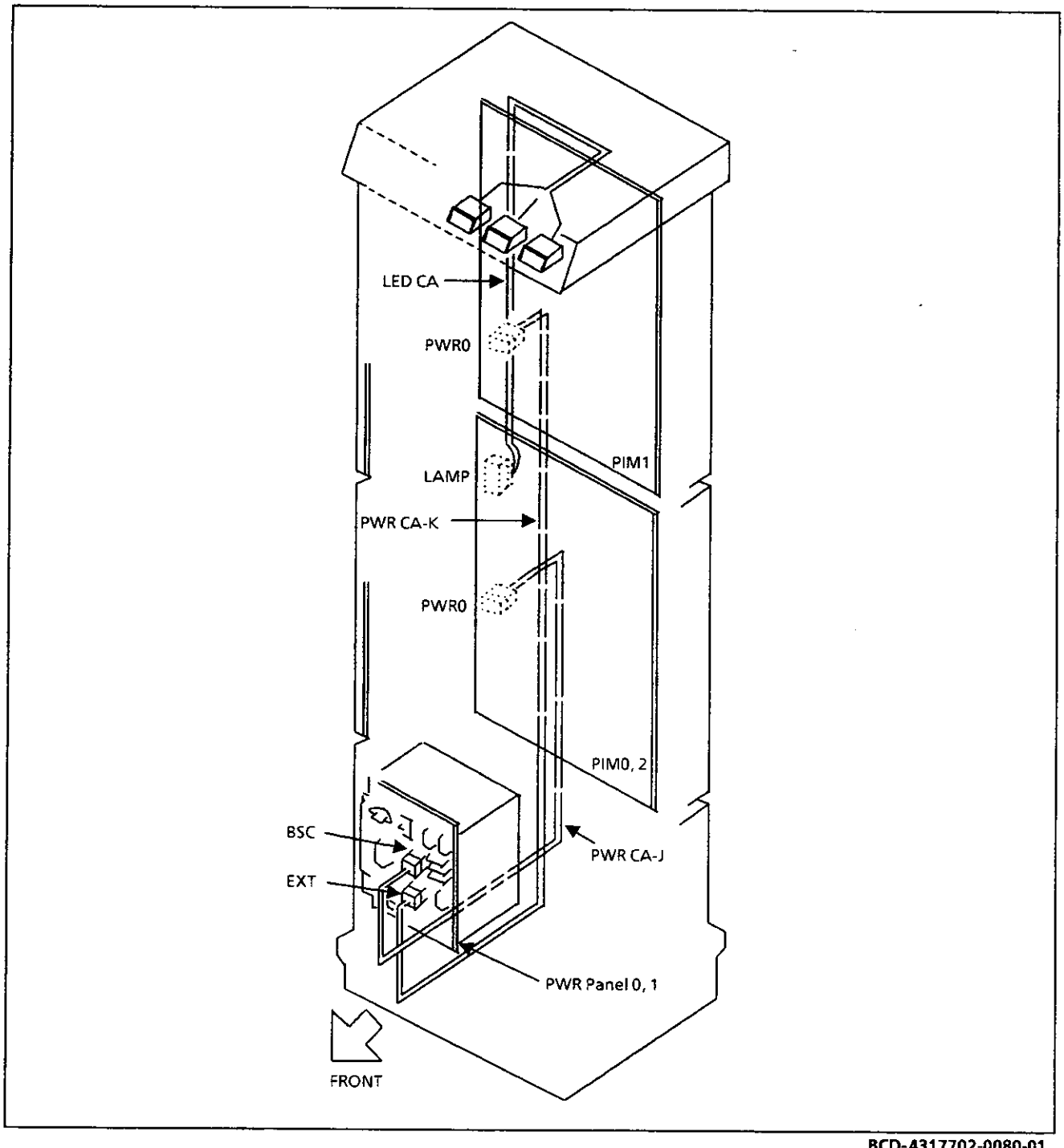

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Figure 003-37 Cable Connections between PIMs 0, 1, 2 and PWR Panels 0, 1

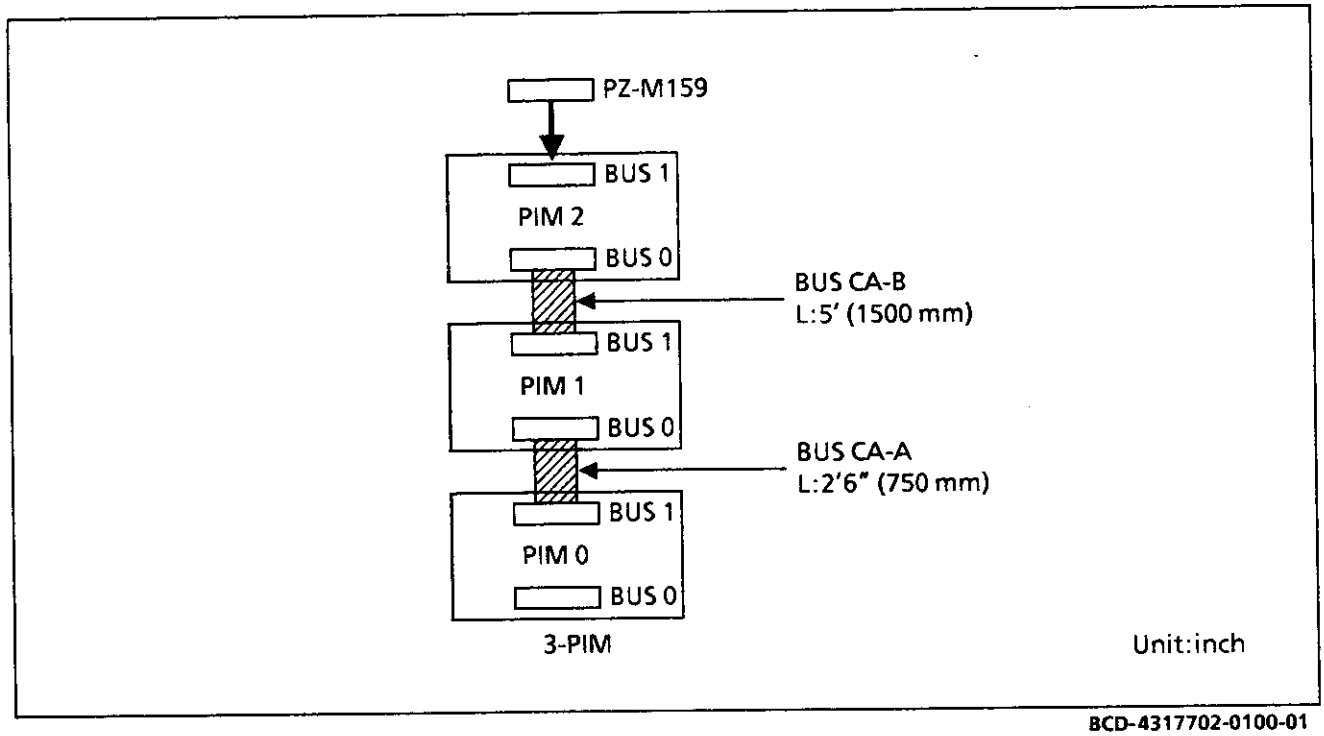

Figure 003-38 BUS Cable Connections for Pattern 3

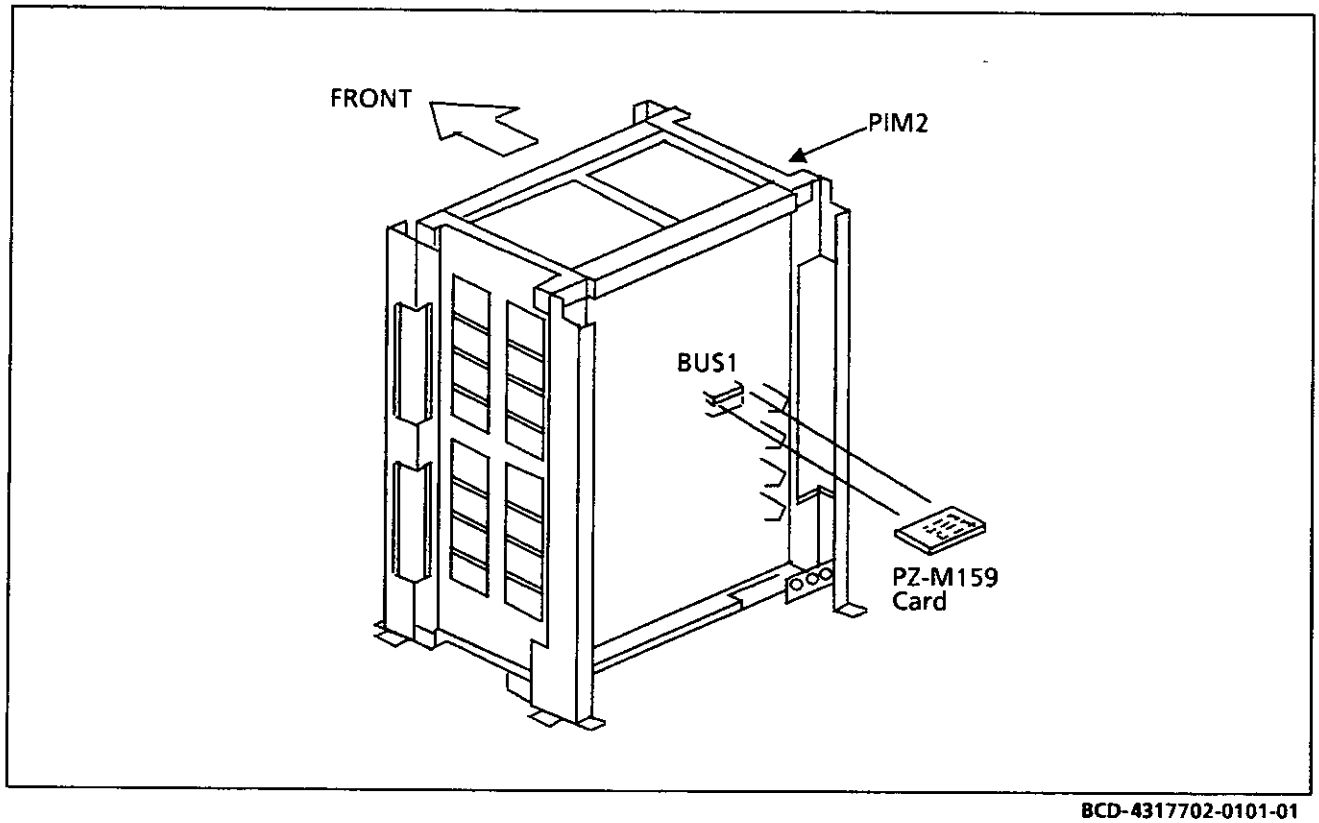

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Figure 003-39 Mounting a PZ-M159 Card on PIM2

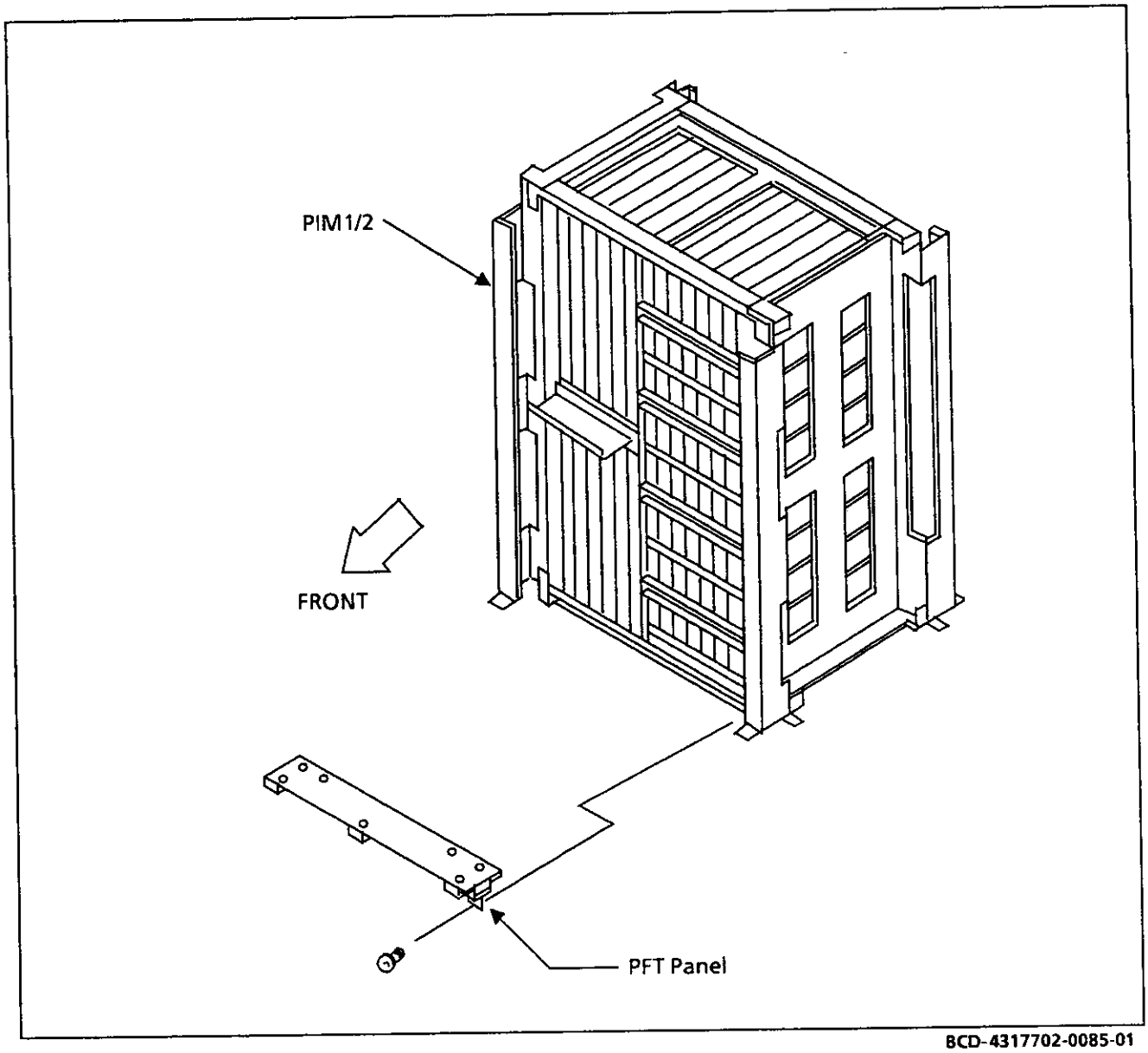

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Figure 003-40 Mounting the PFT Panel for Pattern 3

PATTERN 3

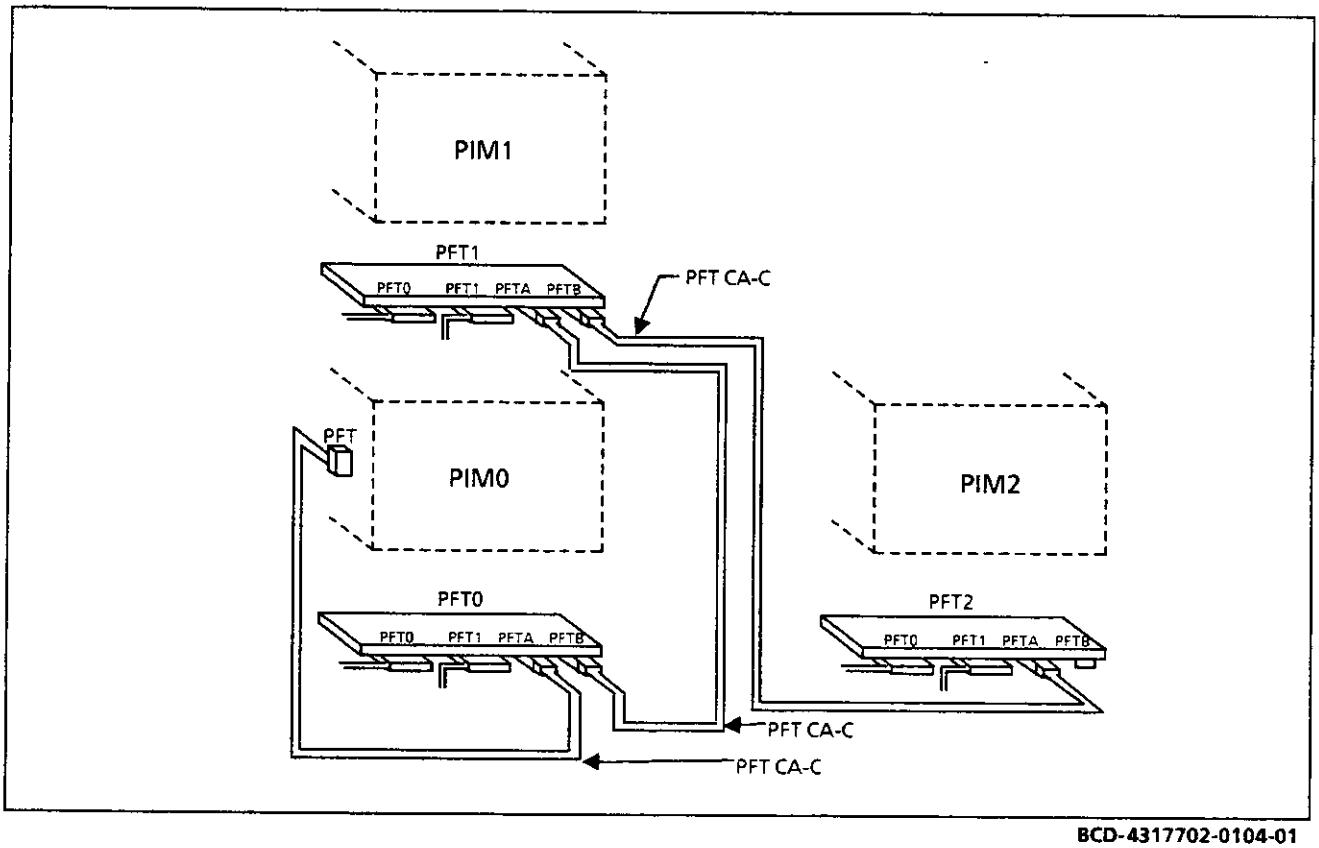

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Figure 003-41 PFT Connections for Pattern 3 (Front View)

Note: *For the cable connections to connectors "PFT0, PFT1", refer to NAP- 200-006 and NAP-200-007.*

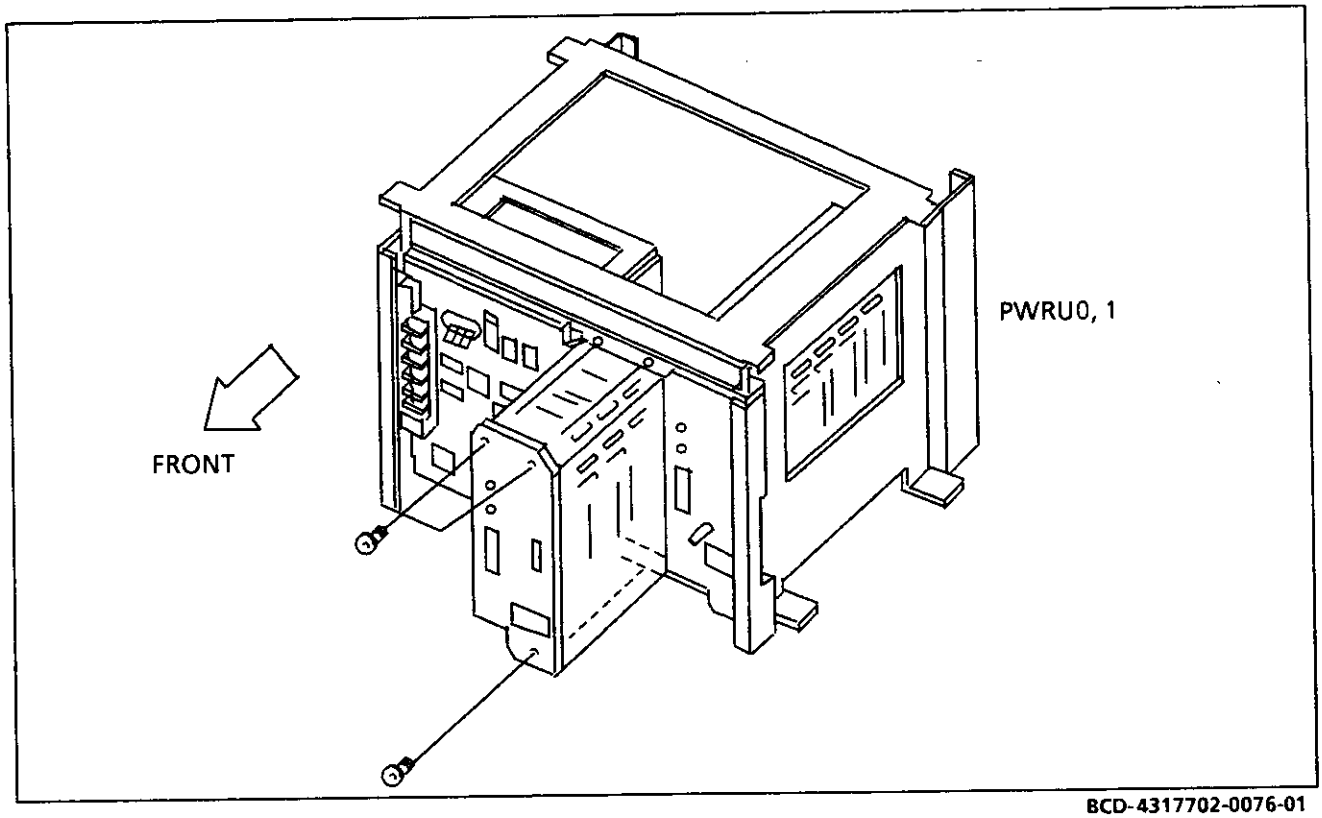

Figure 003-42 Mounting a PWRM

When using a PWRM-B, the following installation is required:

- Set the "AC INPUT" switch to the downward position for 100 – 117 volts A.C.
- Set the "EQUL/FLOAT" switch according to the type of battery connected.
  - No Battery/Sealed Battery···"FLOAT"
  - Lead-Acid Battery··· "EQUL" (Equalizing Charge) "FLOAT" (Floating Charge)

When changing the EQUL/FLOAT mode, with multiple PWRMs, the changes should be done as simultaneously as is possible.

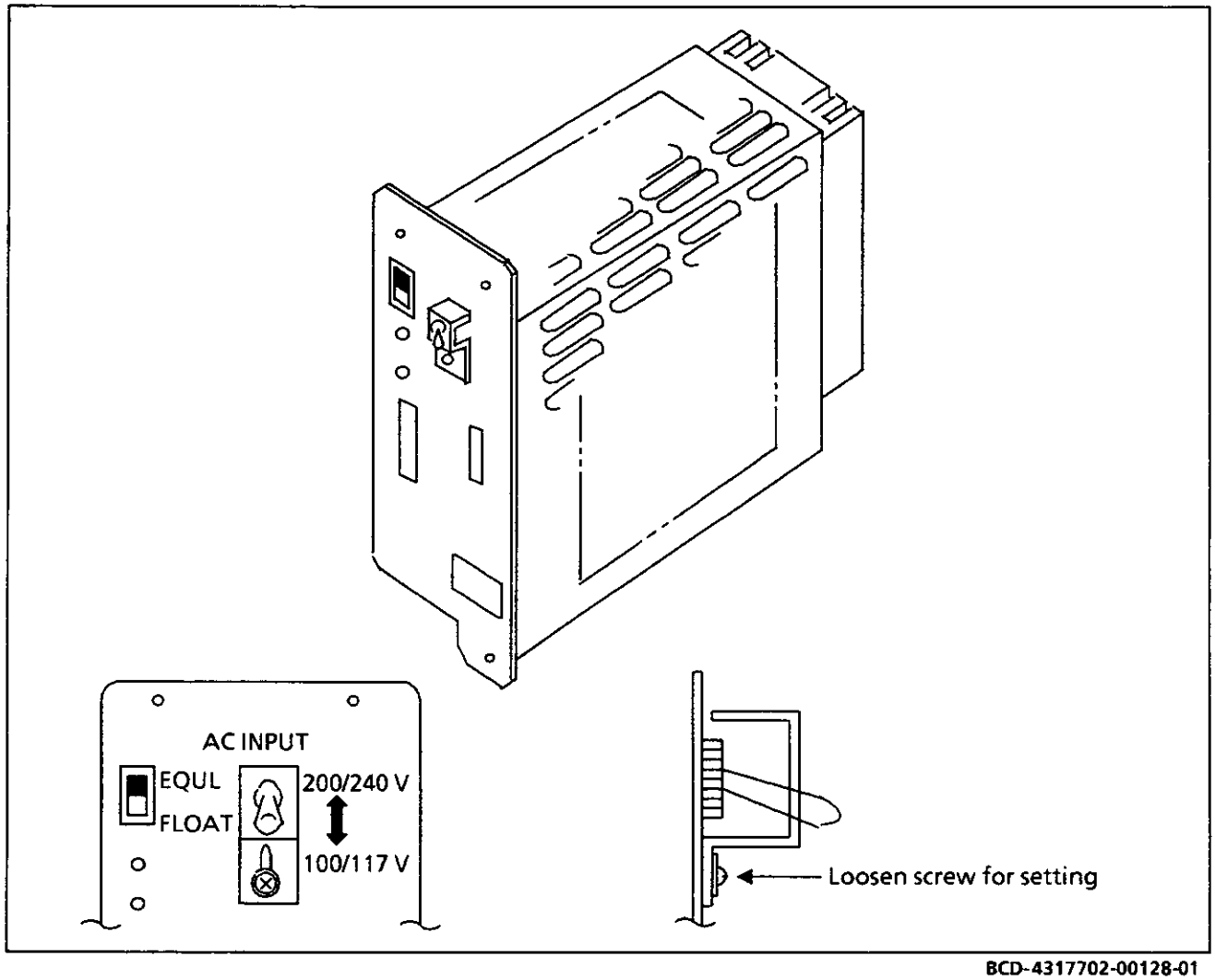

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Figure 003-43 Outer View of a PWRM-B

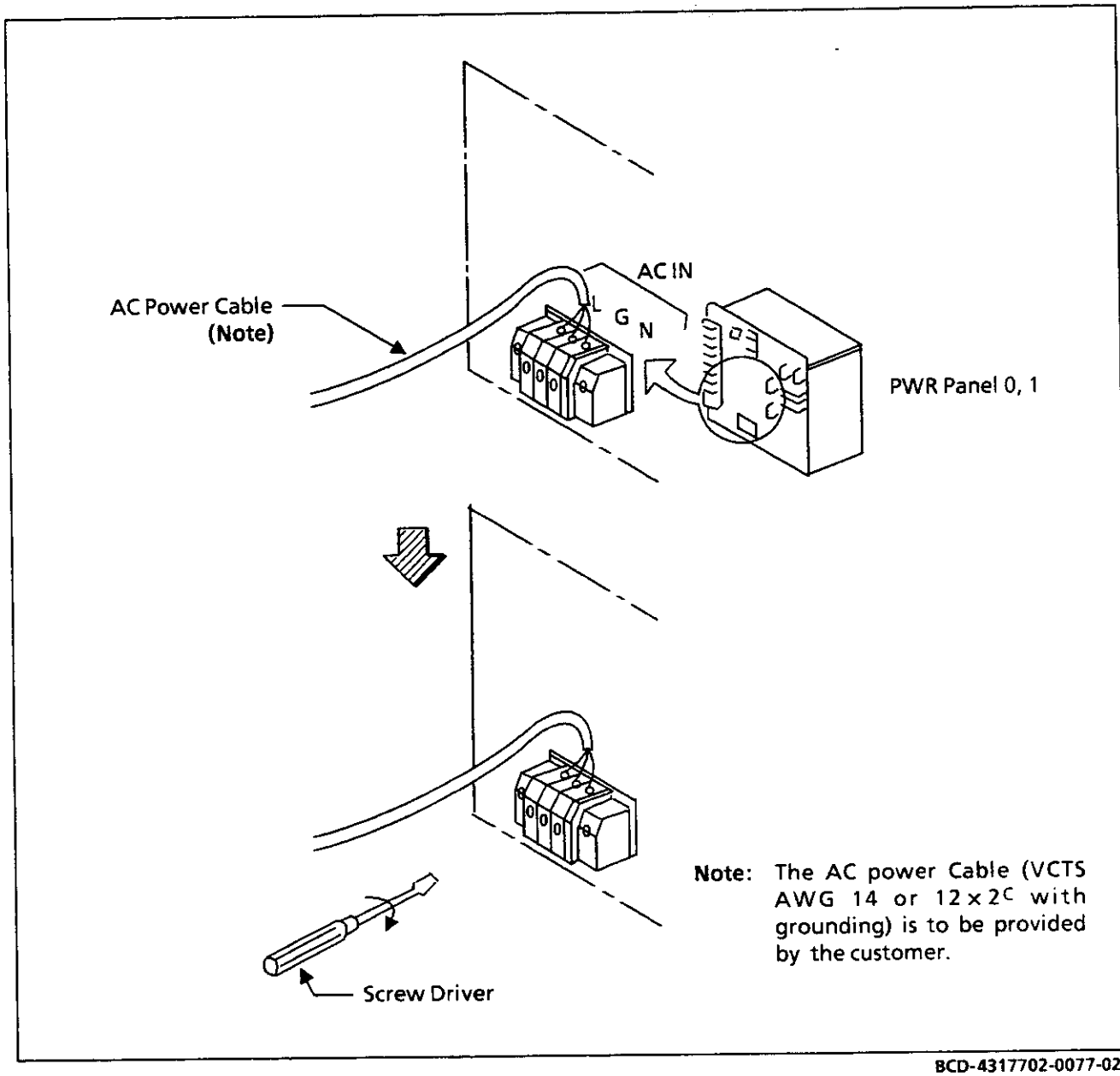

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Figure 003-44 Connecting the AC Power Cable

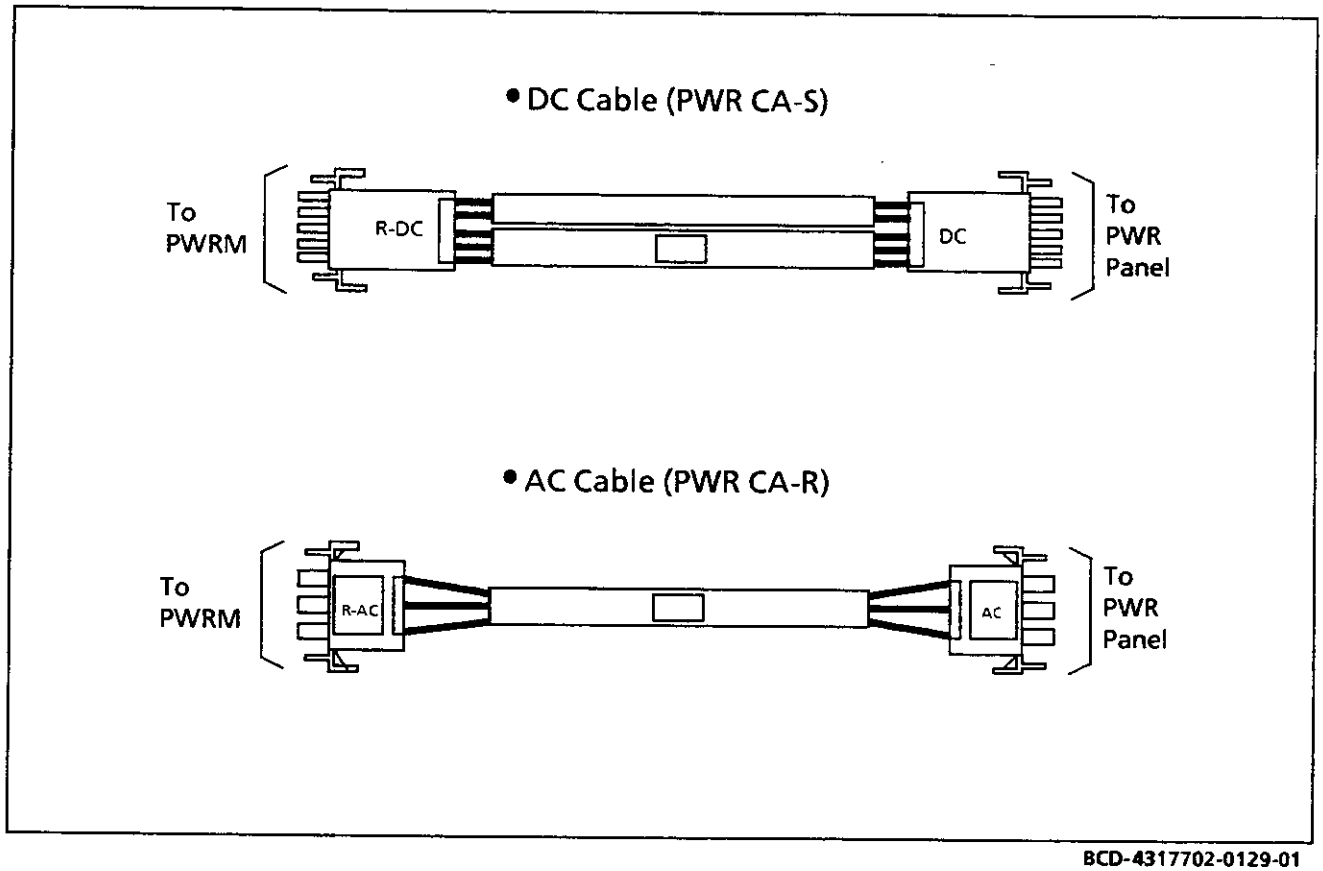

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Figure 003-45 DC Cable, AC Cable

(a) In the case of two (2) PWRMs:

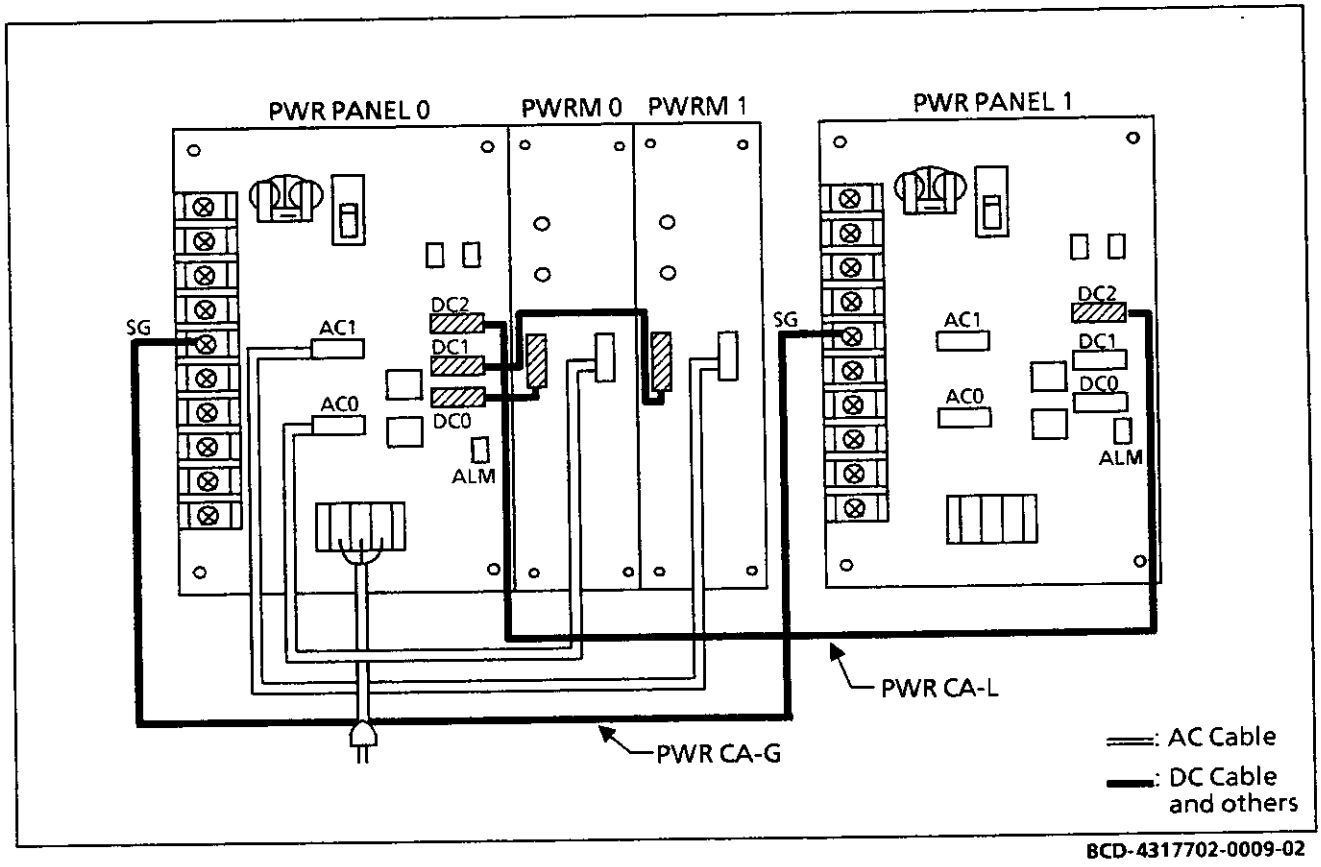


Figure 003-46 Cable Connections on a PWRU (2 PWRMs)

(b) In the case of three (3) PWRMs:

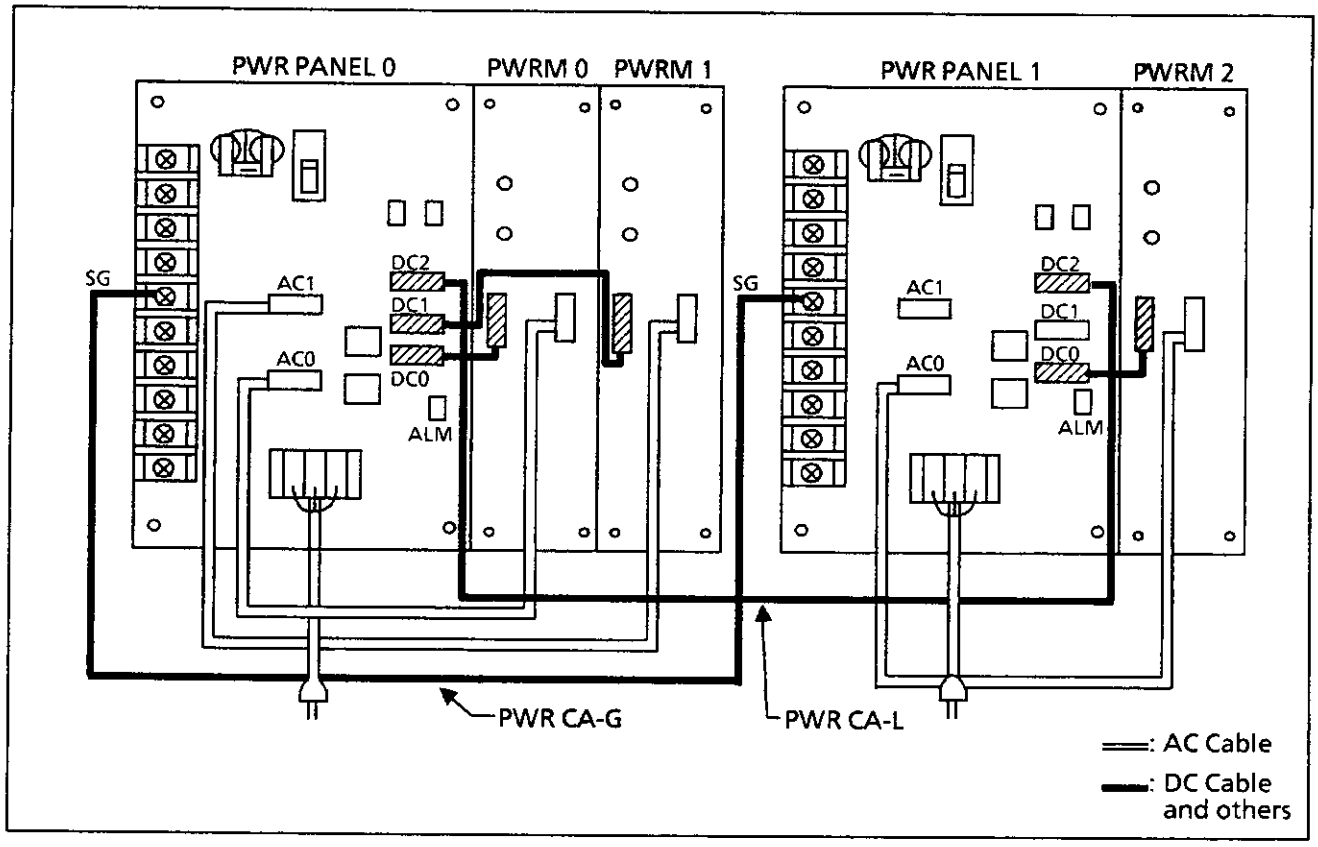
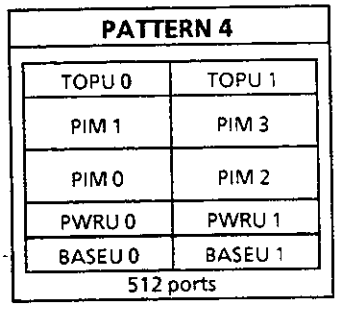


Figure 003-47 Cable Connections on a PWRU (3 PWRMs)



- Pattern 4

1. Attach BASEU0 of the Basic System-G to the floor without removing PWRU0 and PIM0. — Figure 003-48
   - Set BASEU0 over the drilled holes.
   - Attach BASEU0 with anchor bolts.
2. Mount PIM1 with TOPU0 on top of PIM0 and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-49
3. Attach BASEU1 to the floor. — Figure 003-50
   - Set BASEU1 over the drilled holes.
   - Attach BASEU1 with anchor bolts.
4. Mount PWRU1 on top of BASEU1, and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-51
5. Mount PIM2 on top of PWRU1 and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-52
6. Mount PIM3 on the top of PIM2 and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-53
7. Mount TOPU1 on top of PIM3 and secure it with the 10 screws, 10 washers and 10 lock washers which are provided. — Figure 003-54
8. Connect BRACKET (F) to the front side of PIM1 and PIM0, PIM3 and PIM2, PIM2 and PWRU1, PWRU1 and BASEU1, and connect BRACKET (R) to the rear side of PIM0, PIM2, PWRU1. — Figure 003-55, Figure 003-56, Figure 003-57, Figure 003-58
9. Connect the Frame Ground cables (FE CA-A) provided in each PIM to PWRU0, PWRU1, PIM0 and PIM2. — Figure 003-59, Figure 003-60
10. Attach both PWRUs, PIM0 and PIM2 and PIM1 and PIM3 together using the Connecting Bracket provided. — Figure 003-61

11. Cover the LAMP window of TOPU1 with the Lamp Faceplate provided. — Figure 003-62

12. Connect the PWR CA-K cable furnished with the "EXT" connector, located on the front of PWR PANEL0, and PWR PANEL1 to the "PWR0" connector, located on the rear of PIM1 and PIM3, and connect the LED CA, provided with TOPU0, to the "LAMP" connector, located on the rear of PIM0.
Connect the PWR CA-J cable furnished with the "BSC" connector, located on the front of PWR PANEL1, to the "PWR0" connector, located on the rear of PIM2.
The connection of the LED CA provided with TOPU1 is not necessary. — Figure 003-63

13. Connect the PIMs to each other with BUS CA-A and BUS CA-B as shown in Figure 003-64. Unplug the PZ-M159 card from PIM1 and plug the PZ-M159 card in the "BUS 1" connector on PIM3. — Figure 003-64, Figure 003-65

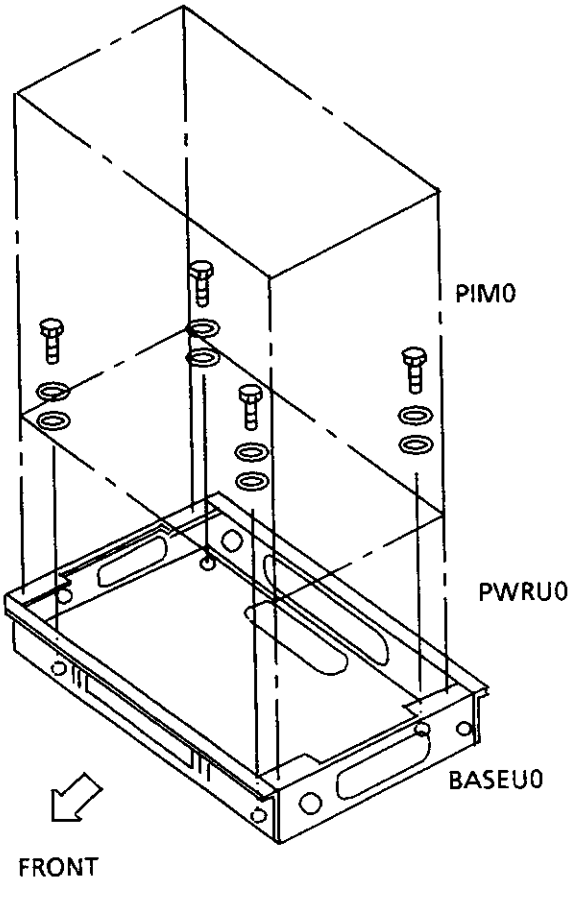
14. If required, mount the PFT Panels at the bottom (front) of PIM1, PIM2 and PIM3 using the 3 screws which are provided, and connect them together in series according to Figure 003-67 using PFT CA-C cables. — Figure 003-66, Figure 003-67

15. If required, mount PWRMs (Power Module) into PWRUs and secure each one using the 3 screws which are provided. — Figure 003-68, Figure 003-69

16. Connect the AC power cables into "AC IN", located on PWR PANEL0 and secure them by tightening the screw clamps.
White (Neutral) to N, Black (Line) to L, Green (Ground) to G.
In case of a three or four-PWRM configuration, also connect a power cable into "AC IN", located on PWR PANEL1. — Figure 003-70

    Note: *The cable connection should be provided with strain relief in order to maintain the integrity of the connection.*

17. Connect the PWRMs, if required, to their associated PWR Panels, via AC and DC connector cables provided with each PWRM. — Figure 003-71, Figure 003-72, Figure 003-73, Figure 003-74



Basic System-G

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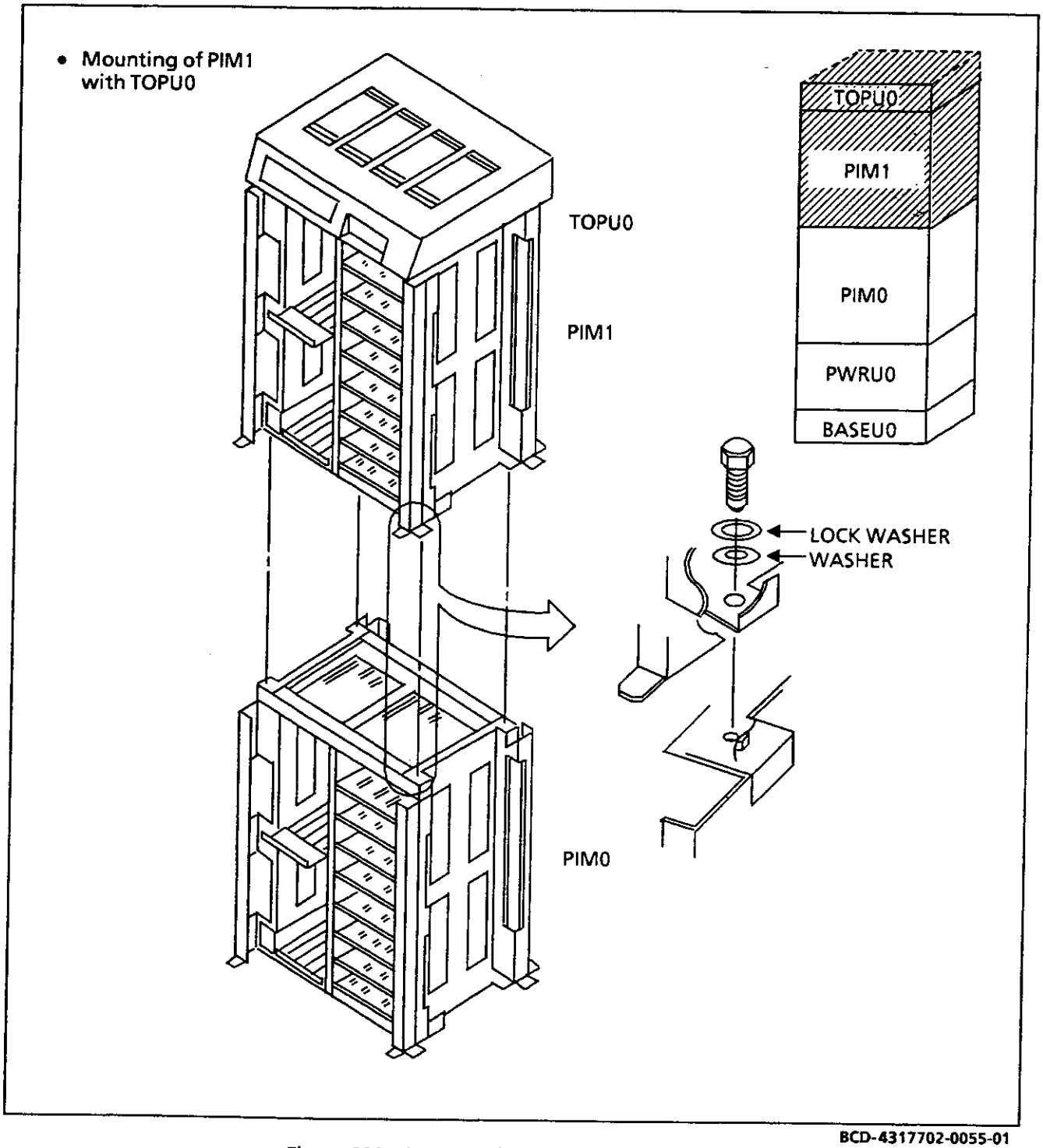
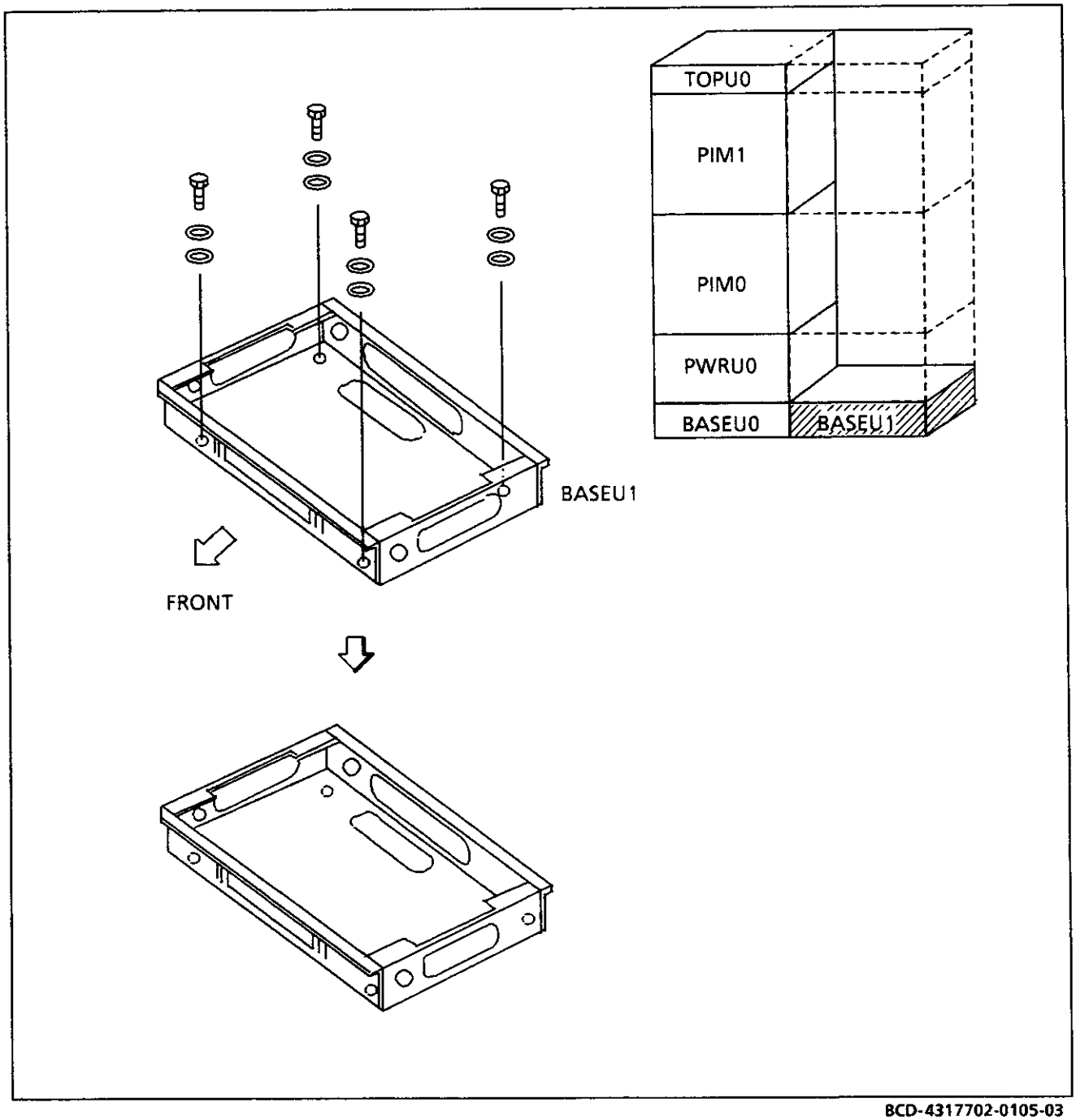
Figure 003-48 Attaching the BASEU of the Basic System - G



BCD-4317702-0055-01

Figure 003-49 Mounting a PIM1 with a TOPU0



BCD-4317702-0105-03

Figure 003-50 Attaching BASEU1

- Mount PWRU1 on the BASEU1

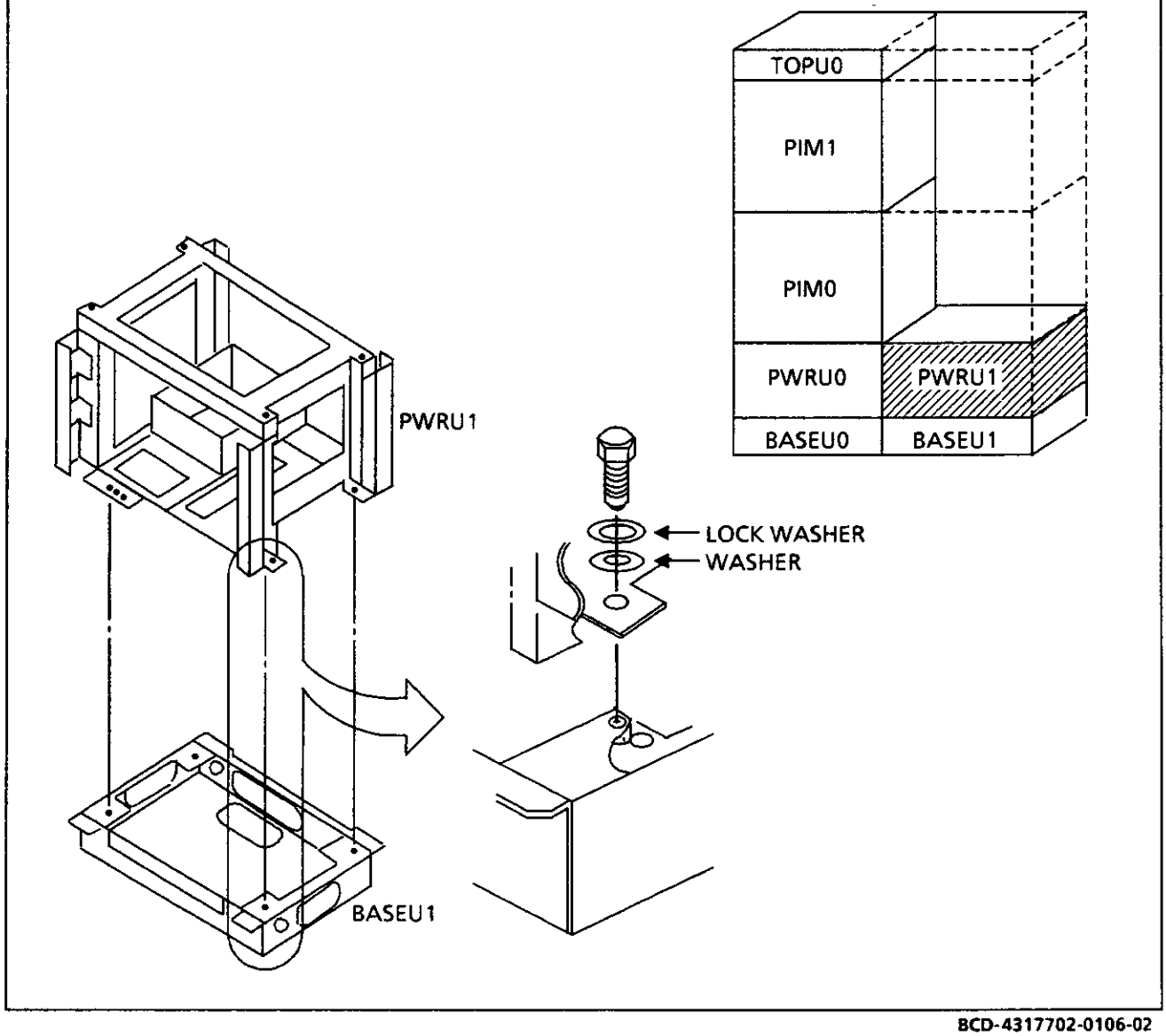


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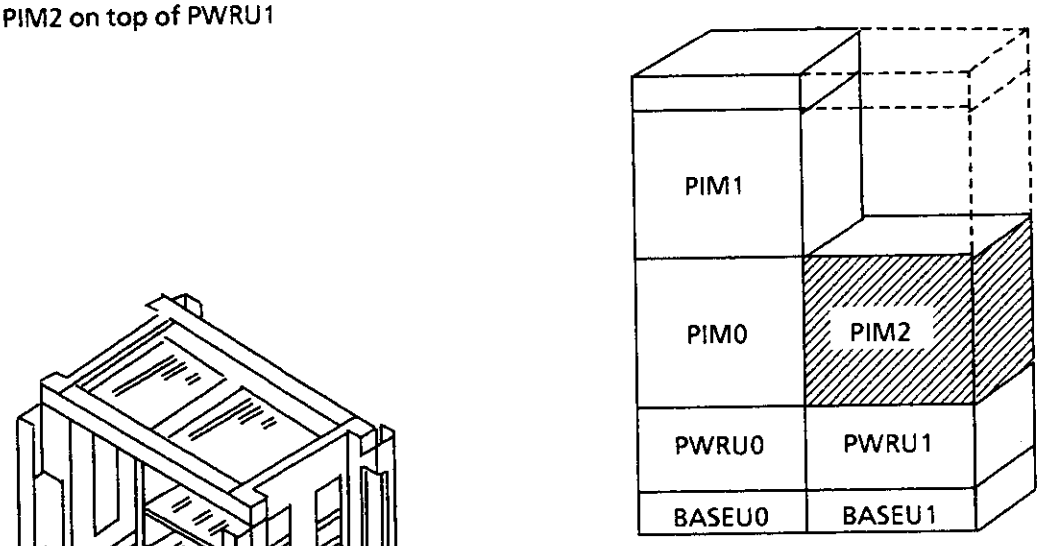
Figure 003-51 Mounting the PWRU1

- Mount PIM2 on top of PWRU1



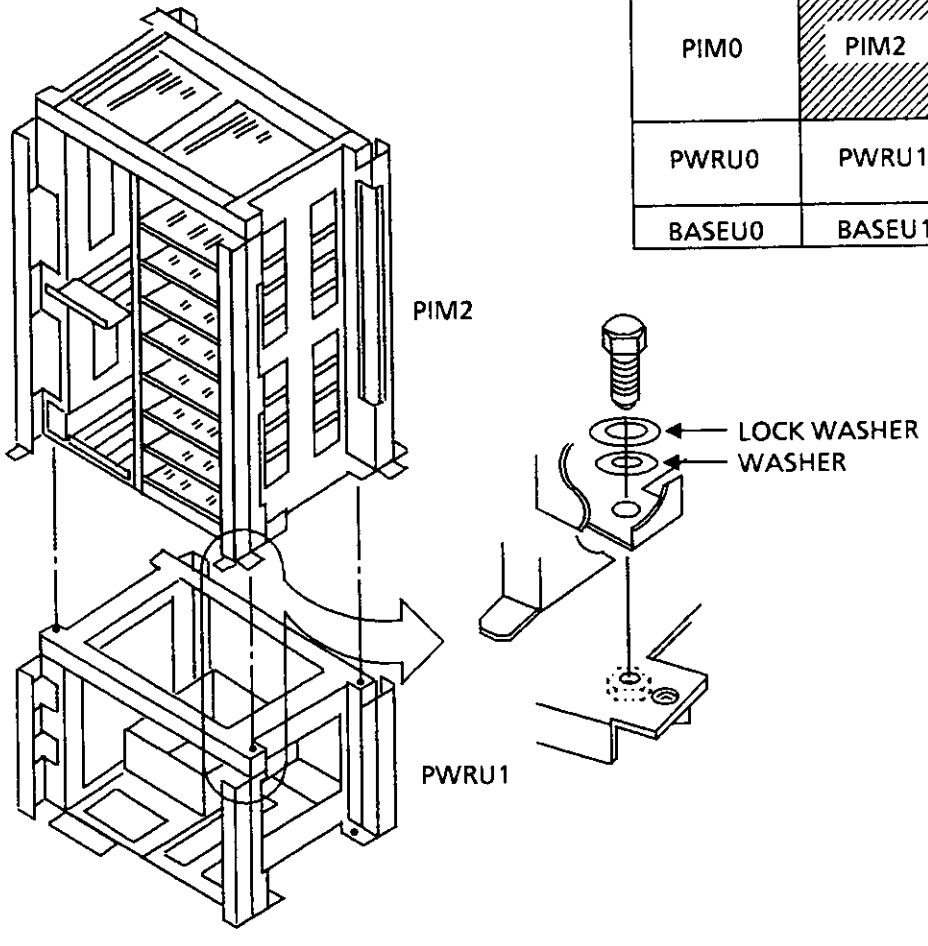


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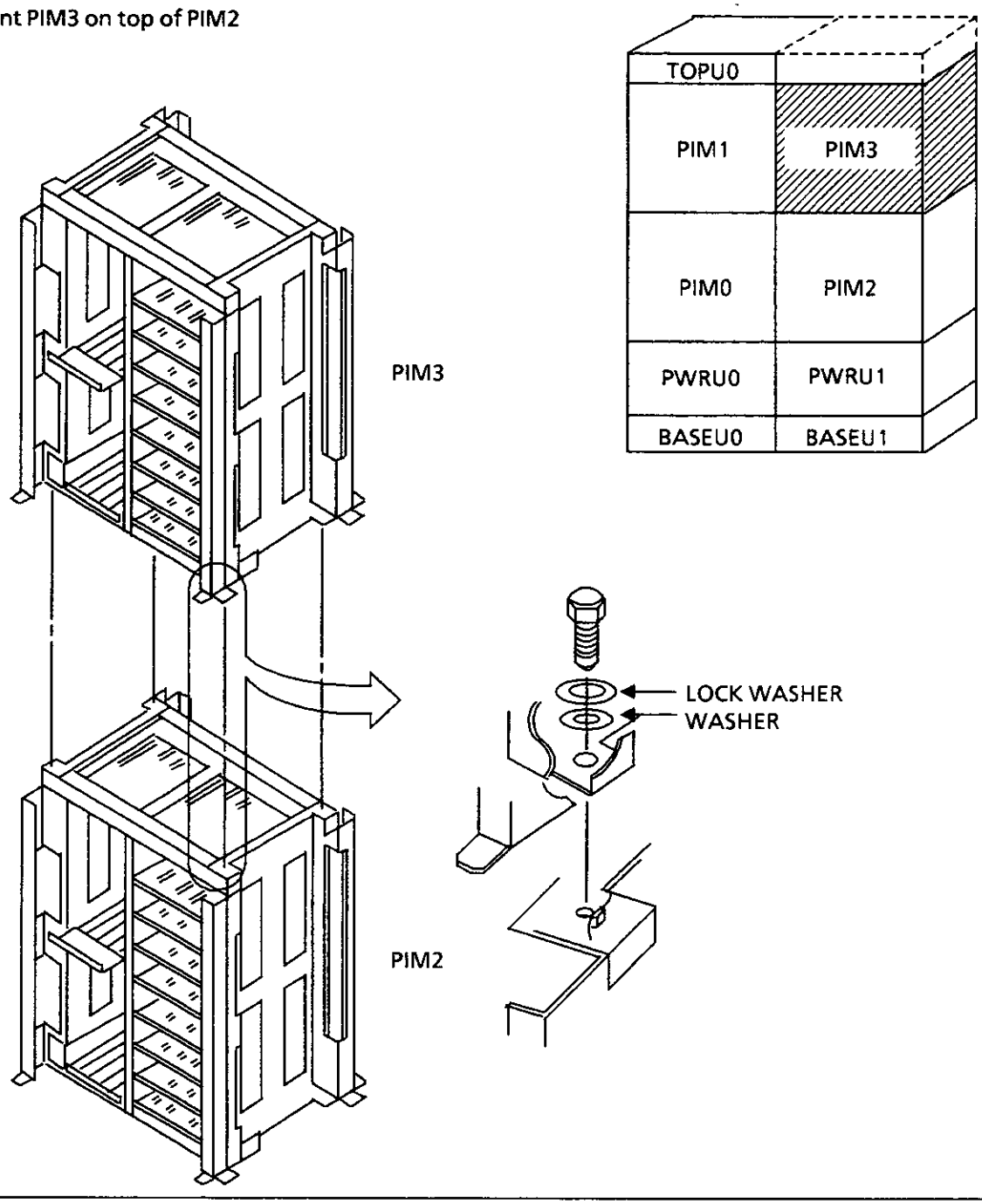
Figure 003-52 Mounting PIM2

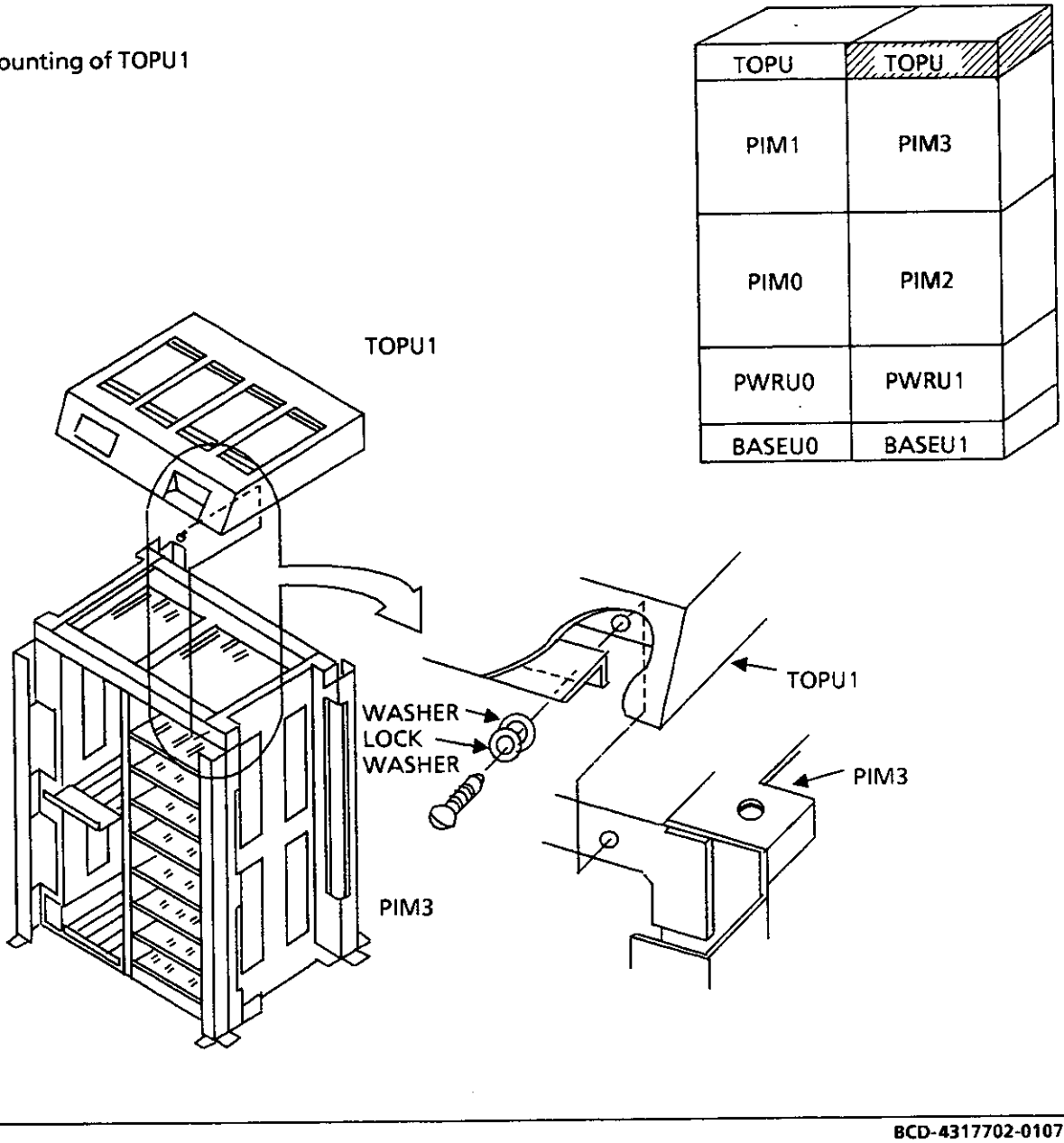
- Mount PIM3 on top of PIM2



BCD-4317702-0027-02

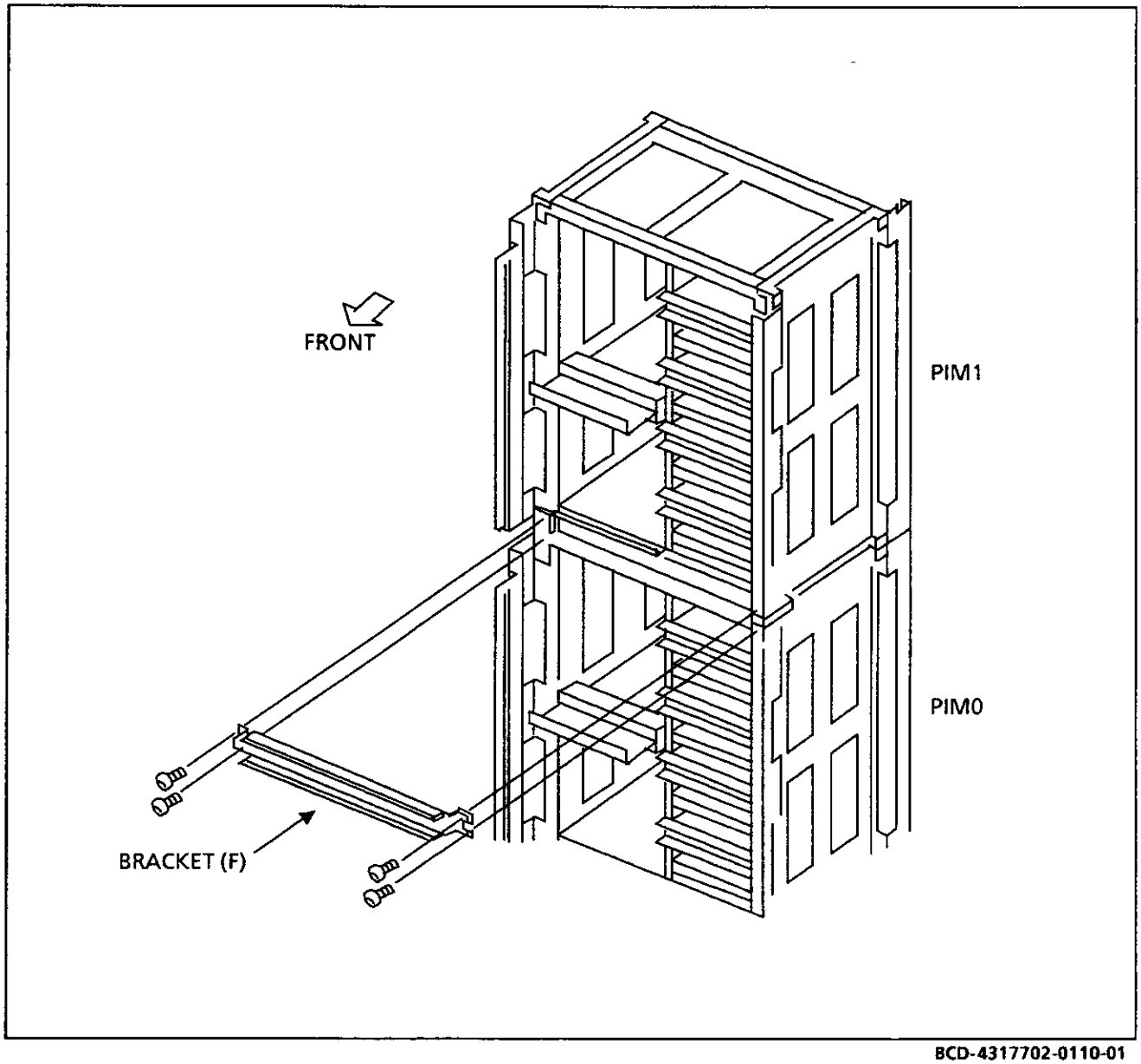
Figure 003-53 Mounting PIM3

- Mounting of TOPU1



BCD-4317702-0107-02

Figure 003-54 Mounting TOPU1



BCD-4317702-0110-01

Figure 003-55 Connecting the Bracket for the Front Cover

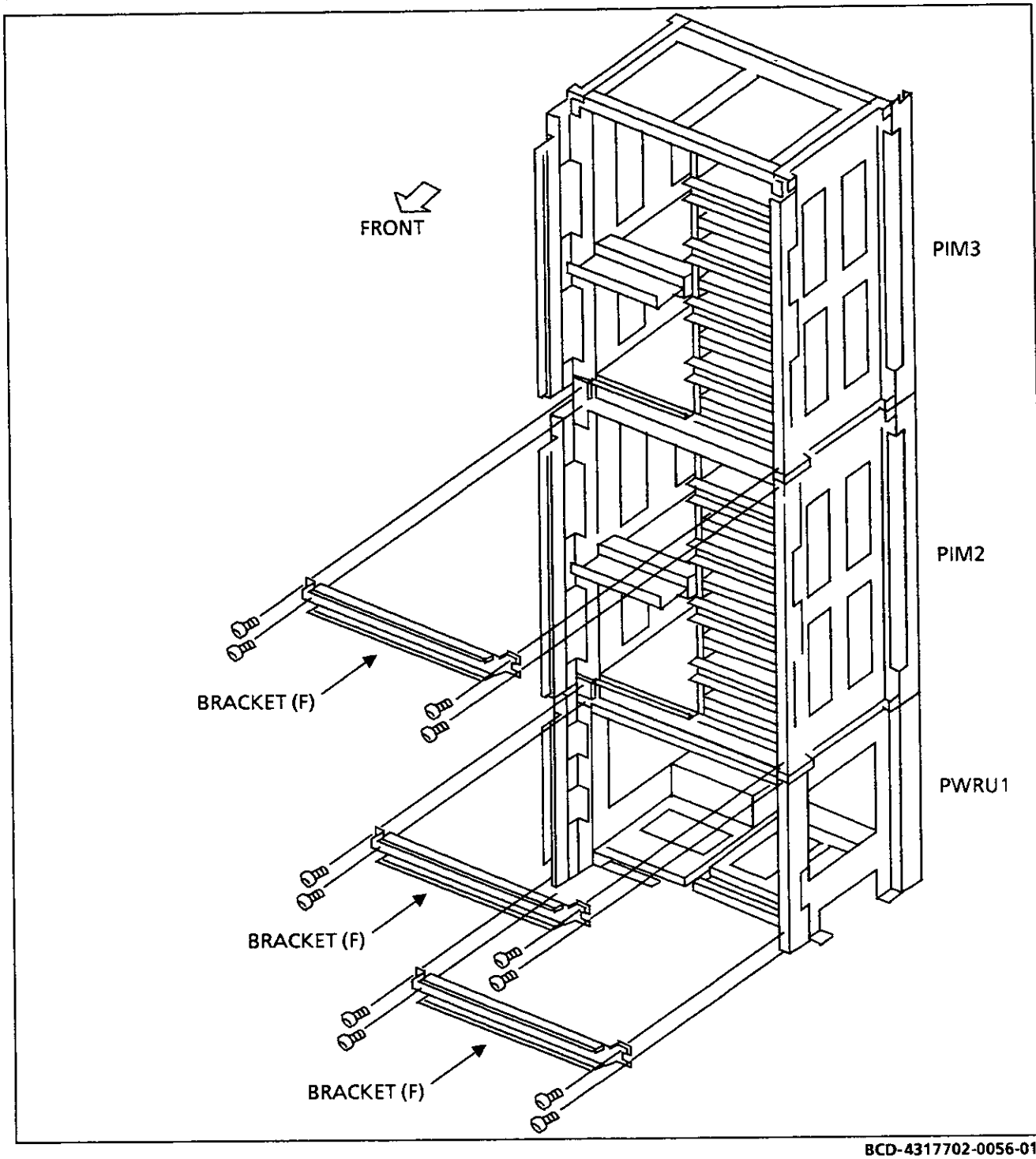
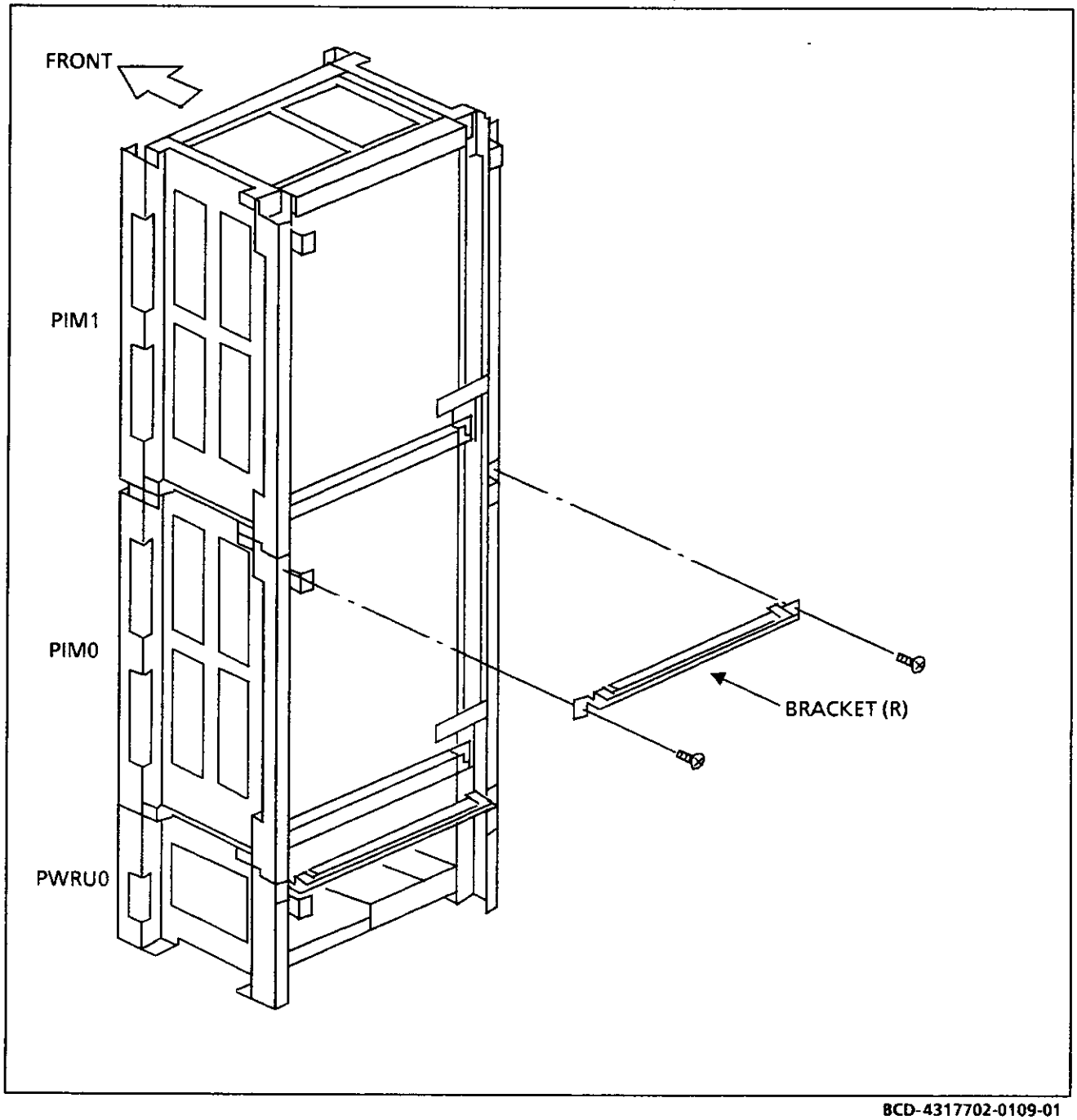


Figure 003-56 Connecting the Brackets for the Front Covers



BCD-4317702-0109-01

Figure 003-57 Connecting the Bracket for the Rear Cover

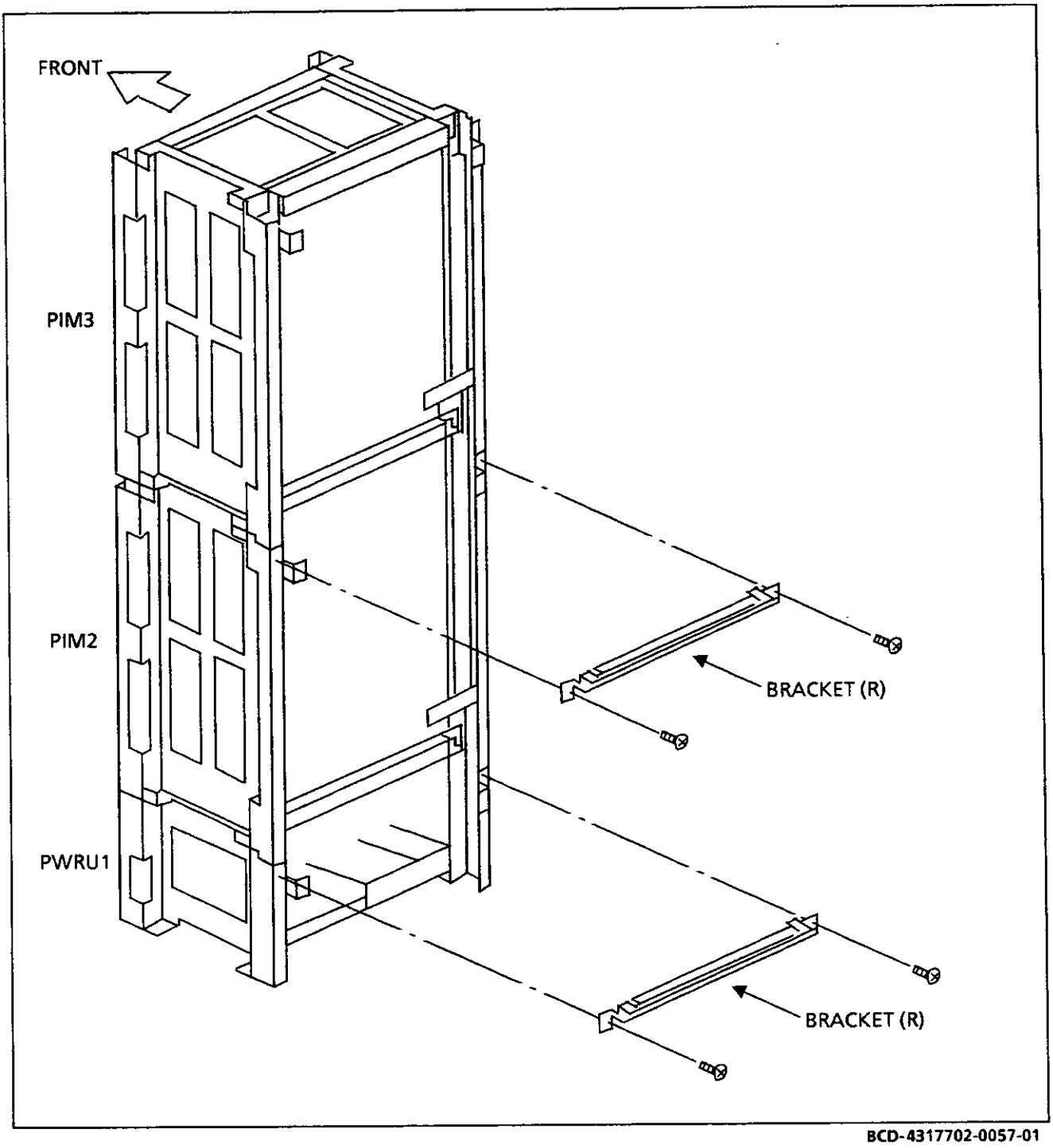
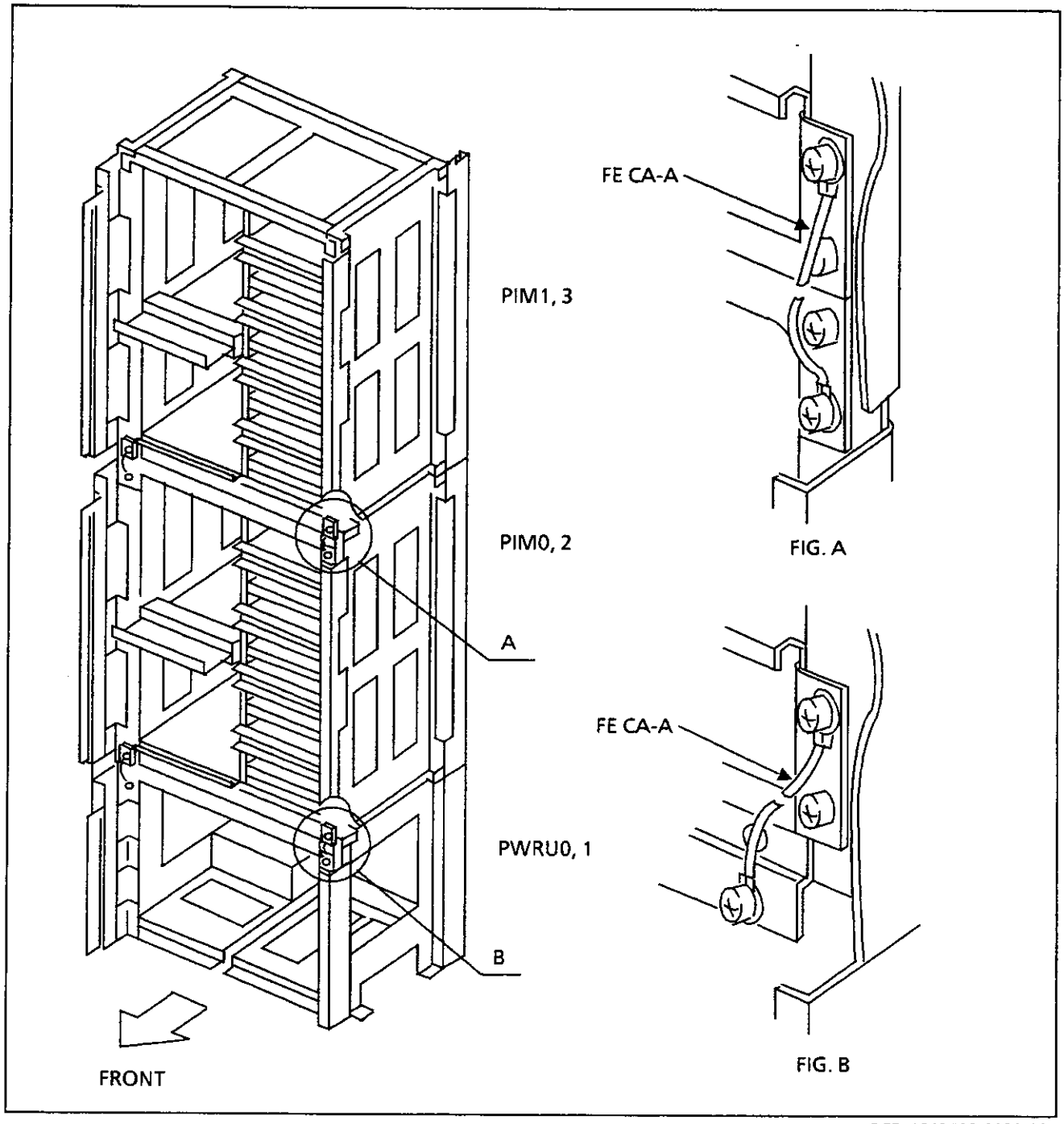


Figure 003-58 Connecting the Brackets for the Rear Covers



BCD-4317702-0039-01

Figure 003-59 Connecting the Frame Ground Cables (Front Side)

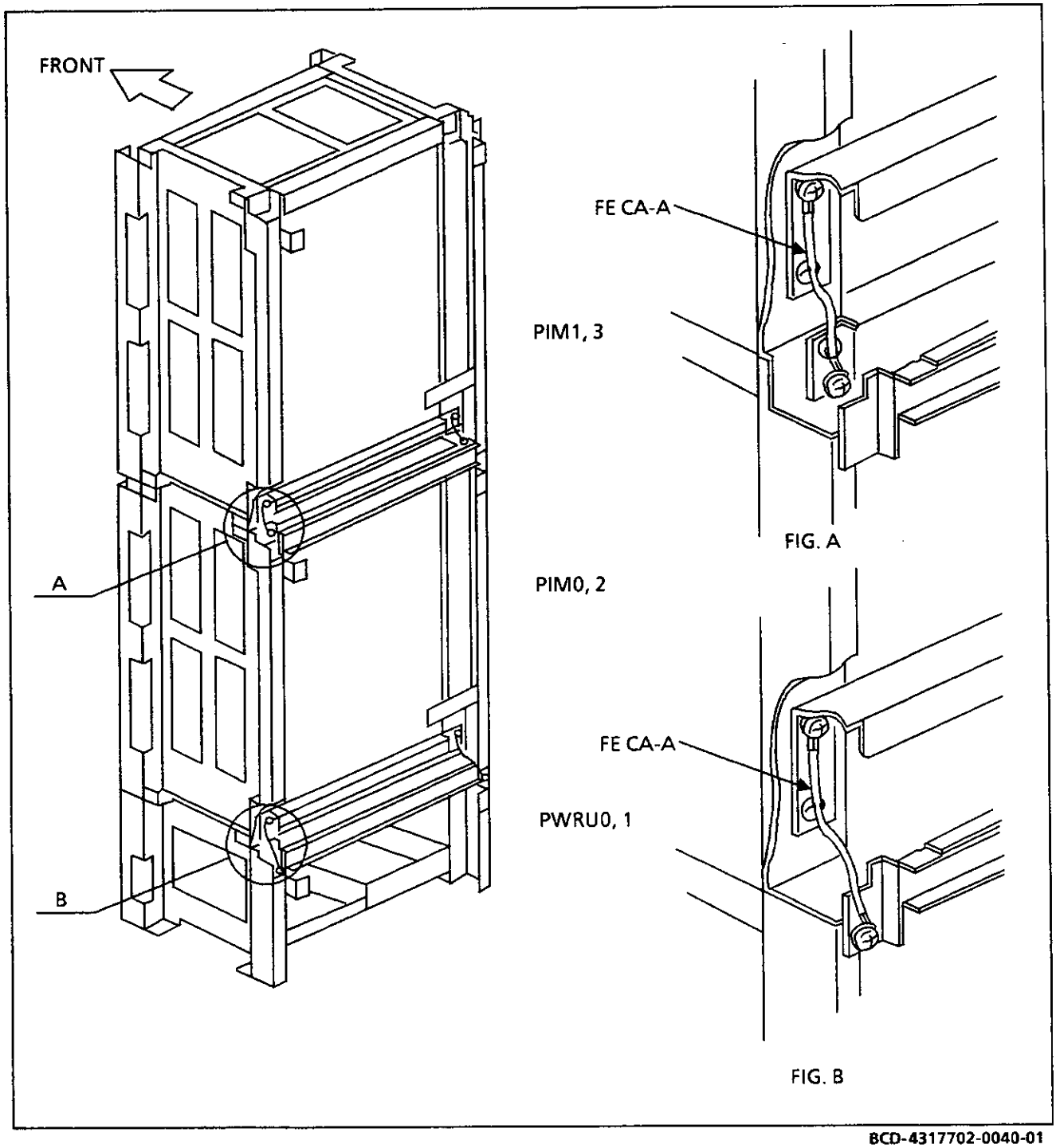
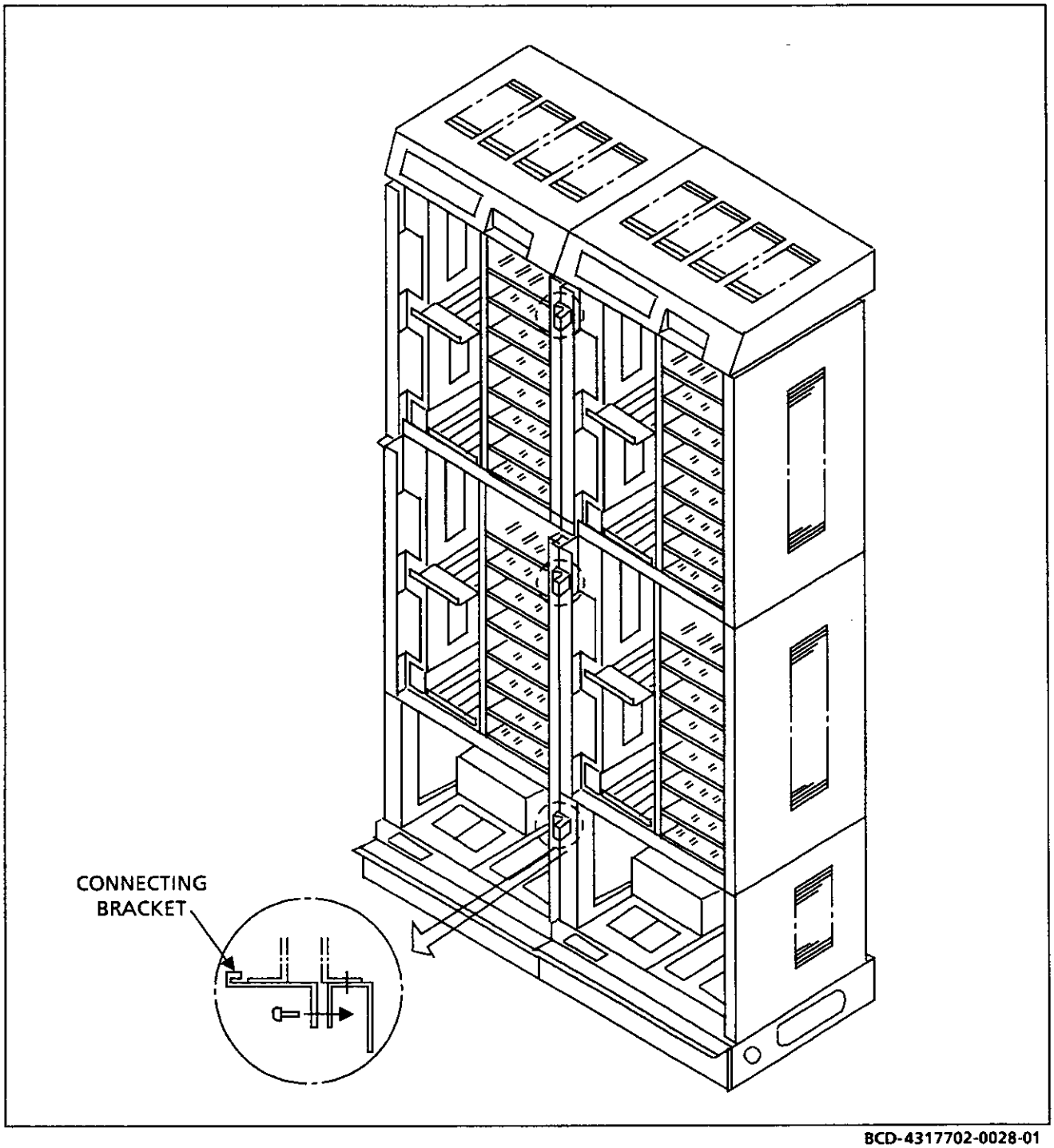
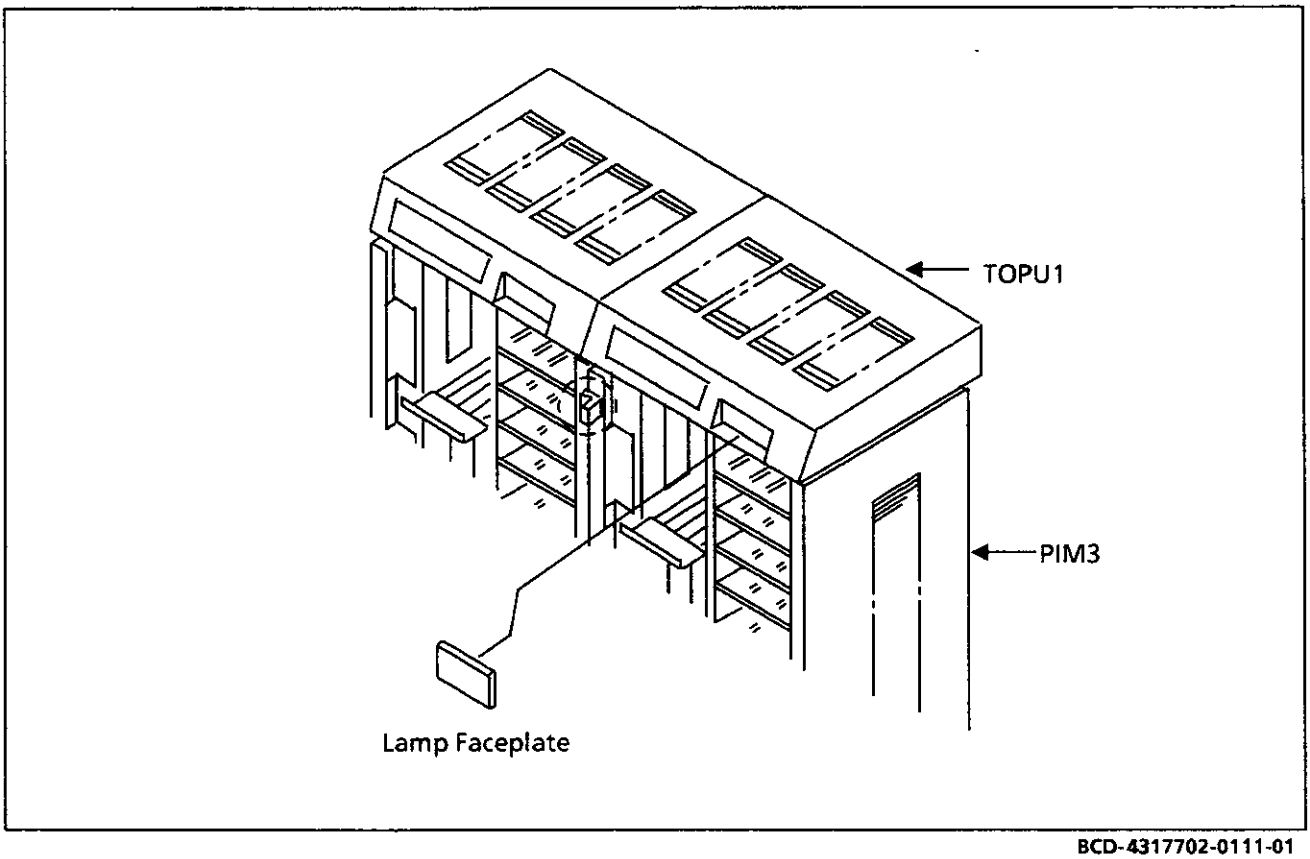


Figure 003-60 Connecting the Frame Ground Cables (Rear Side)



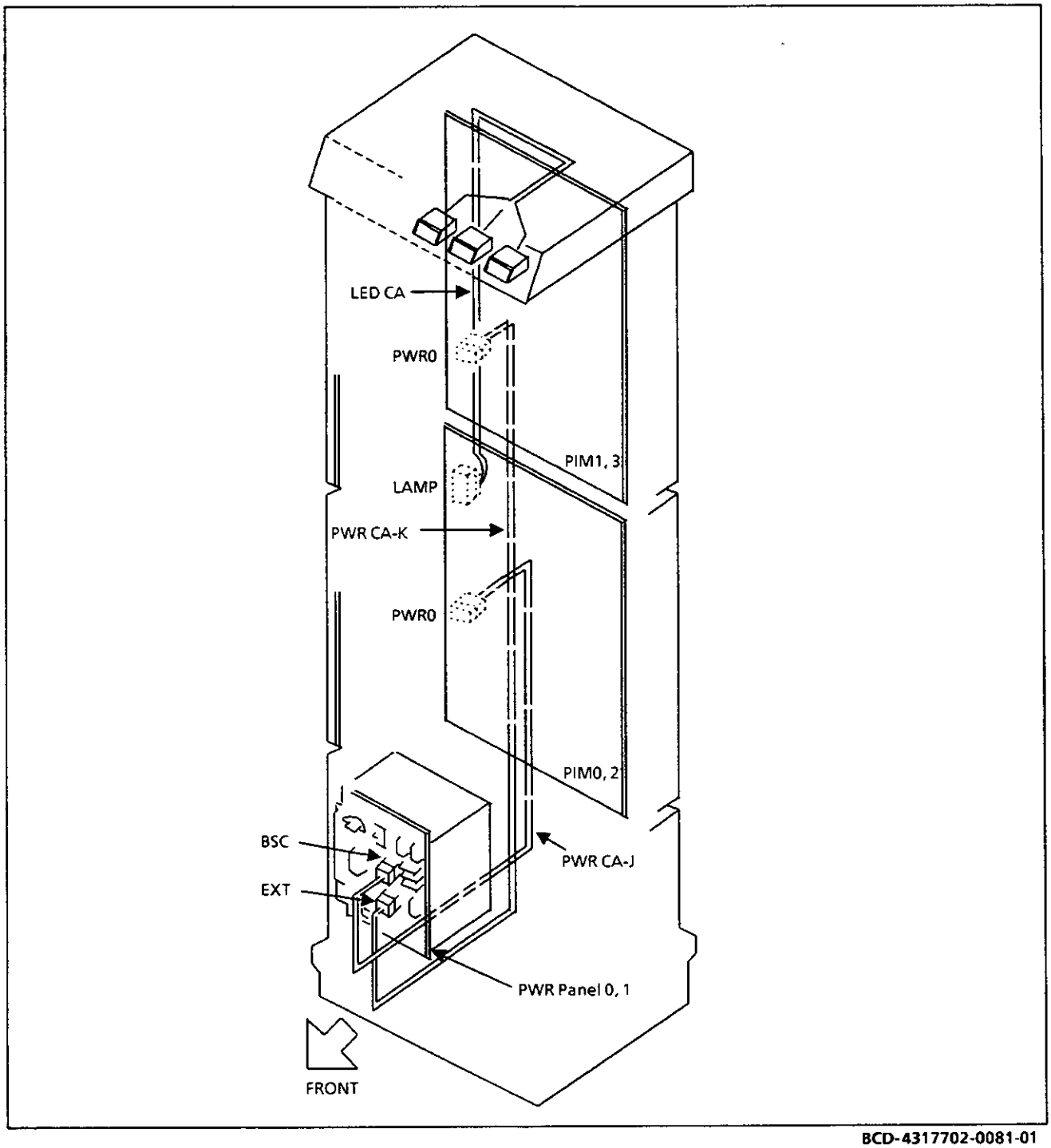
BCD-4317702-0028-01

Figure 003-61 Attaching Modules and Units



BCD-4317702-0111-01

Figure 003-62 Installing the Lamp Faceplate



BCD-4317702-0081-01

Figure 003-63 Cable Connections between PIMs 0, 1, 2, 3 and PWR Panels 0, 1

PATTERN 4

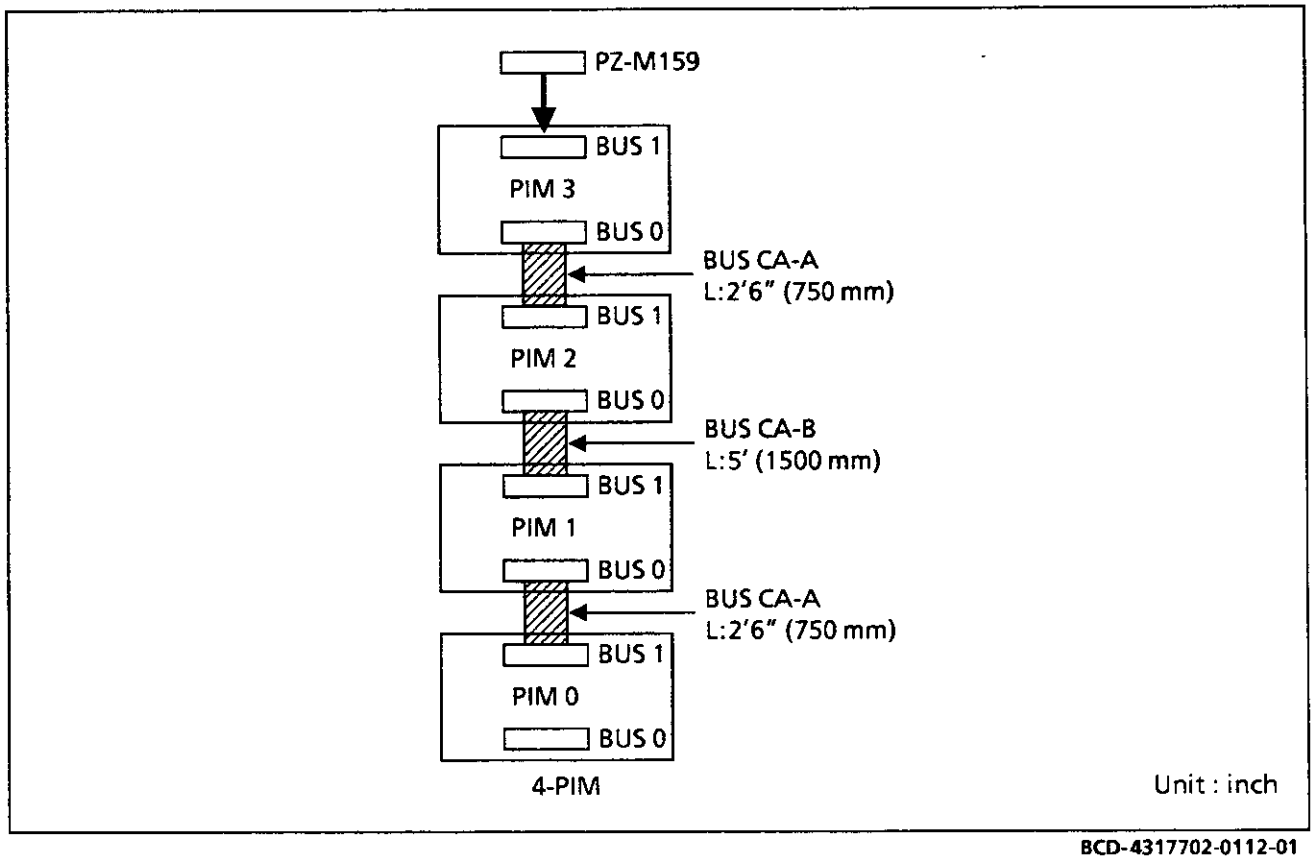


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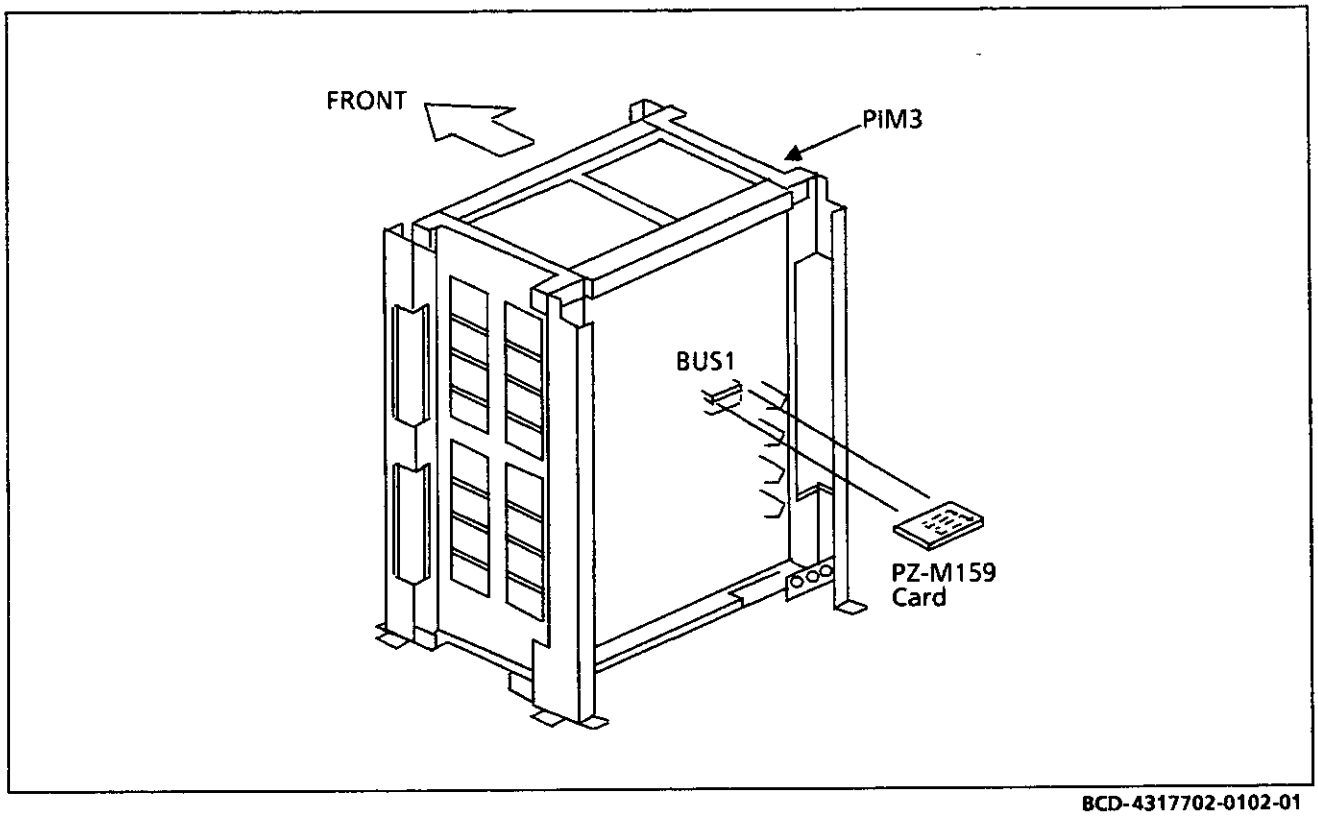
Figure 003-64 BUS Cable Connections for Pattern 4



BCD-4317702-0102-01

Figure 003-65 Mounting a PZ-M159 Card in PIM3

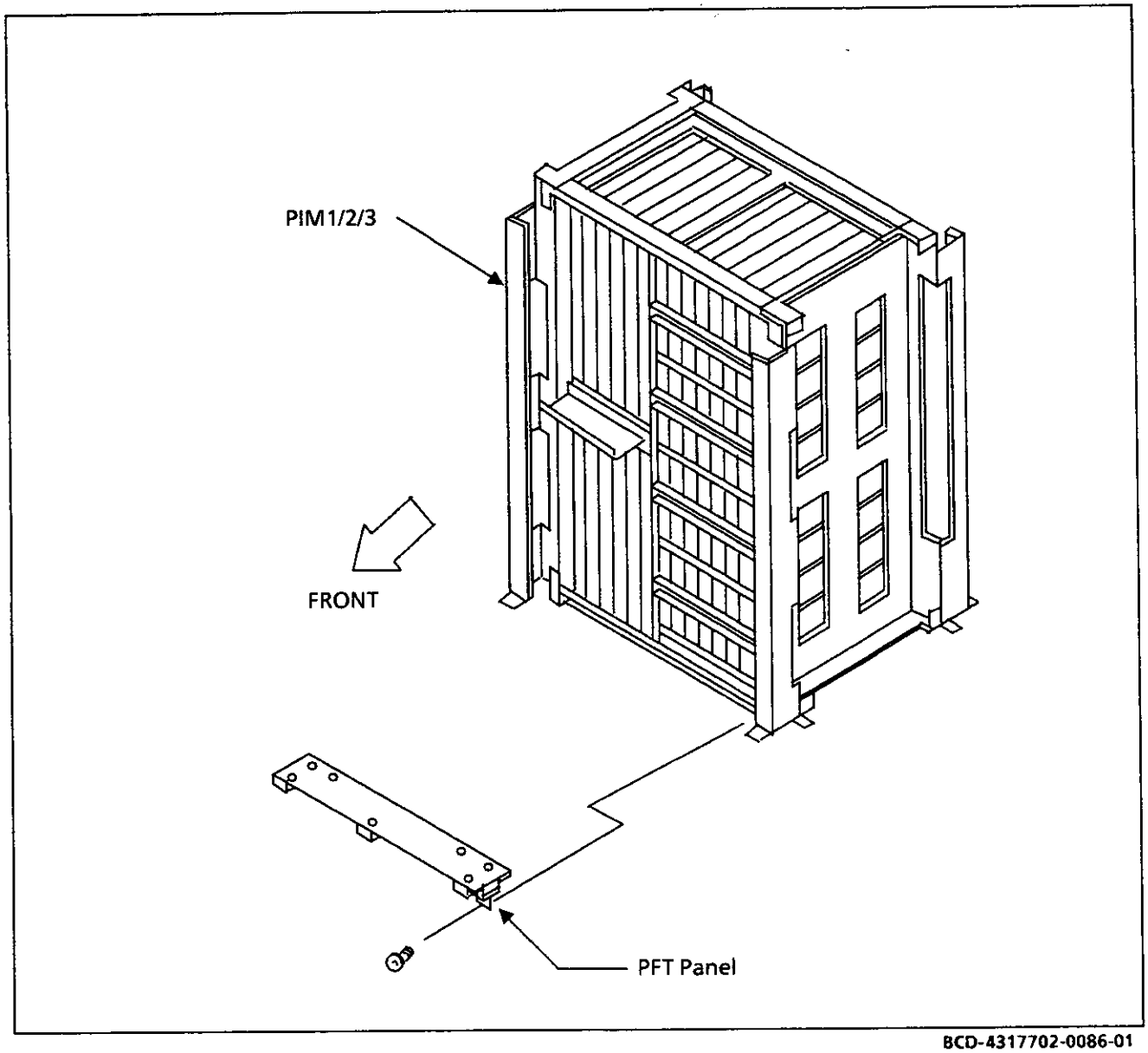


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Figure 003-66 Mounting a PFT Panel on PIM1/2/3

PATTERN 4

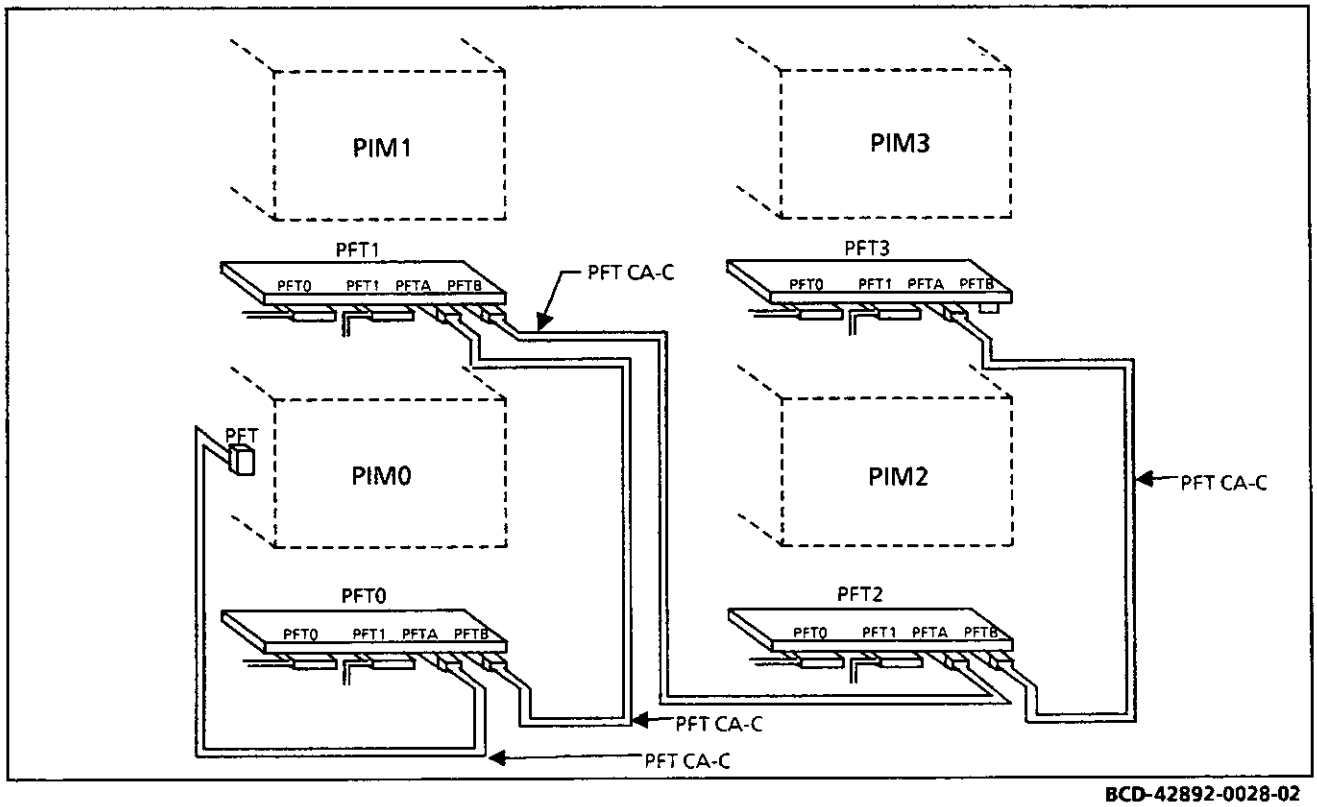

Figure 003-67 PFT Connections for Pattern 4 (Front View)

Note: *For the cable connections to connectors "PFT0, PFT1", refer to NAP- 200-006 and NAP-200-007.*

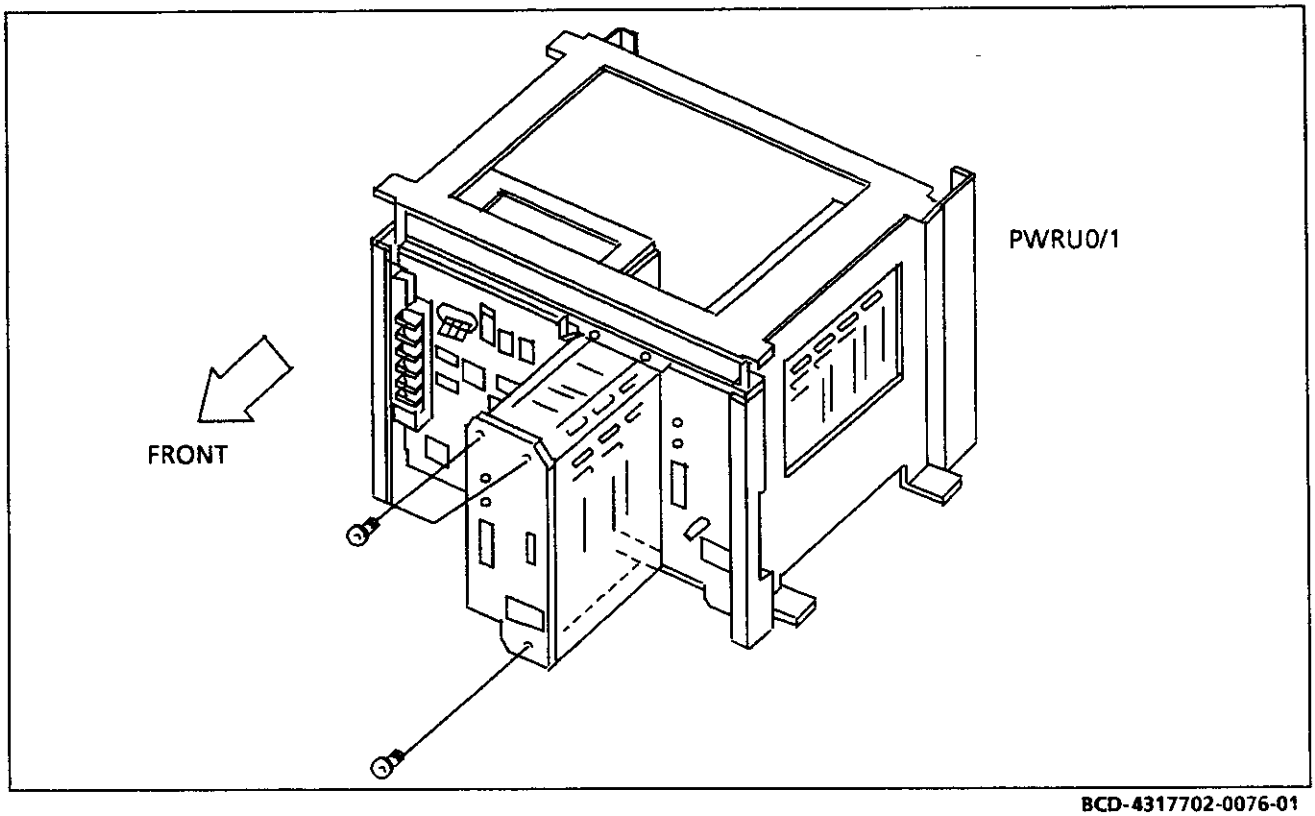

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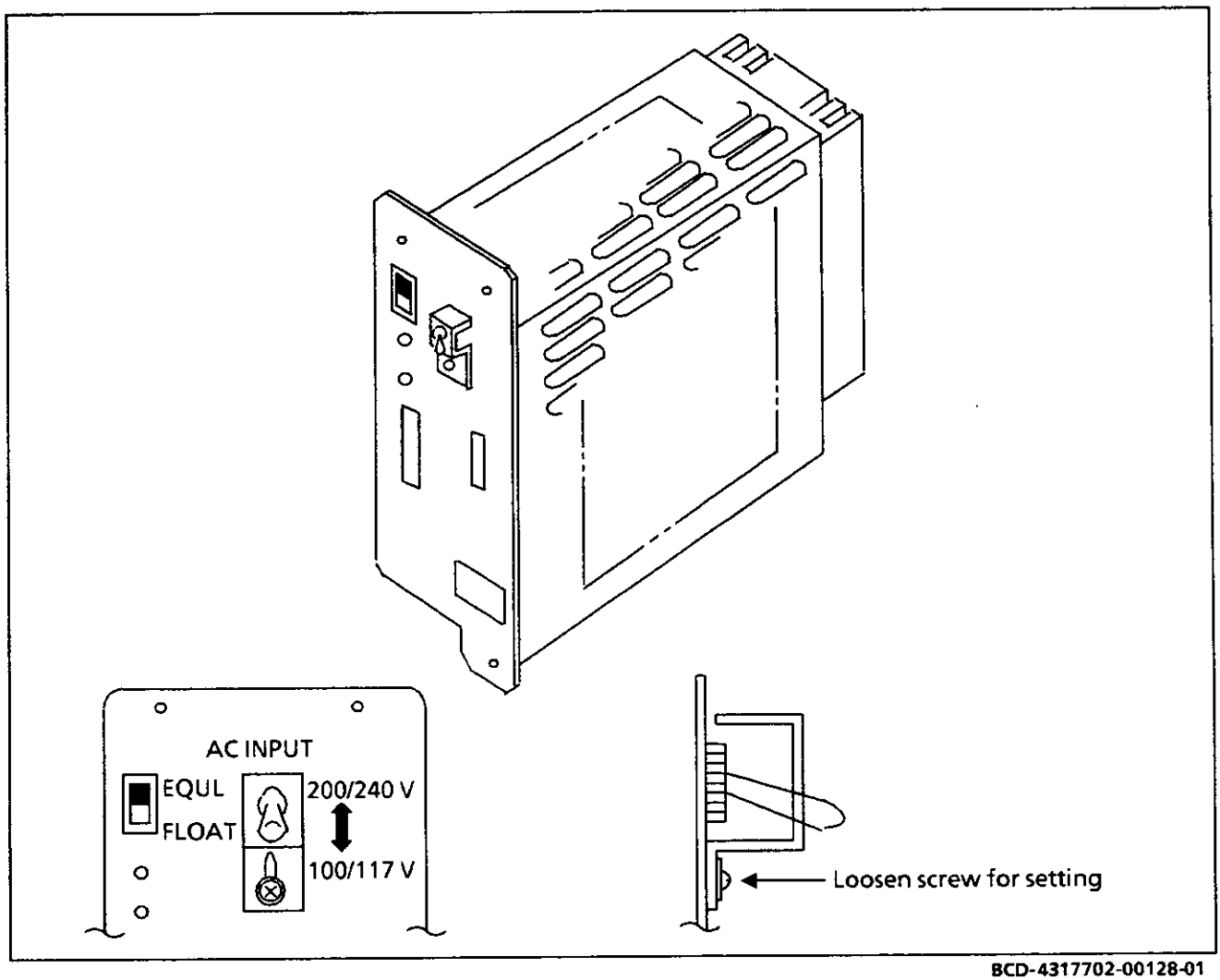
Figure 003-68 Mounting a PWRM in PWRU0/1

When using a PWRM-B, the following installation is required:

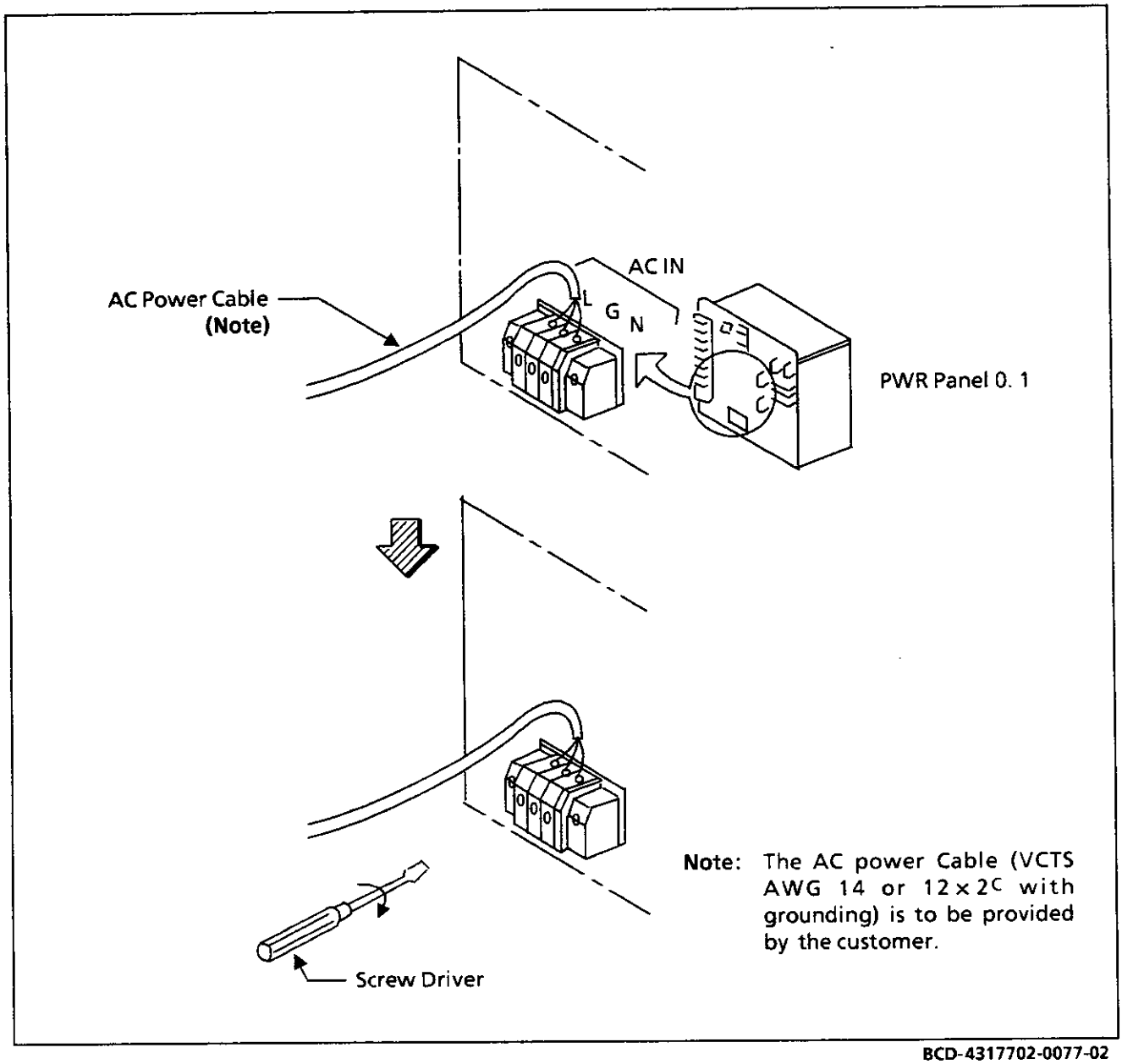
- Set the "AC INPUT" switch to the downward position for 100 – 117 volts A.C.
- Set the "EQUL/FLOAT" switch according to the type of battery connected.
  - No Battery/Sealed Battery···"FLOAT"
  - Lead-Acid Battery··· "EQUL" (Equalizing Charge) "FLOAT" (Floating Charge)

When changing the EQUL/FLOAT mode, with multiple PWRMs, the changes should be done as simultaneously as is possible.



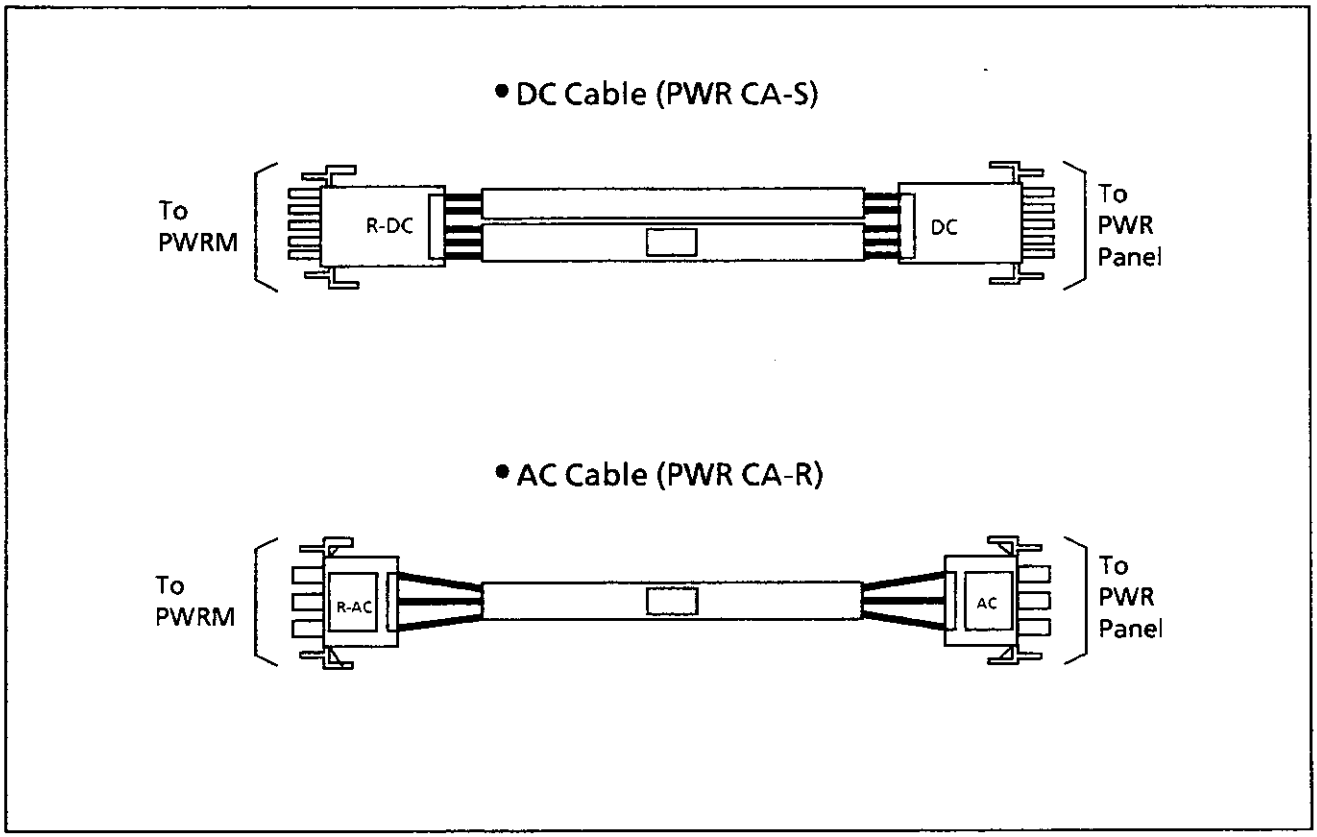
BCD-4317702-00128-01

Figure 003-69 Outer View of a PWRM-B



BCD-4317702-0077-02

Figure 003-70 Connecting the AC Power Cable



BCD-4317702-0129-01

Figure 003-71 DC Cable, AC Cable

(a) In the case of two (2) PWRMs:

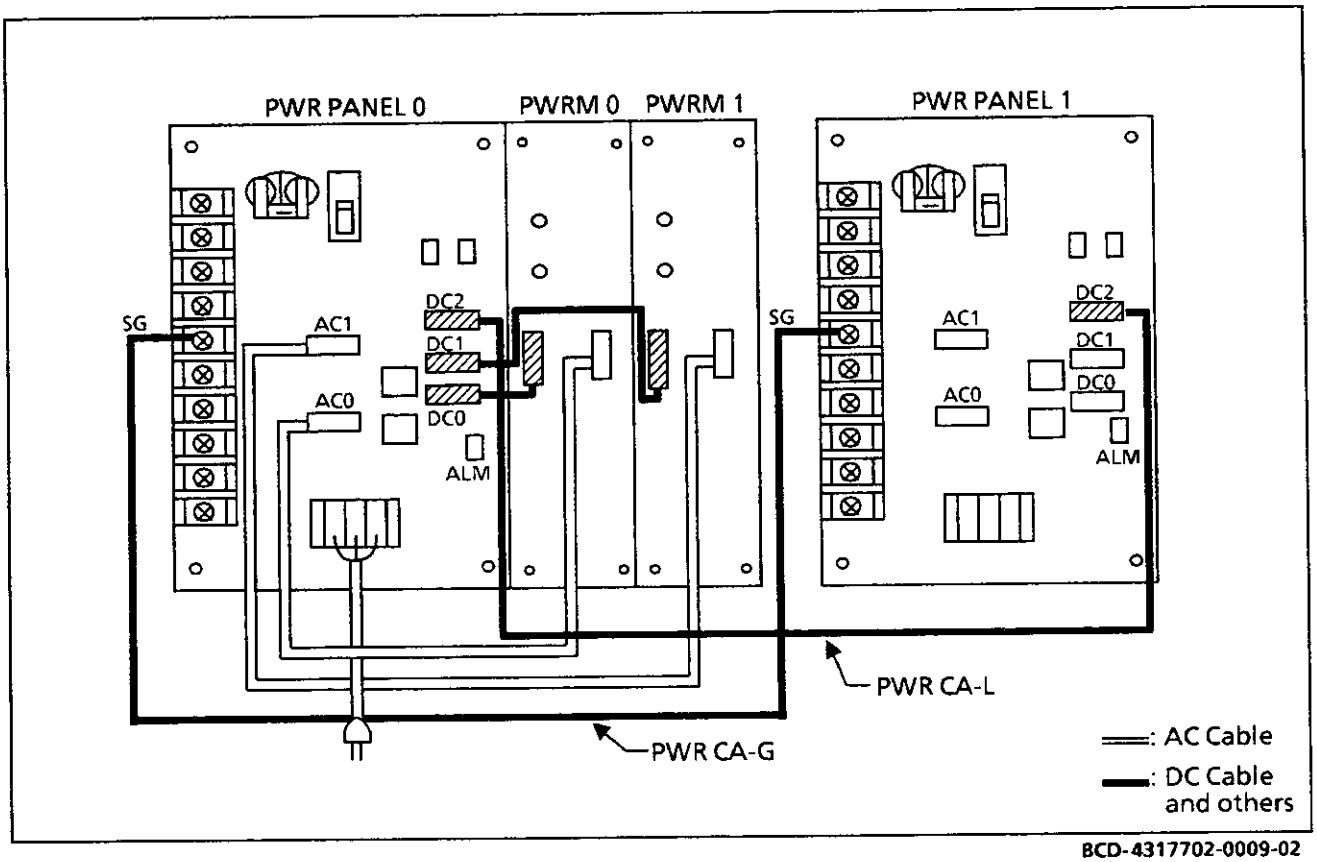


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Figure 003-72 Cable Connections on a PWRU (2 PWRMs)

(b) In the case of three (3) PWRMs:

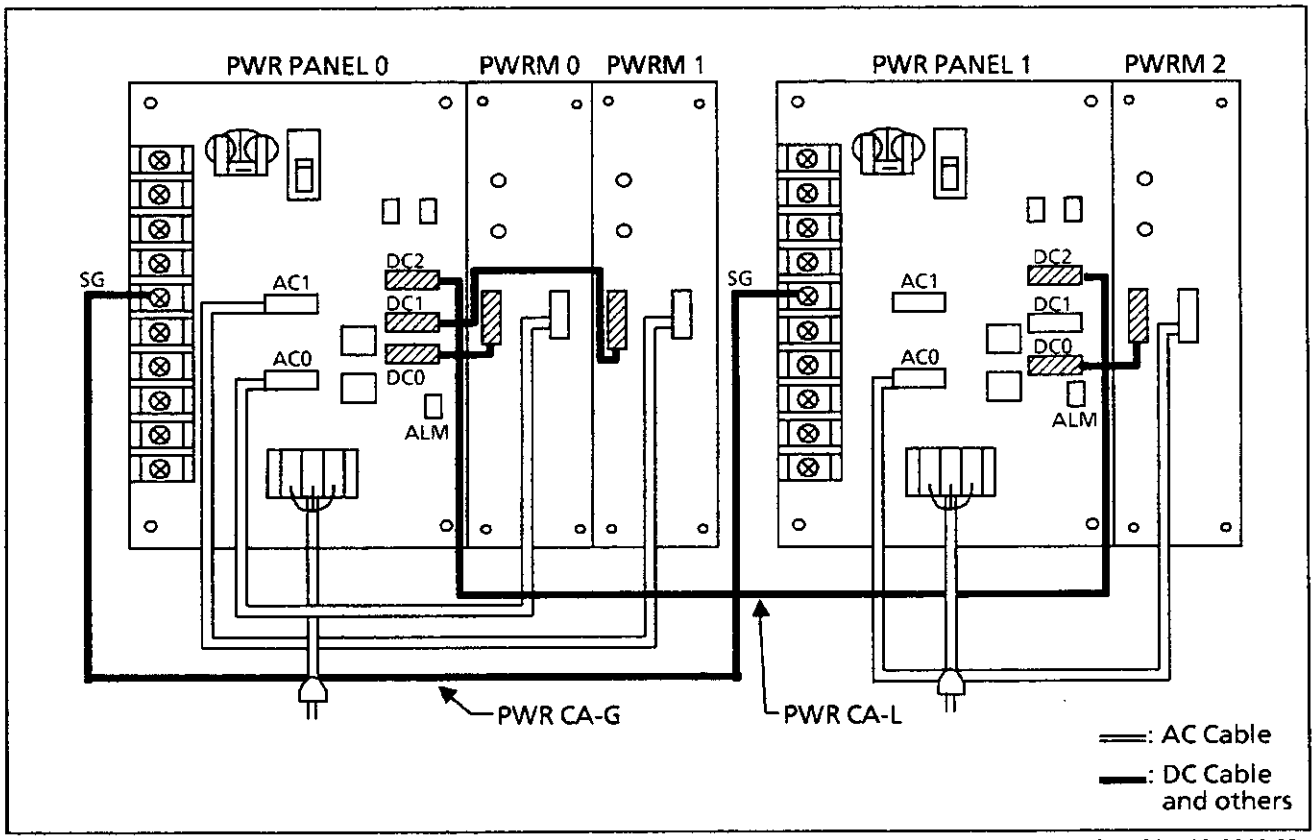

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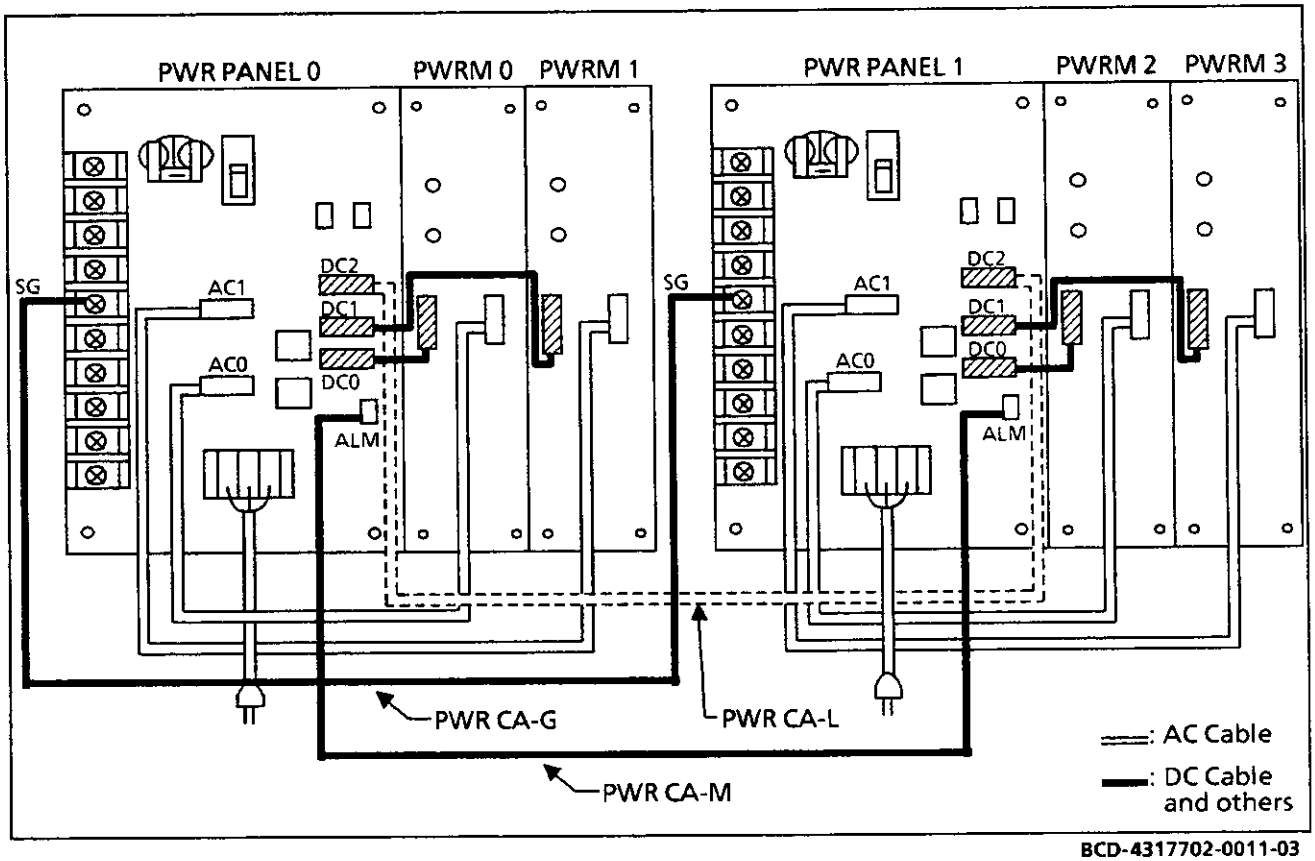
Figure 003-73 Cable Connections on a PWRU (3 PWRMs)

(c) In the case of four (4) PWRMs:



BCD-4317702-0011-03

Figure 003-74 Cable Connections on a PWRU (4 PWRMs)

WARNING:	*In the case of 4 PWRMs, PWR CA-L, for parallel connection of PWRMs (DC2-DC2), should not be used.*

PATTERN 5

TOPU 0	TOPU 1
PIM 0	PIM 1
PWRU 0	PWRU 1
BASEU 0	BASEU 1

256 ports

- Pattern 5

1. Attach BASEU0 of the Basic System-E/F to the floor without removing the PWRU0, PIM0 and TOPU0. — Figure 003-75
   - Set BASEU0 over the drilled holes.
   - Attach BASEU0 with anchor bolts.
2. Attach BASEU1 to the floor. — Figure 003-76
   - Set BASEU1 over the drilled holes.
   - Attach BASEU1 with anchor bolts.
3. Mount PWRU1 on top of BASEU1, and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-77
4. Mount PIM1 on top of PWRU1 and secure it with the 4 screws, 4 washers and 4 lock washers which are provided. — Figure 003-78
5. Mount TOPU1 on top of PIM1 and secure it with the 10 screws, 10 washers and 10 lock washers which are provided. — Figure 003-79
6. Connect BRACKET (F) to the front side of PIM1 and PWRU1, PWRU1 and BASEU1, and connect BRACKET (R) to the rear side of PWRU1. — Figure 003-80, Figure 003-81
7. Connect the Frame Ground cables (FE CA-A), provided in PIM1, to PWRU1. — Figure 003-82, Figure 003-83
8. Attach both PWRUs, PIM0 and PIM1 together using the Connecting Bracket provided. — Figure 003-84
9. Cover the Lamp window of TOPU1 with the Lamp Faceplate. — Figure 003-85
10. Connect the PWR CA-J cable furnished with the "BSC" connector, located on the front of PWR PANEL 1, to the "PWR0" connector, located on the rear of PIM1. — Figure 003-86
    The connection of the LED CA, provided with TOPU1, is not necessary.

11. Connect the PIMs to each other using BUS CA-B as shown in Figure 003-87. Plug the PZ-M159 card in the "BUS 1" connector on PIM1. — Figure 003-87, Figure 003-88

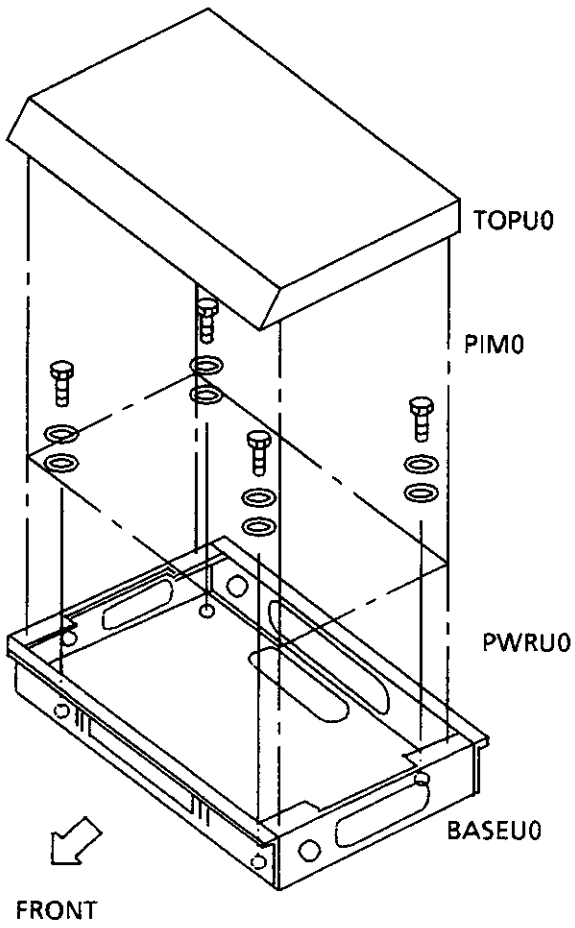
12. If required, mount the PFT Panels at the bottom (front) of each PIM1 using the 3 screws which are provided, and connect them together in series according to Figure 003-90, using PFT CA-C cables. — Figure 003-89, Figure 003-90

13. If required, mount PWRMs (Power Modules) into PWRUs and secure each one using the 3 screws which are provided. — Figure 003-91, Figure 003-92

14. Connect the AC power cables into "AC IN", located on PWR PANEL0, and secure them by tightening the screw clamps. White (Neutral) to N, Black (Line) to L, Green (Ground) to G. — Figure 003-93

    Note: *The cable connection should be provided with strain relief in order to maintain the integrity of the connection.*

15. Connect the PWRMs, if required, to their associated PWR Panels, via AC and DC connector cables provided with each PWRM. — Figure 003-94, Figure 003-95



Basic System-E/F

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Figure 003-75 Attaching the BASEU of the Basic System - E/F

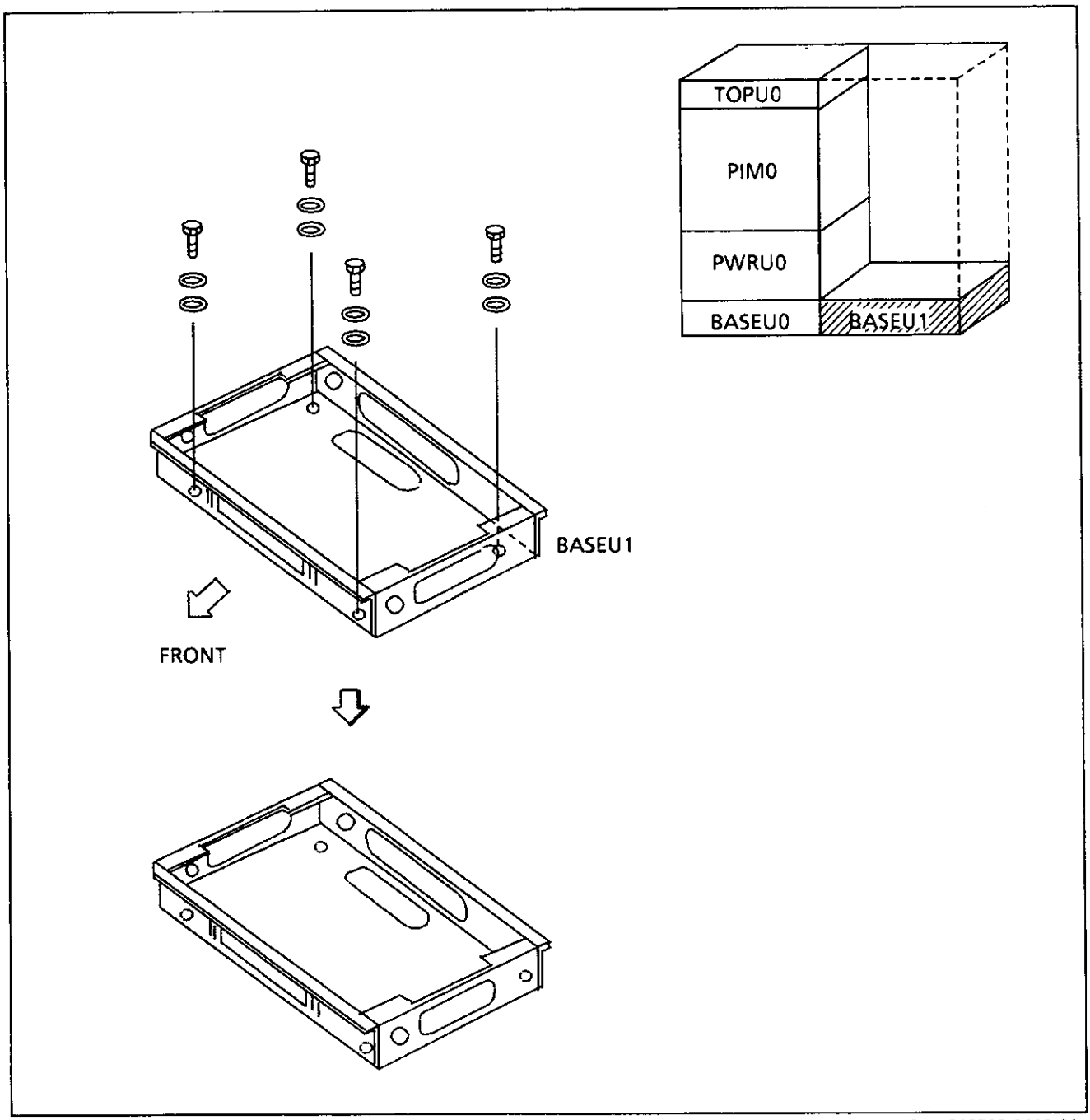

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Figure 003-76 Attaching the BASEU1

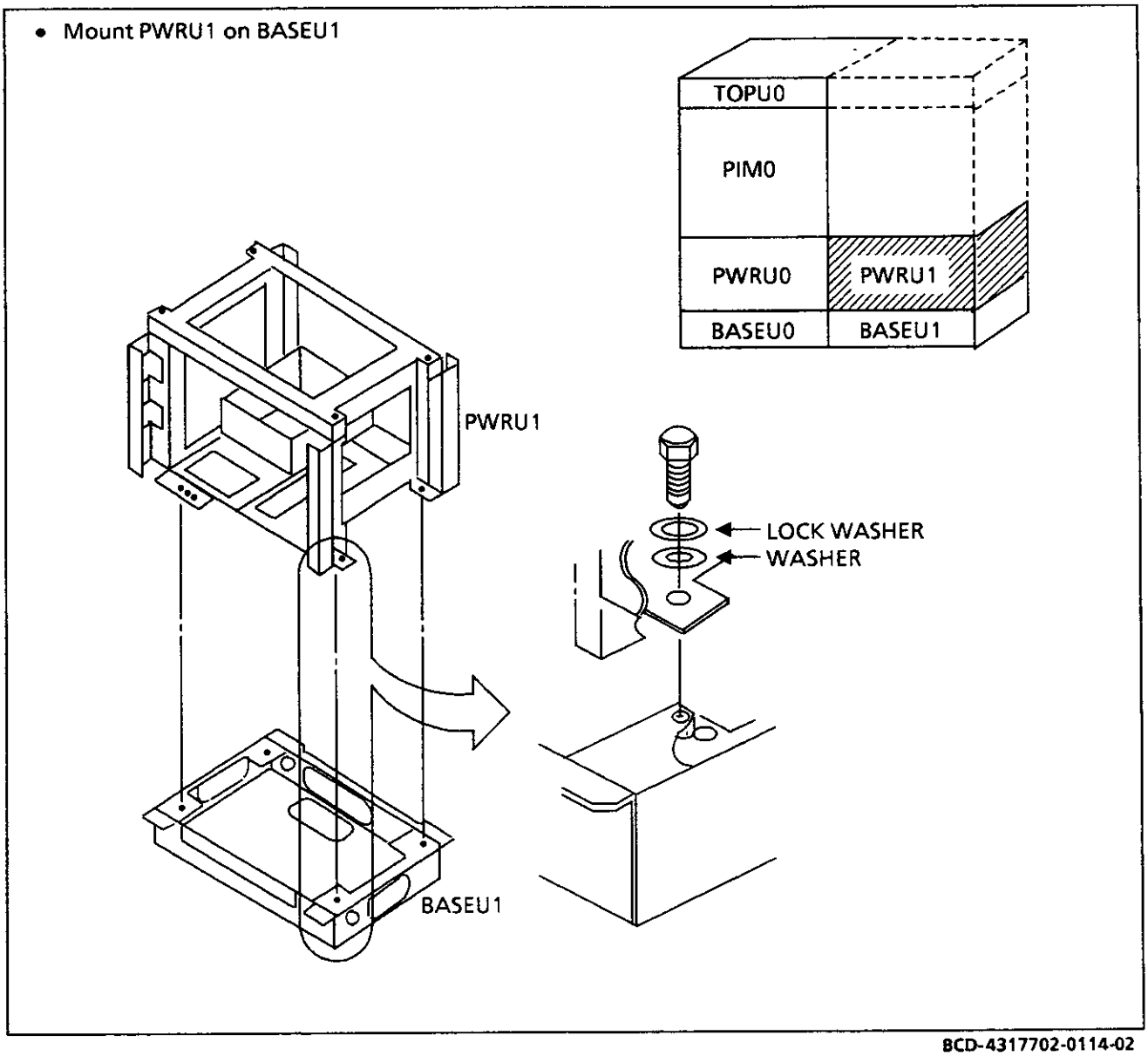


Figure 003-77 Mounting PWRU1

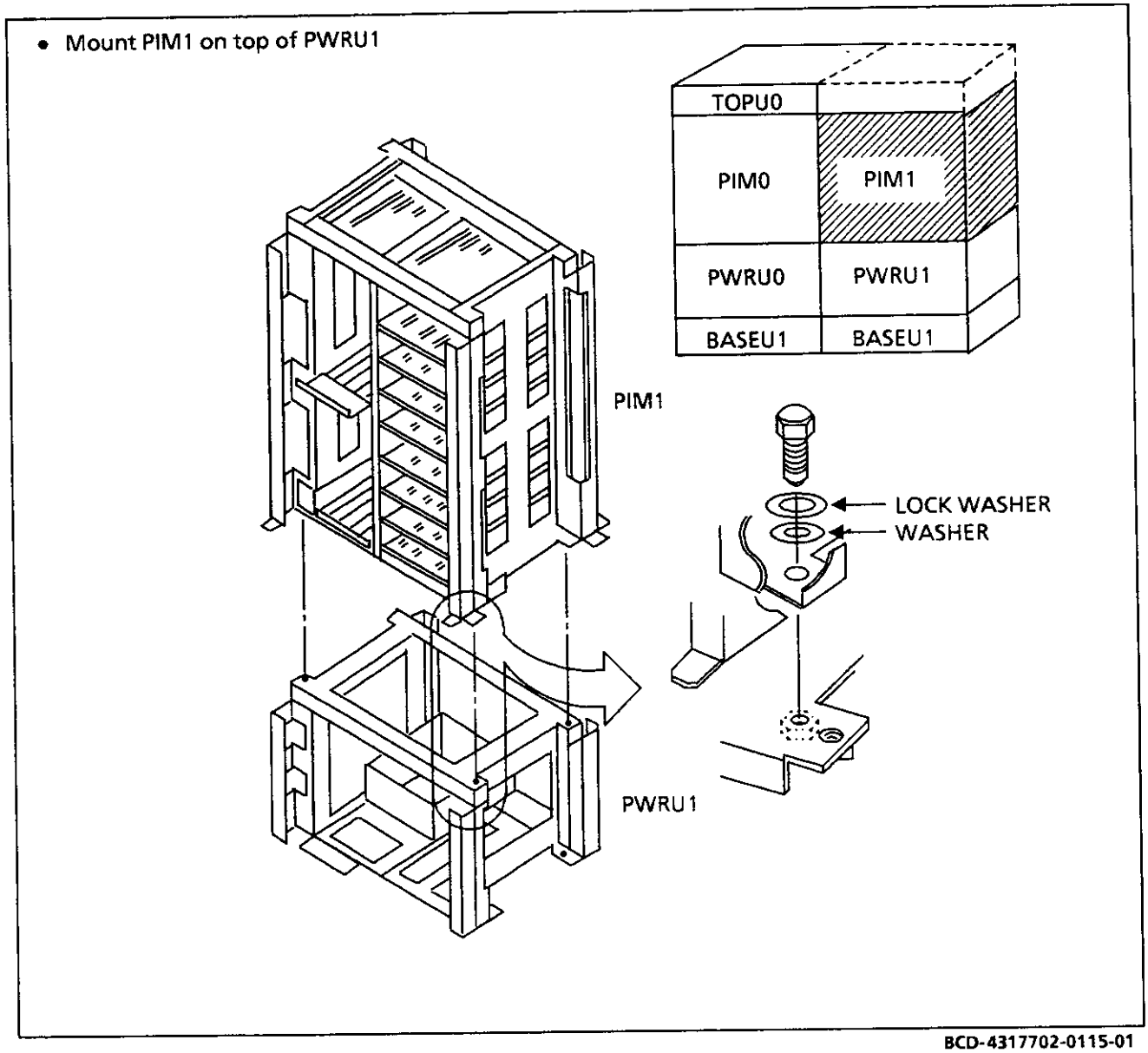
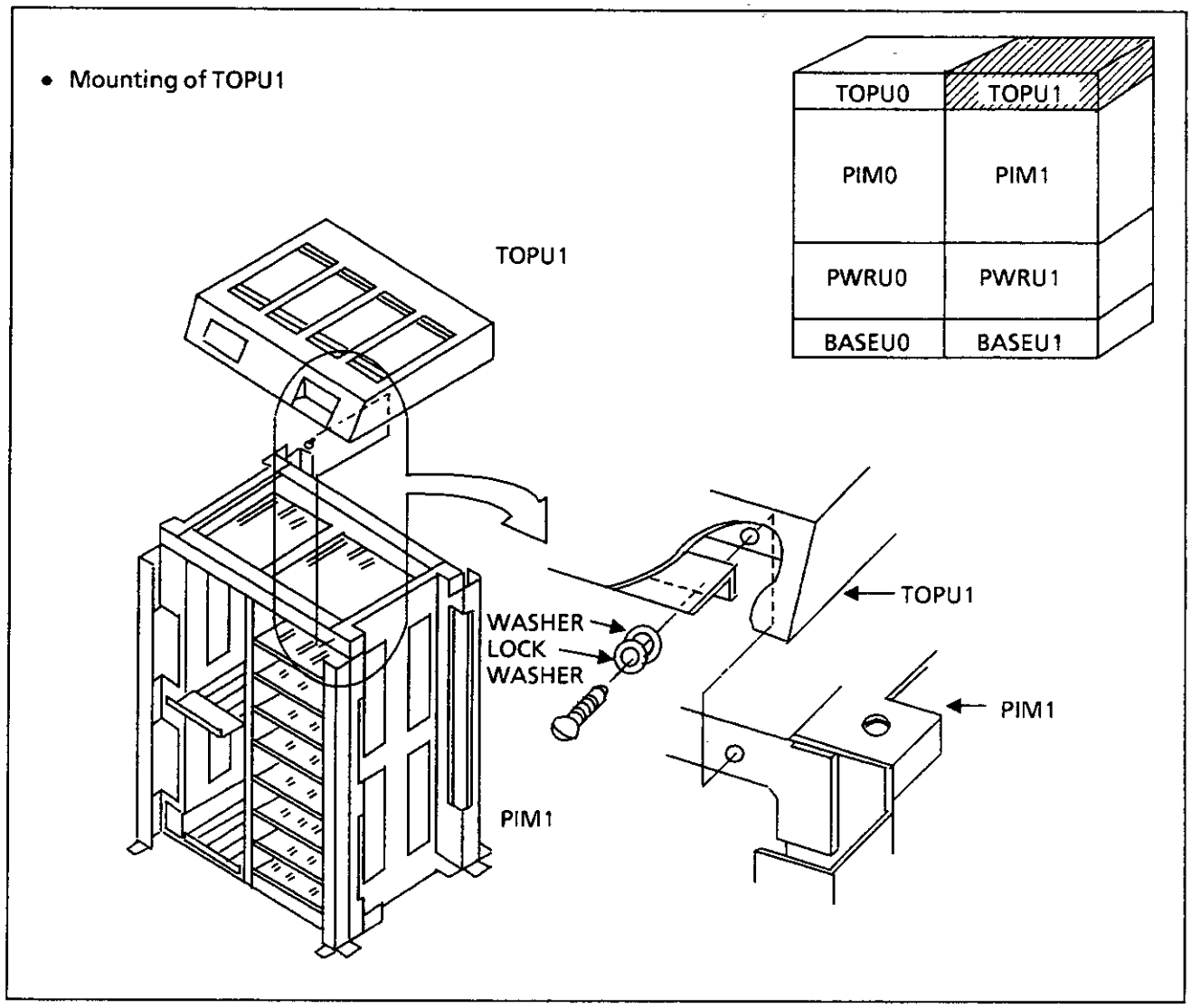


Figure 003-78 Mounting the PIM1



BCD-4317702-0116-02

Figure 003-79 Mounting the TOPU1

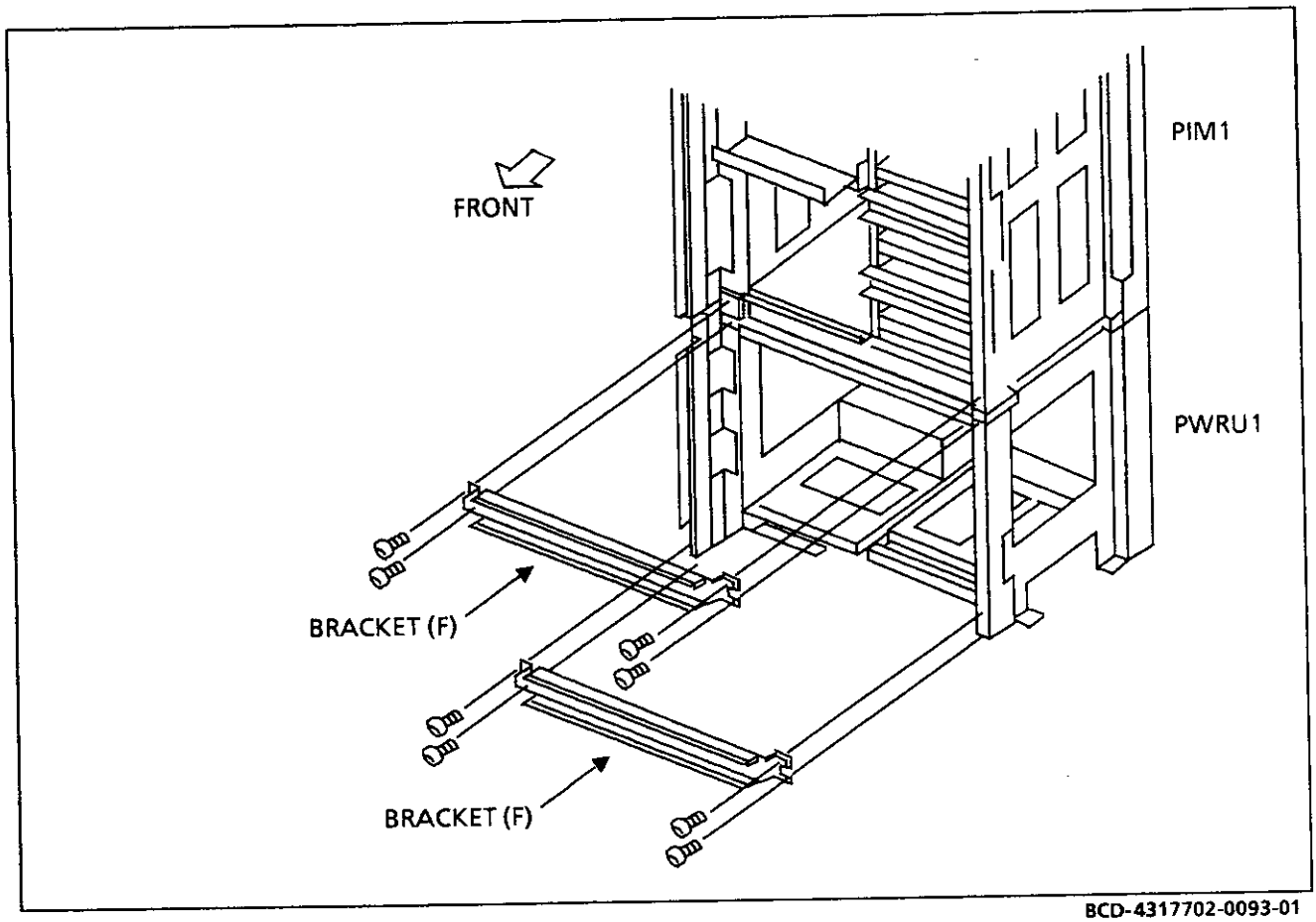
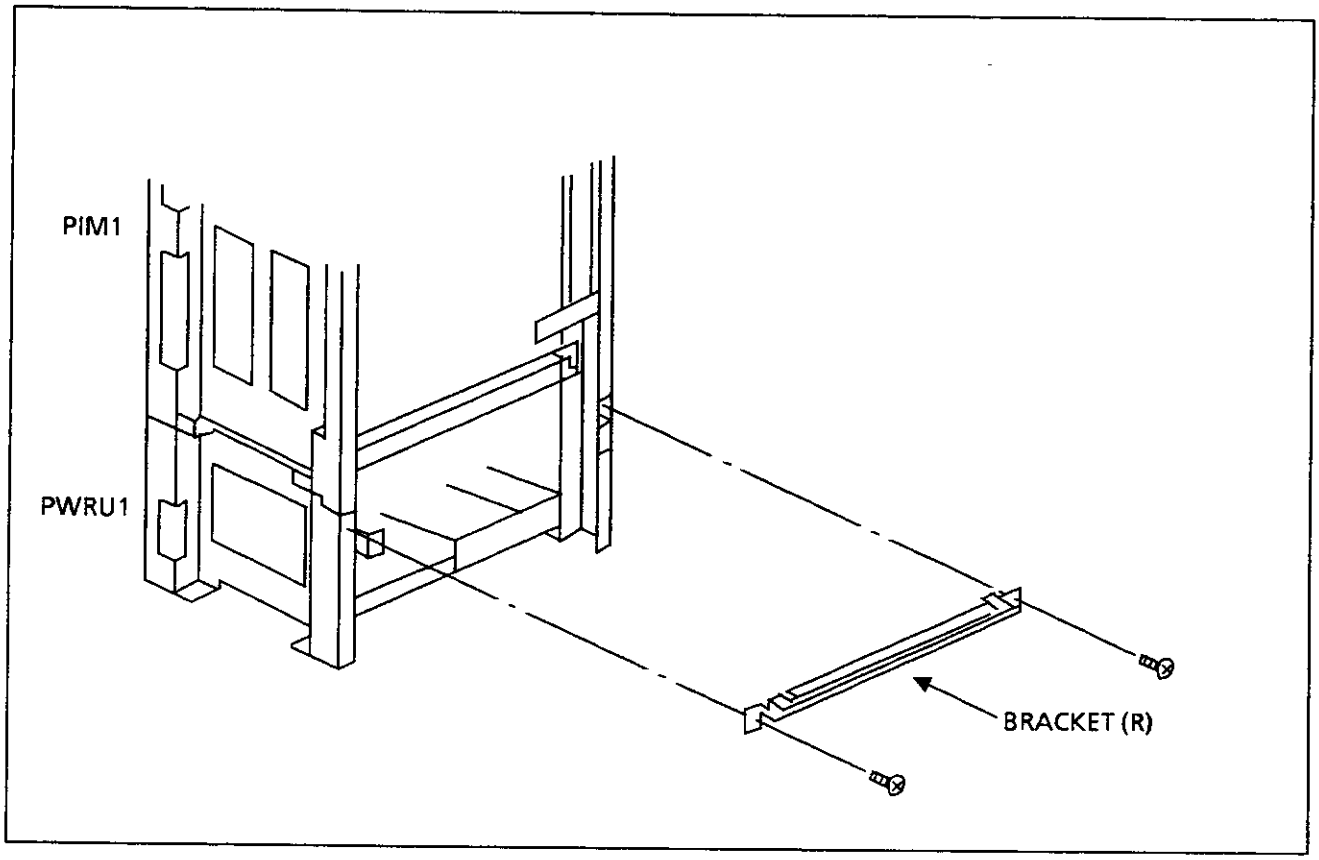


Figure 003-80 Connecting the Brackets for the Front Covers



BCD-4317702-0095-01

Figure 003-81 Connecting the Bracket for the Rear Cover

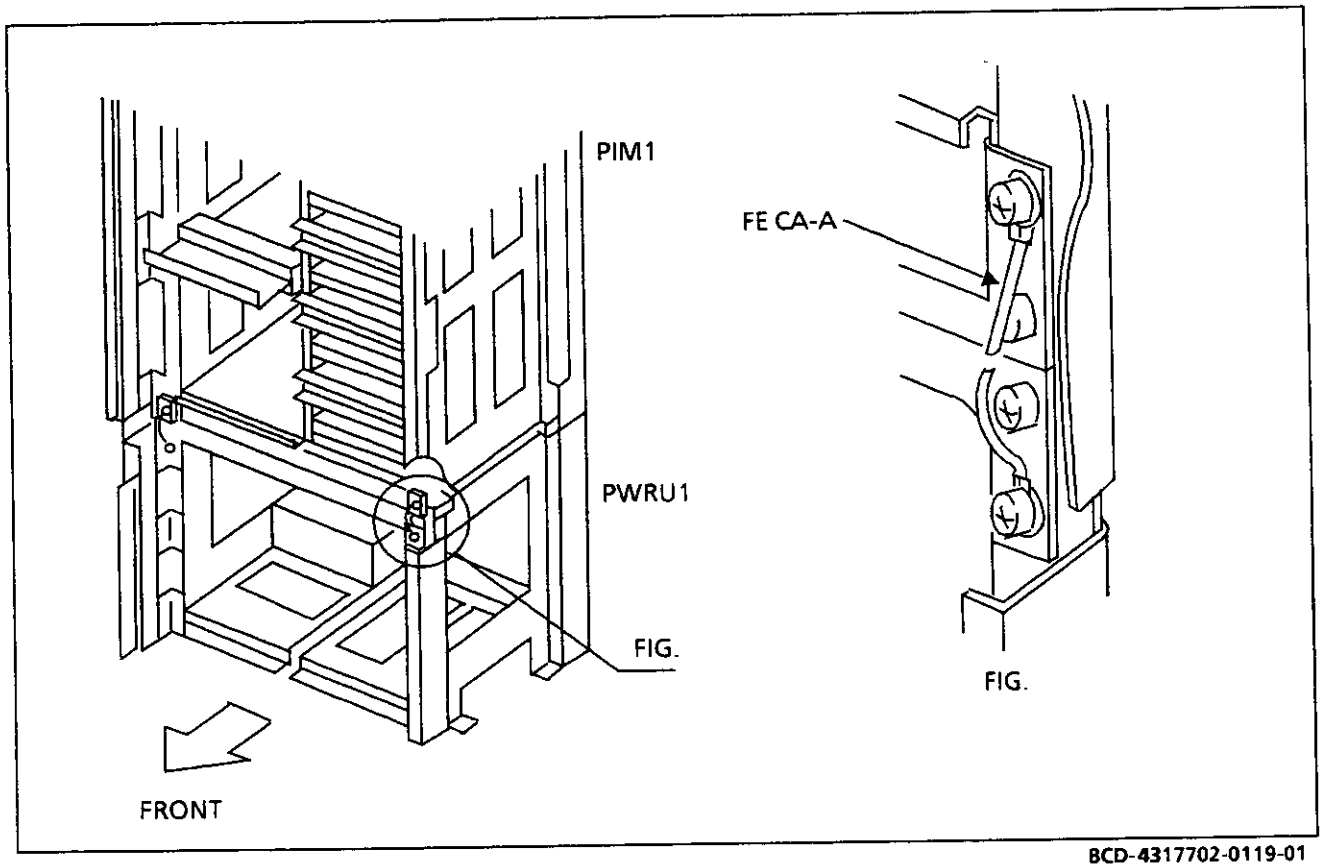
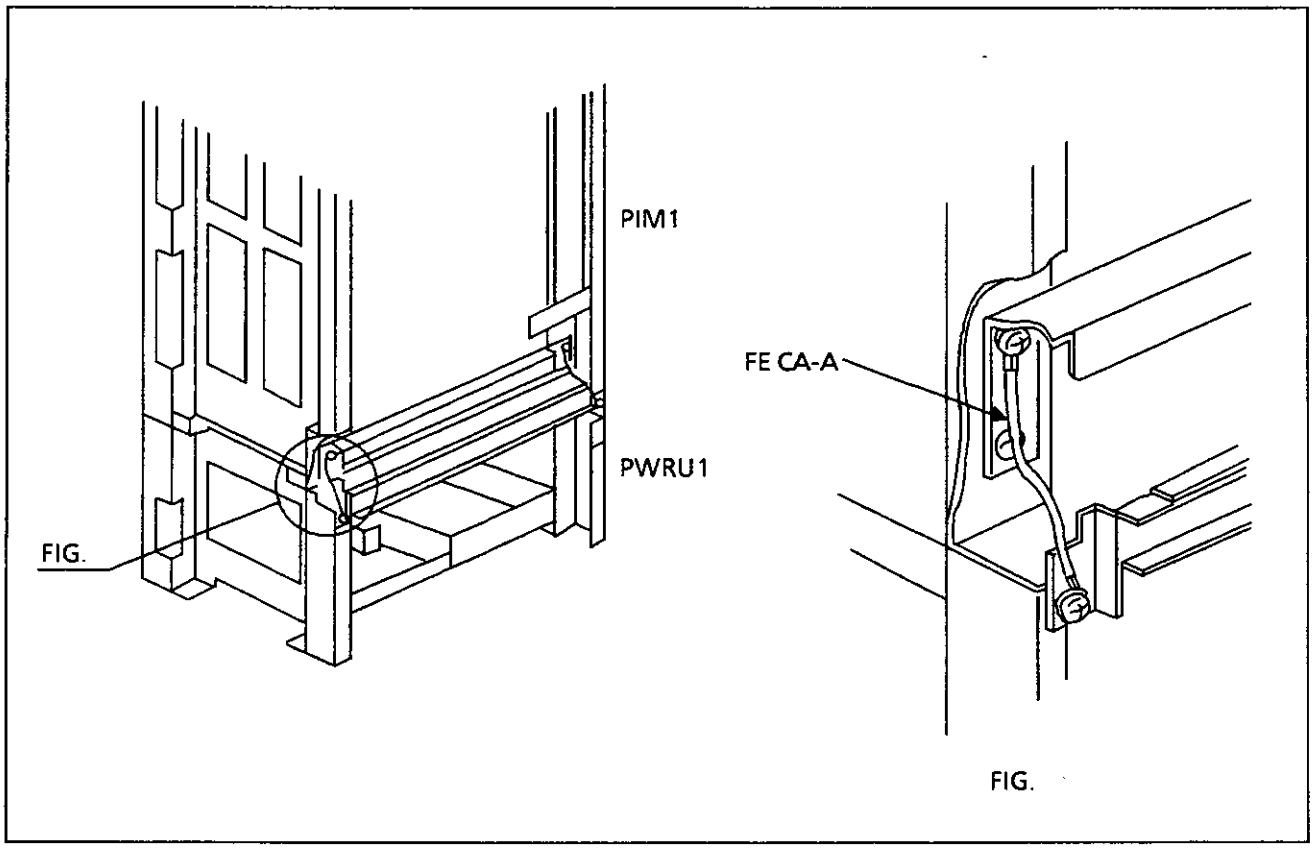
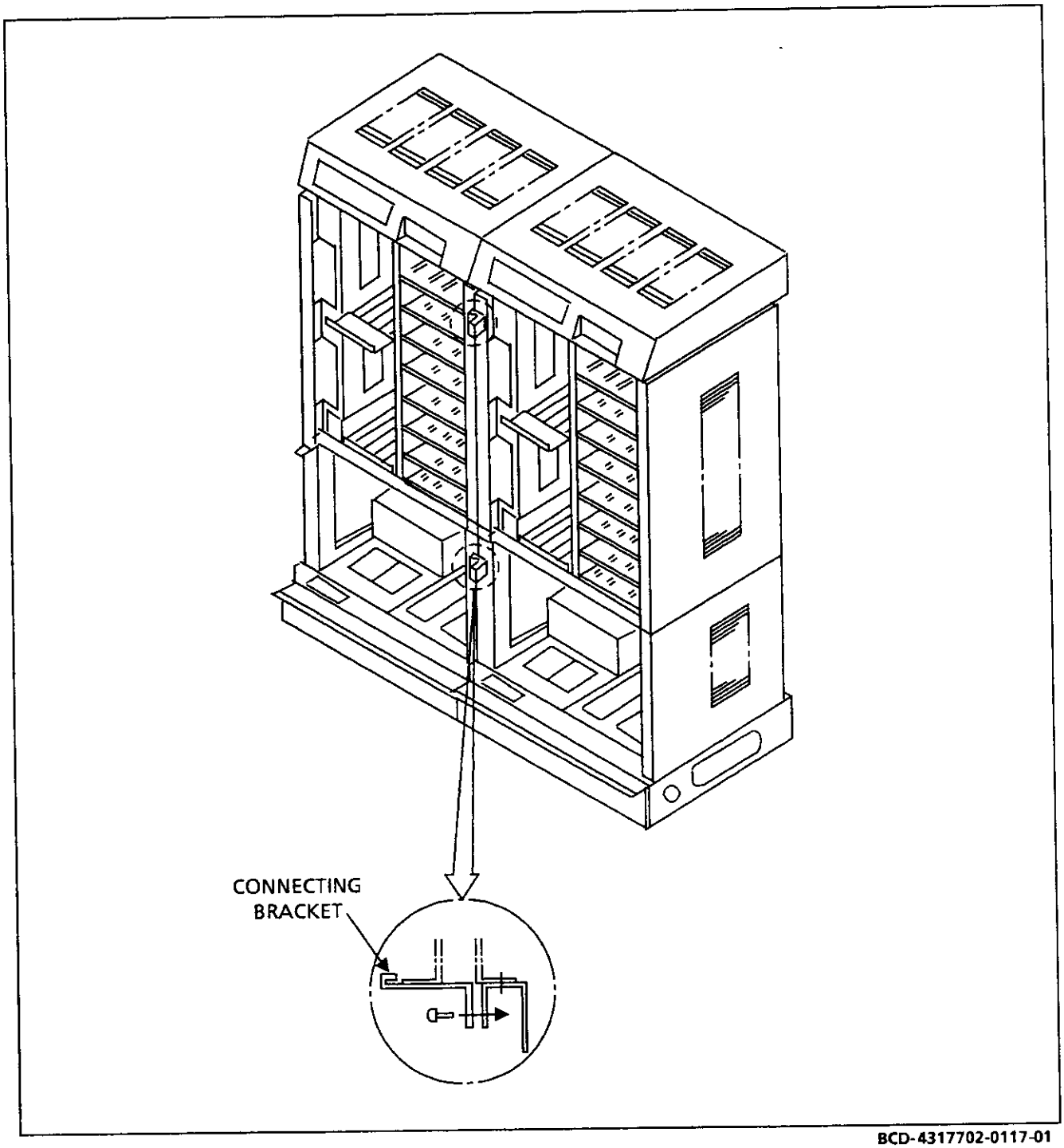


Figure 003-82 Connecting the Frame Ground Cables (Front Side)



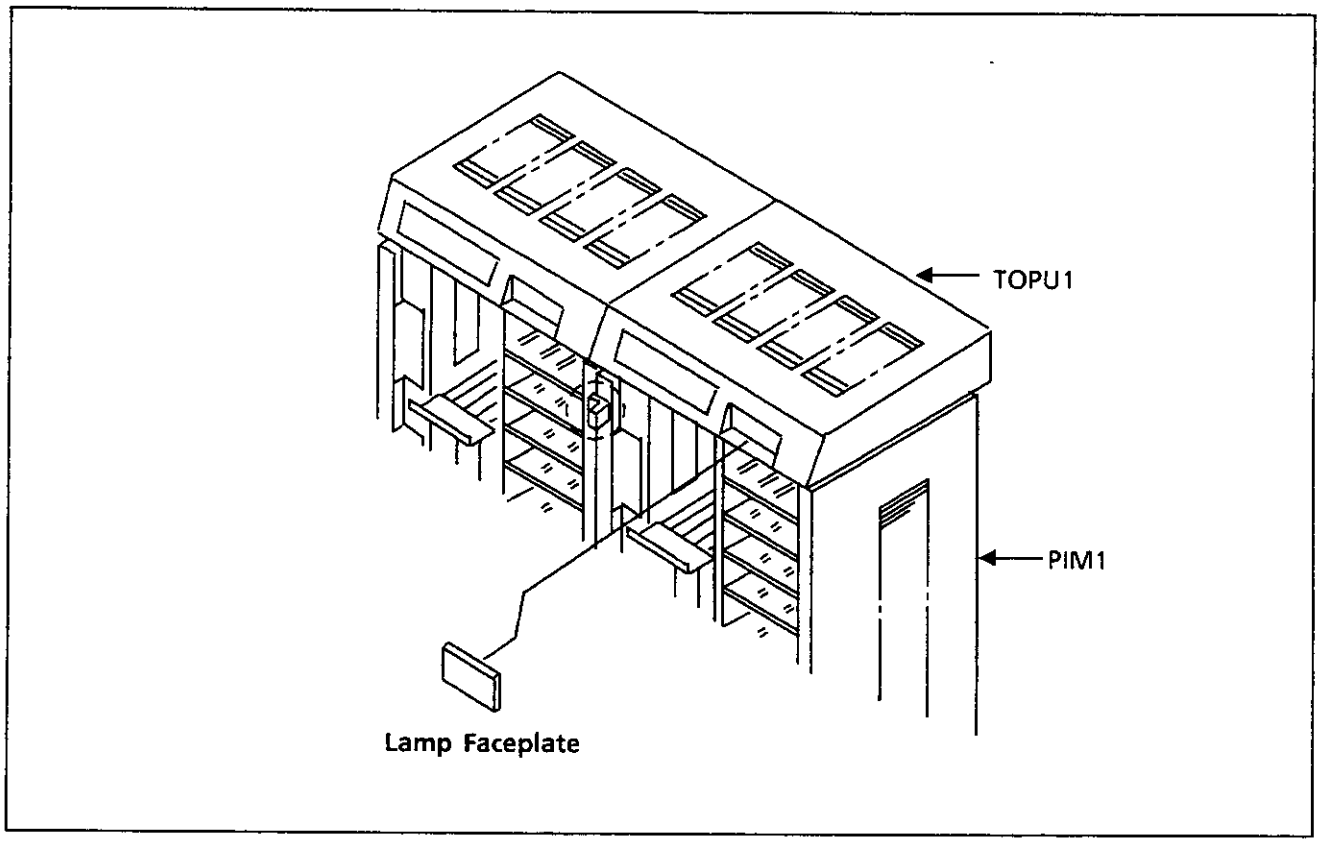
BCD-4317702-0097-01

Figure 003-83 Connecting the Frame Ground Cables (Rear Side)



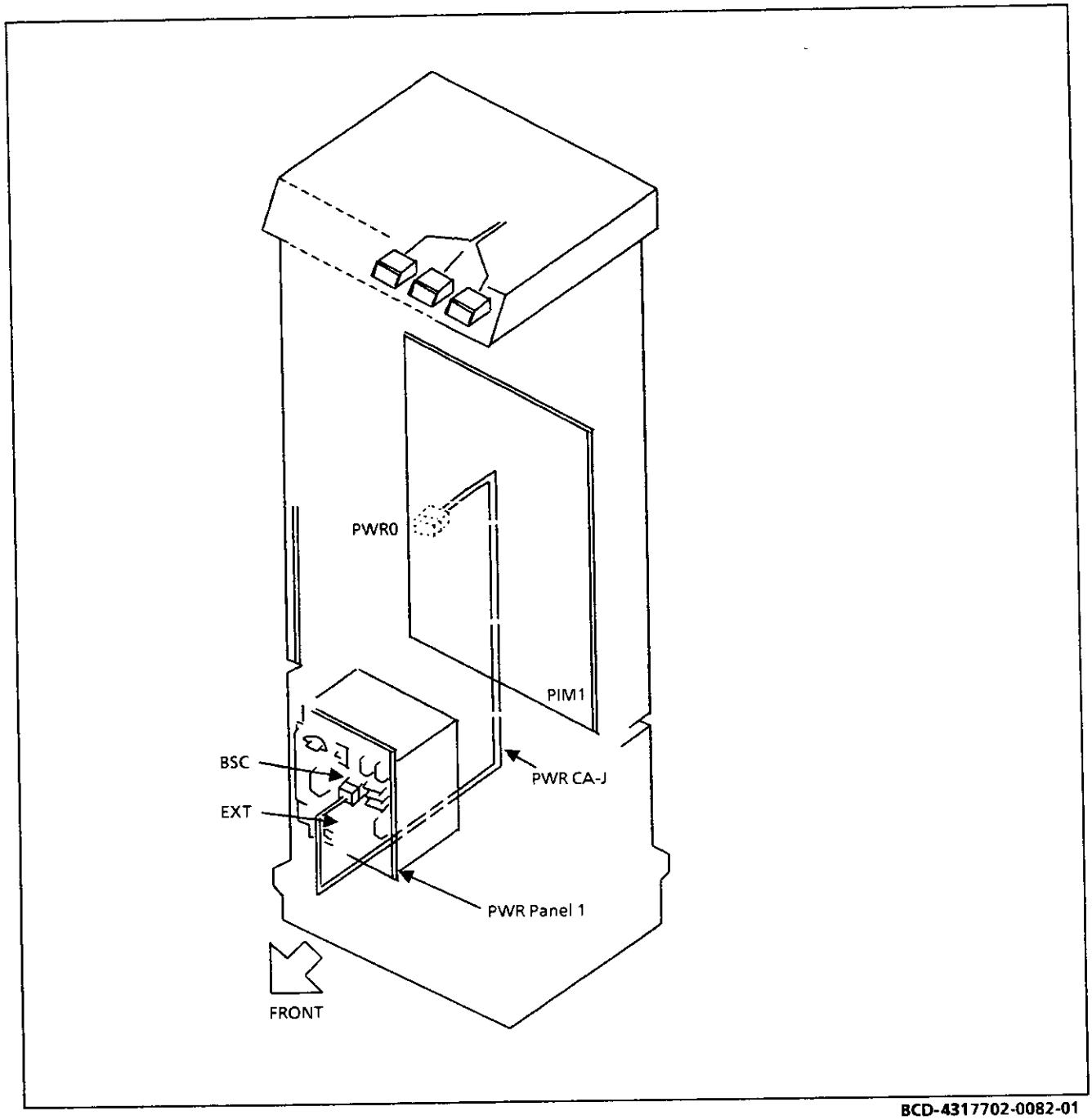
BCD-4317702-0117-01

Figure 003-84 Attachment of Modules and Units



BCD-4317702-0058-01

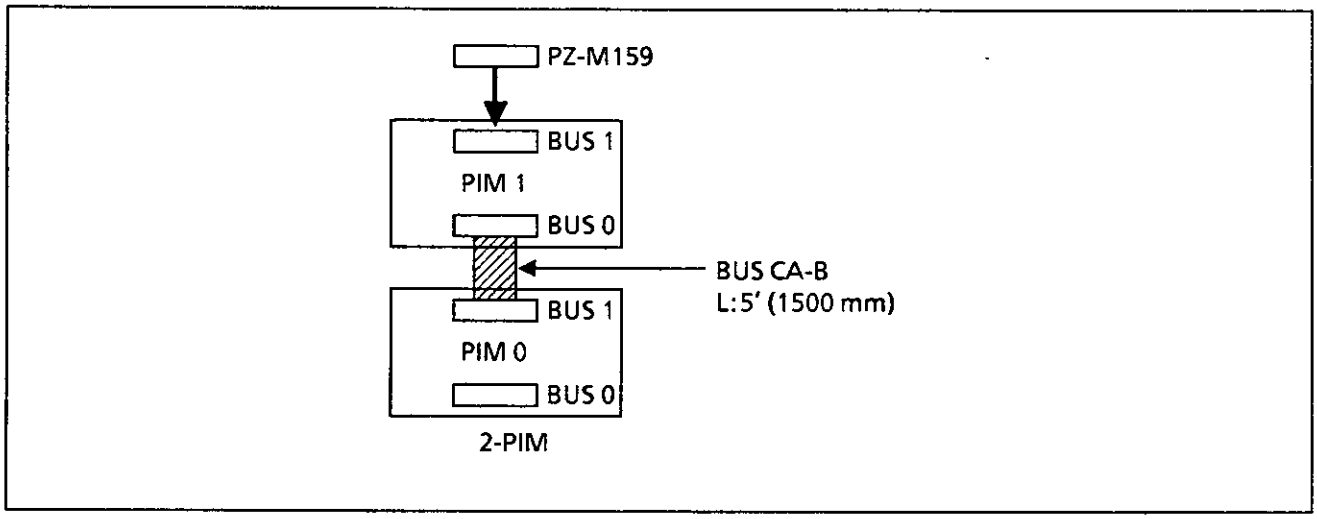
Figure 003-85 Installing the Lamp Faceplate



BCD-4317702-0082-01

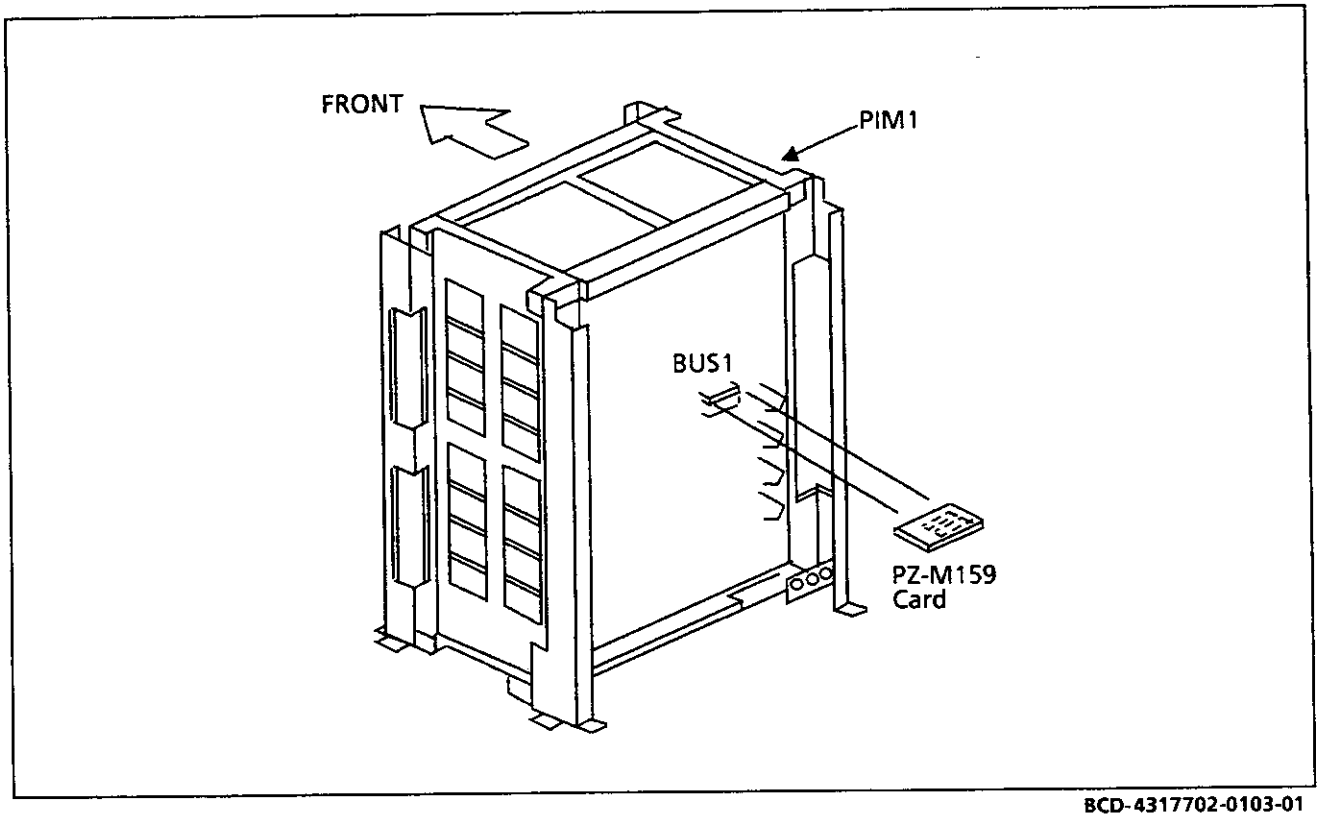
Figure 003-86 Cable Connection between PIM1 and PWR Panel 1

PATTERN 5



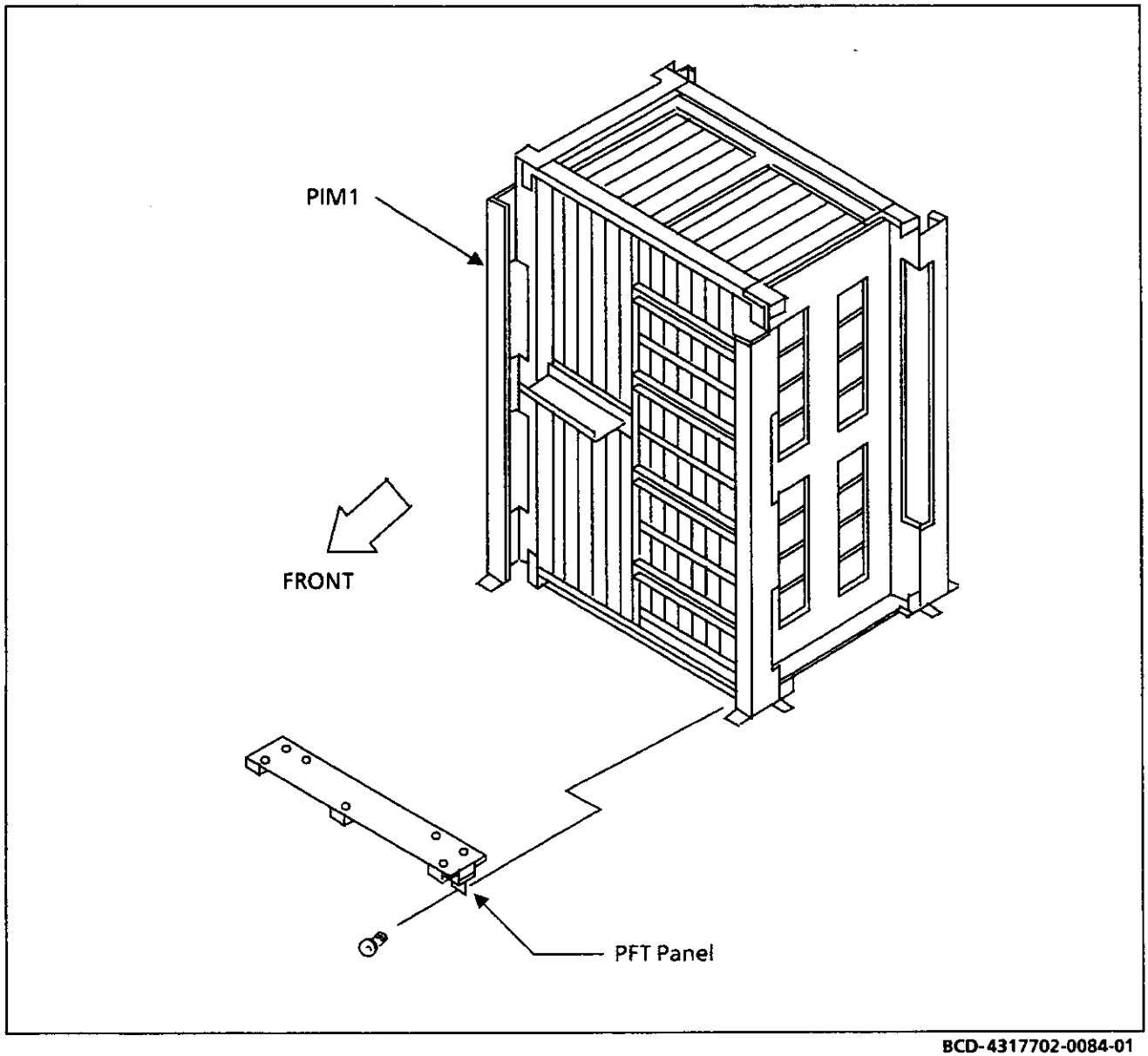
BCD-4317702-0118-01

Figure 003-87 BUS Cable Connection for Pattern 5



BCD-4317702-0103-01

Figure 003-88 Mounting a PZ-M159 Card in PIM1



BCD-4317702-0084-01

Figure 003-89 Mounting a PFT Panel on PIM1

PATTERN 5

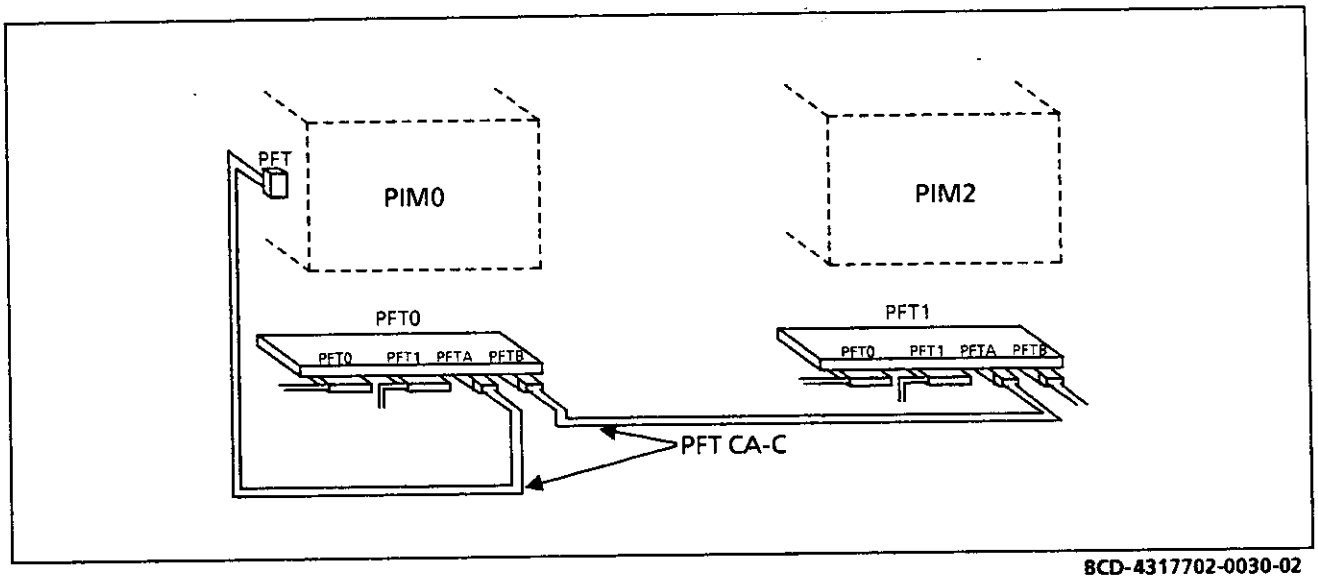
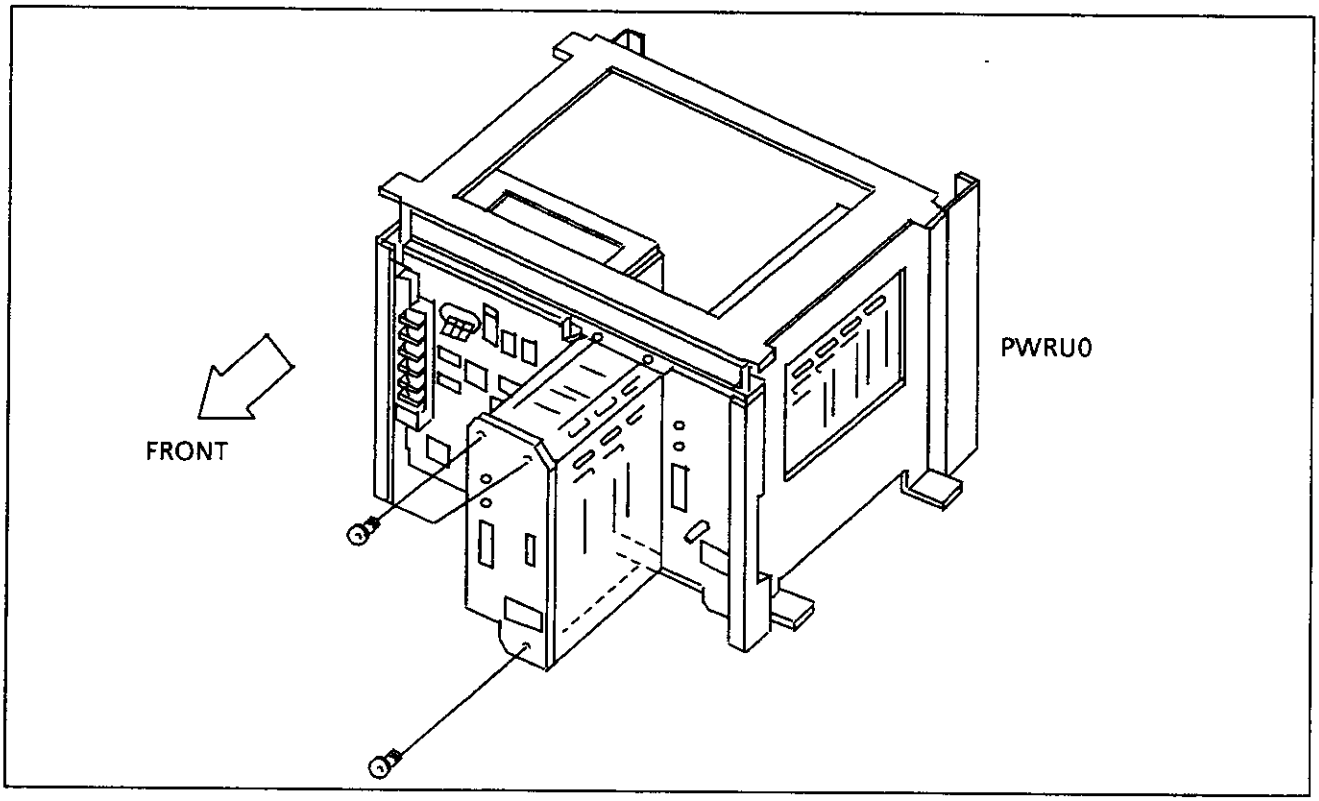


Figure 003-90 PFT Connection for Pattern 5 (Front View)

Note: *For the cable connections to connectors "PFT0, PFT1", refer to NAP- 200-006 and NAP-200-007.*



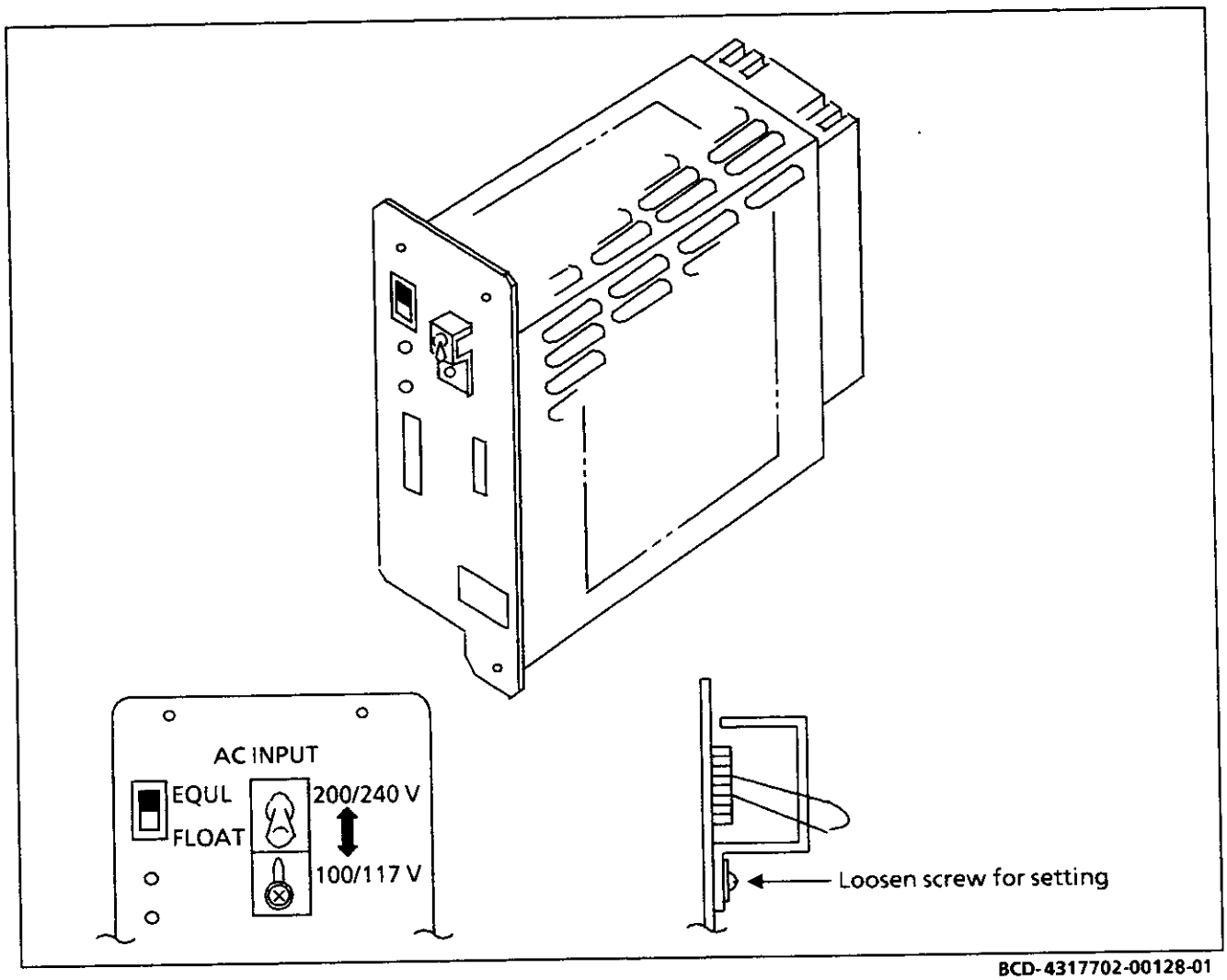
BCD-4317702-0005-01

Figure 003-91 Mounting a PWRM in PWRU0

When using a PWRM-B, the following installation is required:

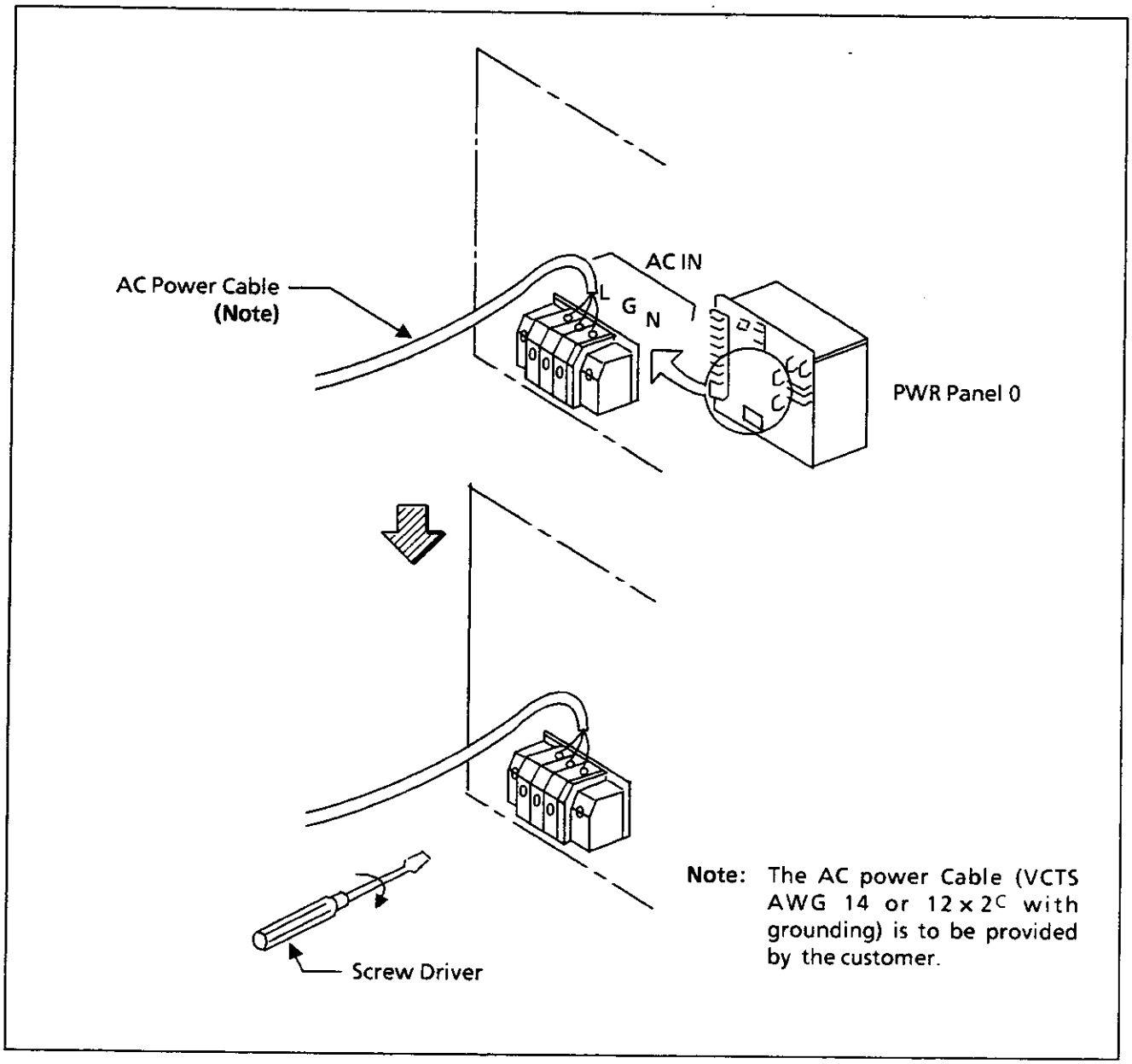
- Set the "AC INPUT" switch to the downward position for 100 – 117 volt A.C..
- Set the "EQUL/FLOAT" switch according to the type of battery connected.
  - No Battery/Sealed Battery···"FLOAT"
  - Lead-Acid Battery··· "EQUL" (Equalizing Charge) "FLOAT" (Floating Charge)

When changing the EQUL/FLOAT mode, with multiple PWRMs, the changes should be done as simultaneously as is possible.



BCD-4317702-00128-01

Figure 003-92 Outer View of a PWRM-B



BCD-4317702-0031-02

Figure 003-93 Connecting the AC Power Cable

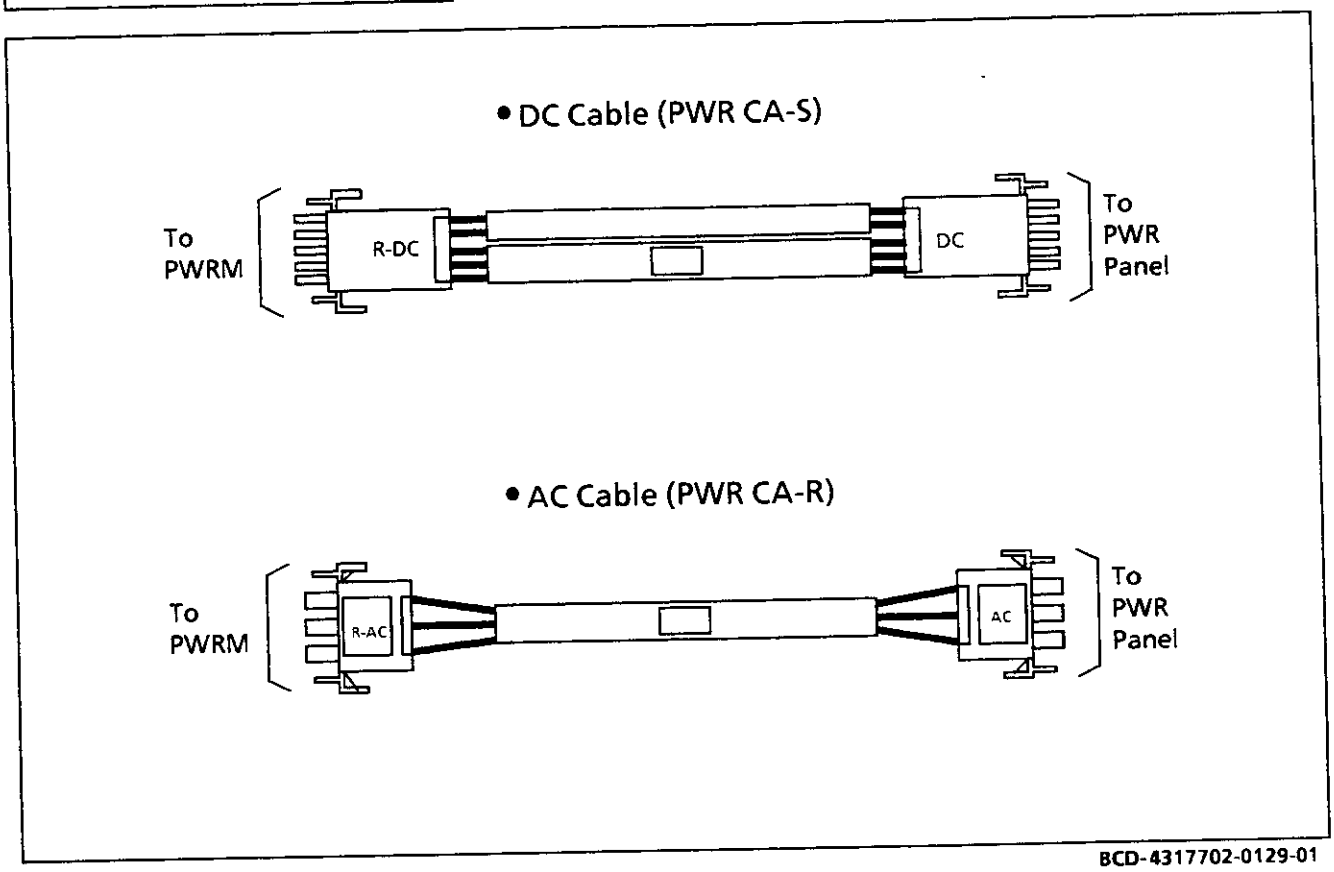
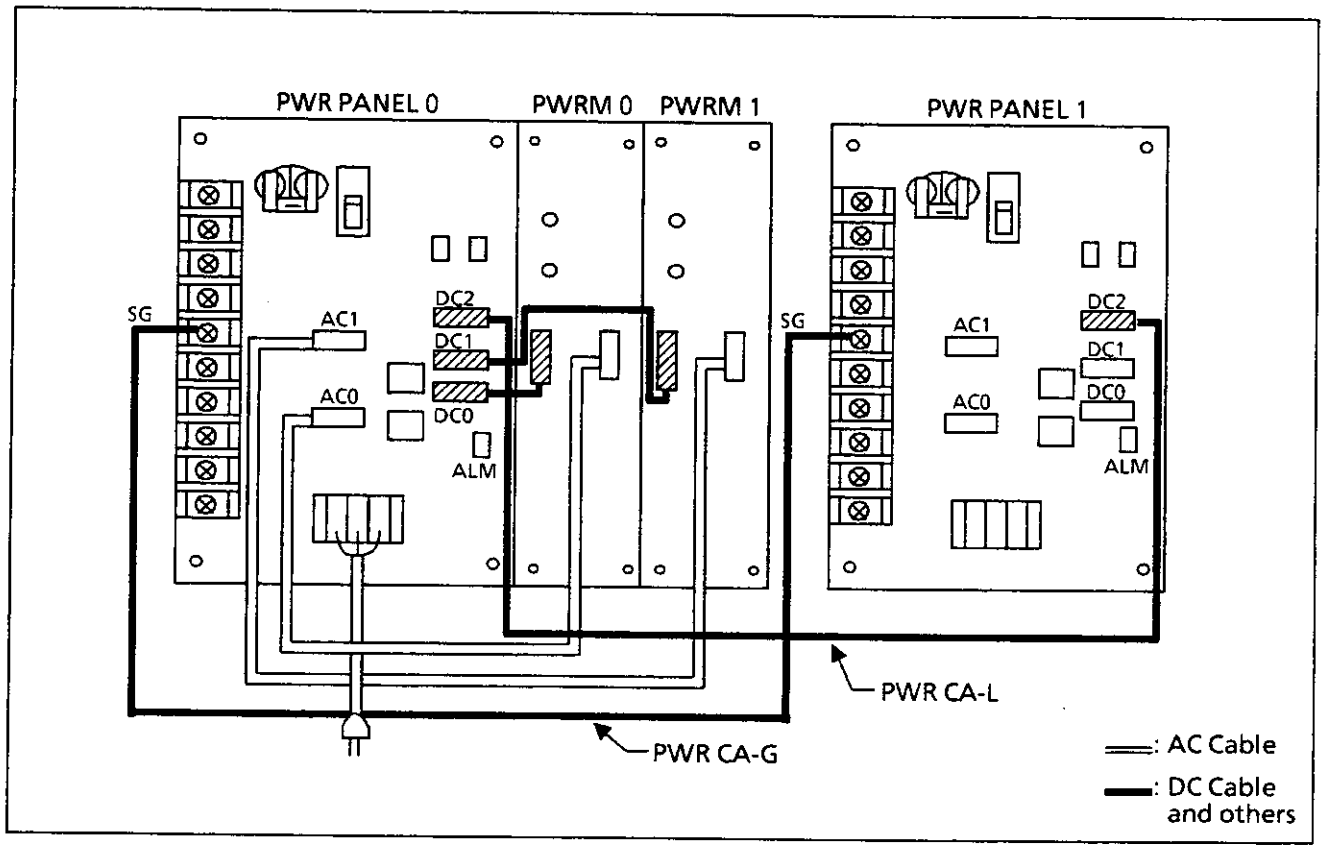


Figure 003-94 DC Cable, AC Cable



BCD-4317702-0009-02

Figure 003-95 Cable Connections on a PWRU

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

1. Installation of the MDF:

   - Attach the MDF to either the floor or the wall.
   - Mount the required MDF components.
   - If required, install cable ducts for the cables to be laid between the MDF and the main equipment. In this case, confirm the locations of the cable openings for the main equipment.

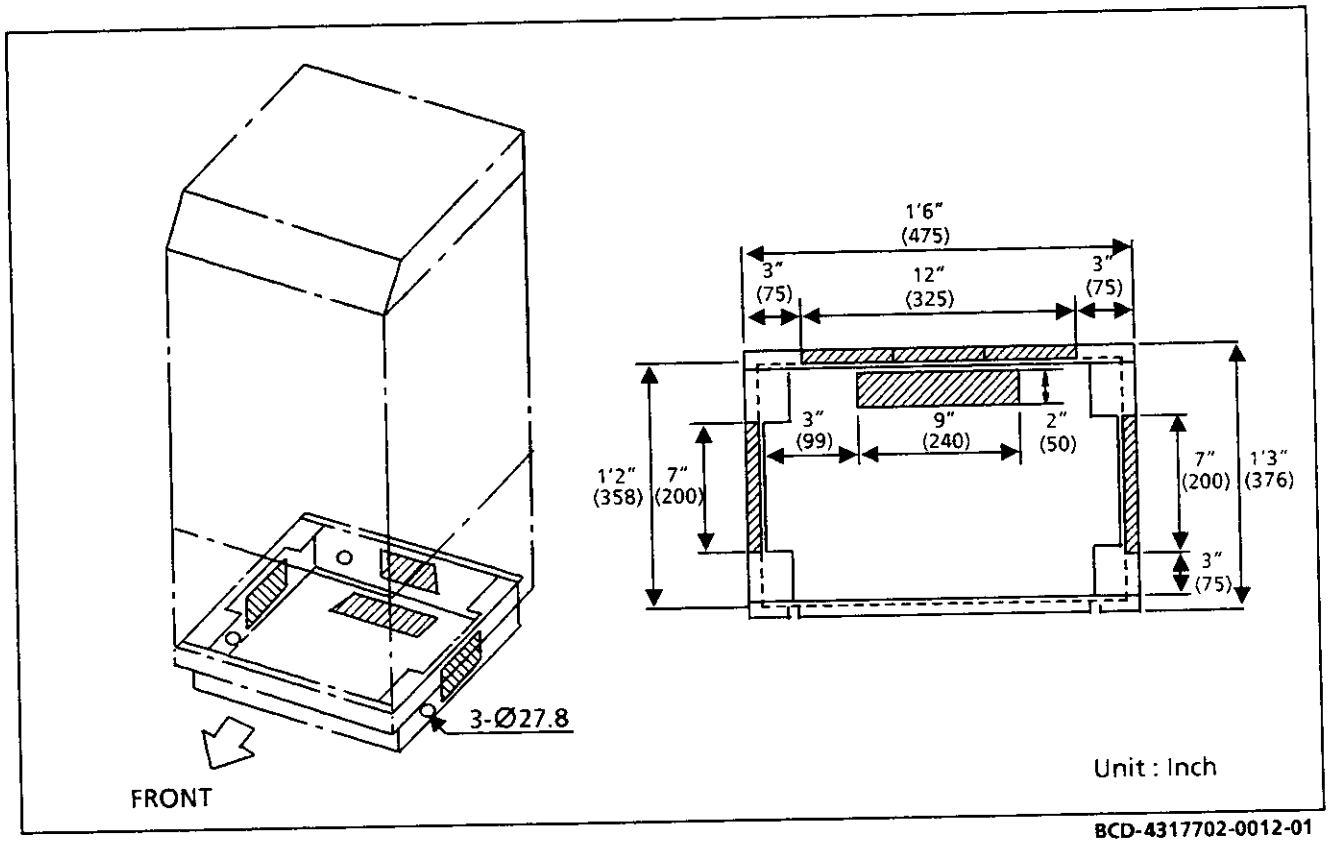


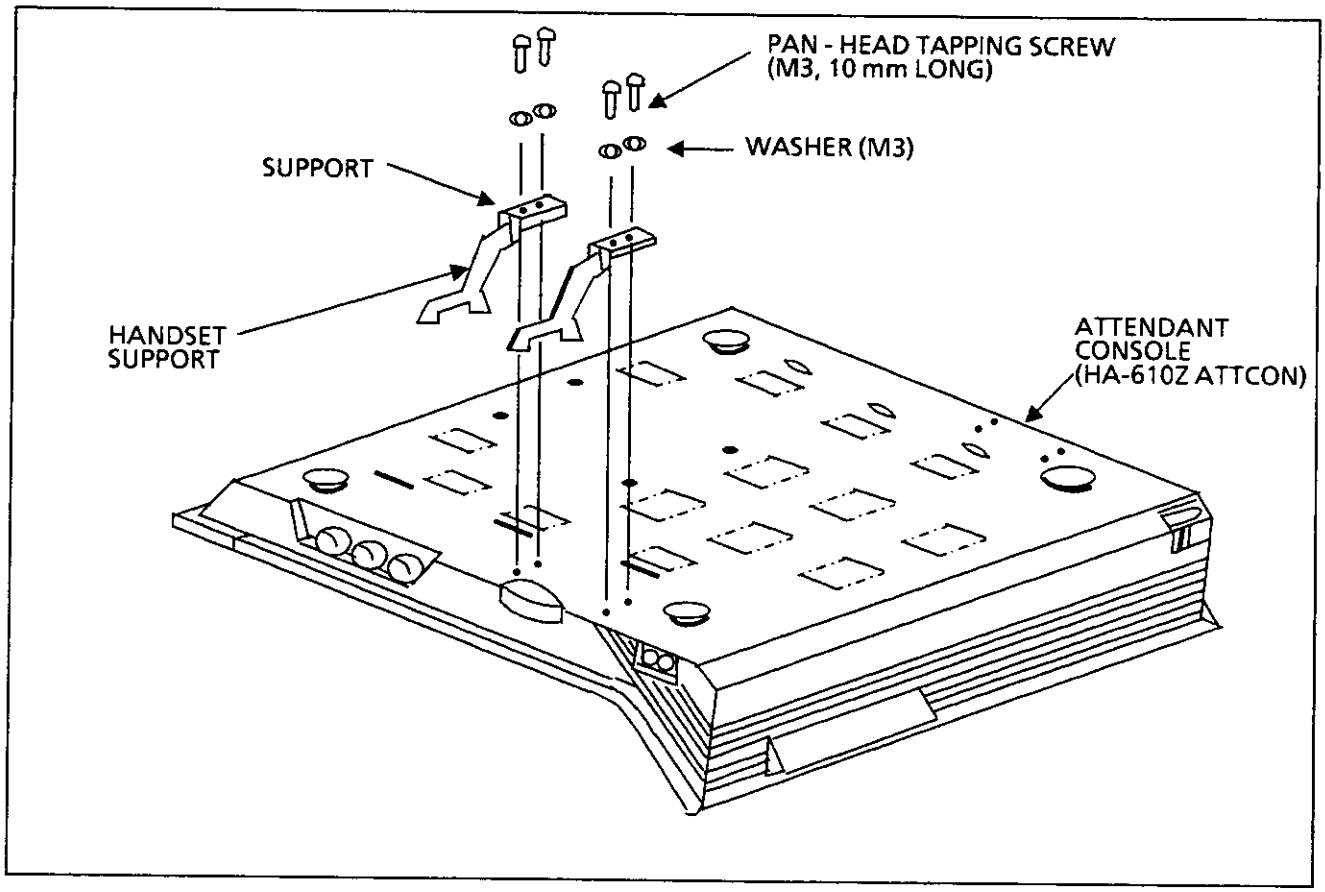
Figure 004-1 Location of Cable Openings

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

2. Installation of a HA-610Z Attendant Console:

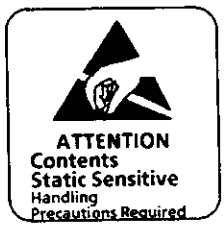
   Screw the handset support onto the bottom of the Console, as shown in Figure 004-2.

Note: *The handset support can be mounted at either the right side or left side of the Console body.*



BCD-4317702-0128-01

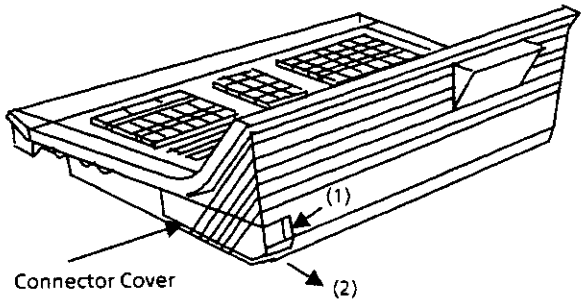
Figure 004-2 Mounting a Handset Support to a HA-610Z ATTCON



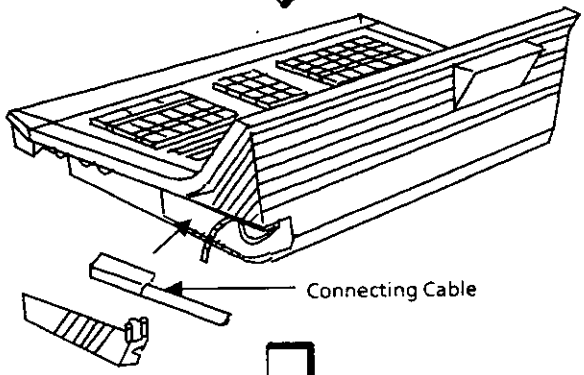
- Connect the ATT cable to the Attendant Console according to the steps described below.

CAUTION: To prevent damage to the system or Attendant Console (ATTCON), make sure that the MB (Make Busy) switch on the ATI (PJ-CS00) board is in the "busy" position before connecting the ATTCON.

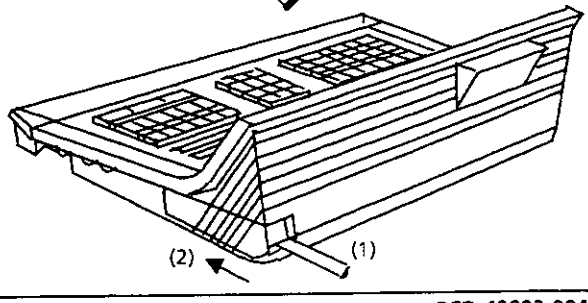
- Press the connector cover in the direction of (1) and slide it in the direction of (2). The cover will come off.



- Plug the connecting cable into the connector inside the Console, and screw on the connector. Tighten the cable onto the Console with the attached band.



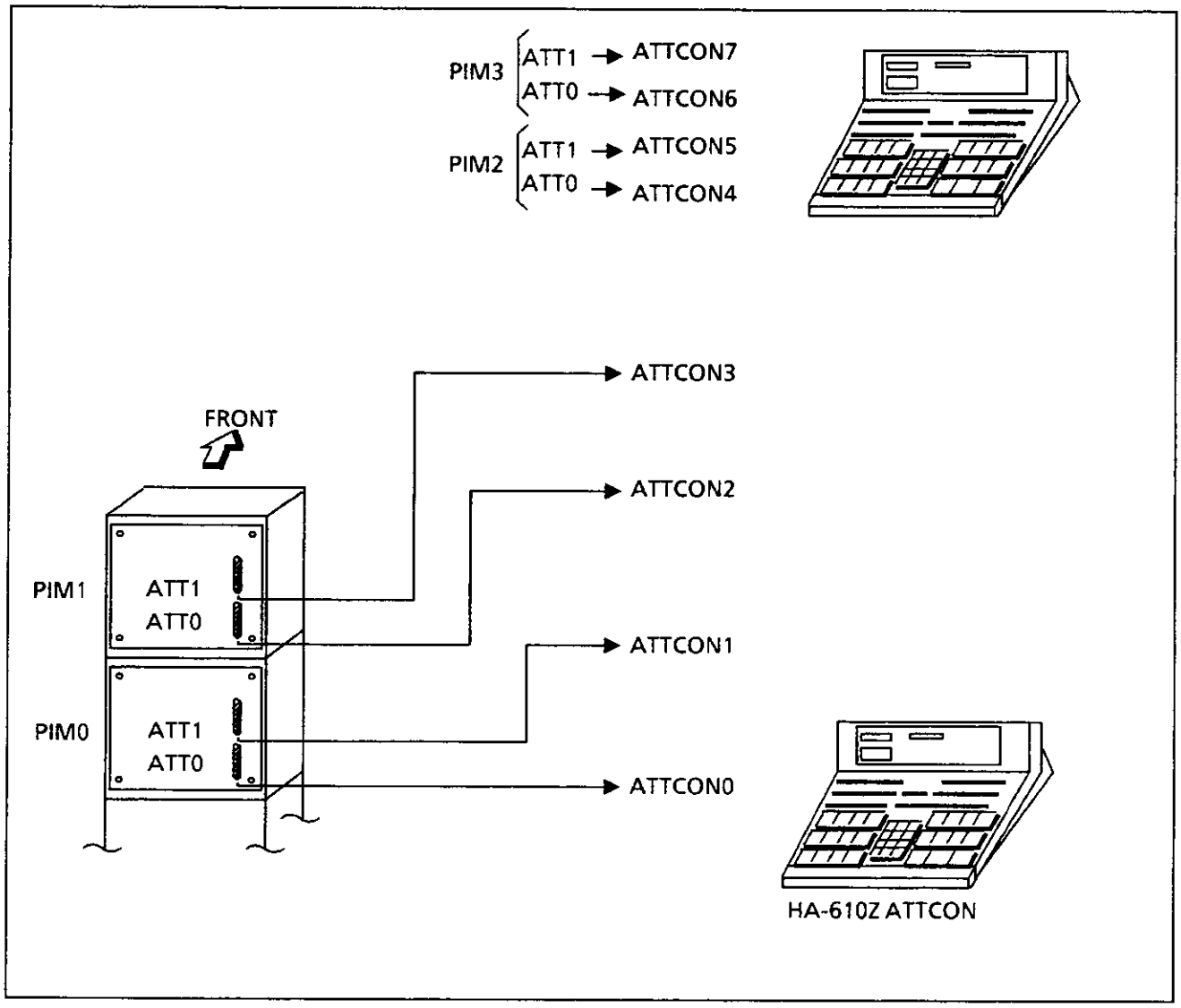
- Place the connector cover back onto its position and slide it in the direction of (2).



BCD-42892-0040-02

Figure 004-3 ATT Cable Connection to a HA-610Z ATTCON

- Connect the ATT cable to the main equipment, as shown in Figure 004-4.



BCD-4317702-0023-04

Figure 004-4 ATT Cable Connection to the Main Equipment

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

3. Installation of a SN610 Attendant Console:

Screw the handset support onto the bottom of the Console as shown in Figure 004-5.

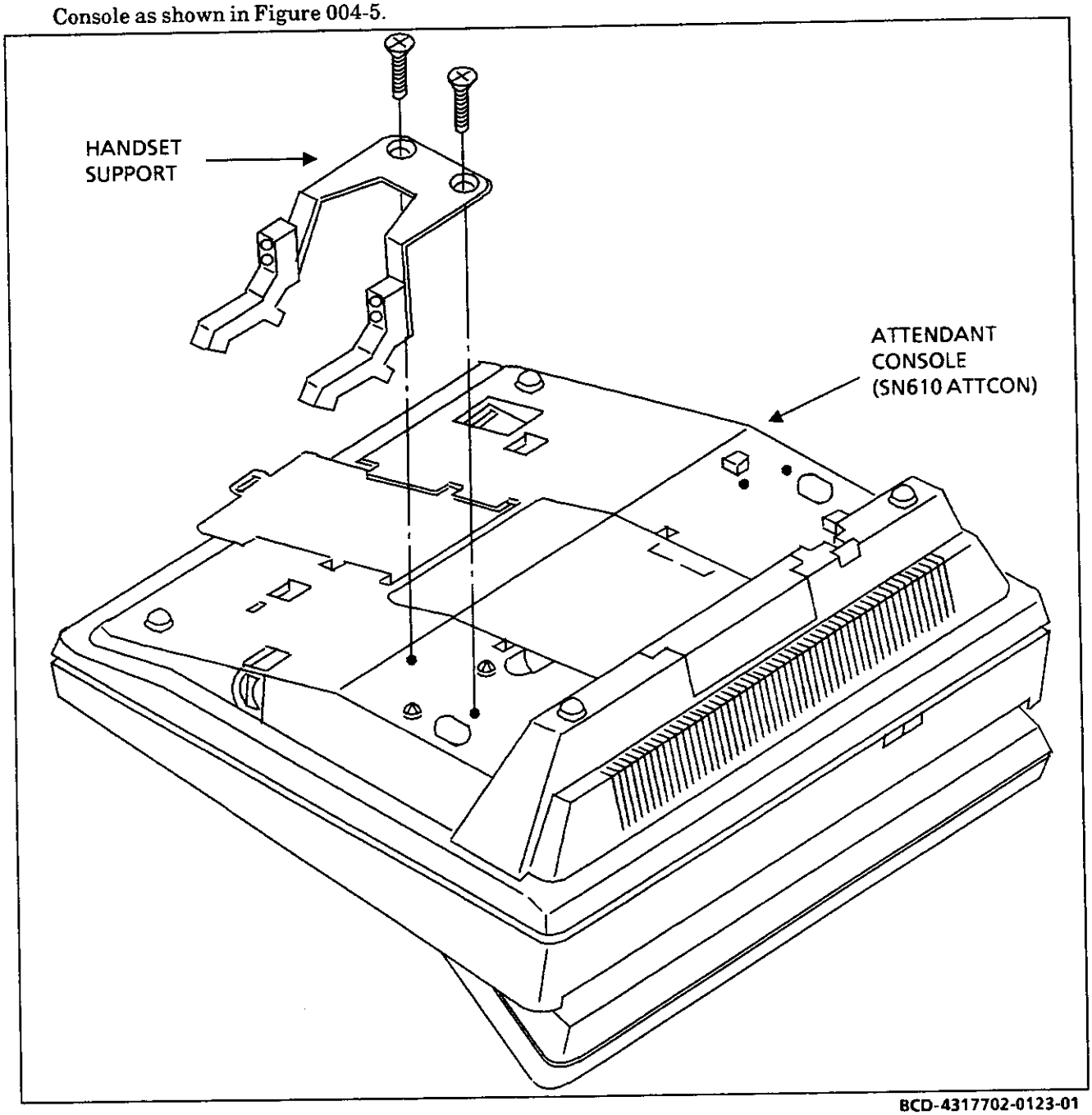
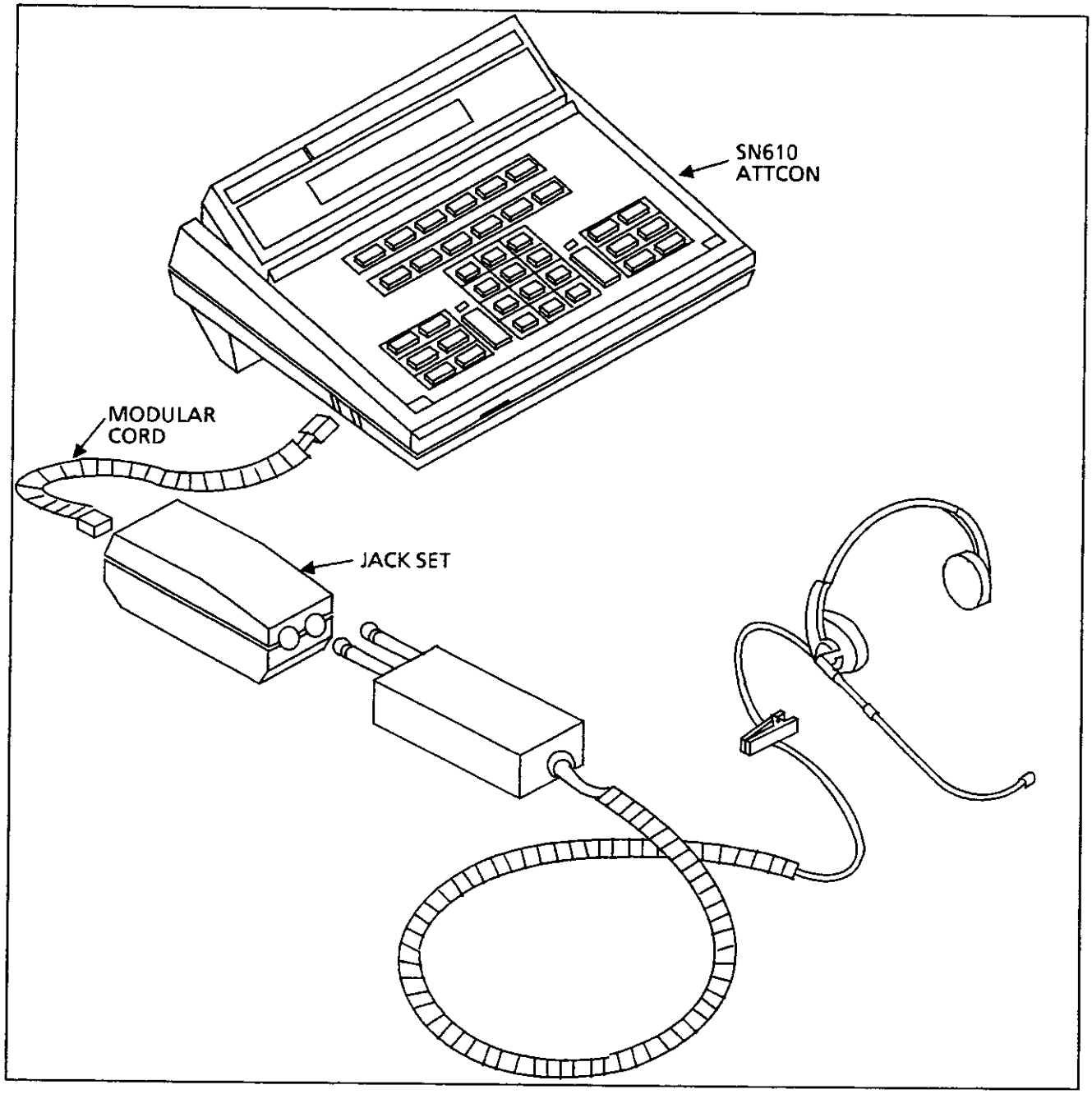


Figure 004-5 Mounting a Handset Support to a SN610 ATTCON

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

- To provide a headset with the Console, in place of a handset, unplug the modular cord from the handset and then plug the modular cord into a jack set.



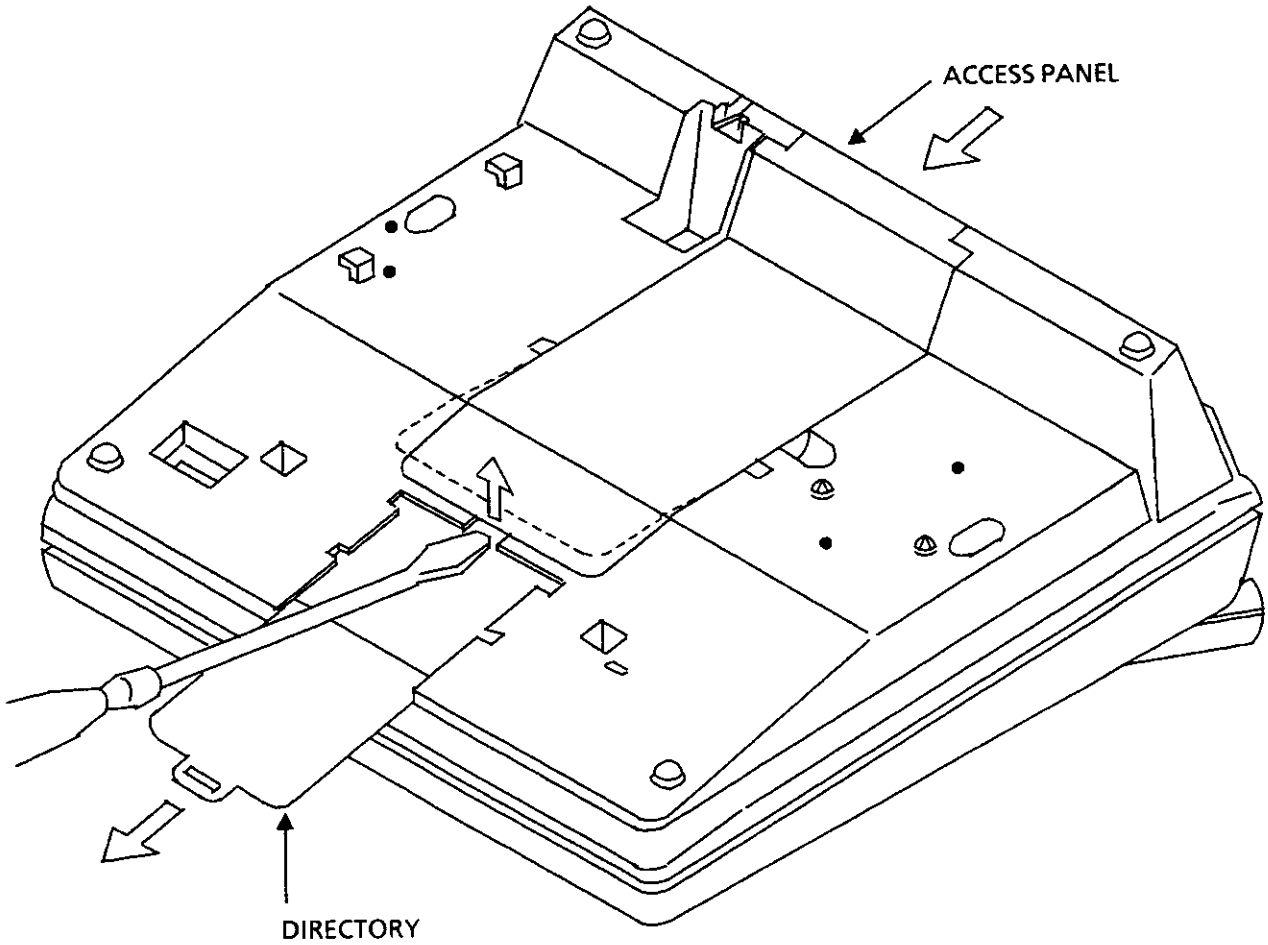
BCD-4317702-0124-01

Figure 004-6 Jack Set Installation for a SN610 ATTCON

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

- Set the switch, located at the back of the Console, according to the type of headset/handset which is connected.

- Slide the directory out of the way. Insert the blade of a flat screw driver into the notched opening and apply light upward pressure until the access panel is clear of the front lip. At the same time, apply pressure (towards you) at the rear of the pedestal to move the access panel.



BCD-4317702-0125-01

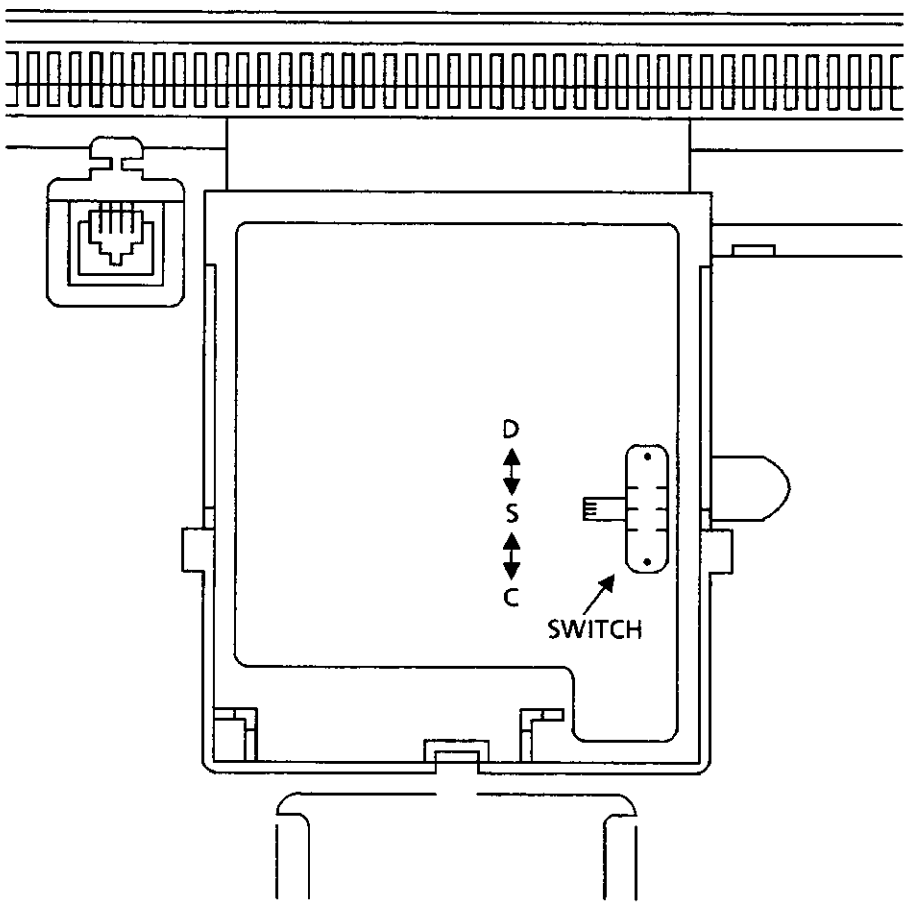
Figure 004-7 Switch Setting on a SN610 ATTCON (1/2)

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

- Set the switch according to the type of headset/handset which is connected:

  C: Carbon Type Handset/Headset
  S: SUPRA Headset
  D: Multiline Terminal Type Handset (setting from the factory)

- Replace the directory and access panel.



BCD-4317702-0127-01

Figure 004-7 Switch Setting on a SN610 ATTCON (2/2)

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

- Plug the line cord into the modular jack located at the back of the Console.

For the MDF cross connection to the SN610 Attendant Console, refer to NAP-200-007 (Table 007-2).

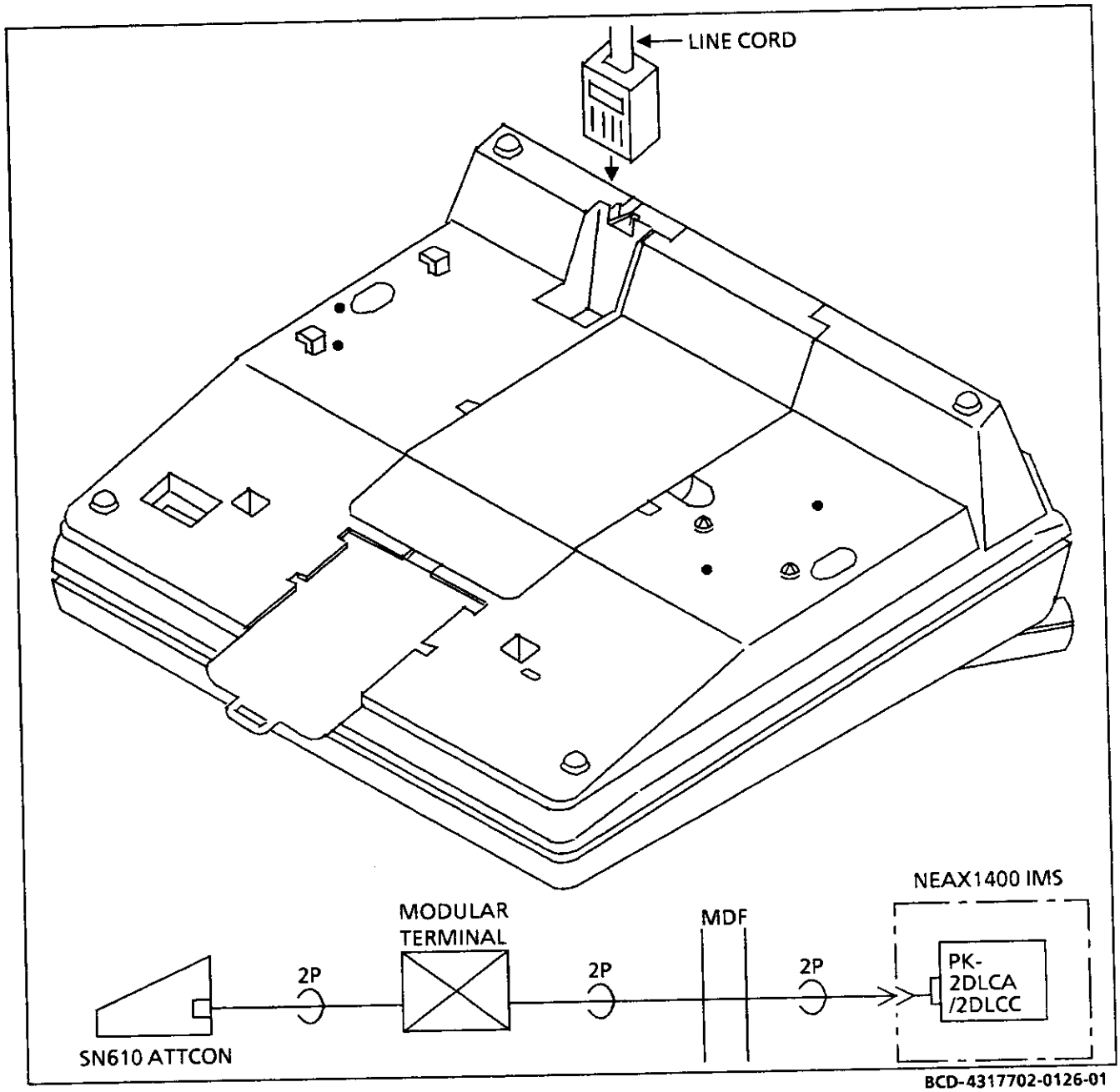
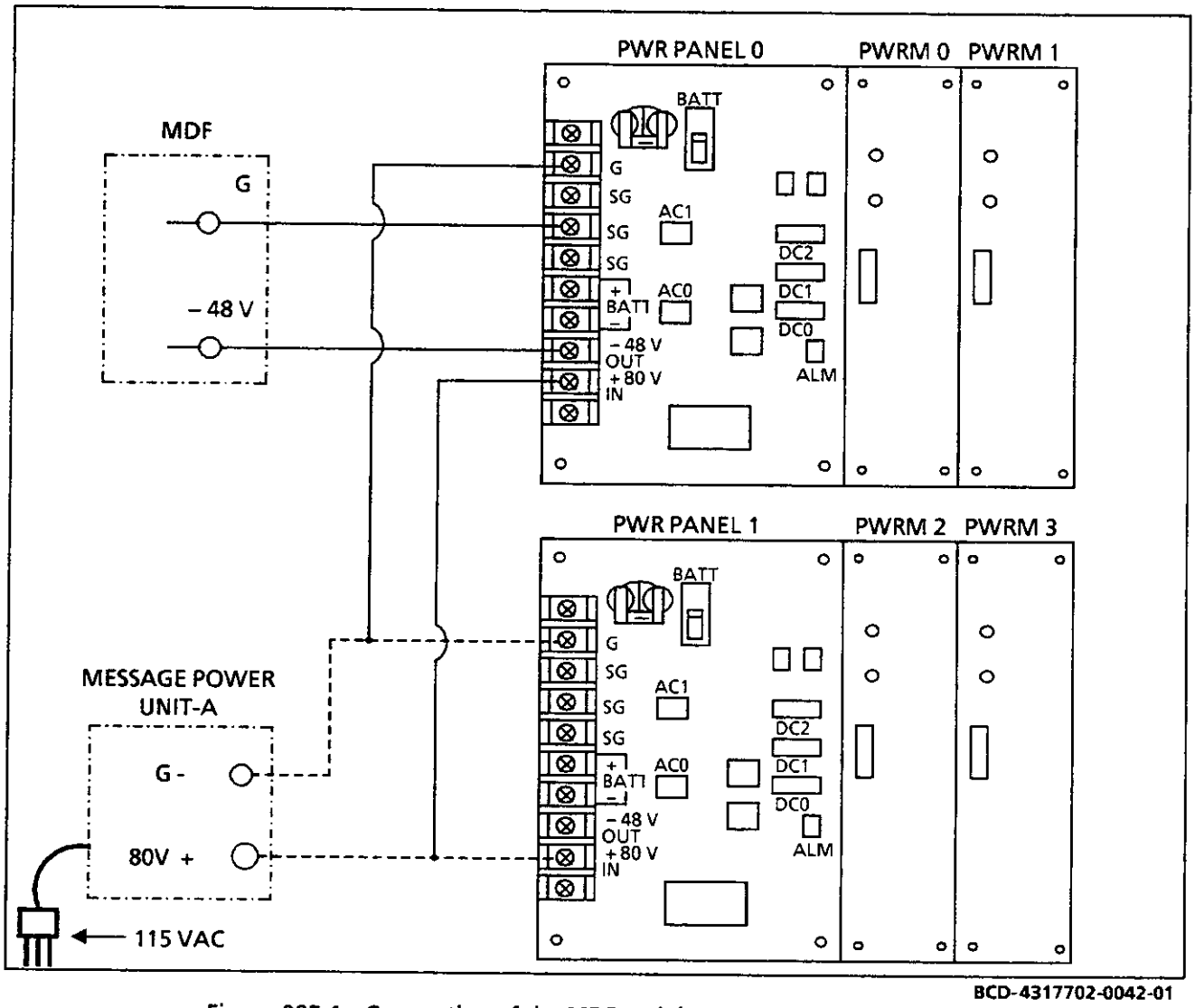


Figure 004-8 Cable Connection to a SN610 ATTCON

NAP- 200-005
Sheet 1/3
Power Cable for Peripheral Equipment

1. Connect the MDF and Message Power Unit-A as shown. The recommended unit is an ELGIN NEAX +80V Message Power Unit-A.



BCD-4317702-0042-01

Figure 005-1 Connection of the MDF and the Message Power Unit-A

Notes on Figure 005-1, Connection of the MDF and the Message Power Unit-A

Note 1: *If single-line telephones with message waiting lamps are provided in PIM2 or PIM3, then jumpers (indicated with dashed lines) must be installed.*

Note 2: *The Message Power Unit-A converts 120 VAC (provided locally) to +80 VDC for use as the power supply for single-line telephones' message waiting lamps.*

Note 3: *The -48 VDC MDF connection is used to supply power to external equipment which requires -48 V. Equipment such as Night Bells, External Lamp Devices and Paging Horns can be driven by the Power Panel and controlled with the PJ-DK01 card.*

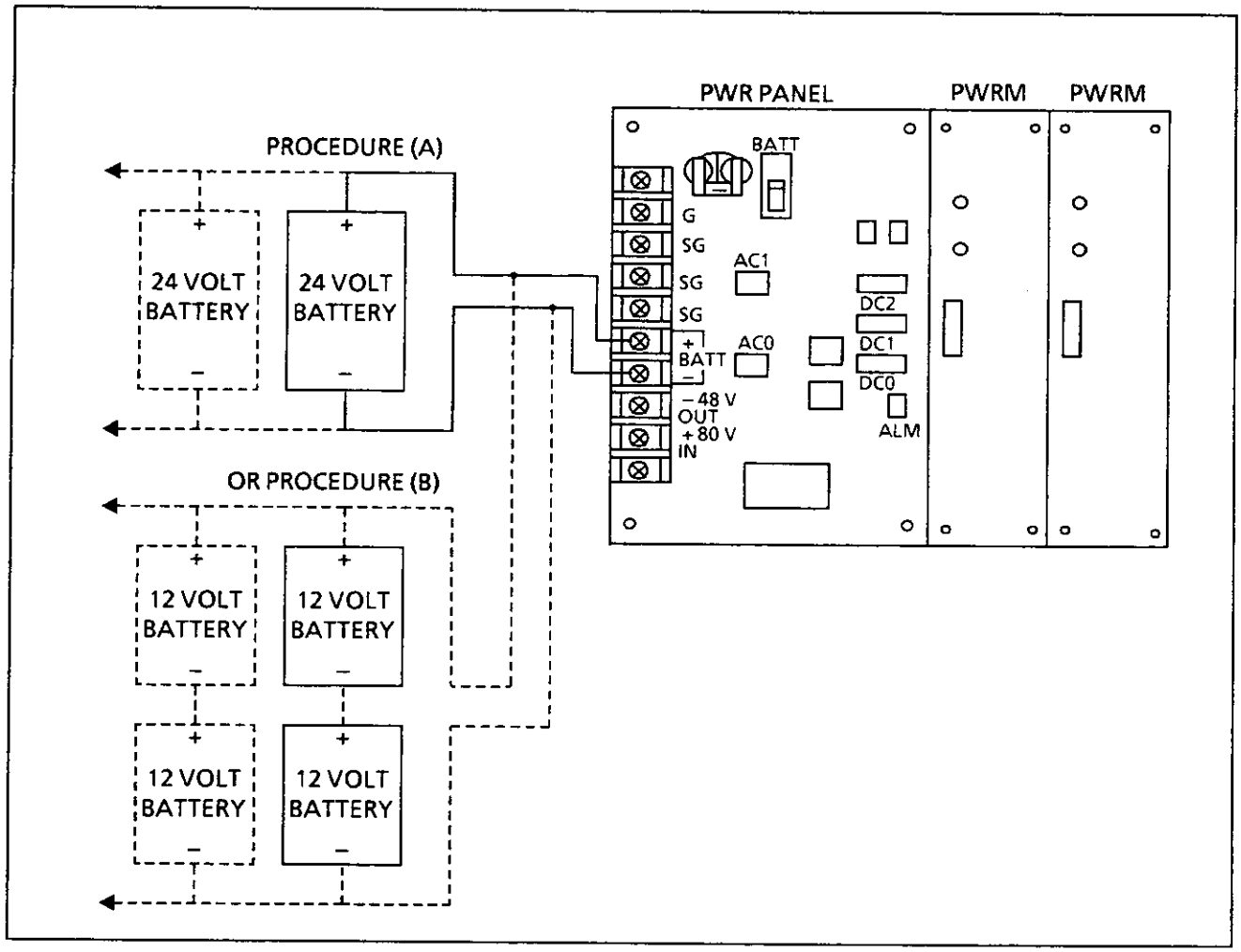
2. The terminals labeled "BATT+" and "BATT−" are located on the PWR Panel inside each PWRU.

   The input voltage of these terminals is 24V DC.

   A maintenance-free battery source must be provided locally.

   In order to increase the reserve power time, batteries can be added in parallel as shown in Figure 005-2.

Note: *When connecting a battery to the system, the "BATT" switch (ON/OFF switch for the battery) located on the PWR Panel should be in the DOWN position. When the battery charging system is used, the "AC" switch and the "BATT" switch should be turned on or turned off simultaneously.*



BCD-4317702-0043-01

Figure 005-2 Connection of the Reserve Power Batteries

NAP- 200-006
Sheet 1/7
Cable Running to MDF

1. To facilitate the connection of the 25-pair cables (shown in Figure 006-1) from the back board of the system to the MDF, each cable should be labeled at both ends using the cable number or cable designation as shown in Table 006-1 and Table 006-2.

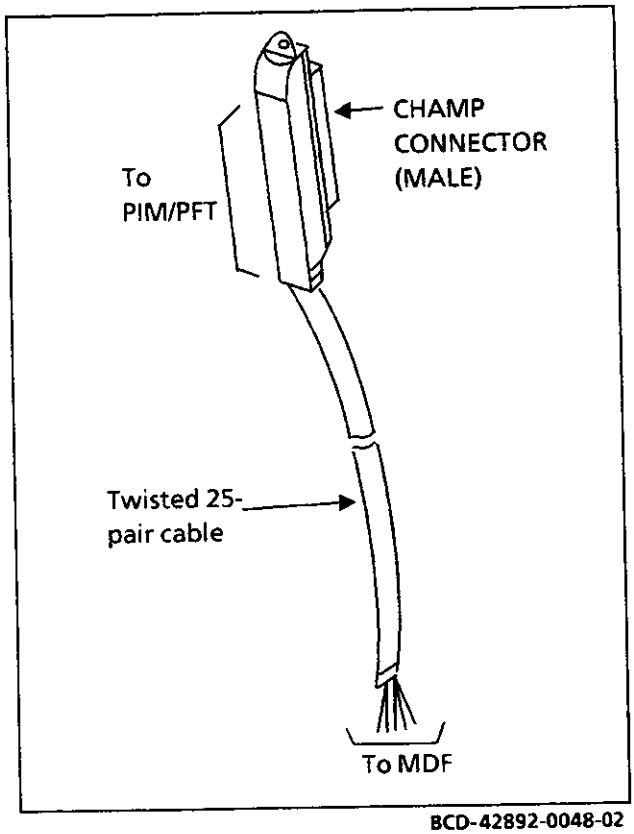


Figure 006-1 The MDF Cable

NAP- 200-006
Sheet 2/7
Cable Running to MDF

Table 006-1 MDF Cable for PIM

FROM		CABLE NUM-BER	TO	CABLE DESIG-NATION
PIM	CONNECTOR			
PIM0	LTC0	1	MDF	0 LTC0
	LTC1	2		0 LTC1
	LTC2	3		0 LTC2
	LTC3	4		0 LTC3
	LTC4	5		0 LTC4
	LTC5	6		0 LTC5
	LTC6	7		0 LTC6
	LTC7	8		0 LTC7
	LTC8	9		0 LTC8
	LTC9	10		0 LTC9
	LTC10	11		0 LTC10
PIM1	LTC0	12	MDF	1 LTC0
	LTC1	13		1 LTC1
	LTC2	14		1 LTC2
	LTC3	15		1 LTC3
	LTC4	16		1 LTC4
	LTC5	17		1LTC5
	LTC6	18		1 LTC6
	LTC7	19		1 LTC7
	LTC8	20		1 LTC8
	LTC9	21		1 LTC9
	LTC10	22		1 LTC10
PIM2	LTC0	23	MDF	2 LTC0
	LTC1	24		2 LTC1
	LTC2	25		2LTC2
	LTC3	26		2LTC3
	LTC4	27		2 LTC4
	LTC5	28		2 LTC5
	LTC6	29		2 LTC6
	LTC7	30		2 LTC7
	LTC8	31		2 LTC8
	LTC9	32		2 LTC9
	LTC10	33		2 LTC10
PIM3	LTC0	34	MDF	3 LTC0
	LTC1	35		3 LTC1
	LTC2	36		3 LTC2
	LTC3	37		3 LTC3
	LTC4	38		3 LTC4
	LTC5	39		3 LTC5

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Table 006-2 MDF Cable for PFT Panel

FROM		CABLE NUM-BER	TO	CABLE DESIG-NATION
UNIT	CONNECTOR			
PFT0	PFT0	45	MDF	0 PFT0
	PFT1	46		0 PFT1
PFT1	PFT0	47		1 PFT0
	PFT1	48		1 PFT1
PFT2	PFT0	49		2 PFT0
	PFT1	50		2 PFT1
PFT3	PFT0	51		3 PFT0
	PFT1	52		3 PFT1

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NAP- 200-006
Sheet 3/7
Cable Running To MDF

2. Bring the MDF cable up to the main equipment through the cable openings located in the Base Unit, as shown in Figure 006-2 through Figure 006-5.

3. Connect each cable to a LTC connector located on a PIM and a PFT0 or PFT1 connector located on a PFT Panel.

4. Affix the cables and connectors to the main equipment with cable bands and screw connectors, as shown in Figure 006-2.

Note 1: *To effectively radiate the heat from the heat sink, bind the cables with tie wrap and leave a space between the heat sink and the cables such that the cables are not in contact with the sink.*

Note 2: *Cut the attached BLANK PLATE (plastic) according to the volume of MDF cables to be provided, and cover the cable opening with it.*

Cover any unused cable openings with the attached BLANK PLATE (metal).

NAP- 200-006
Sheet 4/7
Cable Running To MDF

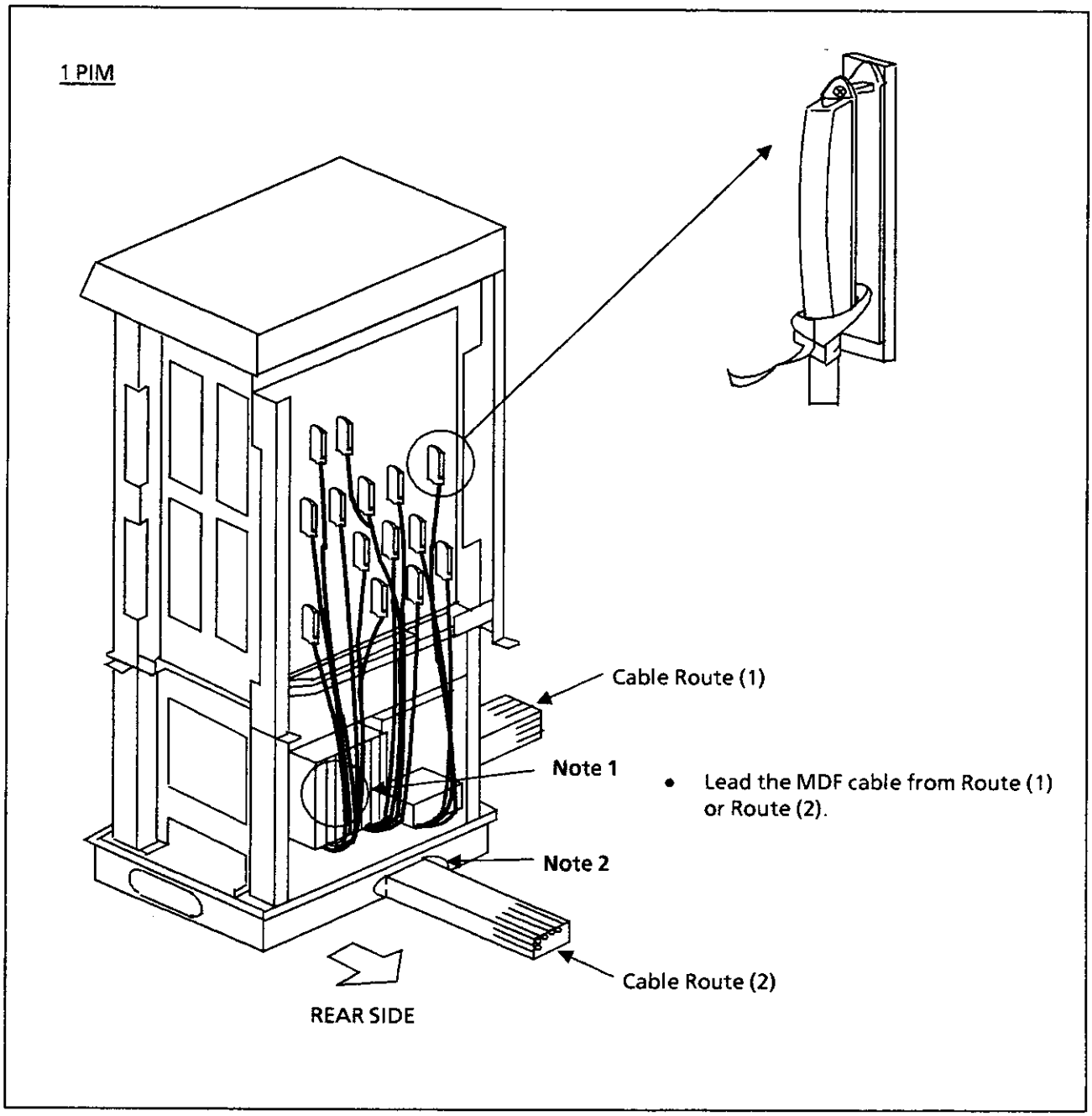

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Figure 006-2 Cable Running (1/4)

NAP- 200-006
Sheet 5/7
Cable Running To MDF

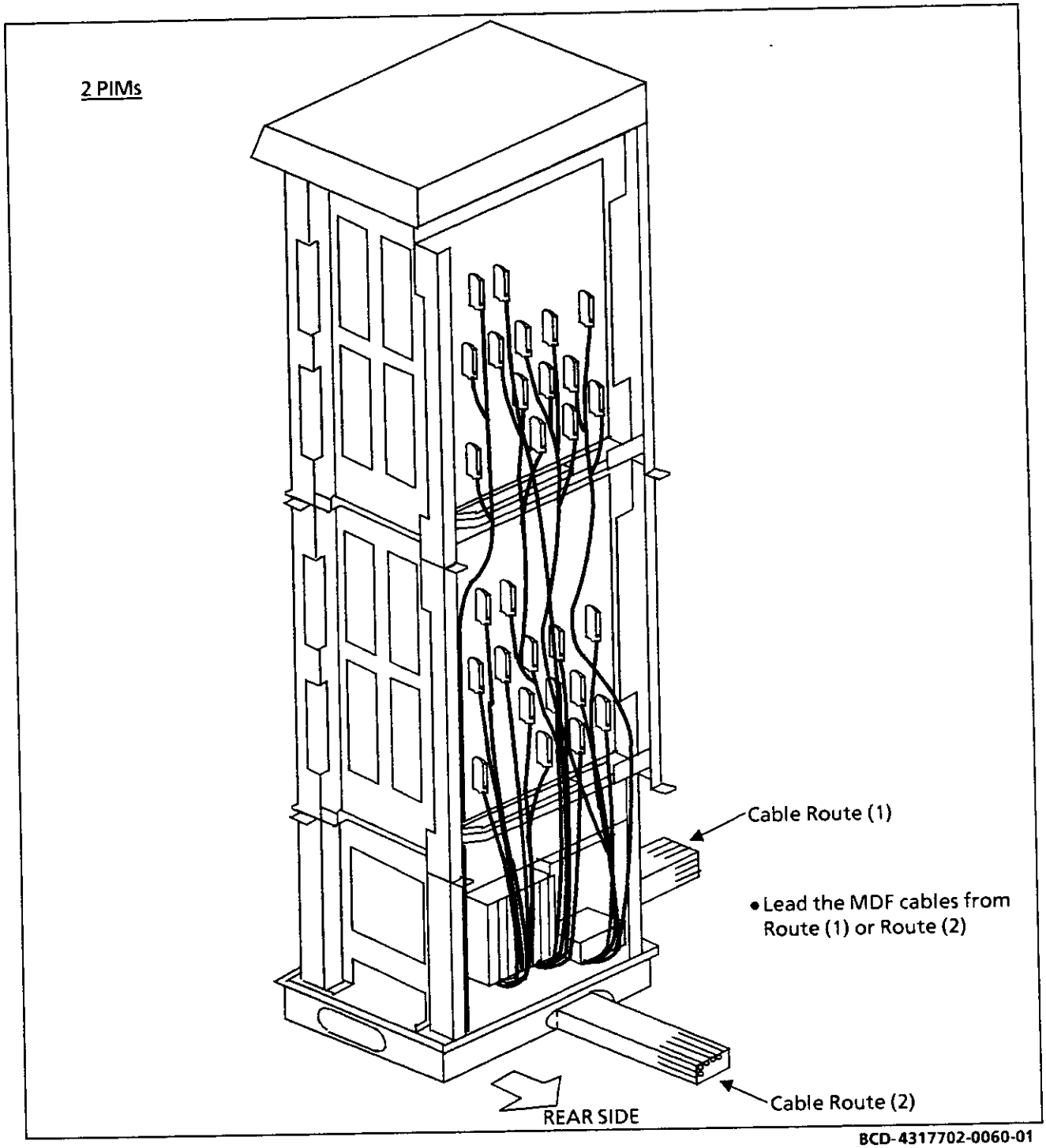

Figure 006-3 Cable Running (2/4)

NAP- 200-006
Sheet 6/7
Cable Running To MDF

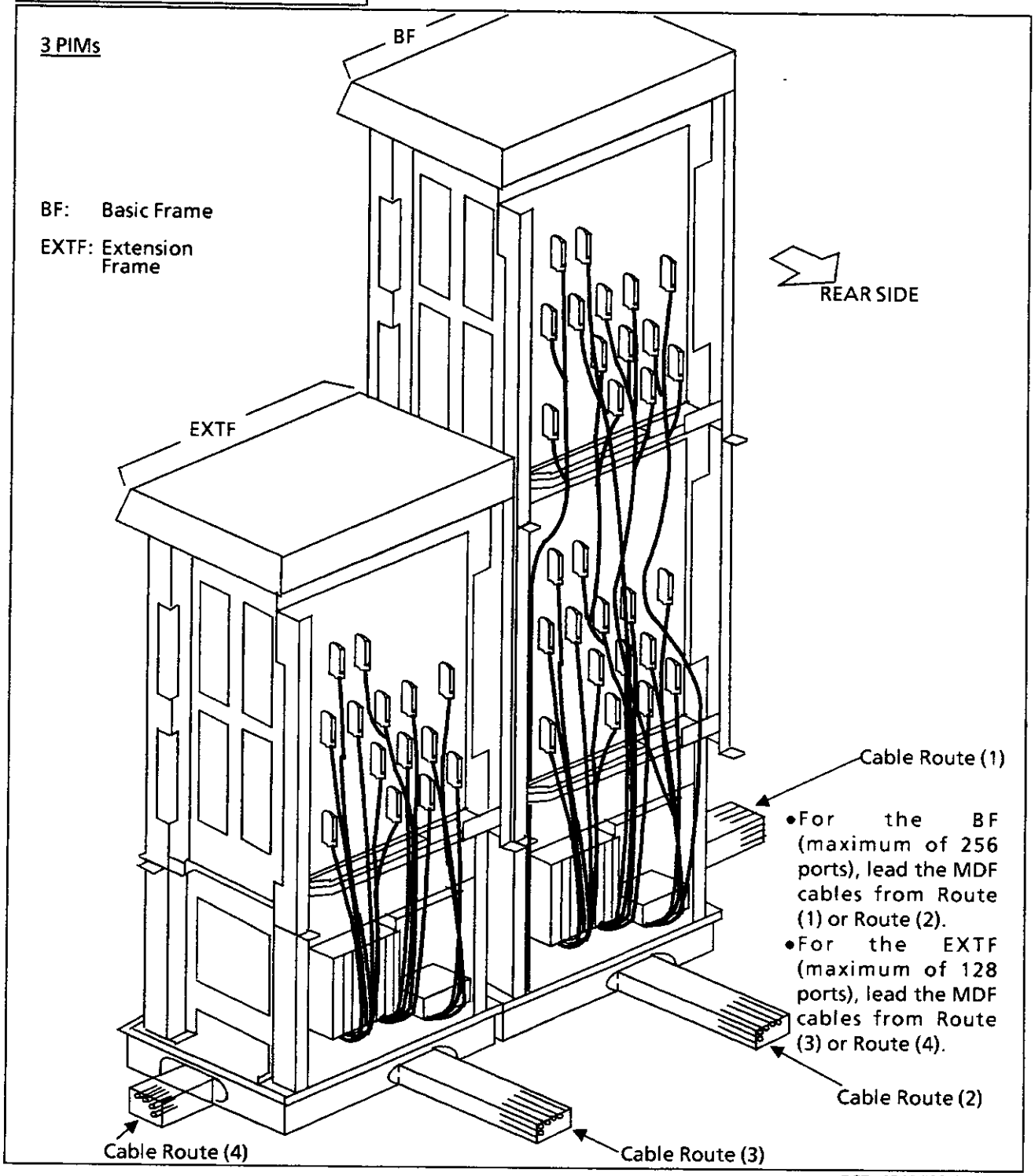

Figure 006-4 Cable Running (3/4)

NAP- 200-006
Sheet 7/7
Cable Running To MDF

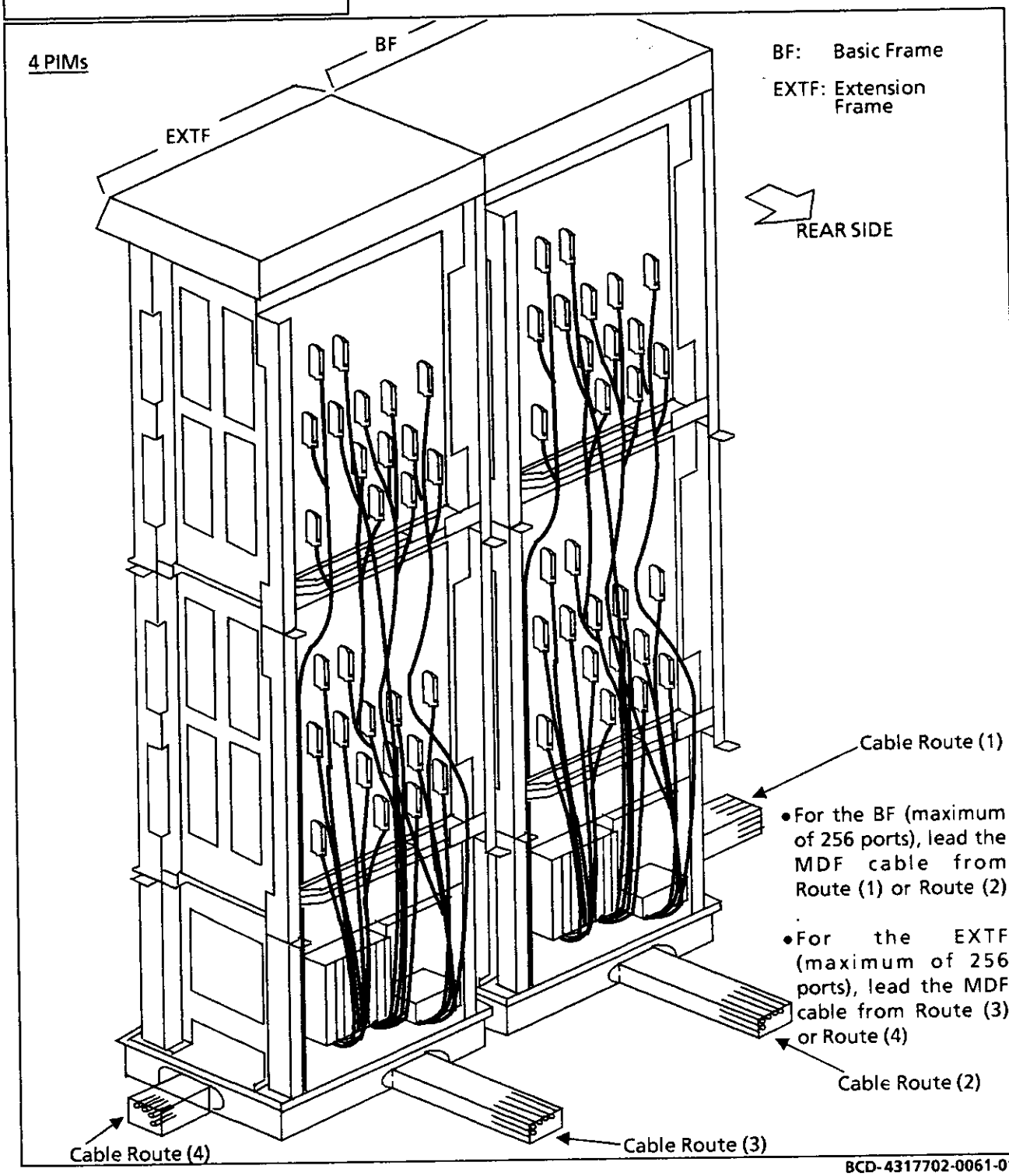

Figure 006-5 Cable Running (4/4)

NAP- 200-007
Sheet 1/22
Termination of Cables on MDF

1. Connect the cables to the MDF, while referring to Figure 007-1 and Table 007-1.

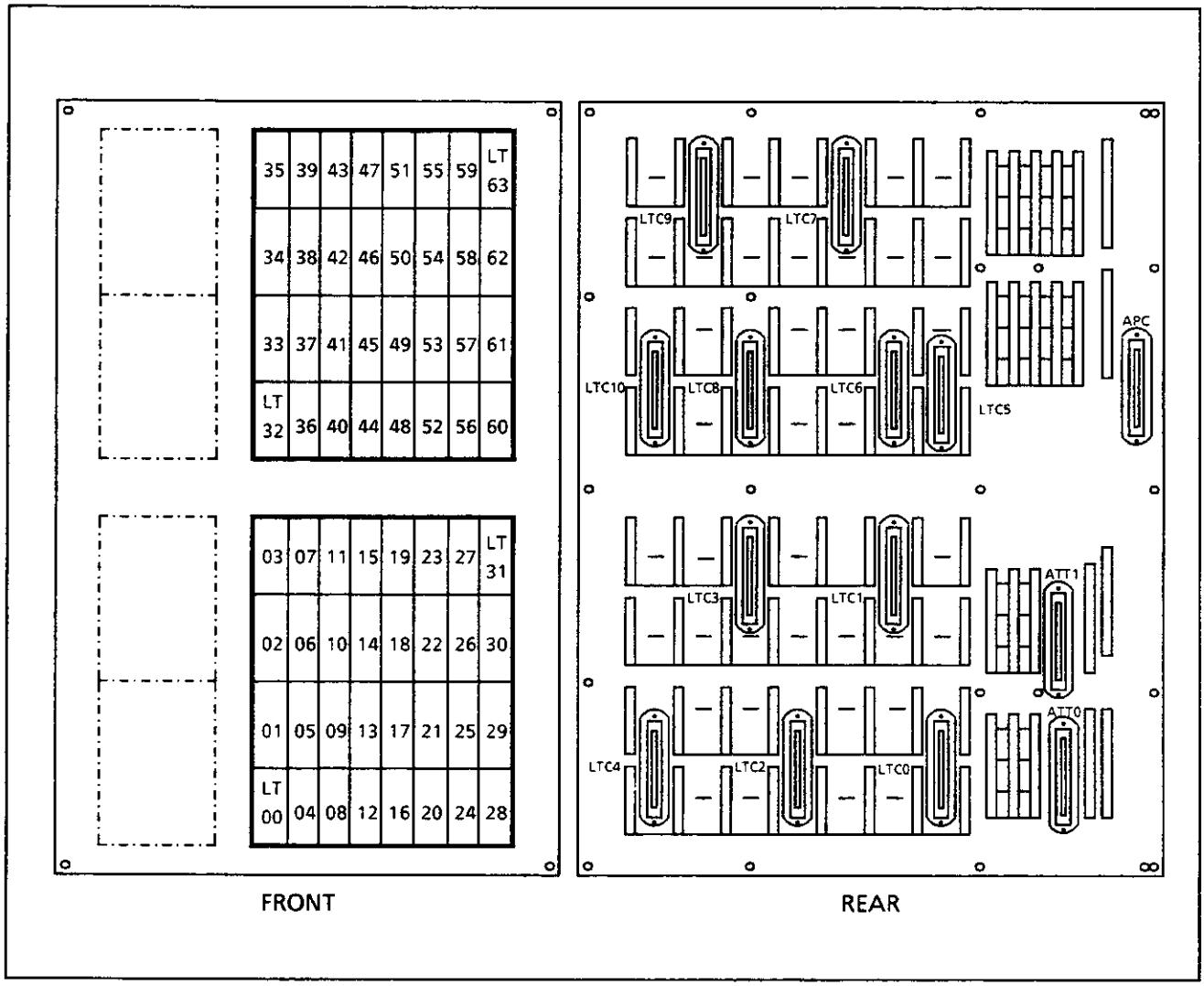

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Figure 007-1 Location of Card Slots and LTC Connectors

NAP- 200-007
Sheet 2/22
Termination of Cables on MDF

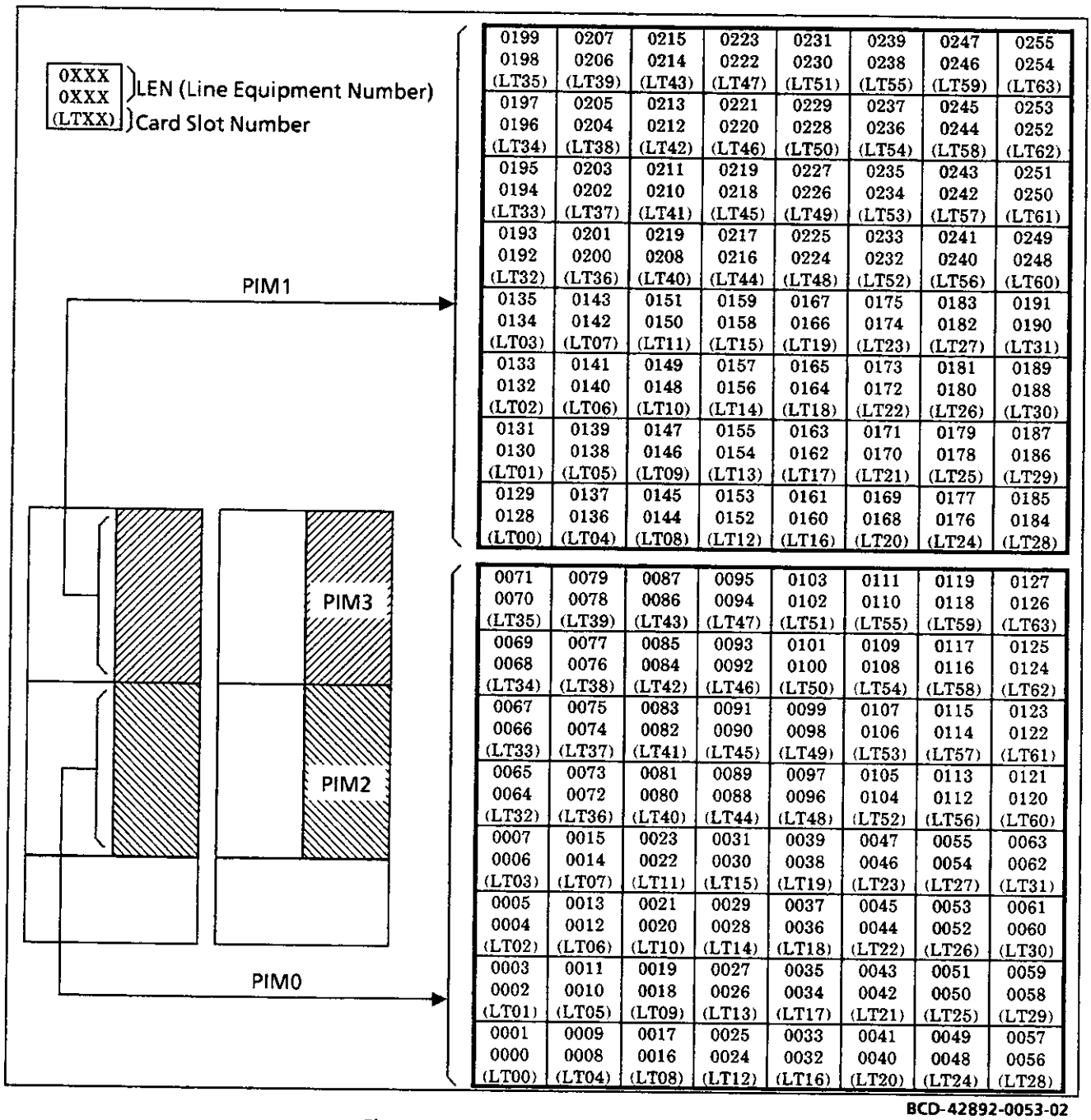
Table 007-1 LTC Connector Accommodation

LTC Connector	Card Slot Number
LTC0	LT00 – LT05
LTC1	LT06 – LT11
LTC2	LT12 – LT17
LTC3	LT18 – LT23
LTC4	LT24 – LT29
LTC5	LT30 – LT35
LTC6	LT36 – LT41
LTC7	LT42 – LT47
LTC8	LT48 – LT53
LTC9	LT54 – LT59
LTC10	LT60 – LT63

BCD-42892-0052-02

- Figure 007-2 shows the relationship between a Line Equipment Number (LEN) and a Card Slot Number (LT Number).

(1) LENs 0000 – 0255



0199 0198 (LT35)	0207 0206 (LT39)	0215 0214 (LT43)	0223 0222 (LT47)	0231 0230 (LT51)	0239 0238 (LT55)	0247 0246 (LT59)	0255 0254 (LT63)
0197 0196 (LT34)	0205 0204 (LT38)	0213 0212 (LT42)	0221 0220 (LT46)	0229 0228 (LT50)	0237 0236 (LT54)	0245 0244 (LT58)	0253 0252 (LT62)
0195 0194 (LT33)	0203 0202 (LT37)	0211 0210 (LT41)	0219 0218 (LT45)	0227 0226 (LT49)	0235 0234 (LT53)	0243 0242 (LT57)	0251 0250 (LT61)
0193 0192 (LT32)	0201 0200 (LT36)	0219 0208 (LT40)	0217 0216 (LT44)	0225 0224 (LT48)	0233 0232 (LT52)	0241 0240 (LT56)	0249 0248 (LT60)
0135 0134 (LT03)	0143 0142 (LT07)	0151 0150 (LT11)	0159 0158 (LT15)	0167 0166 (LT19)	0175 0174 (LT23)	0183 0182 (LT27)	0191 0190 (LT31)
0133 0132 (LT02)	0141 0140 (LT06)	0149 0148 (LT10)	0157 0156 (LT14)	0165 0164 (LT18)	0173 0172 (LT22)	0181 0180 (LT26)	0189 0188 (LT30)
0131 0130 (LT01)	0139 0138 (LT05)	0147 0146 (LT09)	0155 0154 (LT13)	0163 0162 (LT17)	0171 0170 (LT21)	0179 0178 (LT25)	0187 0186 (LT29)
0129 0128 (LT00)	0137 0136 (LT04)	0145 0144 (LT08)	0153 0152 (LT12)	0161 0160 (LT16)	0169 0168 (LT20)	0177 0176 (LT24)	0185 0184 (LT28)

0071 0070 (LT35)	0079 0078 (LT39)	0087 0086 (LT43)	0095 0094 (LT47)	0103 0102 (LT51)	0111 0110 (LT55)	0119 0118 (LT59)	0127 0126 (LT63)
0069 0068 (LT34)	0077 0076 (LT38)	0085 0084 (LT42)	0093 0092 (LT46)	0101 0100 (LT50)	0109 0108 (LT54)	0117 0116 (LT58)	0125 0124 (LT62)
0067 0066 (LT33)	0075 0074 (LT37)	0083 0082 (LT41)	0091 0090 (LT45)	0099 0098 (LT49)	0107 0106 (LT53)	0115 0114 (LT57)	0123 0122 (LT61)
0065 0064 (LT32)	0073 0072 (LT36)	0081 0080 (LT40)	0089 0088 (LT44)	0097 0096 (LT48)	0105 0104 (LT52)	0113 0112 (LT56)	0121 0120 (LT60)
0007 0006 (LT03)	0015 0014 (LT07)	0023 0022 (LT11)	0031 0030 (LT15)	0039 0038 (LT19)	0047 0046 (LT23)	0055 0054 (LT27)	0063 0062 (LT31)
0005 0004 (LT02)	0013 0012 (LT06)	0021 0020 (LT10)	0029 0028 (LT14)	0037 0036 (LT18)	0045 0044 (LT22)	0053 0052 (LT26)	0061 0060 (LT30)
0003 0002 (LT01)	0011 0010 (LT05)	0019 0018 (LT09)	0027 0026 (LT13)	0035 0034 (LT17)	0043 0042 (LT21)	0051 0050 (LT25)	0059 0058 (LT29)
0001 0000 (LT00)	0009 0008 (LT04)	0017 0016 (LT08)	0025 0024 (LT12)	0033 0032 (LT16)	0041 0040 (LT20)	0049 0048 (LT24)	0057 0056 (LT28)

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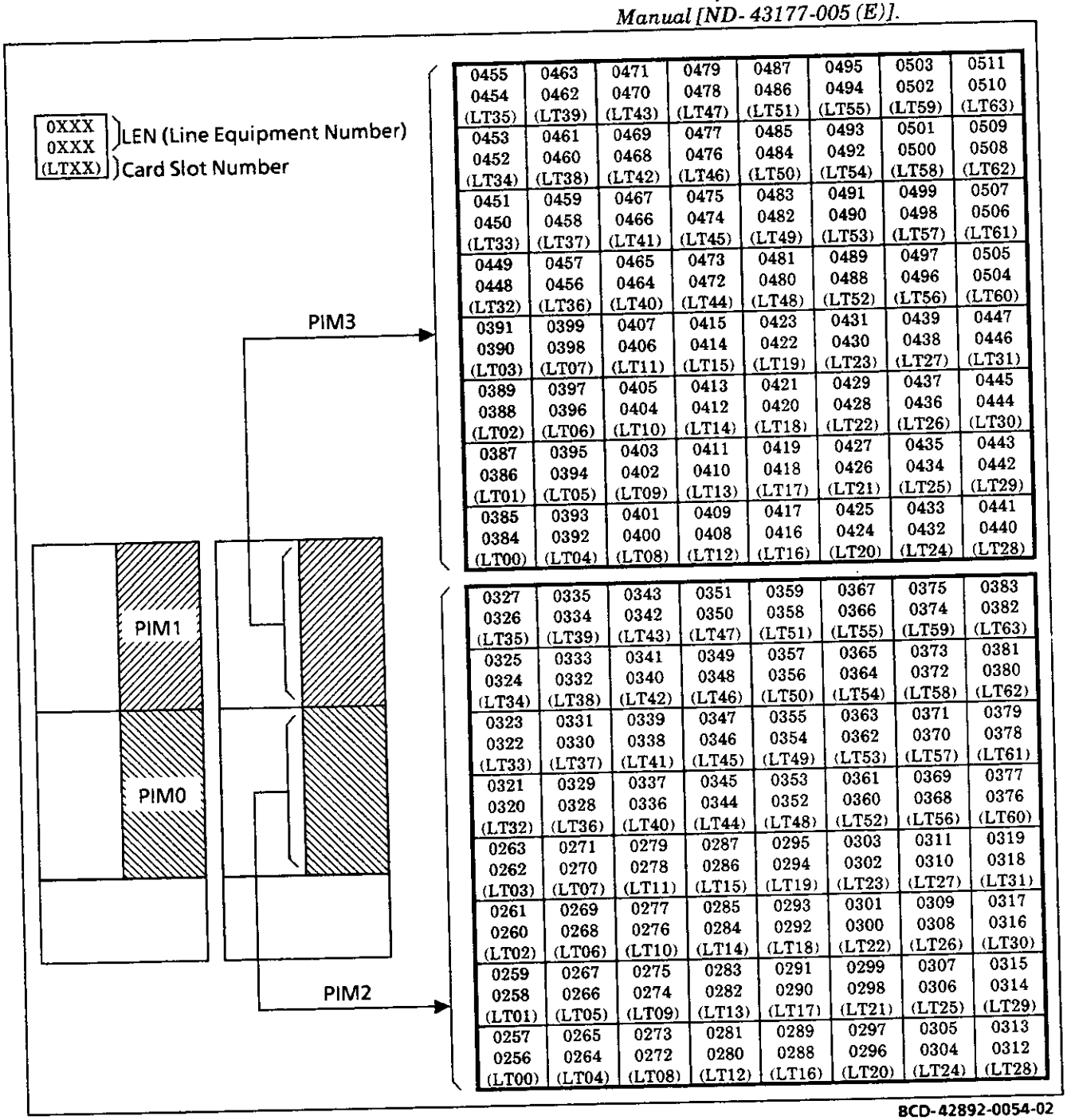
Figure 007-2 Location of LEN (1/2)

(2) LENs 0256 – 0511

Note: *There are limitations for mounting cards in PIM3. Refer to the System Programming Manual [ND- 43177-005 (E)].*



0455 0454 (LT35)	0463 0462 (LT39)	0471 0470 (LT43)	0479 0478 (LT47)	0487 0486 (LT51)	0495 0494 (LT55)	0503 0502 (LT59)	0511 0510 (LT63)
0453 0452 (LT34)	0461 0460 (LT38)	0469 0468 (LT42)	0477 0476 (LT46)	0485 0484 (LT50)	0493 0492 (LT54)	0501 0500 (LT58)	0509 0508 (LT62)
0451 0450 (LT33)	0459 0458 (LT37)	0467 0466 (LT41)	0475 0474 (LT45)	0483 0482 (LT49)	0491 0490 (LT53)	0499 0498 (LT57)	0507 0506 (LT61)
0449 0448 (LT32)	0457 0456 (LT36)	0465 0464 (LT40)	0473 0472 (LT44)	0481 0480 (LT48)	0489 0488 (LT52)	0497 0496 (LT56)	0505 0504 (LT60)
0391 0390 (LT03)	0399 0398 (LT07)	0407 0406 (LT11)	0415 0414 (LT15)	0423 0422 (LT19)	0431 0430 (LT23)	0439 0438 (LT27)	0447 0446 (LT31)
0389 0388 (LT02)	0397 0396 (LT06)	0405 0404 (LT10)	0413 0412 (LT14)	0421 0420 (LT18)	0429 0428 (LT22)	0437 0436 (LT26)	0445 0444 (LT30)
0387 0386 (LT01)	0395 0394 (LT05)	0403 0402 (LT09)	0411 0410 (LT13)	0419 0418 (LT17)	0427 0426 (LT21)	0435 0434 (LT25)	0443 0442 (LT29)
0385 0384 (LT00)	0393 0392 (LT04)	0401 0400 (LT08)	0409 0408 (LT12)	0417 0416 (LT16)	0425 0424 (LT20)	0433 0432 (LT24)	0441 0440 (LT28)

0327 0326 (LT35)	0335 0334 (LT39)	0343 0342 (LT43)	0351 0350 (LT47)	0359 0358 (LT51)	0367 0366 (LT55)	0375 0374 (LT59)	0383 0382 (LT63)
0325 0324 (LT34)	0333 0332 (LT38)	0341 0340 (LT42)	0349 0348 (LT46)	0357 0356 (LT50)	0365 0364 (LT54)	0373 0372 (LT58)	0381 0380 (LT62)
0323 0322 (LT33)	0331 0330 (LT37)	0339 0338 (LT41)	0347 0346 (LT45)	0355 0354 (LT49)	0363 0362 (LT53)	0371 0370 (LT57)	0379 0378 (LT61)
0321 0320 (LT32)	0329 0328 (LT36)	0337 0336 (LT40)	0345 0344 (LT44)	0353 0352 (LT48)	0361 0360 (LT52)	0369 0368 (LT56)	0377 0376 (LT60)
0263 0262 (LT03)	0271 0270 (LT07)	0279 0278 (LT11)	0287 0286 (LT15)	0295 0294 (LT19)	0303 0302 (LT23)	0311 0310 (LT27)	0319 0318 (LT31)
0261 0260 (LT02)	0269 0268 (LT06)	0277 0276 (LT10)	0285 0284 (LT14)	0293 0292 (LT18)	0301 0300 (LT22)	0309 0308 (LT26)	0317 0316 (LT30)
0259 0258 (LT01)	0267 0266 (LT05)	0275 0274 (LT09)	0283 0282 (LT13)	0291 0290 (LT17)	0299 0298 (LT21)	0307 0306 (LT25)	0315 0314 (LT29)
0257 0256 (LT00)	0265 0264 (LT04)	0273 0272 (LT08)	0281 0280 (LT12)	0289 0288 (LT16)	0297 0296 (LT20)	0305 0304 (LT24)	0313 0312 (LT28)

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Figure 007-2 Location of LEN (2/2)

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Termination of Cables on MDF

- Figure 007-3 shows the relationship between the LTC connector pin and the Line Equipment Number (LEN).
  (a) PIM0 (LTC0 – LTC5)

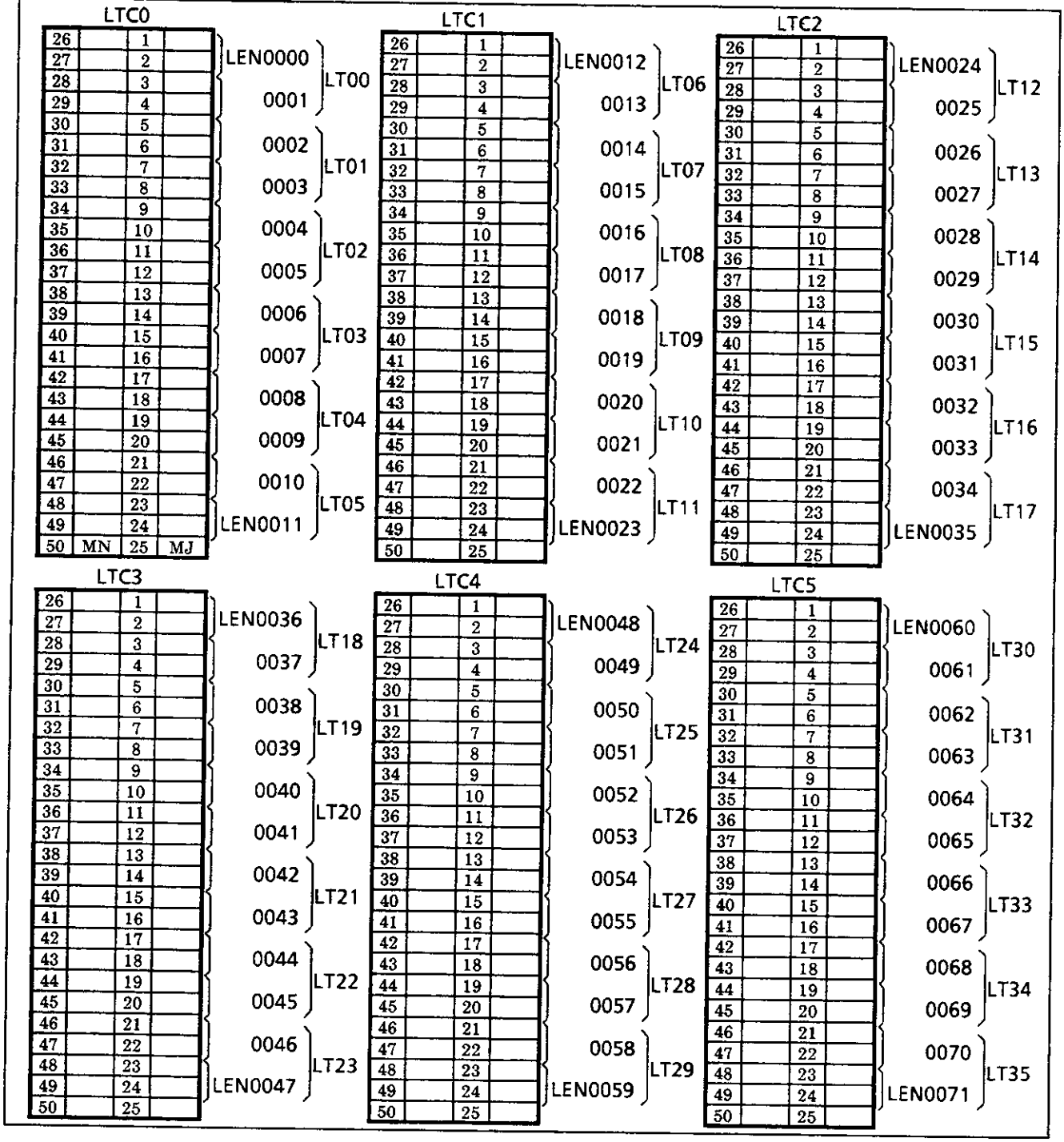

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Figure 007-3 LTC Connector (1/8)

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Termination of Cables on MDF

(a) PIM0 (LTC6 – LTC10)

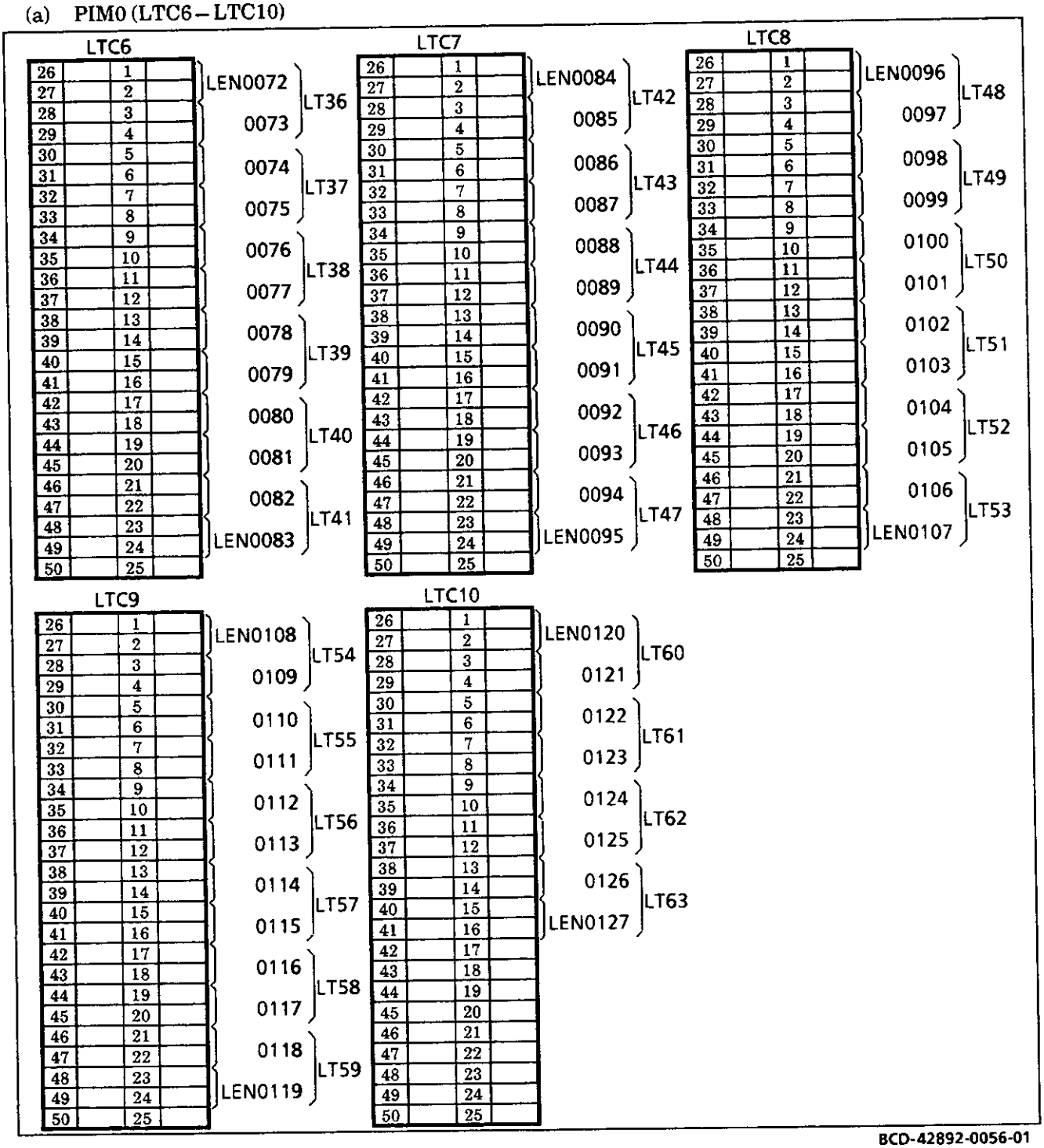

Figure 007-3 LTC Connector (2/8)

(b) PIM1 (LTC0 – LTC5)

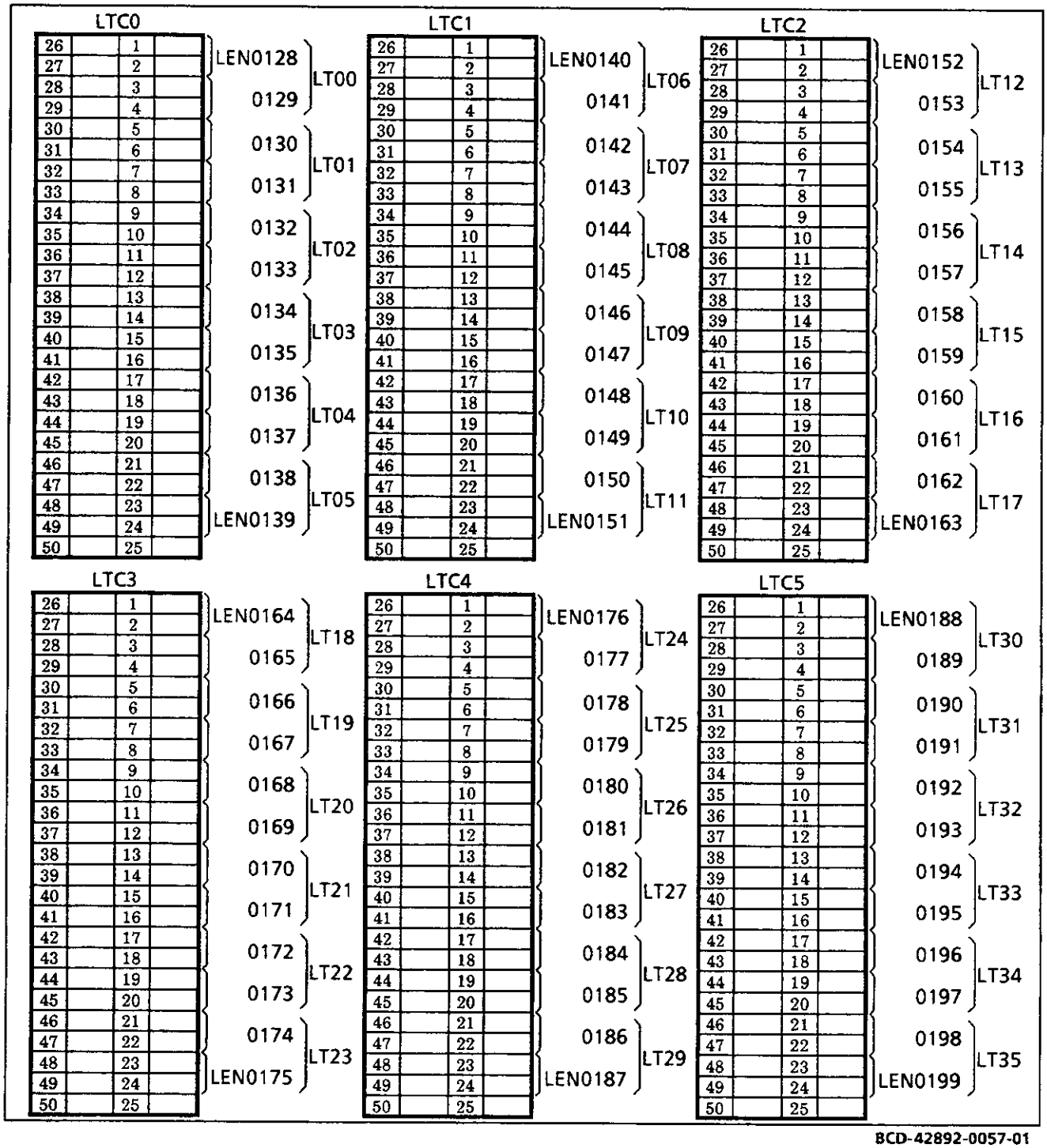

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Figure 007-3 LTC Connector (3/8)

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(b) PIM1 (LTC6 – LTC10)

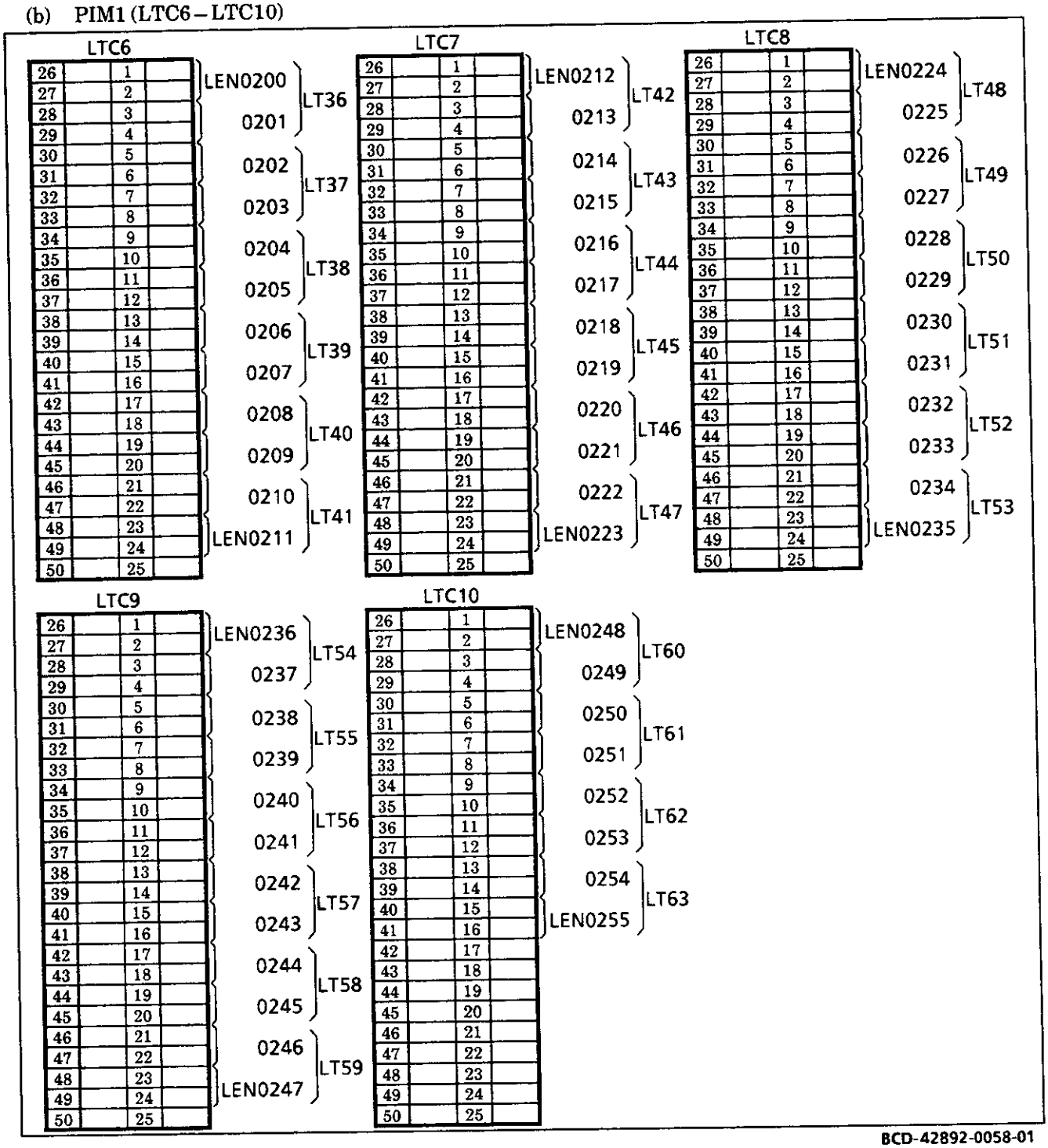

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Figure 007-3 LTC Connector (4/8)

(c) PIM2 (LTC0 – LTC5)

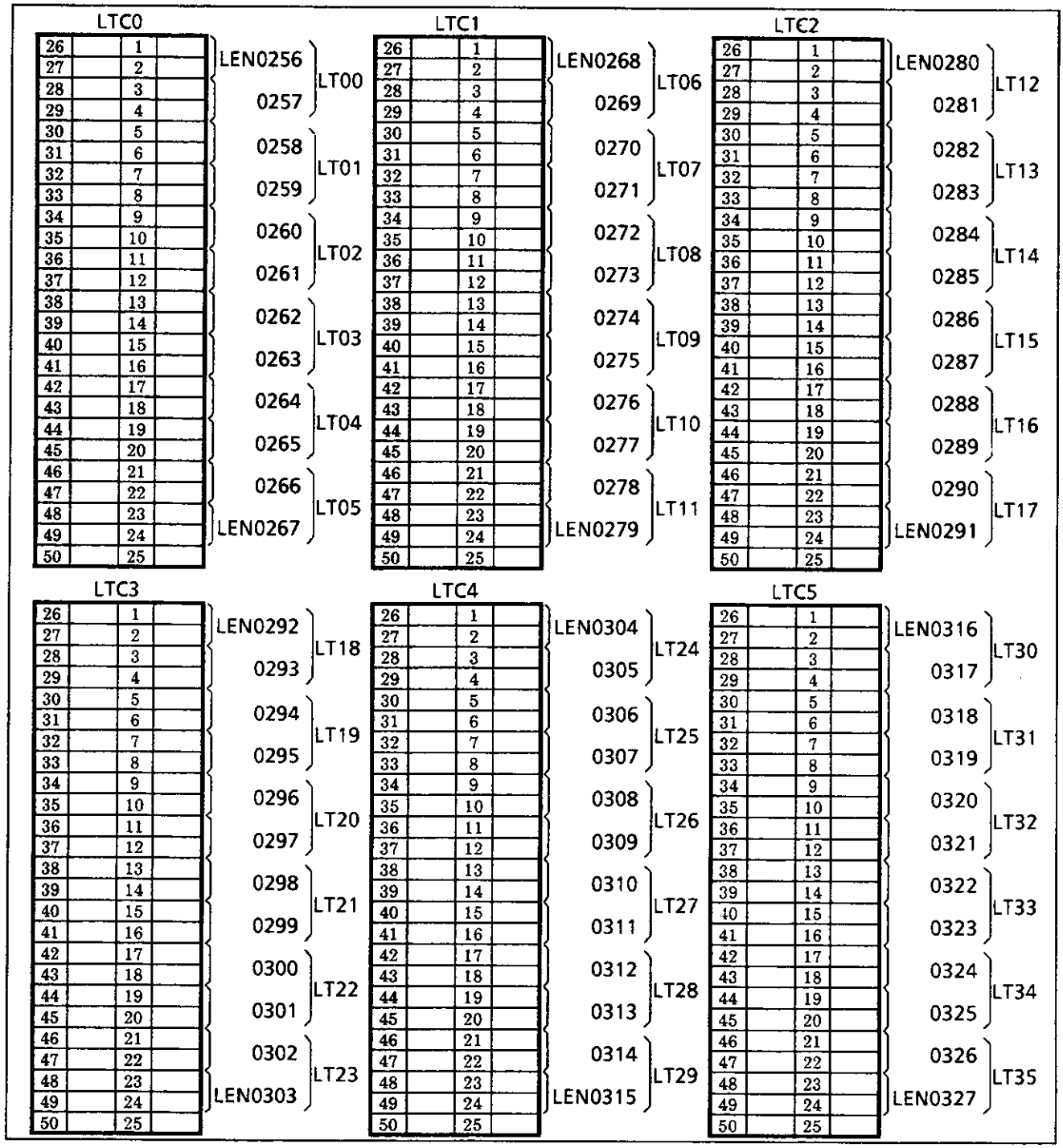

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Figure 007-3 LTC Connector (5/8)

(c) PIM2 (LTC6 – LTC10)

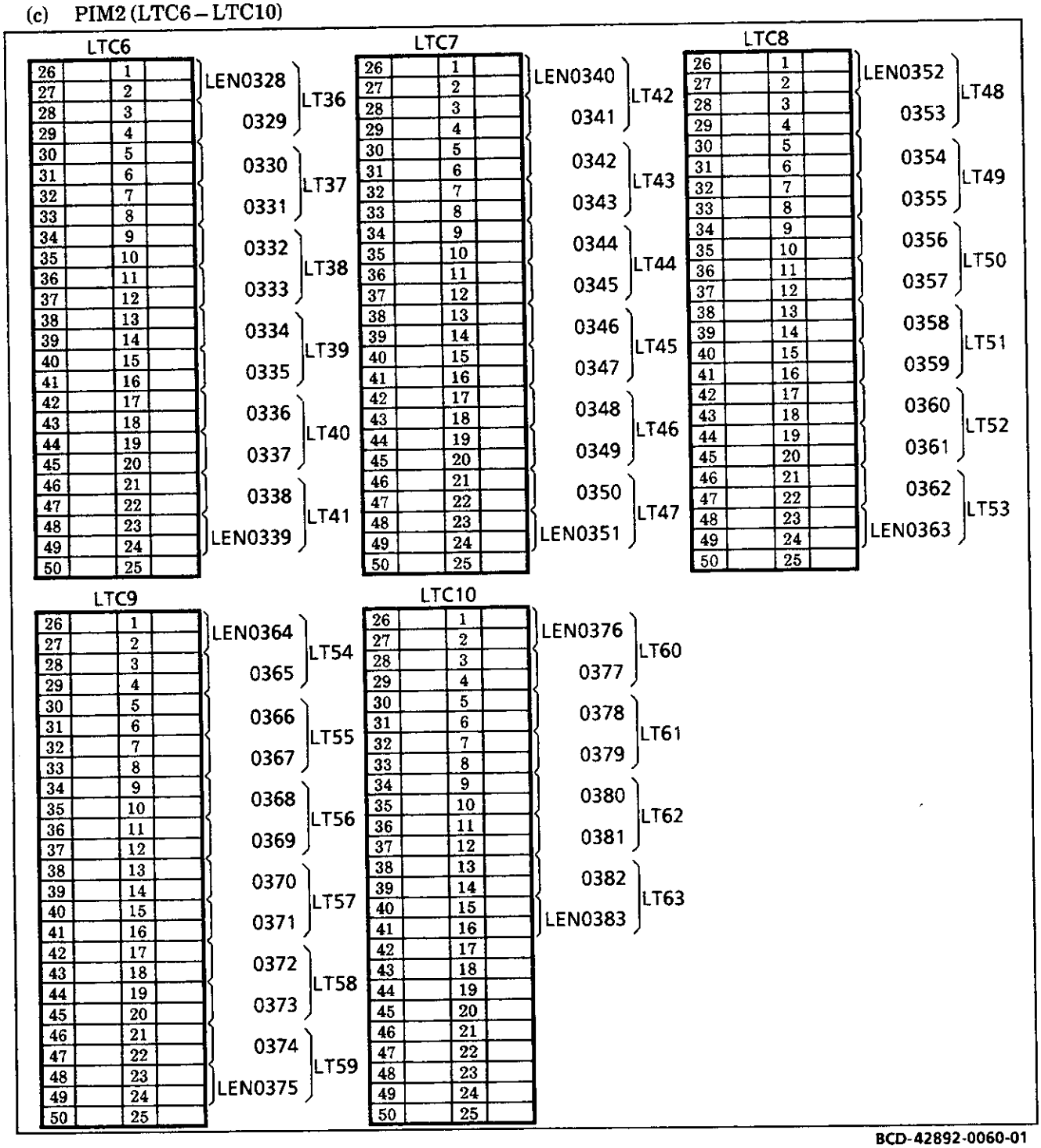

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Figure 007-3 LTC Connector (6/8)

(d) PIM3 (LTC0 – LTC5)

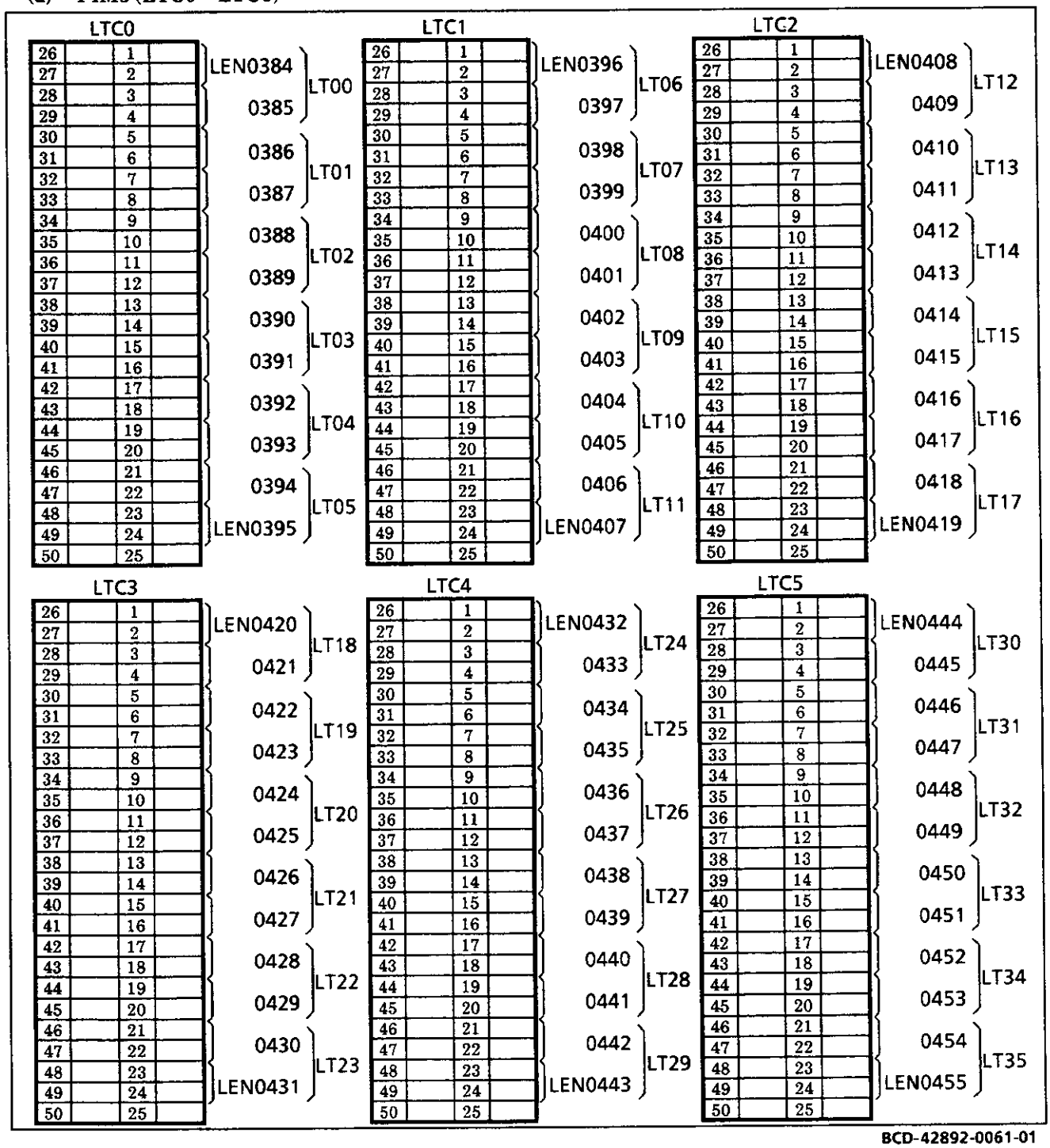

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Figure 007-3 LTC Connector (7/8)

(d) PIM3 (LTC6 – LTC10)

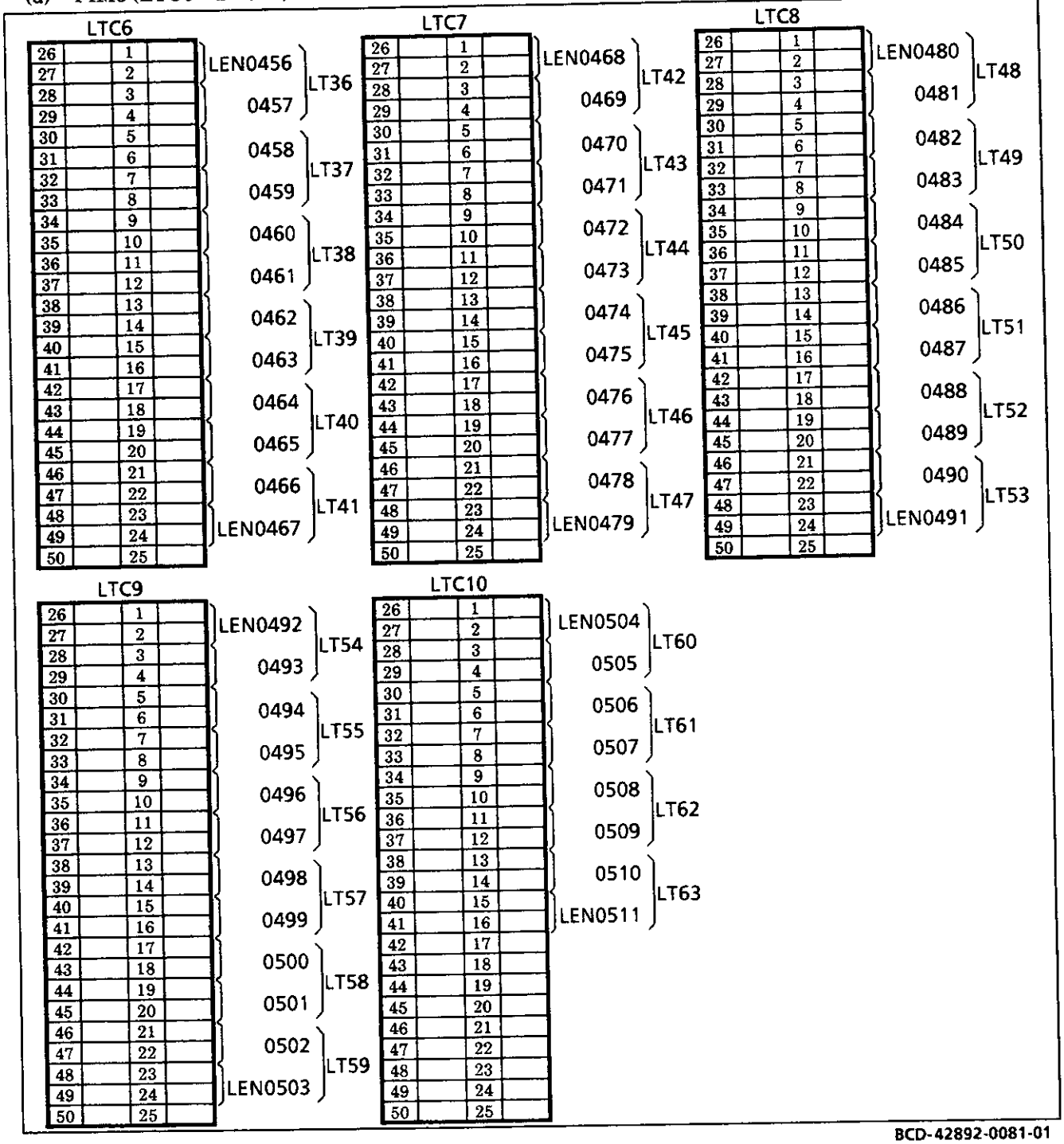

Figure 007-3 LTC Connector (8/8)

2. Cross connections on the MDF for LTC0 – LTC10 are shown in Table 007-2.

Table 007-2 LTC0 – LTC10 MDF Cross Connection Information

PIN	RUN-NING CABLE	STATION CABLE	SLOTS	TYPE OF INTERFACE							
				MULTILINE TERMINAL Note (2DLC)	SLT (2LC)	CO/PBX DID (2COT /DITD)	2-WIRE E&M TIE LINE (2EMT)	4 WIRE E&M TIE LINE (ODT)	EXT. KEY (DK02)	EXT. RELAY (DK01)	EXT. PAGE/ MOH/BGM (2COT)
26	WH-BL	GN	1	RA0	T0	T0	T0	TXT0	K1	0A	T
1	BL-WH	RD		TA0	R0	R0	R0	TXR0	K0	0B	R
27	WH-OR	BK		RB0			M0	RXT0	K3	1A	
2	OR-WH	YL		TB0			E0	RXR0	K2	1B	
28	WH-GN	GN		RA1	T1	T1	T1	M0	K5	2A	T
3	GN-WH	RD		TA1	R1	R1	R1	E0	K4	2B	R
29	WH-BR	BK		RB1			M1		K7	3A	
4	BR-WH	YL		TB1			E1		K6	3B	
30	WH-SL	GN	2	RA0	T0	T0	T0	TXT1	K1	0A	T
5	SL-WH	RD		TA0	R0	R0	R0	TXR1	K0	0B	R
31	RD-BL	BK		RB0			M0	RXT1	K3	1A	
6	BL-RD	YL		TB0			E0	RXR1	K2	1B	
32	RD-OR	GN		RA1	T1	T1	T1	M1	K5	2A	T
7	OR-RD	RD		TA1	R1	R1	R1	E1	K4	2B	R
33	RD-GN	BK		RB1			M1		K7	3A	
8	GN-RD	YL		TB1			E1		K6	3B	
34	RD-BR	GN	3	RA0	T0	T0	T0	TXT0	K1	0A	T
9	BR-RD	RD		TA0	R0	R0	R0	TXR0	K0	0B	R
35	RD-SL	BK		RB0			M0	RXT0	K3	1A	
10	SL-RD	YL		TB0			E0	RXR0	K2	1B	
36	BK-BL	GN		RA1	T1	T1	T1	M0	K5	2A	T
11	BL-BK	RD		TA1	R1	R1	R1	E0	K4	2B	R
37	BK-OR	BK		RB1			M1		K7	3A	
12	OR-BK	YL		TB1			E1		K6	3B	

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Note: *The DSS Console, Add-On Module and SN610 Attendant Console are included.*

Table 007-2 LTC0 – LTC10 MDF Cross Connection Information (Continued)

PIN	RUN-NING CABLE	STATION CABLE	SLOTS	TYPE OF INTERFACE							
				MULTILINE TERMINAL Note (2DLC)	SLT (2LC)	CO/PBX DID (2COT /DITD)	2-WIRE E&M TIE LINE (2EMT)	4 WIRE E&M TIE LINE (ODT)	EXT. KEY (DK02)	EXT. RELAY (DK01)	EXT. PAGE/ MOH/BGM (2COT)
38	BK-GN	GN	4	RA0	T0	T0	T0	TXT1	K1	0A	T
13	GN-BK	RD		TA0	R0	R0	R0	TXR1	K0	0B	R
39	BK-BR	BK		RB0			M0	RXT1	K3	1A	
14	BR-BK	YL		TB0			E0	RXR1	K2	1B	
40	BK-SL	GN		RA1	T1	T1	T1	M1	K5	2A	T
15	SL-BK	RD		TA1	R1	R1	R1	E1	K4	2B	R
41	YL-BL	BK		RB1			M1		K7	3A	
16	BL-YL	YL		TB1			E1		K6	3B	
42	YL-OR	GN	5	RA0	T0	T0	T0	TXT0	K1	0A	T
17	OR-YL	RD		TA0	R0	R0	R0	TXR0	K0	0B	R
43	YL-GN	BK		RB0			M0	RXT0	K3	1A	
18	GN-YL	YL		TB0			E0	RXR0	K2	1B	
44	YL-BR	GN		RA1	T1	T1	T1	M0	K5	2A	T
19	BR-YL	RD		TA1	R1	R1	R1	E0	K4	2B	R
45	YL-SL	BK		RB1			M1		K7	3A	
20	SL-YL	YL		TB1			E1		K6	3B	
46	VI-BL	GN	6	RA0	T0	T0	T0	TXT1	K1	0A	T
21	BL-VI	RD		TA0	R0	R0	R0	TXR1	K0	0B	R
47	VI-OR	BK		RB0			M0	RXT1	K3	1A	
22	OR-VI	YL		TB0			E0	RXR1	K2	1B	
48	VI-GN	GN		RA1	T1	T1	T1	M1	K5	2A	T
23	GN-VI	RD		TA1	R1	R1	R1	E1	K4	2B	R
49	VI-BR	BK		RB1			M1		K7	3A	
24	BR-VI	YL		TB1			E1		K6	3B	
50	VI-SL	MN*									
25	SL-VI	MJ*									

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Note 1: *Major and minor alarm connections for external indications are located on LTC0 of PIM0, only.*

Note 2: *The DSS Console, Add-On Module and SN610 Attendant Console are included.*

3. Figure 007-4 shows the relationship between PFT connector pins and PFT circuit numbers (No.0 – No.11).

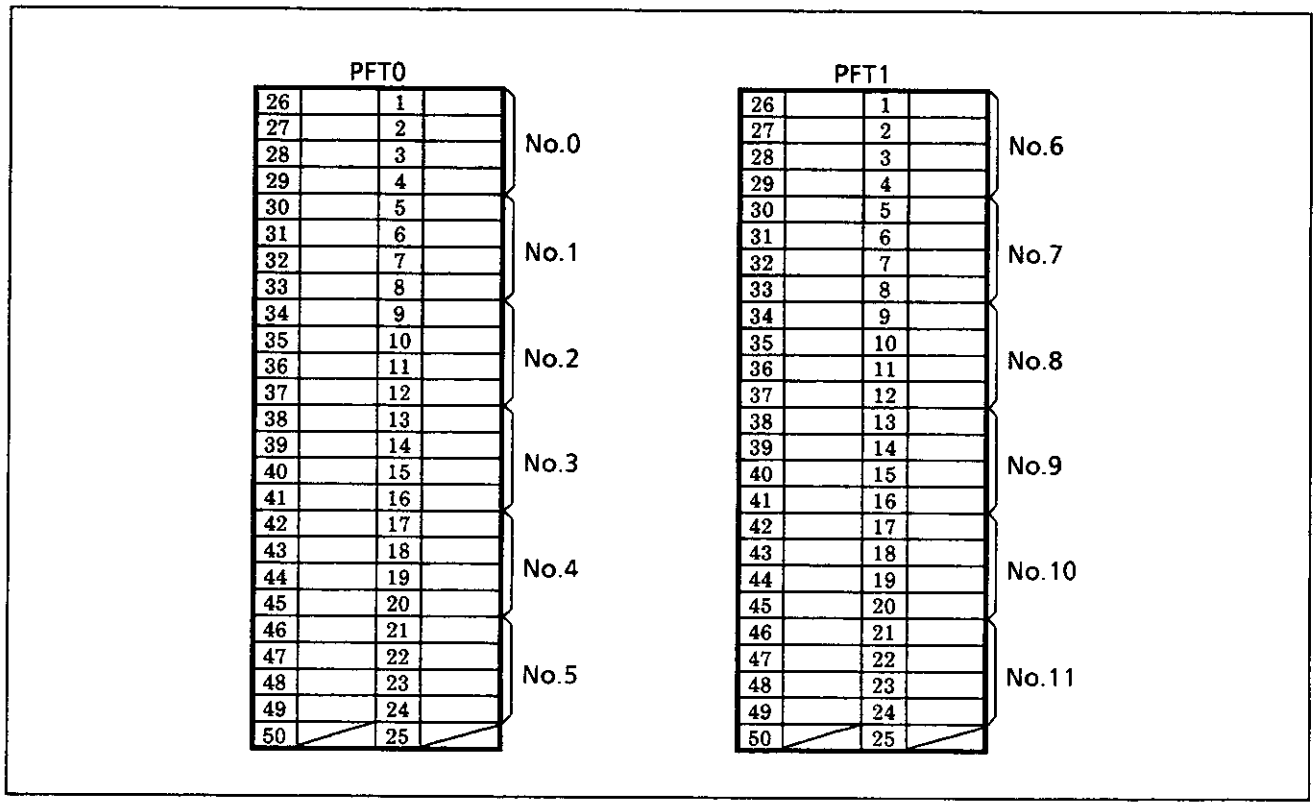

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Figure 007-4 PFT Connector

4. Cross connection for the No.0 circuit PFT (Power Failure Transfer) is shown in Figure 007-5 and Table 007-3.

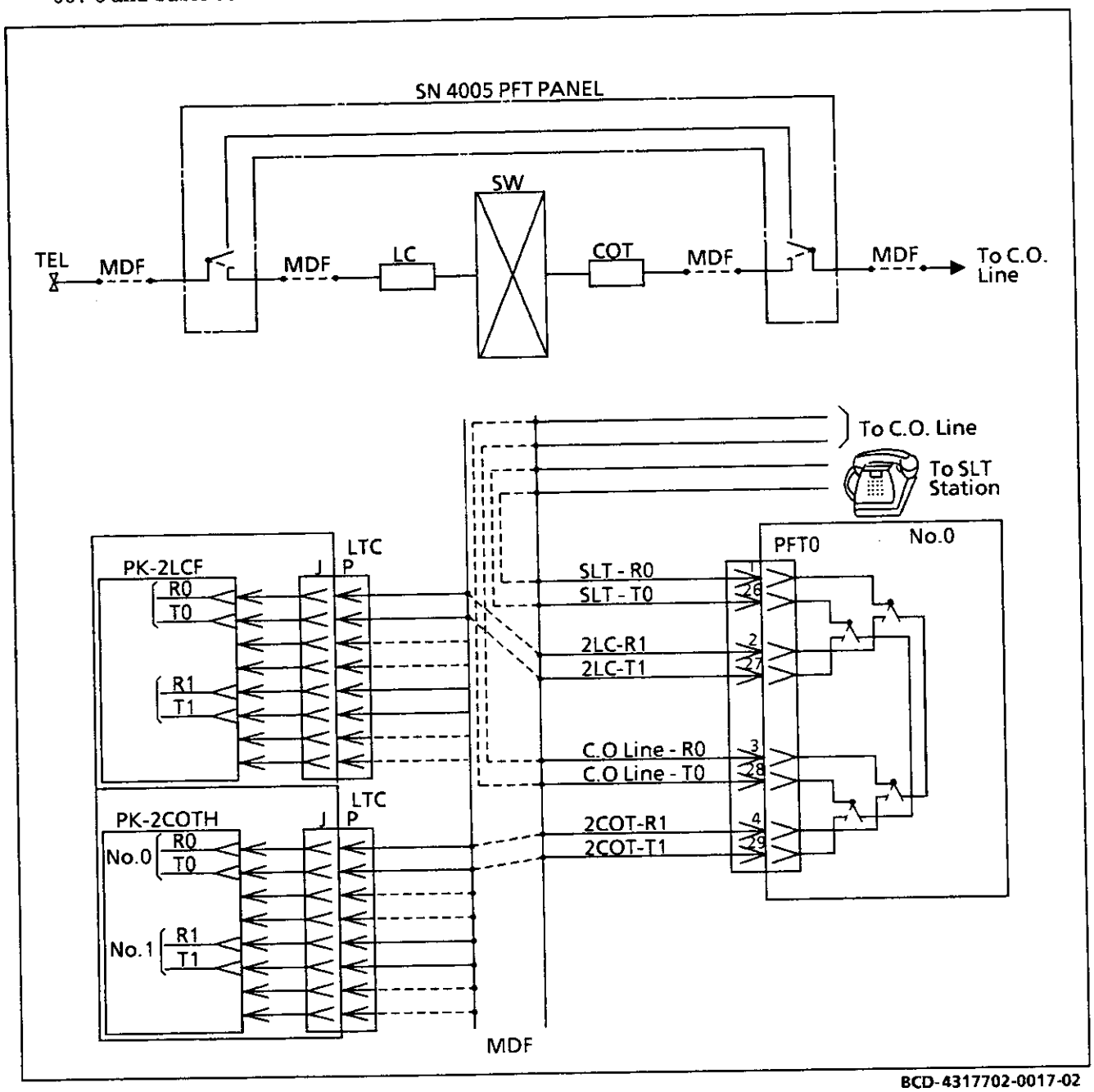

Figure 007-5 Cross Connection for the PFT

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Table 007-3 PFT Cross Connection Information

PFT0 PIN No.	DESTINATION	
26 (T) / 1 (R)	To Single-Line Telephone	PFT CIRCUIT No.0
27 (T) / 2 (R)	To PK-2LCF or PK-2LCH	
28 (T) / 3 (R)	To C.O. Line	
29 (T) / 4 (R)	To PK-2COTG	
30 (T) / 5 (R)	To Single-Line Telephone	PFT CIRCUIT No.1
31 (T) / 6 (R)	To PK-2LCF or PK-2LCH	
32 (T) / 7 (R)	To C.O. Line	
33 (T) / 8 (R)	To PK-2COTG	
34 (T) / 9 (R)	To Single-Line Telephone	PFT CIRCUIT No.2
35 (T) / 10 (R)	To PK-2LCF or PK-2LCH	
36 (T) / 11 (R)	To C.O. Line	
37 (T) / 12 (R)	To PK-2COTG	
38 (T) / 13 (R)	To Single-Line Telephone	PFT CIRCUIT No.3
39 (T) / 14 (R)	To PK-2LCF or PK-2LCH	
40 (T) / 15 (R)	To C.O. Line	
41 (T) / 16 (R)	To PK-2COTG	

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PFT0 PIN No.	DESTINATION	
42 (T) / 17 (R)	To Single-Line Telephone	PFT CIRCUIT No.4
43 (T) / 18 (R)	To PK-2LCF or PK-2LCH	
44 (T) / 19 (R)	To C.O. Line	
45 (T) / 20 (R)	To PK-2COTG	
46 (T) / 21 (R)	To Single-Line Telephone	PFT CIRCUIT No.5
47 (T) / 22 (R)	To PK-2LCF or PK-2LCH	
48 (T) / 23 (R)	To C.O. Line	
49 (T) / 24 (R)	To PK-2COTG	
50 (T) / 25 (R)	Not used	

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Table 007-3 PFT Cross Connection Information (Continued)

PFT0 PIN No.	DESTINATION	
26 (T) 1 (R)	To Single-Line Telephone	PFT CIRCUIT No.6
27 (T) 2 (R)	To PK-2LCF or PK-2LCH	
28 (T) 3 (R)	To C.O. Line	
29 (T) 4 (R)	To PK-2COTG	
30 (T) 5 (R)	To Single-Line Telephone	PFT CIRCUIT No.7
31 (T) 6 (R)	To PK-2LCF or PK-2LCH	
32 (T) 7 (R)	To C.O. Line	
33 (T) 8 (R)	To PK-2COTG	
34 (T) 9 (R)	To Single-Line Telephone	PFT CIRCUIT No.8
35 (T) 10 (R)	To PK-2LCF or PK-2LCH	
36 (T) 11 (R)	To C.O. Line	
37 (T) 12 (R)	To PK-2COTG	
38 (T) 13 (R)	To Single-Line Telephone	PFT CIRCUIT No.9
39 (T) 14 (R)	To PK-2LCF or PK-2LCH	
40 (T) 15 (R)	To C.O. Line	
41 (T) 16 (R)	To PK-2COTG	

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PFT0 PIN No.	DESTINATION	
42 (T) 17 (R)	To Single-Line Telephone	PFT CIRCUIT No.10
43 (T) 18 (R)	To PK-2LCF or PK-2LCH	
44 (T) 19 (R)	To C.O. Line	
45 (T) 20 (R)	To PK-2COTG	
46 (T) 21 (R)	To Single-Line Telephone	PFT CIRCUIT No.11
47 (T) 22 (R)	To PK-2LCF or PK-2LCH	
48 (T) 23 (R)	To C.O. Line	
49 (T) 24 (R)	To PK-2COTG	
50 (T) 25 (R)	Not used	

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Note: *Connecting power failure terminals to long line cards is not recommended due to the variations from Central Office to Central Office; line quality cannot be assured.*

5. An example of the cross connection for customer-owned paging equipment is shown in Figure 007-6.

   Requirement for Paging Equipment

   - Input Impedance: 600 ohms
   - Control Method: Start - Loop on (**Note**)
     Stop - Loop off (Open)

   Note: *The current capacity of the relay contact (PK-DK01 card) is 0.125A.*

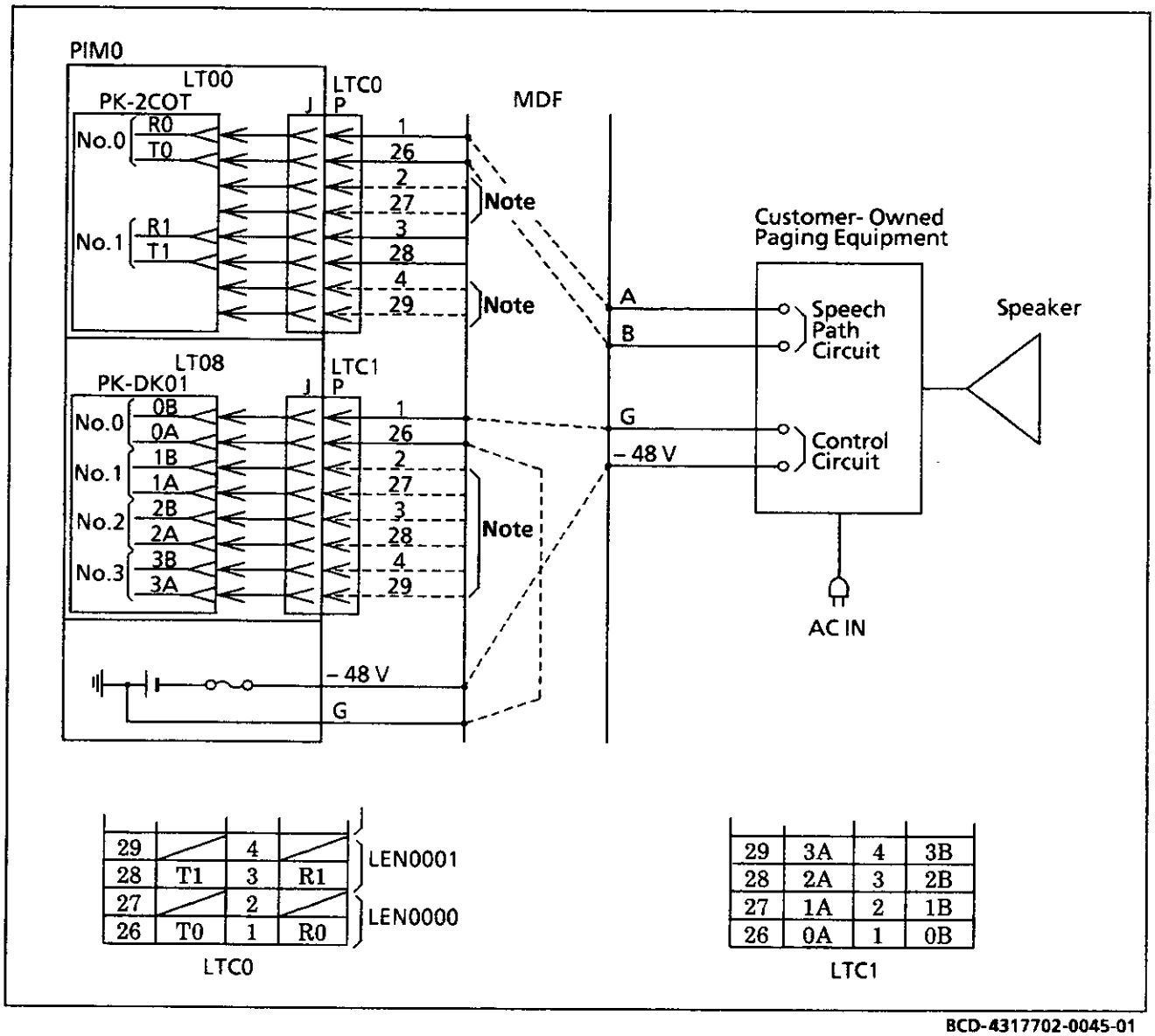

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Figure 007-6 Cross Connection for Customer-Owned Paging Equipment

6. An example of the cross connection for customer-owned External Tone Source equipment for Wake Up service and external Music on Hold is shown in Figure 007-7.

   Requirements for External Tone Source Equipment are:

   - Output level: Less than 0 dbm (adjustable)
   - Output impedance: Less than 10 KΩ
   - Control method: Start - Loop on (**Note**)
     Stop - Loop off (Open)

Note: *The current capacity of the relay contact (PK-DK01 card) is 0.125 A.*

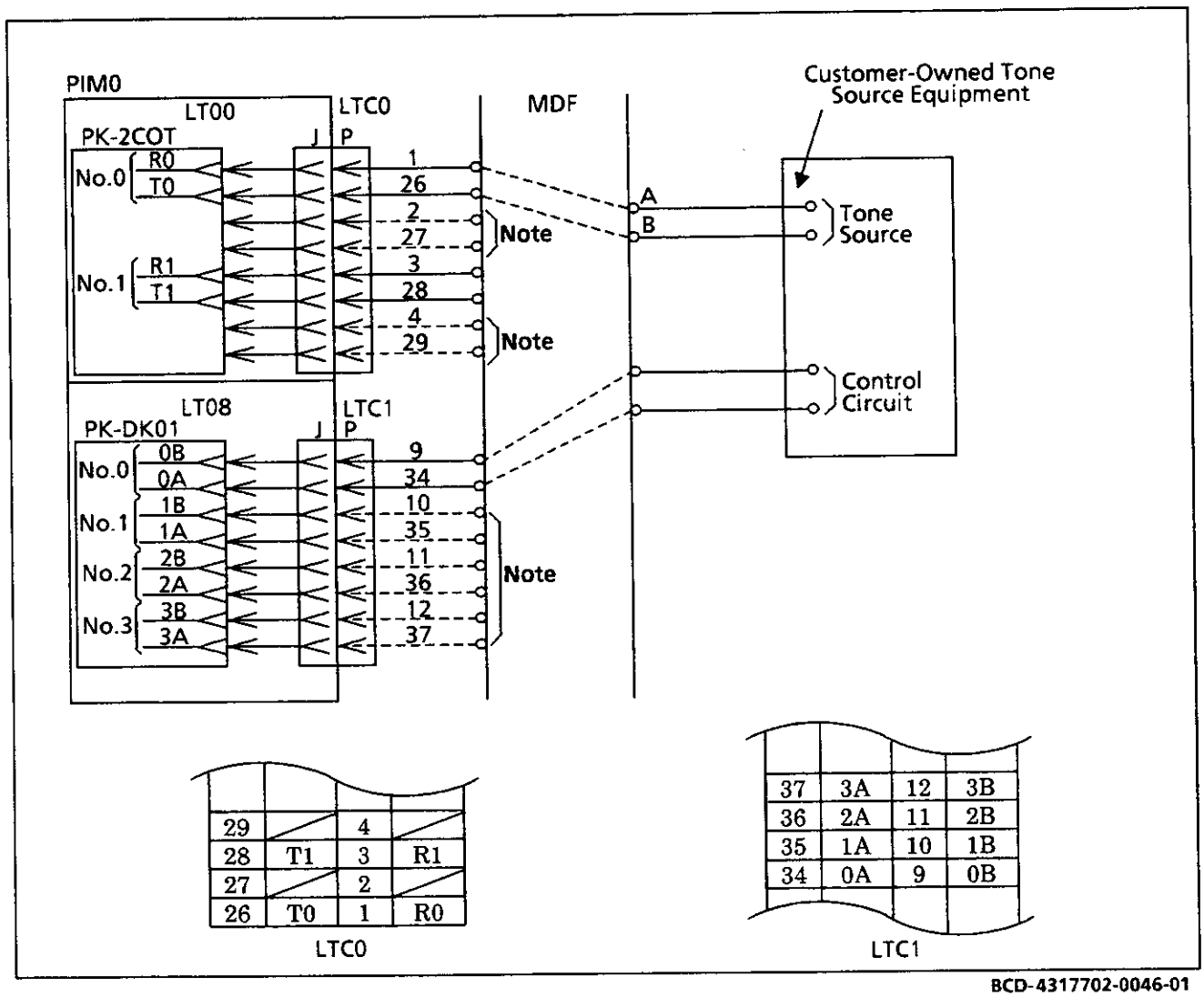

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Figure 007-7 Cross Connection for Customer-Owned External Tone Source Equipment

- If DC voltage is supplied together with the tone from the External Tone Source equipment, a transformer or coupling capacitor should be used as shown in Figure 007-8.

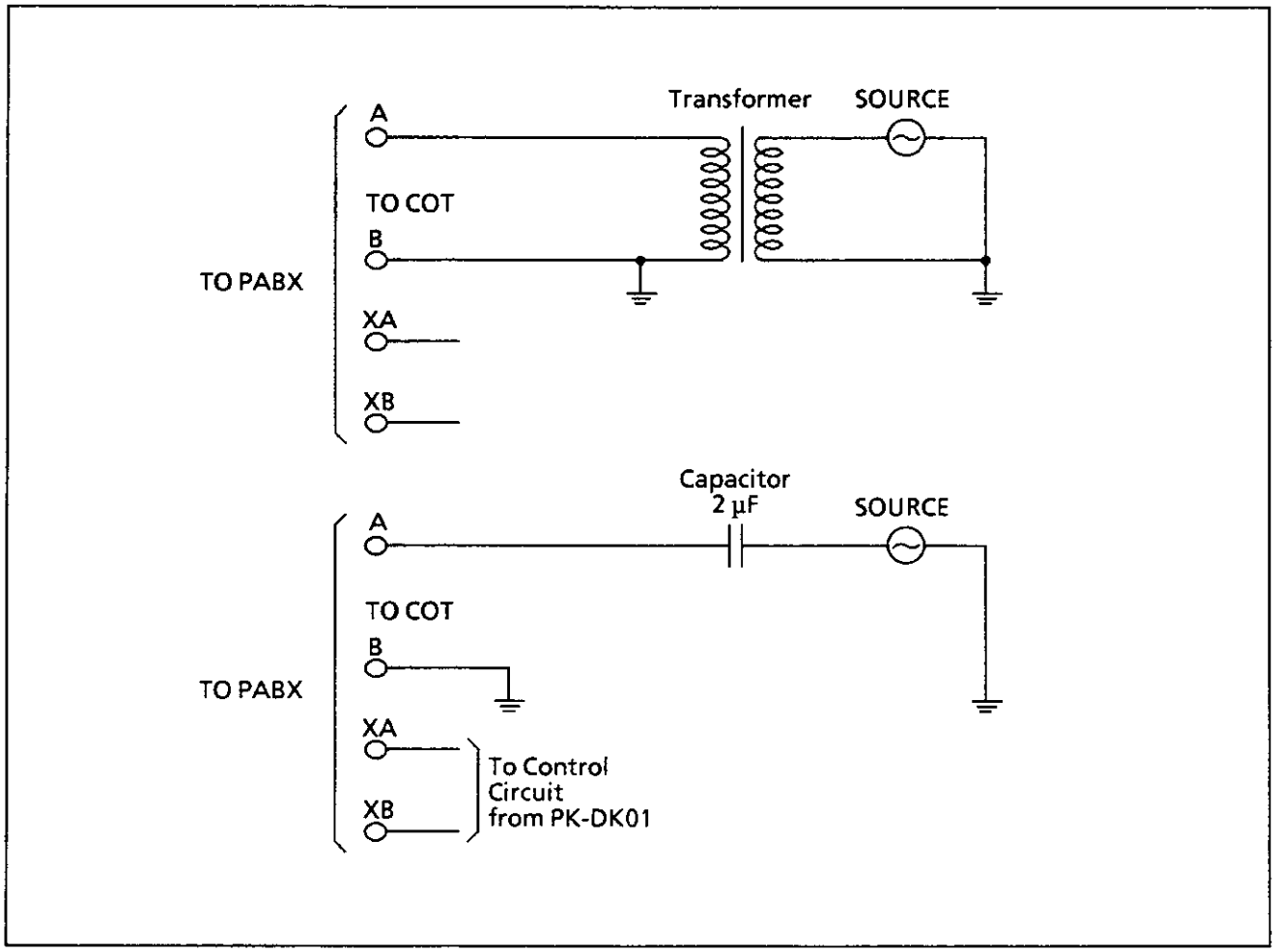

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Figure 007-8 Connecting a Tone Source Modulated by DC

7. Cross connection for an external Alarm Indicator is shown in Table 007-9.

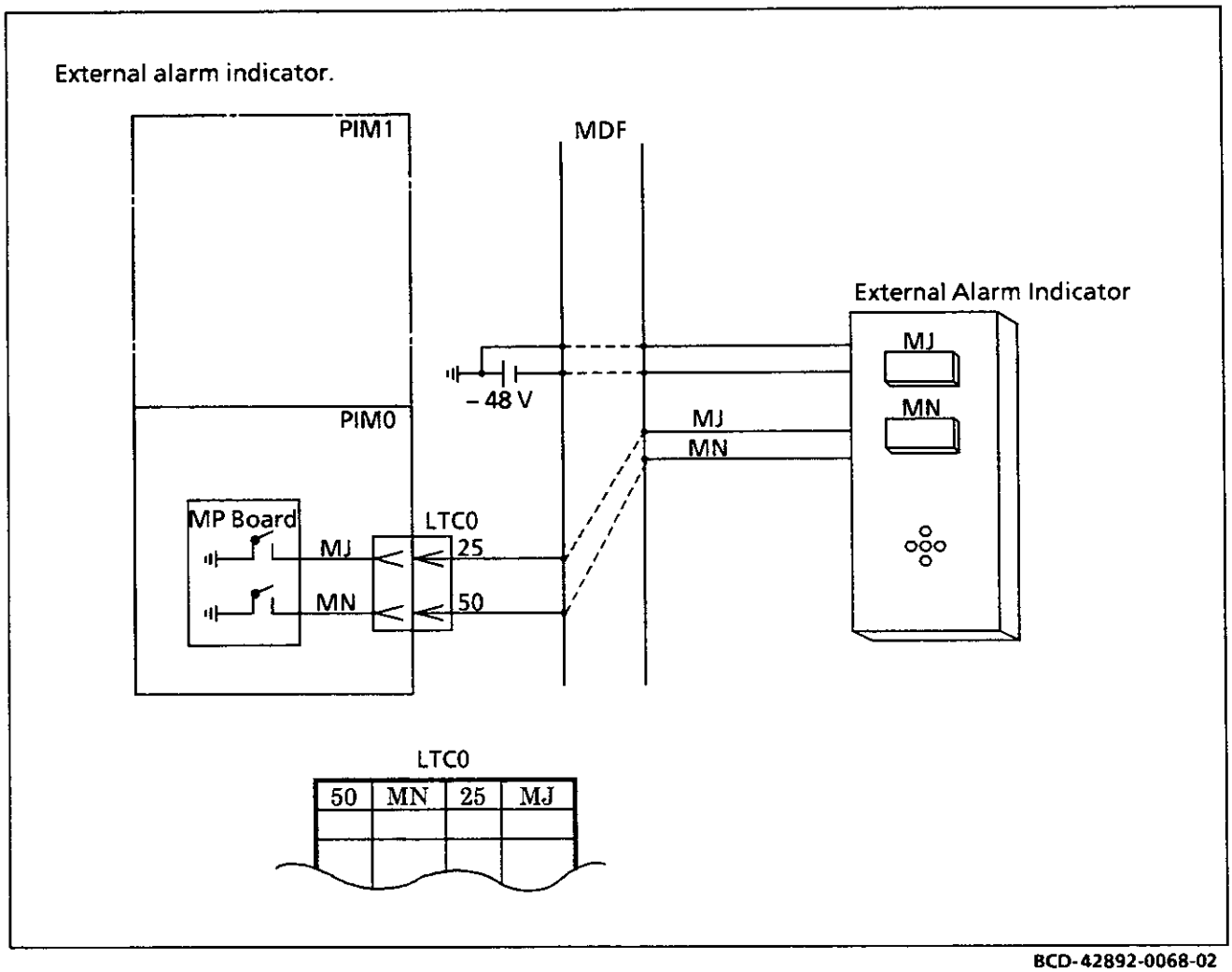
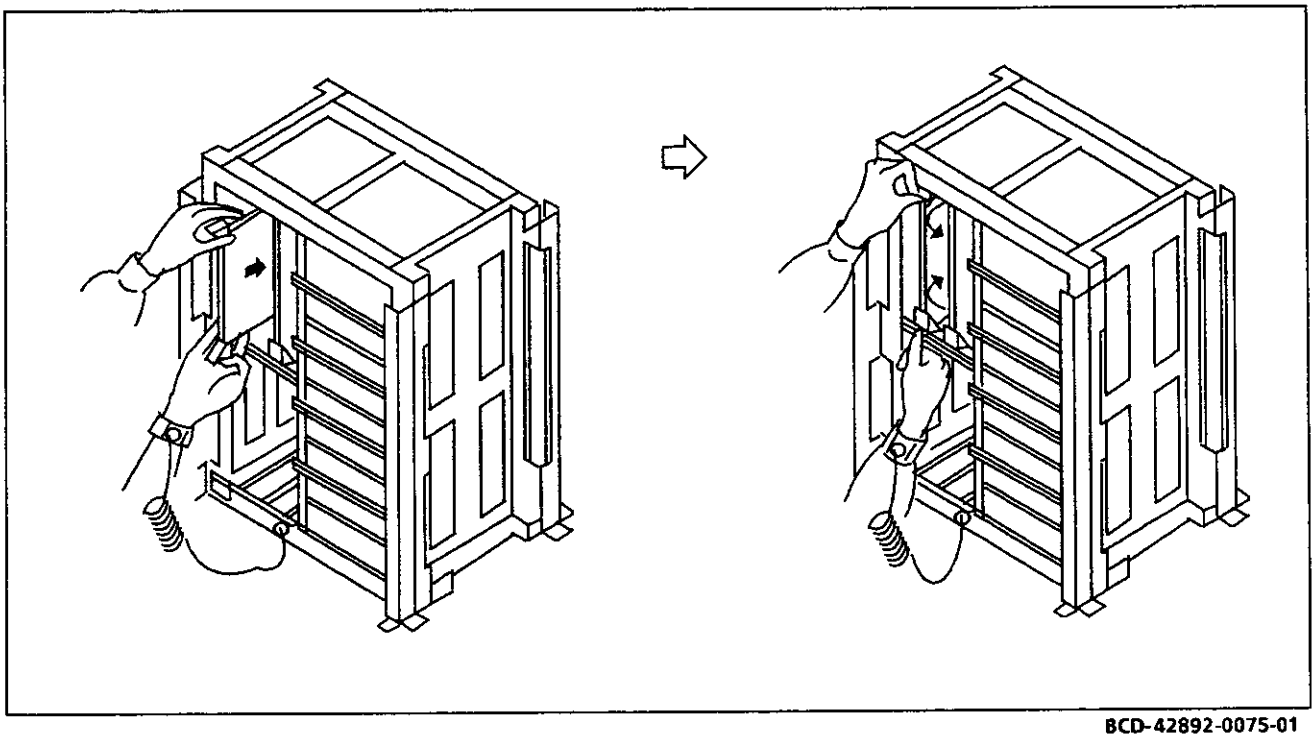


Figure 007-9 Cross Connection for an External Alarm Indicator

NAP- 200-008
Sheet 1/3
Mounting of Boards and Cards

1. Mount the PJ-PW14 board in the slot designated "PWRB". There is one board per-PIM.

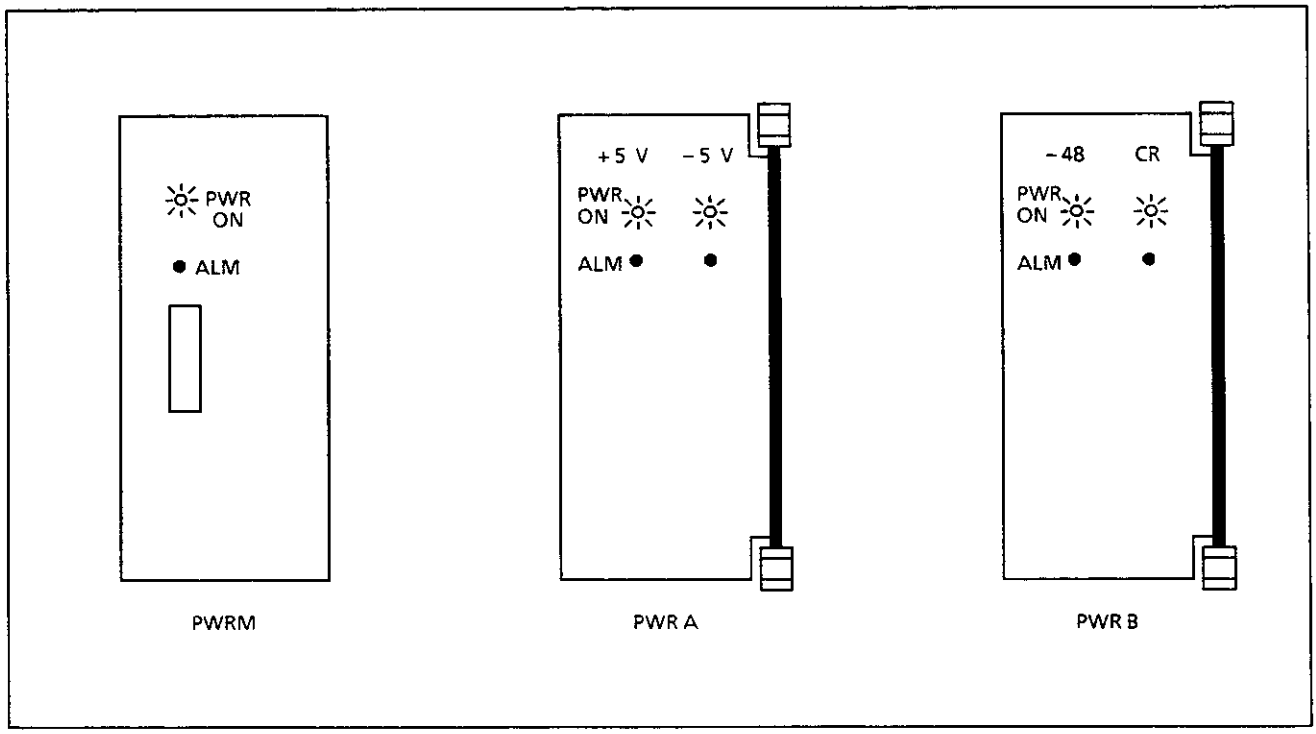


BCD-42892-0075-01

Figure 008-1 Mounting Boards

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

2. Turn on the "AC" switch on the Power Panel. Make sure that the "PWR ON" lamp (green) is lit on all the Power Modules, PWR A and PWR B boards.

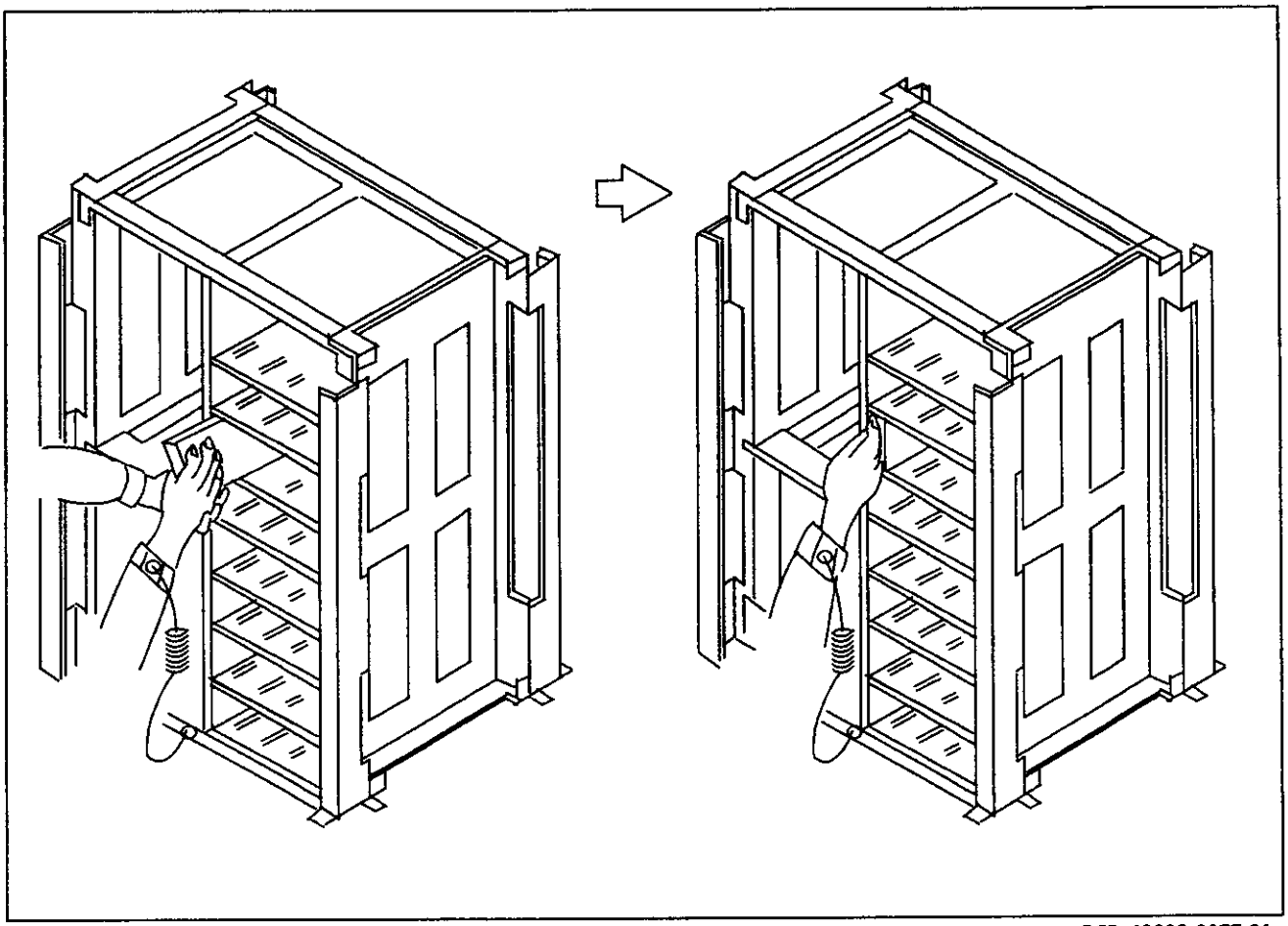


BCD-42892-0076-02

Figure 008-2 Lamp Indications on Power Equipment

3. After turning off the "AC" switch on the Power Panel, mount the boards and cards into their proper positions according to the "Bay Face Layout" and "Port Assignment Table" given in the System Programming Manual [ND- 43177-005 (E)].

4. Set the switches on the boards (MP, FP and ATI, etc.) according to the "Switch Setting Table" given in the System Programming Manual [ND- 43177-005 (E)].



BCD-42892-0077-01

Figure 008-3 Mounting Cards

System Initialization

- There are two methods for System Initialization. The first method is to Clear All Data, except LEN 0000 as a CAT terminal, and then program the System Data. The second method is to use the Resident System Program, which causes the system to configure itself automatically to the default settings, wherever the line/trunk cards are installed. Refer to the System Programming Manual, Chapter 7, for the default settings.

Turn on the "AC" switch, on the Power Panel, before initializing anything.
- The "PWR ON" LED is lit on all the Power Modules, PWRA and PWRB boards.

1. All Clear, except LEN 0000 CAT

Step 1: Set SW2-1, on the MP board, to "ON".
- "WE/WD" LED lights up.

Step 2: Set SW3 to "B" and press SW4.

Step 3: When the "MN" LED on the system is lit, set SW3 to the "0" position and press SW4.
- Operating mode has been changed to ON LINE mode.

Note : *Refer to the System Programming Manual for information on switch settings.*

2. Resident System Program

Step 1: Mount the Line/Trunk cards into PIM 1 and PIM 2.

Step 2: Set SW2-1, on the MP board, to "ON".
- WE/WD lamp lights up.

Step 3: Set SW3 to "A" and press SW4.
- After 3 to 4 seconds, the "MN" LED is lit.
- If other LEDs on the MP board are lit, repeat the procedure from Step 2.
- The system has loaded the Resident System Program.

Step 4: Set SW3 to the "0" position and press SW4.
- Operating mode has been changed to ON LINE mode.

Note : *Refer to the System Programming Manual [ND-43177-005(E)] for additional information on the Resident System Program and the initialization of the system without a MAT (enabling CAT mode).*

System Data Entry

- There are two methods for data entry, both of which employ a CAT or a MAT.

1. CAT

Any Multiline Terminal can be assigned as a CAT terminal through programming. The Multiline Terminal can still be used as a regular telephone when it is not in CAT mode.
If the system is initialized by "A" (Resident System Program), every Multiline Terminal will be able to go into CAT mode.
If the system is initialized by "B" (All Clear), only LEN 0000 is assigned as a CAT port (the DLC card must be installed in slot LT00).

To assign a Multiline Terminal as a CAT, follow the procedures shown on the next page of this NAP.

To set CAT mode:

1. Press [TRF]
2. Press [CNF]
   – CNF lamp flashes
3. Press [*]
   – CNF lamp is off
4. Press [TRF]
5. Press [CNF]
   – CNF lamp flashes
6. Press [#]
   – CNF, SPKR, ANS lamps are lit
   – "***CAT MODE***" is displayed on LCD
7. Press [ST]
   – "***COMMAND*** = –" is displayed on LCD

Note: *Steps 1 through 6 need to be completed within four (4) seconds.*

To reset CAT mode:

While "***COMMAND*** = –" is displayed on LCD:

1. Lift the handset (off hook)
   – SPKR lamp is off.
2. Replace the handset (on hook)
   – CNF, ANS lamps are off.
   – LCD returns to clock.

2. MAT

Step 1: On the MP board, set SW2-1 to the "ON" position and set SW1 to the "MOC" (DOWN) position. The "WE/WD" LED is lit.

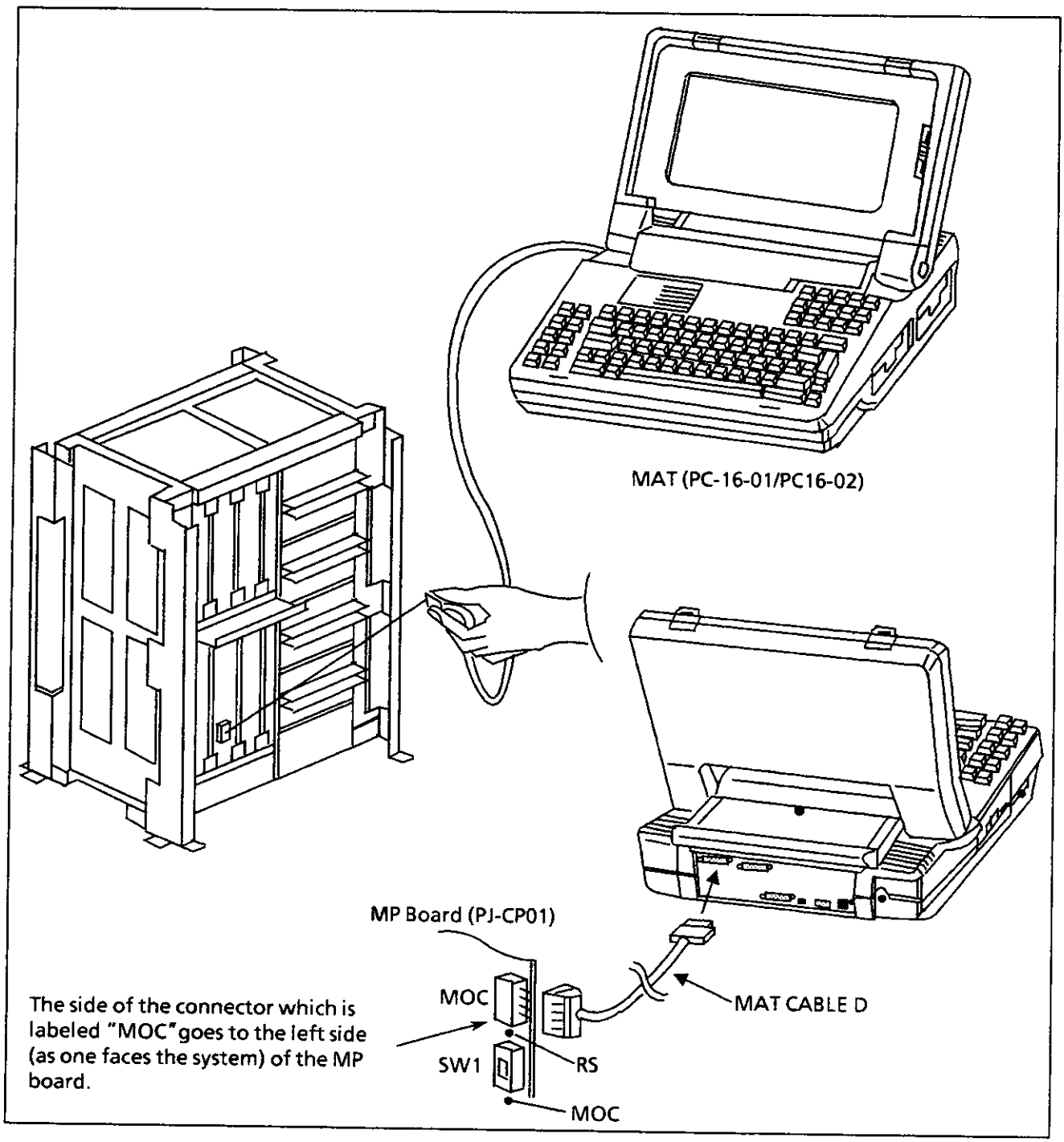
Step 2: Connect MAT CABLE D from the MAT (PC-16-01/PC-16-02) to the connector designated as "MOC" on the MP board. The side of the connector which is labeled "MOC" goes to the left side (as one faces the system) of the MP board.

Step 3: Connect the provided AC Adaptor to the MAT and the AC power source.

Step 4: Turn on the power switch on the MAT.

(The steps are continued on page 166.)

Note: *In addition to "MOC" or "CAT" mode programming, the MAT can also be used in the MAT mode. Refer to the MAT Operation Guide [ND-43654(E)] and the System Programming Manual [ND 43177-005 (E)].*



BCD-4317702-0048-01

Figure 009-1 Connecting the MAT

(Continued from page 164.)

Step 5: Insert the System Disk into Drive A of the MAT.
- The Main Menu will be displayed on the LCD (Liquid Crystal Display).

Step 6: At the Main Menu display, select the 1st item, "Assignment of transfer rate" by using the [↑] or [↓] (cursor) key and depress the [↵] (Enter or Return) key.
- Transfer Rate Menu will be displayed.

Step 7: At the Transfer Rate Menu display, select the 2nd item, "1200 bps" by using the [↑] or [↓] (cursor) key and depress the [↵] (Enter or Return) key.

Step 8: At the Main Menu display, select the 2nd item, "Assignment of office data (MOC mode)" by using the [↑] or [↓] (cursor) key and depress the [↵] key.

Step 9: Initialize the system (System Data All Clear)

(1) On the MP board, set SW3 to "2" and press SW4.
- Operating mode has been changed to OFF LINE mode.

(2) Enter the following system data from the keyboard.
[F1] +00+ [F8] +1+ [F8] + CCC+ [F2]
- "*OK*" will be displayed on the LCD.

Step 10: Enter the System Data (in MAT mode)

(1) On the MP board, set SW3 to "0" and press SW4.
- The "COP" alarm lamp is lit
- Operating mode has been changed to ON LINE mode

(2) Enter the following System Data from the keyboard:
[F1] +408+ [F8] +00+ [F8] + 4+ [F2]
- "*OK*" will be displayed on the LCD.

(3) Press the [ESC] key.
- The Main Menu will be displayed.

(4) On the MP board, set SW1 to "RS" (up).

(5) At the Main Menu display, select the 1st item, "Assignment of transfer rate" and depress the [↵] key.
- The Transfer Rate Menu will be displayed.

(6) Select the 5th item, "9600 bps" and depress the [↵] key.
- The display will be changed to the Main Menu.

(8) Select the 3rd item, "Assignment of office data (MAT mode)" and depress the [↵] key.
- The MAT Mode Menu will be displayed.

(9) Insert the appropriate Command Disk (COM01, COM02 or COM03) into Drive B, according to the desired data command.

(10) Enter the System Data by following the MAT instructions.

Step 11: Enter the System Data (in MOC mode)

(1) Select the 2nd item, "Assignment of office data (MOC mode)" and press the [↵] key.

(2) Enter the System Data as specified in the System Programming Manual [ND-43177-005(E)] and Feature Programming Manual [ND- 43177-003 (E)].

Step 12: After entering the system data, depress the [ESC] key.
- The Main Menu will be displayed.

Step 13: Remove the floppy disks from the Drives.

Step 14: Turn off the power switch of the MAT.

Step 15: Set SW2-1 to "OFF".
- The "WE/WD" LED goes out.

Step 16: Disconnect the MAT.

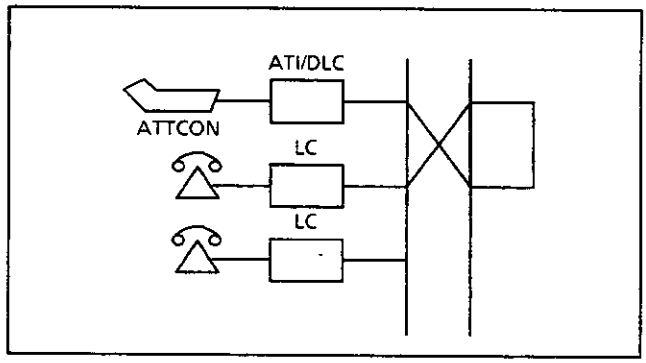
Note: *Even if SW2-1 is "OFF" (Data Memory Write Disabled), it doesn't affect any features (for Stations or Attendant Consoles), such as Call Forwarding, Name Display Change, Day/Time Change, etc.*

If Remote Maintenance Service is required, this switch should be left "ON".

NAP- 200-010
Sheet 1/17
Operation Test

1. Confirm the entered System Data and hardware (including cable connections) using the following operational test procedures.

NAP- 200-010
Sheet 2/17
Operation Test



BCD-42901-0003-02

- System Connection Test

(1) Station Line Test

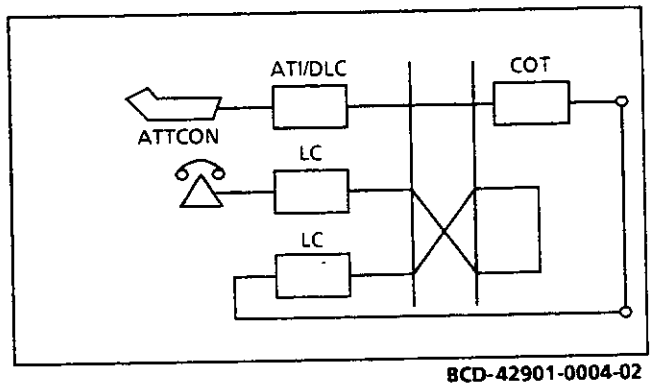
START

- Connect the DP or DTMF telephone to a station terminal on the MDF.
- Go off-hook, and upon hearing dial tone, dial the Attendant Access Code.
- Answer the test call at the HA-610Z/SN610 Attendant Console, and confirm the Station Number and Service Class displayed on the Number Display.
- Converse.

END

Repeat the above test steps for all stations.

NAP- 200-010
Sheet 3/17
Operation Test



BCD-42901-0004-02

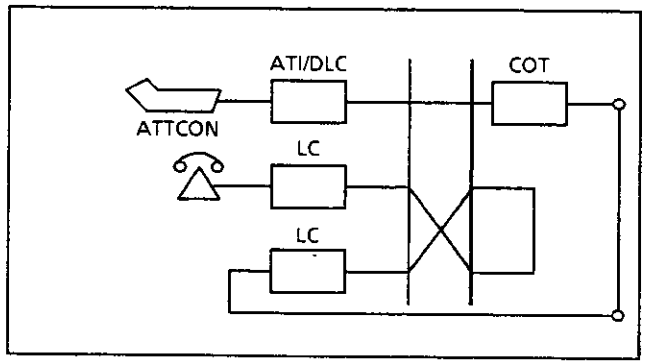
(2) Central Office Outgoing Trunk Test

START

- Cross connect a COT terminal with an individual station terminal, on the MDF.
- Dial the C.O. Line Access Code from the HA-610Z/SN610 Attendant Console
  Confirm the trunk number displayed on the Number Display of the Attendant Console.
- After hearing dial tone, dial the station.
- The party at the called station answers the call, and performs a speech test.

END

Repeat the above test steps for all Outgoing/Bothway C.O. Trunks. Set the Trunk to Make Busy status by entering Command E5 from the MAT or CAT.



BCD-42901-0004-02

(3) Central Office Incoming Trunk Test

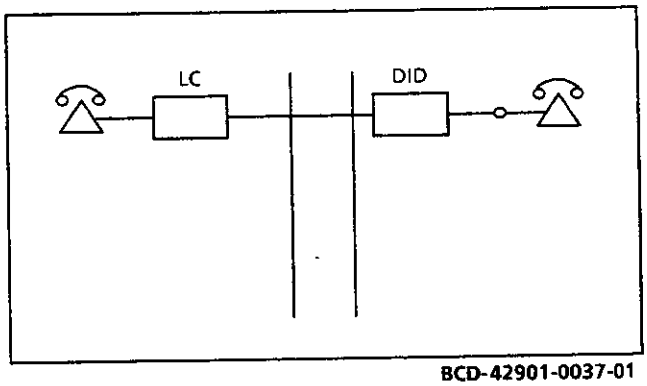
START

- Cross connect a COT terminal with an individual station terminal, on the MDF.
- From a station telephone set, dial the station which is connected to the C.O. terminal.
- The operator at the HA-610Z/SN610 Attendant Console answers the incoming call, and confirms the trunk number displayed on the Number Display of the Attendant Console.
- Converse with the operator and perform a speech test.

END

Repeat the above test steps for all the Incoming/Bothway C.O. Trunks.

NAP- 200-010
Sheet 5/17
Operation Test



BCD-42901-0037-01

(4) Dial-In Trunk (DID) Test

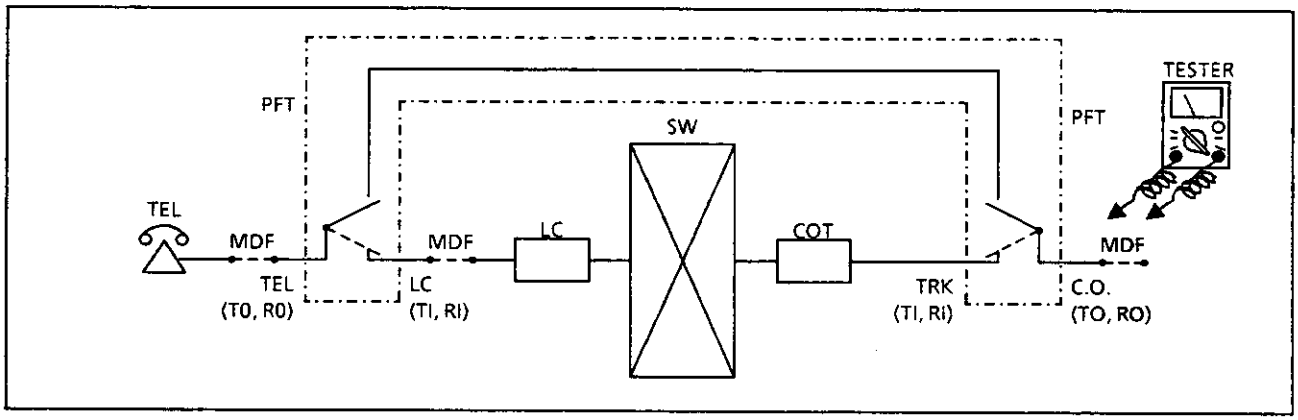
START

- Connect a DP telephone to a Dial-In Trunk (DID) terminal, on the MDF.
- Go off-hook and dial the station.
- The party at the called station answers the call, and performs a speech test.

END

Repeat the above test steps for all the DID Trunks.

(5) Power Failure Transfer (PFT) Test



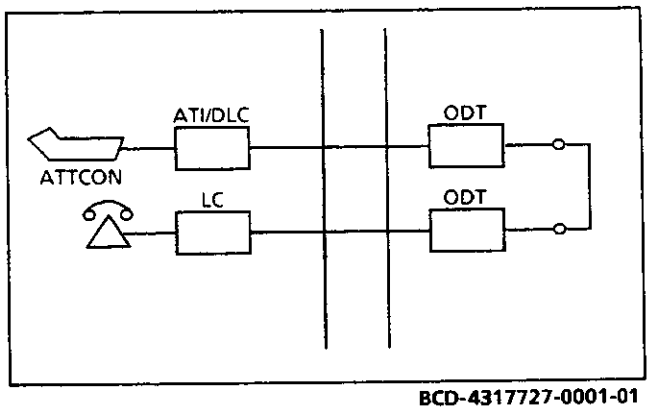
BCD-43315-0044-01

START

- Power off and confirm that SW3 on the MP board is set to "0" (on-line).
- Unplug the PJ-ME00 board.
- Power on.
- After approximately one second has elapsed, the EMA alarm lights on the MP, and the PFT circuits are operated to connect the station to the C.O. line directly.
- Check the station line loop through a PFT circuit with a tester.

END

NAP- 200-010
Sheet 7/17
Operation Test



BCD-4317727-0001-01

(6) Tie Line Trunk Test

START

- On the MDF, connect Tie Line Trunks to each other (loop back connection). **Note**
- The HA-610Z/SN610 Attendant Console operator dials the Tie Line Access Code and the Station Number for the station to which the telephone set is connected.
- The party at the called station answers the call and performs a speech test.

END

Repeat the above test steps for all Tie Line Trunks.

Set the Trunk to Make Busy status by entering Command E5 from the MAT or CAT.

Note: *In the MDF connection, connect the ODTs together as follows:*

Trunk A		*Trunk B*
E	———	*M*
M	———	*E*
TA	———	*RA*
TB	———	*RB*
RA	———	*TA*
RB	———	*TB*

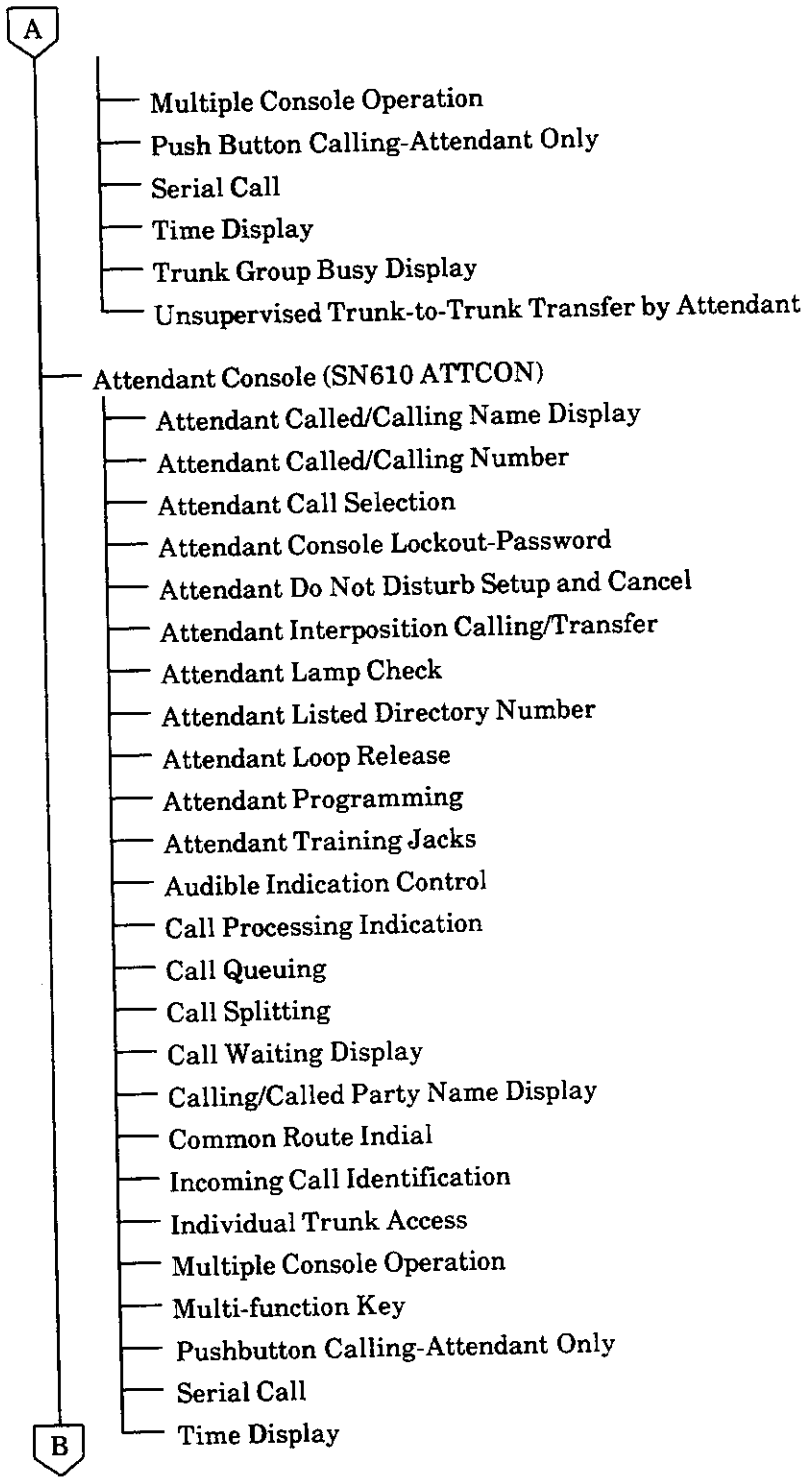
- Feature List

(1) Test Items for Business Features

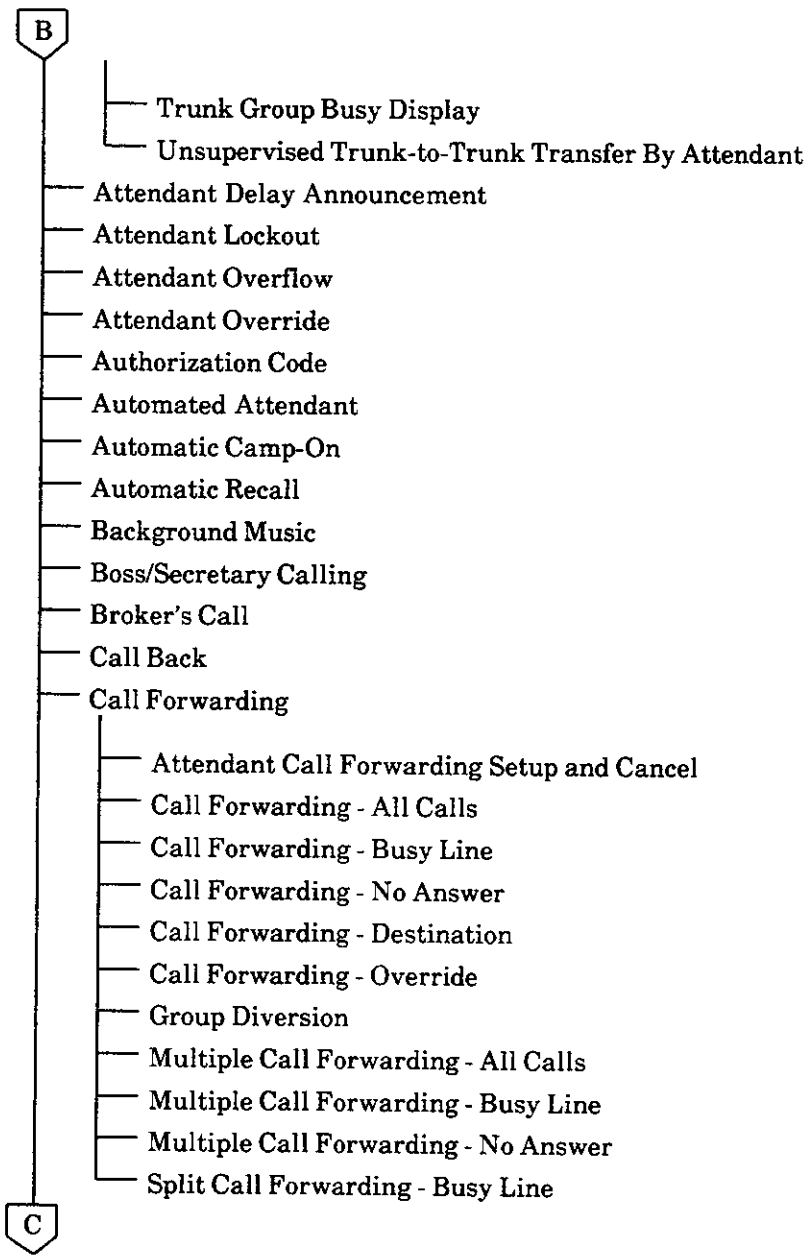
- Account Code
- Add-On Module
- Alarm Indications
- Alphanumeric Display
- Announcement Service
- Answer Key
- Attendant Assisted Calling
- Attendant Camp-On
- Attendant Console (HA-610Z ATTCON)
  - Attendant Busy Lamp Field
  - Attendant Called/Calling Number
  - Attendant Call Selection
  - Attendant Console Lockout
  - Attendant Do Not Disturb Setup and Cancel
  - Attendant Interposition Transfer
  - Attendant Lamp Check
  - Attendant Listed Directory Number
  - Attendant Loop Release
  - Attendant Training Jacks
  - Audible Indication Control
  - Call Processing Indication
  - Call Queuing
  - Call Splitting
  - Call Waiting LED
  - Common Route Indial
  - Incoming Call Identification
  - Individual Trunk Access

A

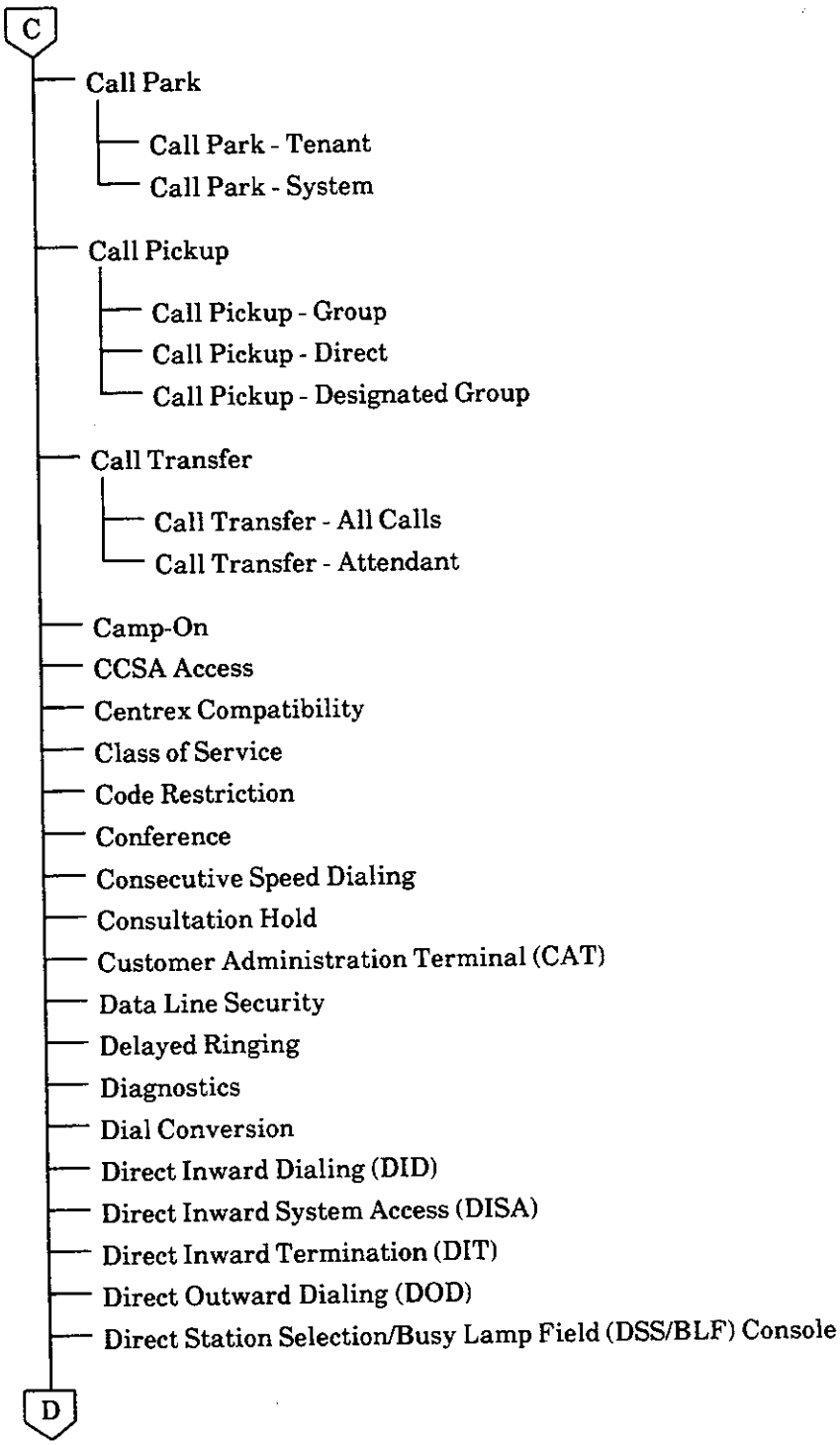
NAP- 200-010
Sheet 9/17
Operation Test



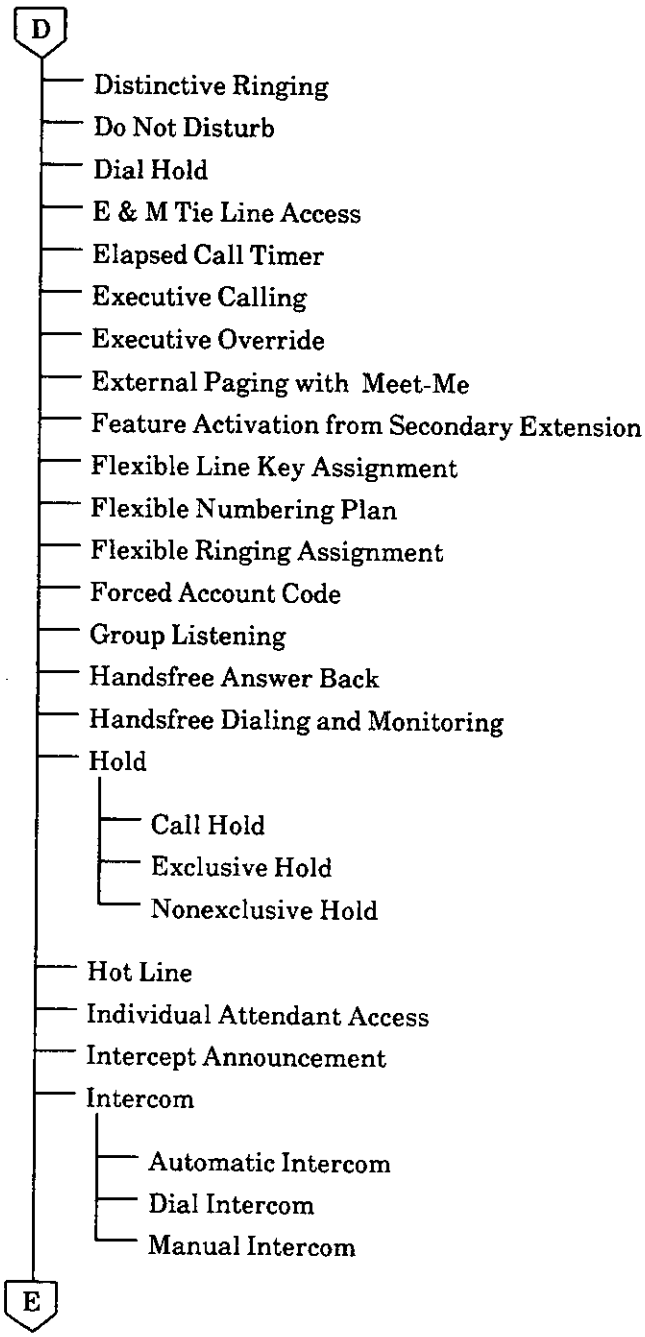
NAP- 200-010
Sheet 10/17
Operation Test

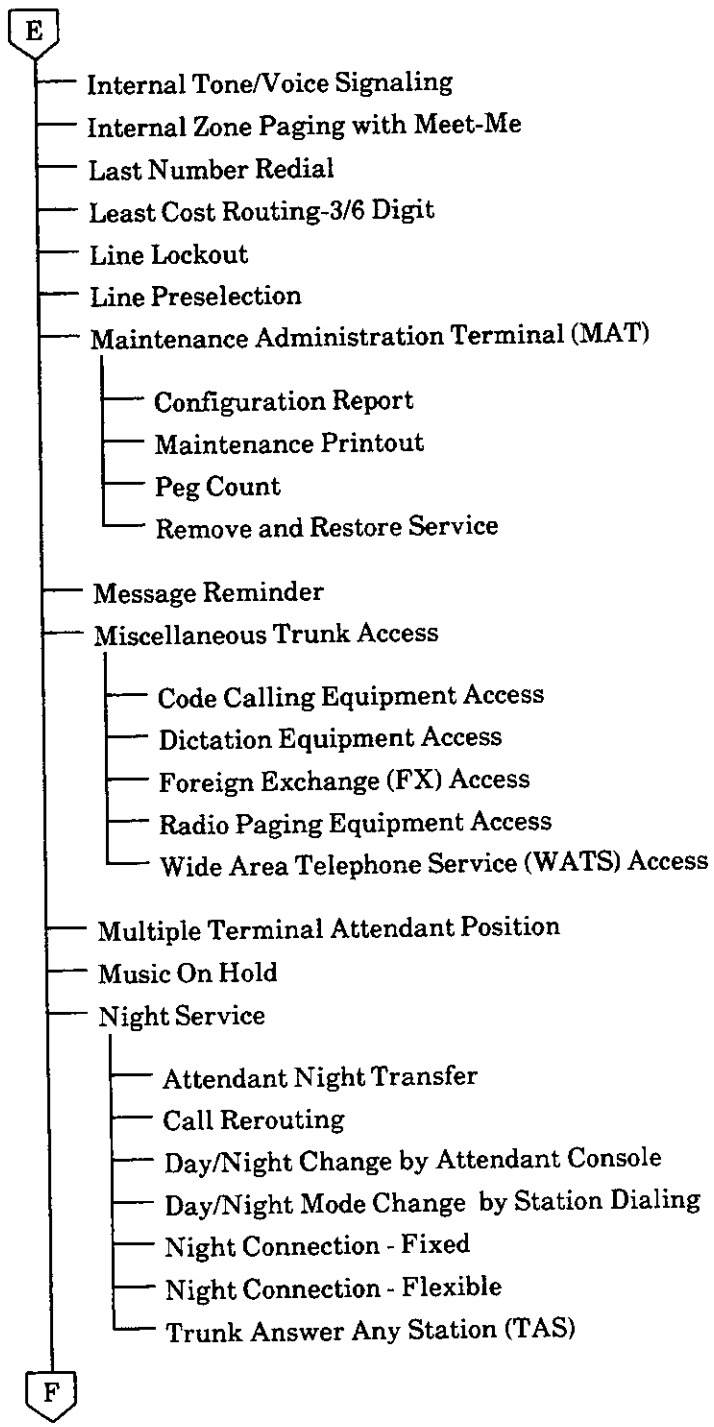


NAP- 200-010
Sheet 11/17
Operation Test

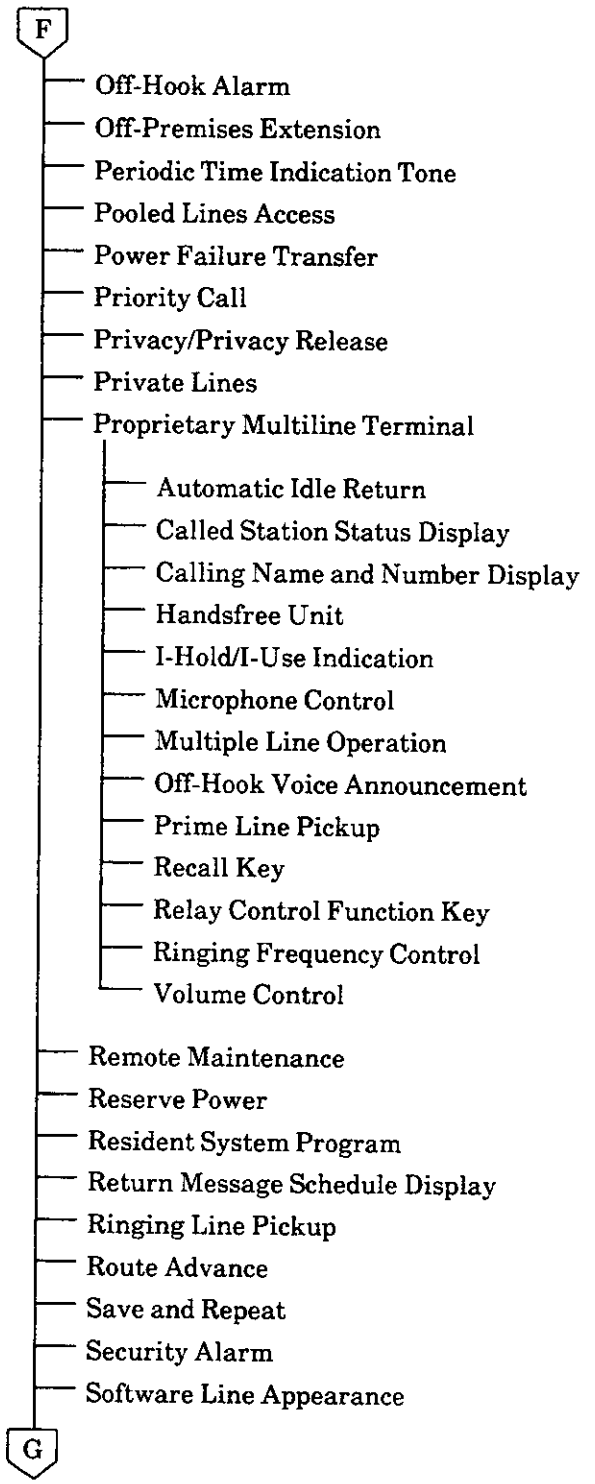


NAP- 200-010
Sheet 12/17
Operation Test

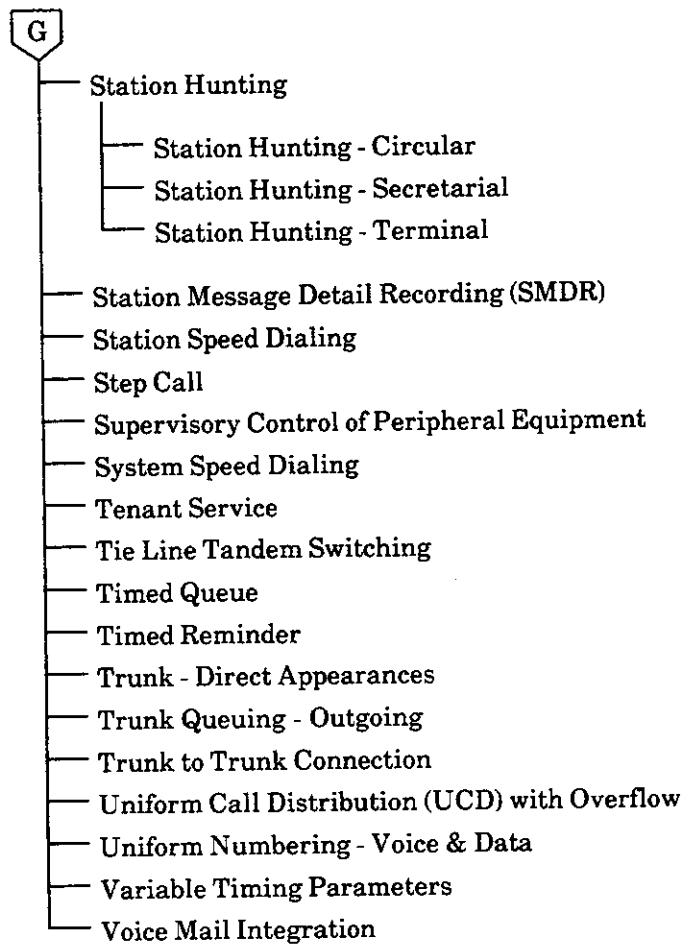



E
Internal Tone/Voice Signaling
Internal Zone Paging with Meet-Me
Last Number Redial
Least Cost Routing-3/6 Digit
Line Lockout
Line Preselection
Maintenance Administration Terminal (MAT)
Configuration Report
Maintenance Printout
Peg Count
Remove and Restore Service
Message Reminder
Miscellaneous Trunk Access
Code Calling Equipment Access
Dictation Equipment Access
Foreign Exchange (FX) Access
Radio Paging Equipment Access
Wide Area Telephone Service (WATS) Access
Multiple Terminal Attendant Position
Music On Hold
Night Service
Attendant Night Transfer
Call Rerouting
Day/Night Change by Attendant Console
Day/Night Mode Change by Station Dialing
Night Connection - Fixed
Night Connection - Flexible
Trunk Answer Any Station (TAS)
F

NAP- 200-010
Sheet 14/17
Operation Test



NAP- 200-010
Sheet 15/17
Operation Test



(2) Test Items for Data Communication Features

- Asynchronous Data Switching
- Do Not Disturb - Data Line
- Data Hunting
- Data Interface - Automatic Answer
- Data Hot Line
- Keyboard Dialing
- Modem Pooling
- Nailed Down Connection
- Simultaneous Voice and Data Transmission
- Synchronous Data Switching
- Terminal Attribute Data Assignment

(3) Test Items for Hotel/Motel Features

- Automatic Wake Up
- Check In/Check Out
- Do Not Disturb
- Do Not Disturb - System
- Hotel/Motel Front Desk Instrument
- Hotel/Motel Attendant Console
- House Phone
- Message Waiting
- Message Registration
- Maid Status
- Property Management System Interface
- Room Cutoff
- Room Status
- Single Digit Dialing

NAP- 200-011
Sheet 1/6
Mounting of Covers

1. Check to see that all the boards and cards are in their positions correctly.

2. Check the cable connections. Check that the PIMs are correctly connected, and that the layout of the cables has been done neatly.

3. Mount the side and rear covers on the system in the order that is shown in Figure 011-1 and Figure 011-2.

NAP- 200-011
Sheet 2/6
Mounting of Covers

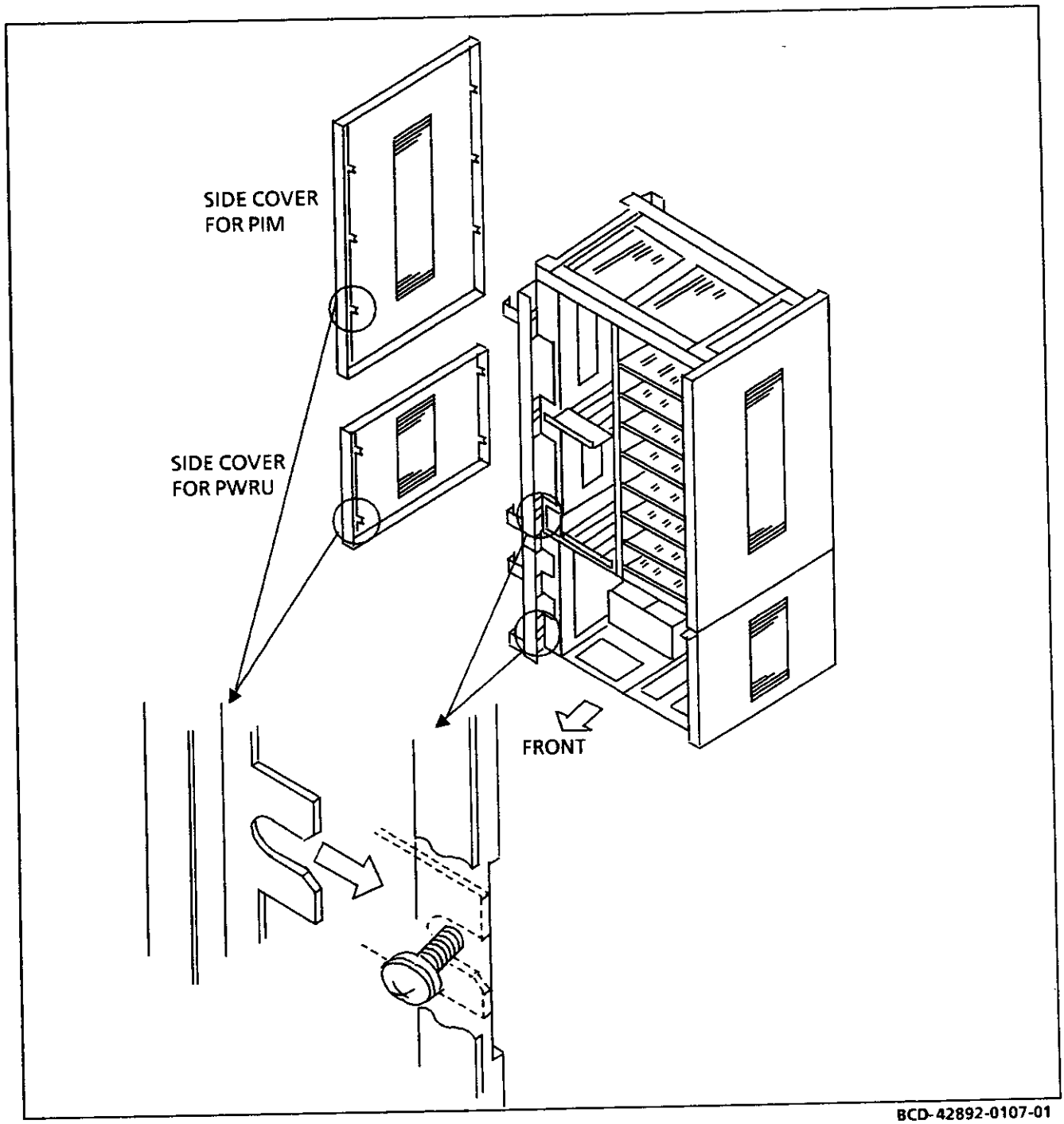
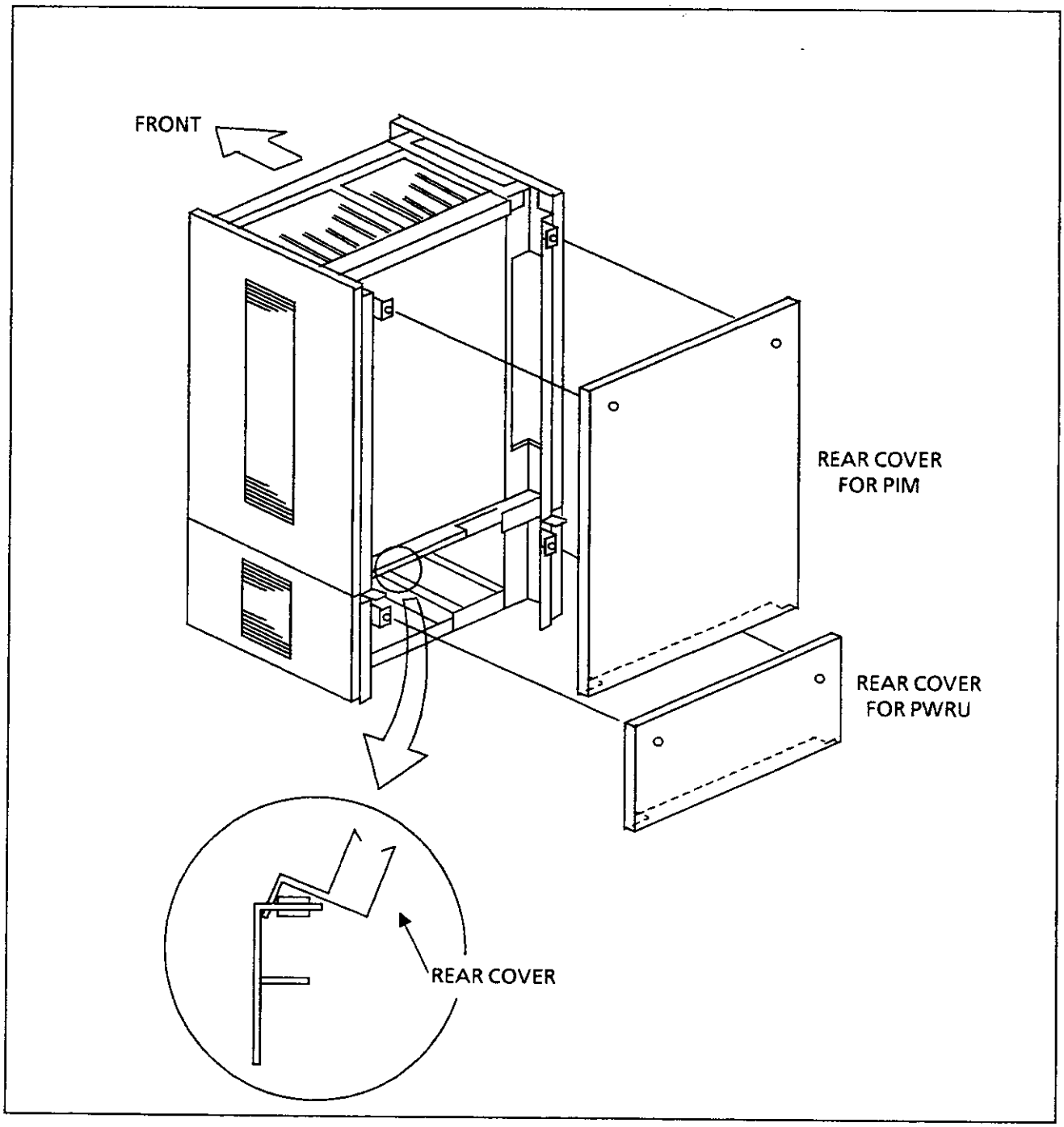


Figure 011-1 Mounting the Side Covers

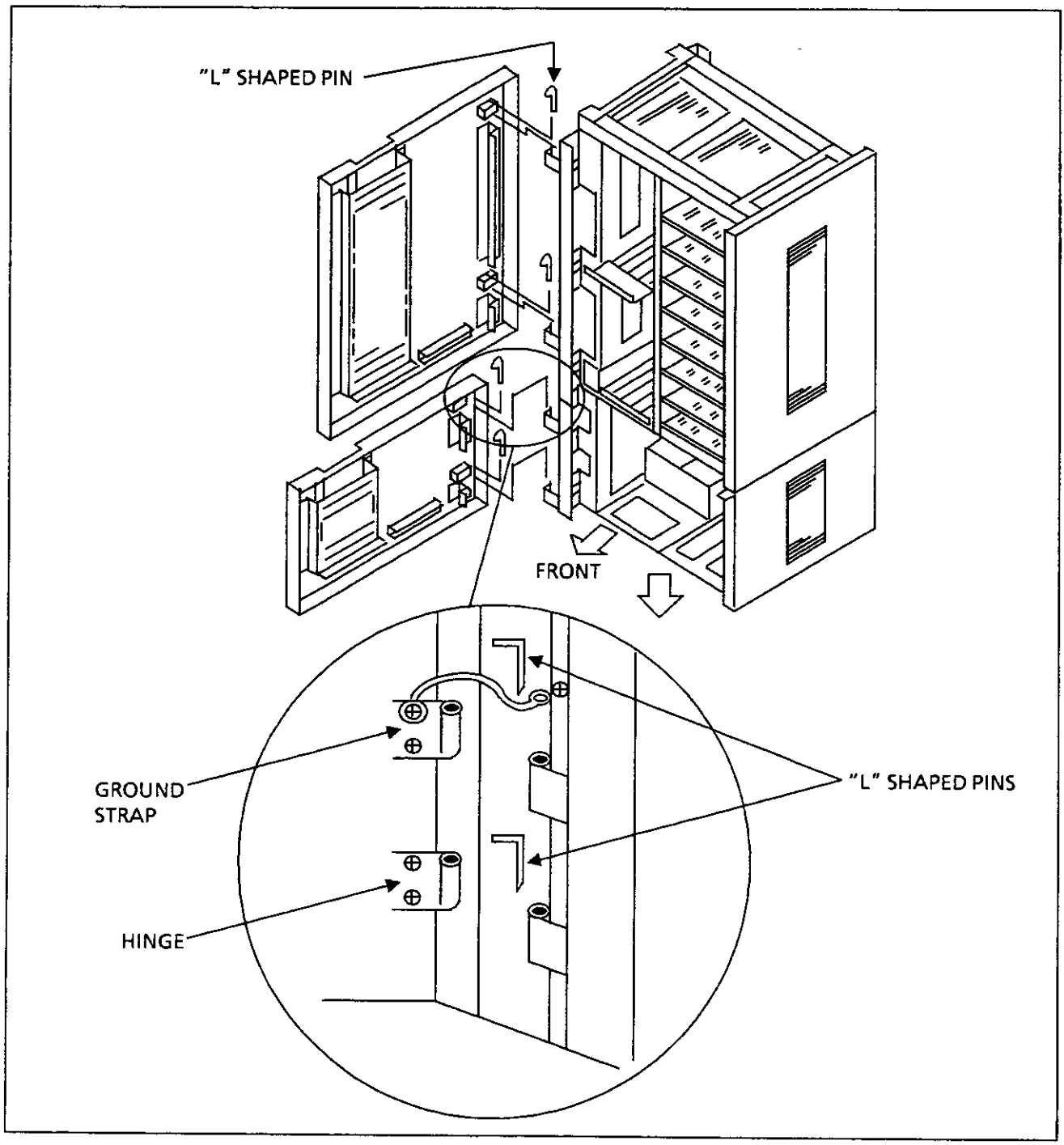


BCD-4317702-0066-01

Figure 011-2 Mounting the Rear Covers

4. Mount the front covers onto the hinges located on the PIM. Secure the front covers to the hinges as shown in Figure 011-3, using the "L" shaped pins provided. Then, connect the ground straps located on the front covers to the screw on the PIM.

NAP- 200-011
Sheet 5/6
Mounting of Covers



BCD-4317702-0067-01

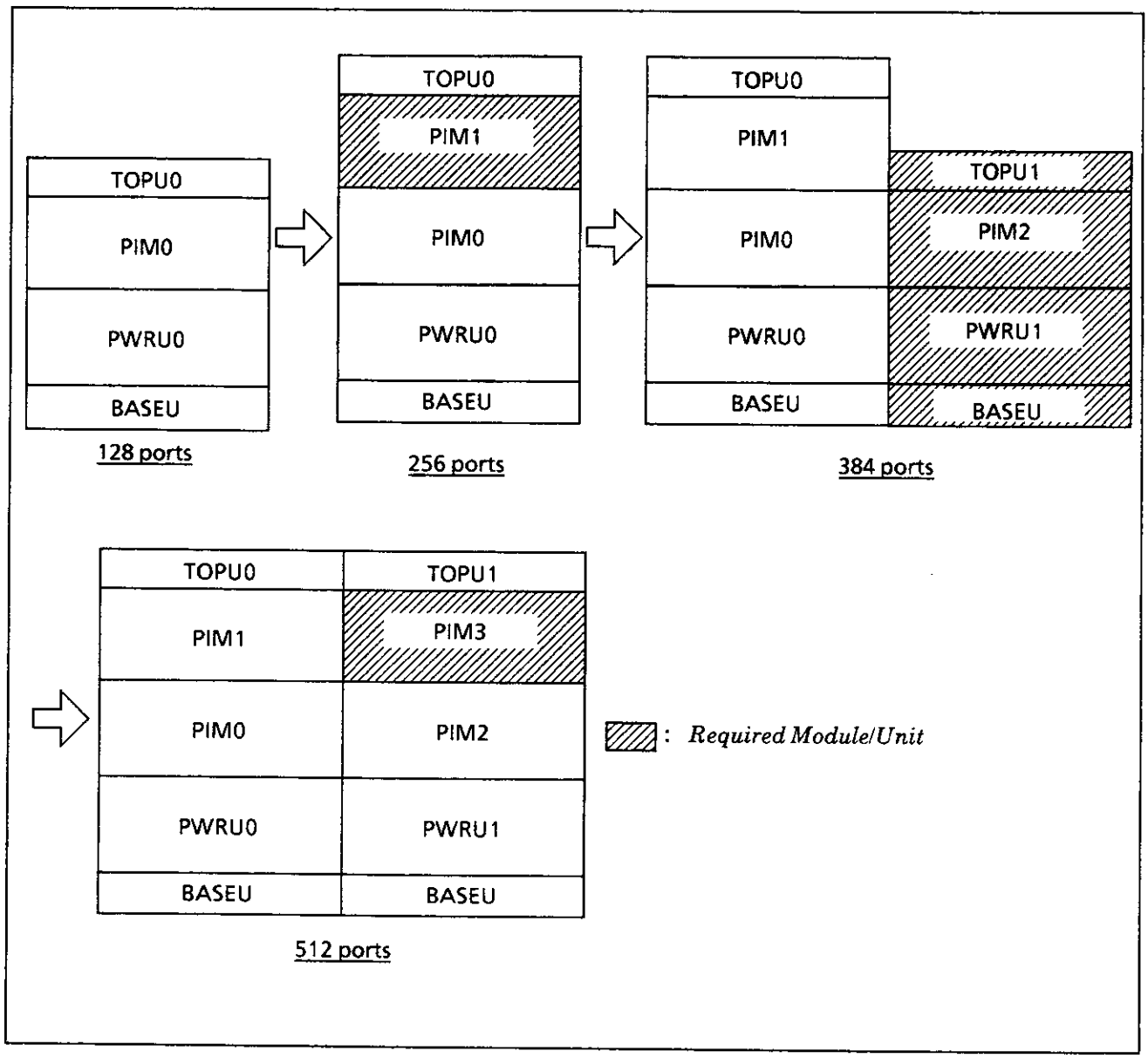
Figure 011-3 Mounting the Front Covers

5. Clean the following places:
   - The inside of the main equipment, particularly the bottom of the Base Unit.
   - On the Top Unit.
   - Around the Main Equipment and MDF.
   - The keyboard on the Attendant Console.
6. Check to see that the MAT is removed.

3. PROCEDURES FOR SYSTEM EXPANSION

3.1 System Configuration

The NEAX1400 IMS can be expanded up to 512 ports by adding PIMs and other units. Figure 3-1 shows the system configuration and the modules and units required for expansion.



BCD-4317702-0068-02

Figure 3-1 System Expansion (1/2)

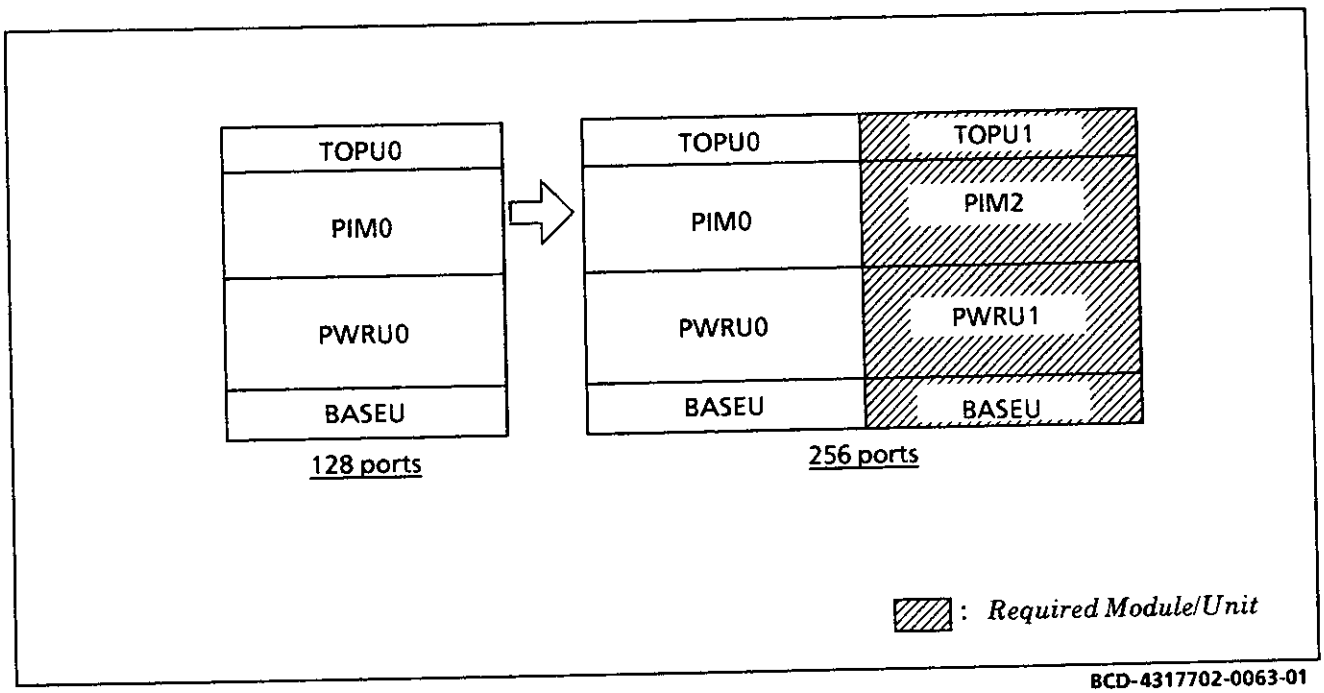


Figure 3-1 System Expansion (2/2)

3.2 Additional Hardware

Table 3-1 Additional Hardware

NUMBER OF PORTS / PATTERN No. / ADDITIONAL HARDWARE	128 → 256		256 → 384	384 → 512
	PATTERN 1 ↓ PATTERN 2	PATTERN 1 ↓ PATTERN 5	PATTERN 2 ↓ PATTERN 3	PATTERN 3 ↓ PATTERN 4
Module/Unit				
• SN1082 TOPU-A	–	1	1	–
• SN1060 PIM-A	1	1	1	1
• SN1062 PWRU	–	1	1	–
• SN1083 BASEU-A	–	1	1	–
• SN1071 PWRM-A /SN1071 PWRM-B	Note 2	Note 2	Note 2	Note 2
Cable				
• PWR CA-G	–	1	1	–
• PWR CA-J	–	1	1	–
• PWR CA-K	1	–	–	1
• PWR CA-L	–	–	1	–
• PWR CA-M	–	1	1	–
• BUS CA-A	1	–	–	1
• BUS CA-B	–	1	1	–
Board				
• PJ-CP02 (FP)	1	1	1	1
• PJ-64SPA (SPI)	1 or 2	1 or 2	1 or 2	1 or 2
• PJ-PW01 (PWR A)	1	1	1	1
• PJ-PW04 (PWR B)	1	1	1	1
• PJ-CS00 (ATI)	Note 2	Note 2	Note 2	Note 2
Card				
• PZ-M159	1	1	–	–
• Cards	Note 2	Note 2	Note 2	Note 2

BCD-4317702-0024-04

Note 1: *The numbers shown above represent the hardware quantity to be added.*

Note 2: *The quantity depends on the customer's requirements for expansion.*

START

- Expansion from 128 ports to 256 ports (Pattern 2).
  - Remove the LED cable from PIM0.
  - Remove TOPU0.
  - Mount PIM1 on top of PIM0, and screw them together.
  - Mount TOPU0 on top of PIM1, and screw them together.
  - Connect BRACKET (F) to the front sides of PIM0 and PIM1, and connect BRACKET (R) to the rear of PIM0.
  - Connect the Frame Ground cables (FE CA-A), provided in PIM1, to PIM0.
  - Cover the lamp window of TOPU1 with the Lamp Faceplate.
  - Connect the LED cable to the "LAMP" connector located on the rear of PIM0.
  - Connect the "PWR0" connector, located on the rear of PIM1, and the "EXT" connector, located on the PWR PANEL0, with a PWR CA-K.
  - Connect the "BUS1" connector, located on the rear of PIM0, and the "BUS0" connector, located on the rear of PIM1, with a BUS cable (BUS CA-A).
  - Plug the PZ-M159 card in the "BUS1" connector located on the rear of PIM1.
  - Mount the PWRM into the PWRU, if required.
  - Plug the boards and cards into PIM1.
  - Enter the System Data required for the expansion.
- Expansion from 256 ports to 384 ports. (Pattern 3)
  - Mark the installation holes for an additional BASEU (BASEU1). See NAP-200-002.
  - Drill and embed Anchor Bolts.
  - Affix the additional BASEU (BASEU1) onto the floor.

A B

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A

B

Mount the PWRU1, PIM2 and TOPU1 on top of BASEU1, in that order, and screw them together.

Connect BRACKET (F) to the front side of PIM2 and PWRU1, PWRU1 and BASEU1, and connect BRACKET (R) to the rear of PWRU1.

Connect the Frame Ground cables (FE CA-A), provided in PIM2, to PWRU1.

Affix both PWRUs, PIM0 and PIM2 with the CONN BRACKET. Refer to NAP- 200-003.

Connect the "PWR0" connector, located on the rear of PIM2, and the "BSC" connector, located on the PWR Panel (PWRU1), with a PWR CA-J.

Unplug the PZ-M159 card from the rear of PIM1, and plug the card into the "BUS1" connector, located on the rear of PIM2.

Connect the "BUS1" connector, located on the rear of PIM1, and the "BUS0" connector, located on the rear of PIM2, with a BUS cable (BUS CA-B).

Mount the PFT Panel at the bottom of PIM2 using the three (3) screws which are provided, and connect them together in series with PFT CA-C cables, if required.

Connect the PWR Panels to each other as shown below:

CONNECTION	CABLE
• Between "DC2" Connector on each PWRU.	PWR CA-L
• Between "G" terminal on each PWRU.	PWR CA-G

Mount the PWRM into PWRU0 or PWRU1, if required.

Plug the boards and cards into PIM2.

Enter the System Data required for the expansion.

Expansion from 384 ports to 512 ports (Pattern 4).

Remove TOPU1.

C

D

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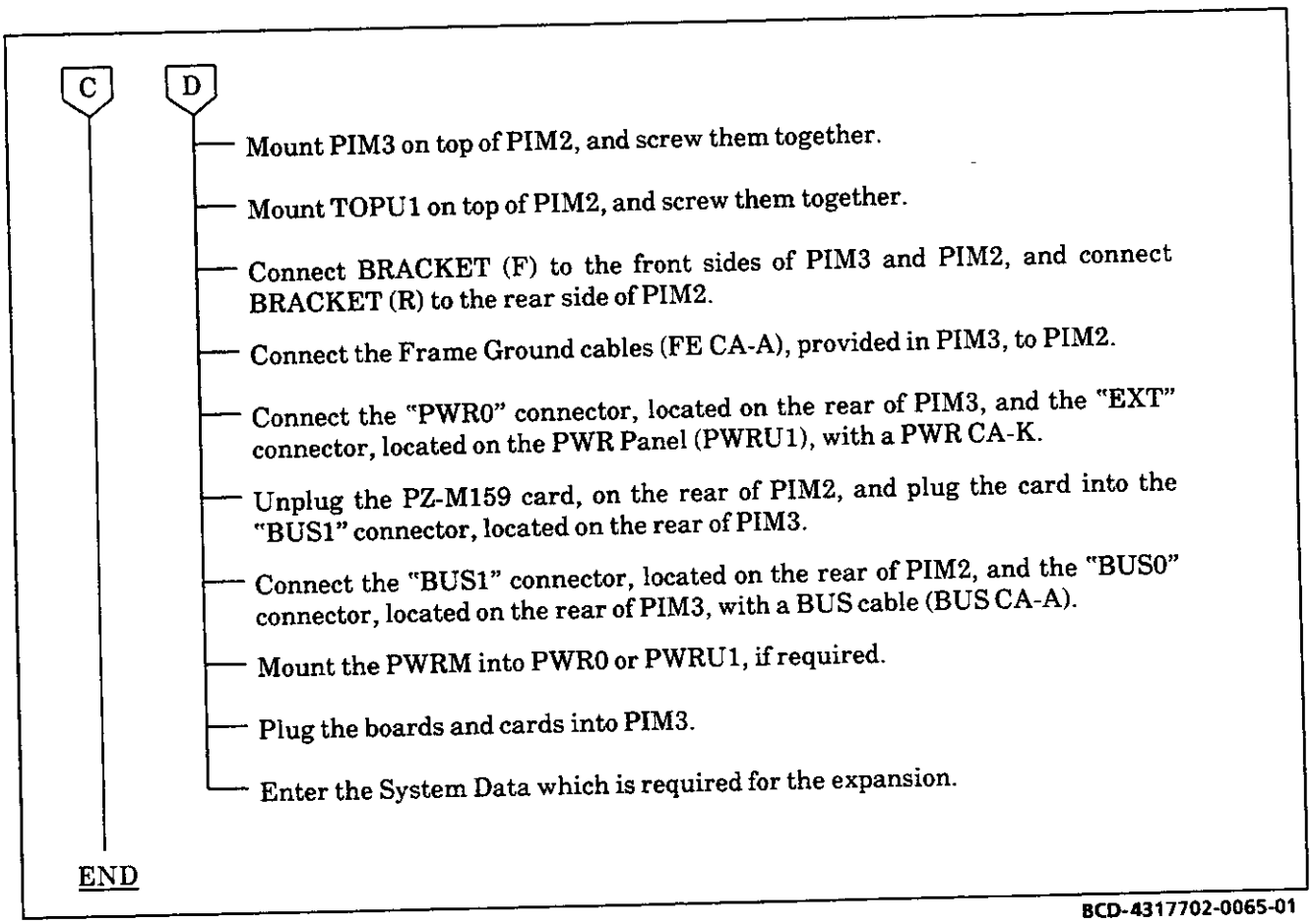
C
D
Mount PIM3 on top of PIM2, and screw them together.
Mount TOPU1 on top of PIM2, and screw them together.
Connect BRACKET (F) to the front sides of PIM3 and PIM2, and connect BRACKET (R) to the rear side of PIM2.
Connect the Frame Ground cables (FE CA-A), provided in PIM3, to PIM2.
Connect the "PWR0" connector, located on the rear of PIM3, and the "EXT" connector, located on the PWR Panel (PWRU1), with a PWR CA-K.
Unplug the PZ-M159 card, on the rear of PIM2, and plug the card into the "BUS1" connector, located on the rear of PIM3.
Connect the "BUS1" connector, located on the rear of PIM2, and the "BUS0" connector, located on the rear of PIM3, with a BUS cable (BUS CA-A).
Mount the PWRM into PWR0 or PWRU1, if required.
Plug the boards and cards into PIM3.
Enter the System Data which is required for the expansion.
END
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START

Expansion from 128 ports to 256 ports (Pattern 5).

- Mark the installation holes for an additional BASEU (BASEU1).
- Drill and embed Anchor Bolts.
- Attach the additional BASEU1 onto the floor.
- Mount the PWRU1, PIM1 and TOPU1 on top of the BASEU1, in that order, and screw them together.
- Connect both PWRUs, PIM0 and PIM1 together with the CONN BRACKET (see NAP- 200-003).
- Connect the Frame Ground cables (FE CA-A), provided in PIM1, to PWRU1.
- Connect BRACKET (F) to the front sides of PIM1 and PWRU1, PWRU1 and BASEU1, and connect BRACKET (R) to the rear side of PWRU1.
- Cover the lamp window of TOPU1 with the Lamp Faceplate.
- Connect the "PWR0" connector, located on the rear of PIM1, and the "BSC" connector, located on the front of PWR PANEL 1, with a PWR CA-J.
- Connect the "BUS1" connector, located on the rear of PIM0, and the "BUS0" connector, located on the rear of PIM1, with a BUS cable (BUS CA-B).
- Plug the PZ-M159 card in the "BUS1" connector located on the rear of PIM1.
- Connect the PWR Panels to each other as shown below:

CONNECTION	CABLE
• Between "DC2" Connector on each PWRU.	PWR CA-L
• Between "G" terminal on each PWRU.	PWR CA-G

- Mount the PWRM into PWR0 or PWR1, if required.
- Plug the boards and cards into PIM1.
- Enter the System Data required for the expansion.

END

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