NEC

ND-45492 (E)
ISSUE 2
PART OF STOCK # 151900

NEAX® 2000 IVS

Installation Procedure Manual

DECEMBER, 1997

NEC America, Inc.

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SAFETY CONSIDERATIONS

IMPORTANT — SAVE THESE INSTRUCTIONS

(1) Never install telephone wiring during a lightning storm.

(2) Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

(3) Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

(4) Use caution when installing or moving telephone lines.

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury, including the following:

(5) Read and understand all instructions.

(6) Follow all warnings and instructions marked on the product.

(7) Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

(8) Do not use this product near water; for example, under water pipes near a bath tub, sink, or laundry tub, in a wet basement, or near a swimming pool.

(9) Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

(10) Slots and openings in the cabinet and the back or bottom are provided for ventilation, to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.

(11) This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power source available, consult with your local power company.

(12) This product normally connected with a three wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

(13) Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.

(14) Do not overload wall outlets and extension cords as this can result in the risk of fire or electric

shock.

(15) Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.

(16) To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the appliance is subsequently used.

(17) Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

(a) When the power supply cord or plug is damaged or frayed.

(b) If liquid has been spilled into the product.

(c) If the product has been exposed to rain or water.

(d) If the product does not operate normally by following the operating instructions. Adjust only those controls, that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

(e) If the product has been dropped or the cabinet has been damaged.

(f) If the product exhibits a distinct change in performance.

(18) Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.

(19) Do not use the telephone to report a gas leak in the vicinity of the leak.

REGULATORY INFORMATION

1. Regulatory Requirements

The Federal Communications Commission (FCC) has established rules that permit the NEAX2000 IVS to be directly connected to the telephone network. A jack is provided on party lines or coin lines.

The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of the NEAX2000 IVS, the telephone company is required to give adequate notice of the changes.

This equipment complies with the requirements in Part 15 of FCC Rules for a Class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct this interference.

2. FCC Part 15 Requirements

In compliance with FCC Part 15 Rules, the following statement is provided:

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

3. FCC Part 68 Registration

3.1 Company Notification

Before installing the NEAX2000 IVS to the telephone network, the telephone company must be provided with the following:

- Your telephone number
- The FCC registration numbers:

	JAPAN	USA
• PBX:	AY5JPN-20542-PF-E	AY5USA-21582-PF-E
• Hybrid:	AY5JPN-20543-MF-E	AY5USA-21583-MF-E
• Key system:	AY5JPN-20586-KF-E	AY5USA-21584-KF-E

The Ringer Equivalence Number is 1.6B; the required USOC jacks are RJ21X, RJ2EX, and RJ2GX.

NOTE: Limitations on features exist if the system is registered as a KF system. Refer to *Features and Specifications* for details.

3.2 Service Requirements

In the event of equipment malfunction, all repairs will be performed by NEC or an authorized distributor of NEC. It is the responsibility of users requiring service to report the need for service to NEC or to one of their authorized distributors.

If the equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact NEC America, Inc.'s Oregon plant at (503) 648-5000 for repair and/or warranty information. If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved.

NO REPAIRS CAN BE DONE BY THE CUSTOMER.

3.3 Location of FCC Compliance Labels

Labels stating the NEAX2000 IVS FCC registration number and compliance with FCC Parts 15 and 68 are attached to the Base Unit. If the unit is in a table-top configuration, the labels are located on the side of the enclosure. The appearance of the labels is as shown below:

NEAX2000 IVS		
COMPLIES WITH PART 68 FCC RULES		
FCC registration numbers:	AY5USA-21582-PF-E	
	AY5USA-21583-MF-E	
	AY5USA-21584-KF-E	
Ringer Equivalence : 1.6B		
NEC	NEC America	Made In U.S.A.

4. Direct-Inward Dialing (DID) Calls

Allowing this equipment to be operated in such a manner as to not provide for proper answer supervision is a violation of Part 68 of the FCC's rules.

PROPER ANSWER SUPERVISION IS WHEN:

(a) This equipment returns answer supervision to the PSTN when DID calls are:
- Answered by the called station
- Answered by the attendant

- Routed to a recorded announcement that can be administered by the CPE user
- Routed to a dial prompt

(b) This equipment returns answer supervision on all DID calls forwarded to the PSTN. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received.

EQUAL ACCESS REQUIREMENTS

This equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

5. Regulatory Information on Single-Line Analog Telephones

NEC single-line telephones comply with Part 68 of FCC Rules. On the bottom of the equipment is a label that states, among other information, the FCC registration number and ringer equivalence number (REN) for the equipment. If requested, this information should be provided to the telephone company.

The equipment uses the following USOC jacks: RJ11C.

The equipment should be used only behind a PBX or KTS. The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all, areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

6. Hearing Aid Compatibility

The D^{term} terminals provided for the NEAX2000 IVS are hearing aid compatible. FCC rules prohibit the use of non-hearing aid compatible telephones.

NEC-type single-line telephone sets used in conjunction with the NEAX2000 IVS are hearing aid compatible. If other than NEC-type single-line telephone sets are to be used with this system, ensure that these are hearing aid compatible.

CAUTION: The act of monitoring or recording telephone conversations under certain circumstances may violate federal or state statutes. Consultation with your legal counsel prior to engaging in such practices would be advisable.

7. Industry Canada CS-03

Certification number: 140 5976A

Load Number of the equipment: 21

NOTICE: The Industry Canada label identifies certified equipment. The certification means that the equipment meets certain telecommunications network protective operational and safety requirements. The department does not guarantee the equipment will operate to the user's satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or installations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request that the user disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This protection may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Load Number assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the load numbers of all the devices does not exceed 100.

8. Safety Certifications

This equipment has been listed by Underwriters Laboratories and found to comply with all the applicable requirements of the standard for telephone equipment U.L. 1459. This equipment complies with Canadian Standards Association's standard C 22.2 No. 225.

8.1 Safety Considerations

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury, including the following:

1. Never install telephone wiring during a lightning storm.
2. Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
3. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
4. Use caution when installing or modifying telephone lines.

NOTE: Also follow the precautionary items listed under "Safety Considerations" on the previous pages.

CHAPTER 1 INTRODUCTION

1. PURPOSE

This manual explains the installation procedure for the NEAX2000 IVS (Integrated Voice Server). Before beginning installation, the installer is required to confirm materials to be prepared and site conditions. Thereafter, the installer should perform each installation step according to the procedures described in Section 2 of Chapter 3.

2. REFERENCE MANUAL

During installation, refer also to the manuals below:

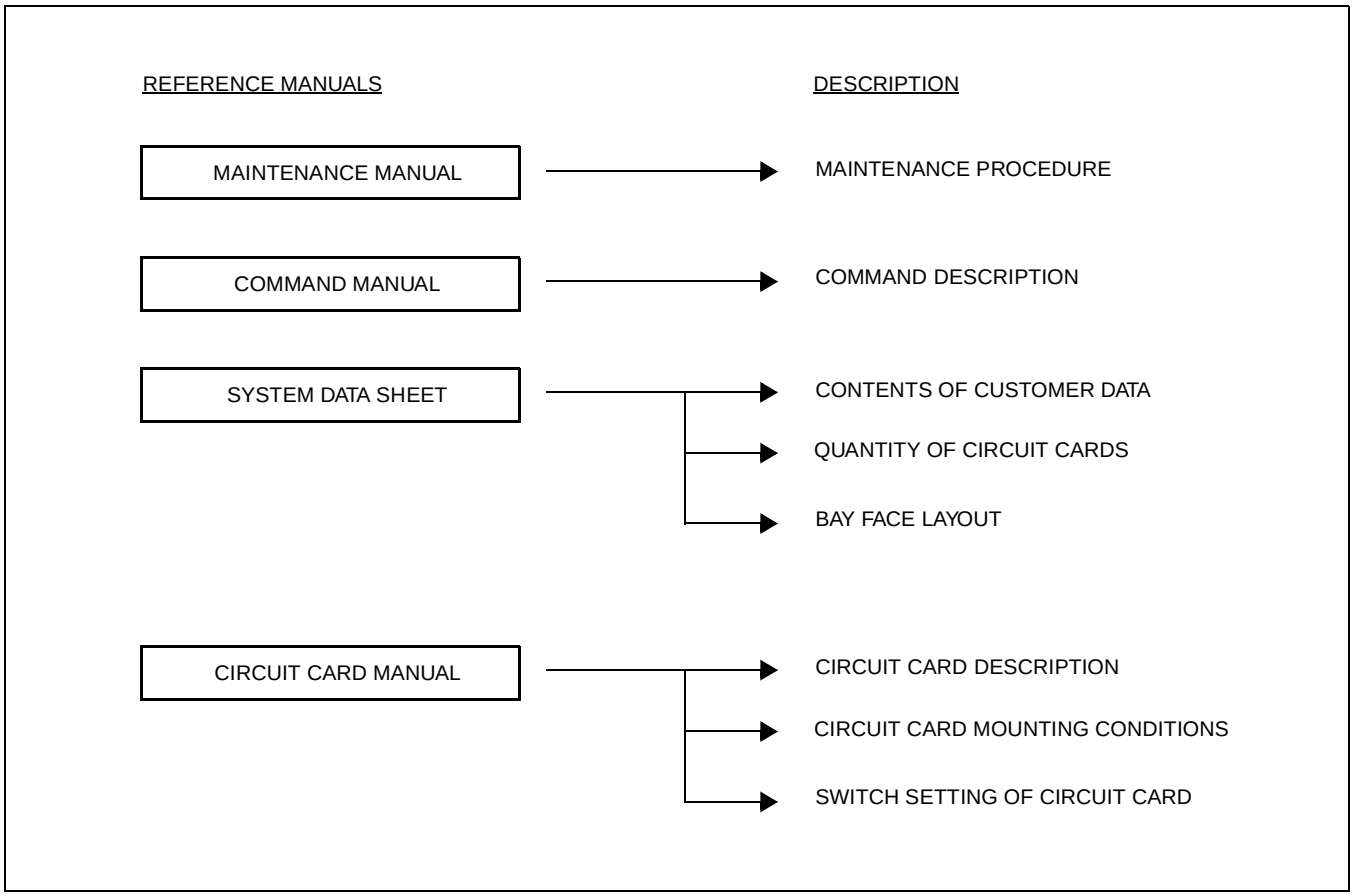


Figure 1-1 Reference Manuals for Installation

3. HOW TO FOLLOW THIS MANUAL

The Installation Procedure is shown by means of flowcharts with NEC Action Procedure (NAP) numbers. The details of each step are described in the NAPs.

3.1 SCOPE OF INSTALLATION PROCEDURES

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

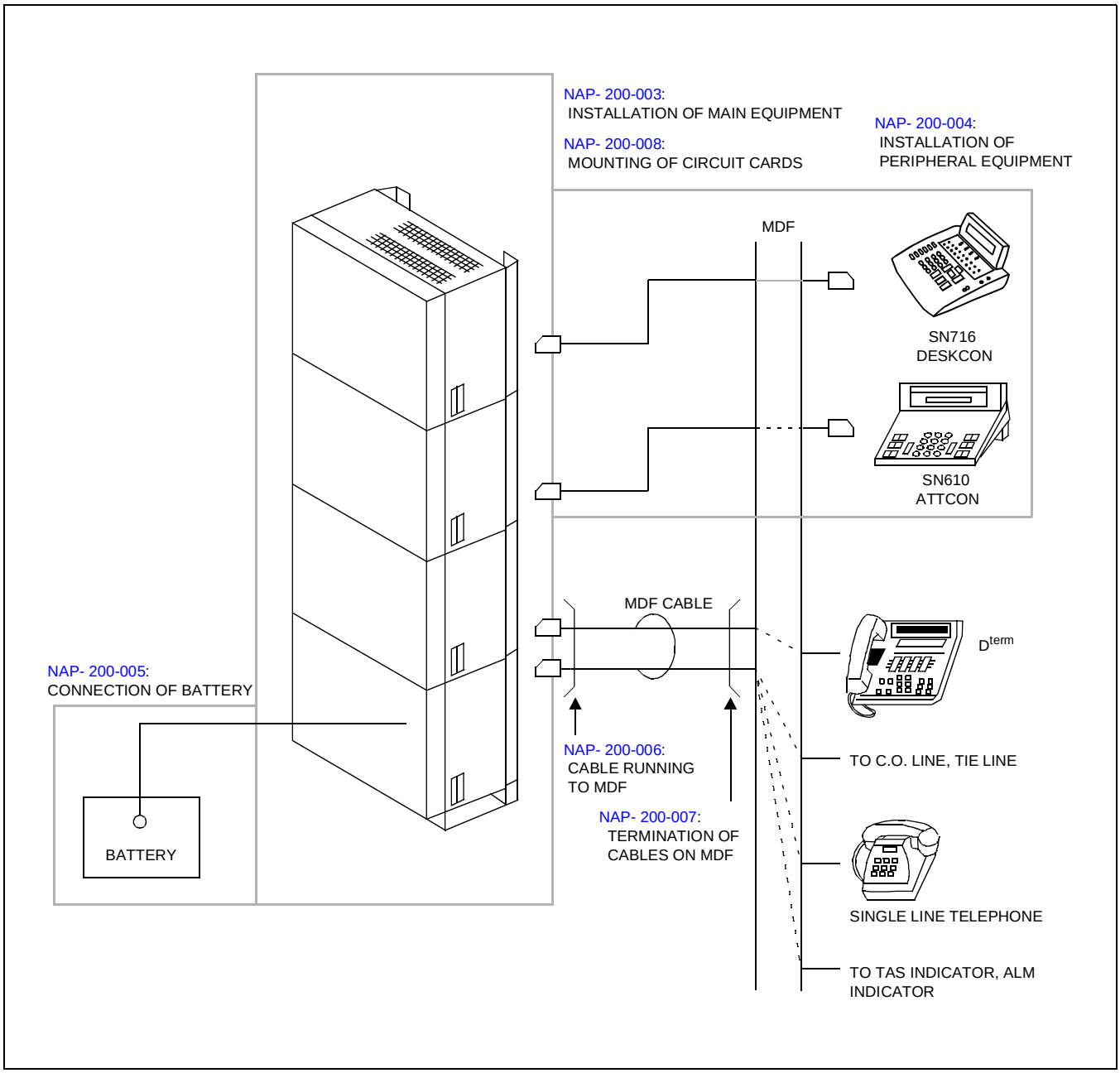
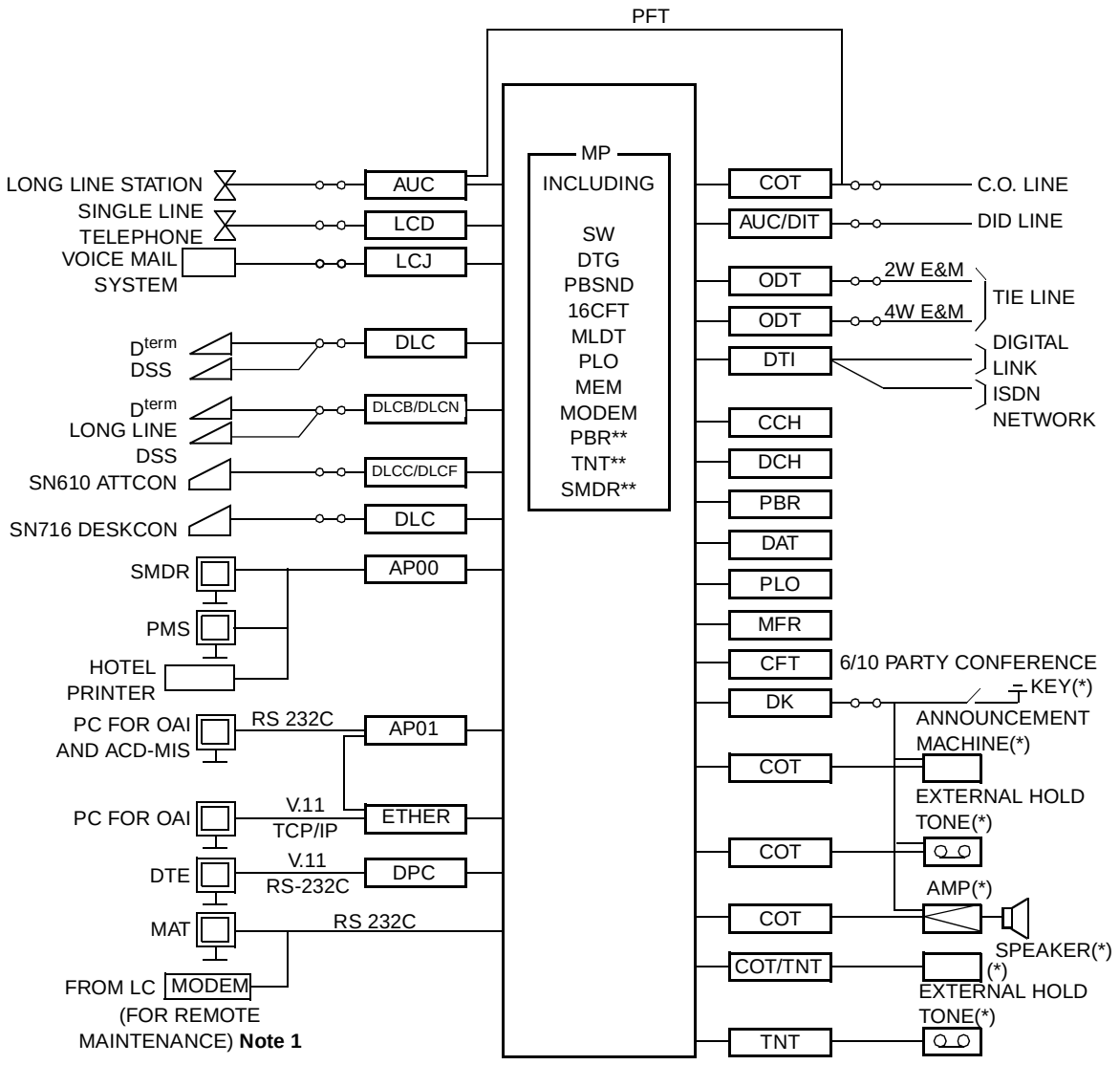


Figure 1-2 Scope of Installation Works

CHAPTER 2 GENERAL INFORMATION

1. TRUNKING DIAGRAM

A typical trunking diagram for the PBX is shown in Figure 2-1.



Note 1: *An external Modem is not required when the Built-In Modem on the MP is used.*
Note 2: *The equipment marked with (*) is provided by the customer.*
Note 3: *The MP functions marked with (**) are included in the PN-CP03 card only.*

Figure 2-1 PBX Trunking Diagram

Table 2-1 Description of Symbols in Trunking Diagram

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AMP	Amplifier for External Speaker	KEY	External Key
AP00	SMDR/Hotel Application Card	LCD	Line Circuit Card (for Single Line Telephone)
AP01	OAI Interface Card	LCI	Line Circuit Card for Voice Mail Integrator
AUC	Analog Universal Circuit Card (Long Line Circuit, DID Trunk)	MAT	Maintenance Administration Terminal
BGM	External Music Source for D^{term} Back Ground Music Service	MDF	Main Distribution Frame
CCH	Common Channel Handler Card	MEM	Main Memory
CFT	6/10 party Conference Trunk Card	MFR	MF Receiver Trunk Card
COT	C.O. Trunk Card	MLDT	Melody Trunk Card
DAT	Digital Announcement Trunk Card	MODEM	Modem
DCH	D-Channel Handler Card	MP	Main Processor Card
DIT	DID Trunk Card	PFT	Power Failure Transfer
DK	External Relay/Key Interface Card	PMS	Property Management System
DLC	Digital Line Circuit Card (for D^{term}/SN 716 DESKCON)	CDT	OD Trunk Card (2/4 wire E&M)
DLCB/DLCN	Digital Line Circuit Card (for D^{term} Long Line/SN 716 DESKCON)	PBR	PB Receiver Card
DLCC/DLCF	Digital Line Circuit Card (for SN610 ATTCON)	PBSND	PB Sender
DPC	Data Port Controller Card	PLO	Phase Lock Oscillator
DSS	DSS Console	SMDR	Station Message Detail Recording
DTI	Digital Trunk Interface Card	SW	Time Division Switch
DTG	Digital Tone Generator	TNT	Tone/Music Source Interface Card
ETHER	Ethernet Control Card	16CFT	16 Circuit Three/Four Party Conference Trunk
FP	Firmware Processor Card		

Note : *Refer to the Circuit Card Manual for details of circuit cards.*

2. SYSTEM CONFIGURATIONS

The NEAX2000 IVS system provides four installation methods as follows:

- Floor Standing Installation
- Wall-Mounting Installation
- 19-Inch Rack-Mounting Installation
- Desk Top Installation

This equipment can only be serviced by a qualified service person.

Examples of system configurations for each installation method are shown in Figure 2-2 through 2-7.

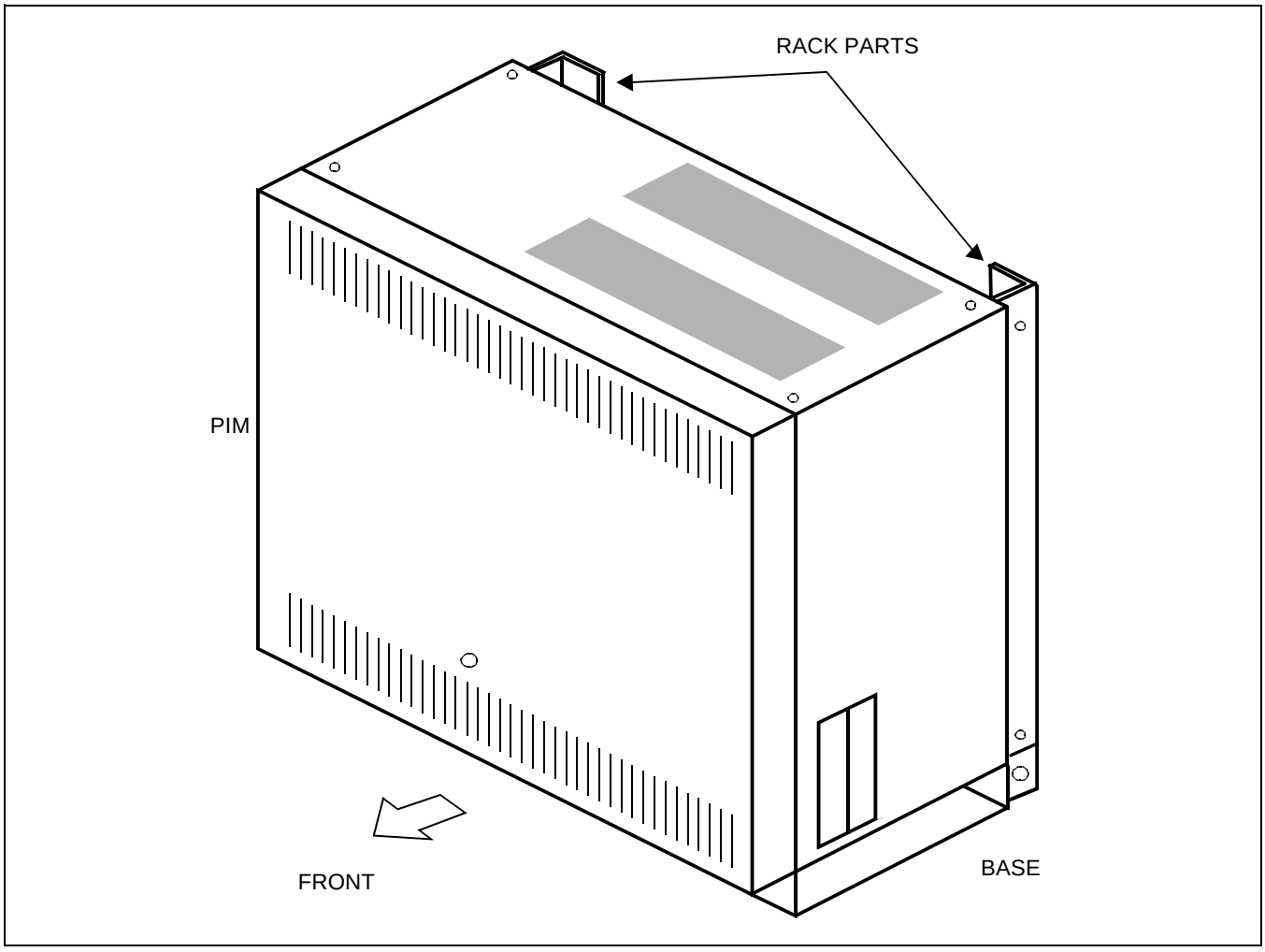


Figure 2-2 1-PIM Configuration for Floor Standing Installation

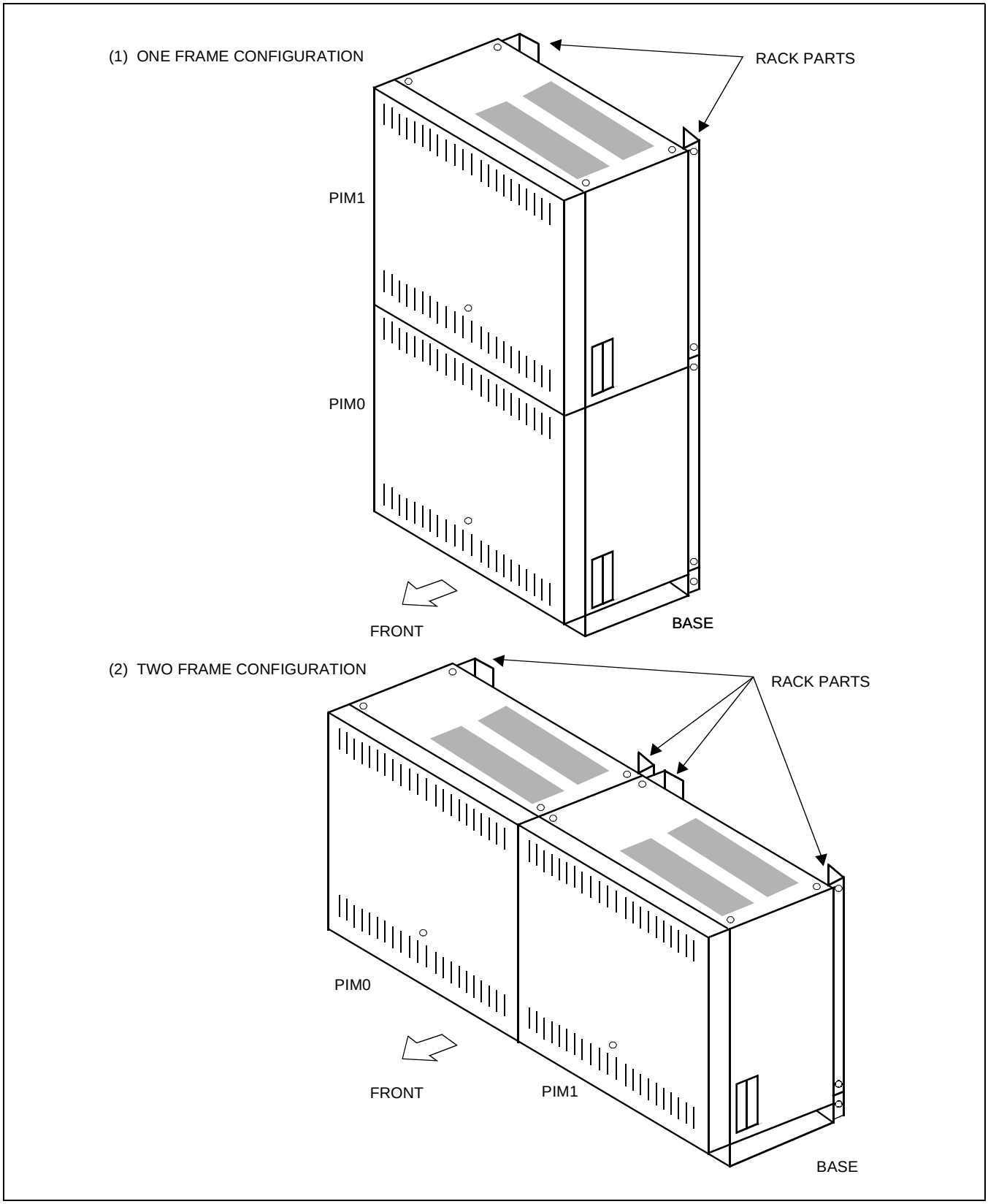


Figure 2-3 2-PIM Configuration for Floor Standing Installation

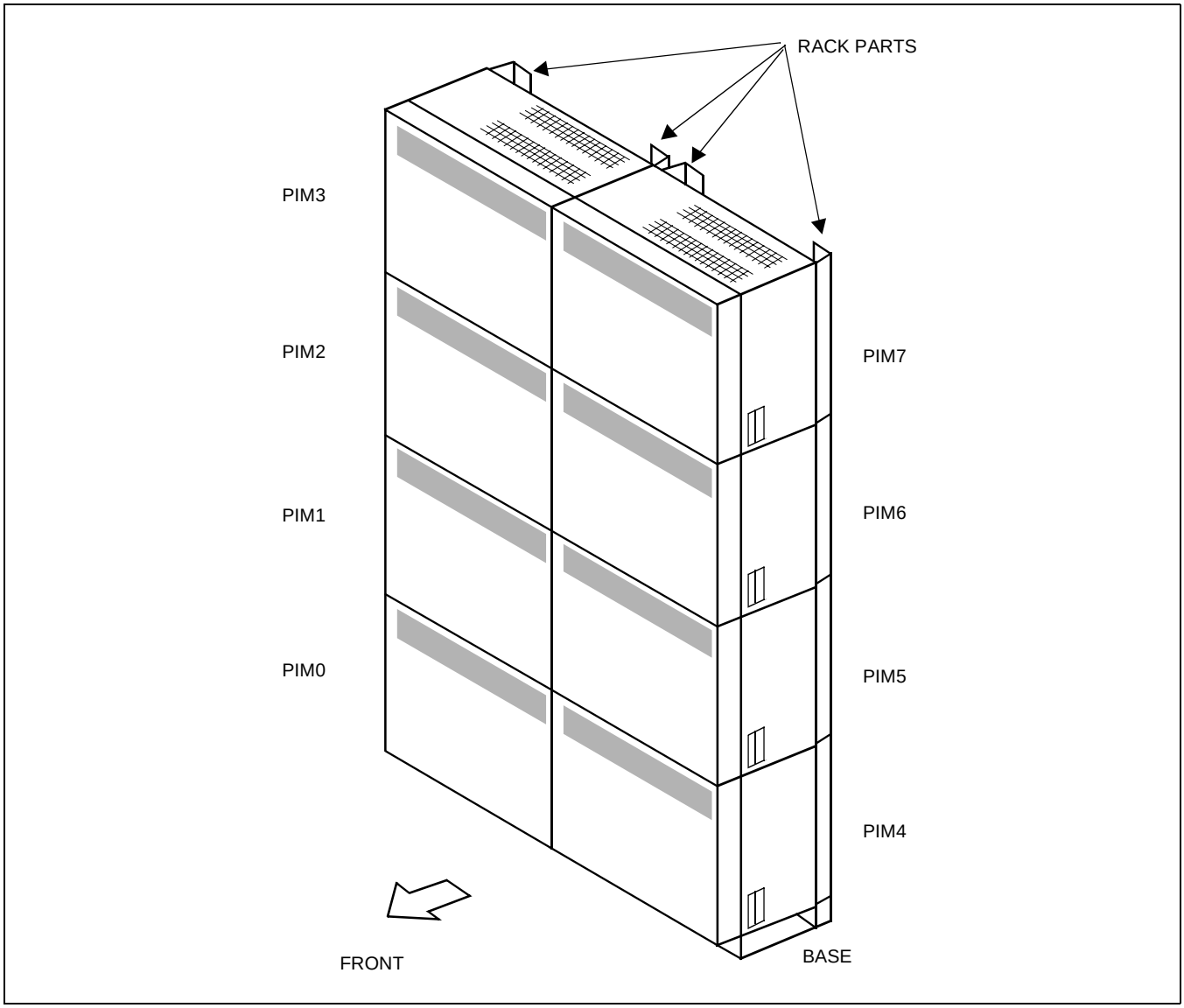


Figure 2-4 8-PIM Configuration for Floor Standing Installation

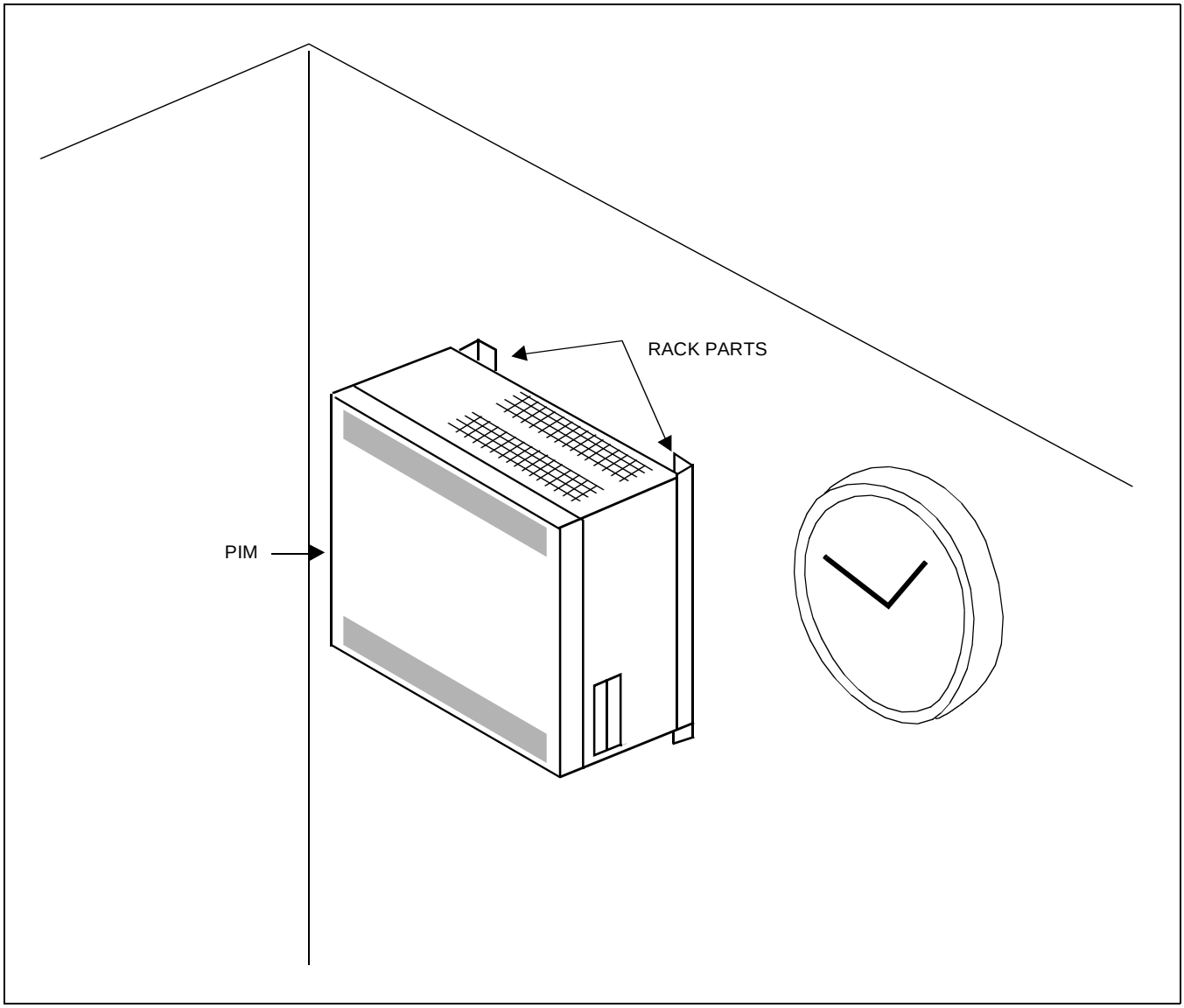


Figure 2-5 1-PIM Configuration for Wall-Mounting Installation

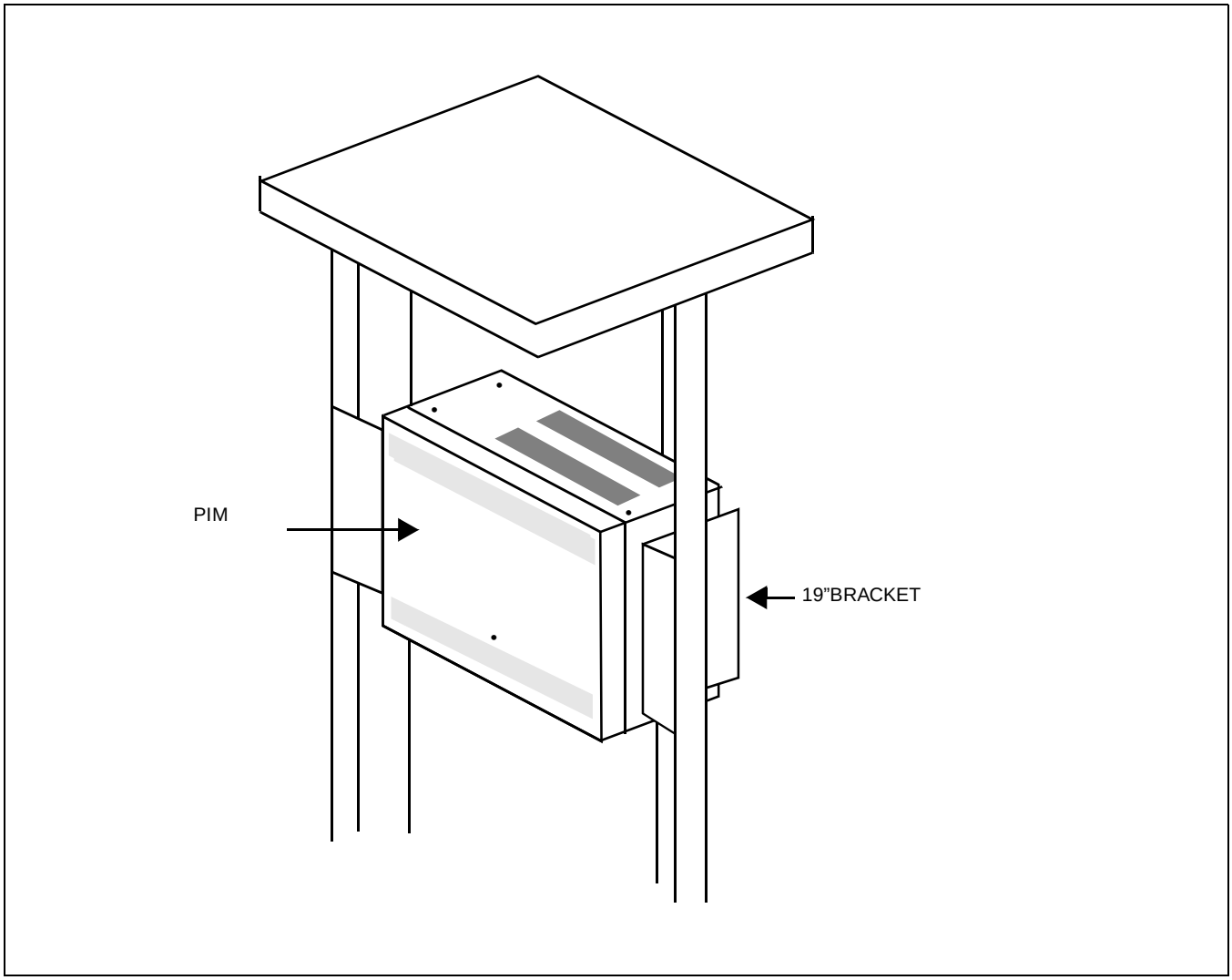


Figure 2-6 1-PIM Configuration for 19-inch Rack-Mounting Installation

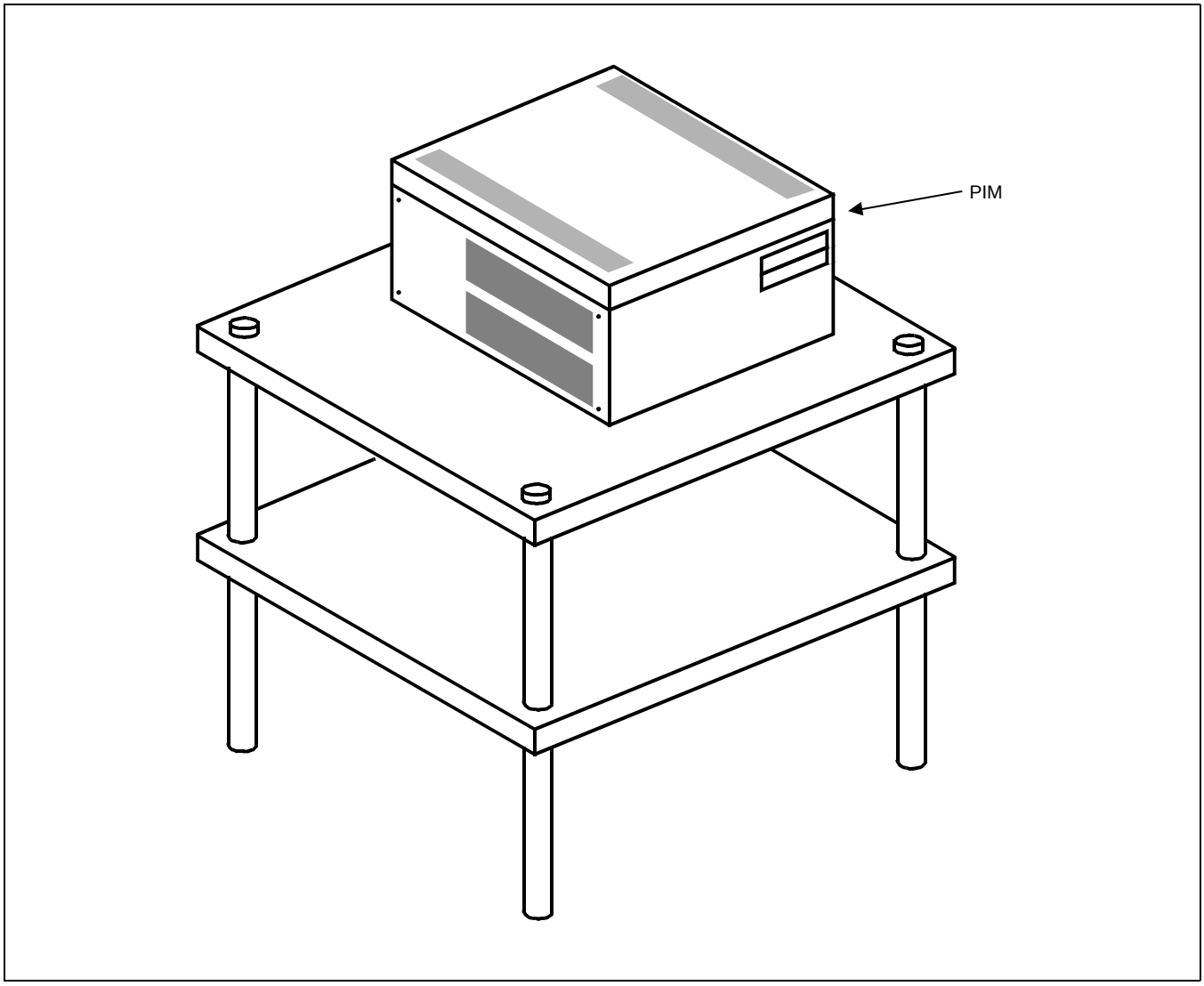


Figure 2-7 1-PIM Configuration for Desk Top Installation

CHAPTER 3 INSTALLATION PROCEDURE

1. PRECAUTIONS

1.1 GROUNDING REQUIREMENTS

The system grounding must have a specific ground resistance and AC noise level, and is to be connected to a pre-determined terminal in the NEAX2000 IVS. Standard grounding requirements are as shown below:

- Communication grounding : Less than 10 ohm
- Protective ground for PIM: Less than 10 ohm

Note: *The AC ripple on these various grounds should be less than 0.5 Vp-p.*

CAUTION

Grounding circuit continuity is vital for safe operation of telecommunication equipment. Never operate this equipment with the grounding conductor disconnected.

The following specific requirements apply to ground wiring.

1.1.1 EQUIPMENT GROUND

An equipment grounding conductor that is at least as large as the ungrounded branch-supply conductors is to be installed as part of the circuit that supplies the NEAX2000 IVS. Bare, covered, or insulated grounding conductors are acceptable. Individually covered or insulated equipment grounding conductors shall have a continuous outer finish that is either green, or green with one or more yellow stripes. The equipment grounding connector is to be connected to ground at the service equipment.

The attachment-plug receptacles in the vicinity of the NEAX2000 IVS are all to be of a grounding type, and the equipment grounding conductors serving these receptacles are to be connected to earth ground at the service equipment.

1.1.2 SUPPLEMENTARY GROUND

In addition to the equipment grounding conductor in the power supply cord, a supplementary equipment grounding conductor shall be installed between the product or system and ground. This conductor shall be at least as large as the ungrounded branch-supply conductors. It shall be connected to the NEAX2000 IVS at the terminal provided, and shall be connected to to ground in a manner that will retain the ground connection when the NEAX2000 IVS is unplugged from the receptacle.

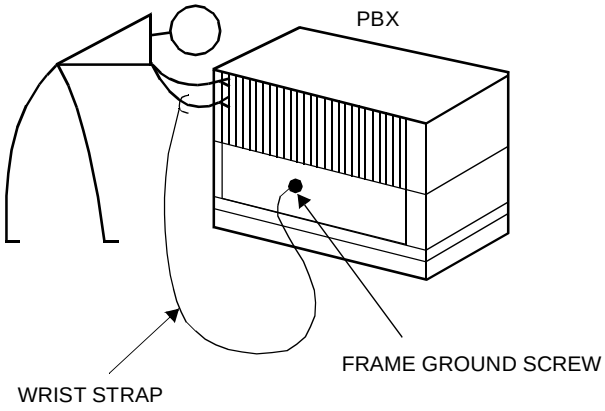
The connection to ground of the supplementary equipment grounding conductor shall be in compliance with the rules for terminating bonding jumpers in Part K of Article 250 of the National Electrical Code, ANSI/NFPA 70. Termination of the supplementary equipment grounding conductor is permitted to be made to building steel, to a metal electrical raceway system, or to any grounded item that is permanently and reliably connected to the electrical service equipment ground.

Bare, covered, or insulated grounding conductors are acceptable. A covered or insulated grounding conductor shall have a continuous outer finish that is either green, or green with one or more yellow stripes.

1.2 STATIC ELECTRICITY PRECAUTIONS

The installer must wear a grounded wrist strap to protect circuit cards from static electricity.

• WHEN PLUGGING/UNPLUGGING A CIRCUIT CARD



• WHEN HOLDING A CIRCUIT CARD

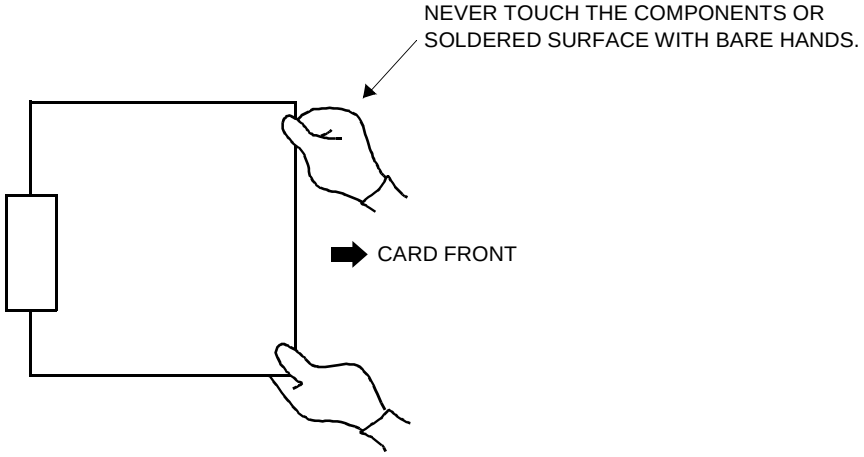
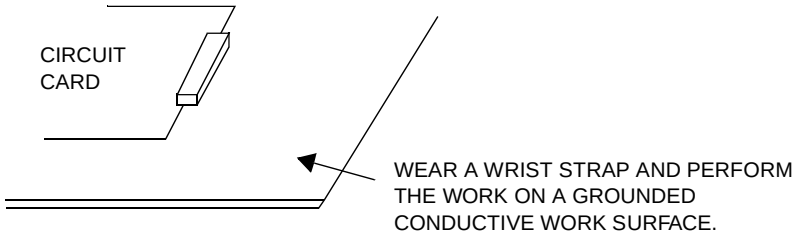


Figure 3-1 Static Electricity Precautions (1 of 2)

• WHEN MAKING A SWITCH SETTING ON A CIRCUIT CARD



• WHEN CARRYING A CIRCUIT CARD

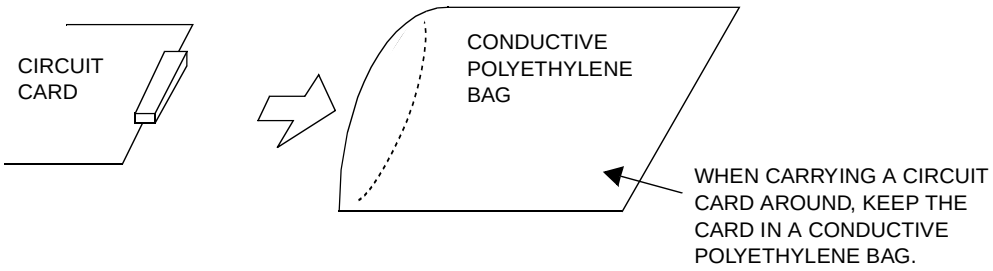


Figure 3-1 Static Electricity Precautions (2 of 2)

1.3 PROCEDURE FOR UNPLUGGING/PLUGGING CIRCUIT CARDS

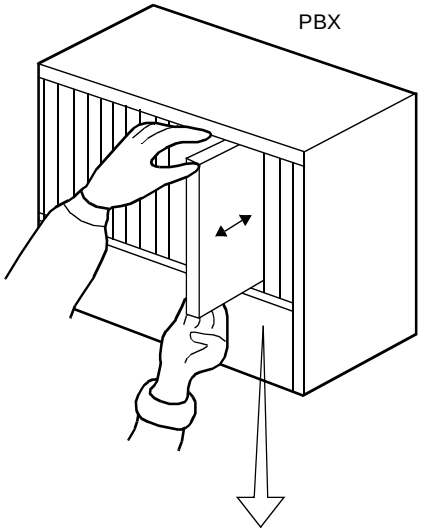
When removing a circuit card from the PIM or when mounting a circuit card in the PIM, follow the procedure given in Table 3-1 below.

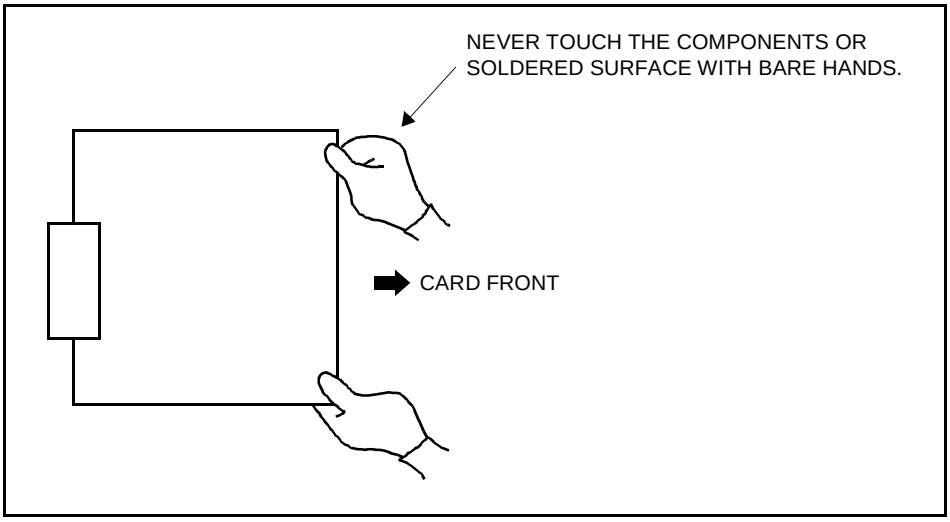
Table 3-1 Procedure for Unplugging/Plugging Circuit Cards

CIRCUIT CARD	PROCEDURE		CONDITION
	PLUG	UNPLUG	
• SPN-CP00/CP03 (MP) • PZ-PW86 (PWR) • SPN-PW00 (PWR)	Power off ⇓ Plug in ⇓ Power on	Power off ⇓ Unplug ⇓ Power on	These circuit cards must be plugged in or unplugged only with power off to prevent damage to the card or other system circuitry.
• SPN-CP01 (FP) • SPN-CP02 (MP) • SPN-BS00 (BS00) • SPN-BS01 (BS01) • SPN-AP00 (AP00) • SPN-ME00 (EXTMEM) • SPN-24DTA (DTI) • SPN-SC00 (CCH) • SPN-SC01 (DCH) • SPN-SC02 (ICH) • SPN-CK00 (PLO) • SPN-4RSTB (MFR) • SPN-AP01 (AP01) • SPN-VM00	Power off or MB switch on ⇓ Plug in ⇓ Power on or MB switch off	Power off or MB switch on ⇓ Unplug ⇓ Power on	These circuit cards must be plugged in or unplugged under Make Busy condition or power off to prevent damage to the card or other system circuitry.
• PN-CC00 (ETHER)	Refer to the OAI System Manual.		

CAUTION

The installer must hold the edge of circuit card when plugging or unplugging the circuit card. If you touch another area, you may be exposed to hazardous voltages.





2. PROCEDURE

This section explains the procedures for installing the NEAX2000 IVS system. The installer should follow the procedure shown in the following flowchart. In the flowchart, a NAP number is denoted to the right side of each step. The NAP Number refers to the details for each procedure.

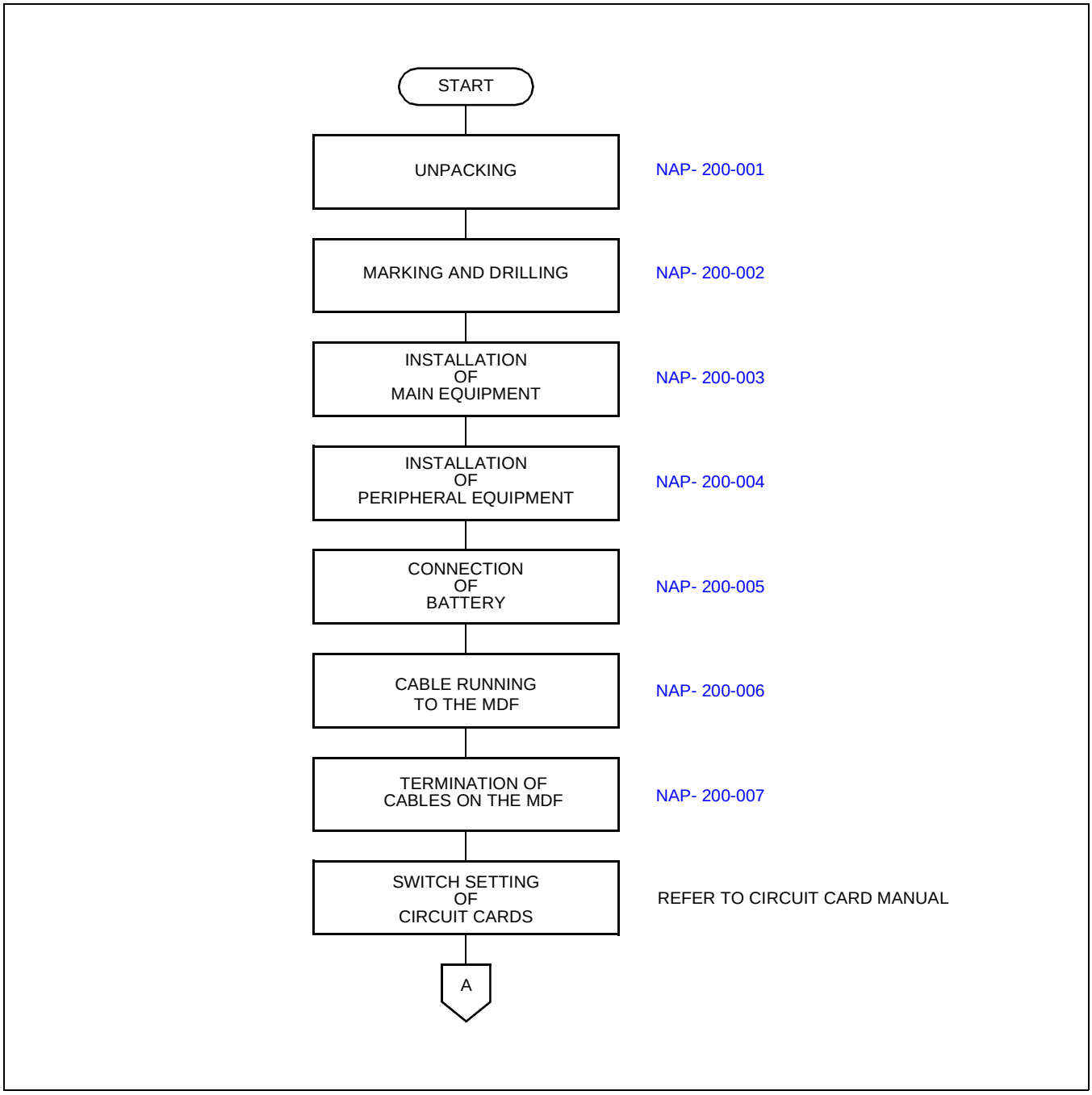


Figure 3-2 Procedure Flowchart (1 of 2)

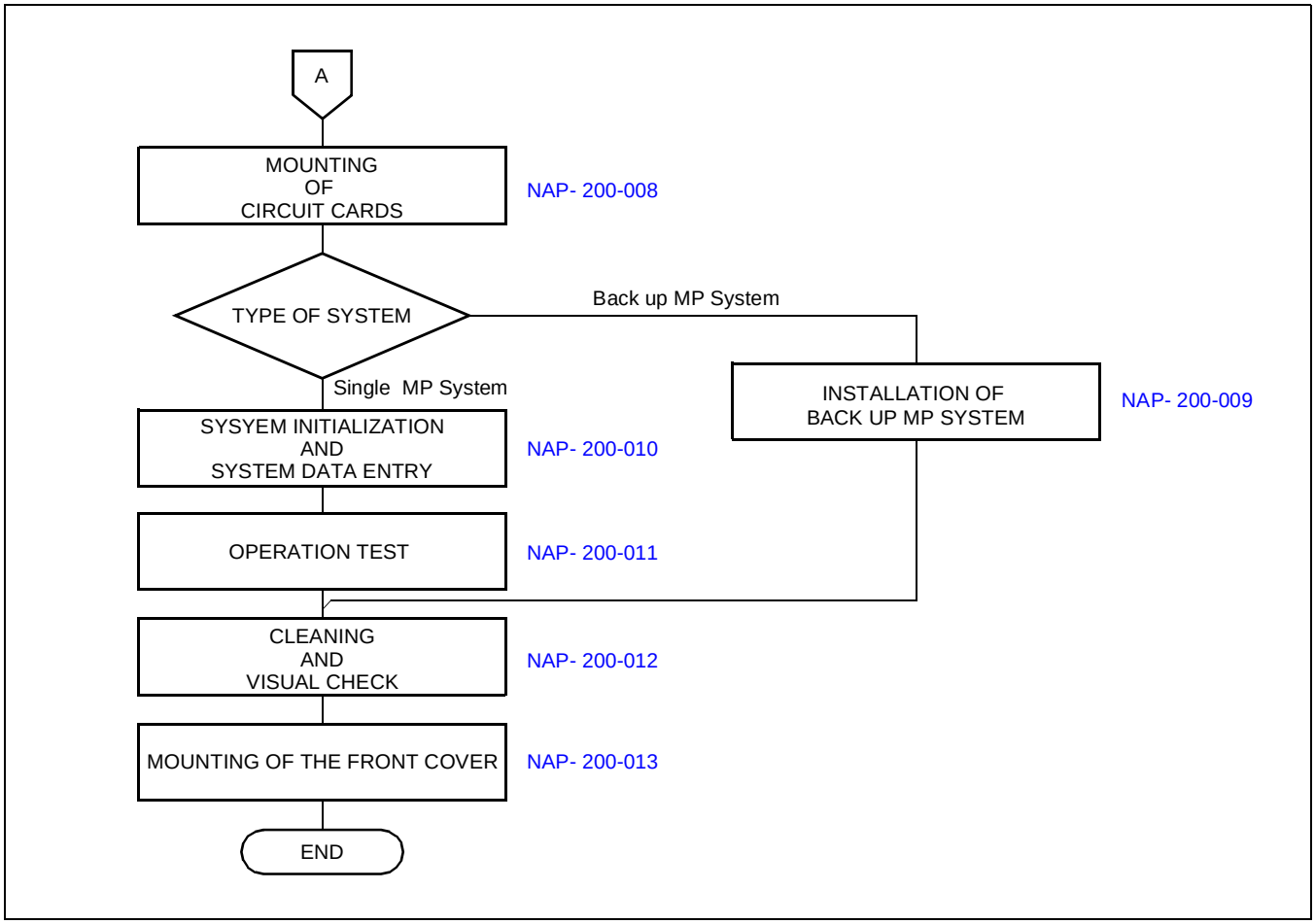


Figure 3-2 Procedure Flowchart (2 of 2)

The mark shown below is attached to the NAP sheet for each procedure in which circuit cards are handled. When doing such a procedure, the installer must perform the procedure with caution, to prevent damage caused by static electricity (See section 1.2, “Static Electricity Precautions” in this chapter).

NAP 200-001		
Sheet 1/2		
Unpacking		

1. Unpacking Procedure

(1) Check the received quantity of packages containing the NEAX2000 IVS system with the description on the shipping document.

(2) Check the packaging for external damage done by transportation and record it as necessary.

(3) Unpack the packaging.

- For unpacking the packages containing circuit cards, a grounded wrist strap should be worn.

(4) Check the quantity of equipment and materials unpacked with the shipping document.

(5) Perform visual inspection, checking for the following items.

- Modules
  - 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.
- Circuit Cards
  - Overall distortion
  - Scratches and cracks
  - Loss, or damage of parts on the circuit cards.
- Attendant Console
  - Scratches and cracks on the keyboard
  - Overall distortion
  - Damage to keys and lamps.

NAP 200-001
Sheet 2/2
Unpacking

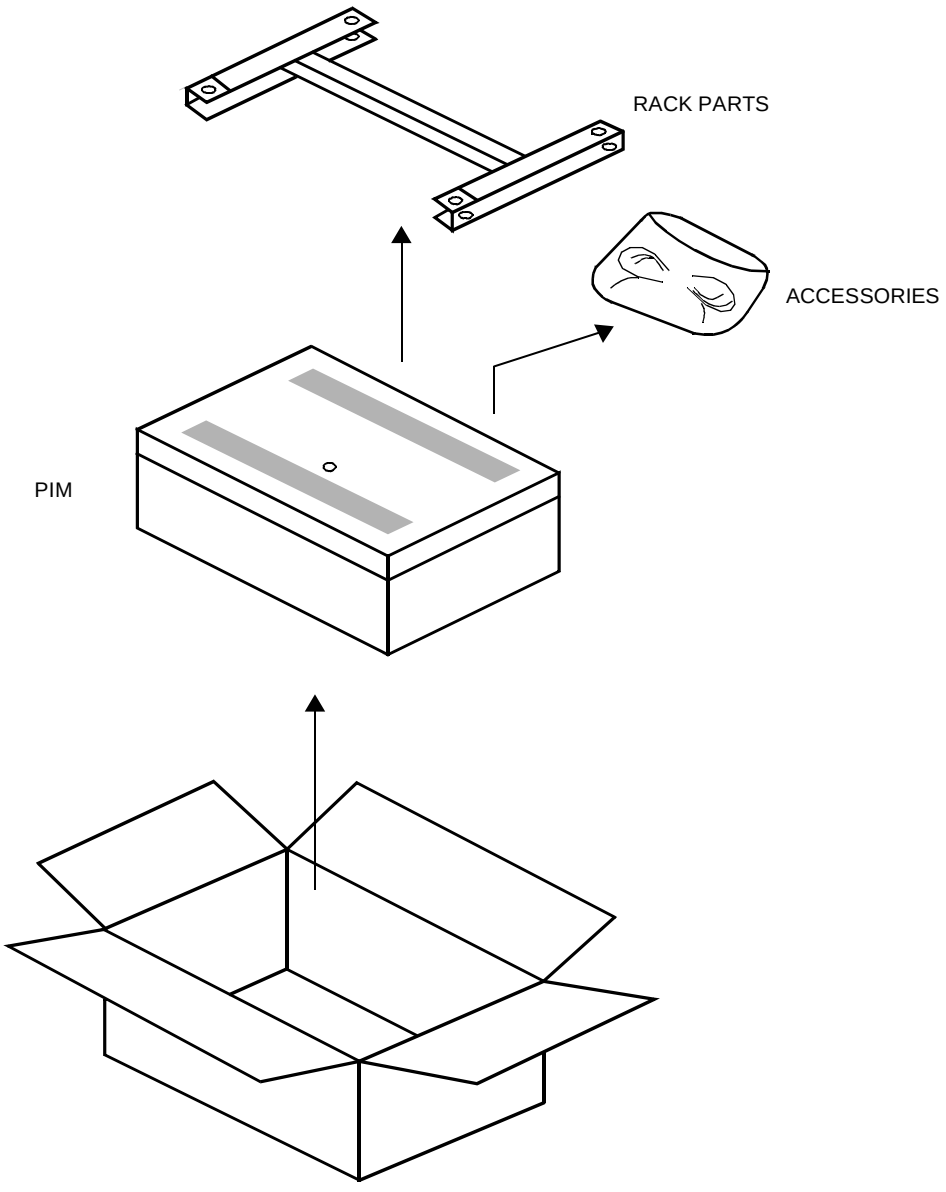


Figure 001-1 Unpacking of Main Equipment

NAP 200-002
Sheet 1/3
Marking and Drilling

1. Confirmation of the Equipment Layout

Install the equipment in an area which provides adequate ventilation and is easily accessible to service personnel.

2. Marking

2.1. Floor Standing

- Referring to Figure 002-1, mark the installation holes for the main equipment.
- Mark the installation holes for the external MDF, if required.

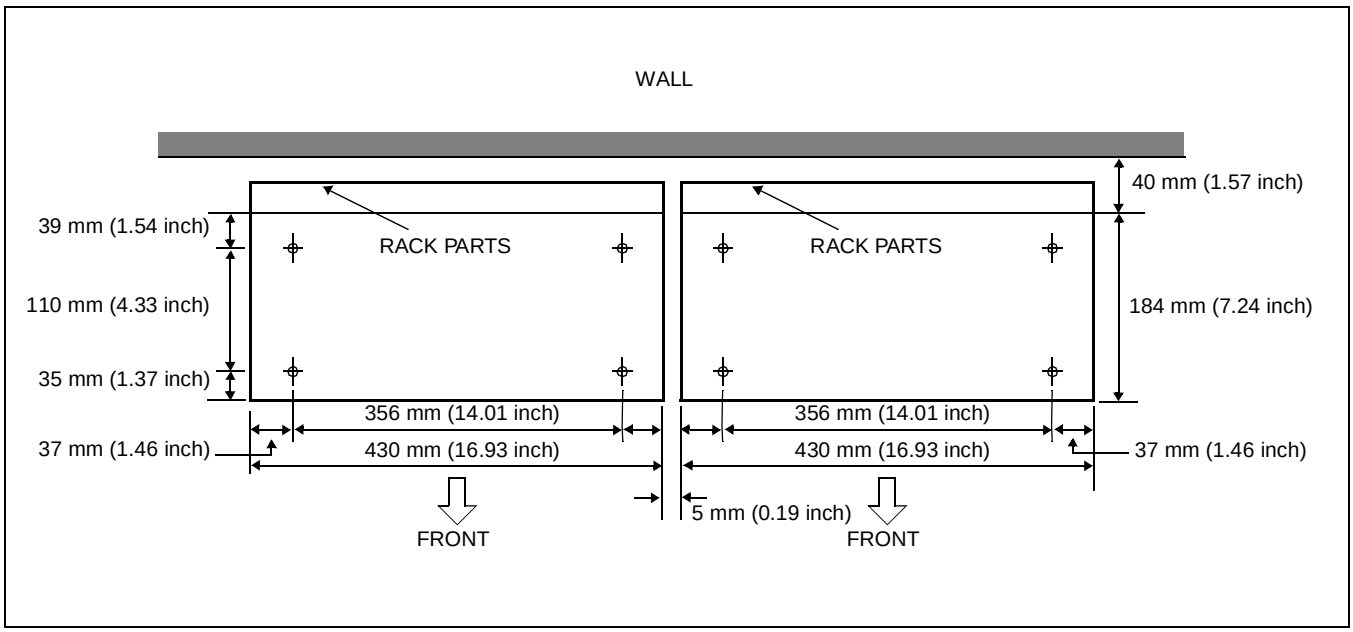


Figure 002-1 Floor Marking for Main Equipment

2.2. Wall Mounting

- Locate and mark the wall mounting points as shown in Figure 002-2.

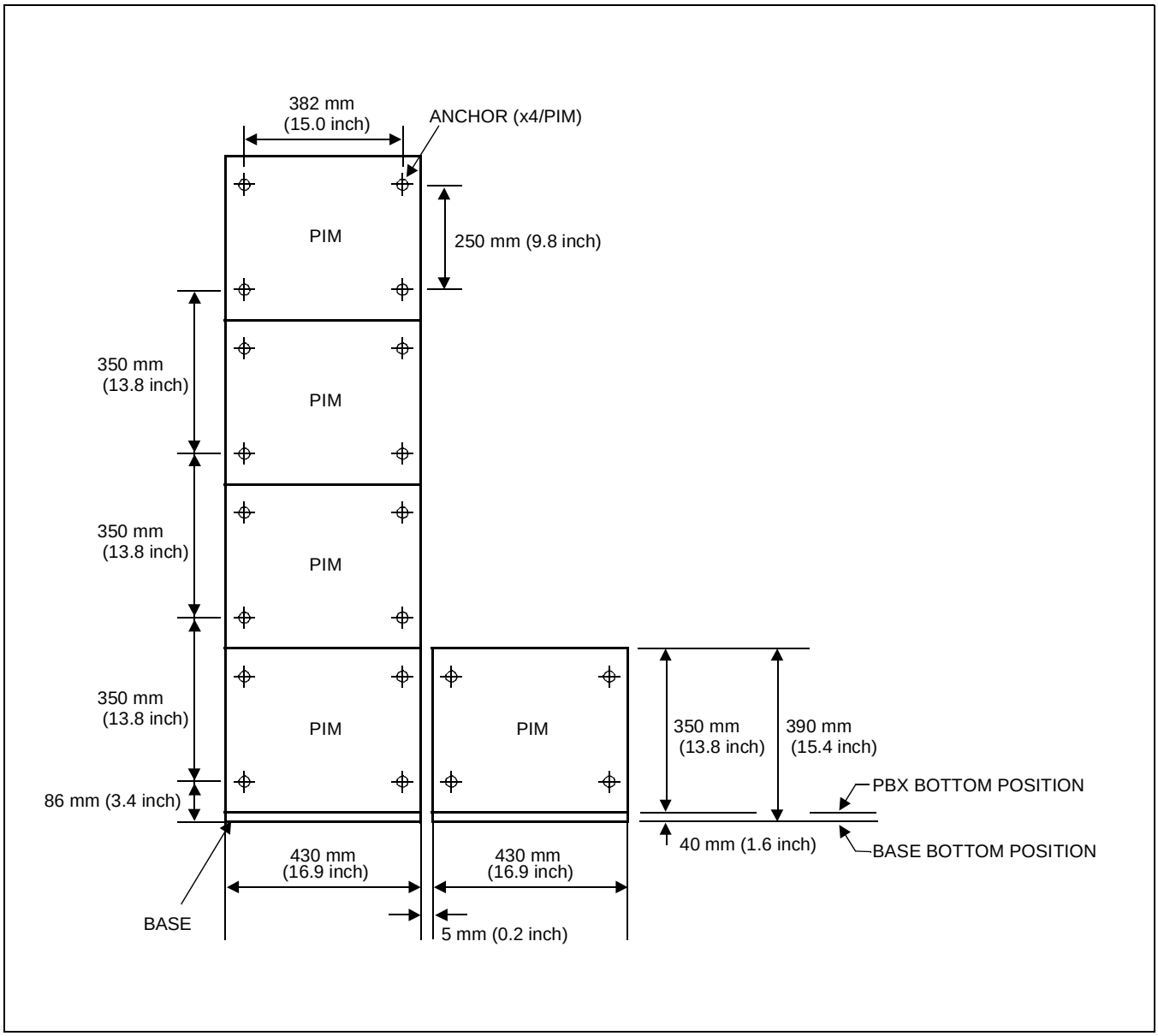


Figure 002-2 Wall Mounting Points

NAP 200-002
Sheet 3/3
Marking and Drilling

3. Drilling

- Drilling and installing anchor bolts

(1) DRILL A HOLE IN THE CONCRETE WITH A DRILL SUITABLE FOR A PLUG BOLT A LITTLE DEEPER THAN THE PLUG BOLT LENGTH.

(2) INSERT THE ANCHOR BOLT INTO THE HOLE.

(3) PUSH ANCHOR BOLT UNTIL THE BOLT STAYS PERMANENTLY IN PLACE.

(4) TURN BOLT COUNTERCLOCKWISE AND REMOVE.

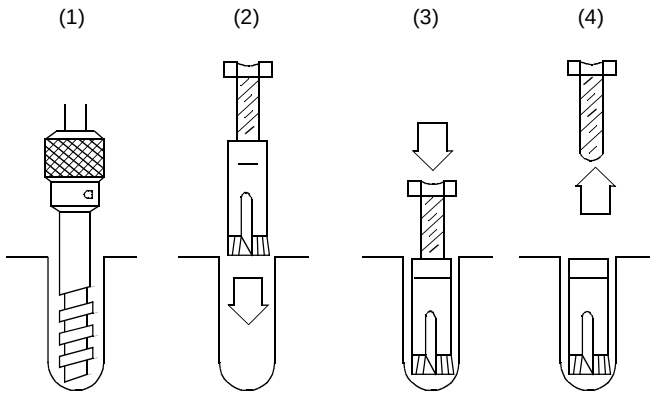


Figure 002-3 Instruction for Anchor Bolt

NAP 200-003
Sheet 1/37
Installation of Main Equipment

Install the main equipment according to the desired procedure for either Floor Standing, Wall-Mounting, 19-Inch Rack-Mounting or Desk Top installation.

1. Floor Standing Installation

(1) Connect the RACK PARTS to the rear side of the BASE with 4 bolts provided.

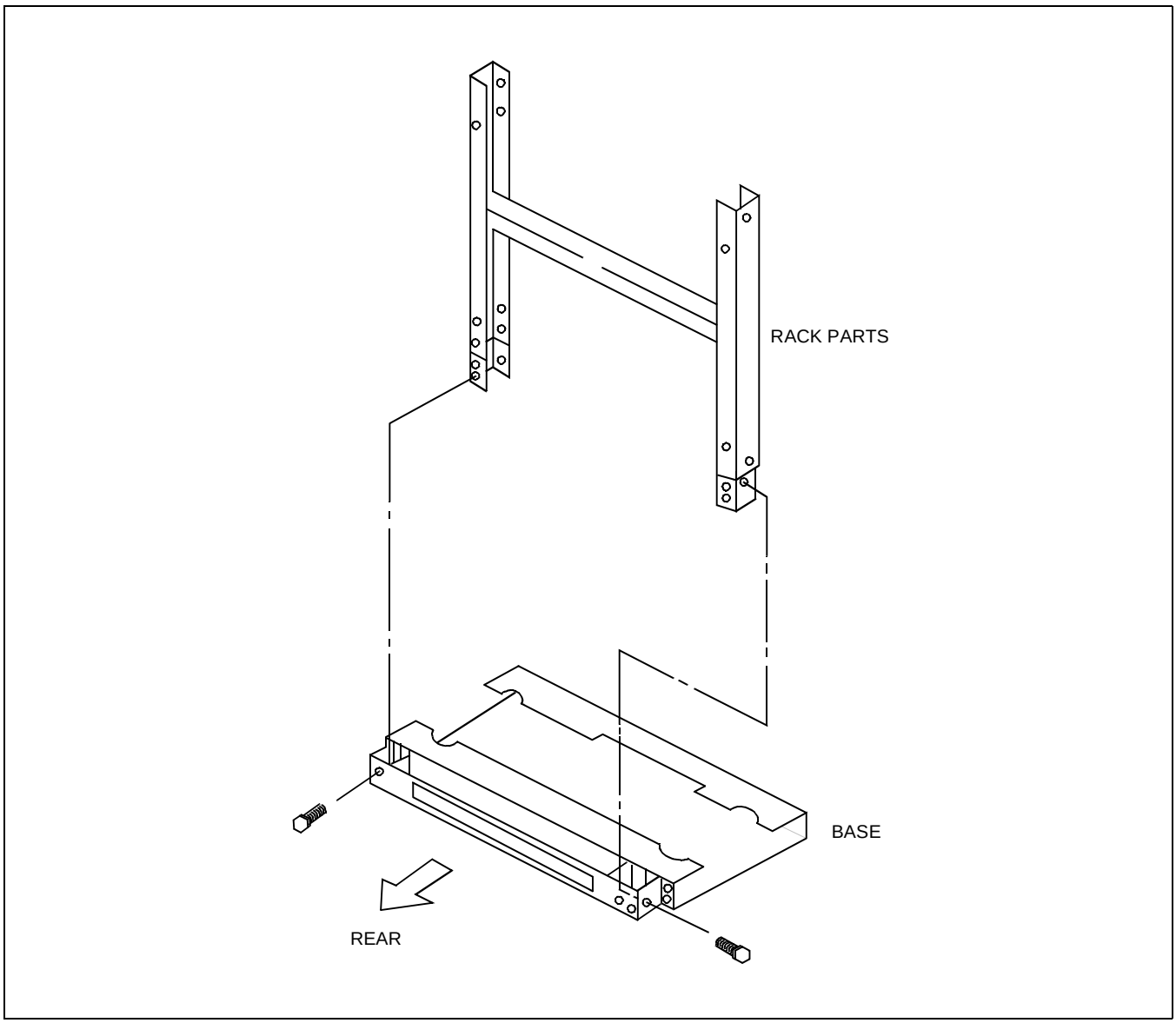


Figure 003-1 Connection of RACK PARTS and BASE

(2) In a Multiple-PIM Configuration

(a) When the system is a multiple-PIM configuration, connect the RACK PARTS to each other as shown in Figure 003-2.

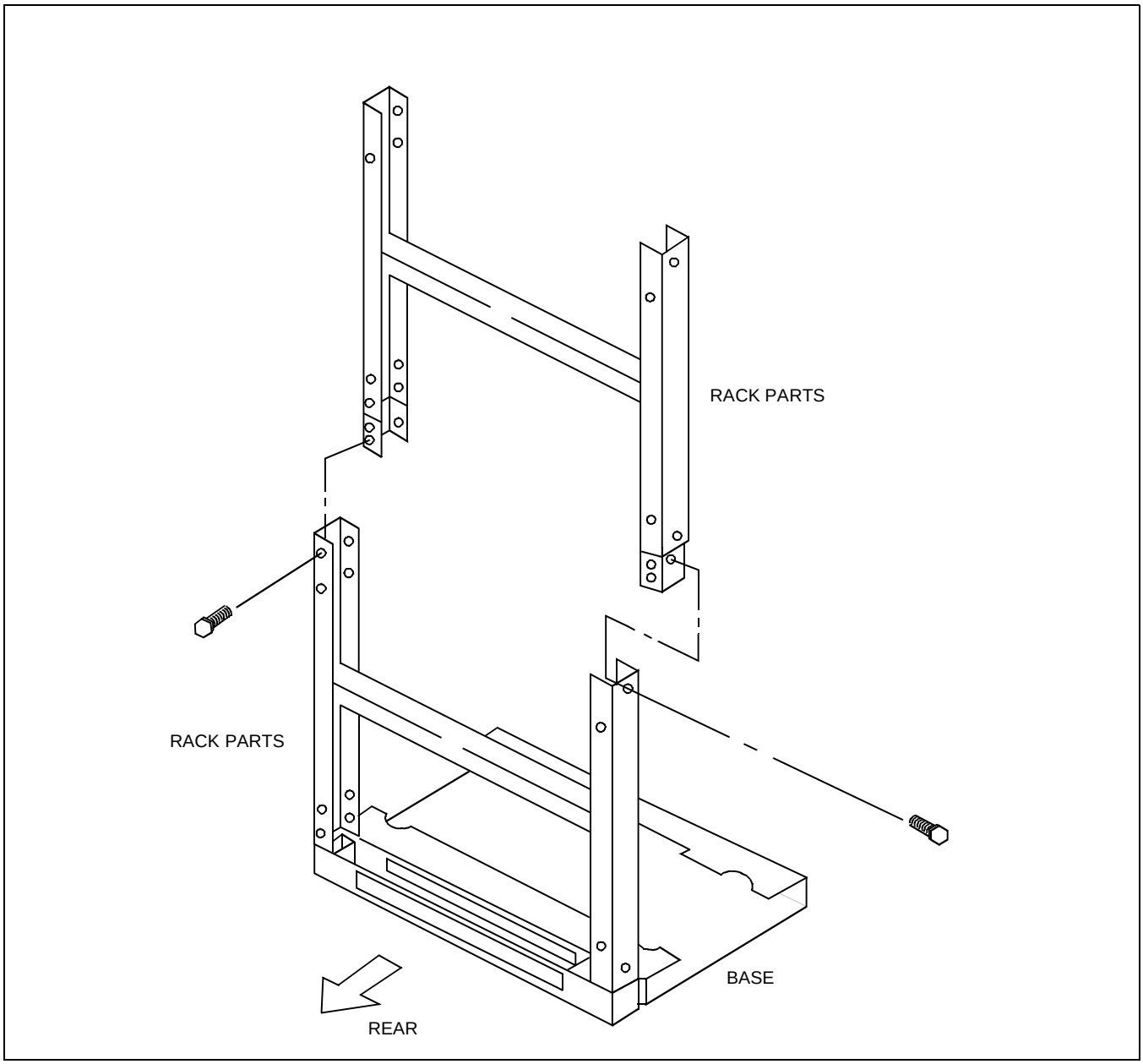


Figure 003-2 Connection of RACK PARTS

(b) For each PIM to be installed, install the 4 screws into the RACK PARTS on which the PIM(s) will be mounted as shown in Figure 003-3.

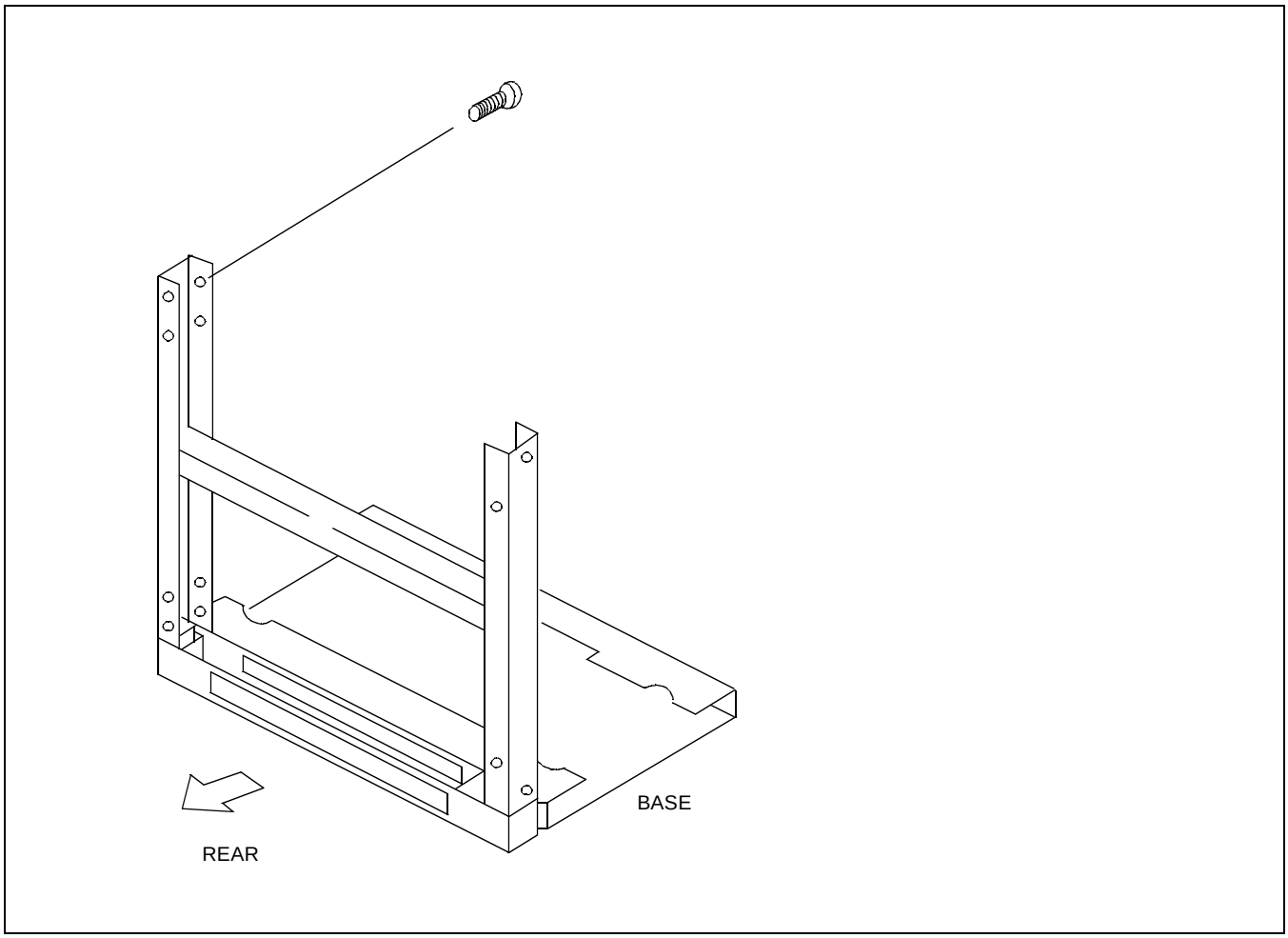


Figure 003-3 Installation of Screws onto RACK PARTS

(3) Attaching the BASE to the floor.

- Position the BASE over the holes drilled as per Figure 002-1.
- Secure the BASE to the floor using anchor bolts.

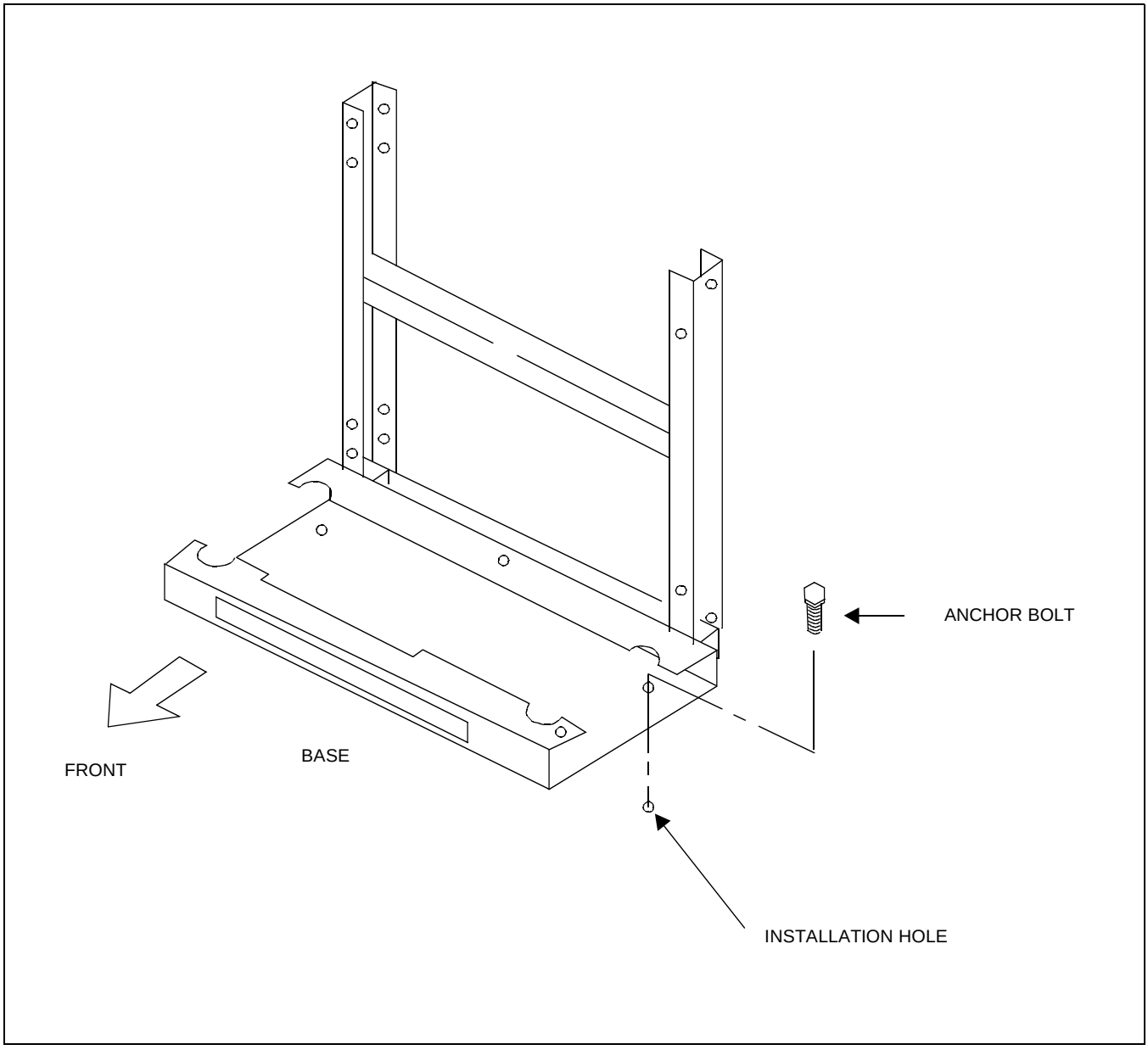
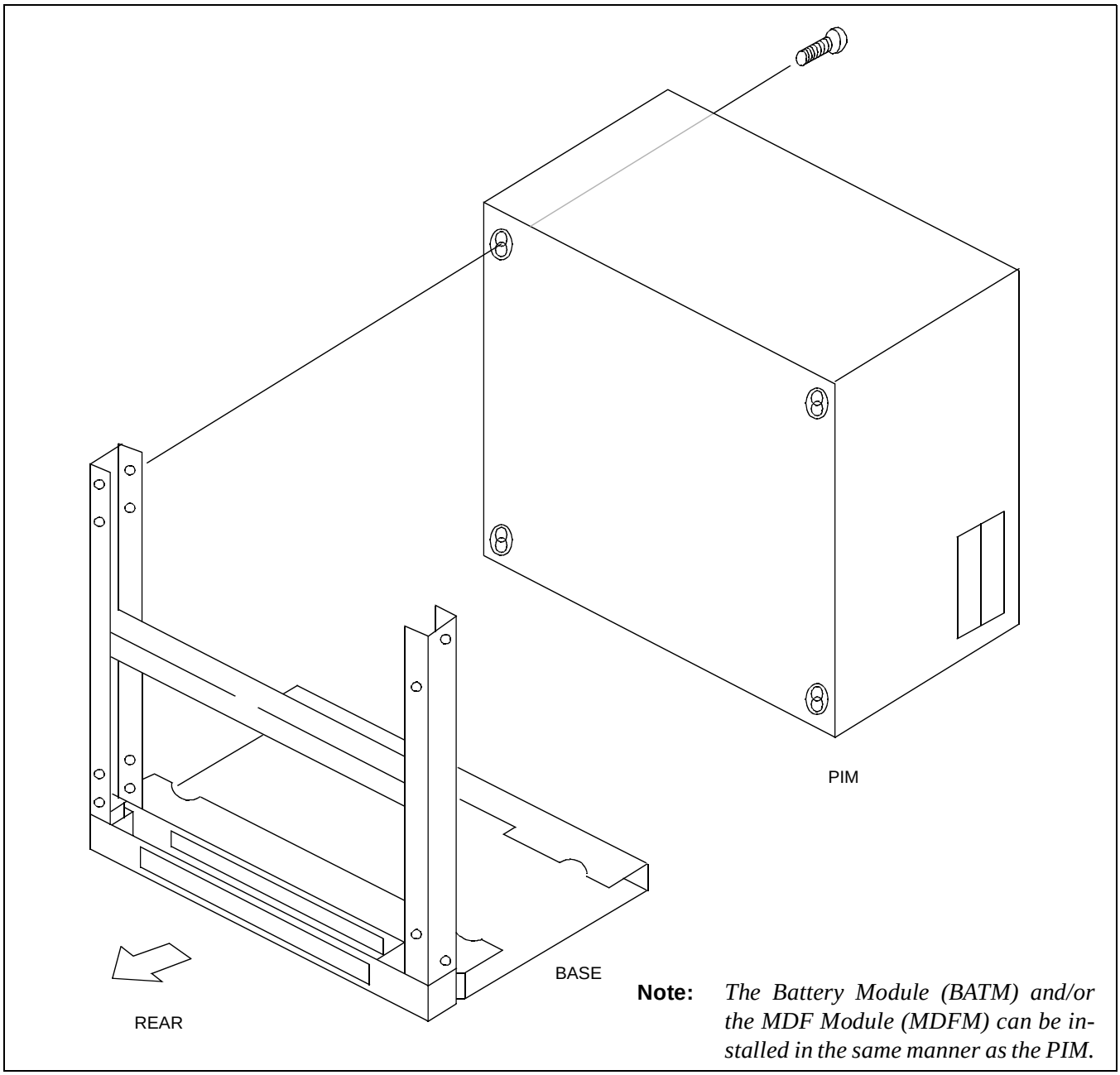


Figure 003-4 Securing of the BASE

(4) Secure the PIM to the RACK PARTS as shown in Figure 003-5 by tightening the 4 screws already mounted in the RACK PARTS. When the system is a multiple-PIM configuration, secure all PIMs and RACK PARTS.

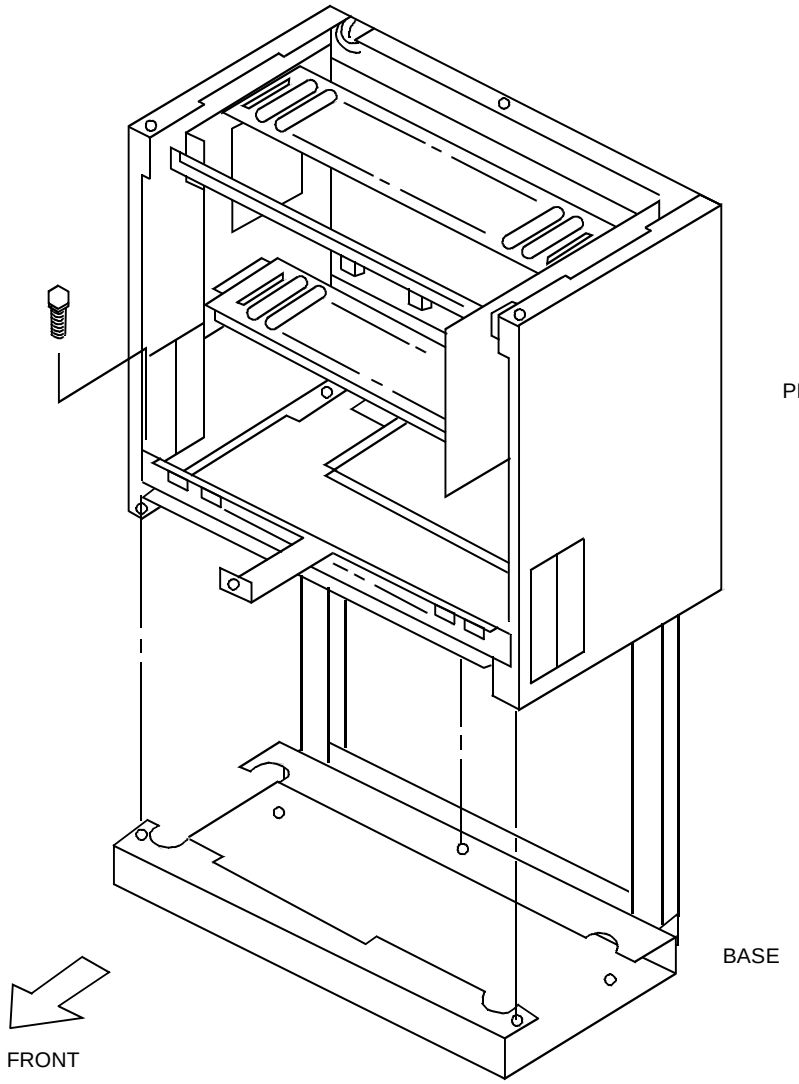


Note: *The Battery Module (BATM) and/or the MDF Module (MDFM) can be installed in the same manner as the PIM.*

Figure 003-5 Connection of the PIM and the RACK PARTS

(5) Mount the PIM on the BASE, and connect them together using 3 bolts (provided). Refer to Figure 003-6.

Note: *The PIM must be mounted over the 4 RACK PART screws previously installed in step 2(b).*



Note: *The Battery Module (BATM) and/or the MDF Module (MDFM) can be installed in the same manner as the PIM.*

Figure 003-6 Mounting of the PIM

(6) When the system is a multiple-PIM configuration, connect PIMs to each other with 3 bolts provided, as shown in Figure 003-7.

Note: *Each PIM must be installed over the 4 RACK PART screws previously installed in step 2(b).*

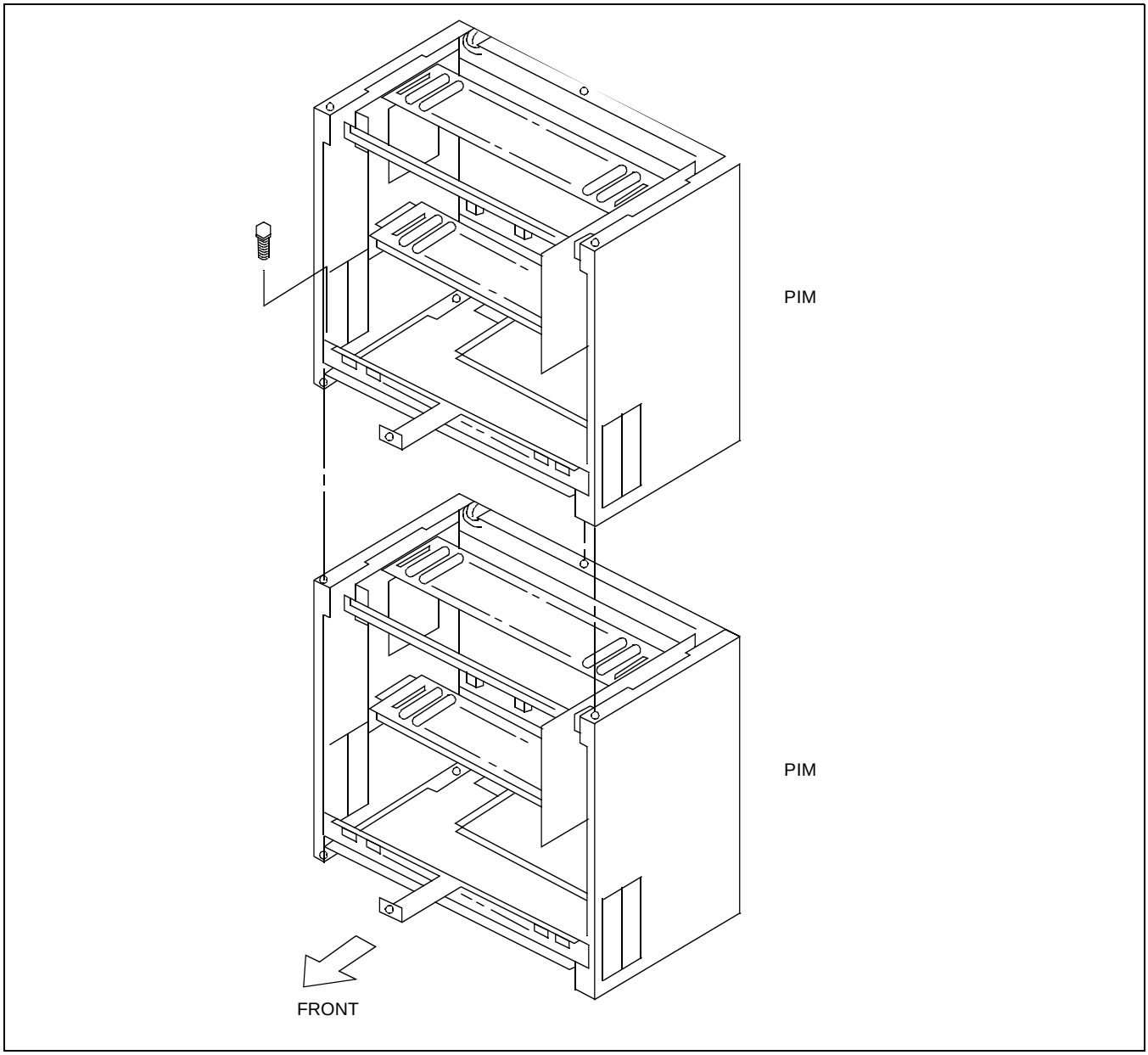


Figure 003-7 Connection of PIMs

(7) Position the TOP COVER on the top PIM, and connect them together with 4 screws (provided).

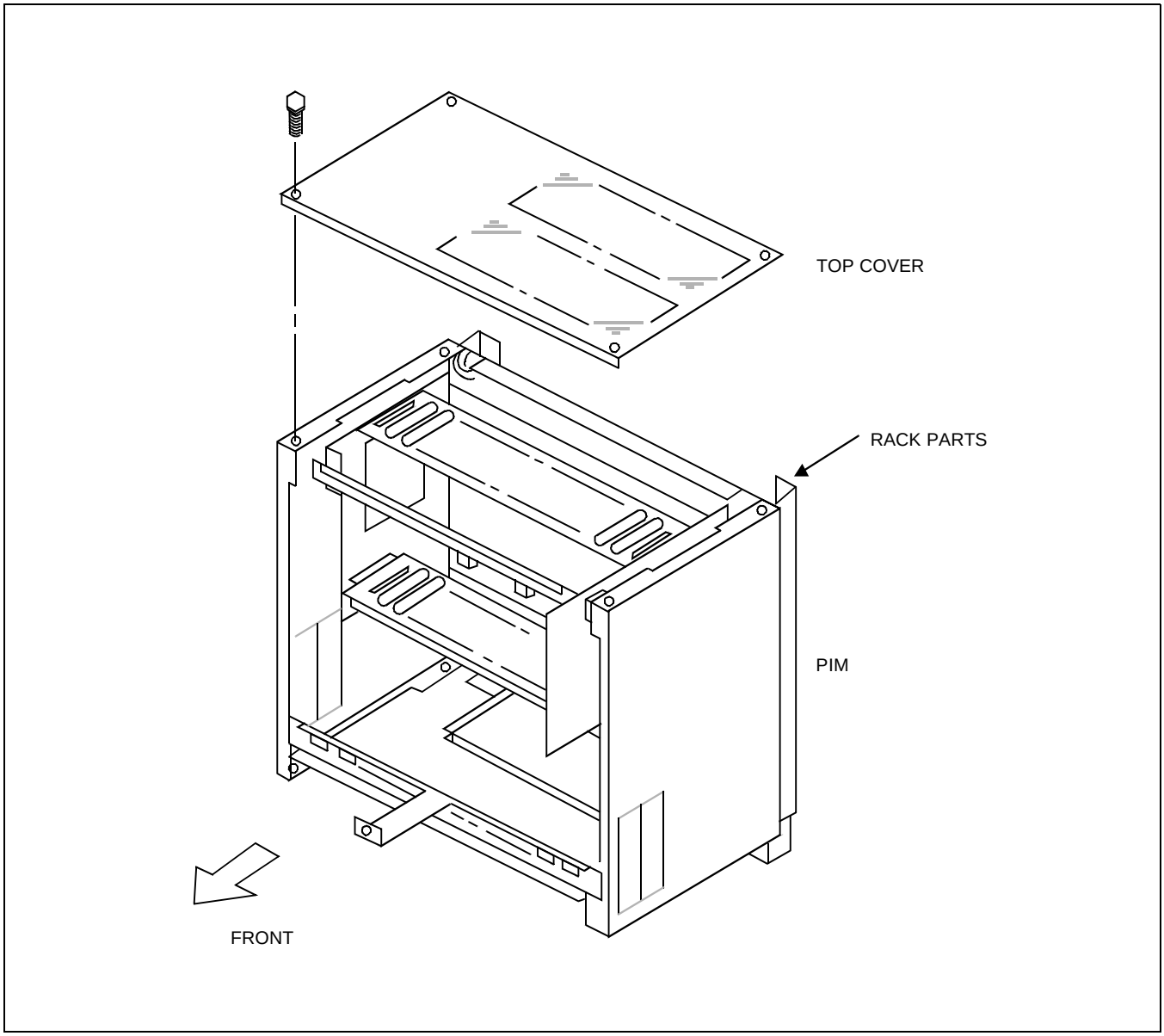


Figure 003-8 Mounting of the TOP COVER

(8) The cable connections on the PZ-PW86 card are shown in Figure 003-9.

(a) PZ-PW86 (A)

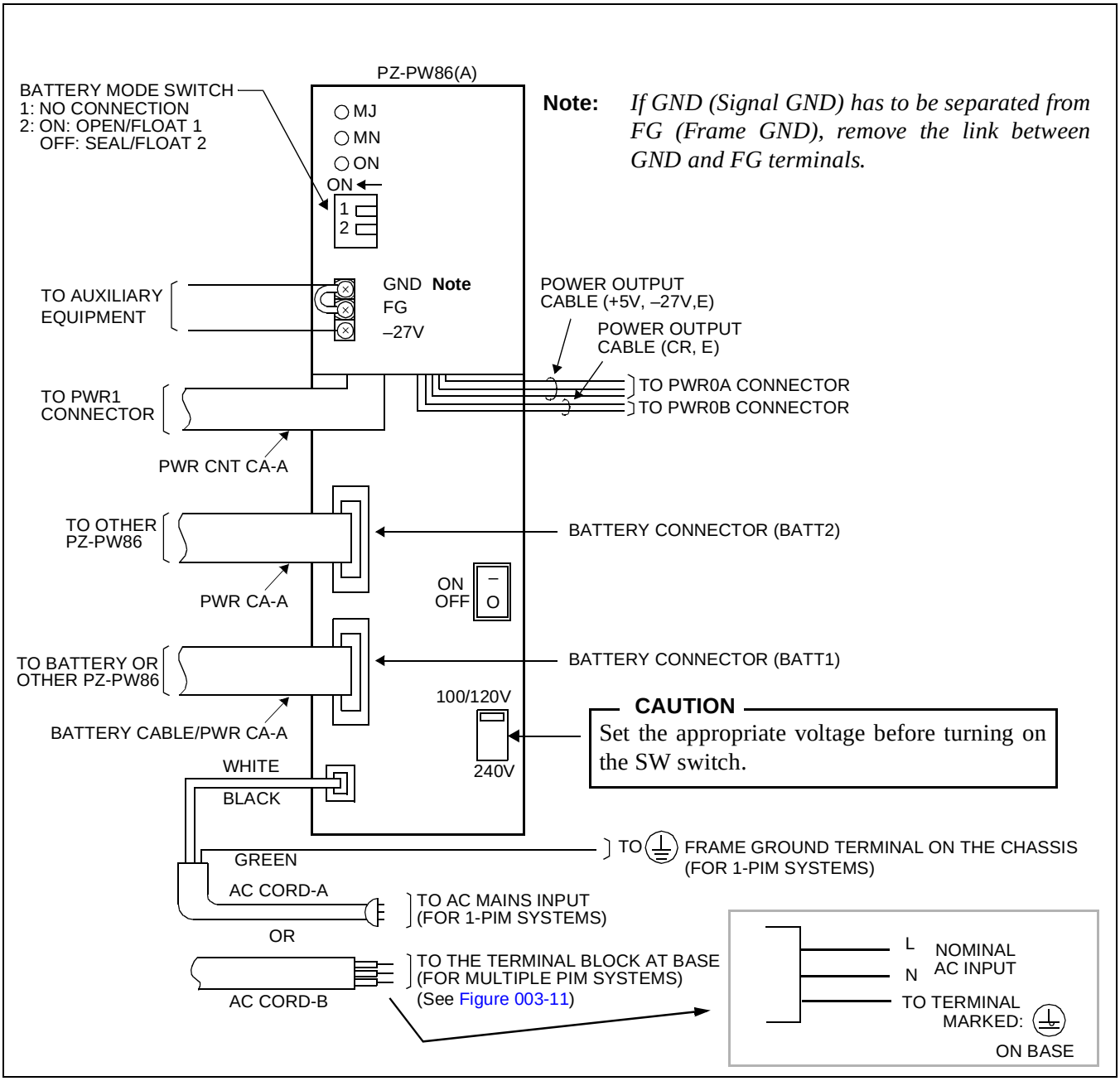


Figure 003-9 Cable Connection on the PZ-PW86 (1 of 3)

(b) PZ-PW86 (C)

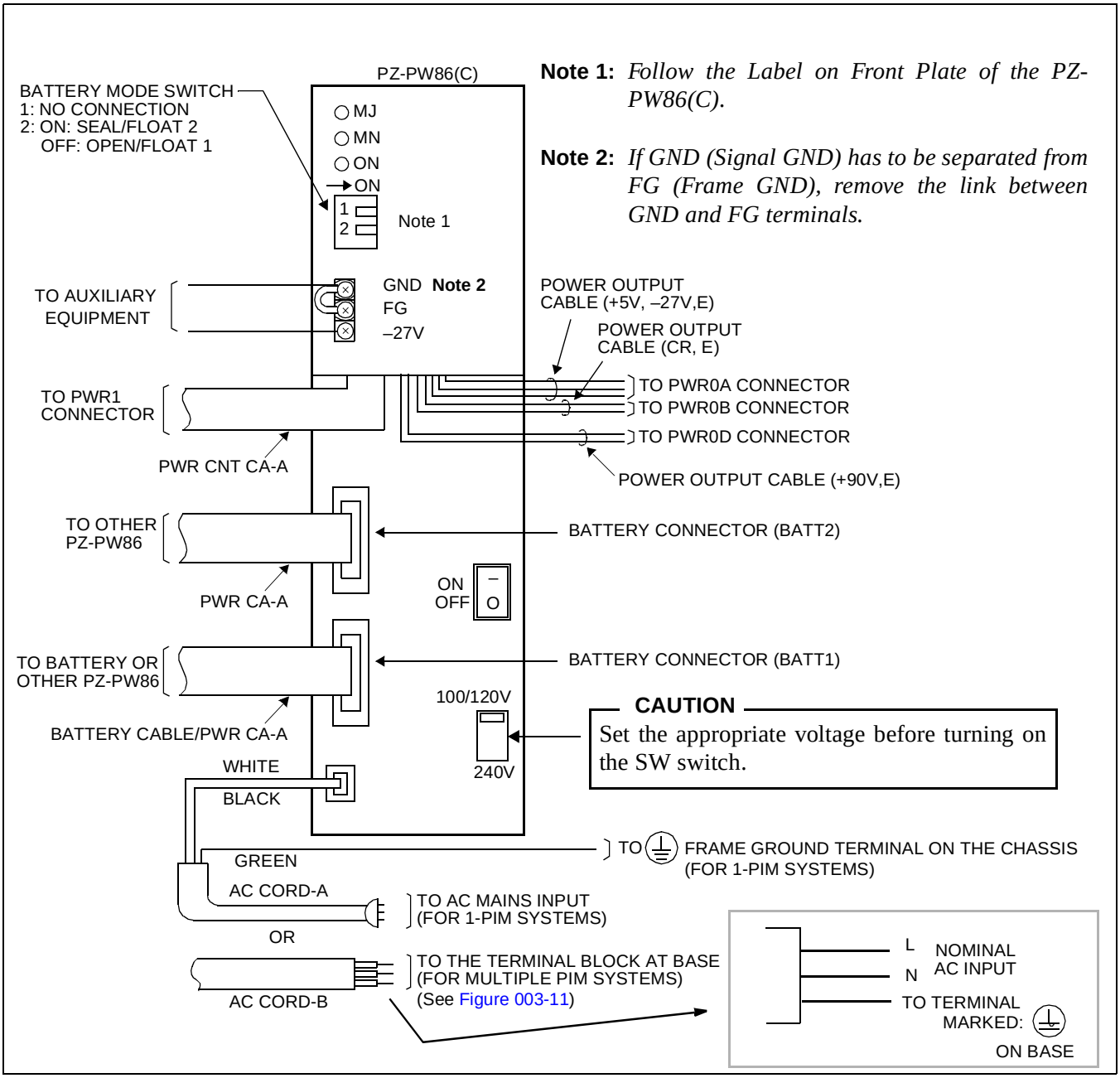


Figure 003-9 Cable Connection on the PZ-PW86 (2 of 3)

(c) PZ-PW86 (D)

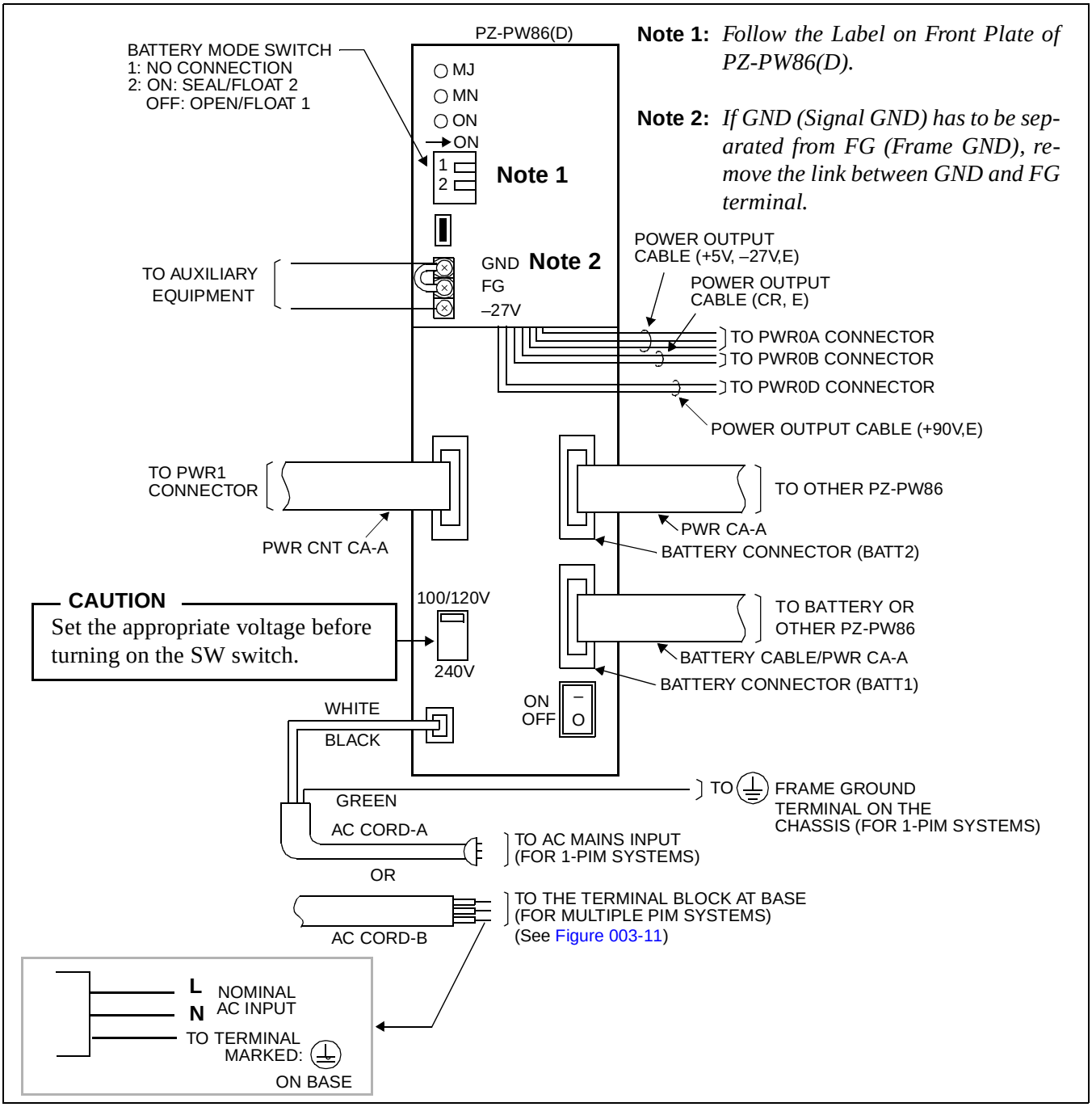


Figure 003-9 Cable Connection on the PZ-PW86 (3 of 3)

(9) Confirm the connection of the PWR CNT CA-A and power output cables as shown in Figure 003-10 (These cables are pre-installed).

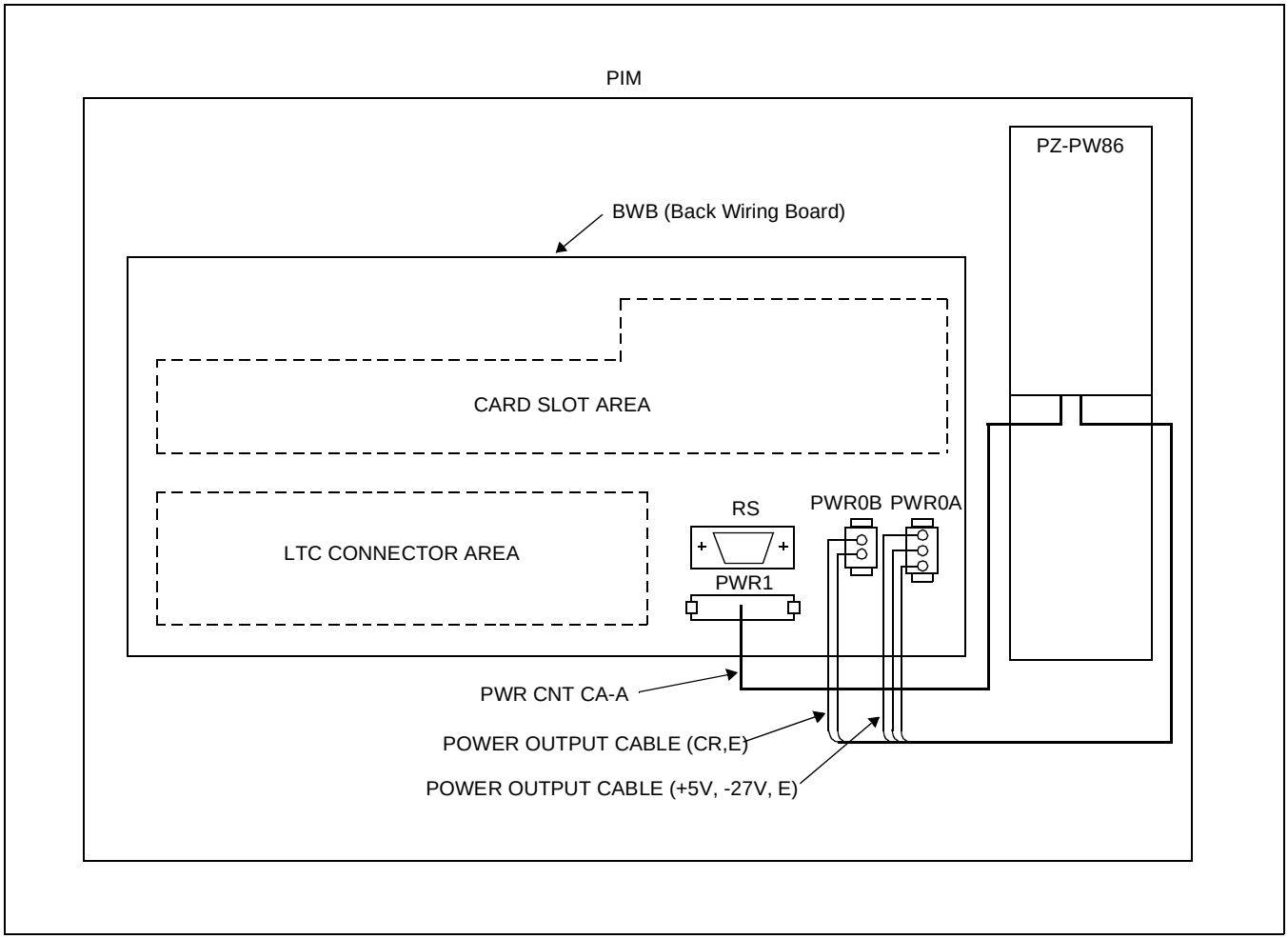


Figure 003-10 Cable Connection between the PZ-PW86 and the BWB

(10) AC CORD-B and AC Power Cable Wiring

(a) The AC CORD-B and the AC Power Cable Wiring to the FG, NEUTRAL and LINE terminals inside the BASE are shown in Figure 003-11 (for details of wiring to the terminals, see Figure 003-12).

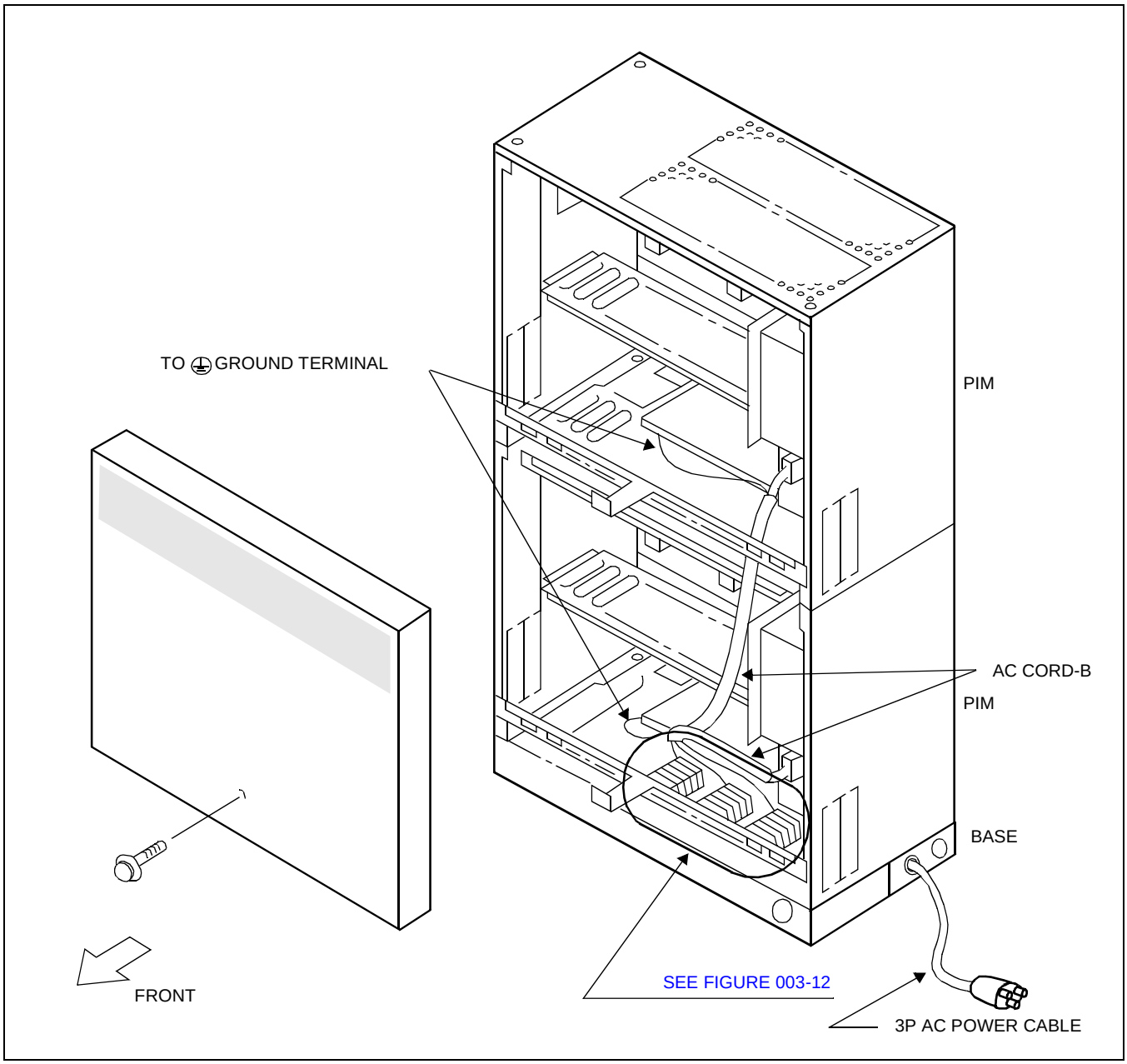


Figure 003-11 AC CORD-B and AC Power Cable Wiring

(b) Secure the AC CORD-B cables to the FG, NEUTRAL and LINE terminals as shown in Figure 003-12. The 3P AC Power Cable and the FG Cable are pre-installed with the BASE.

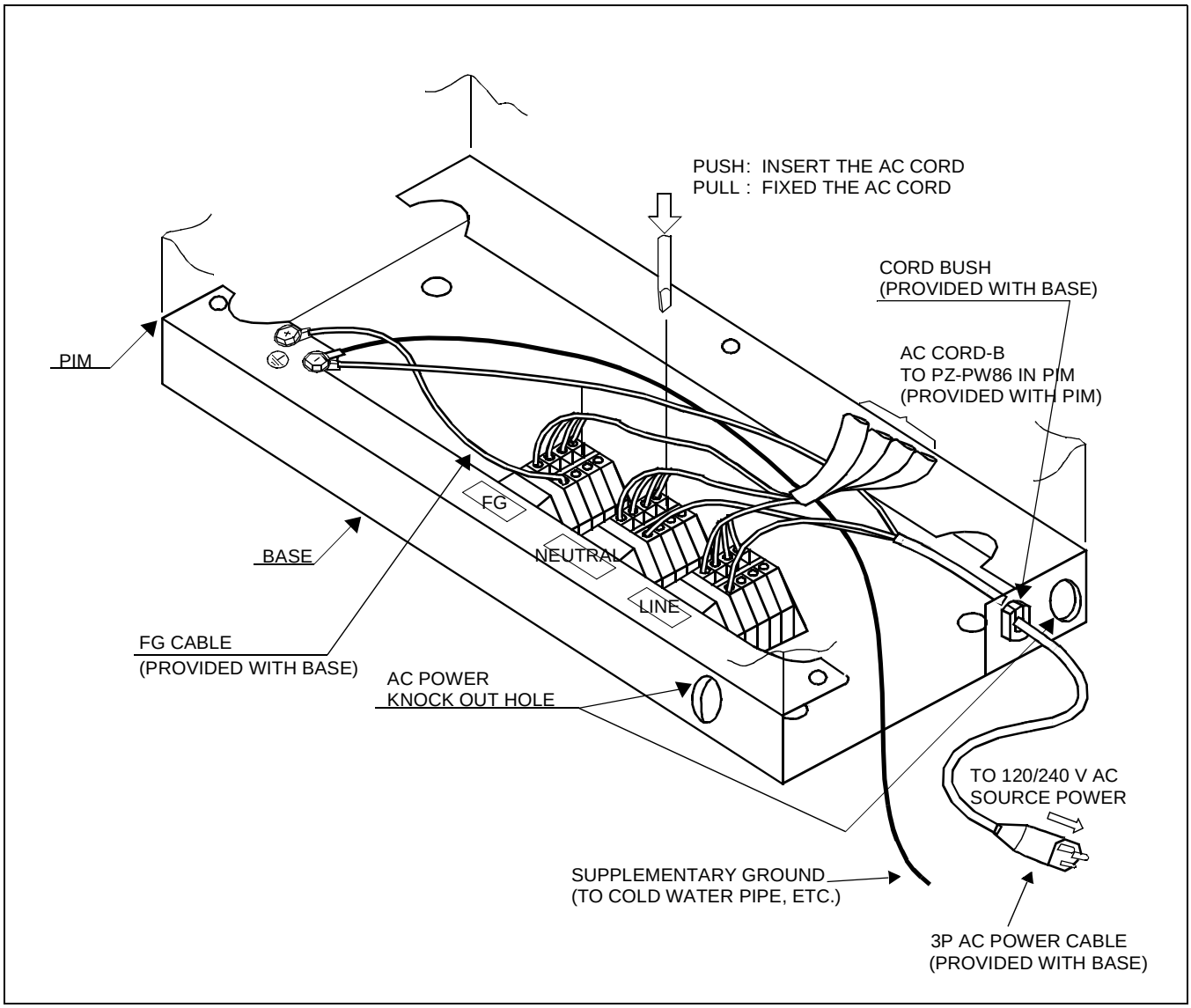


Figure 003-12 Screwing the AC CORD-B to the Terminals

(c) When the system is a two-frame configuration, the 3P AC Power Cable of the left side frame can go through the BASE of the right side frame, as shown in Figure 003-12.

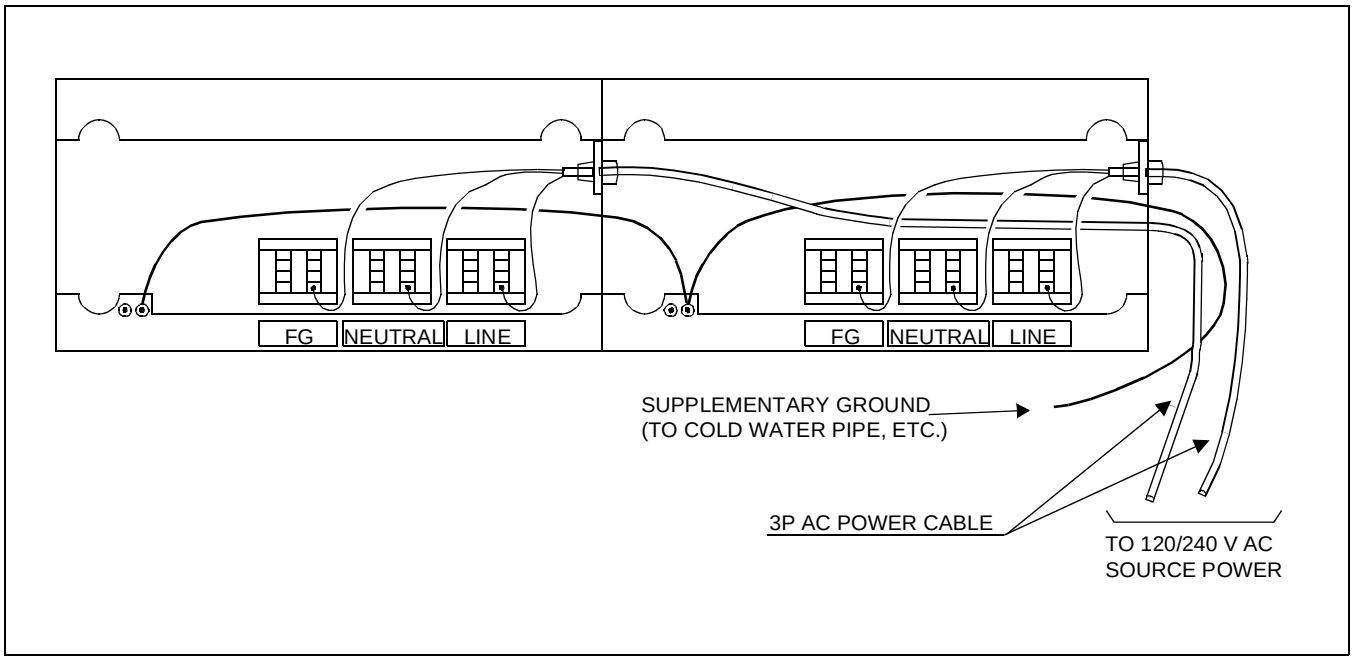


Figure 003-13 AC Power Cable Wiring for Two-Frame Configuration

(11) When the system is a multiple-PIM configuration, connect the PZ-PW86 Cards to each other using PWR CA-A cables, as shown in Figure 003-14 and Figure 003-15.

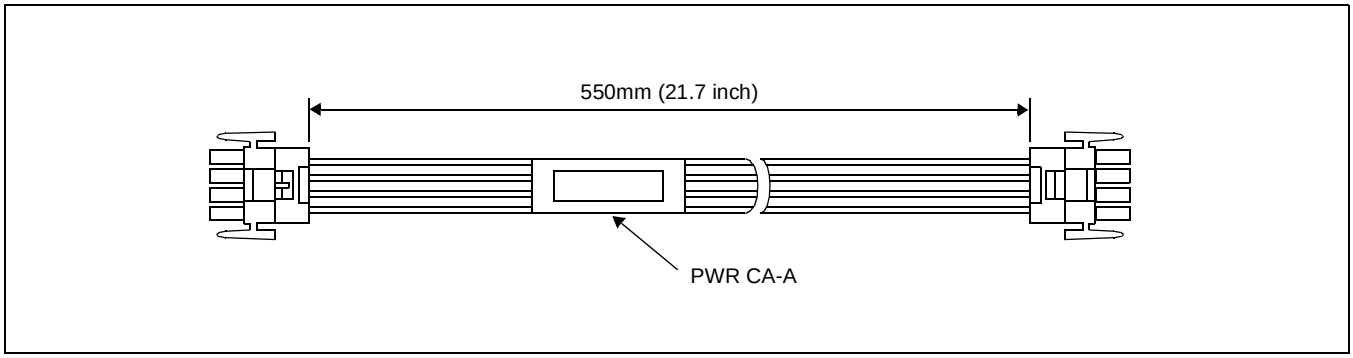
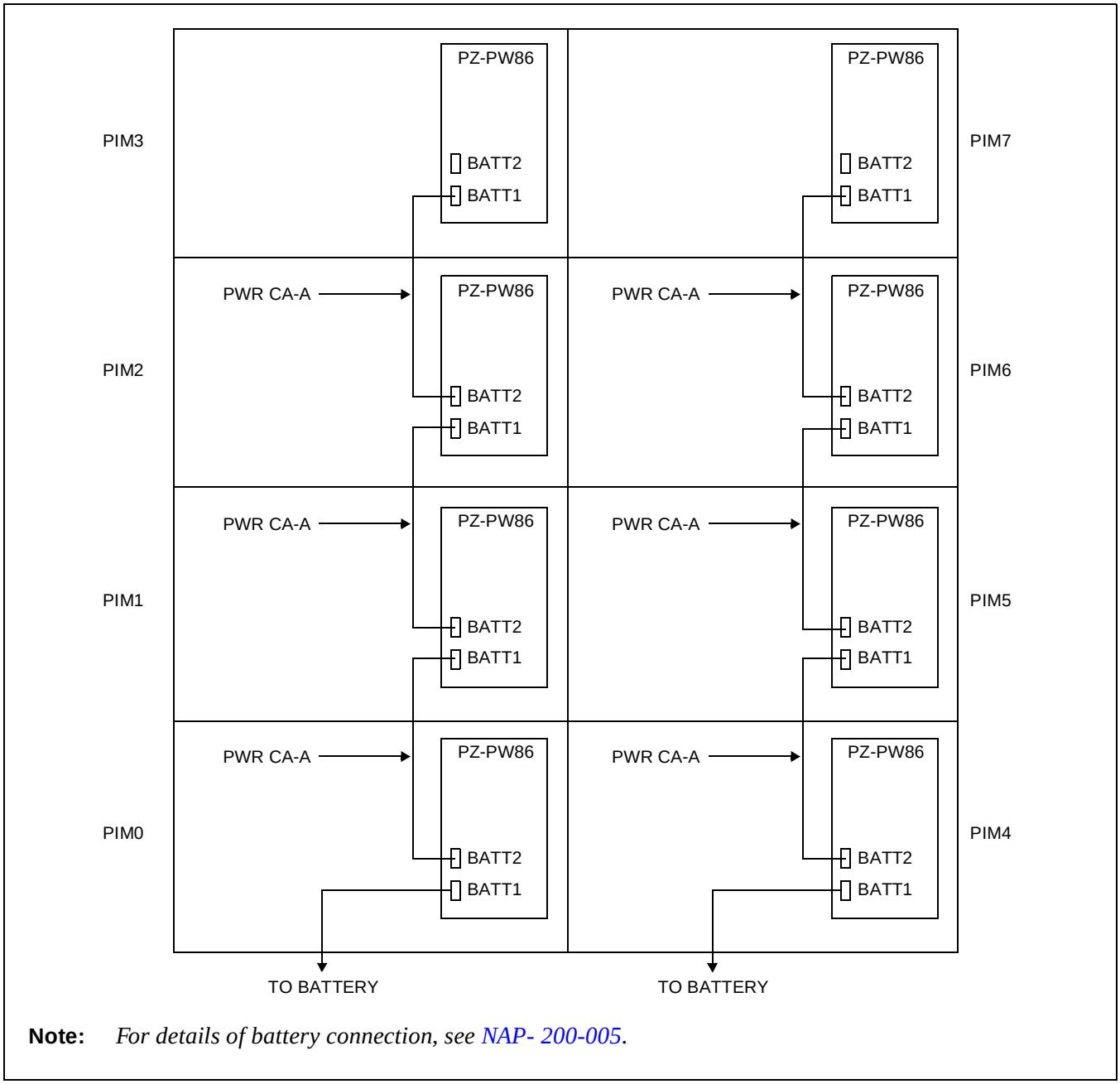


Figure 003-14 PWR CA-A

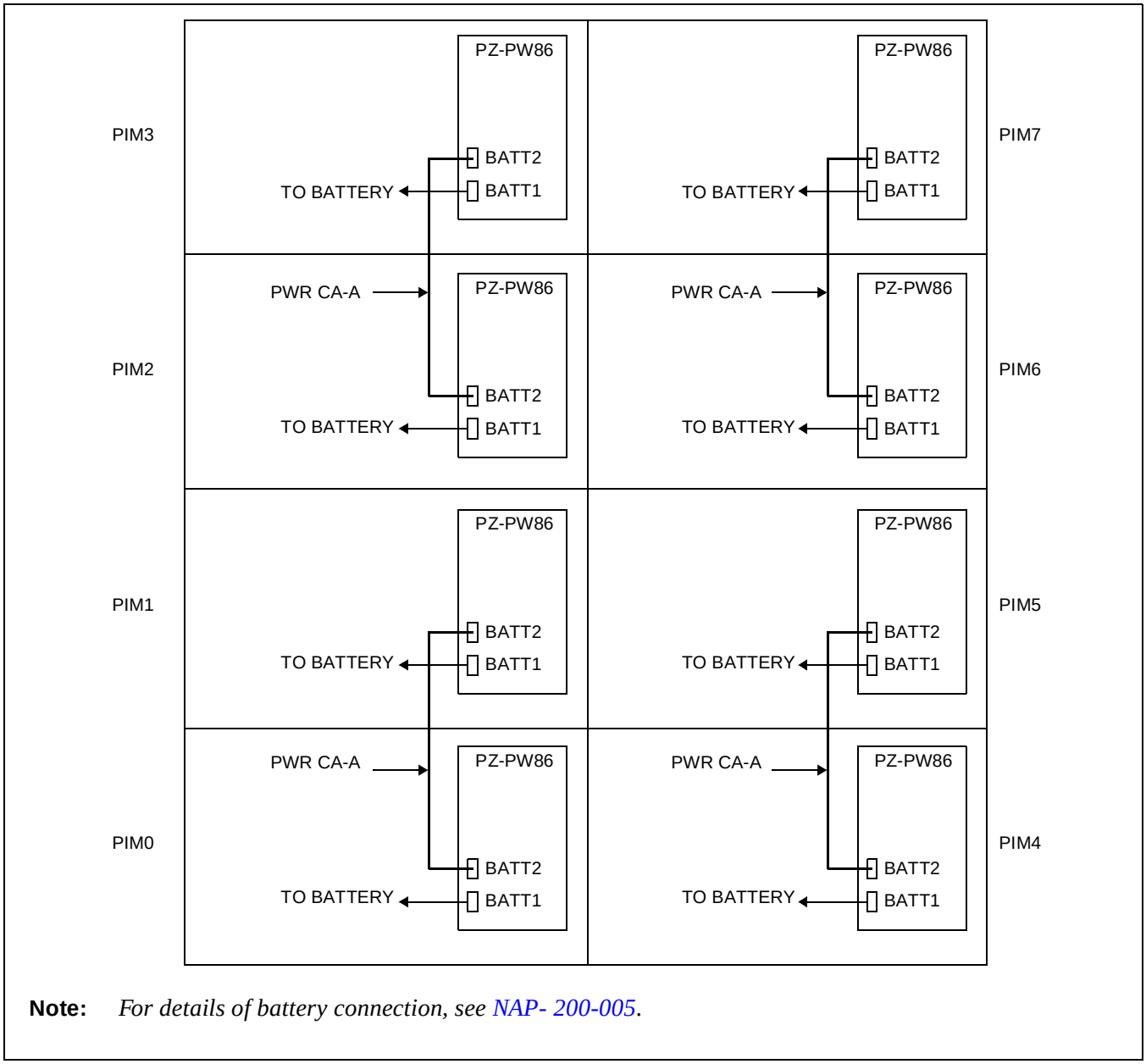
(a) When using an External Battery or the BATTM



Note: *For details of battery connection, see NAP- 200-005.*

Figure 003-15 Connection of PWR CA-A Cables (1 of 2)

(b) When using an Internal Battery



Note: *For details of battery connection, see NAP- 200-005.*

Figure 003-15 Connection of PWR CA-A Cables (2 of 2)

(12) When the system is a multiple-PIM configuration, mount the PN-BS00 Card in the BUS slot of PIM0. Also, mount the PN-BS01 Card in each BUS slot of PIM1 through PIM7.
When the system is a single PIM configuration, neither PN-BS00 nor PN-BS01 is needed.

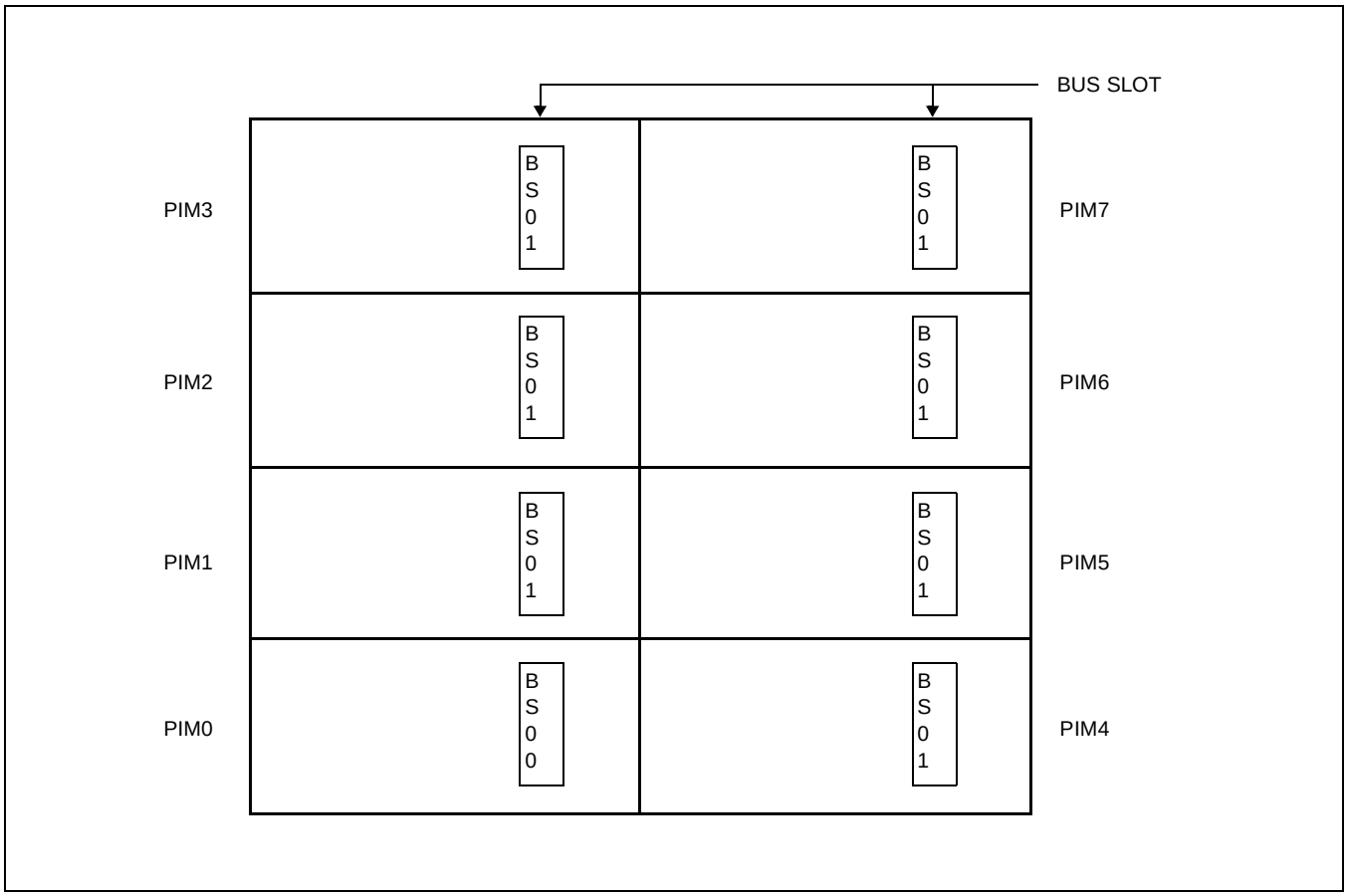


Figure 003-16 Mounting of the BUS Cards

(13) When the system is a multiple-PIM configuration, connect all the BUS Cards (PN-BS00/PN-BS01) to each other using BUS cables, as shown in Figure 003-17 and Figure 003-18.

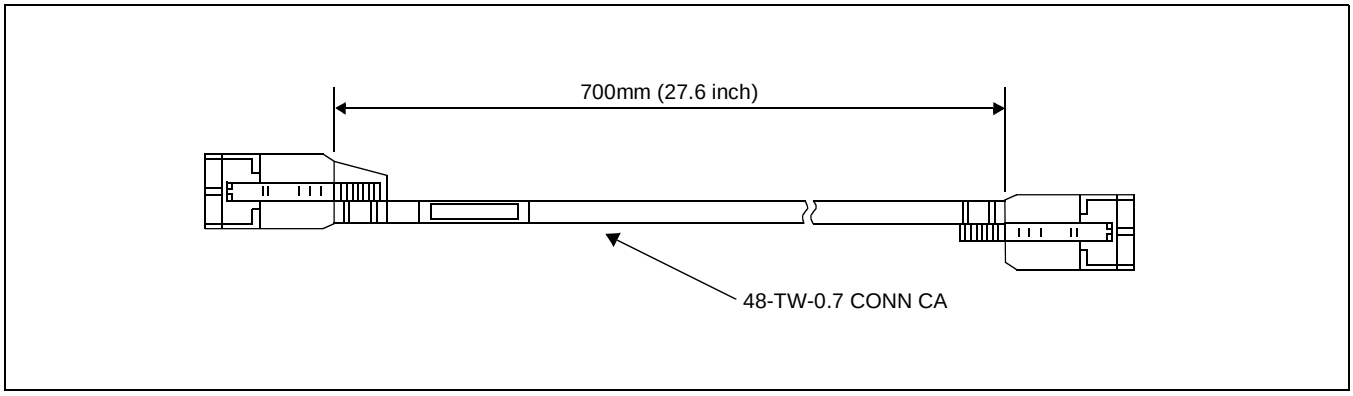


Figure 003-17 BUS Cable

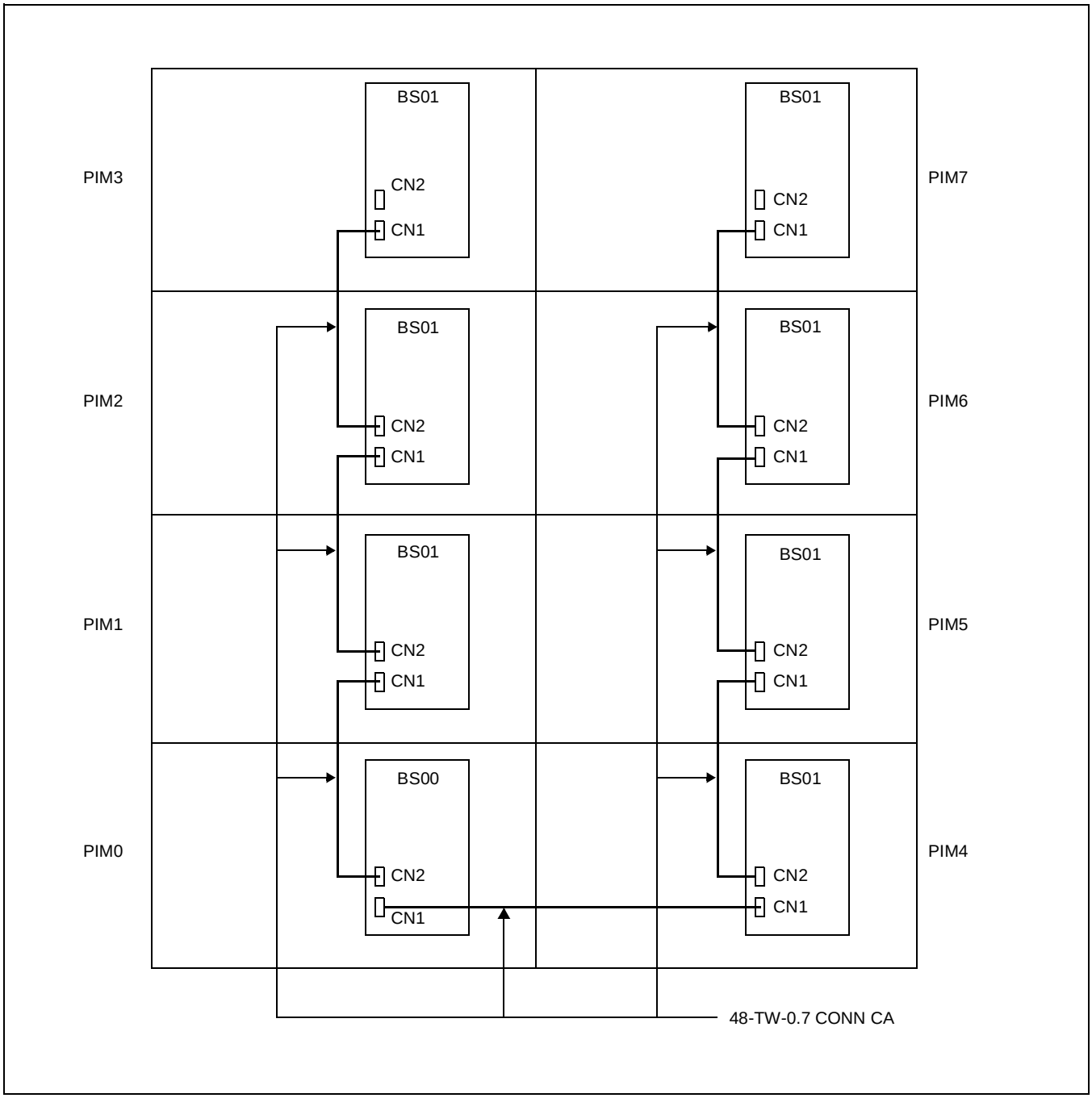


Figure 003-18 Connection of the BUS Cables

(14) When the system is a multiple-rack configuration, connect the PN-BS00 in rack 1 to the PN-BS00 in rack using BUS cable, as shown in Figure 003-19 and Figure 003-20.

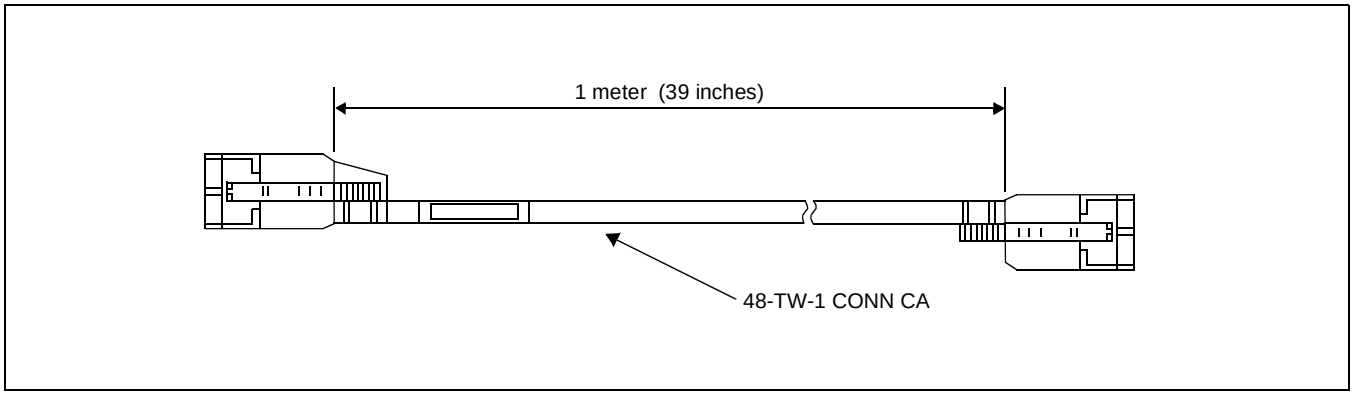


Figure 003-19 BUS Cable

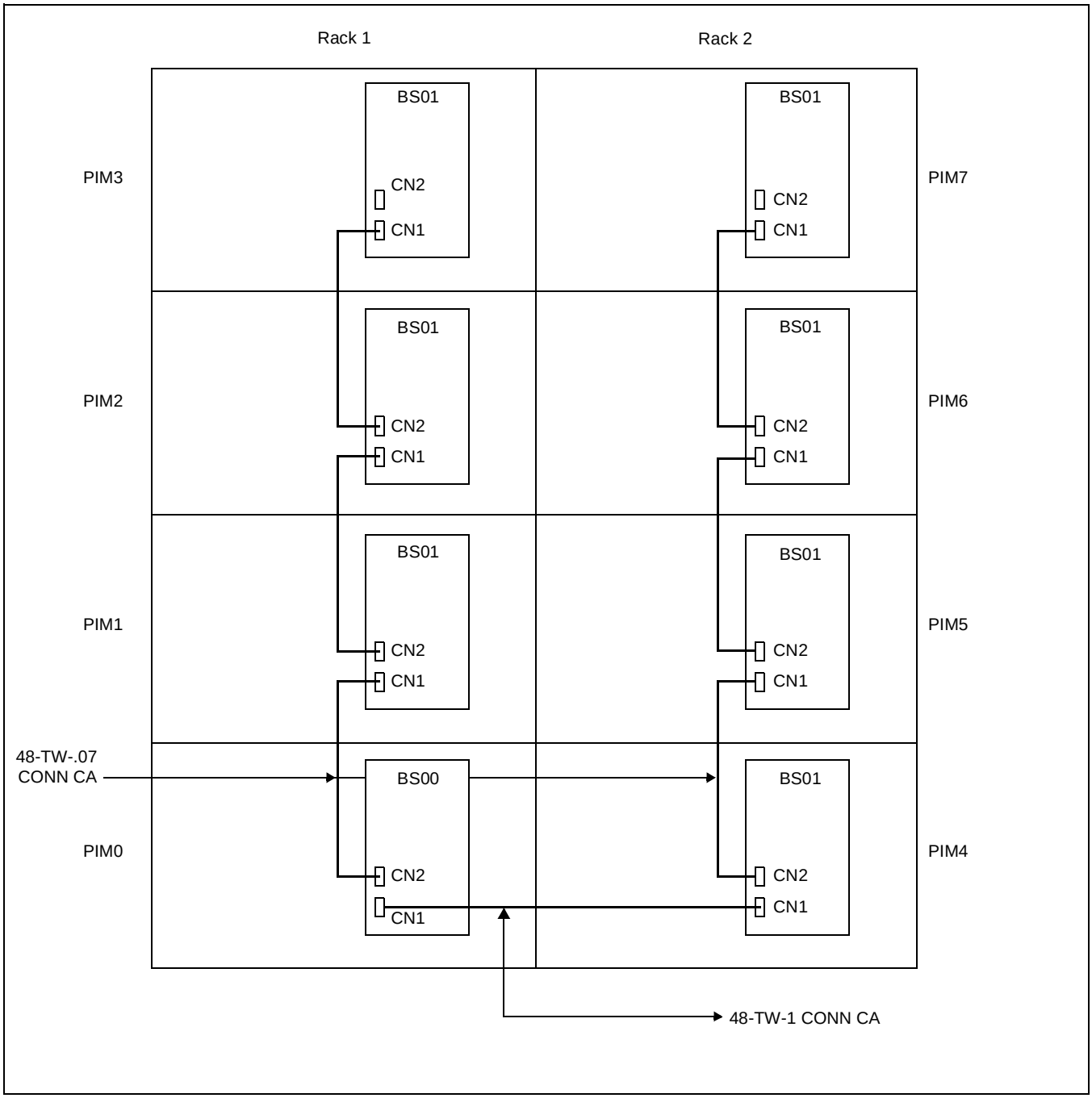


Figure 003-20 Connection of the BUS Cables

2. Wall Mounting Installation

(1) Using four appropriate fasteners (locally provided; see Table 003-1) for the type of wall construction, secure the RACK PARTS as shown in Figure 003-21. For the wall mounting points, refer to Figure 002-2 in NAP-200-002.

Table 003-1 Recommended Fasteners

WALL TYPE	RECOMMENDED FASTENER	
PLASTER BOARD [THICKNESS Min. 9.6 mm (0.38 inch)]	MOLLY ANCHOR TYPE	Min. 3.5 mm (0.14 inch) DIA. Max. 4.5 mm (0.17 inch) DIA
WOOD	WOOD TYPE SCREWS	Min. 3.5 mm (0.14 inch) DIA Max. 4.5 mm (0.17 inch) DIA
CONCRETE	ANCHOR BOLT TYPE	Recommended 4 mm (0.16 inch) by 25 mm (0.98 inch)

Note: *For the wall-mounting installation, a concrete wall is recommended because the concrete wall is more firm to mount the PBX than a wooden wall or a plaster board. The plaster board is the most infirm wall of the three.*

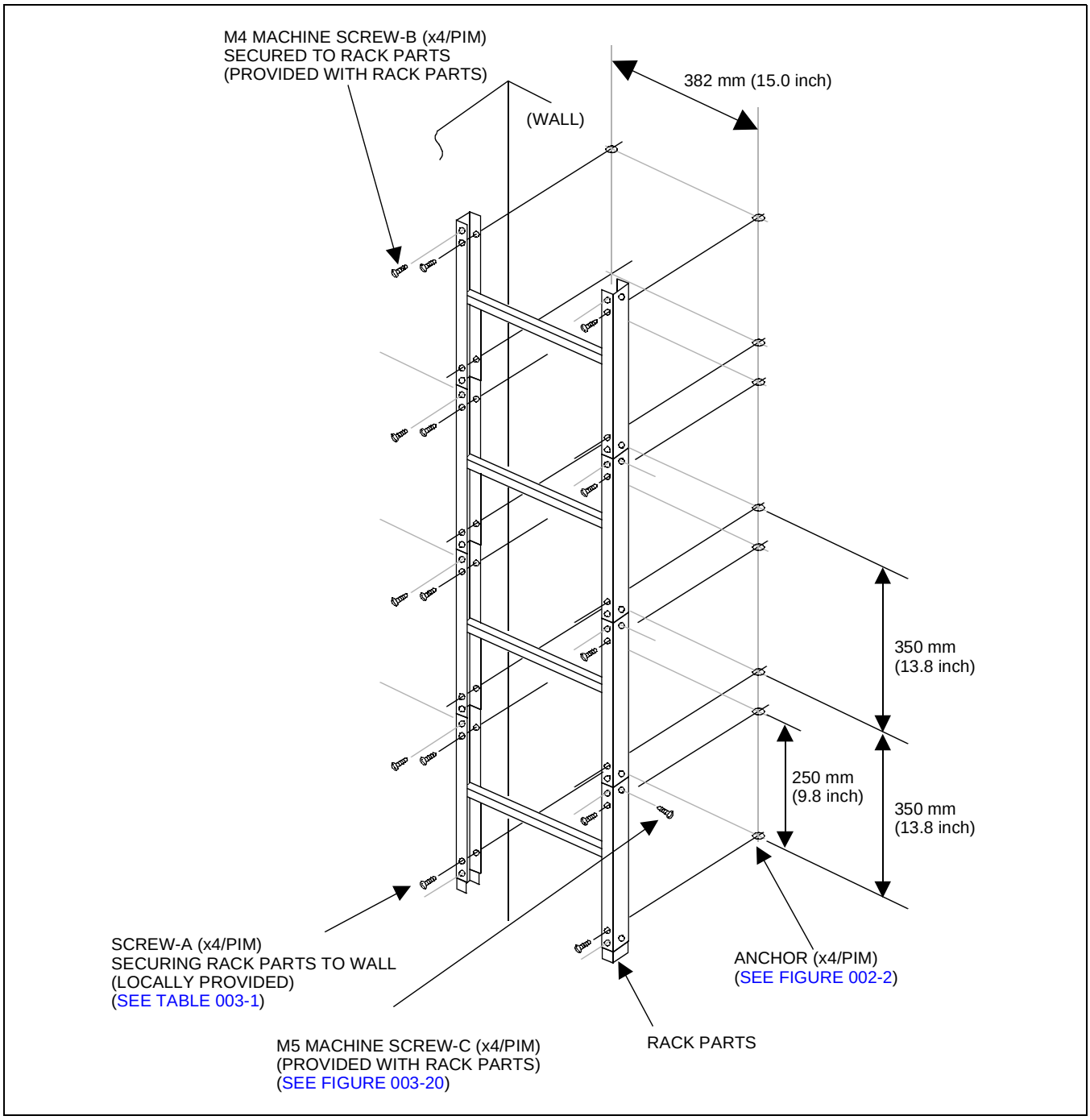


Figure 003-21 Screwing the RACK PARTS to a Wall

(2) When mounting the RACK PARTS to a wall, connect all the RACK PARTS to each other, and connect the BASE to the bottom RACK PARTS using the M5 Machine screws (provided), as shown in Figure 003-21.

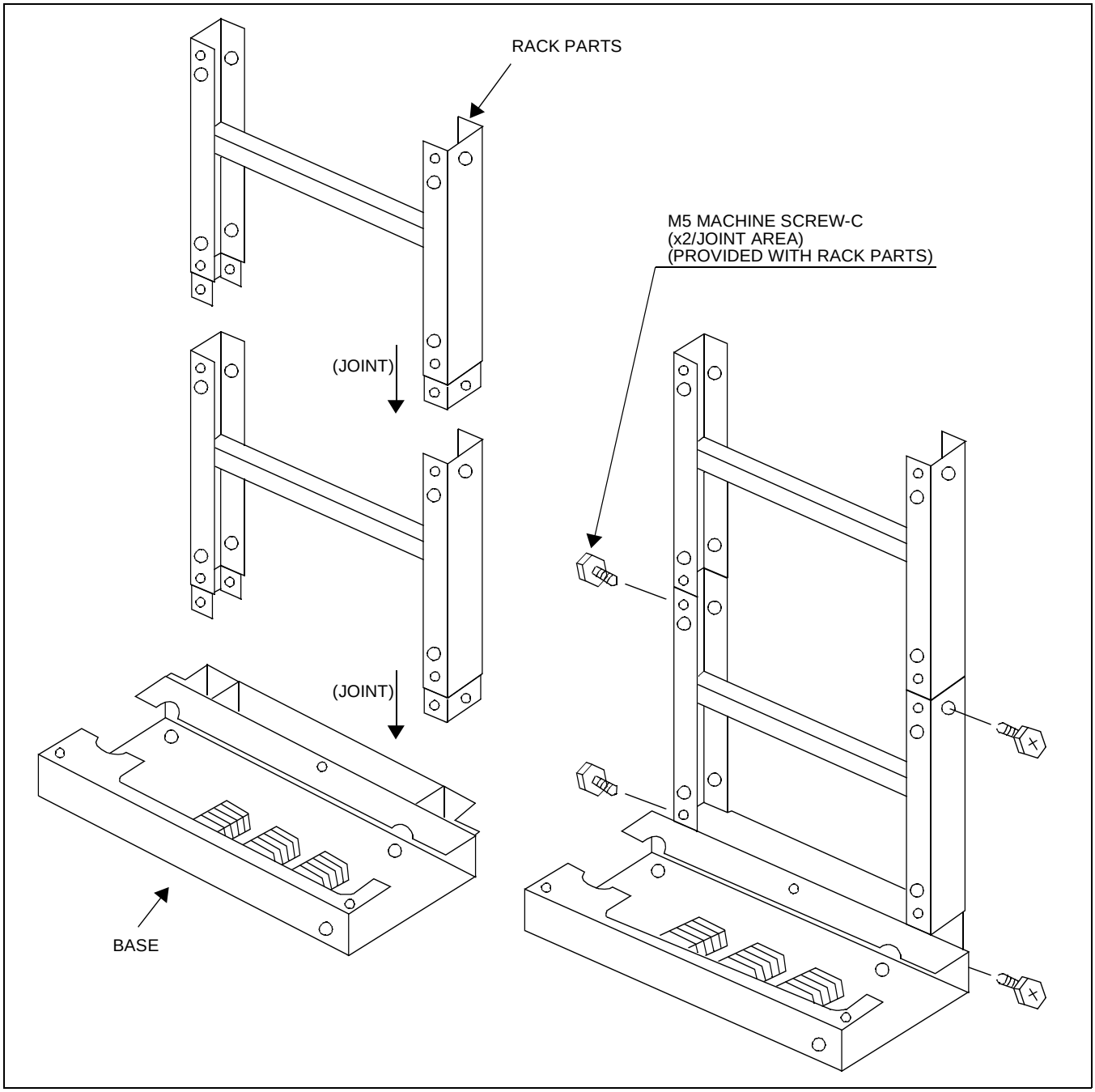


Figure 003-22 Connecting the RACK PARTS and the BASE

(3) Attach four M4 machine screws (provided) to the RACK PARTS as shown in Figure 003-21.

For proper mounting of each PIM, approximately 4 mm (0.2 inch) spacing should be provided between the inner face of the M4 machine screw and the RACK PARTS front channel. See Figure 003-23.

(4) Align and insert the key hole slots of the rear cover of each PIM to the machine screws secured in step (3). See Figure 003-23.

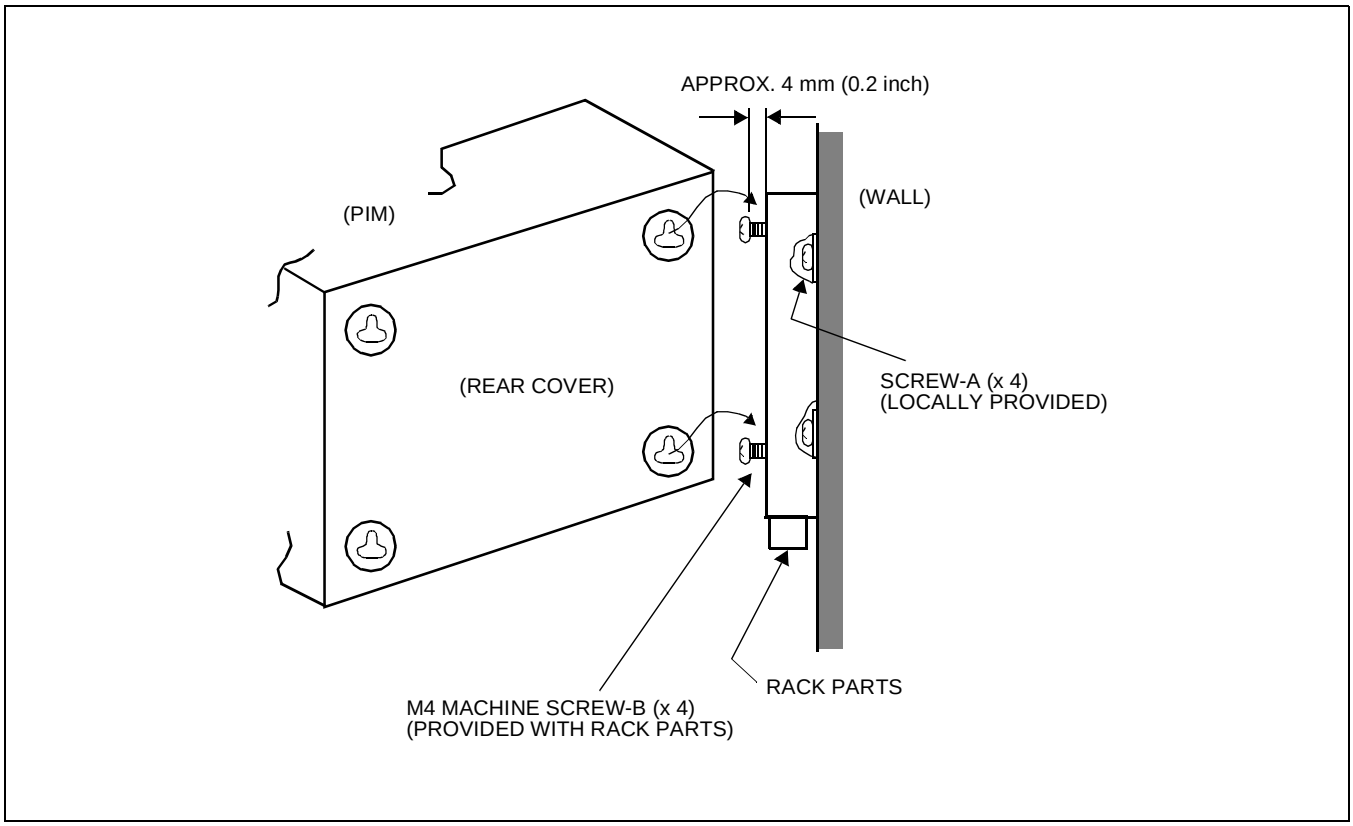


Figure 003-23 Mounting the PIM to the RACK PARTS

(5) After hanging each PIM onto the RACK PARTS, tighten each M4 machine screw using a Phillips screw driver as shown in Figure 003-24.

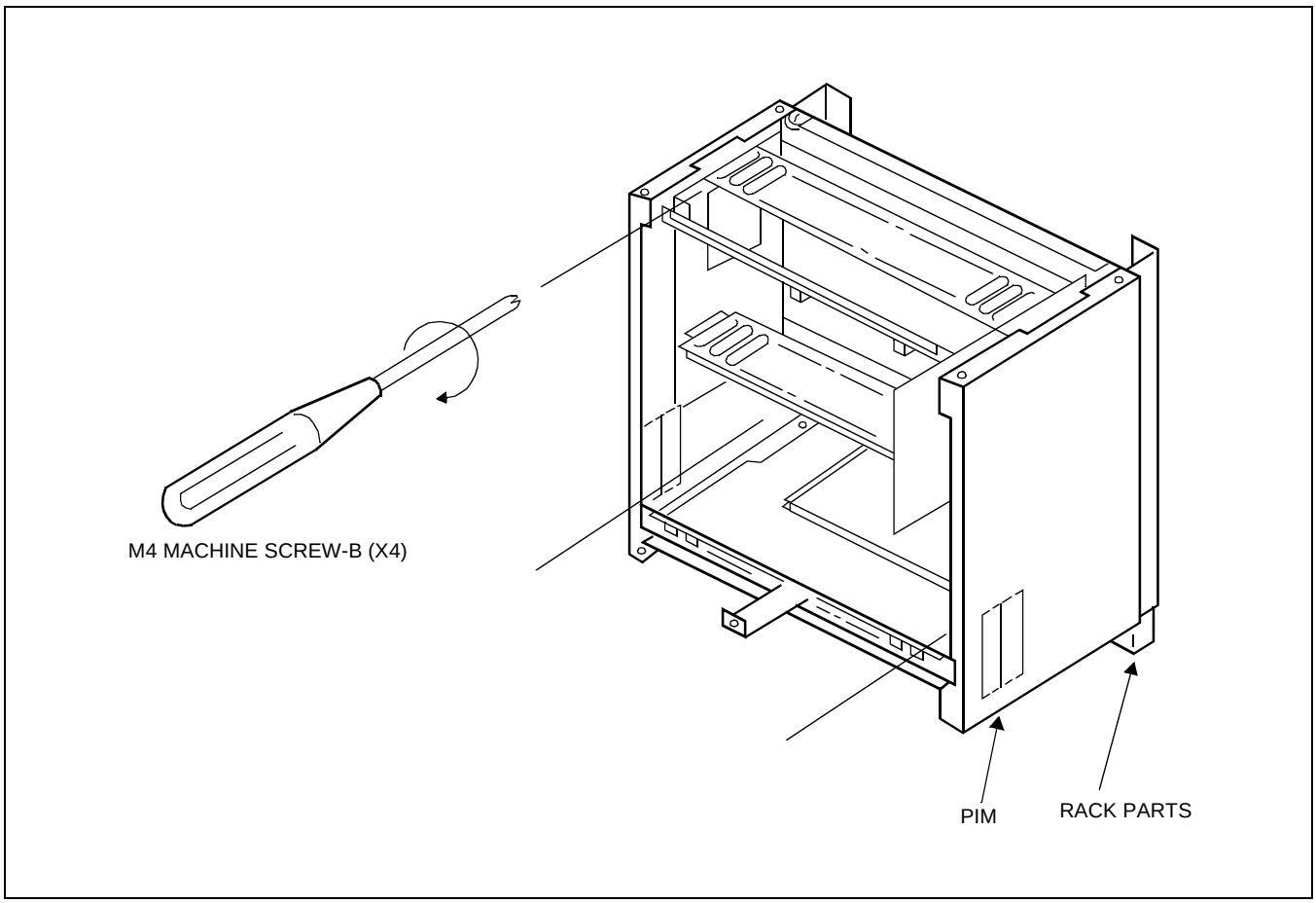


Figure 003-24 Screwing the PIM to the RACK PARTS

(6) Connect the bottom PIM and the BASE, and connect PIMs to each other using 3 bolts (provided), as shown in Figure 003-6 and Figure 003-7. Then, position the TOP COVER on the top PIM and connect them together with 4 screws (provided), as shown in Figure 003-8.

(7) Connect the AC CORD-B to the terminals inside the BASE in the same manner as for the Floor Standing Installation (Refer to Figure 003-11 through Figure 003-13).

(8) When the system is a multiple-PIM configuration, connect the PZ-PW86 cards to each other using PWR CA-A cables (Refer to Figure 003-14 through Figure 003-15).

(9) When the system is a multiple-PIM configuration, mount the PN-BS00 card in the BUS slot of PIM0, and mount the PN-BS01 card in each BUS slot of PIM1 through PIM7 (Refer to Figure 003-16).
Then, connect all the BUS cards (PN-BS00/PN-BS01) to each other using BUS cables (Refer to Figure 003-17 and Figure 003-18).

3. 19-Inch Rack-Mounting Installation

3.1. Single-PIM Installation

(1) Before mounting the PIM, connect the TOP COVER, BOTTOM COVER and AC CORD-A to the PIM as shown in Figure 003-25. The AC CORD-A is pre-installed with the BOTTOM COVER.

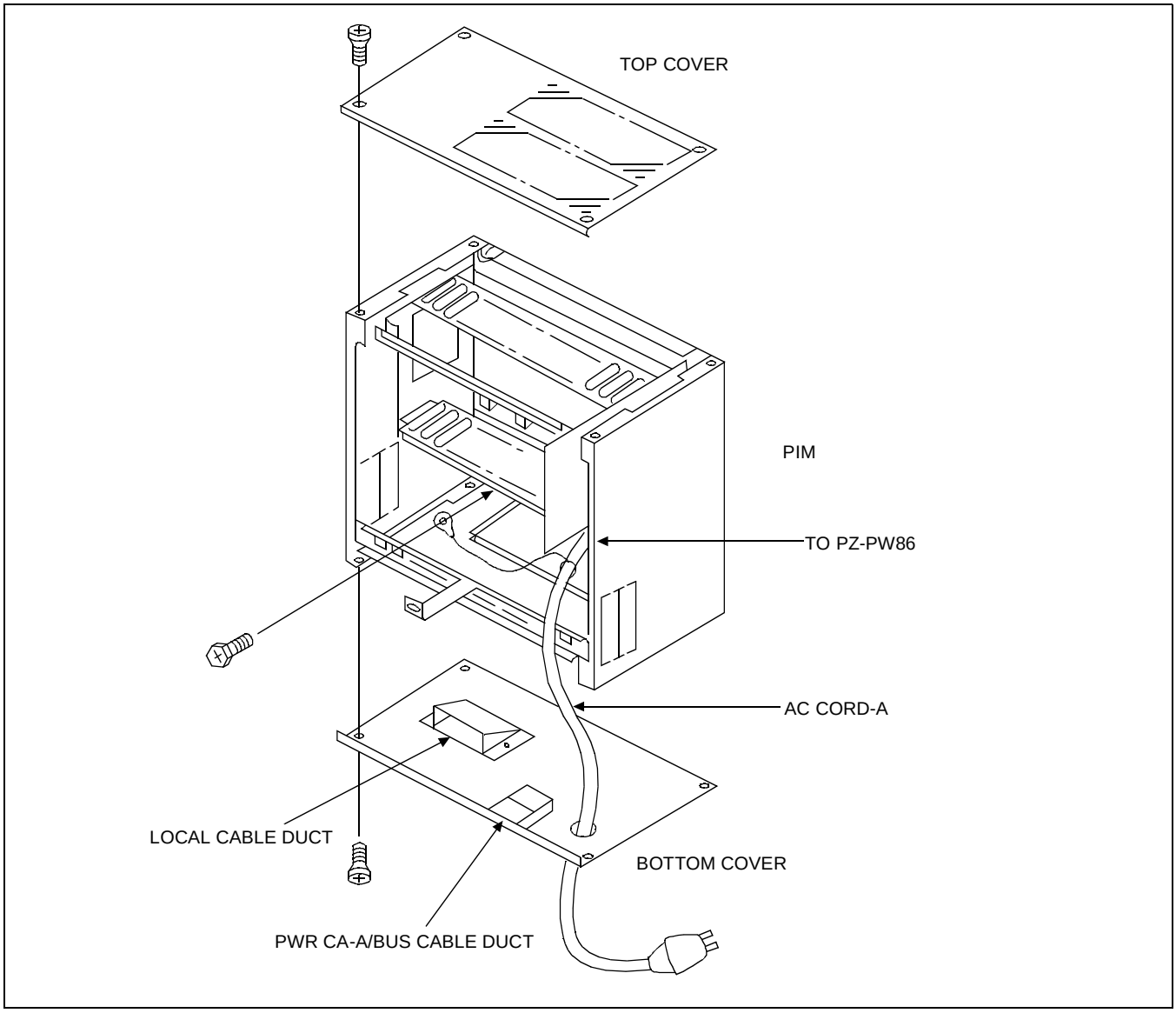


Figure 003-25 Connecting the Covers and AC CORD-A to the PIM

(2) Secure the 19” BRACKET to the 19-inch Rack as shown in Figure 003-26Ⓐ.

(3) Mount the PIM on the 19” BRACKET as shown in Figure 003-26Ⓑ.
Then, secure the PIM to the 19” BRACKET as shown in Figure 003-26Ⓒ.

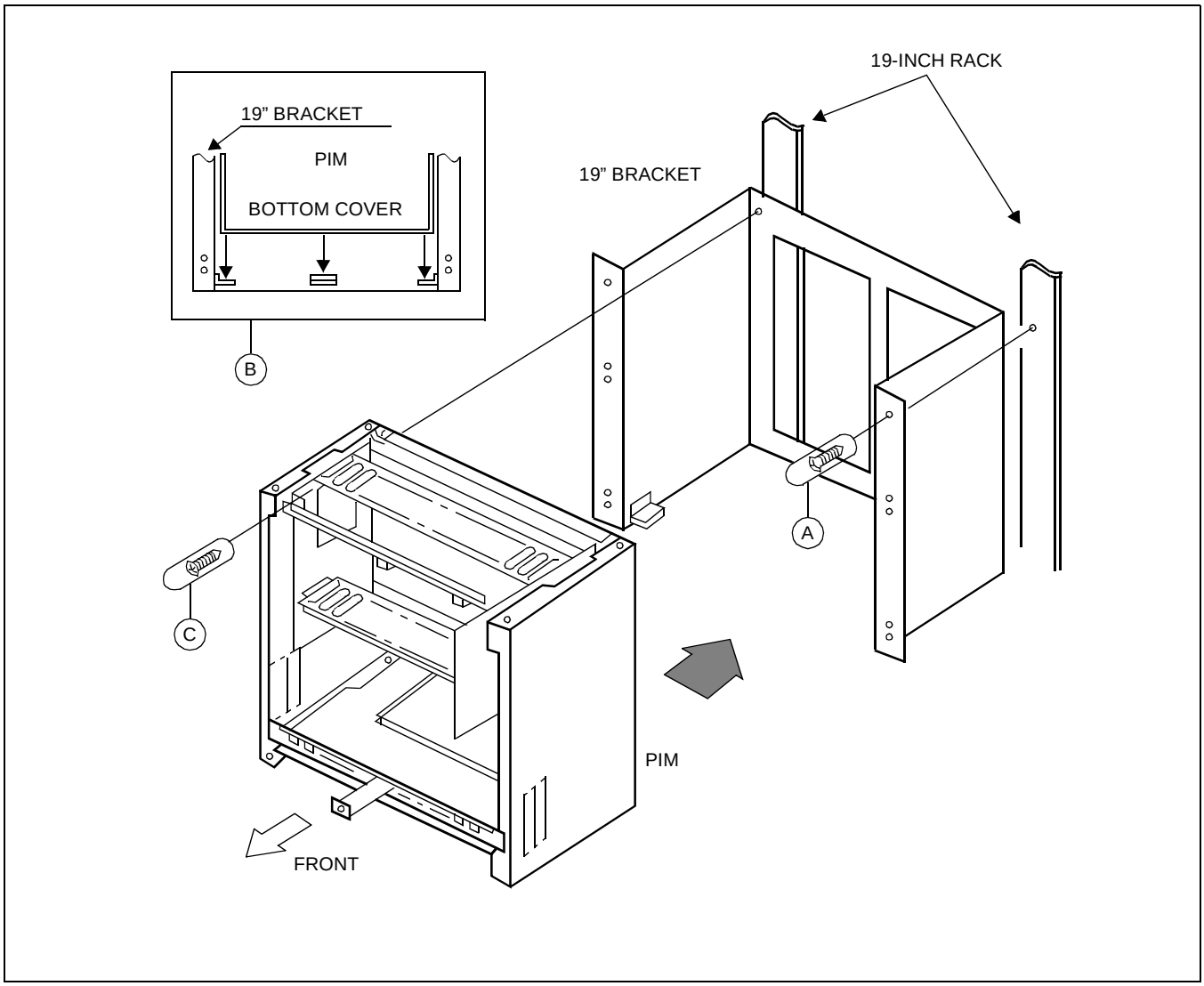


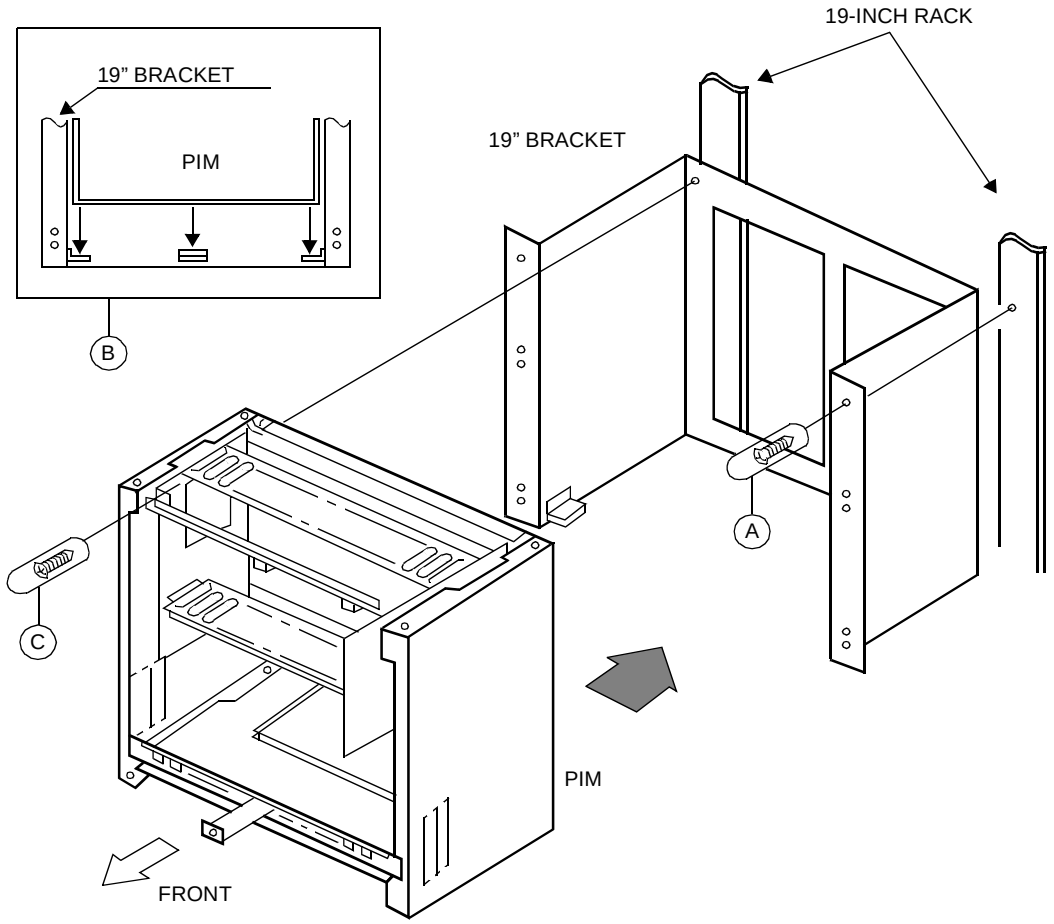
Figure 003-26 Mounting the PIM to the 19-Inch Rack (1 of 2)

3.2. Multiple-PIM Installation

(1) Secure the 19” BRACKET to the 19-inch Rack as shown in Figure 003-26Ⓐ.

(2) Mount a PIM on the 19” BRACKET as shown in Figure 003-26Ⓑ.
Then, secure the PIM to the 19” BRACKET as shown in Figure 003-26Ⓒ.

(3) Repeat step (1) and (2) according to the number of modules. A maximum of 5 modules (4 PIMs and 1 MD-FM) can be mounted in the 19-inch Rack.



Note: *The MDFM can be installed in the same manner as the PIM.*

Figure 003-26 Mounting the PIM to the 19-Inch Rack (2 of 2)

(4) Position the TOP COVER on the top PIM, and connect them with 4 screws (provided) as shown in Figure 003-27.

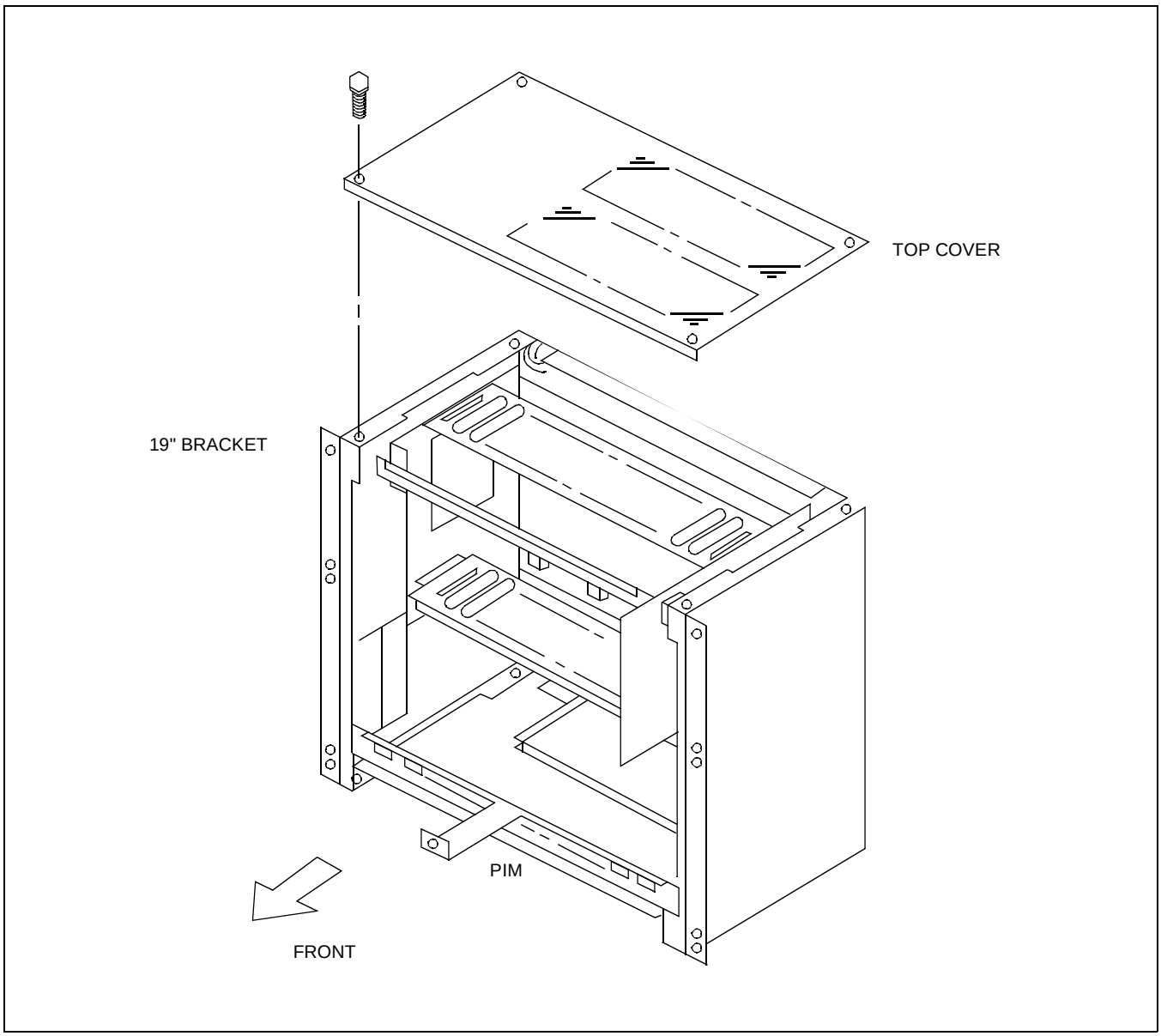
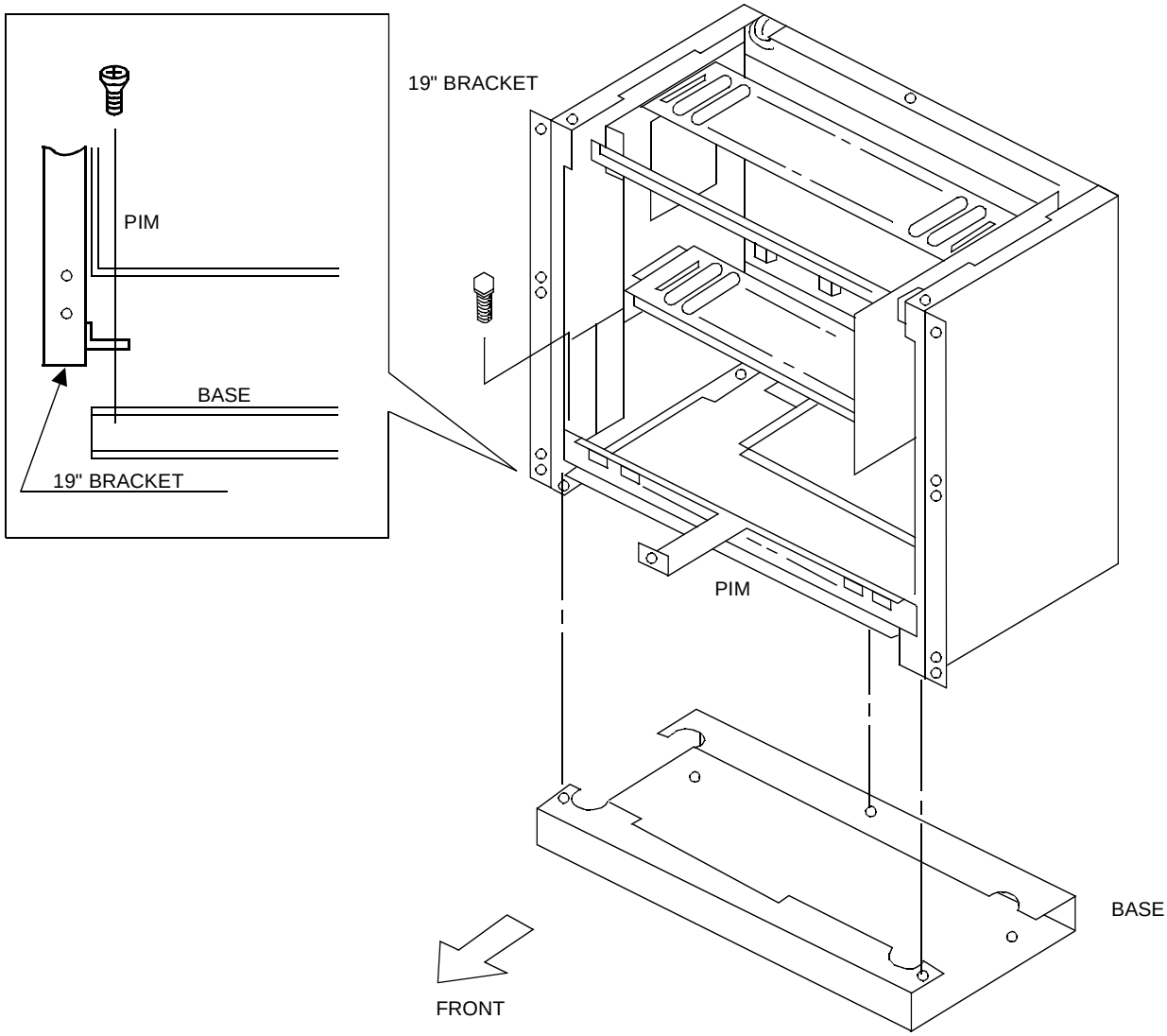


Figure 003-27 Mounting of the TOP COVER

(5) Connect the BASE to the bottom PIM as shown in Figure 003-28.



Note: *The MDFM can be connected to the BASE in the same manner as the PIM.*

Figure 003-28 Connecting the BASE to the PIM

(6) Do the following cable connectons in the same manner as for Floor Standing Installation.

(a) Connect the AC CORD-B cables to the terminals inside the BASE (Refer to Figure 003-11 through Figure 003-13).

(b) Connect the PZ-PW86 cards to each other using PWR CA-A cables (Refer to Figure 003-14 through Figure 003-15).

(c) Mount the PN-BS00 card in the BUS slot of PIM0, and mount the PN-BS01 card in each BUS slot of PIM1 through PIM3 (Refer to Figure 003-16).

Then, connect all the BUS cards (PN-BS00/PN-BS01) to each other using BUS cables (Figure 003-17 and Figure 003-18).

4. Desk Top Installation

(1) Connect the TOP COVER, BOTTOM COVER and AC CORD-A to the PIM as shown in Figure 003-29. The AC CORD-A is pre-installed with the BOTTOM COVER.

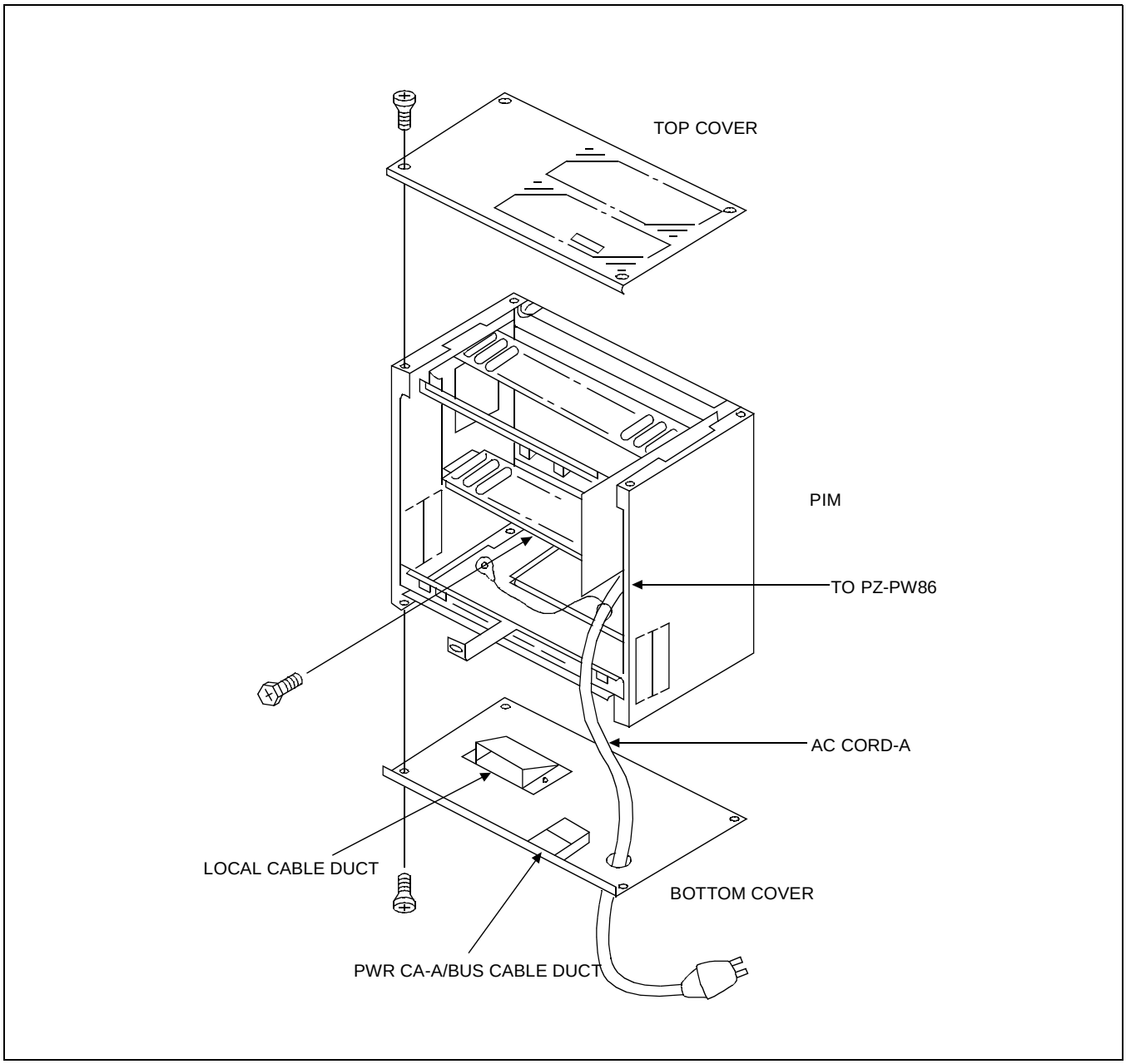


Figure 003-29 Connecting the Covers and AC CORD-A to the PIM

(2) Connect the RUBBER FEET to the PIM as shown in Figure 003-30.

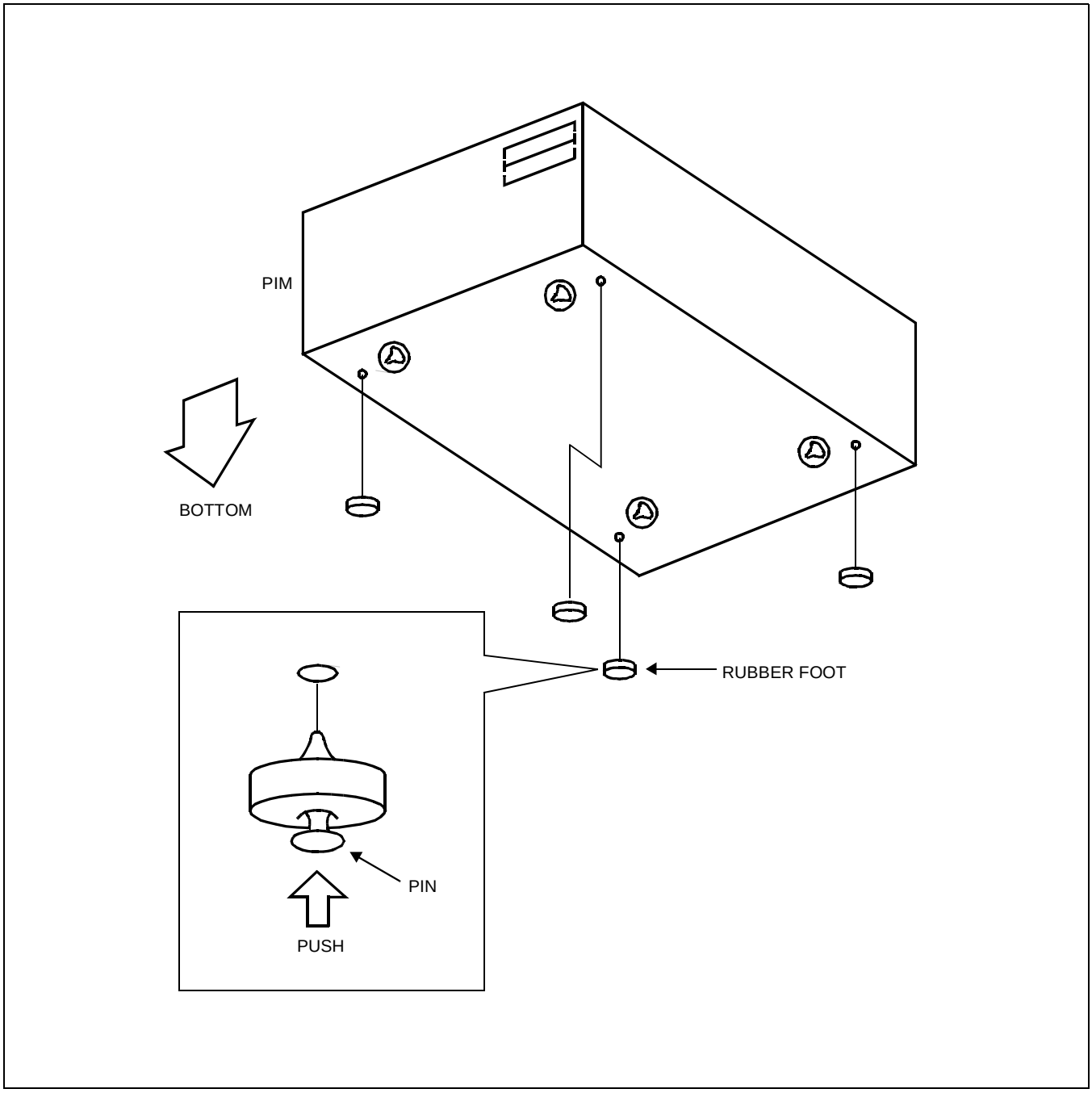


Figure 003-30 Connecting the RUBBER FOOT to the PIM

1. Installation of External MDF

- Secure the external MDF onto the floor or mount the MDF onto the wall.
- Mount the required MDF components.
- If required, install the cable ducts for the cables to be laid between the MDF and the Main Equipment. In this case, confirm the locations of the cable holes for the Main Equipment. Refer to Figure 004-1.

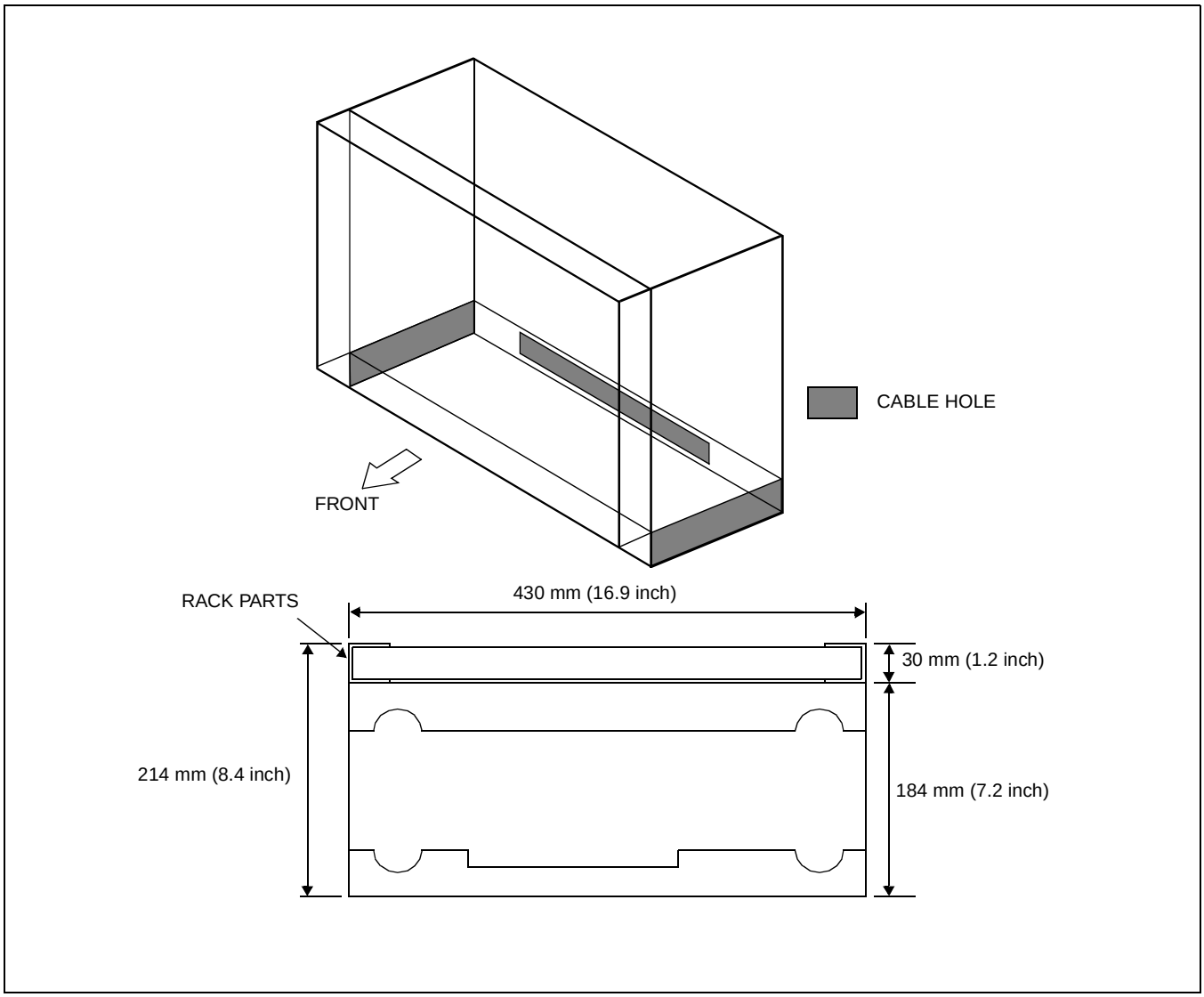


Figure 004-1 Location of the Cable Hole

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

2. Installation of SN610 ATTCON

(1) Screw the handset support onto the bottom of the console as shown in Figure 004-2.

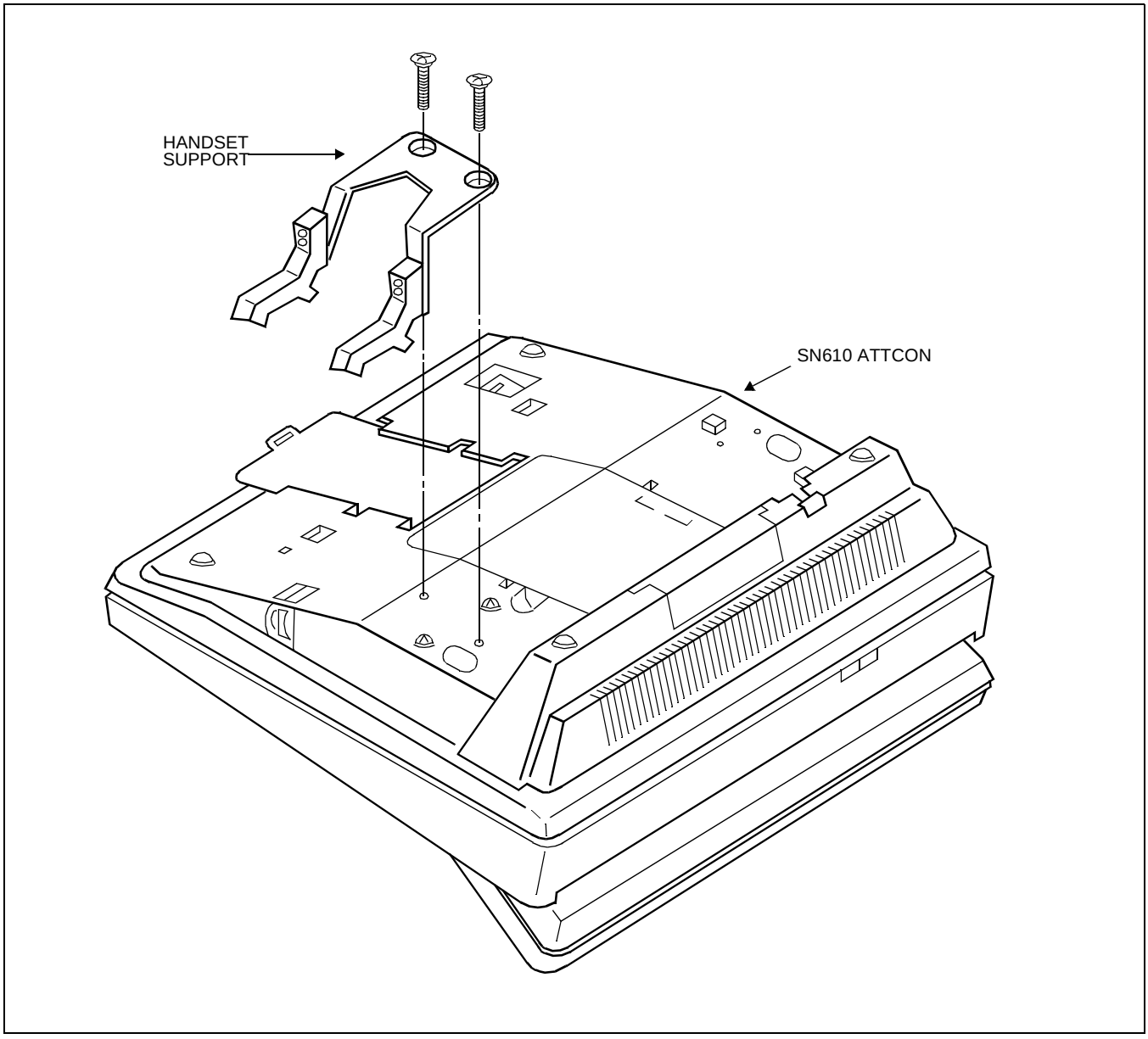


Figure 004-2 Mounting of the Handset Support to the SN610 ATTCON

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(2) To provide the console with the headset in place of the handset, unplug the modular cord from the handset and plug the modular cord to the Jack Set.

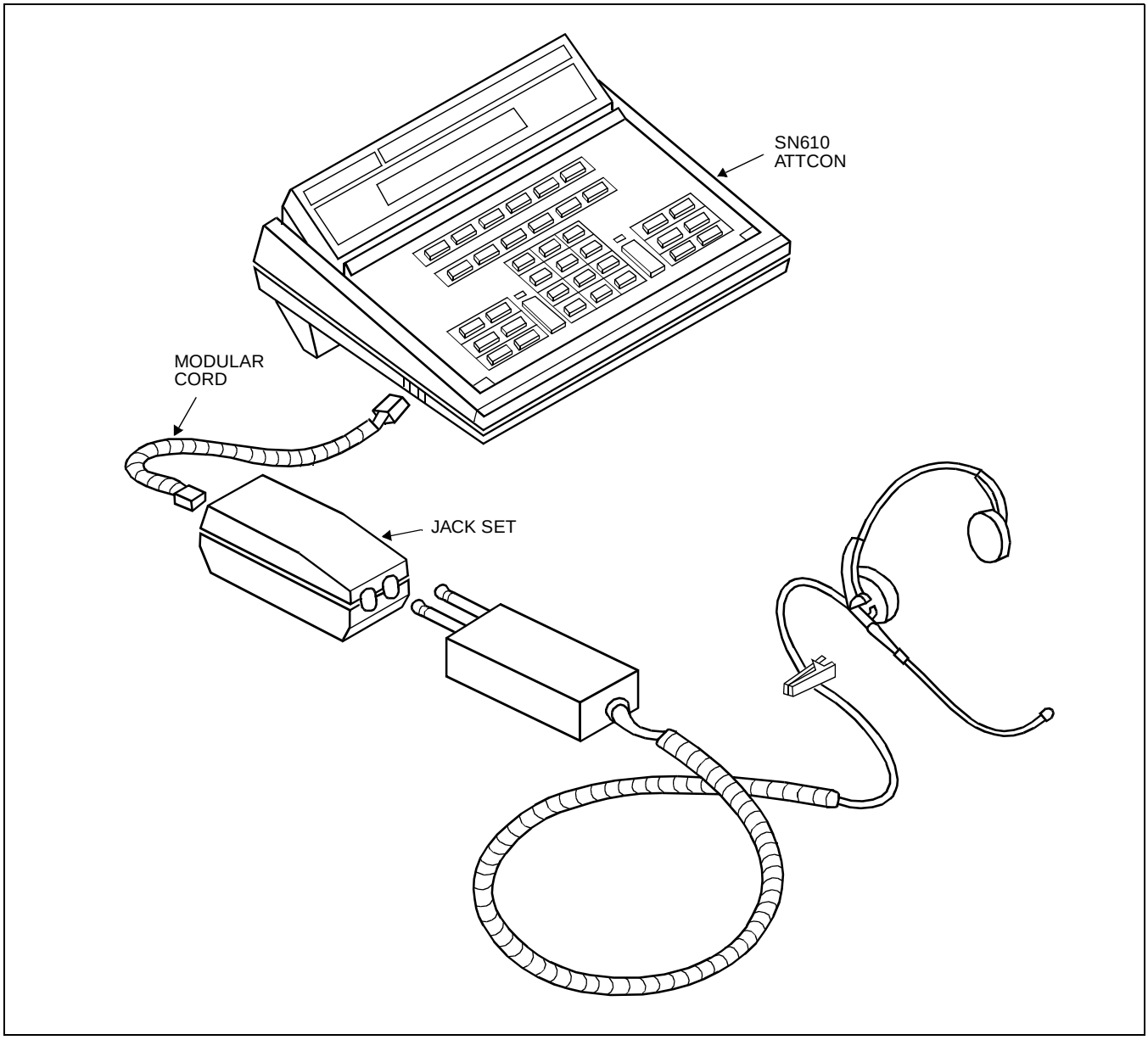


Figure 004-3 Jack Set Installation for the SN610 ATTCON

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(3) Set the switch located inside the console according to the type of headset/handset connected. Refer to Figure 004-4.

- Slide the directory out of the way.
  Then insert a flat screw driver's blade 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 (toward you) at the rear of the pedestal to move the access panel.

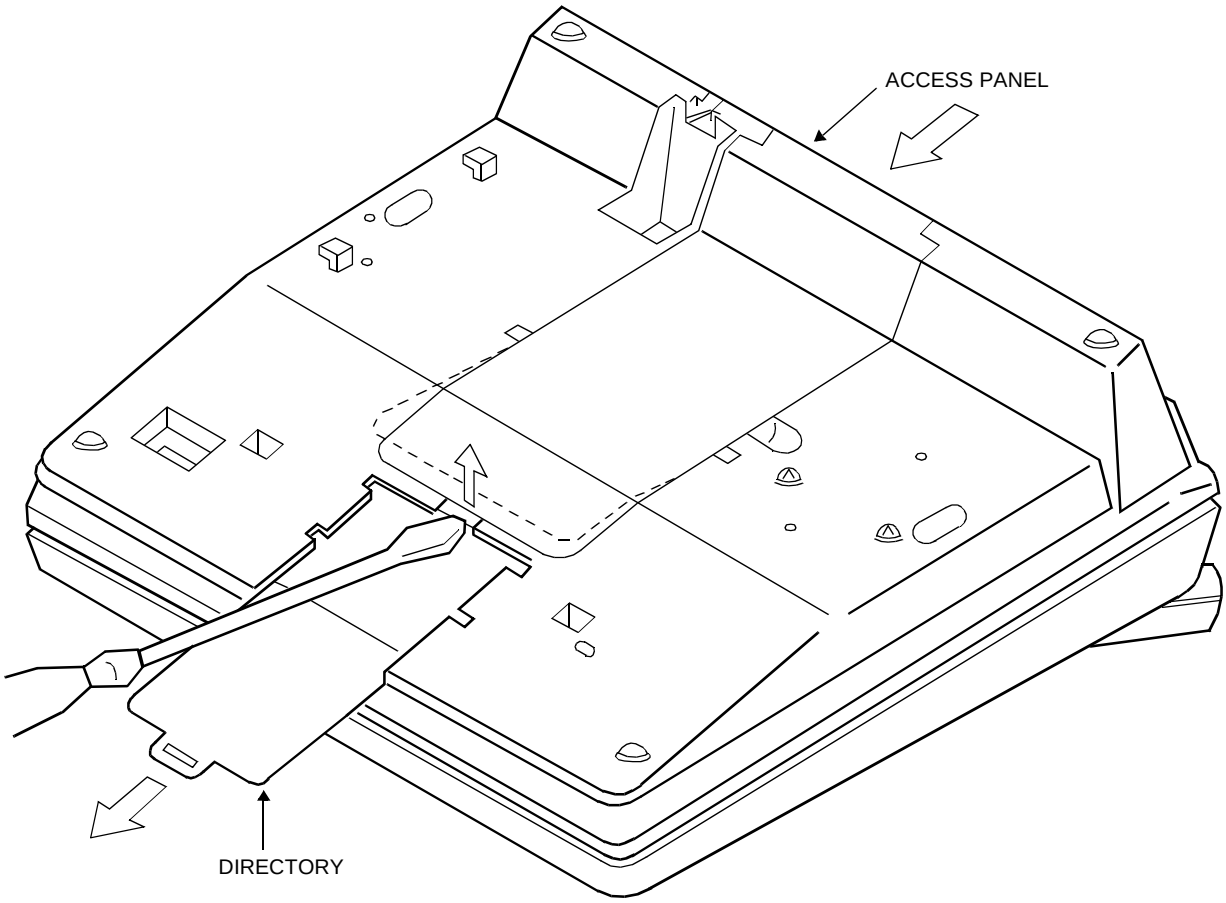


Figure 004-4 Switch Setting on the SN610 ATTCON (1 of 2)

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

- Set the switch according to the type of headset/handset connected.
  C: Carbon Type Handset/Headset
  S: SUPRA Headset
  D: D^{term} Type Handset
- Replace the directory and access panel.

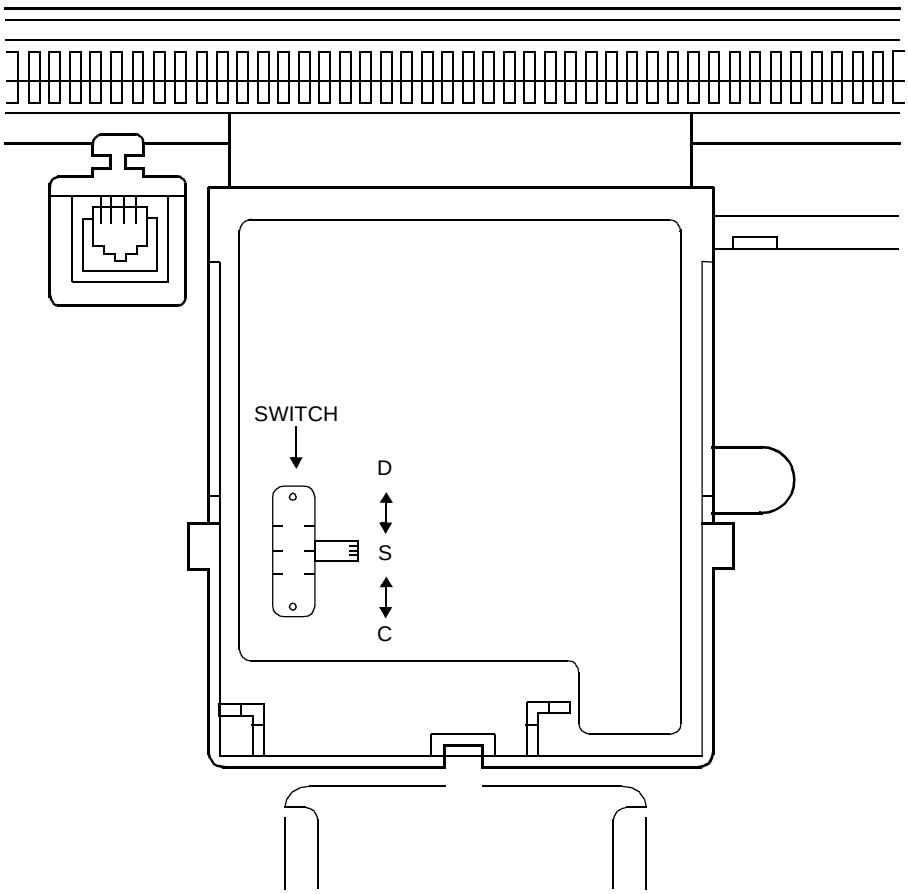


Figure 004-4 Switch Setting on the SN610/611/615 ATTCON (2 of 2)

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(4) Plug the line cord into the modular jack located at the bottom of the console. For the MDF cross connection for the SN610 ATTCON, refer to NAP- 200-007 (Figure 007-23).

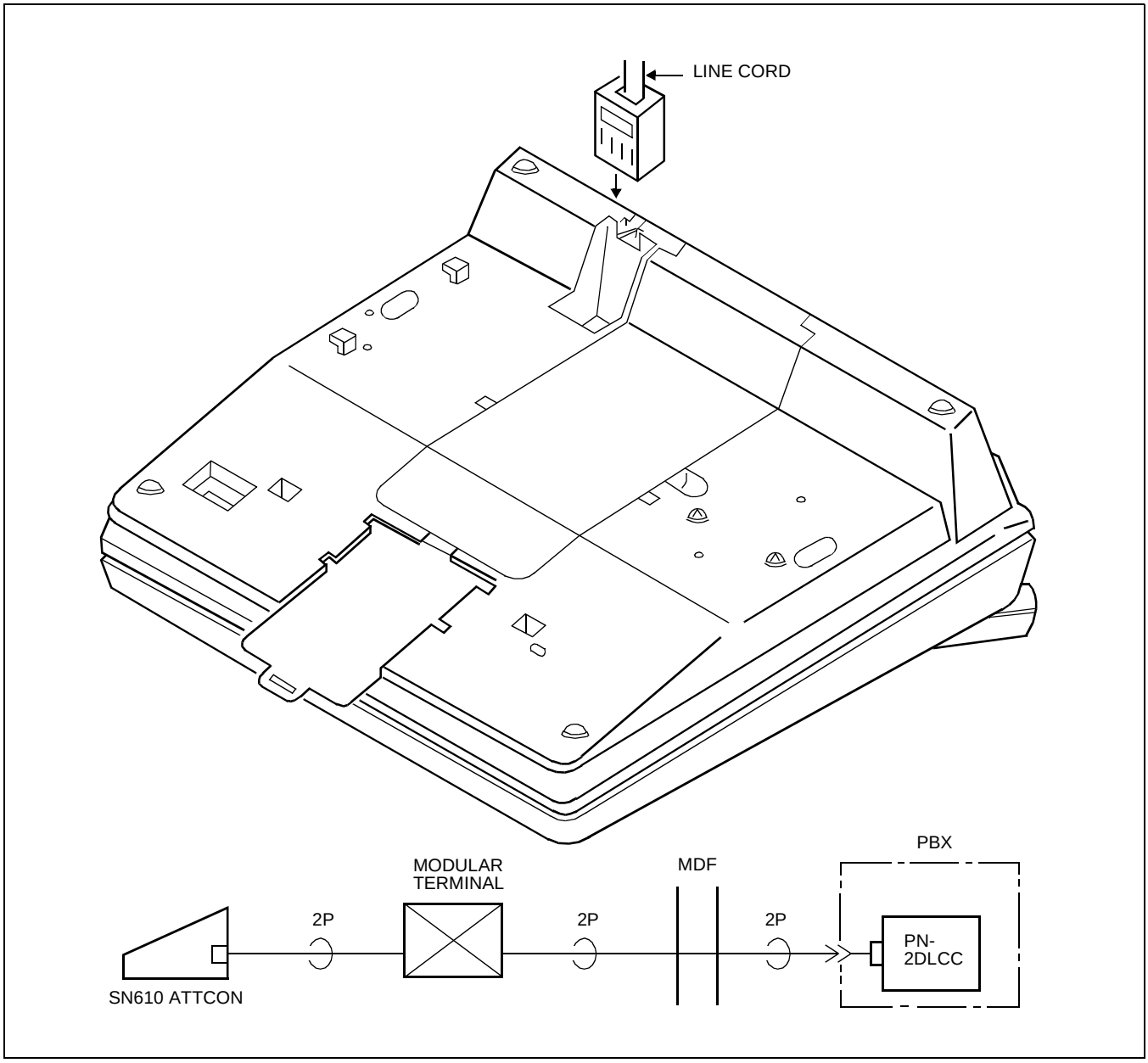


Figure 004-5 Cable Connection to the SN610 ATTCON

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

3. Installation of SN716 DESKCON

(1) Screw the handset support onto the bottom of the console, if required.

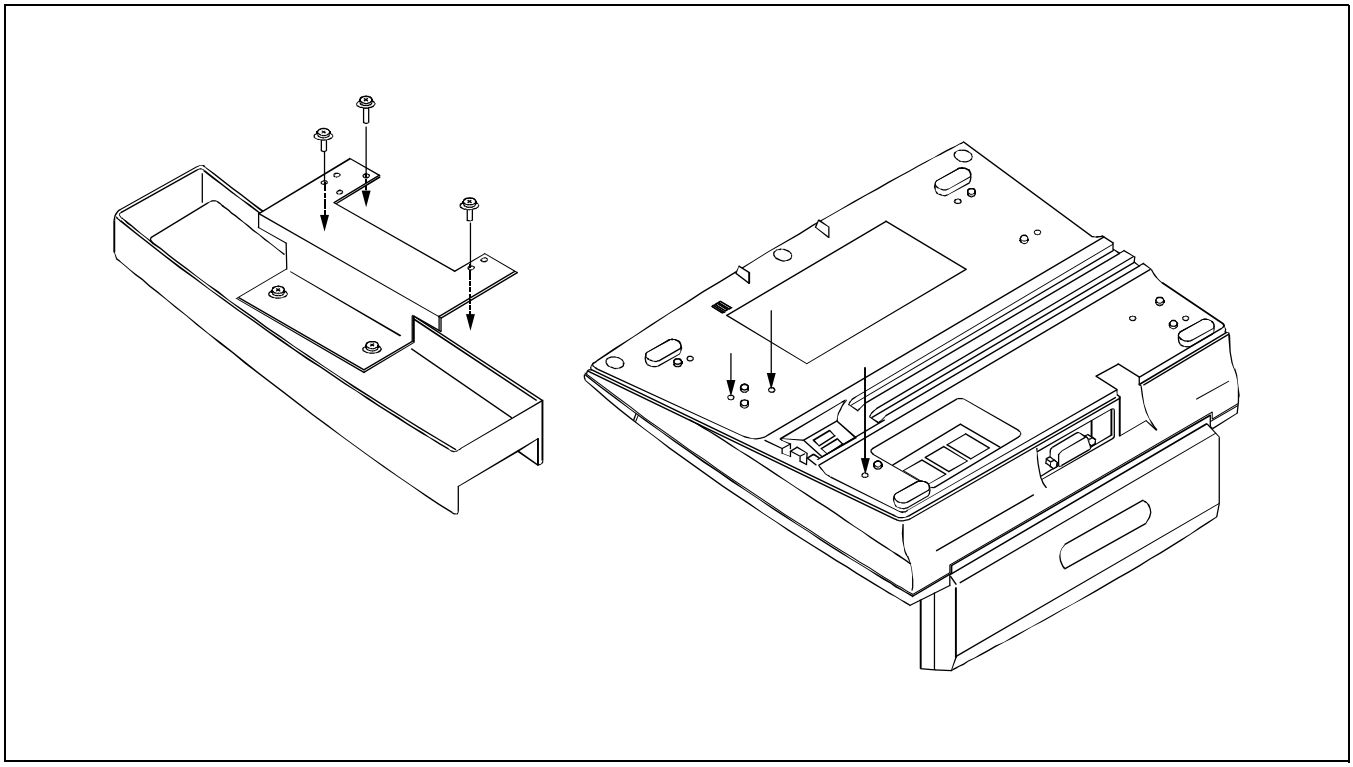


Figure 004-6 Mounting of the Handset Support to the SN716 DESKCON

The handset support bracket is reversible to mount on either side of the SN716 DeskCon. To mount the support unit on the right hand side of the DeskCon, reverse the mounting bracket on the handset support unit (two screws). Then attach the handset support with three screws on the right side of the DeskCon.

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(2) Plug the headset into the modular jack (H/S 0 or H/S 1) located at the bottom of the console, if required.

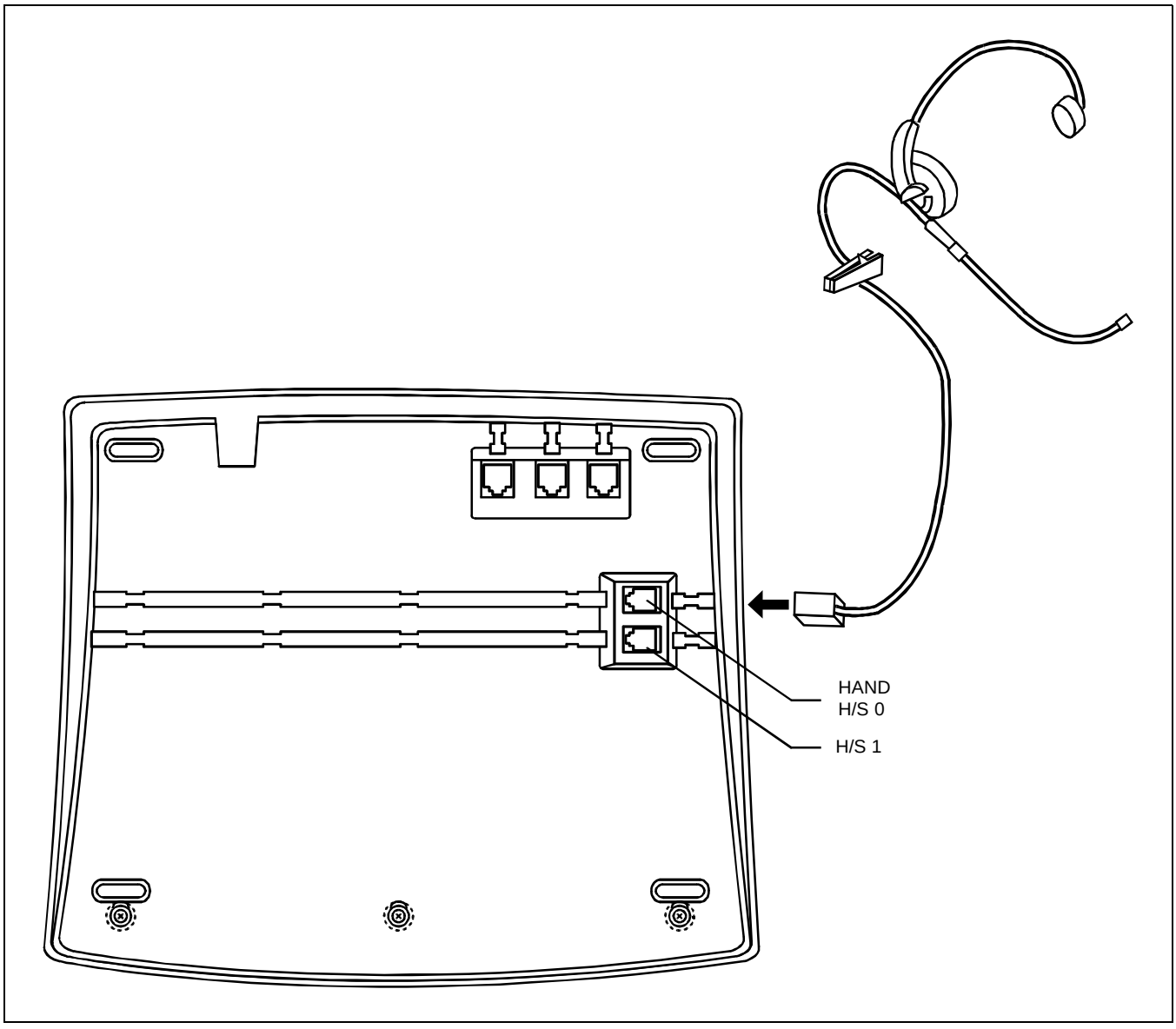


Figure 004-7 Headset Installation for the SN716 DESKCON

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(3) Plug the line cord into the modular jack (LINE) located at the bottom of the console. For the MDF cross connection fot the SN716 DESKCON, refer to NAP-200-007 (Figure 007-24, 007-24).

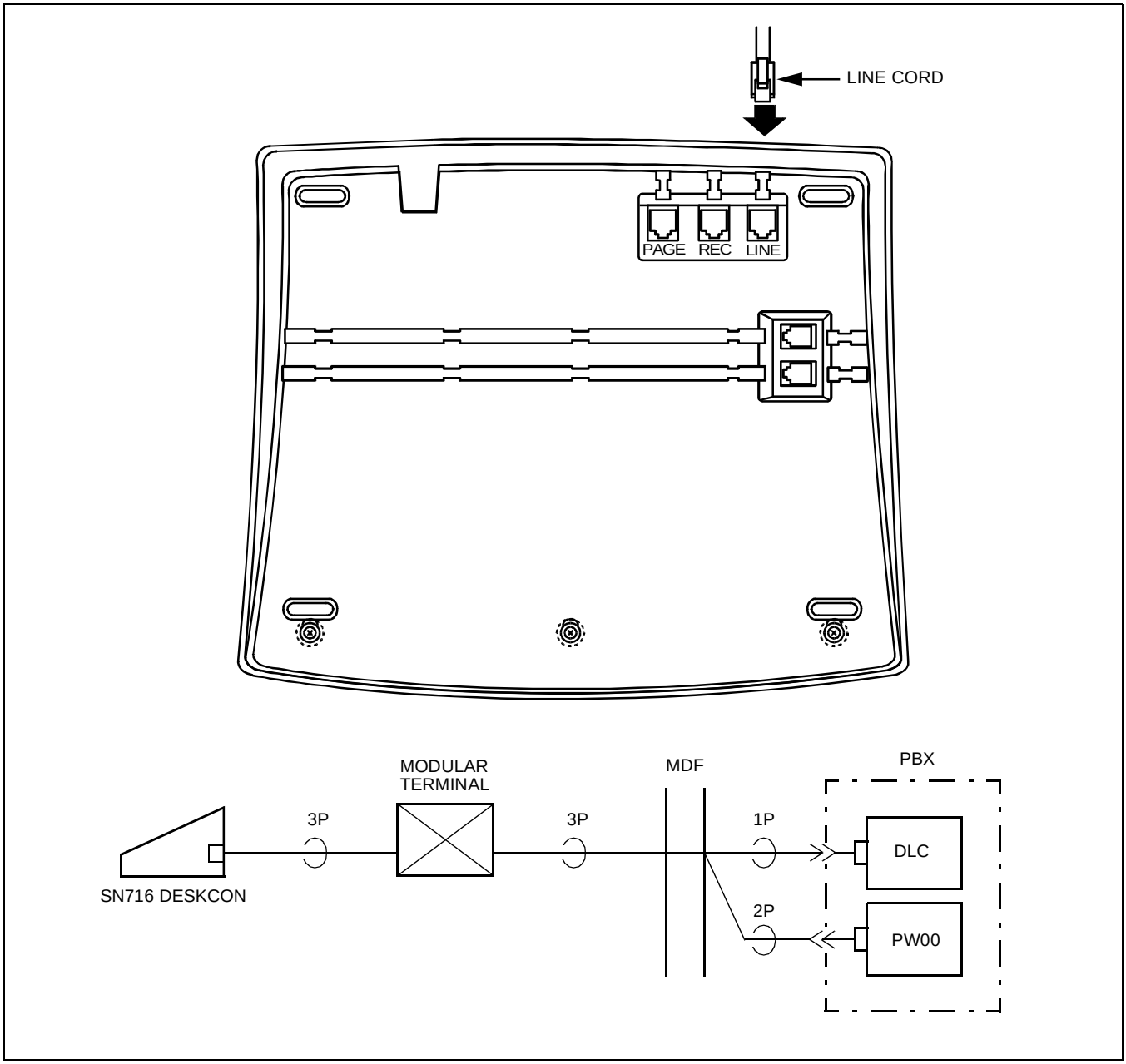
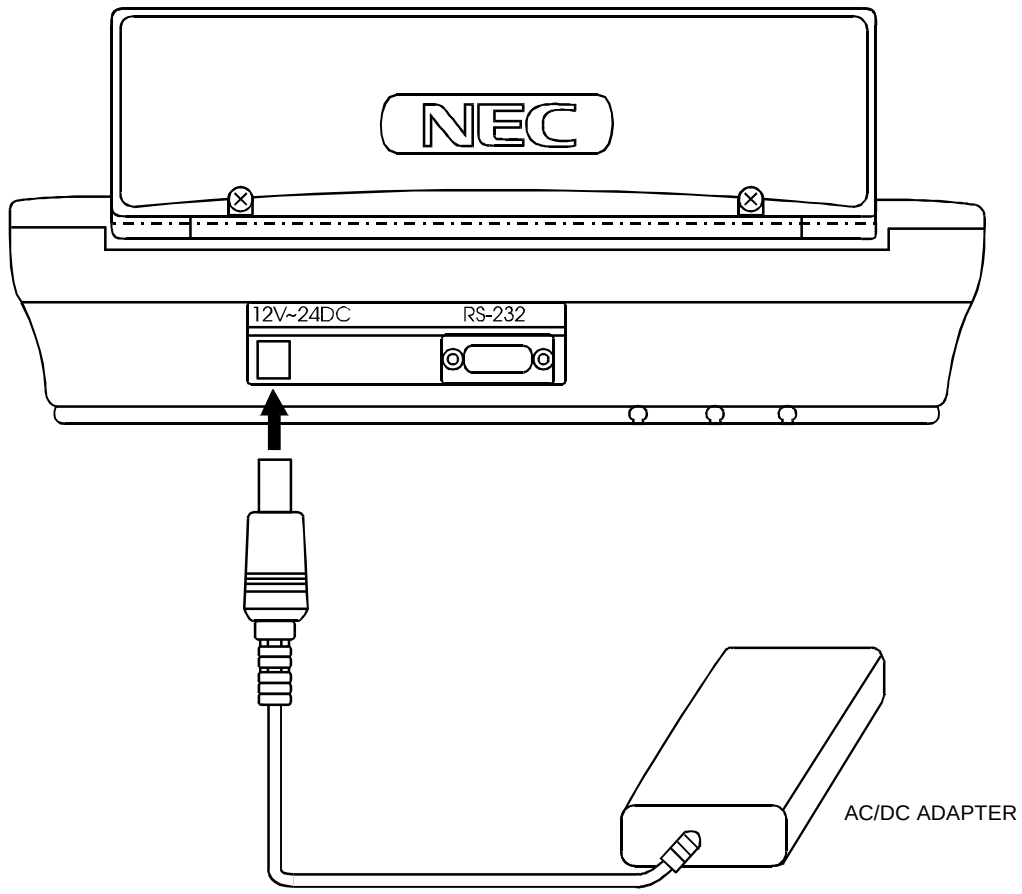


Figure 004-8 Cable Connection to the SN716 DESKCON

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(4) When using an AC-DC ADAPTER for power supply, plug the AC-DC ADAPTER into the "12V~24VDC" terminal located at the rear of the console. This adapter is the same as the D^{term} Series E AC-DC adapter.



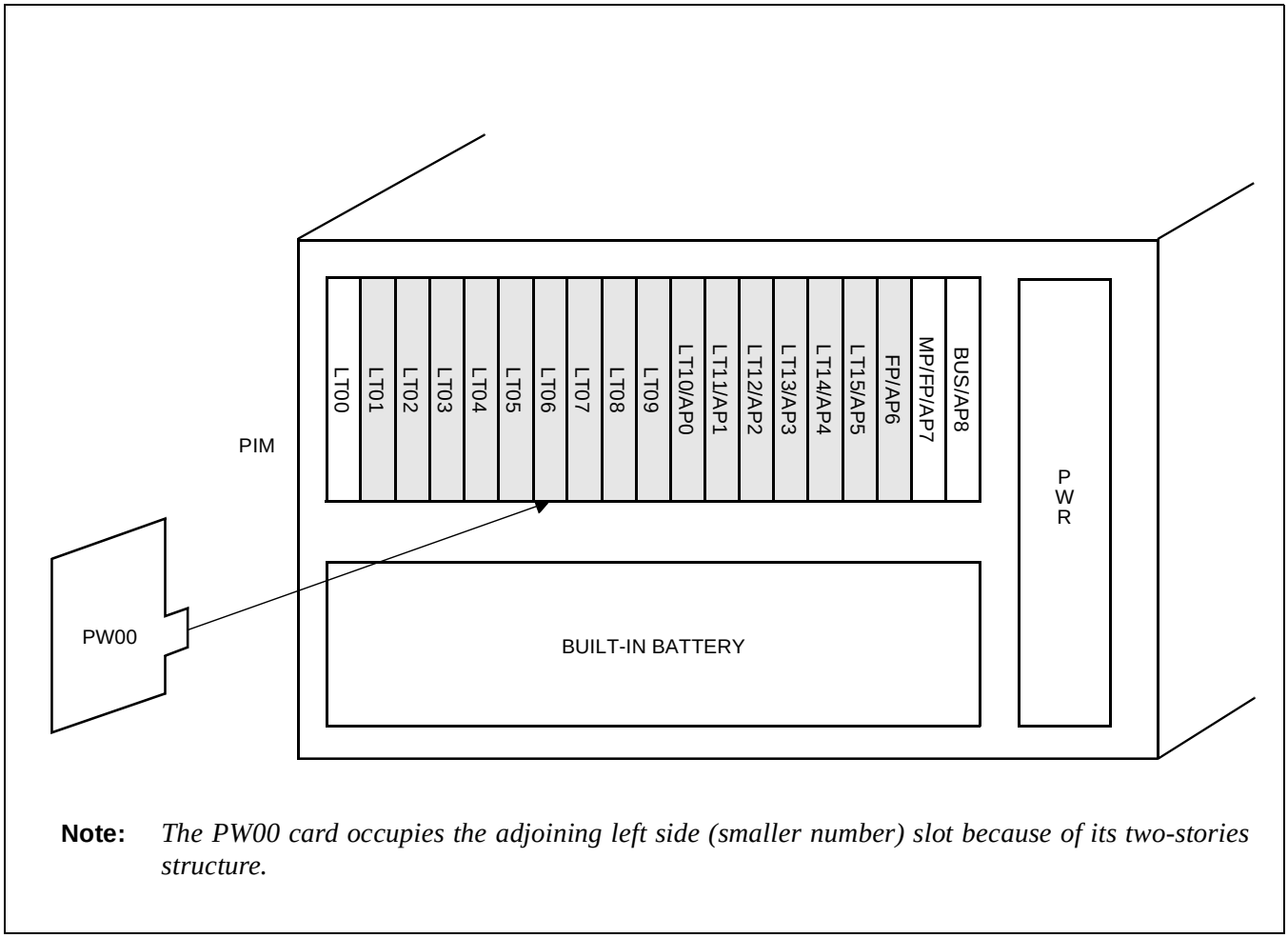
Note: *AC-DC Adapter is only required when the PW00 card is not used.*

Figure 004-9 AC-DC ADAPTER Connection to the SN716 DESKCON

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(5) When using the PW00 card for power supply, provide the PW00 card according to the following procedure.

(a) Mount the PW00 card into the LT01-LT15 or AP6 slot.



Note: *The PW00 card occupies the adjoining left side (smaller number) slot because of its two-stories structure.*

Figure 004-10 Mounting PW00 Card into PIM

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(b) Connect the PW00 card and SN716 DESKCON using installation cable as shown in Figure 004-11 and Figure 007-24 (1 of 1 and 1 of 2).

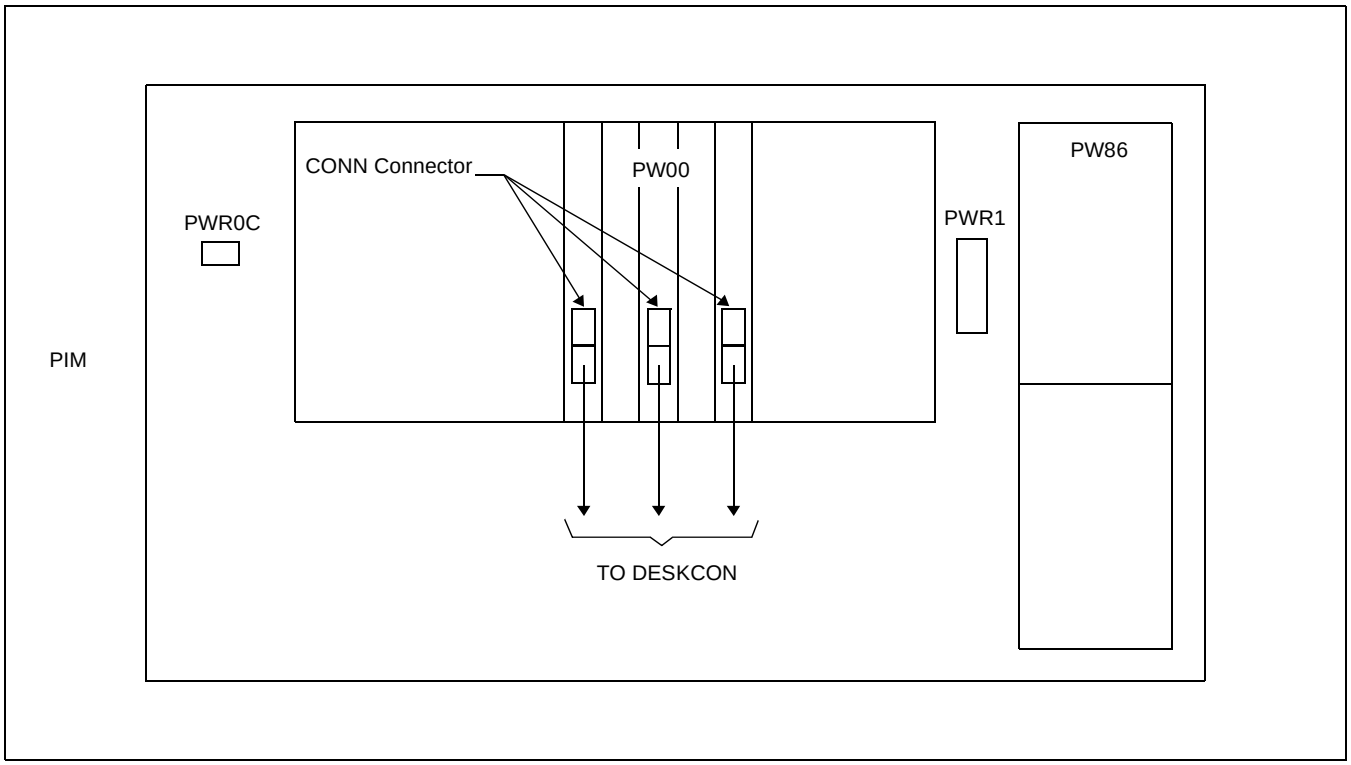


Figure 004-11 PW00 Card connection to the SN716 DESKCON

NAP 200-005
Sheet 1/7
Connection of Battery

1. Battery Connection

CAUTION

If battery terminals (+, –) contact with the module while connecting the battery cable to the PZ-PW86 card, the PZ-PW86 card or the BWB may be shorted. Therefore, the installer must perform work in accordance with the following steps when mounting or removing the batteries.

(1) When mounting batteries:
   (a) Connect the battery cable to the batteries.
   (b) Mount the batteries into the appointed position of the PIM or the BATTM.
   (c) Connect the battery cable to the PZ-PW86 card.

(2) When removing batteries:
   (a) Disconnect the battery cable from the PZ-PW86 card.
   (b) Remove the batteries from the PIM or the BATTM.

WARNING: *Turn off AC power before connecting batteries.*

Recommended Battery		
Internal Battery:	YUASA MATSUSHITA	type NPH-3.2-12 type LCR-12V3.4NE
External Battery: (BATTM)	YUASA MATSUSHITA	type NP-24-12B type LCL-12V-24

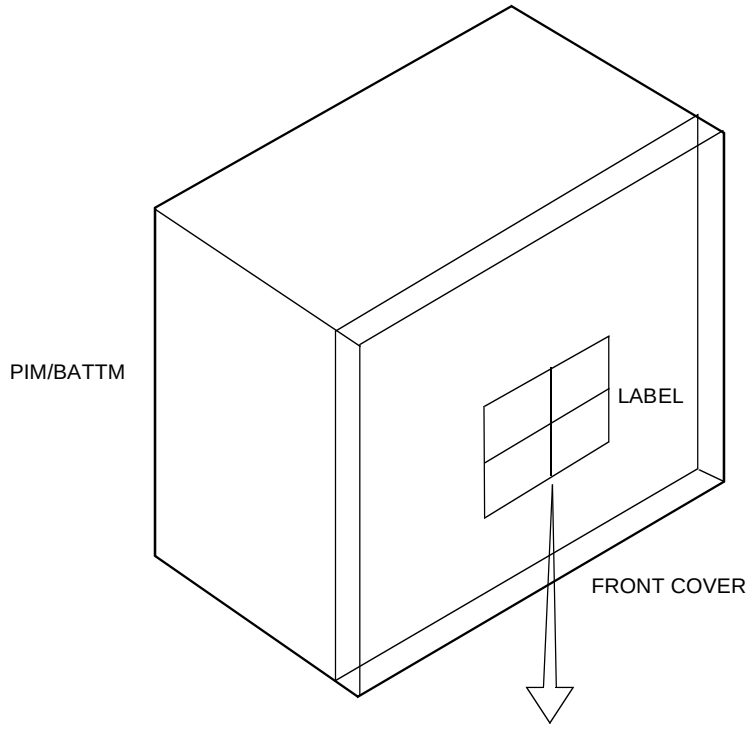
NAP 200-005
Sheet 2/7
Connection of Battery

CAUTION

Battery Replacement Table and Battery Warnings

The label which shows battery replacement table and battery warnings is attached to the reverse side of Front Cover for PIM and BATTM.

During the battery installation process, the warning statements must be observed. When replacing batteries, the battery replacement table should be observed to increase battery life and ensure a safe operation.



BATTERY REPLACEMENT TABLE

INSTALLATION DATE: , .

AMBIENT TEMPERATURE	25°C (77°F)	25°C ~ 30°C (77°F ~ 86°F)	30°C ~ 40°C (86°F ~ 104°F)
REPLACEMENT INTERVAL	2.5 ~ 3 YEARS	2.0 ~ 2.5 YEARS	1.5 ~ 2.0 YEARS

- ELECTROLYTE LEAKAGE OR OTHER HAZARDS MAY RESULT IF THE BATTERY IS NOT REPLACED IN ACCORDANCE WITH THE SPECIFIED INTERVALS.

CAUTION TO PREVENT INJURY AND SKIN BURN, PAY ATTENTION TO THE FOLLOWING.

- DO NOT STRIKE A MATCH OR CAUSE A SPARK IN VICINITY OF BATTERY.
- PLACE THE EQUIPMENT IN A WELL VENTILATED AREA.
- DO NOT SHORT.
- REPLACE BATTERY ONLY AFTER BATTERY GASES HAVE BEEN DISPERSED.

NAP 200-005
Sheet 3/7
Connection of Battery

1.1. Internal Battery Connection

(1) Install the two batteries (12VDC, 3.0-3.4AH) into each PIM as shown in Figure 005-1.

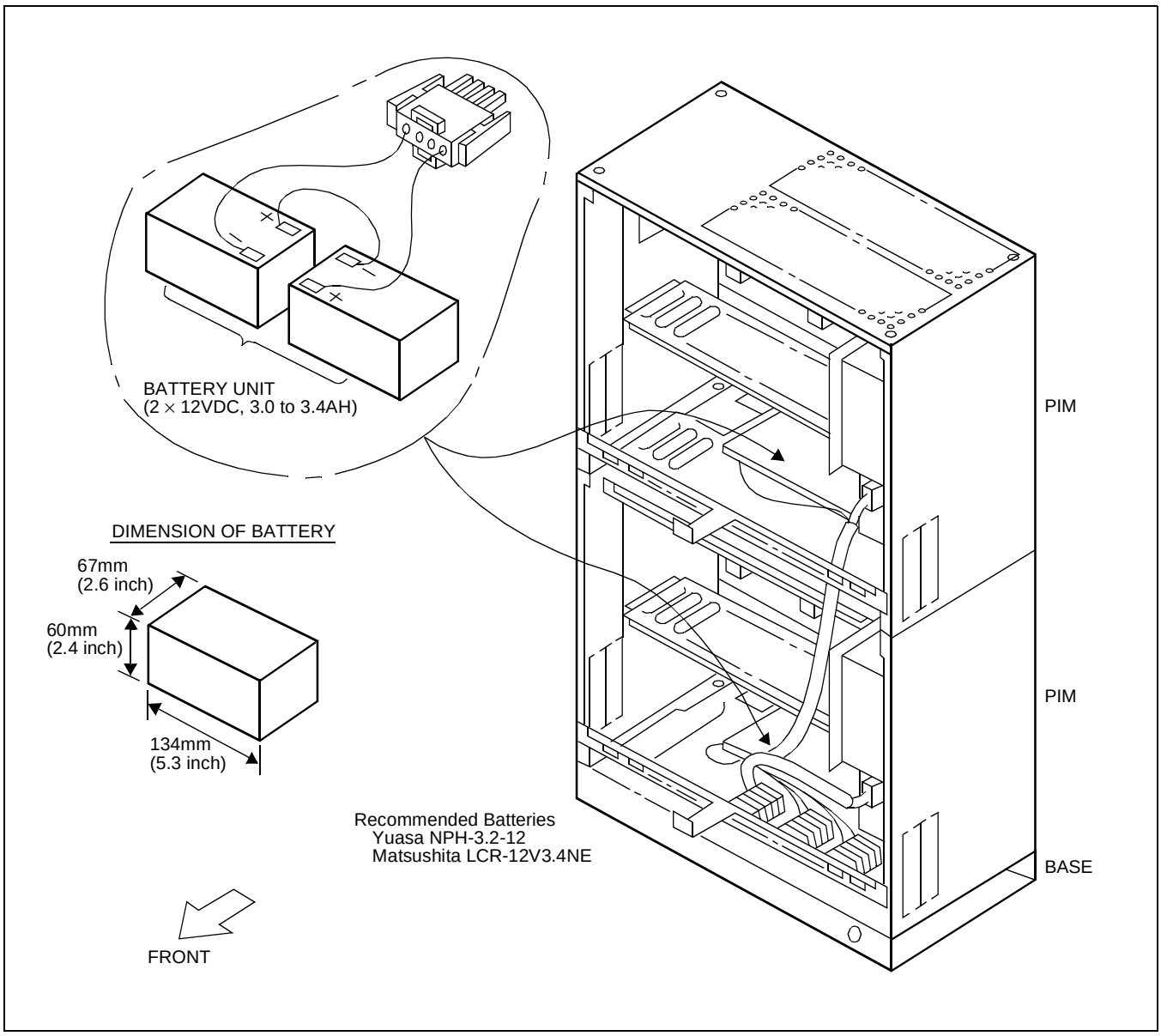


Figure 005-1 Internal Battery Mounting

(2) Plug the battery cable connector into the BATT1 connector on the PZ-PW86 as shown in Figure 005-2.

(3) Secure the batteries and battery cable using tie wraps as shown in Figure 005-2.

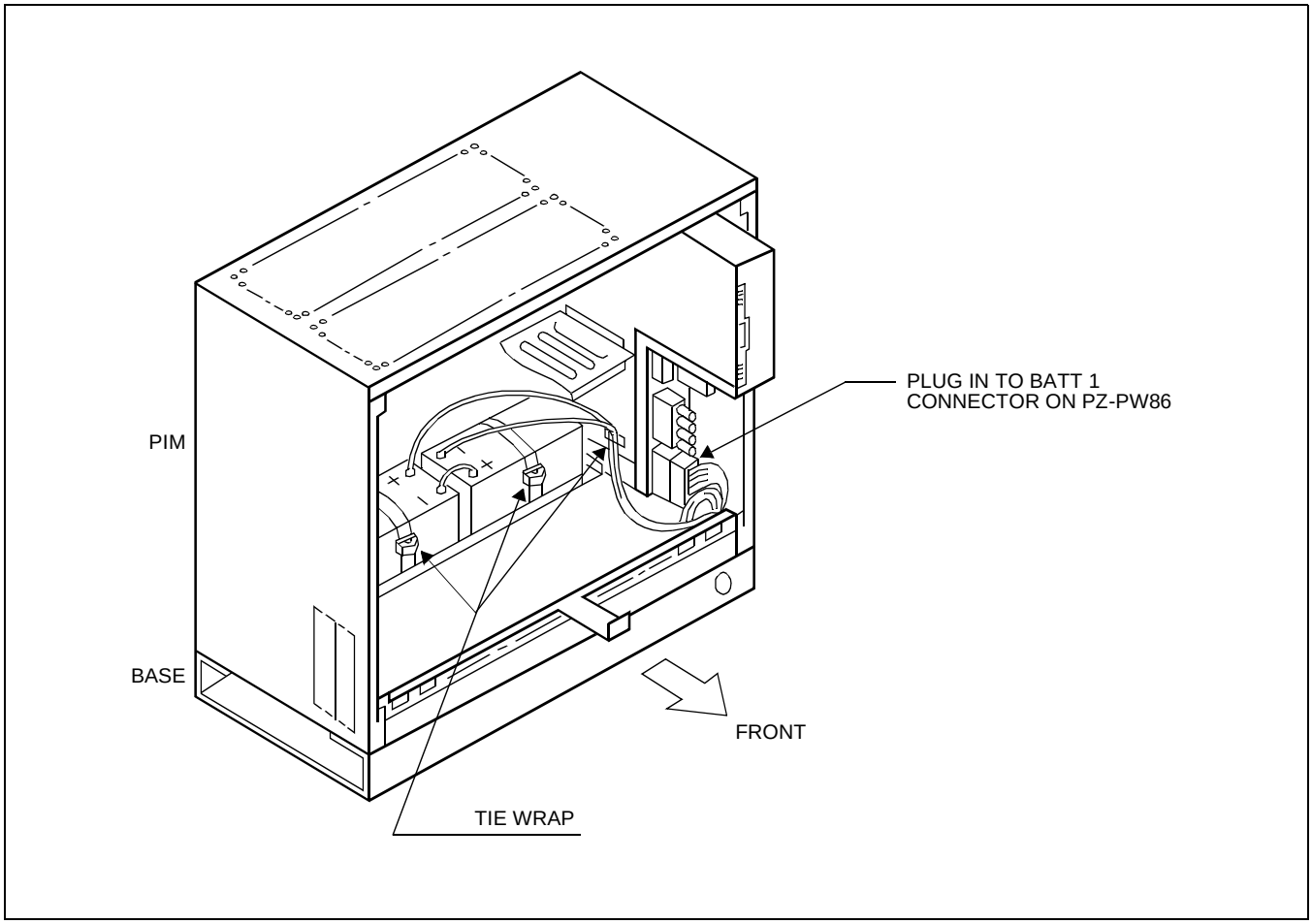


Figure 005-2 Internal Battery Connection

(4) When the system is a multiple PIM configuration, provide the following connections to the internal batteries.

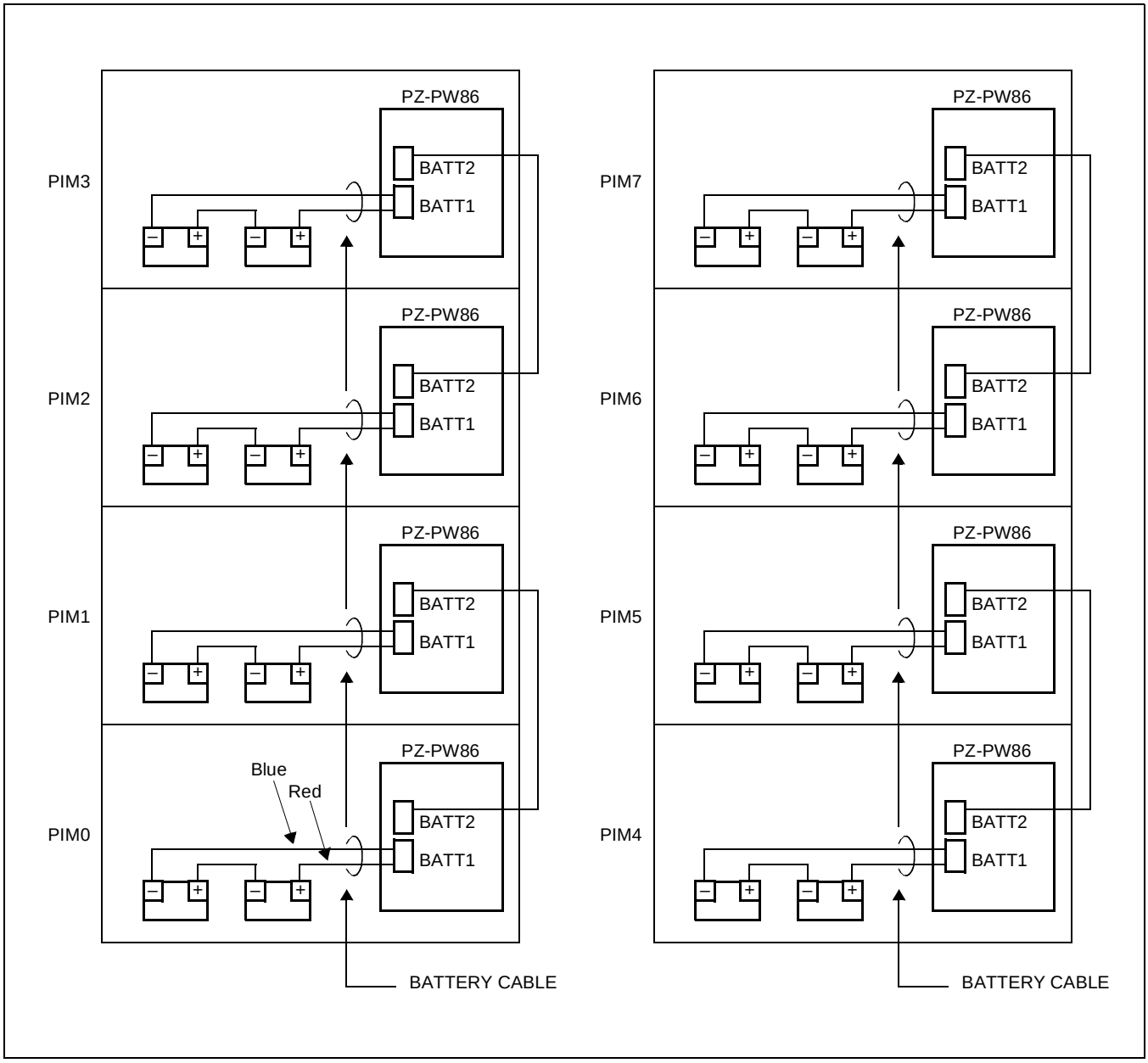
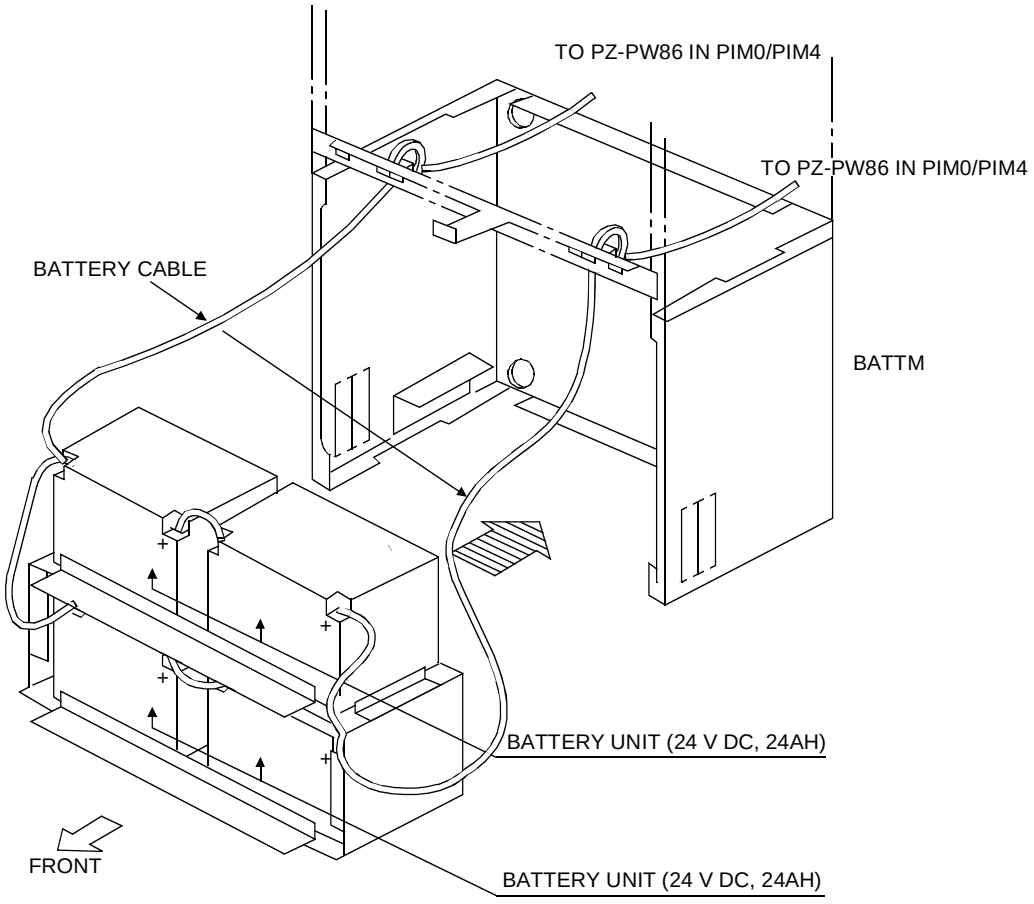


Figure 005-3 Internal Battery Connection for a Multiple PIM Configuration

NAP 200-005
Sheet 6/7
Connection of Battery

1.2. Battery Connection in the BATTM

(1) Connect the battery cables to the batteries, and mount the battery units (24 V DC, 24AH per unit) into the Battery Module (BATTM) as shown in Figure 005-4.



Recommended Batteries

Yuasa NP-24-12B
Matsushita LCL-12V-24

Specifications

UL Listed
12VDC, 24AH
Terminal: bolt/nut type with hole for 5mm bolt
Dimensions:
166mm L x 175mm W x 125mm H
(6.54in L x 6.89in W x 4.92in H)

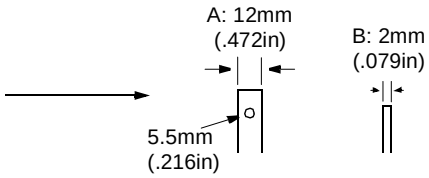
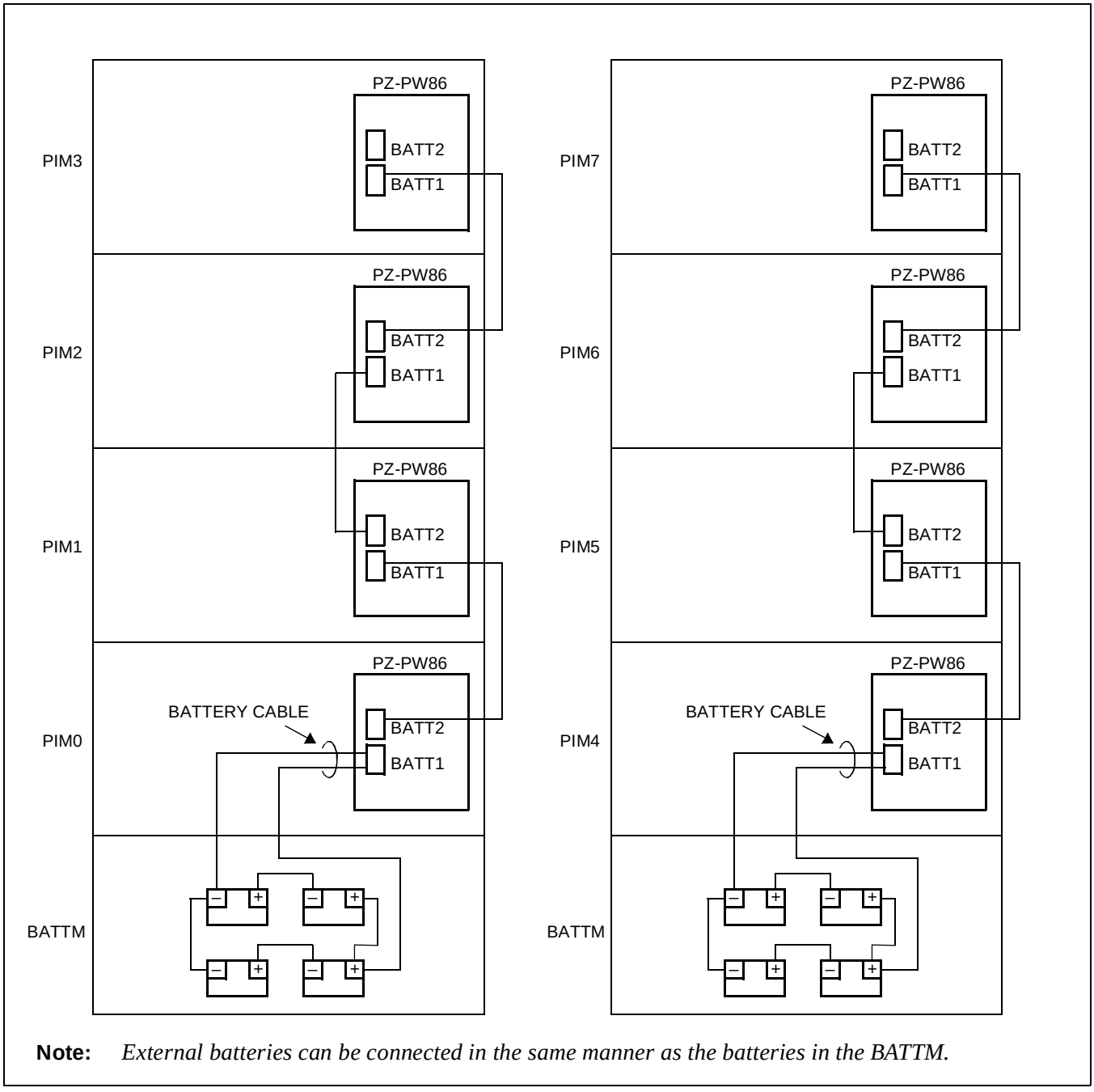


Figure 005-4 Battery Mounting into the BATTM

(2) Plug the battery cable connector into the BATT1 connector on the PZ-PW86 in PIM0 or PIM4. Figure 005-5 shows an example of battery connection in the BATTM for 8-PIM configuration.



Note: *External batteries can be connected in the same manner as the batteries in the BATTM.*

Figure 005-5 Battery Connection in the BATTM for a Multiple PIM Configuration

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

1. MDF Cable

To facilitate the termination of the 25 pair cables (MDF cables) from the system to the MDF shown in Figure 006-1, the length of each cable to be used should be predetermined according to the distance between the MDF and the system. Each cable should be labeled at both ends using a cable number or cable designation as shown in Table 006-1.

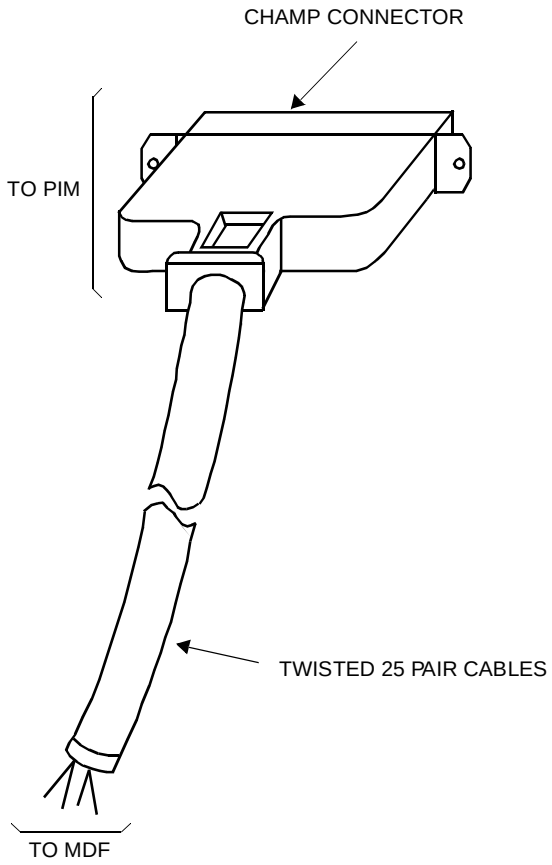


Figure 006-1 MDF Cable

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

Table 006-1 MDF Cables for each PIM

FROM		CABLE NUMBER	TO	CABLE DESIGNATION
MODULE	CONNECTION			
PIM0	LTC0	1	MDF	0 LTC0
	LTC1	2		0 LTC1
	LTC2	3		0 LTC2
PIM1	LTC0	4	MDF	1 LTC0
	LTC1	5		1 LTC1
	LTC2	6		1 LTC2
PIM2	LTC0	7	MDF	2 LTC0
	LTC1	8		2 LTC1
	LTC2	9		2 LTC2
PIM3	LTC0	10	MDF	3 LTC0
	LTC1	11		3 LTC1
	LTC2	12		3 LTC2
PIM4	LTC0	13	MDF	4 LTC0
	LTC1	14		4 LTC1
	LTC2	15		4 LTC2
PIM5	LTC0	16	MDF	5 LTC0
	LTC1	17		5 LTC1
	LTC2	18		5 LTC2
PIM6	LTC0	19	MDF	6 LTC0
	LTC1	20		6 LTC1
	LTC2	21		6 LTC2
PIM7	LTC0	22	MDF	7 LTC0
	LTC1	23		7 LTC1
	LTC2	24		7 LTC2

2. Cable Running to the External MDF

(1) When not using the cable hole of the PIM

(a) Bring the MDF cable up to the Main Equipment through the cable hole(s) of the BASE.

(b) Connect the champ connector of each MDF cable to an LTC connector located on a PIM using the screws provided, as shown in Figure 006-2.

(c) Pare the sheath of each MDF cable and secure the shield to the front bracket on the PIM using tie wraps, as shown in Figure 006-2.

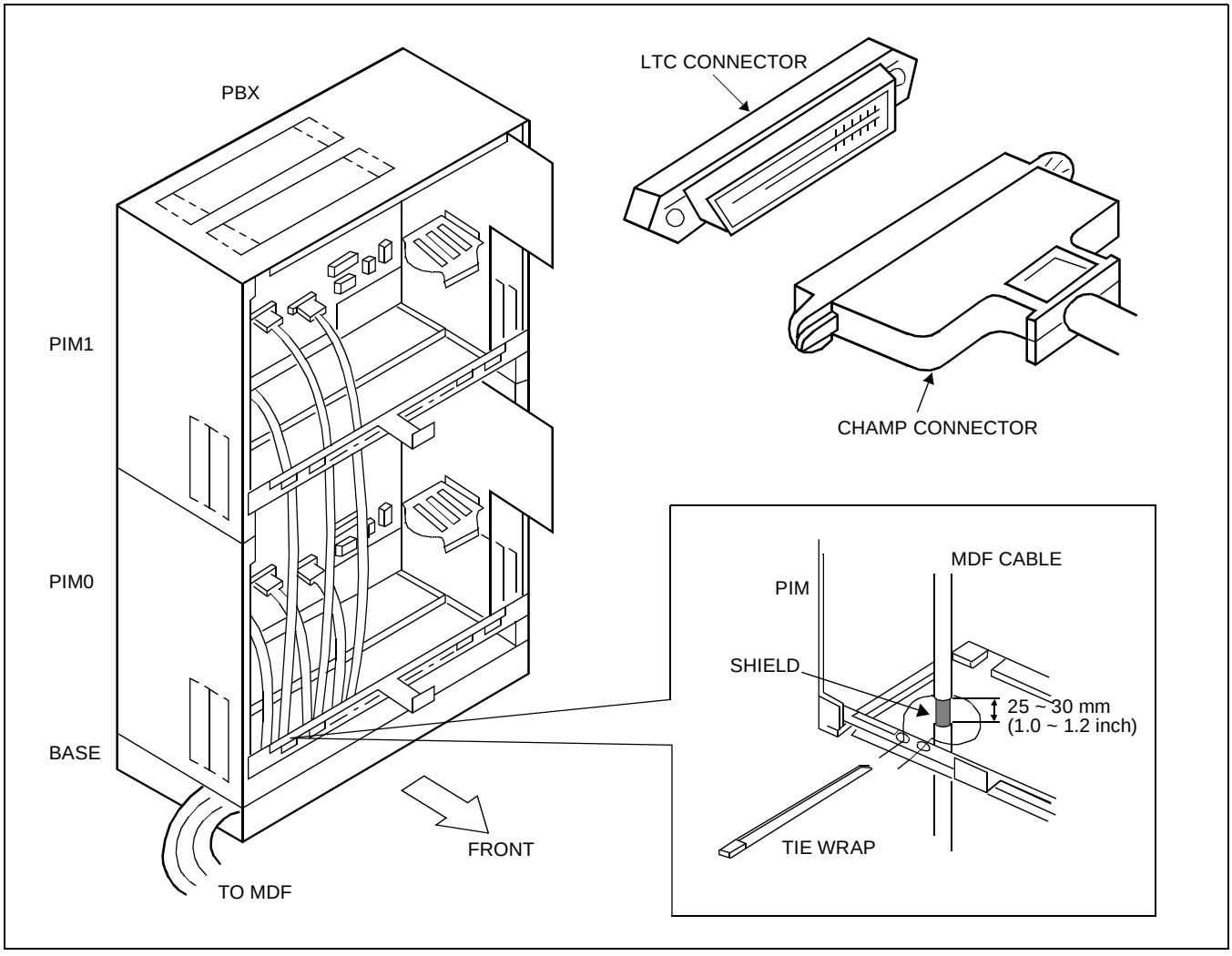


Figure 006-2 Cable Running to the External MDF (1 of 2)

(2) When using the cable hole of the PIM

(a) Make the cable hole on the left side of PIM as shown in Figure 006-3.

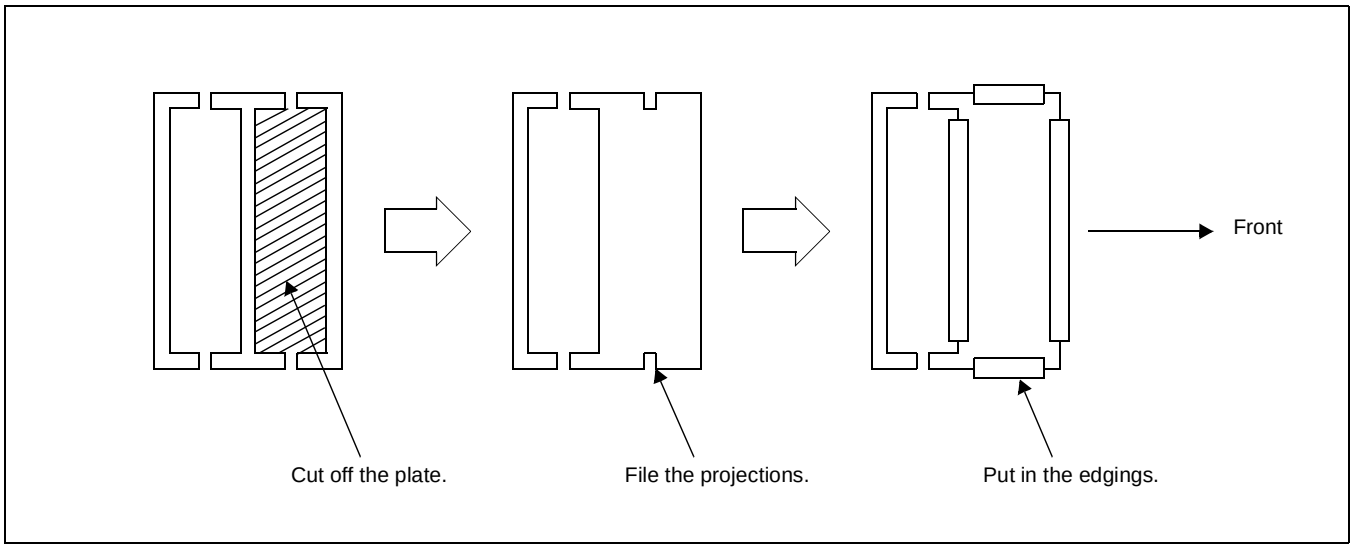


Figure 006-3 Making Cable Hole on the PIM

(b) Bring the MDF cable up to the PIM0 through the cable hole (s) of the BASE and bring the MDF cable up to the other PIM through the cable hole (left side) of each PIM.

(c) Connect the champ connector of each MDF cable to an LTC connector located on a PIM using the screws provided, as shwon in Figure 006-4.

(d) Pare the sheath of each MDF cable and secure the shield to the front bracket on the PIM using tie wraps, as shown in Figure 006-4.

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Cable Running to the MDF

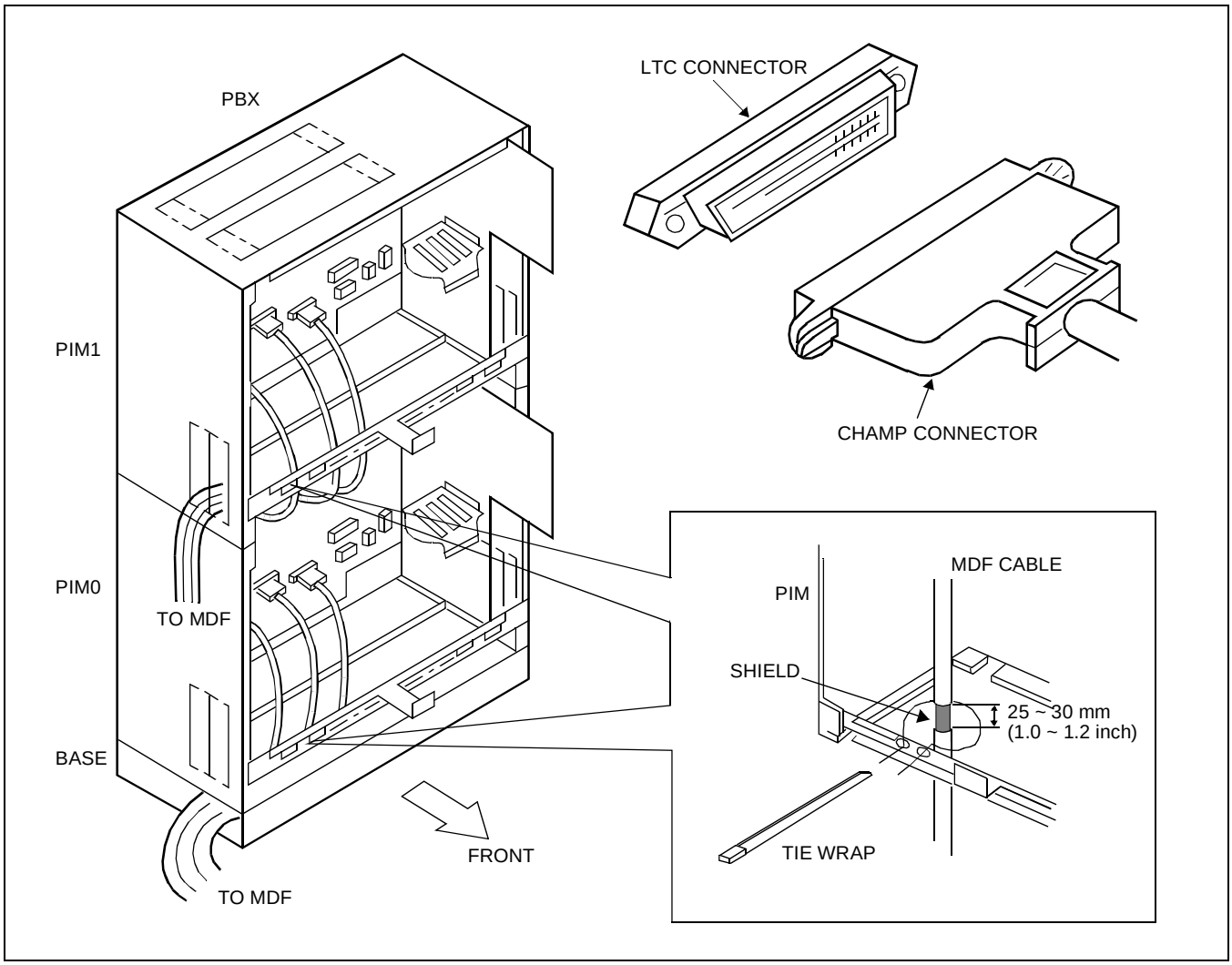

Figure 006-4 Cable Running to the External MDF (2 of 2)

3. Cable Running to the MDFM

(1) Connect the champ connector of each MDF cable to an LTC connector located on a PIM using the screws provided, as shown in Figure 006-5.

(2) Pare the sheath of each MDF cable and secure the shield to the front bracket on the PIM using tie wraps, as shown in Figure 006-5.

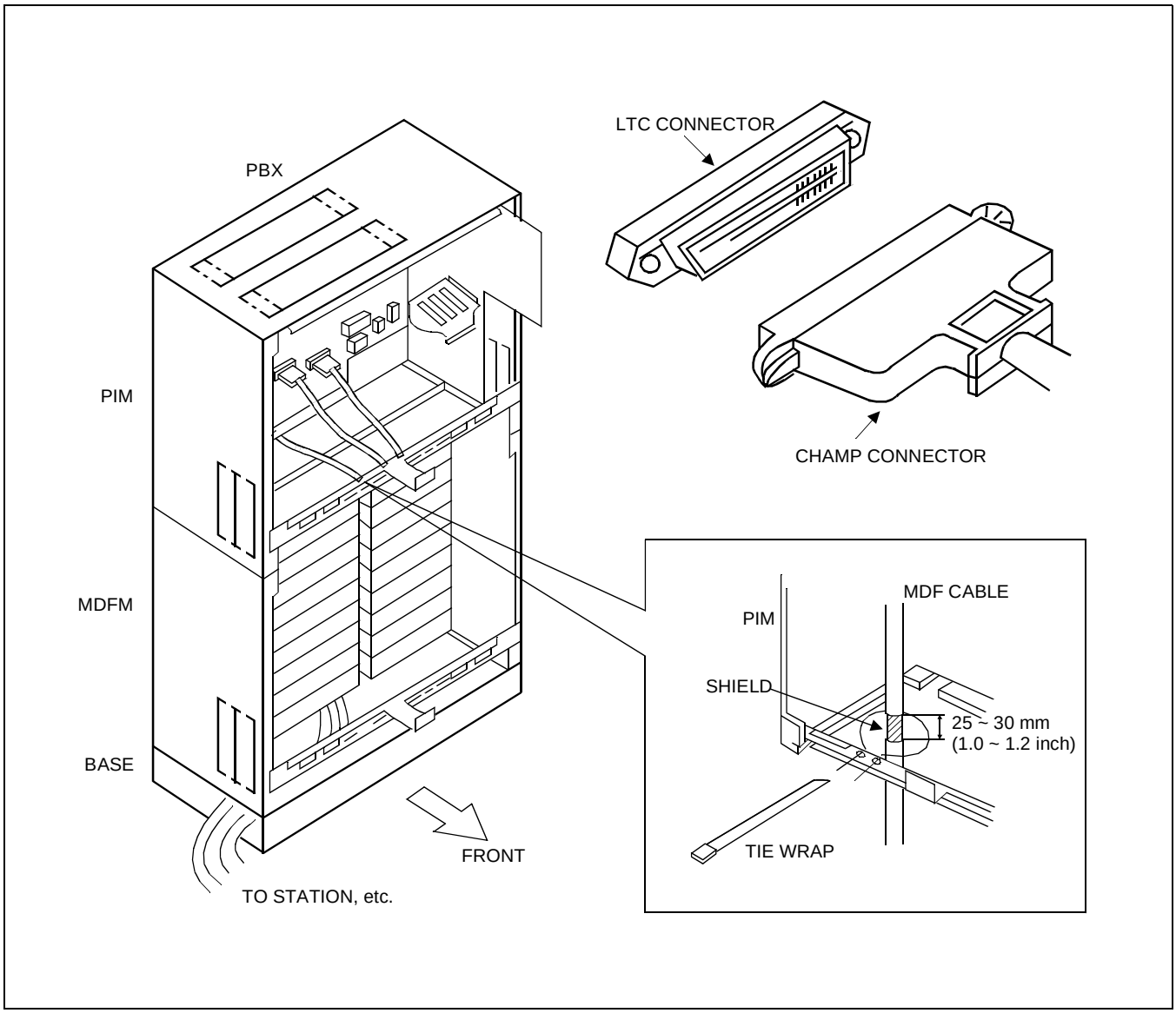

Figure 006-5 Cable Running to the MDFM

(3) Connect the MDF cables to the MDF connectors in the MDFM, as shown in Figure 006-6.

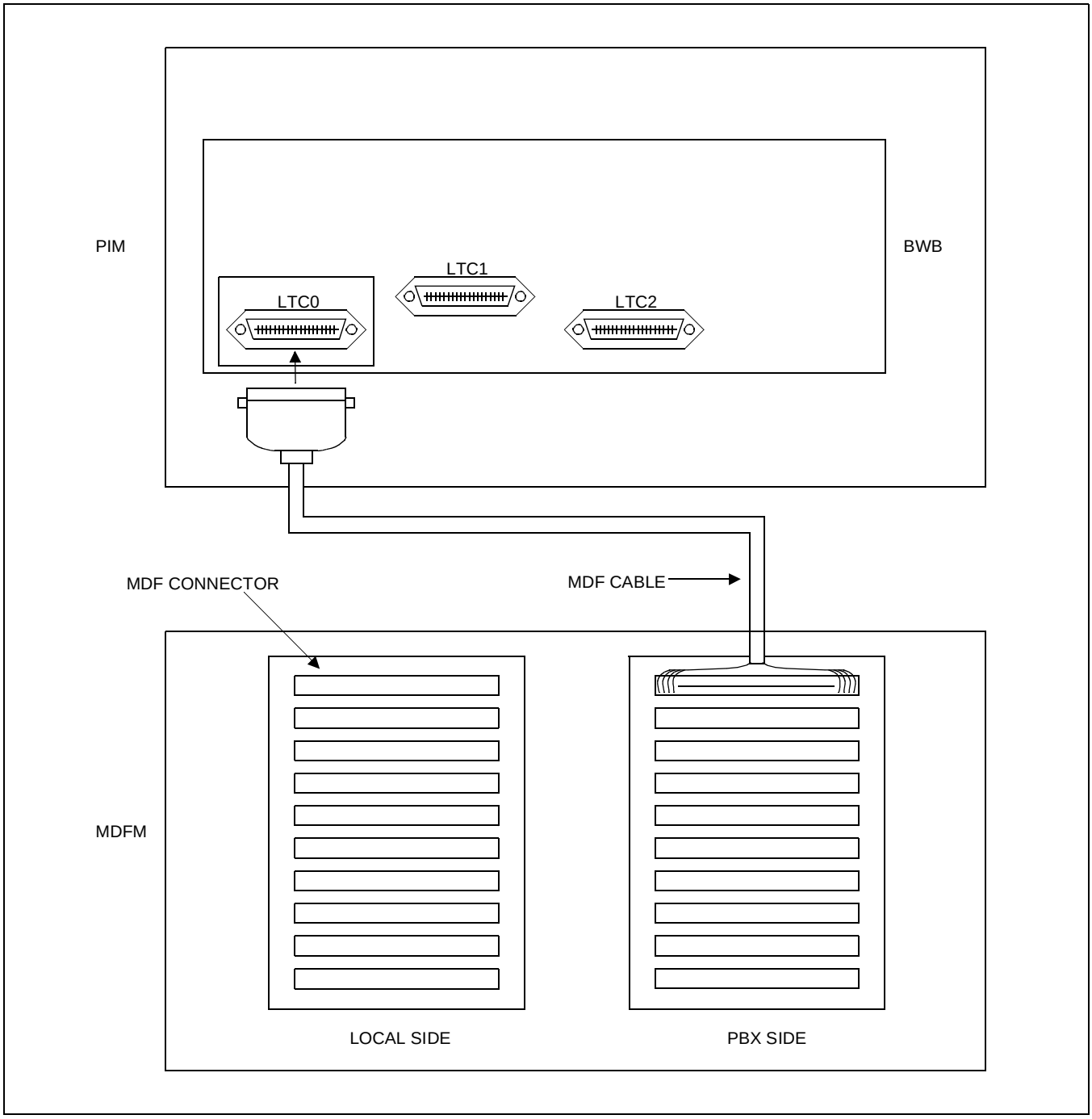

Figure 006-6 Example of MDF Cable Connection to the MDFM

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Termination of Cables on the MDF

1. Cable Connection to the MDF

(1) Connect the cables to the MDF referring to Figure 007-1 and Table 007-1.

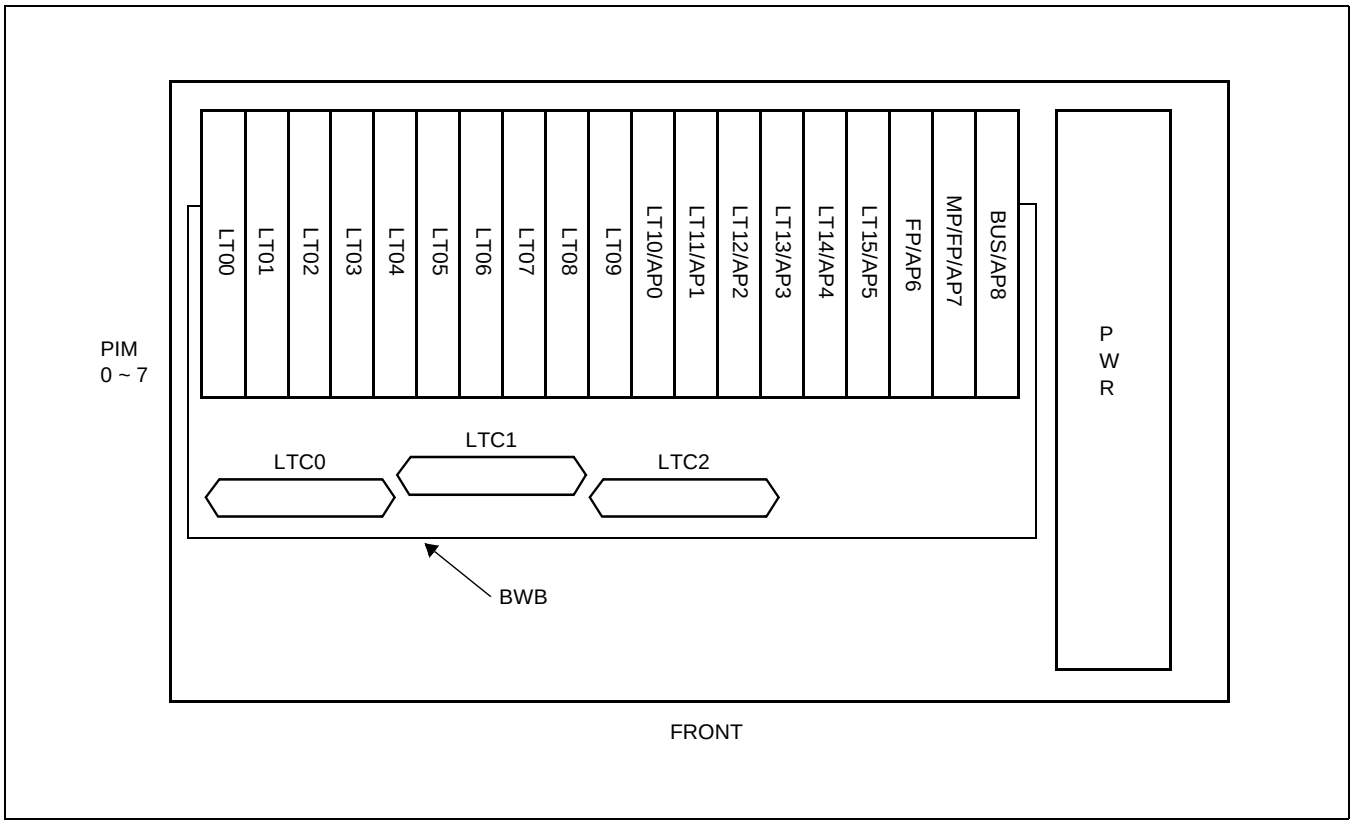


Figure 007-1 Location of the Card Slots and the LTC Connectors

Table 007-1 LTC Connector Accommodation

LTC CONNECTOR	CARD SLOT NUMBER	REMARKS
LTC0	LT00 ~ LT05	
LTC1	LT06 ~ LT09, LT10/AP0, LT11/AP1	
LTC2	LT12/AP2 ~ LT15/AP5, AP6	

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

(a) LEN 0000 ~ 0255

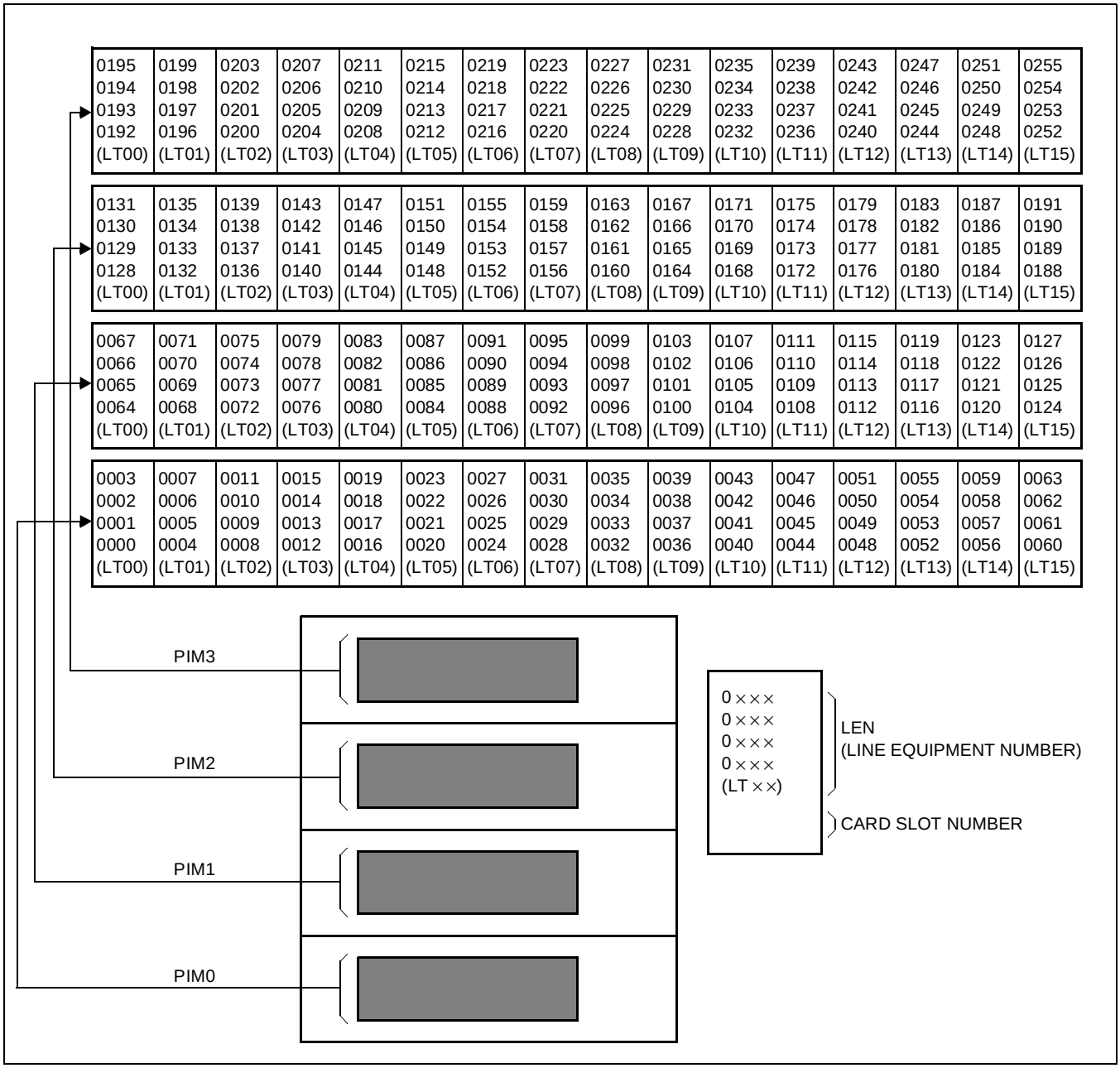


Figure 007-2 Location of each LEN (1 of 2)

(b) LEN0256 ~ 0511

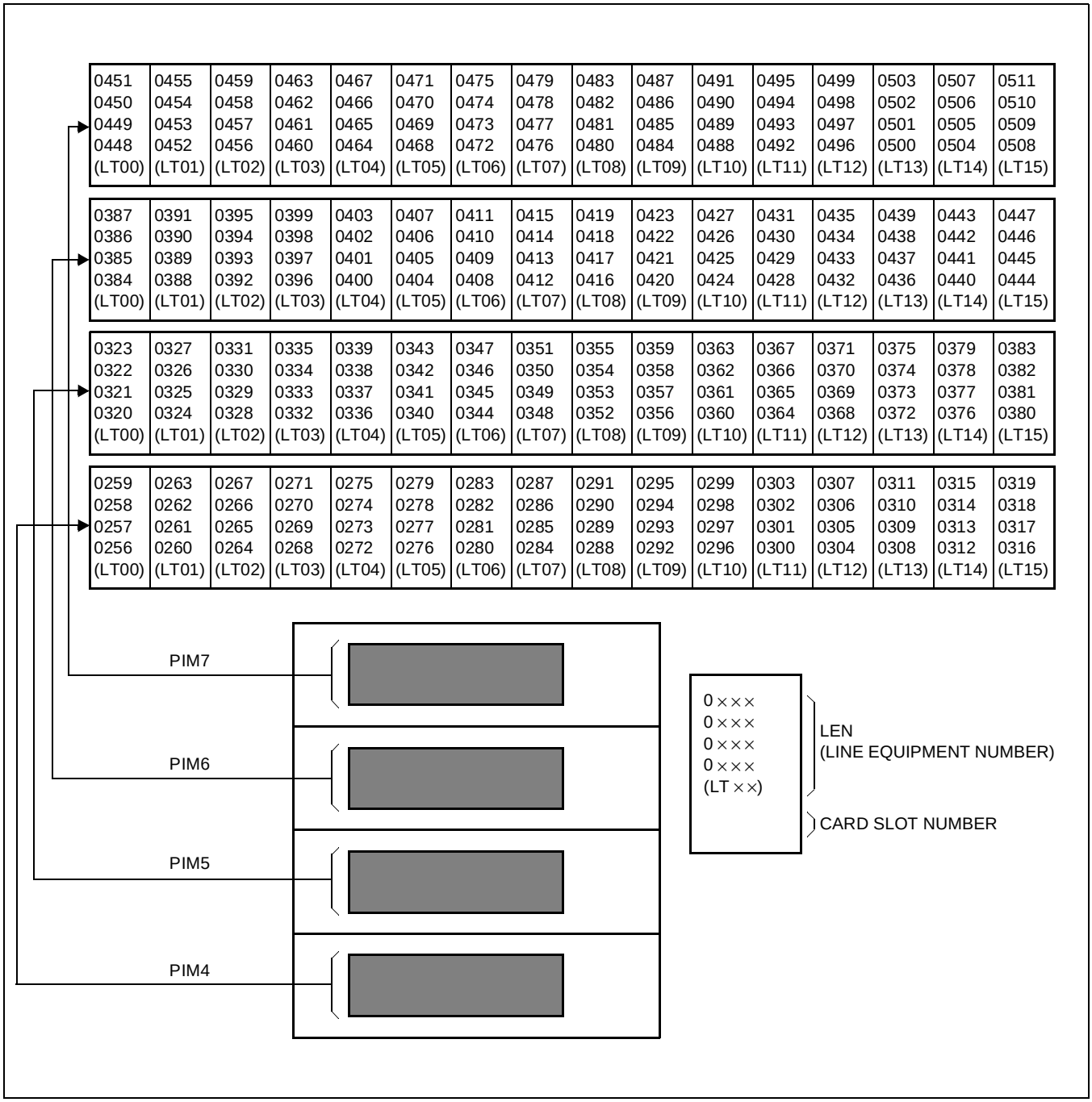


Figure 007-3 Location of each LEN (2 of 2)

(3) Figure 007-4 shows the LTC Connector Pin Arrangement.

(a) PIM0 (LTC0 ~ LTC2)

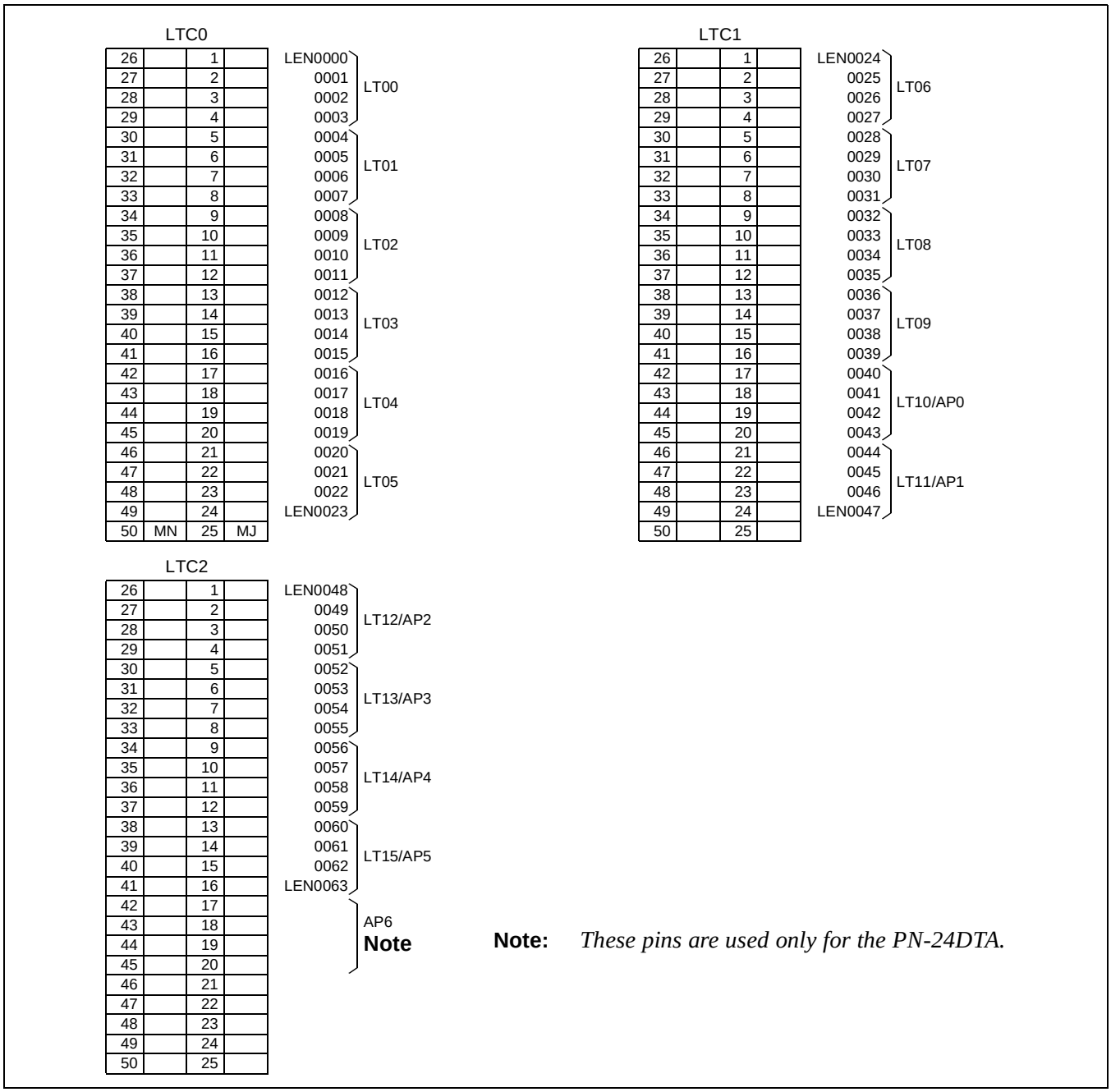
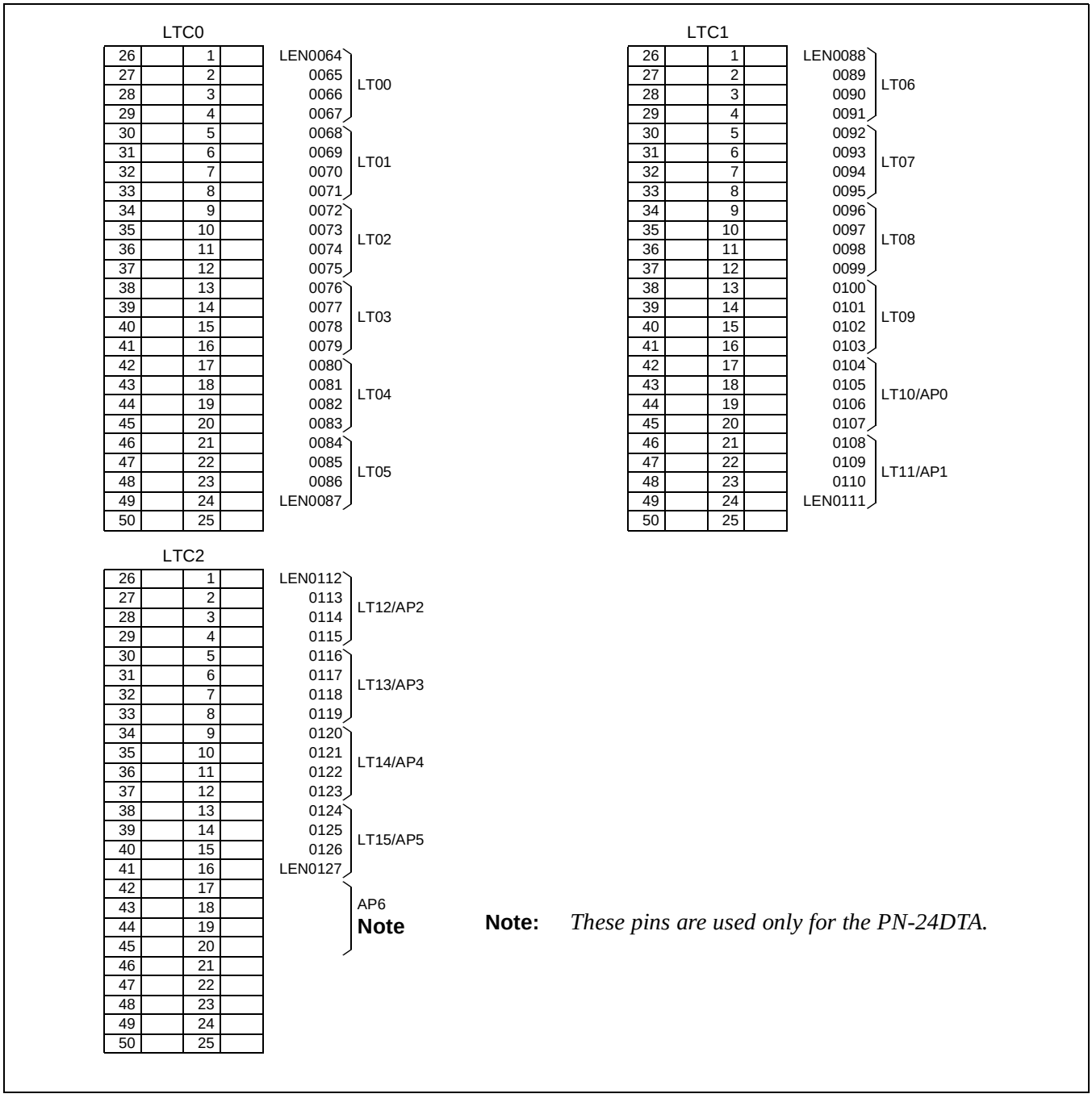


Figure 007-4 LTC Connector Pin Arrangement (1 of 8)

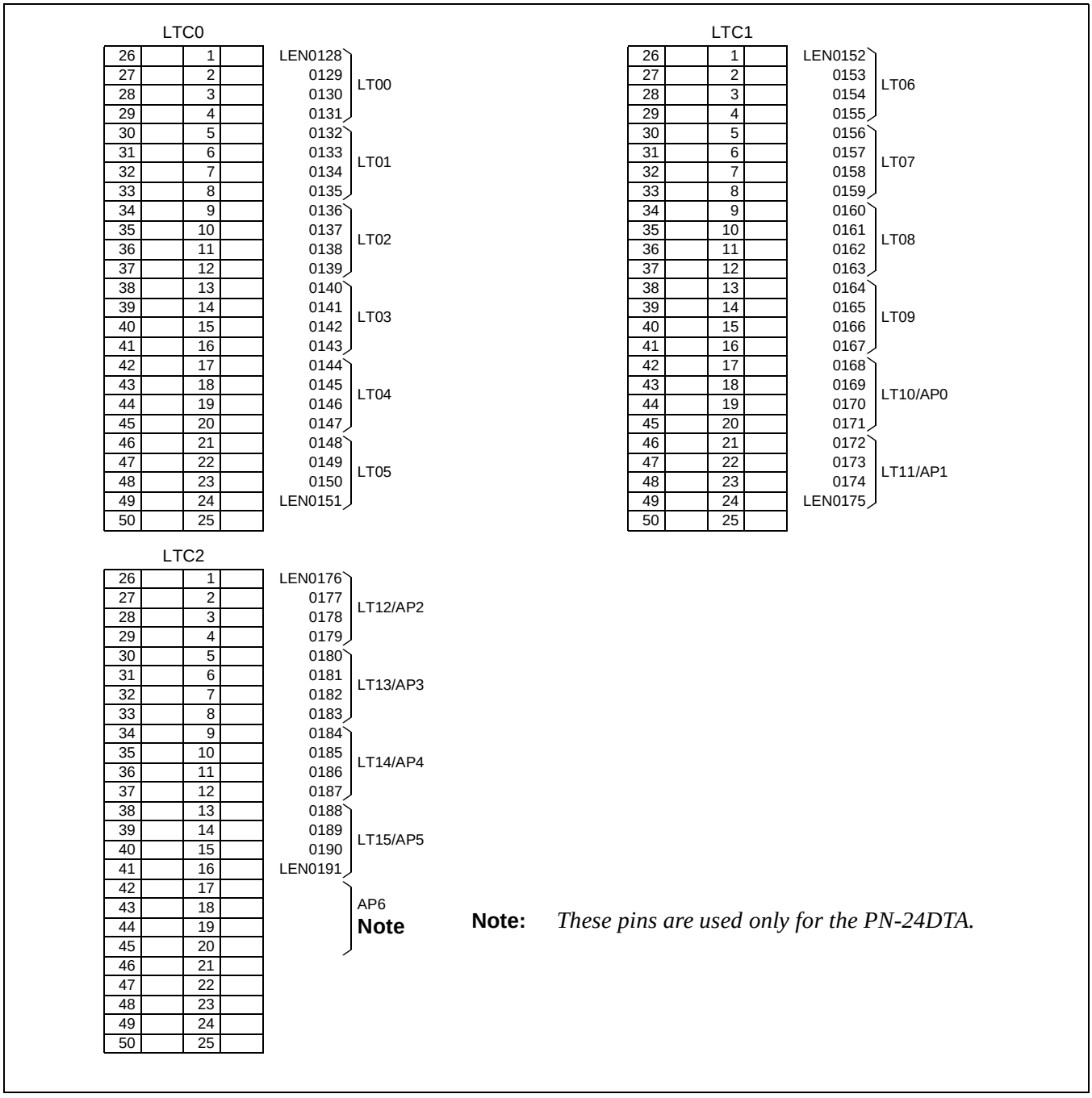
(b) PIM1 (LTC0 ~ LTC2)



Note: *These pins are used only for the PN-24DTA.*

Figure 007-5 LTC Connector Pin Arrangement (2 of 8)

(c) PIM2 (LTC0 ~ LTC2)



Note: *These pins are used only for the PN-24DTA.*

Figure 007-6 LTC Connector Pin Arrangement (3 of 8)

(d) PIM3 (LTC0 ~ LTC2)

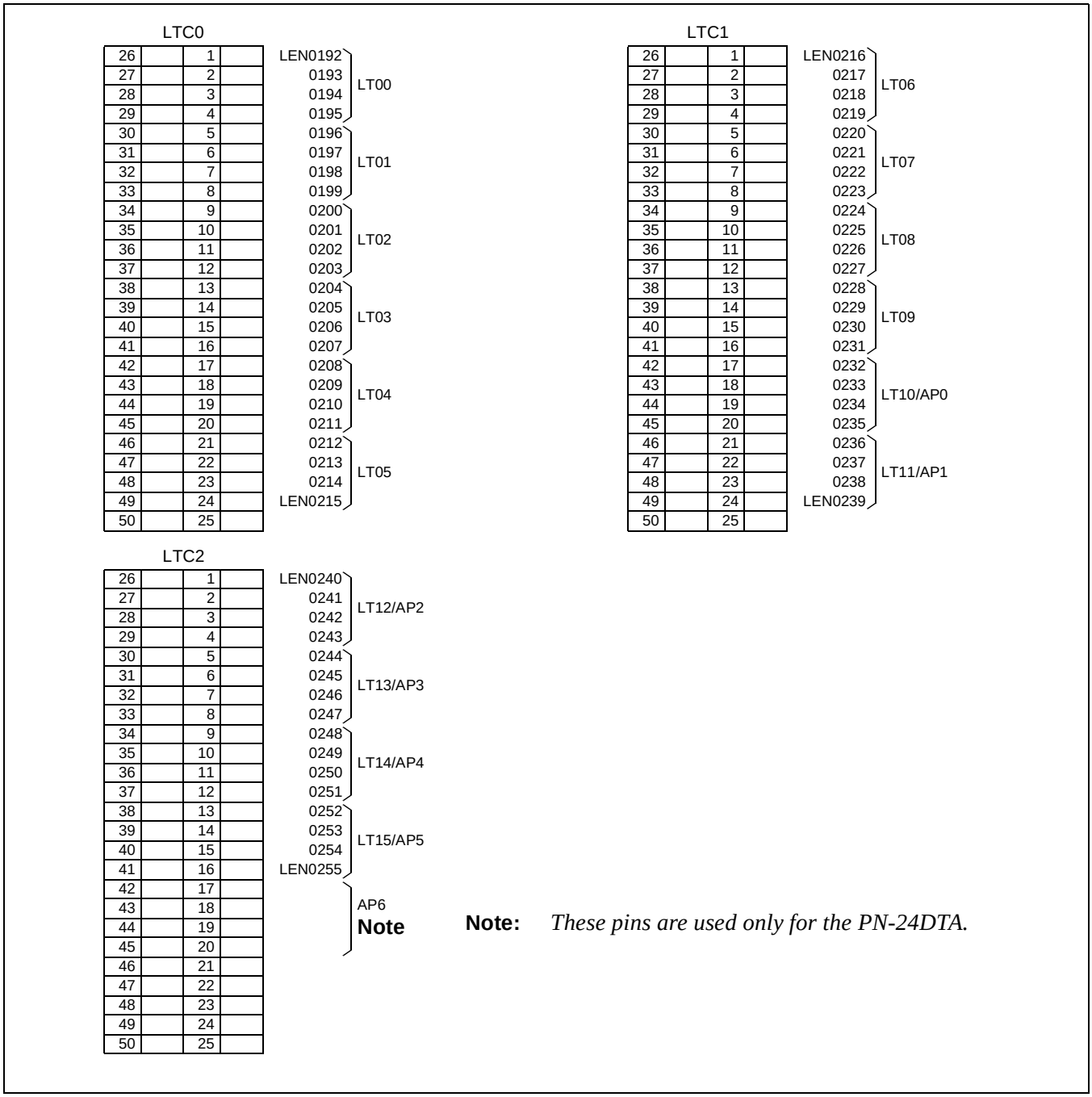


Figure 007-7 LTC Connector Pin Arrangment (4 of 8)

(e) PIM4 (LTC0 ~ LTC2)

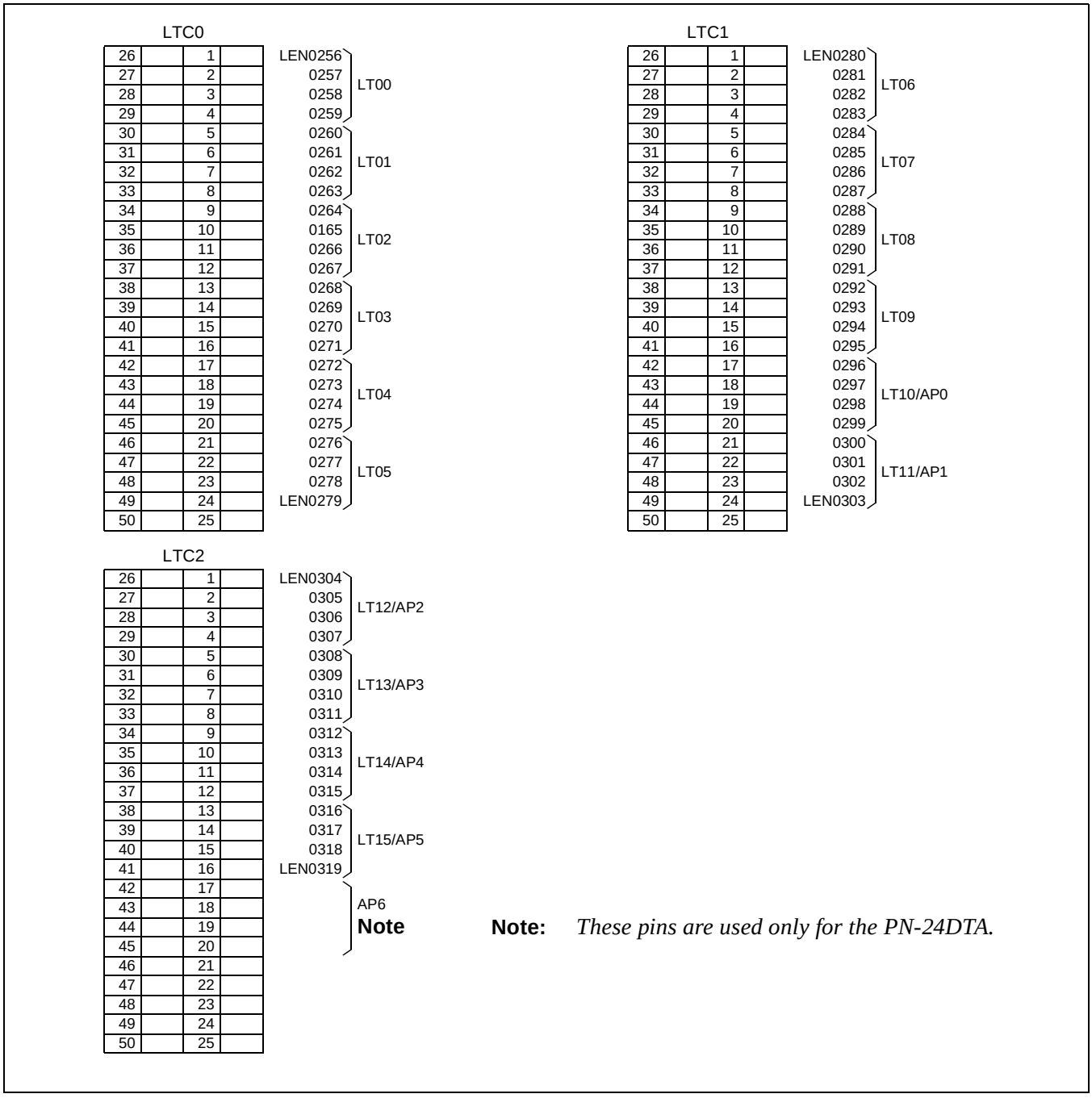


Figure 007-8 LTC Connector Pin Arrangement (5 of 8)

(f) PIM5 (LTC0 ~ LTC2)

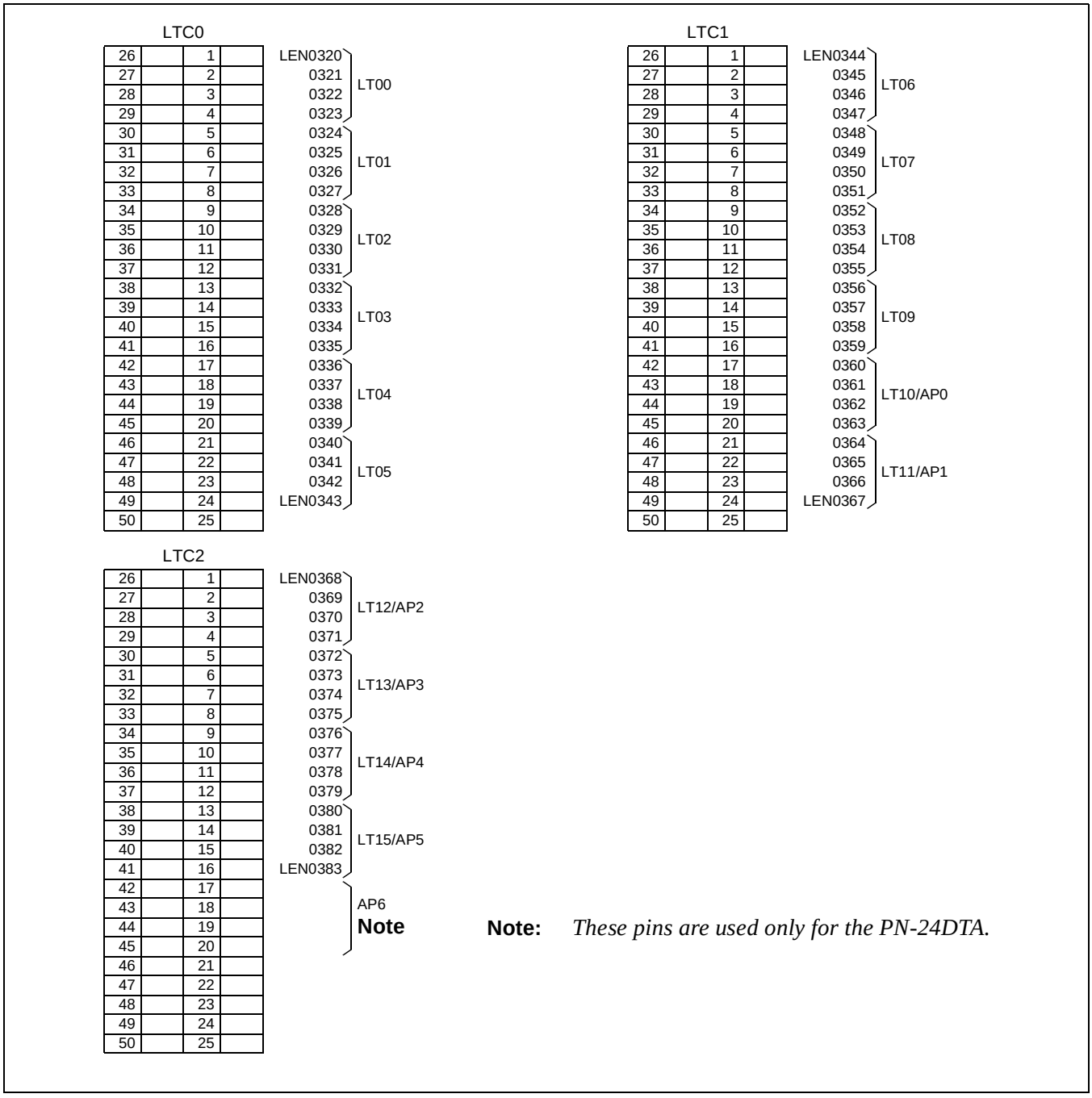


Figure 007-9 LTC Connector Pin Arrangement (6 of 8)

(g) PIM6 (LTC0 ~ LTC2)

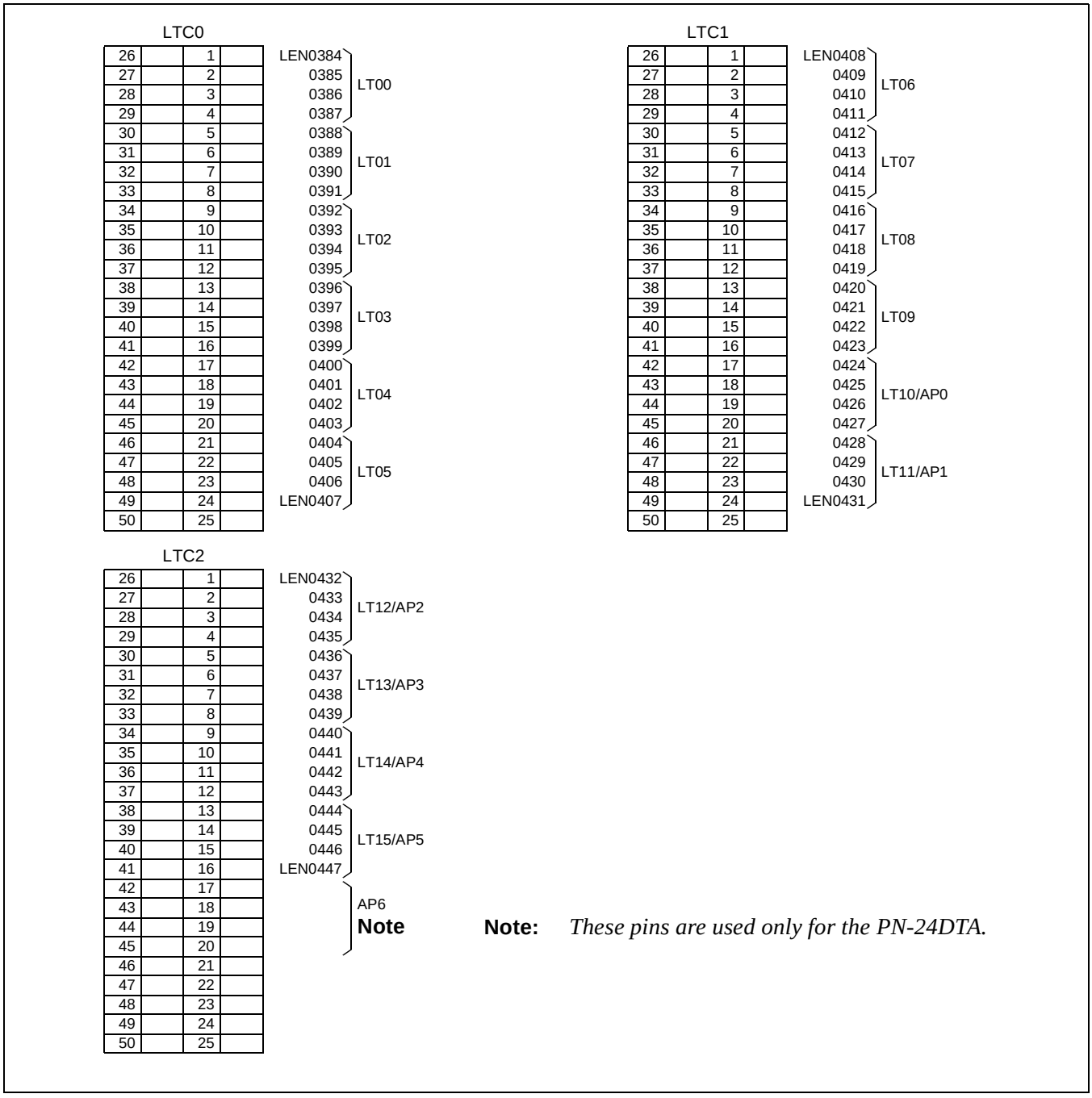


Figure 007-10 LTC Connector Pin Arrangement (7 of 8)

(h) PIM7 (LTC0 ~ LTC2)

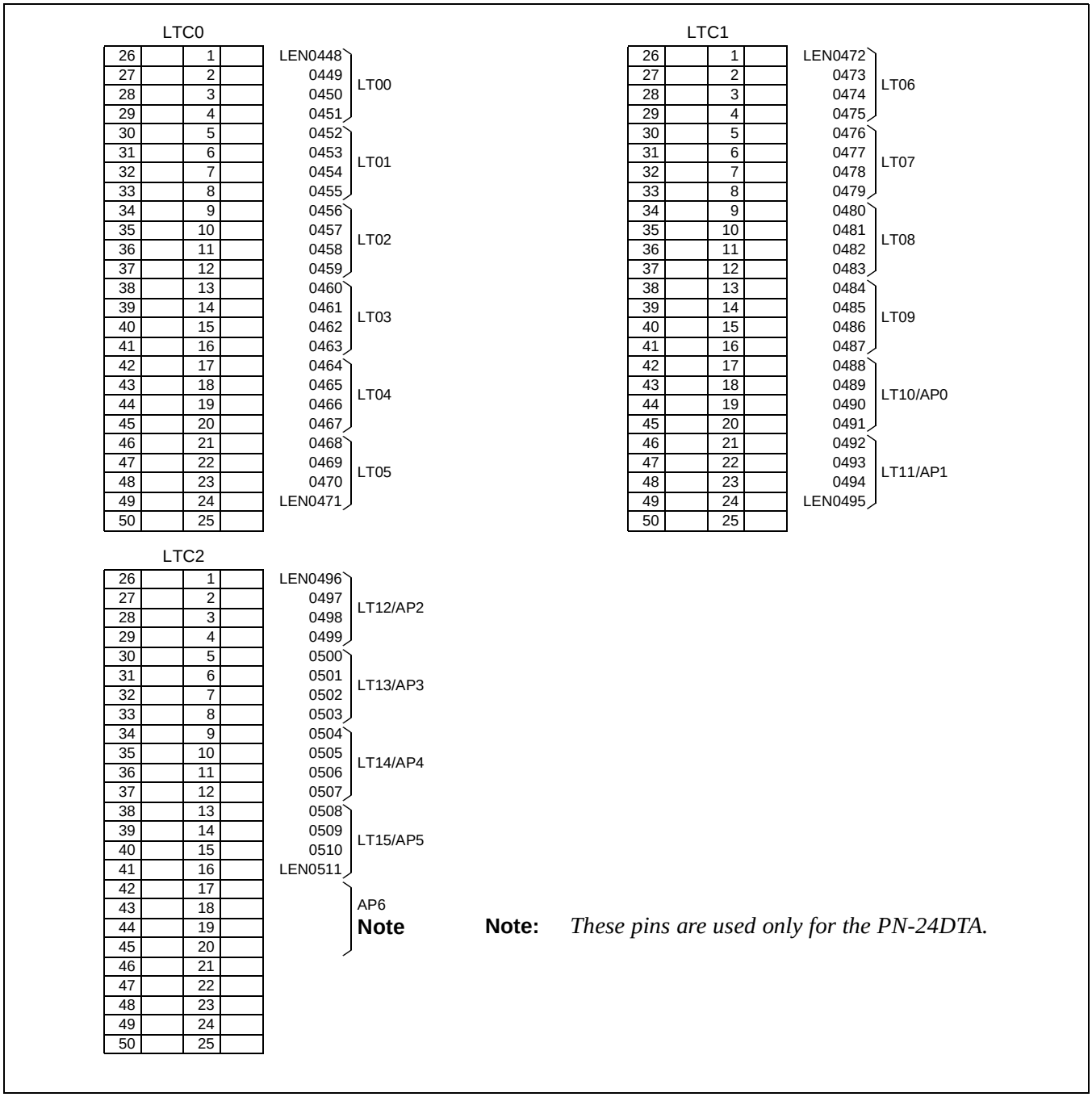


Figure 007-11 LTC Connector Pin Arrangement (8 of 8)

2. MDF Cross Connections

Cross connections on the MDF for LTC0 through LTC2 are shown in Table 007-2 through Table 007-5.

Table 007-2 LTC0-LTC2 MDF Cross Connection Information (1 of 4)

PIN	RUNNING CABLE	STATION CABLE	SLOTS	TYPE OF INTERFACE						
				CO (4COT)	CO (2COT)	2-WIRE E&M TIE LINE (2ODT)	4-WIRE E&M TIE LINE (2ODT)	DID (AUC)	SLT (4LC)	SLT (AUC)
26	WH-BL	GN	1	T0	T0	T0	TxT0	T0	T0	T0
1	BL-WH	RD		R0	R0	R0	TxR0	R0	R0	R0
27	WH-OR	BK		T1	T1	T1	RcvT0	T1	T1	T1
2	OR-WH	YL		R1	R1	R1	RcvR0	R1	R1	R1
28	WH-GN	GN		T2		T2	TxT1		T2	
3	GN-WH	RD		R2		R2	TxR1		R2	
29	WH-BR	BK		T3		T3	RcvT1		T3	
4	BR-WH	YL		R3		R3	RcvR1		R3	
30	WH-SL	GN	2	T0	T0	T0	TxT0	T0	T0	T0
5	SL-WH	RD		R0	R0	R0	TxR0	R0	R0	R0
31	RD-BL	BK		T1	T1	T1	RcvT0	T1	T1	T1
6	BL-RD	YL		R1	R1	R1	RcvR0	R1	R1	R1
32	RD-OR	GN		T2		T2	TxT1		T2	
7	OR-RD	RD		R2		R2	TxR1		R2	
33	RD-GN	BK		T3		T3	RcvT1		T3	
8	GN-RD	YL		R3		R3	RcvR1		R3	
34	RD-BR	GN	3	T0	T0	T0	TxT0	T0	T0	T0
9	BR-RD	RD		R0	R0	R0	TxR0	R0	R0	R0
35	RD-SL	BK		T1	T1	T1	RcvT0	T1	T1	T1
10	SL-RD	YL		R1	R1	R1	RcvR0	R1	R1	R1
36	BK-BL	GN		T2		T2	TxT1		T2	
11	BL-BK	RD		R2		R2	TxR1		R2	
37	BK-OR	BK		T3		T3	RcvT1		T3	
12	OR-BK	YL		R3		R3	RcvR1		R3	

Table 007-3 LTC0-LTC2 MDF Cross Connection Information (2 of 4)

PIN	RUNNING CABLE	STATION CABLE	SLOTS	TYPE OF INTERFACE						
				COT (4COT)	COT (2COT)	2-WIRE E&M TIE LINE (2ODT)	4-WIRE E&M TIE LINE (2ODT)	DID (AUC)	SLT (4LC)	SLT (AUC)
38	BK-GN	GN	4	T0	T0	T0	TxT0	T0	T0	T0
13	GN-BK	RD		R0	R0	R0	TxR0	R0	R0	R0
39	BK-BR	BK		T1	T1	T1	RcvT0	T1	T1	T1
14	BR-BK	YL		R1	R1	R1	RcvR0	R1	R1	R1
40	BK-SL	GN		T2		T2	TxT1		T2	
15	SL-BK	RD		R2		R2	TxR1		R2	
41	YL-BL	BK		T3		T3	RcvT1		T3	
16	BL-YL	YL		R3		R3	RcvR1		R3	
42	YL-OR	GN	5	T0	T0	T0	TxT0	T0	T0	T0
17	OR-YL	RD		R0	R0	R0	TxR0	R0	R0	R0
43	YL-GN	BK		T1	T1	T1	RcvT0	T1	T1	T1
18	GN-YL	YL		R1	R1	R1	RcvR0	R1	R1	R1
44	YL-BR	GN		T2		T2	TxT1		T2	
19	BR-YL	RD		R2		R2	TxR1		R2	
45	YL-SL	BK		T3		T3	RcvT1		T3	
20	SL-YL	YL		R3		R3	RcvR1		R3	
46	VI-BL	GN	6	T0	T0	T0	TxT0	T0	T0	T0
21	BL-VI	RD		R0	R0	R0	TxR0	R0	R0	R0
47	VI-OR	BK		T1	T1	T1	RcvT0	T1	T1	T1
22	OR-VI	YL		R1	R1	R1	RcvR0	R1	R1	R1
48	VI-GN	GN		T2		T2	TxT1		T2	
23	GN-VI	RD		R2		R2	TxR1		R2	
49	VI-BR	BK		T3		T3	RcvT1		T3	
24	BR-VI	YL		R3		R3	RcvR1		R3	
50	VI-SL	MN *								
25	SL-VI	MJ *								

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

Table 007-4 LTC0-LTC2 MDF Cross Connection Information (3 of 4)

PIN	RUNNING CABLE	STATION CABLE	SLOTS	TYPE OF INTERFACE					
				D^{term}/ SN716 DESKCON (4DLC) Note 1	D^{term}/ SN716 DESKCON (2DLC) Note 1	D^{term} (4DLC) Note 2	SN610 ATTCON (2DLC) Note 2	EXT. KEY/ EXT. RELAY (DK00)	EXT. PAGE/MOH/ BGM (4COT)
26 1	WH-BL BL-WH	GN RD	1	T0 R0	T0 R0	RA0 TA0	RA0 TA0	K1 K0	T R
27 2	WH-OR OR-WH	BK YL		T1 R1	T1 R1	RB0 TB0	RB0 TB0	K3 K2	T R
28 3	WH-GN GN-WH	GN RD		T2 R2		RA1 TA1	RA1 TA1	K5 K4	T R
29 4	WH-BR BR-WH	BK YL		T3 R3		RB1 TB1	RB1 TB1	K7 K6	T R
30 5	WH-SL SL-WH	GN RD	2	T0 R0	T0 R0	RA0 TA0	RA0 TA0	K1 K0	T R
31 6	RD-BL BL-RD	BK YL		T1 R1	T1 R1	RB0 TB0	RB0 TB0	K3 K2	T R
32 7	RD-OR OR-RD	GN RD		T2 R2		RA1 TA1	RA1 TA1	K5 K4	T R
33 8	RD-GN GN-RD	BK YL		T3 R3		RB1 TB1	RB1 TB1	K7 K6	T R
34 9	RD-BR BR-RD	GN RD	3	T0 R0	T0 R0	RA0 TA0	RA0 TA0	K1 K0	T R
35 10	RD-SL SL-RD	BK YL		T1 R1	T1 R1	RB0 TB0	RB0 TB0	K3 K2	T R
36 11	BK-BL BL-BK	GN RD		T2 R2		RA1 TA1	RA1 TA1	K5 K4	T R
37 12	BK-OR OR-BK	BK YL		T3 R3		RB1 TB1	RB1 TB1	K7 K6	T R

Note 1: *2 wire type for Multiline Terminal/DSS Consol/SN716 DESKCON.*

Note 2: *4 wire type for Multiline Terminal/SN610 ATTCON.*

Table 007-5 LTC0-LTC2 MDF Cross Connection Information (4 of 4)

PIN	RUNNING CABLE	STATION CABLE	SLOTS	TYPE OF INTERFACE					
				D^{term}/ SN716 DESKCON (4DLC) Note 1	D^{term}/ SN716 DESKCON (2DLC) Note 1	D^{term} (4DLC) Note 2	SN610 ATTCON (2DLC) Note 2	EXT. KEY/ EXT. RELAY (DK00)	EXT. PAGE/MOH/ BGM (4COT)
38 13	BK-GN GN-BK	GN RD	4	T0 R0	T0 R0	RA0 TA0	RA0 TA0	K1 K0	T R
39 14	BK-BR BR-BK	BK YL		T1 R1	T1 R1	RB0 TB0	RB0 TB0	K3 K2	T R
40 15	BK-SL SL-BK	GN RD		T2 R2		RA1 TA1	RA1 TA1	K5 K4	T R
41 16	YL-BL BL-YL	BK YL		T3 R3		RB1 TB1	RB1 TB1	K7 K6	T R
42 17	YL-OR OR-YL	GN RD	5	T0 R0	T0 R0	RA0 TA0	RA0 TA0	K1 K0	T R
43 18	YL-GN GN-YL	BK YL		T1 R1	T1 R1	RB0 TB0	RB0 TB0	K3 K2	T R
44 19	YL-BR BR-YL	GN RD		T2 R2		RA1 TA1	RA1 TA1	K5 K4	T R
45 20	YL-SL SL-YL	BK YL		T3 R3		RB1 TB1	RB1 TB1	K7 K6	T R
46 21	VI-BL BL-VI	GN RD	6	T0 R0	T0 R0	RA0 TA0	RA0 TA0	K1 K0	T R
47 22	VI-OR OR-VI	BK YL		T1 R1	T1 R1	RB0 TB0	RB0 TB0	K3 K2	T R
48 23	VI-GN GN-VI	GN RD		T2 R2		RA1 TA1	RA1 TA1	K5 K4	T R
49 24	VI-BR BR-VI	BK YL		T3 R3		RB1 TB1	RB1 TB1	K7 K6	T R
50 25	VI-SL SL-VI	MN* MJ*							

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

Note 1: *2 wire type for Multiline Terminal/DSS Consol/SN716 DESKCON.*

Note 2: *4 wire type for Multiline Terminal/SN610 ATTCON.*

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(1) C.O. Trunk

(a) 4 Line C.O. Trunk (PN-4COT)

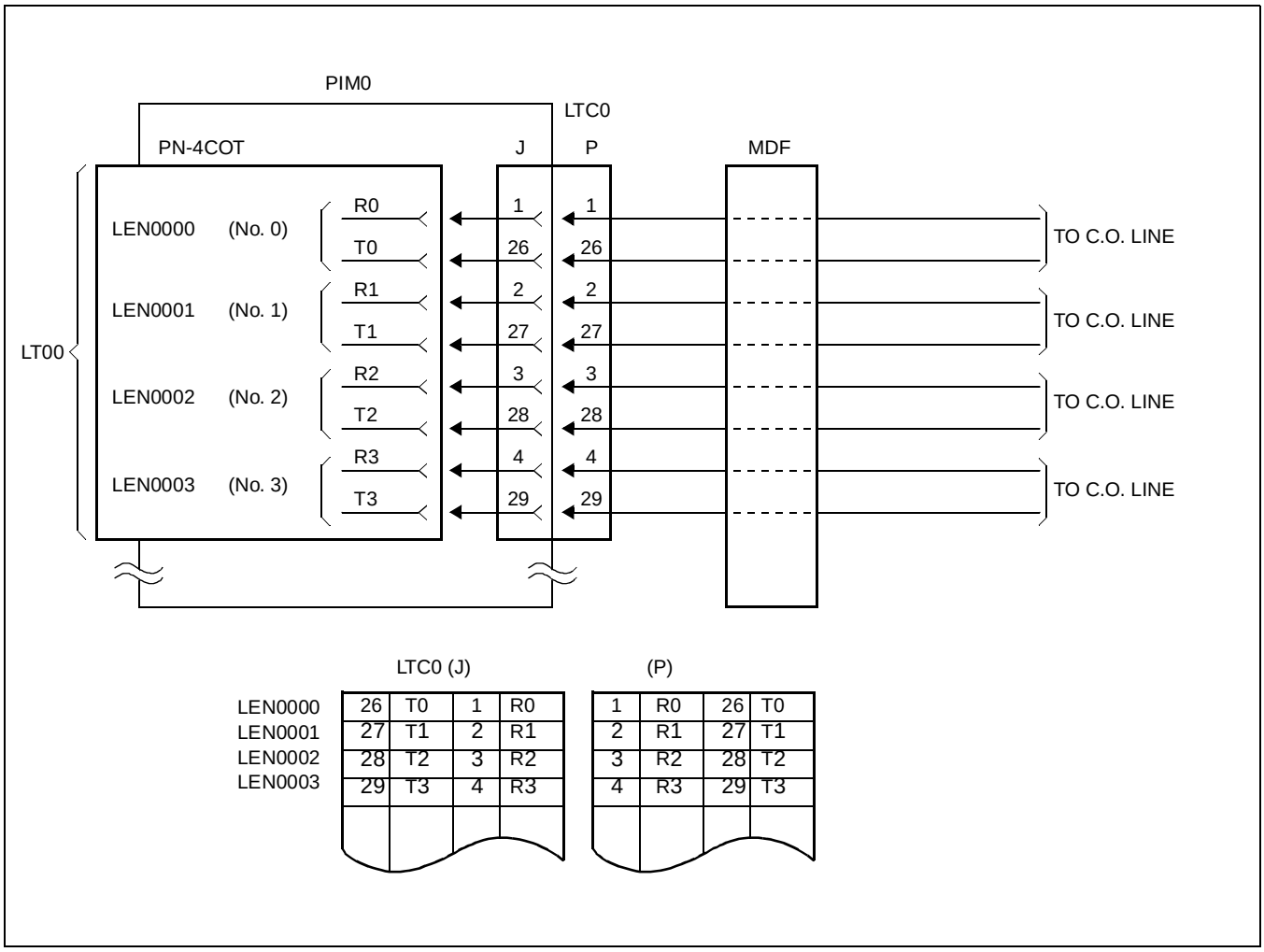
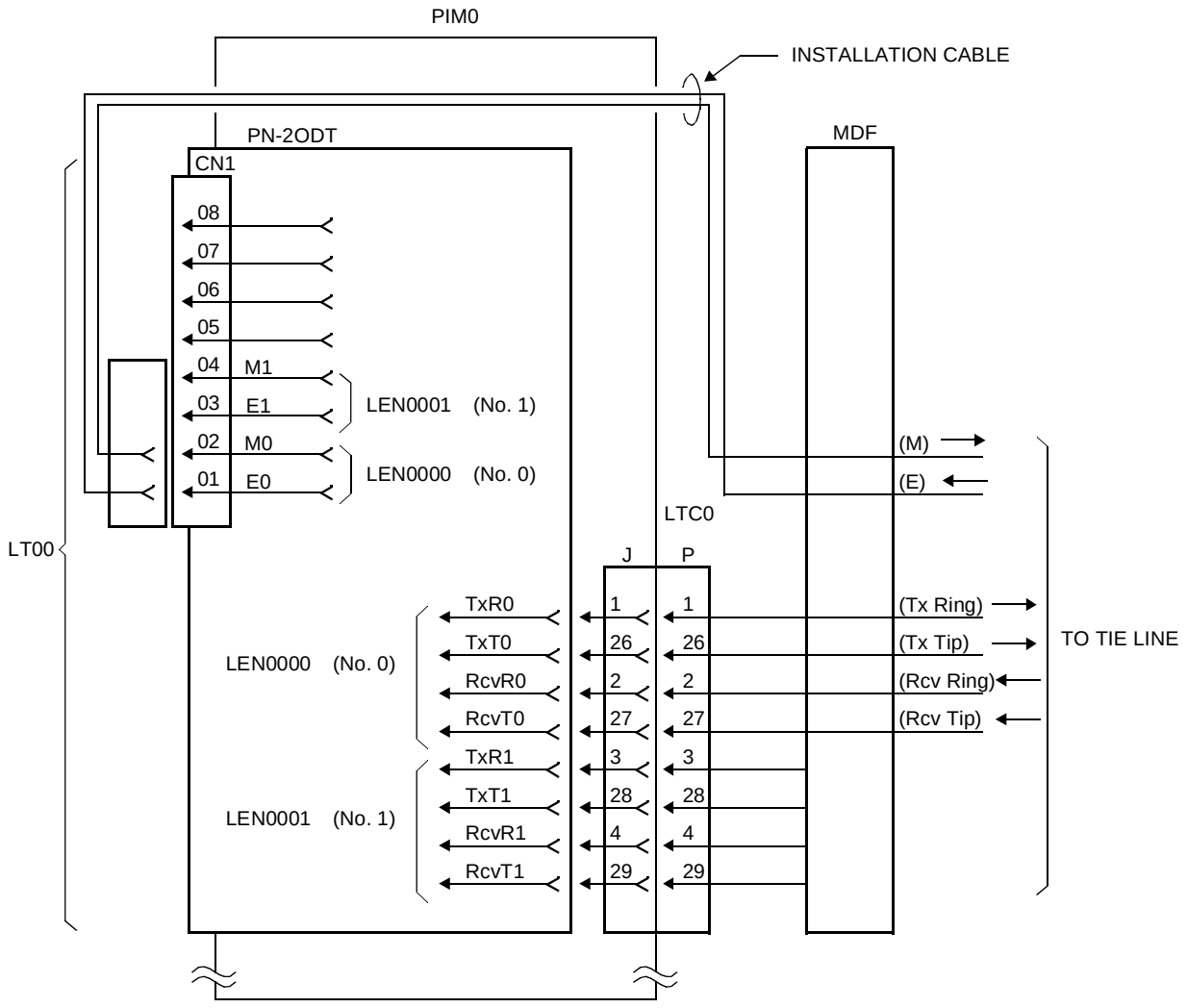


Figure 007-12 MDF Cross Connection for a 4 Line C.O. Trunk Card (PN-4COT)

(2) Tie Line Trunk

(a) 4W E&M (PN-2ODT)



Note 1: *Both No. 0 and No. 1 circuits must be set to same purpose (2-wire or 4-wire) in one PN-2ODT card.*

Note 2: *When connecting the E and M, make the installation cable by using the connector attached with the PN-2ODT card.*

Figure 007-13 MDF Cross Connection for a 4W E&M Trunk Card (PN-2ODT) (1 of 2)

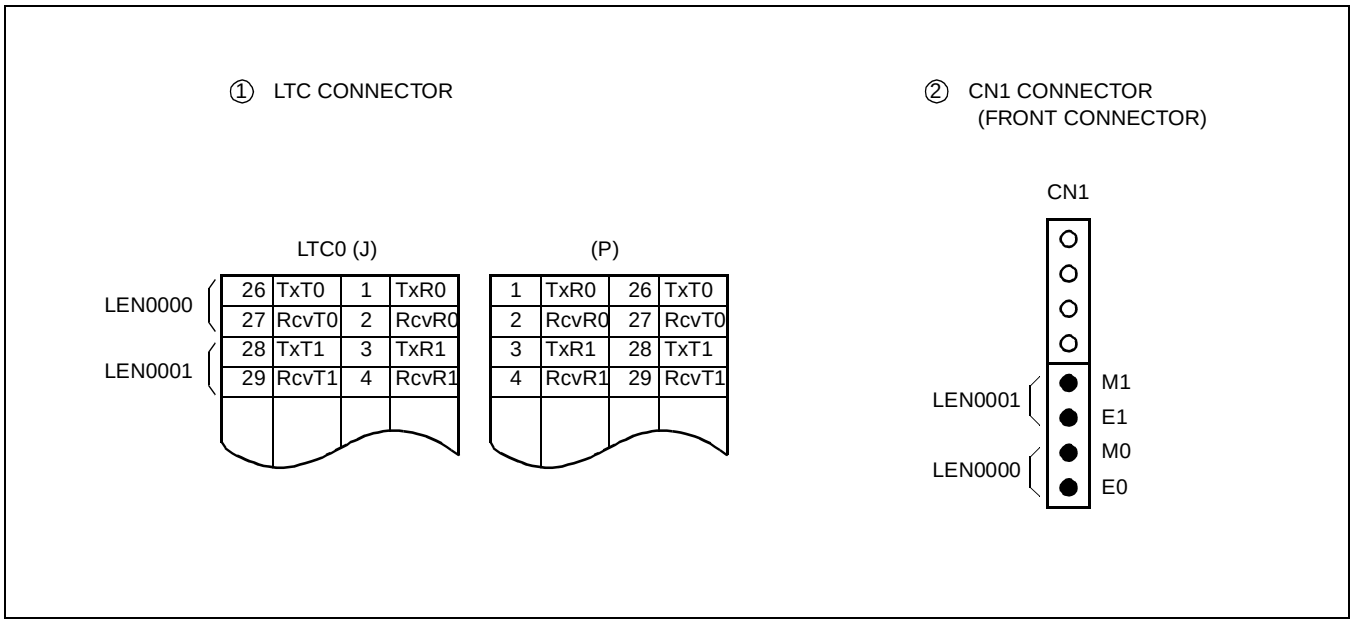
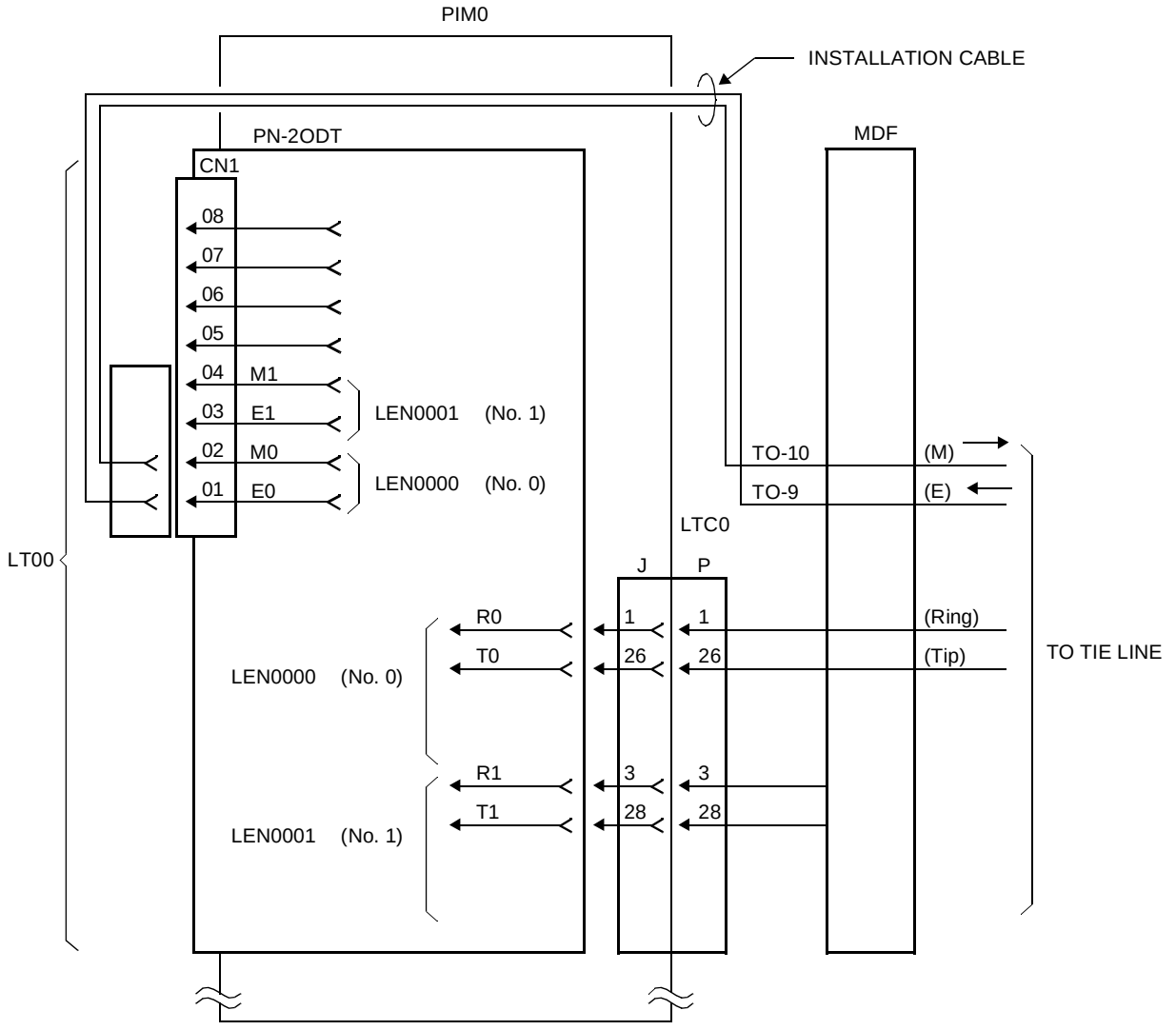


Figure 007-14 MDF Cross Connection for a 4W E&M Trunk Card (PN-2ODT) (2 of 2)

(b) 2W E&M (PN-2ODT)



Note 1: *Both No. 0 and No. 1 circuits must be set to same purpose (2-wire or 4-wire) in one PN-2ODT card.*

Note 2: *When connecting the E and M, make the installation cable by using the connector attached with the PN-2ODT card.*

Figure 007-15 MDF Cross Connection for a 2W E&M Trunk Card (PN-2ODT) (1 of 2)

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Termination of Cables on the MDF

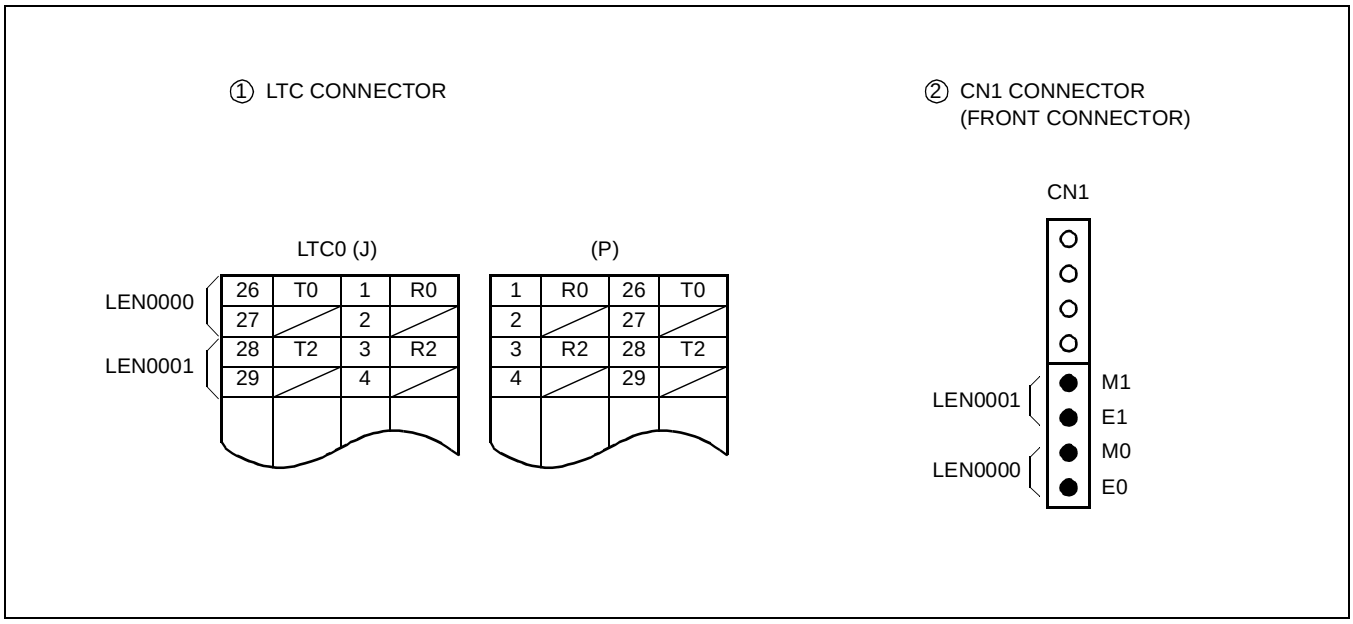
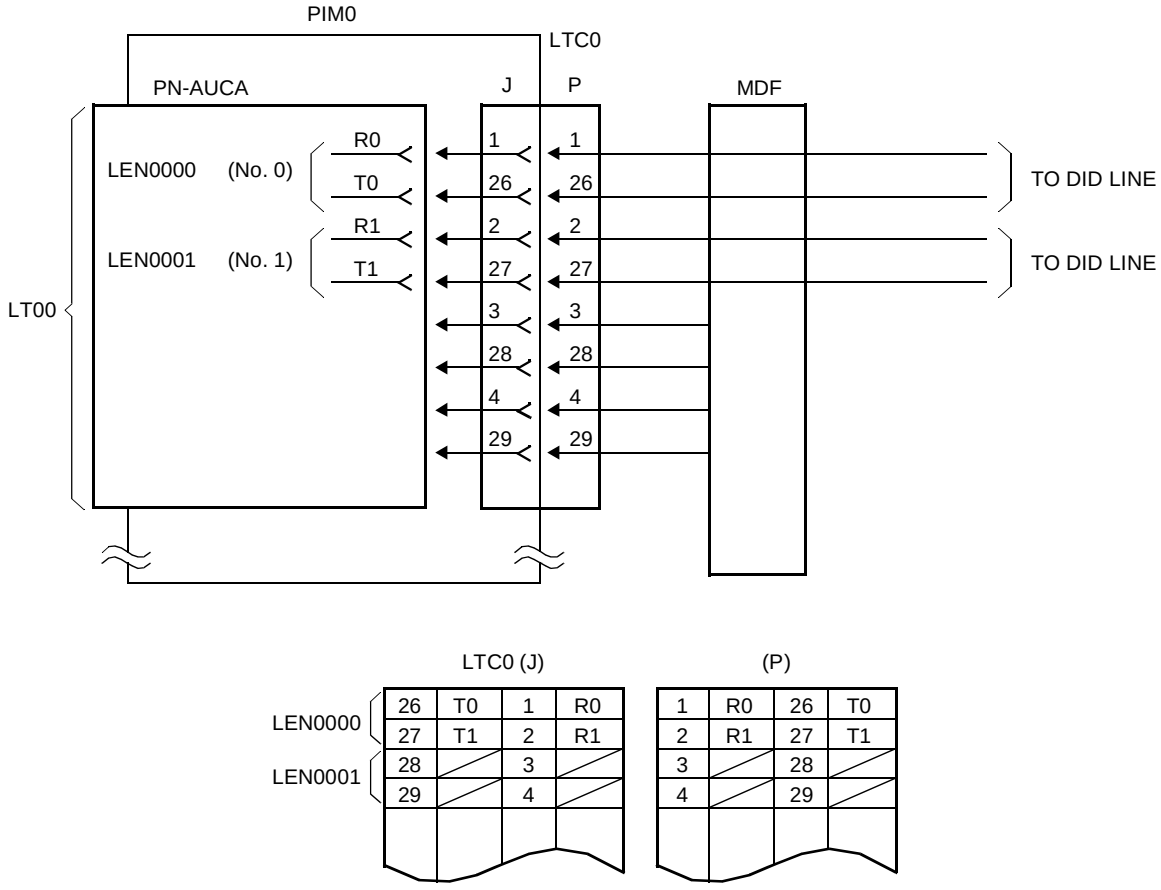


Figure 007-16 MDF Cross Connection for a 2W E&M Trunk Card (PN-2ODT) (2 of 2)

(3) DID Trunk

(a) 2 Line DID Trunk (PN-AUCA)



Note: *The PN-AUCA card can also be used as a long line circuit with the Power Failure Transfer (PFT) function.*

Figure 007-17 MDF Cross Connection for a 2 Line DID Trunk Card (PN-AUCA)

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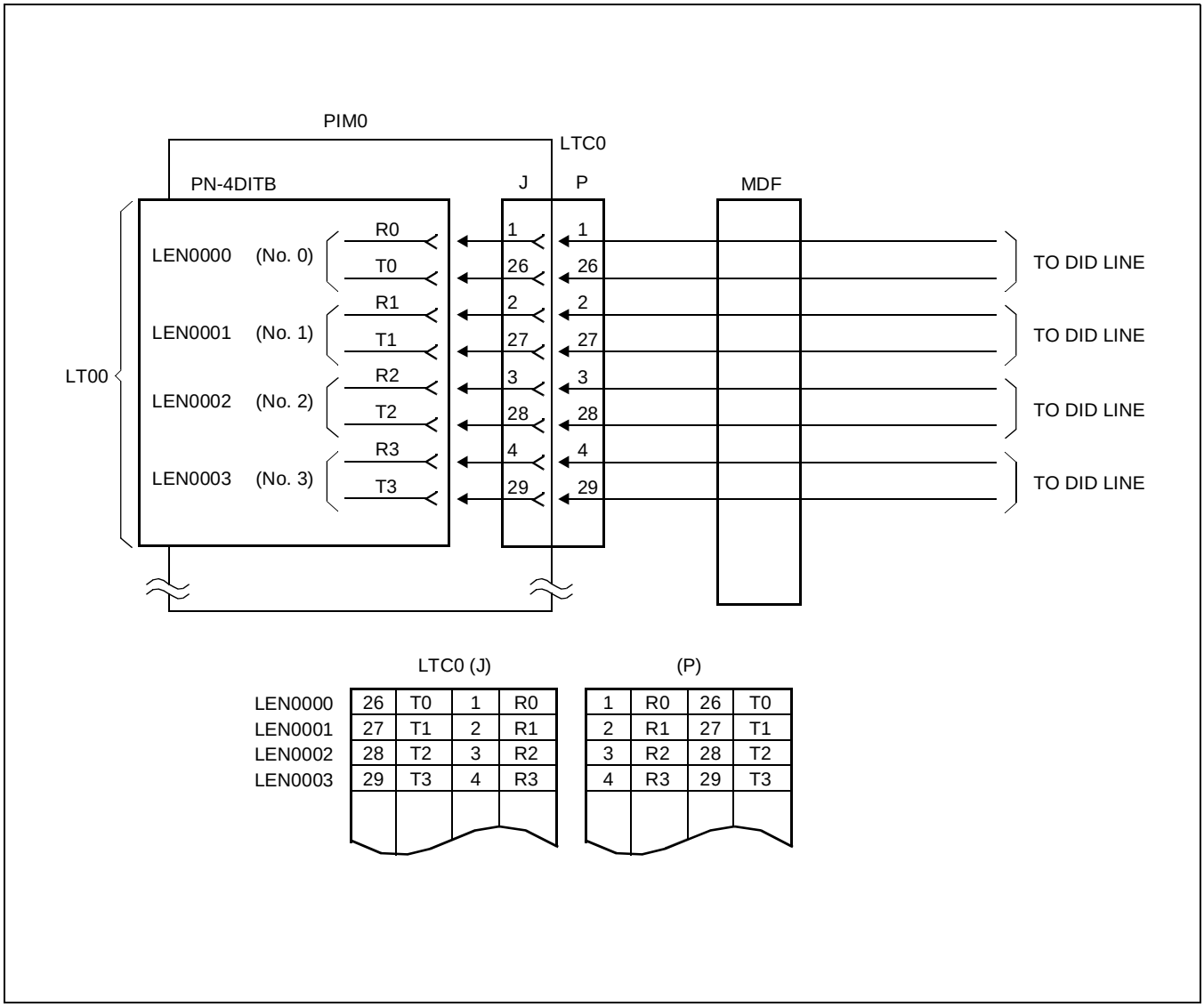
Termination of Cables on the MDF

(a) 4 Line DID Trunk (PN-4DITB)



LTC0 (J)

LEN0000	26	T0	1	R0
LEN0001	27	T1	2	R1
LEN0002	28	T2	3	R2
LEN0003	29	T3	4	R3

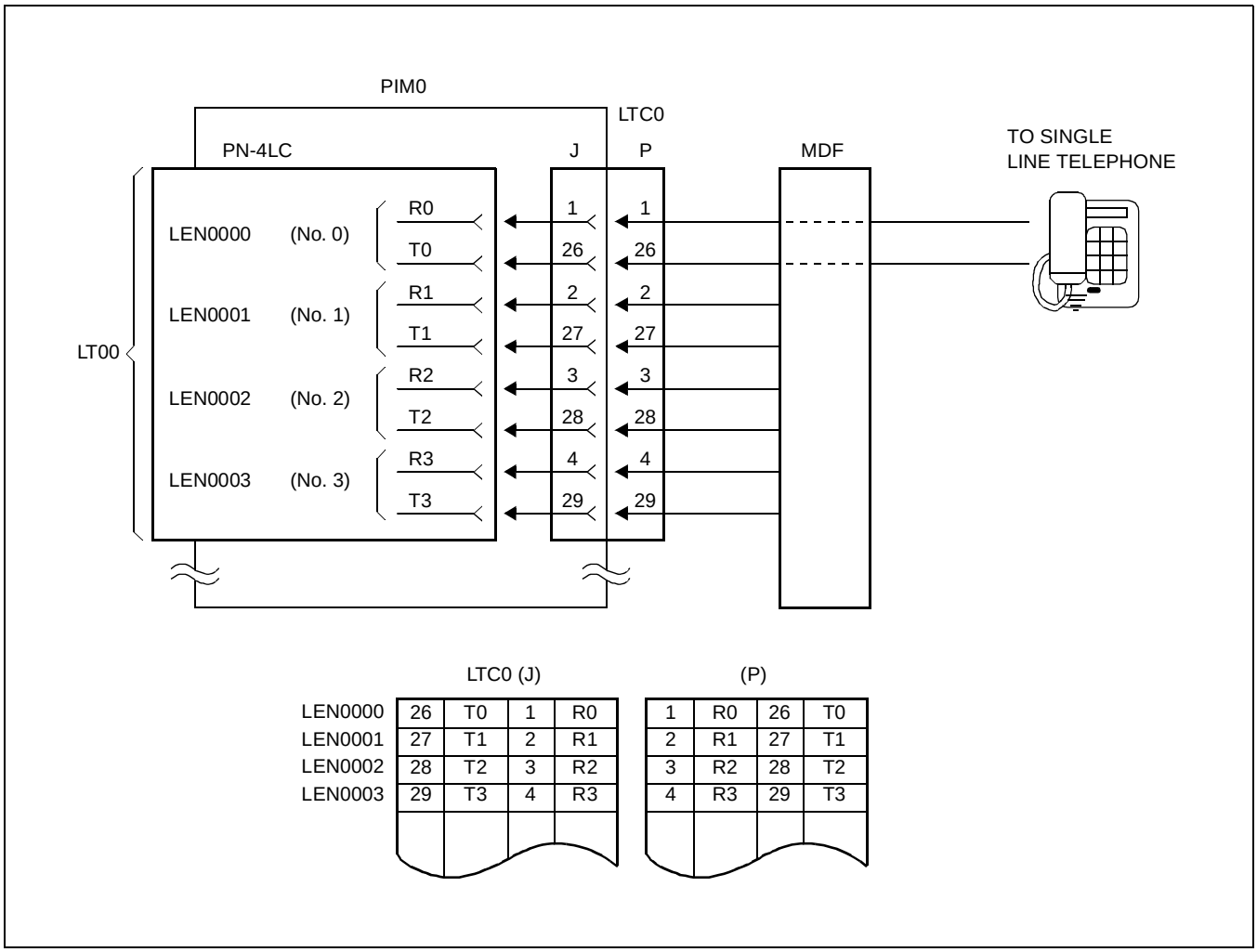
(P)

1	R0	26	T0
2	R1	27	T1
3	R2	28	T2
4	R3	29	T3

Figure 007-18 MDF Cross Connection for a 4 Line DID Trunk Card (PN-4DITB)

(4) Single Line Telephone

(a) Standard Line (PN-4LC)



LTC0 (J)

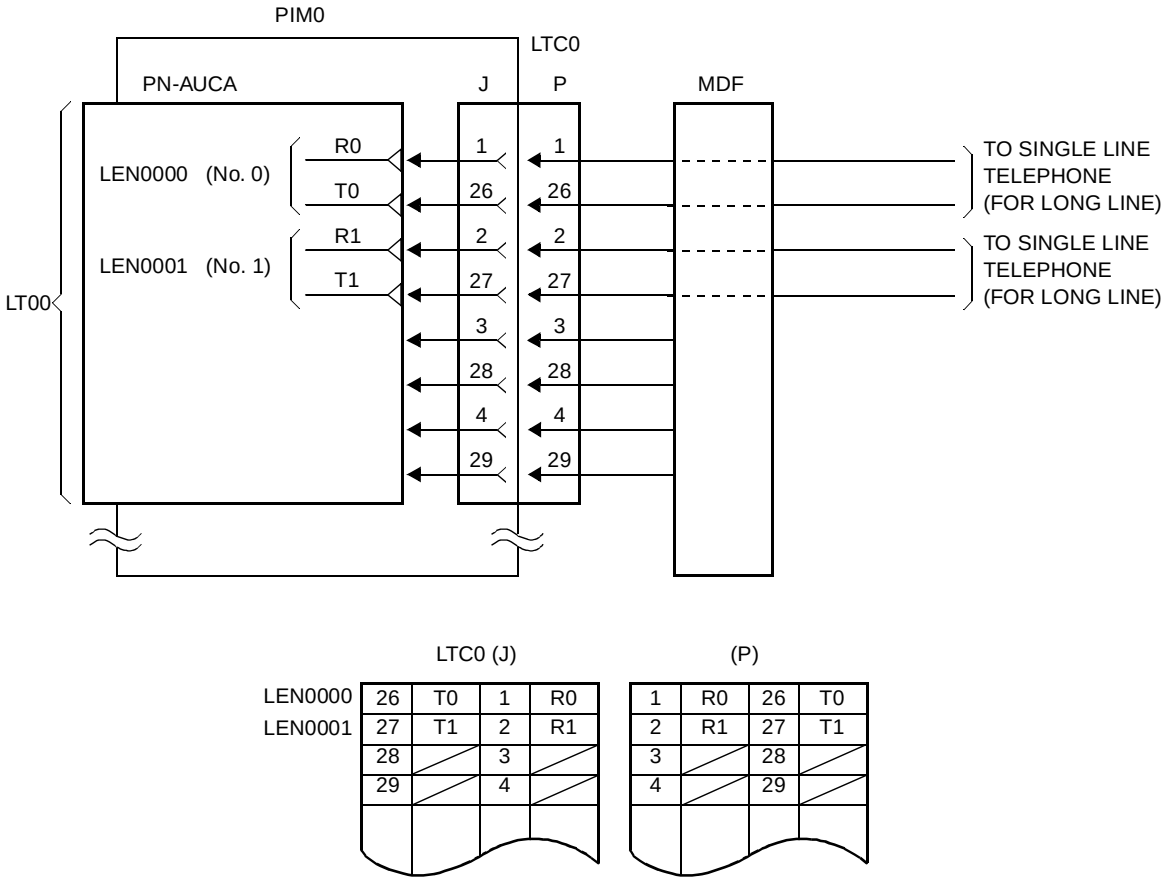
LEN0000	26	T0	1	R0
LEN0001	27	T1	2	R1
LEN0002	28	T2	3	R2
LEN0003	29	T3	4	R3

(P)

1	R0	26	T0
2	R1	27	T1
3	R2	28	T2
4	R3	29	T3

Figure 007-19 MDF Cross Connection for a Single Line Telephone (Standard Line)

(b) Long Line (PN-AUCA)



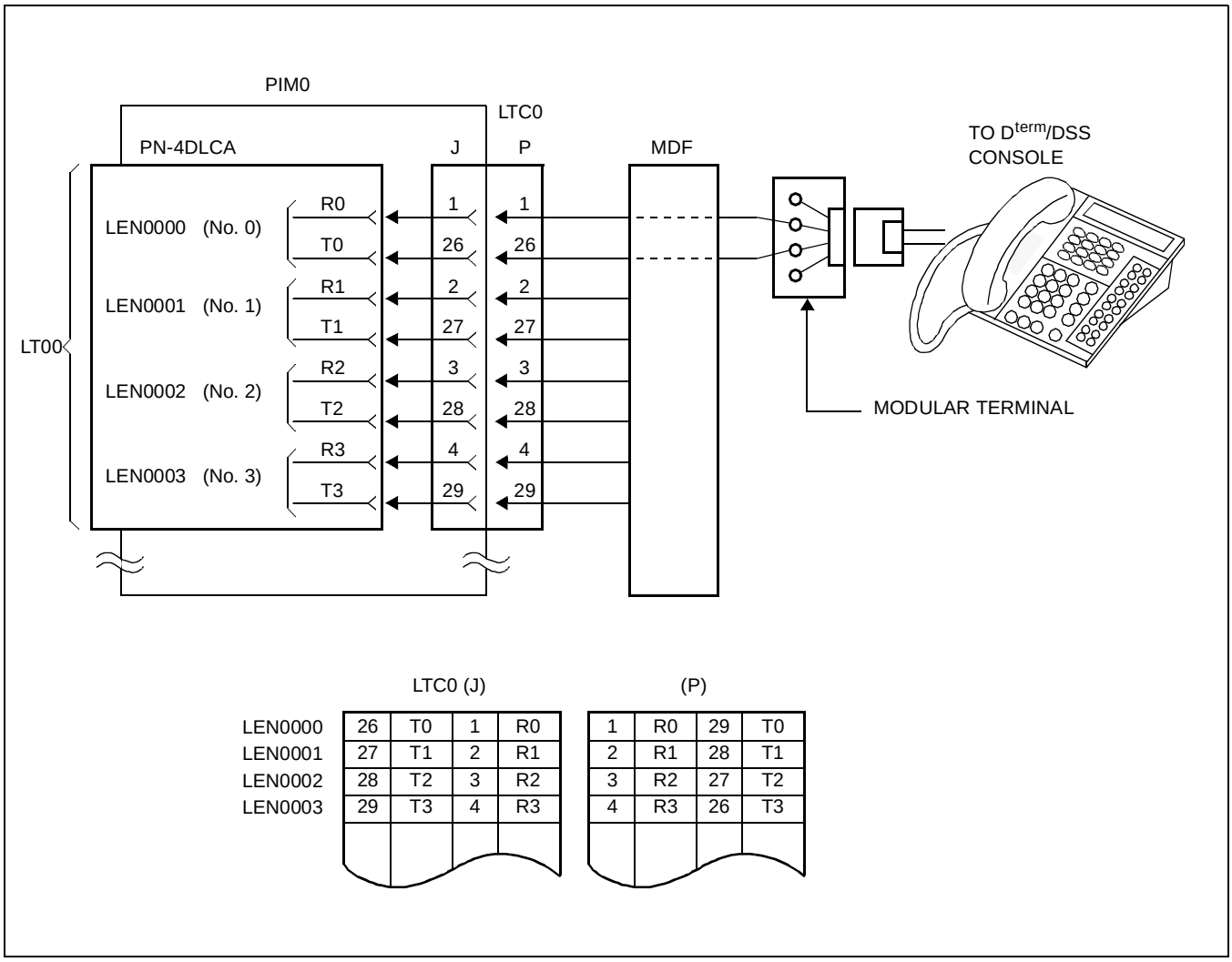
Note 1: *The PN-AUCA card can also be used as a DID Trunk card.*

Note 2: *For the cross connection for the Power Failure Transfer (PFT), see item (12) in this NAP.*

Figure 007-20 MDF Cross Connection for a Single Line Telephone (Long Line)

(5) D^{term} /DSS Console

(a) Standard Line (PN-4DLCA)



LTC0 (J)

LEN0000	26	T0	1	R0
LEN0001	27	T1	2	R1
LEN0002	28	T2	3	R2
LEN0003	29	T3	4	R3

(P)

1	R0	29	T0
2	R1	28	T1
3	R2	27	T2
4	R3	26	T3

Figure 007-21 MDF Cross Connection for a D^{term}/DSS Console (Standard Line)

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Termination of Cables on the MDF

(b) Long Line (PN-2DLCB)

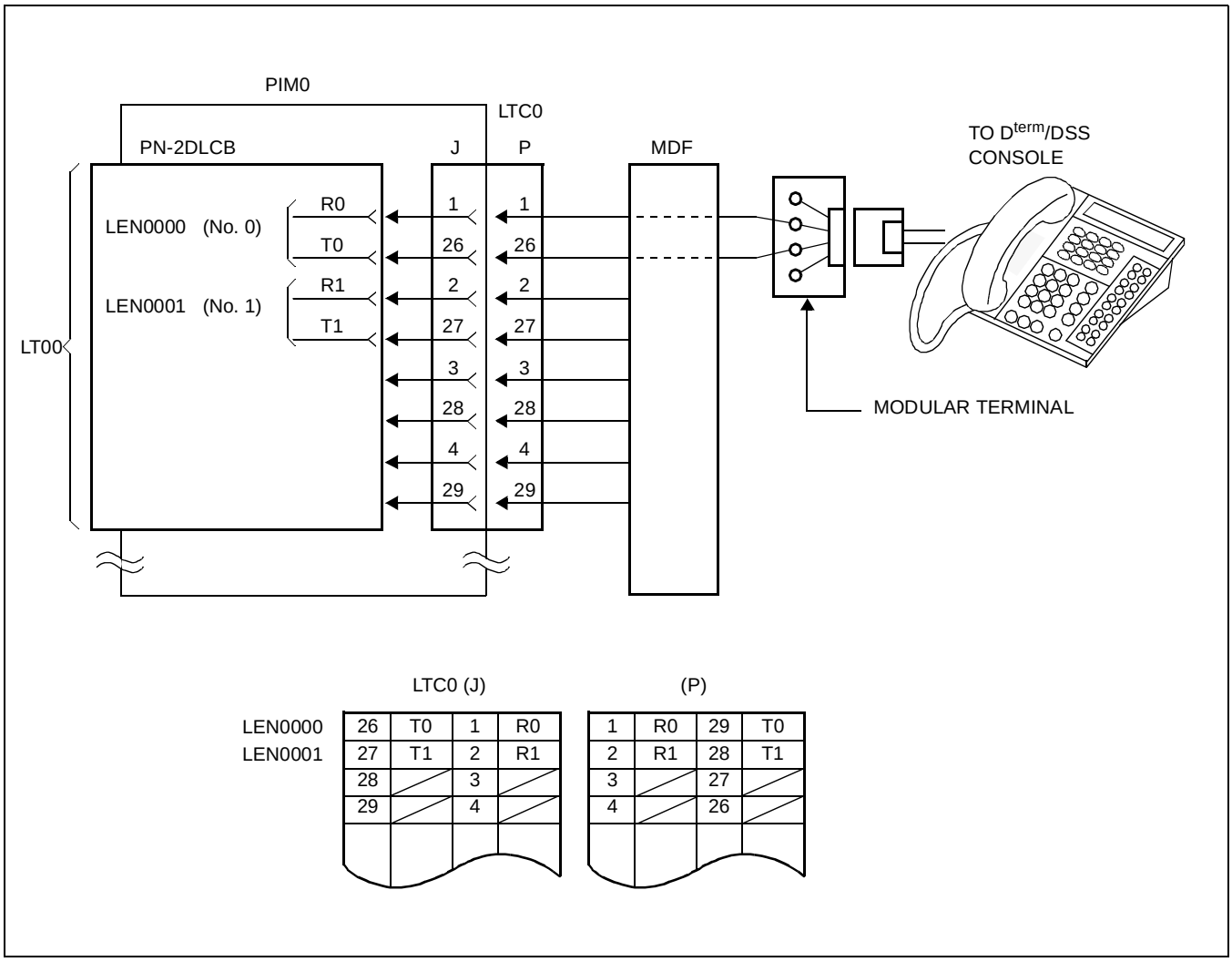

Figure 007-22 MDF Cross Connection for a D^{term}/DSS Console (Long Line)

(6) SN610 ATTCON

(a) When using PN-2DLCC

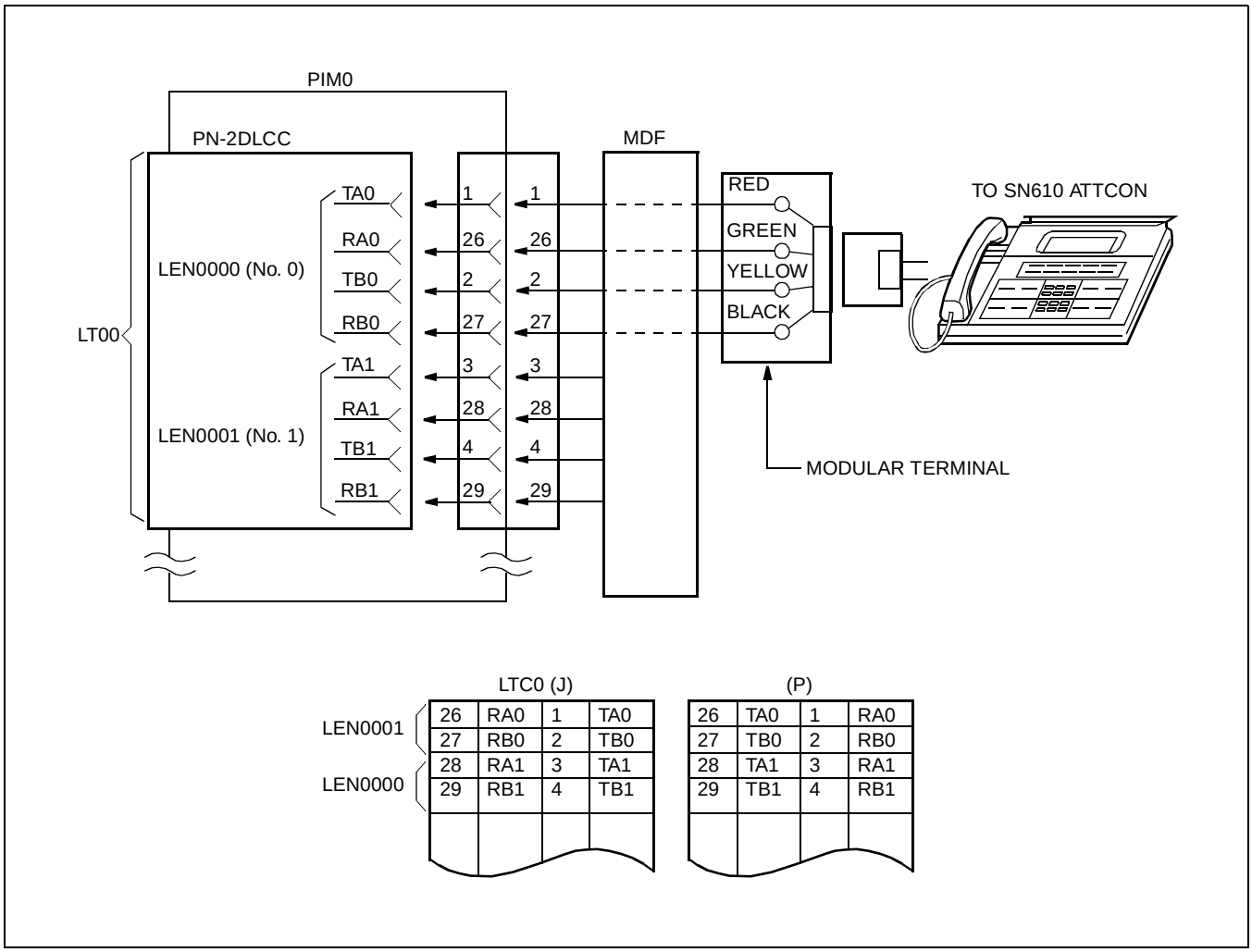

Figure 007-23 MDF Cross Connection for an SN610 ATTCON (1 of 3)

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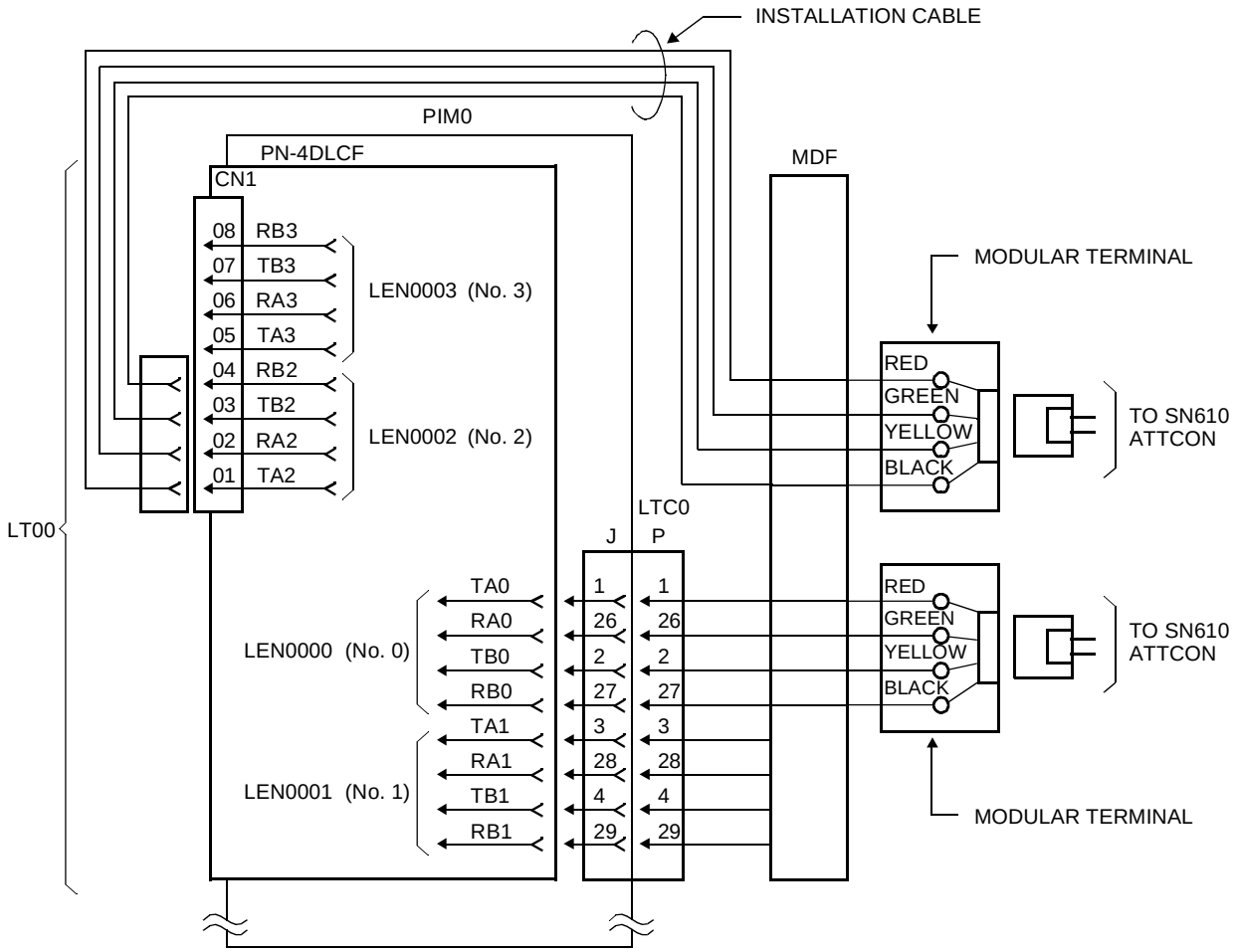
Termination of Cables on the MDF

(b) When using PN-4DLCF



Note: *When using the No. 2 and No. 3 circuits of PN-4DLCF card, make the installation cable by using the connector attached with the PN-4DLCF card.*

Figure 007-23 MDF Cross Connection for an SN610 ATTCON (2 of 3)

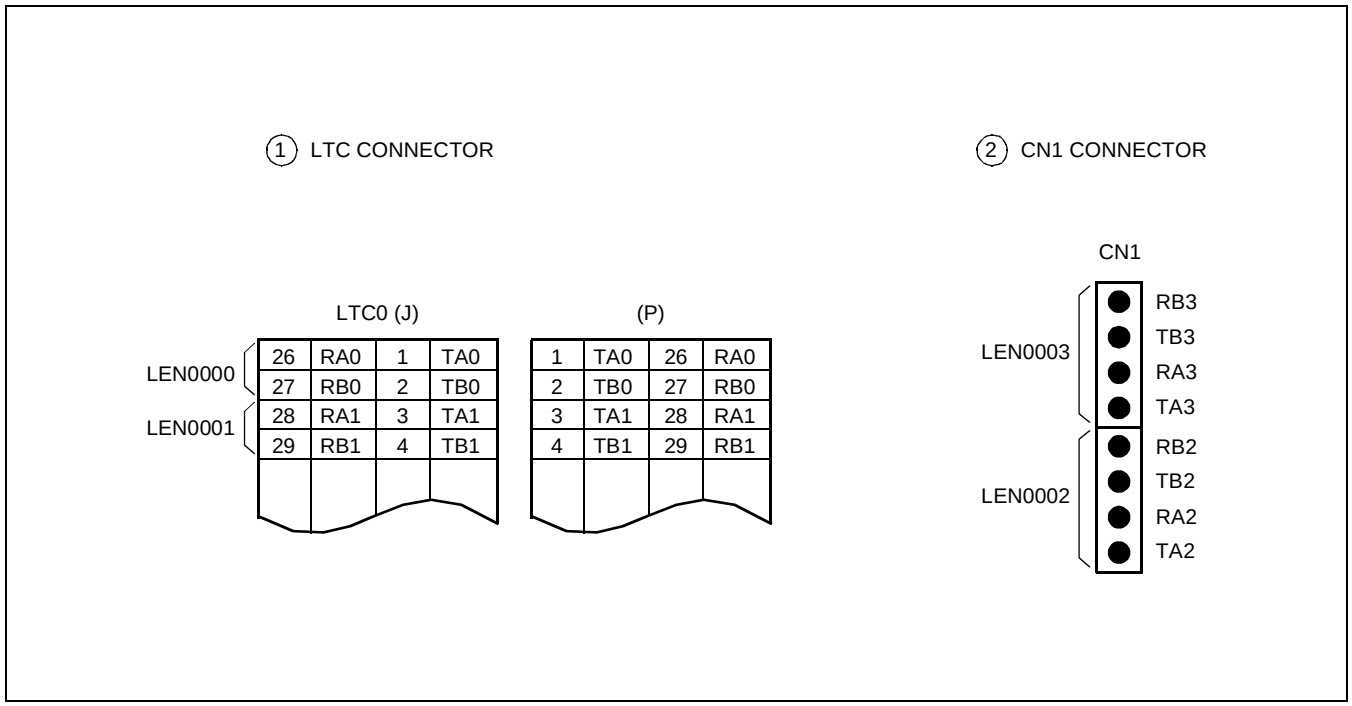


Figure 007-23 MDF Cross Connection for an SN610 ATTCON (3 of 3)

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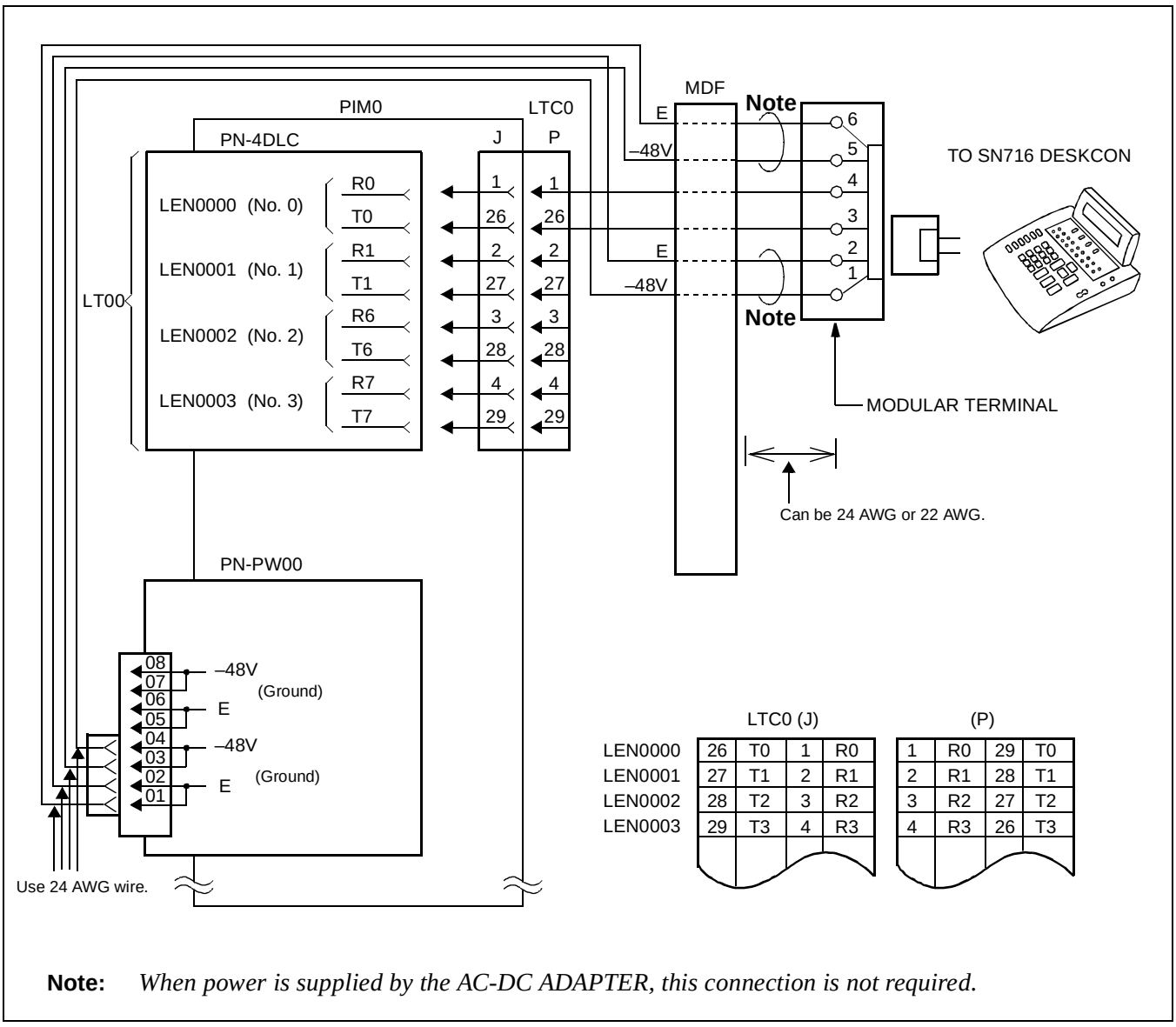
Termination of Cables on the MDF

(7) SN716 DESKCON

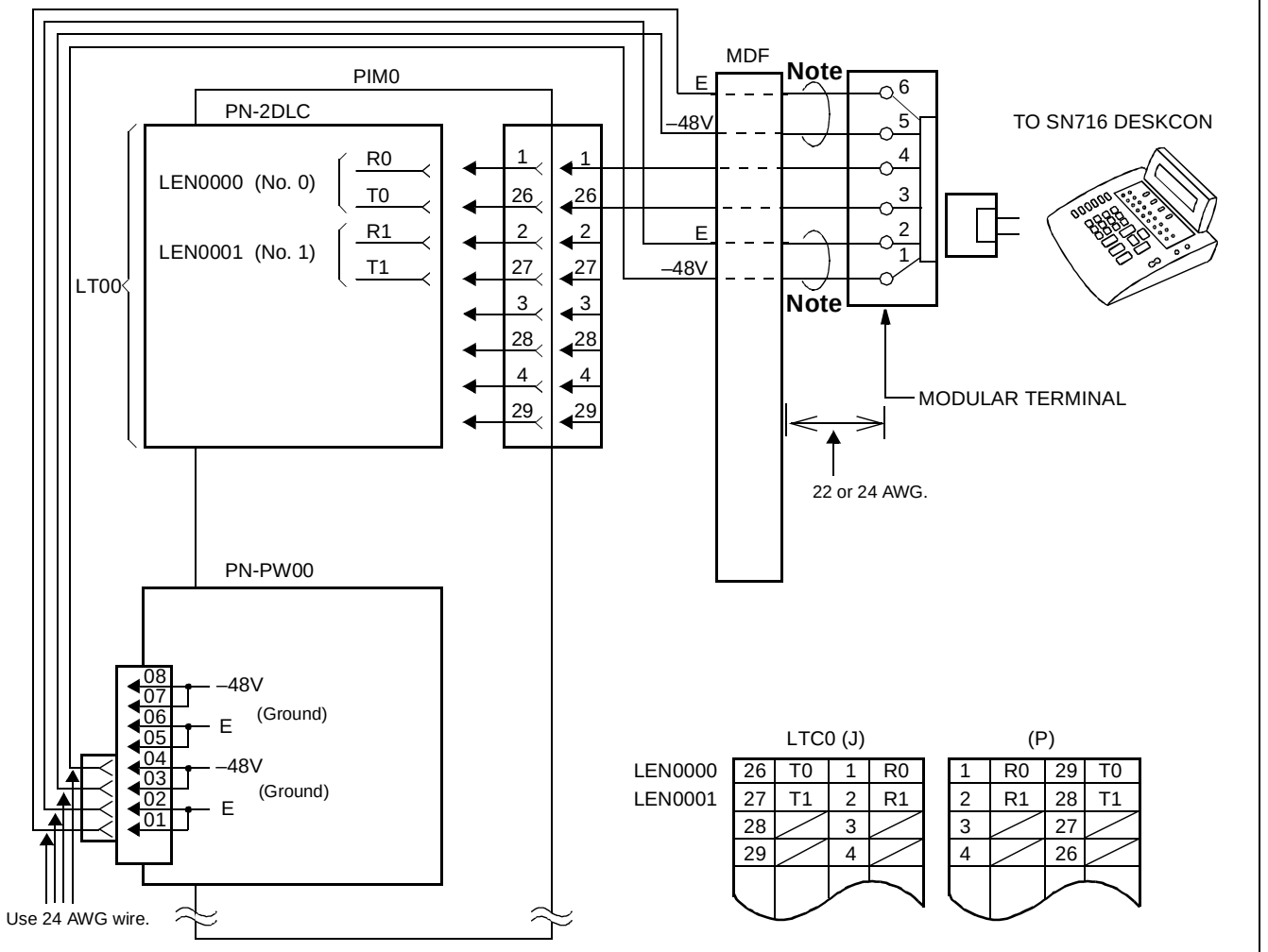
(a) When using PN-4DLCA/4DLCD/4DLCM/4DLCQ



Note: *When power is supplied by the AC-DC ADAPTER, this connection is not required.*

Figure 007-24 MDF Cross Connection for a SN716 DESKCON (1 of 2)

(b) When using PN-2DLCB/2DLCN



Note: *When power is supplied by the AC-DC ADAPTER, this connection is not required.*

Figure 007-24 MDF Cross Connection for a SN716 DESKCON (2 of 2)

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Termination of Cables on the MDF

(8) Day/Night Mode Change by External Key

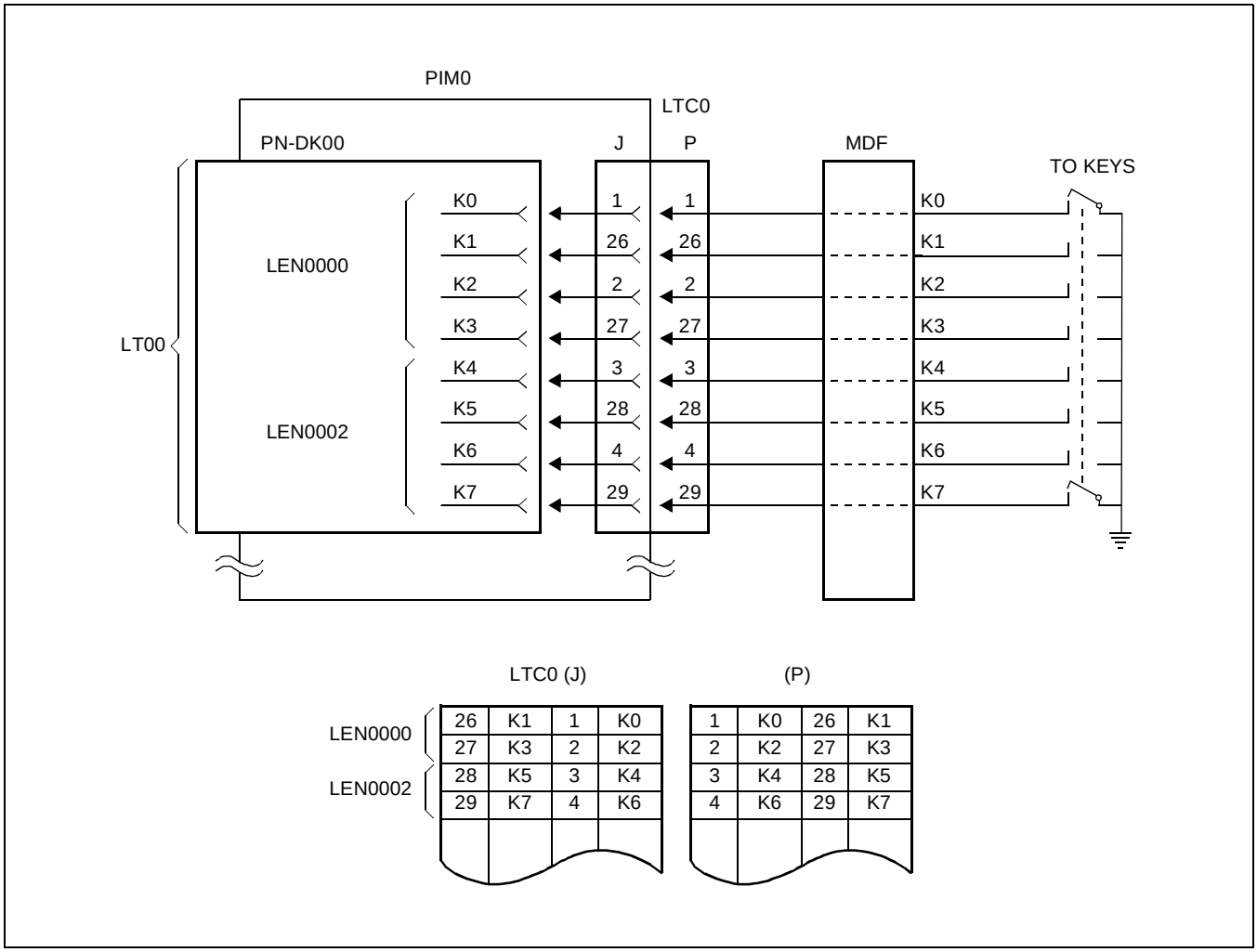

Figure 007-25 MDF Cross Connection for Day/Night Mode Change by External Key

(9) External TAS Indicator

(a) Outline of the Connection

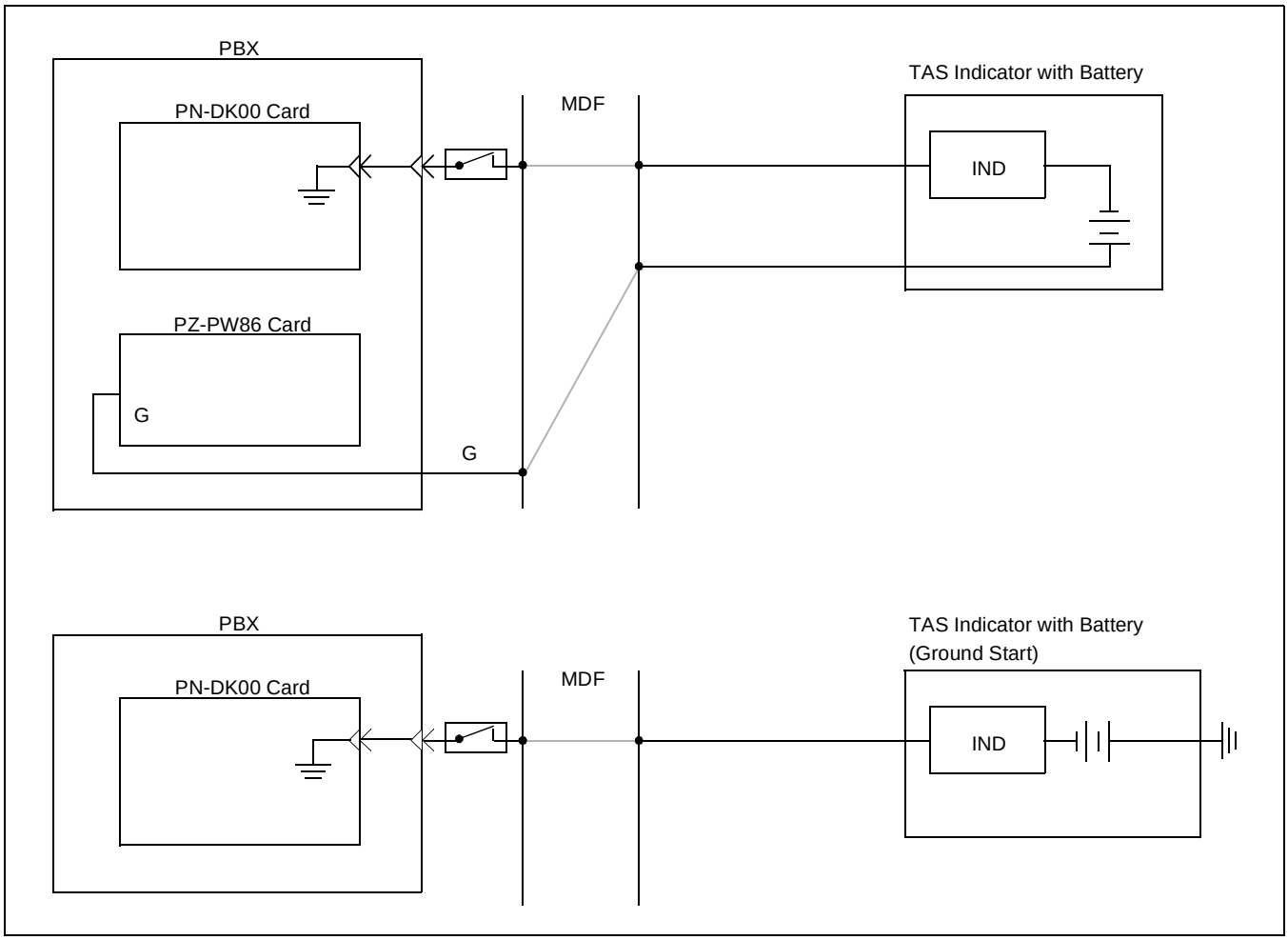

Figure 007-26 Outline of the External TAS Indicator Connection

Note: *The DK00 card will drive relays; there are no relays provided on the PN-DK00 card.*

(b) MDF Cross Connection

- When using a TAS Indicator with a Battery

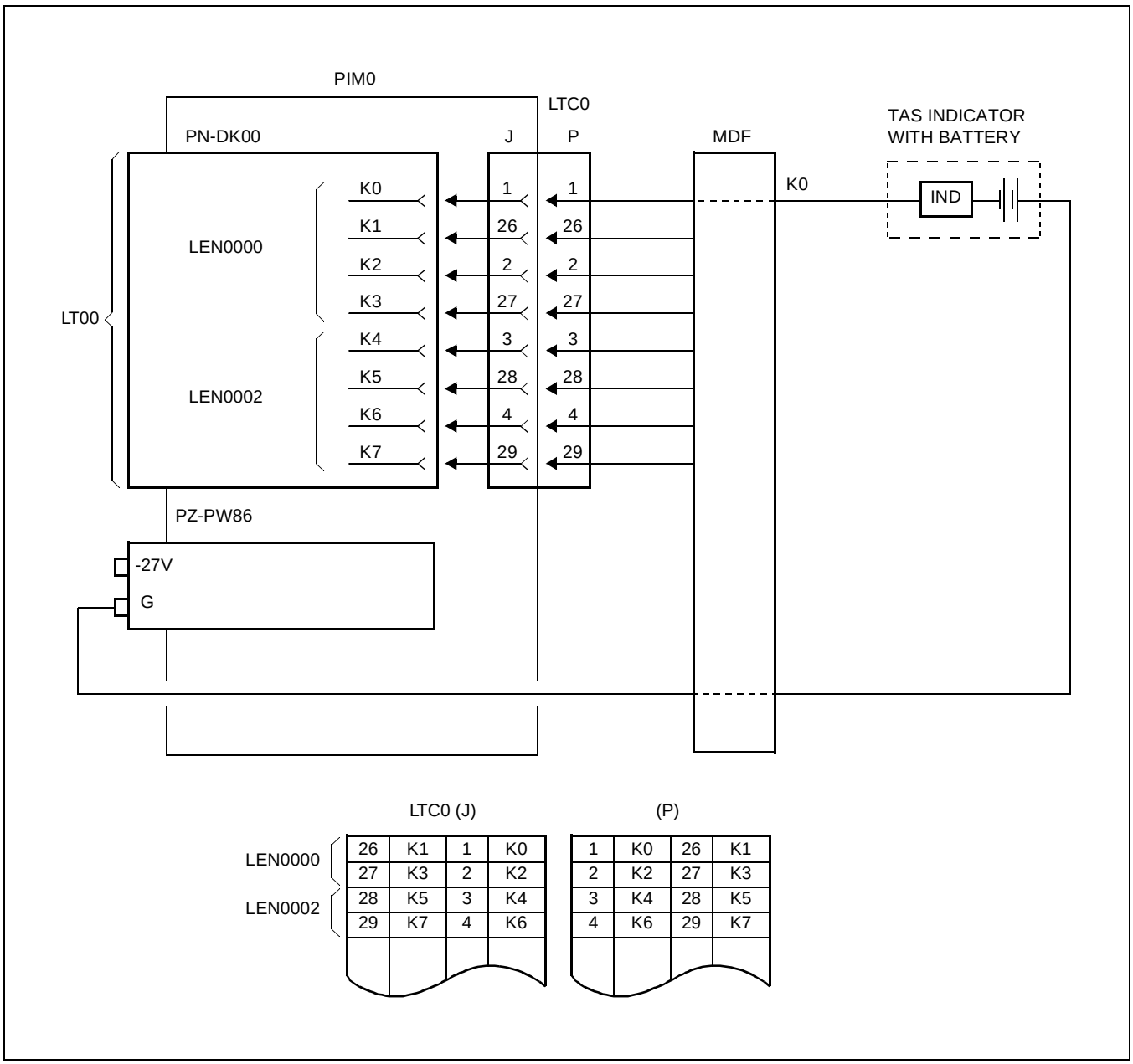

Figure 007-27 MDF Cross Connection for a TAS Indicator with a Battery

NAP 200-007
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Termination of Cables on the MDF

- When using a TAS Indicator with a Battery (Ground Start)

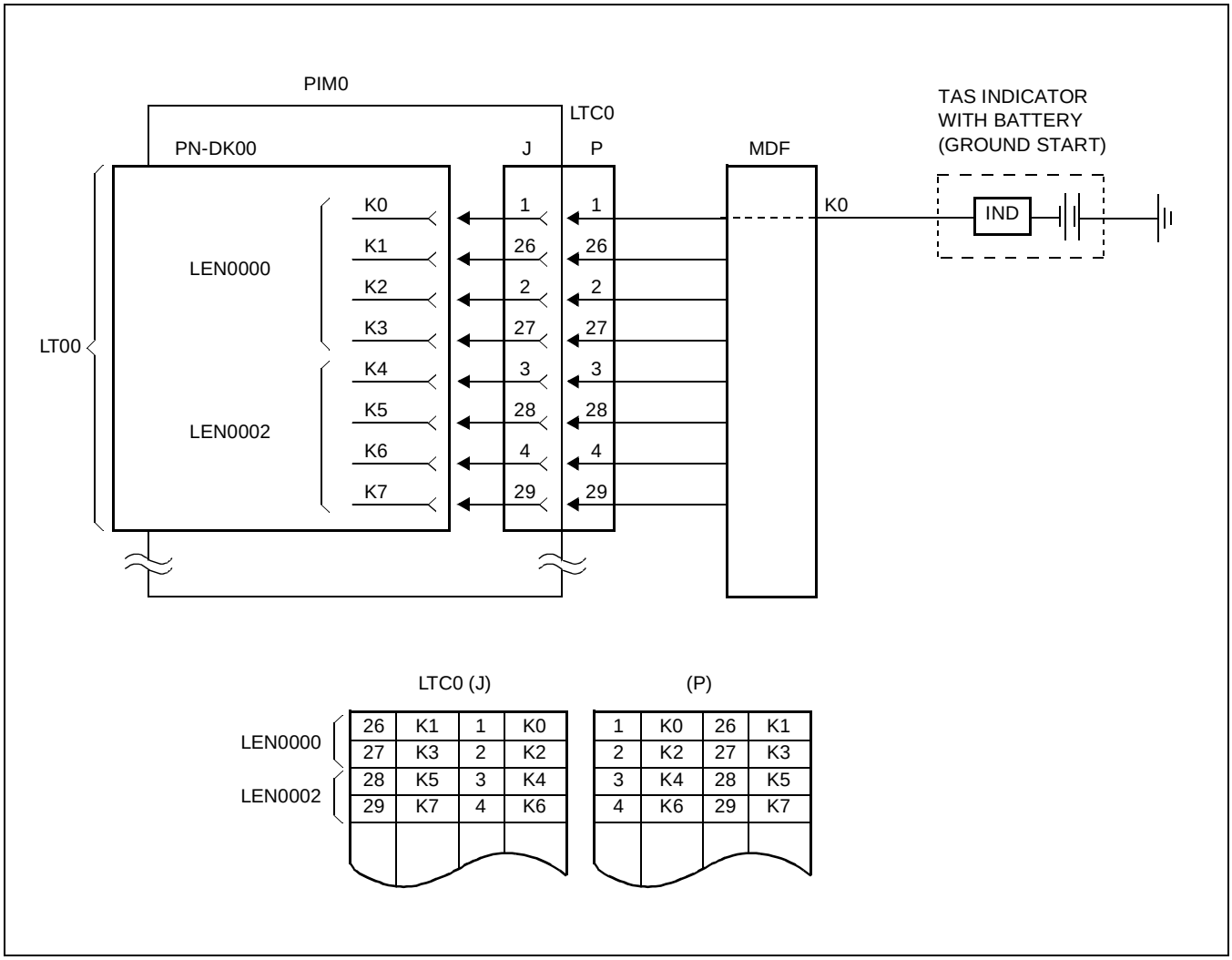

Figure 007-28 MDF Cross Connection for a TAS Indicator with a Battery (Ground Start)

(10) Paging Equipment

The cross connection for a customer owned paging equipment is shown in Figure 007-29 through Figure 007-31, as an example.

Requirement for the Paging Equipment

- Input Impedance : 600 ohm
- Control Method : Start - Ground Start **Note**
  : Stop - Ground Off (Open)

Note: *The current capacity of the relay driver (PN-DK00 card) is 0.125 A.*

(a) Outline of the Connection

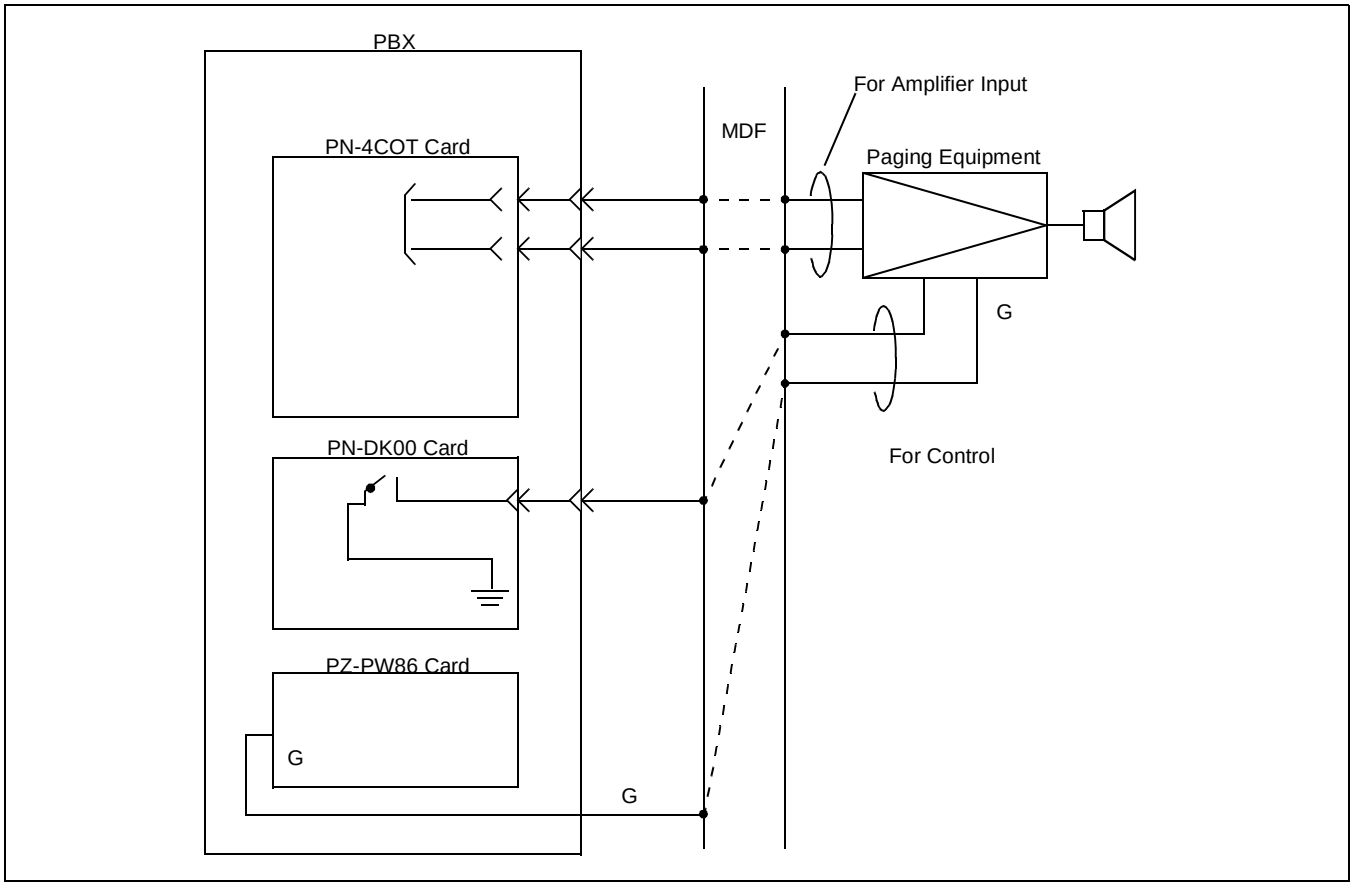

Figure 007-29 Outline of the Paging Equipment Connection

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Termination of Cables on the MDF

(b) MDF Cross Connection

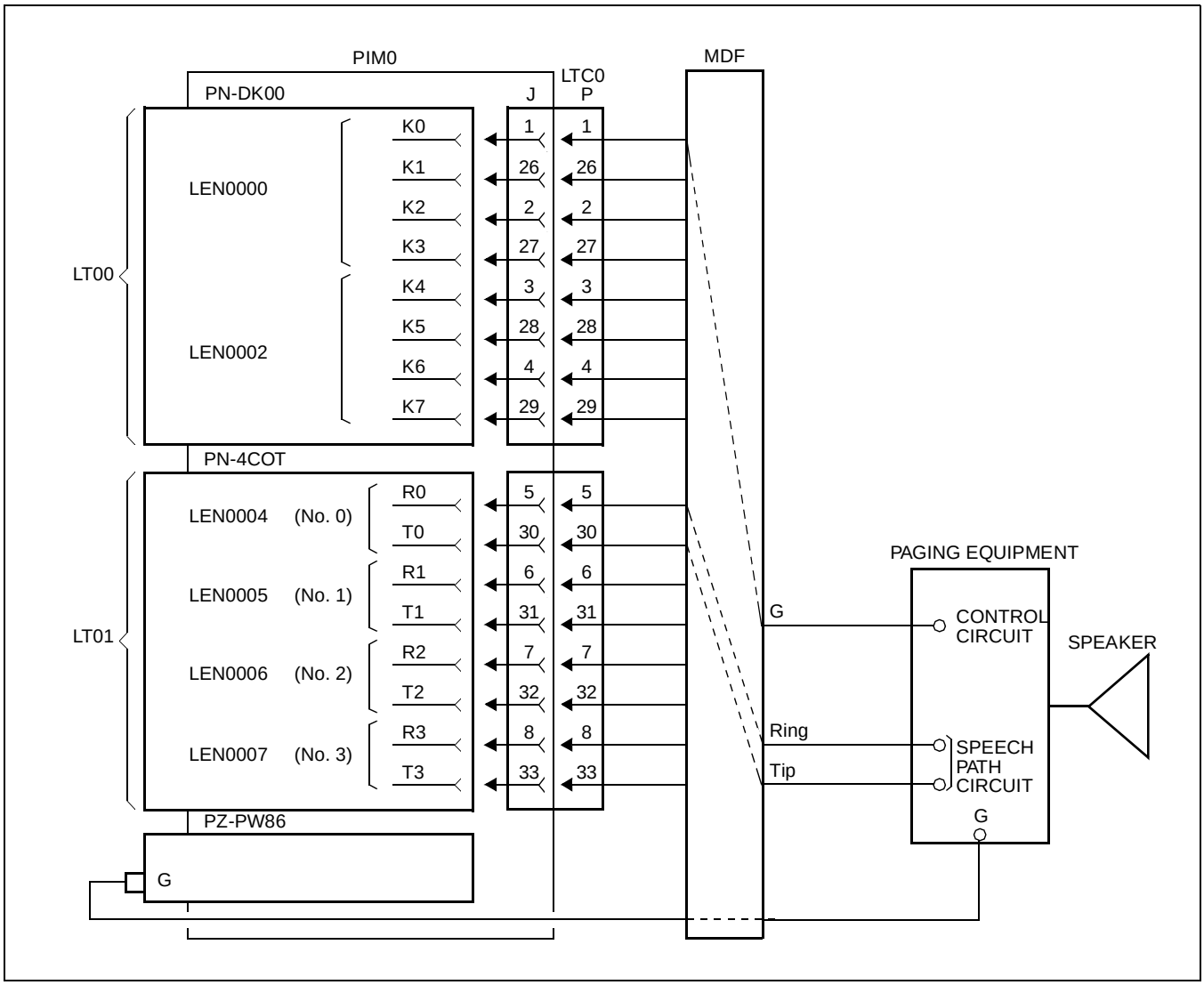

Figure 007-30 MDF Cross Connection for a Paging Equipment (1 of 2)

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Termination of Cables on the MDF

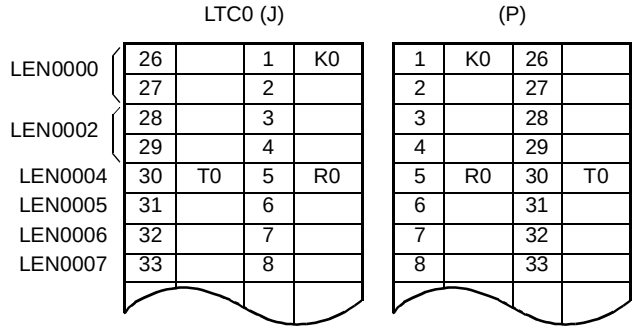


Figure 007-31 MDF Cross Connection for Paging Equipment (2 of 2)

(11) External Tone Source Equipment

The cross connection for a customer owned external tone source equipment is shown in Figure 007-32 through Figure 007-34 as an example.

Requirement for the External Tone Source Equipment

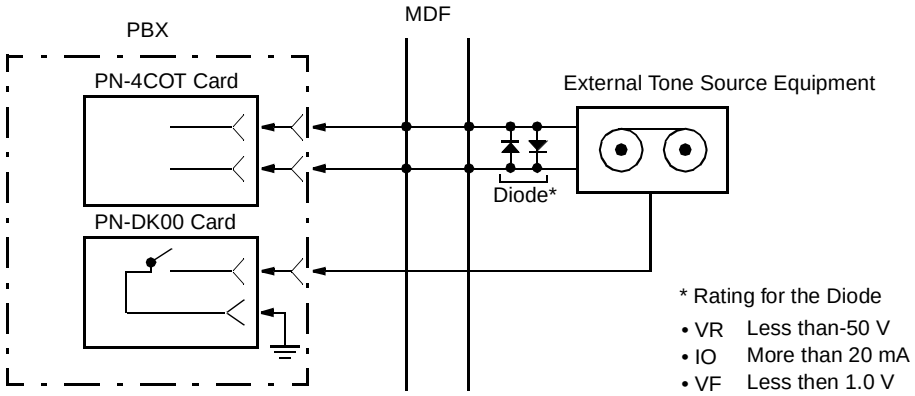
- Output level : Less than 0 dBm (Adjustable)
- Output impedance : Less than 1 kΩ (When using PN-4COT and PN-DK00)
  : Less than 10 kΩ (When using Pin Jacks on PN-TNTA)
- Control Method : Start - Ground Start **Note 1**
  : Stop - Ground Off (Open)

Note 1: *The current capacity of relay driver (PN-DK00 card) is 0.125 A.*

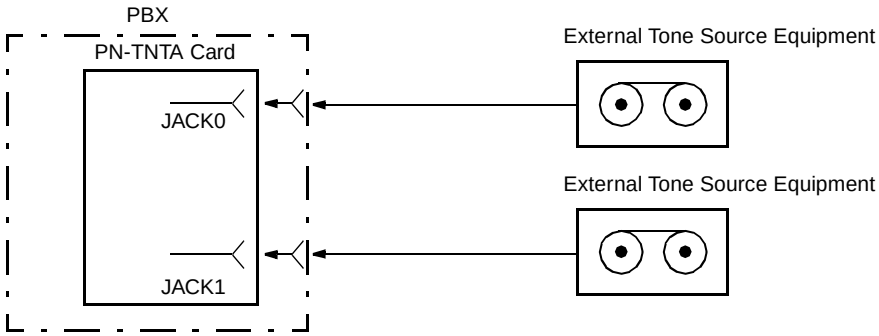
Note 2: *When connecting the external tone source equipment using the PN-4COT and PN-DK00 cards, an appropriate diode must be installed on the MDF, as shown in Figure 007-32.*

(a) Outline of the Connection

- When using PN-4COT and PN-DK00



- When using Pin Jacks on PN-TNTA



- When using Pin Jack on PN-CP03

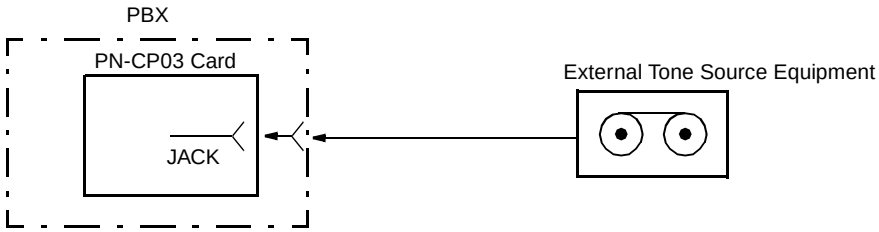


Figure 007-32 Outline of the External Tone Source Connection

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Termination of Cables on the MDF

(b) MDF Cross Connection

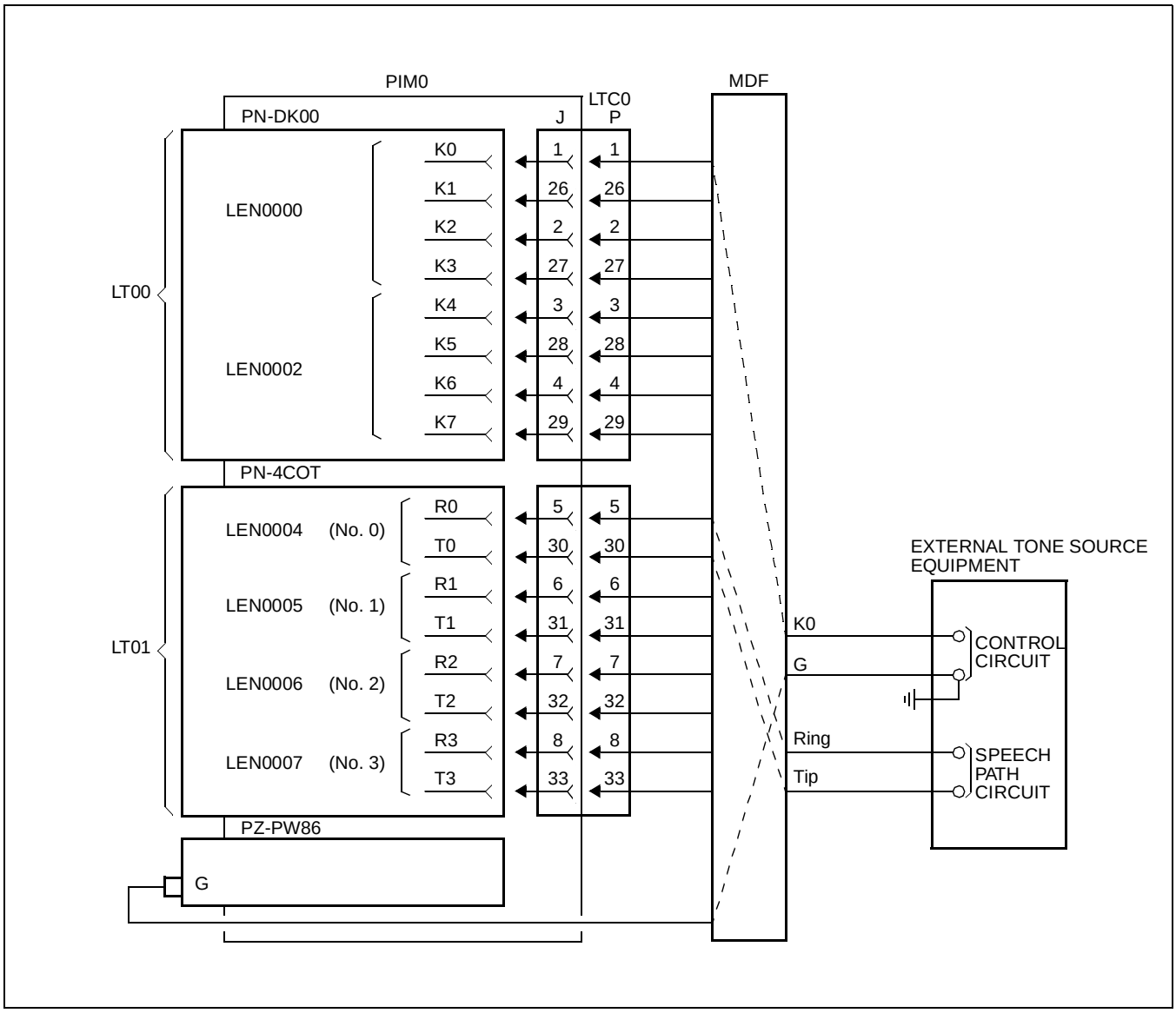

Figure 007-33 MDF Cross Connection for External Tone Source Equipment (1 of 2)

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Termination of Cables on the MDF

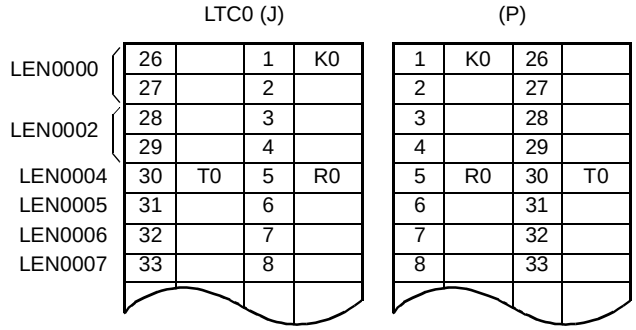

Figure 007-34 MDF Cross Connection for External Tone Source Equipment (2 of 2)

- If a D.C. voltage is supplied with the tone from the external tone source equipment, a transformer or coupling capacitor should be used as shown in Figure 007-35.

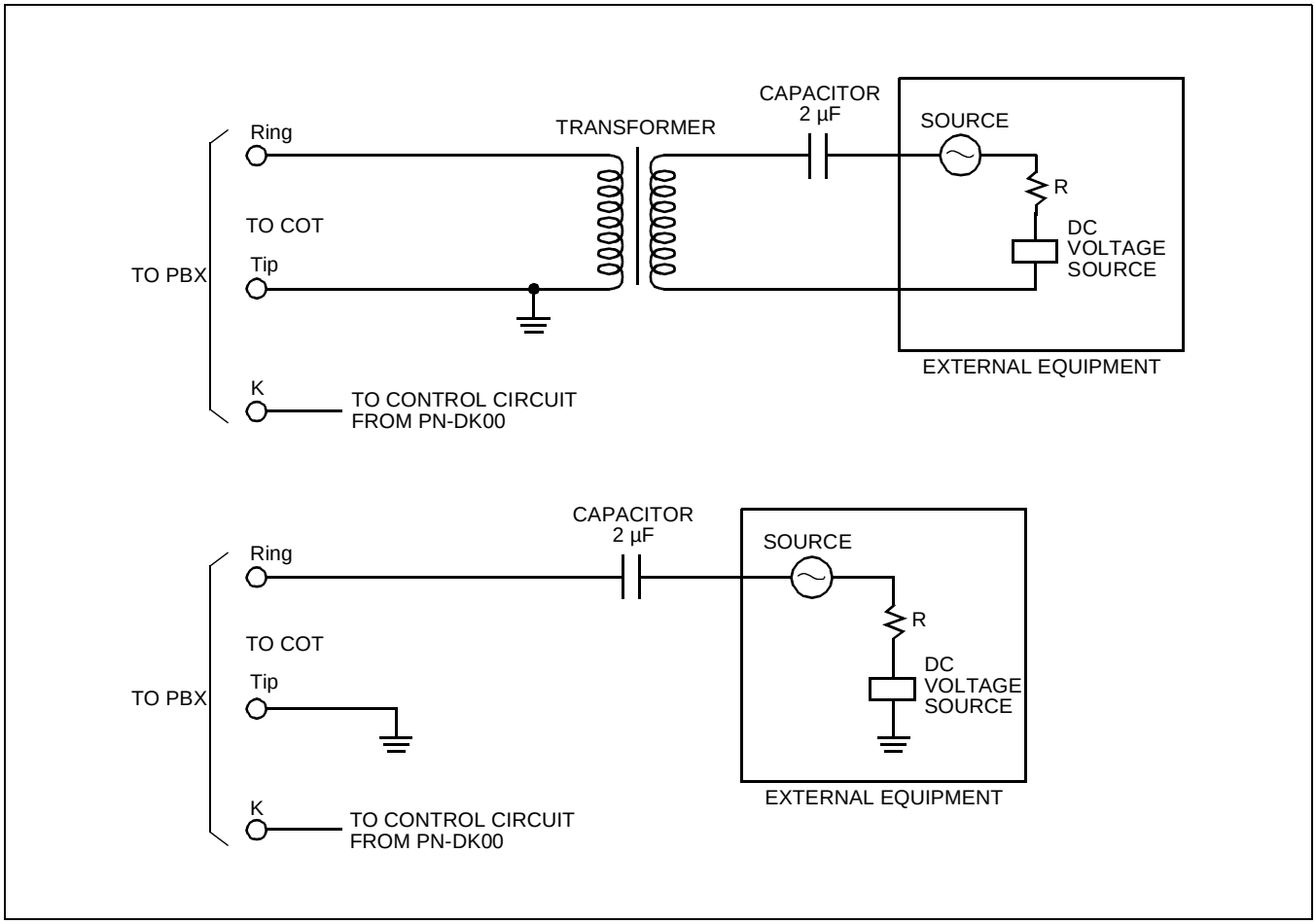

Figure 007-35 Connecting a Tone Source Supplied with D.C.

(12) External BGM Source

The cross connection for customer-owned external BGM sources is shown in Figure 007-36 and Figure 007-37. A maximum of 10 BGM sources can be provided in the system.

(a) When using PN-4COT

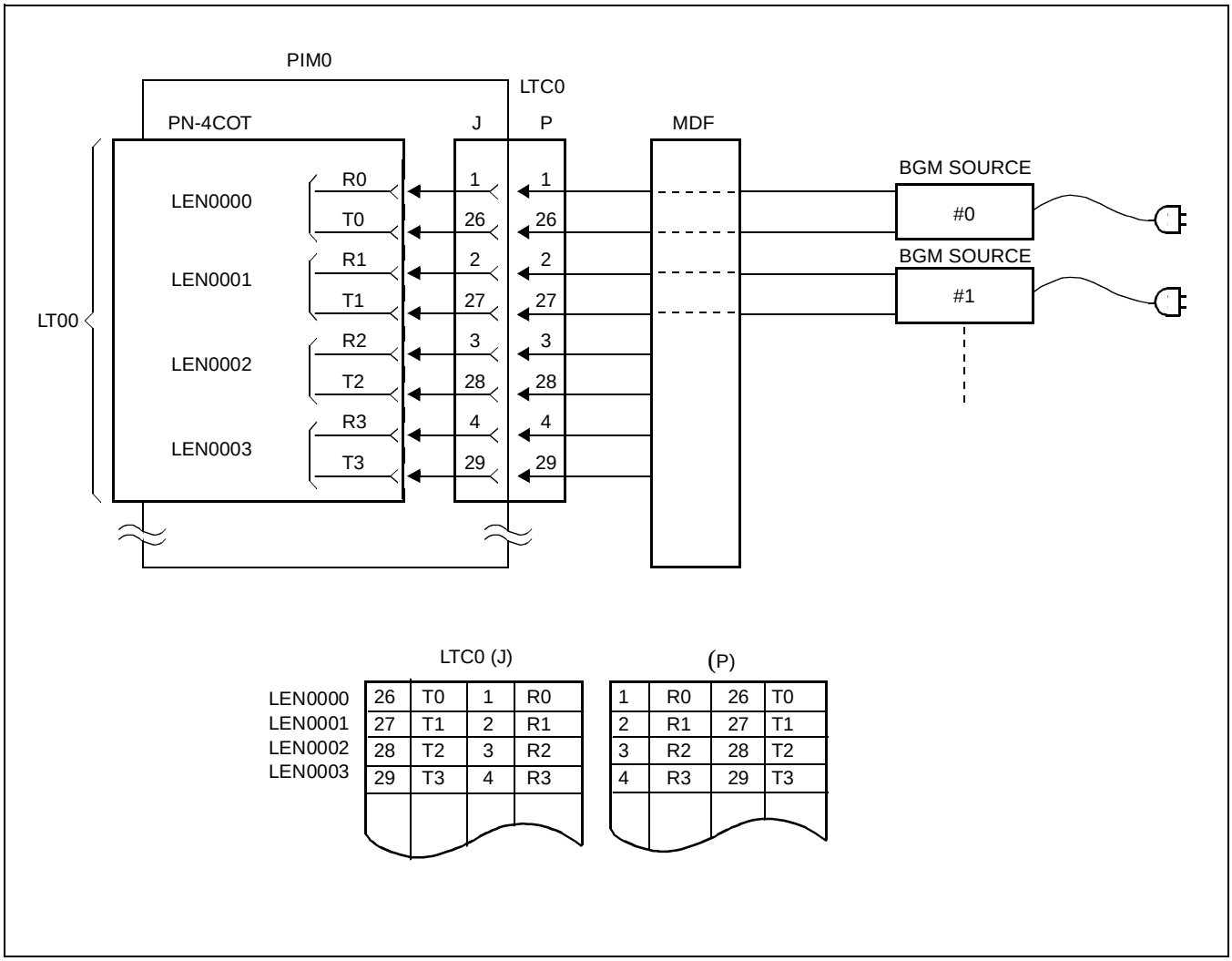

Figure 007-36 MDF Cross Connection for External BGM Sources

(b) When using Pin Jacks on PN-TNTA

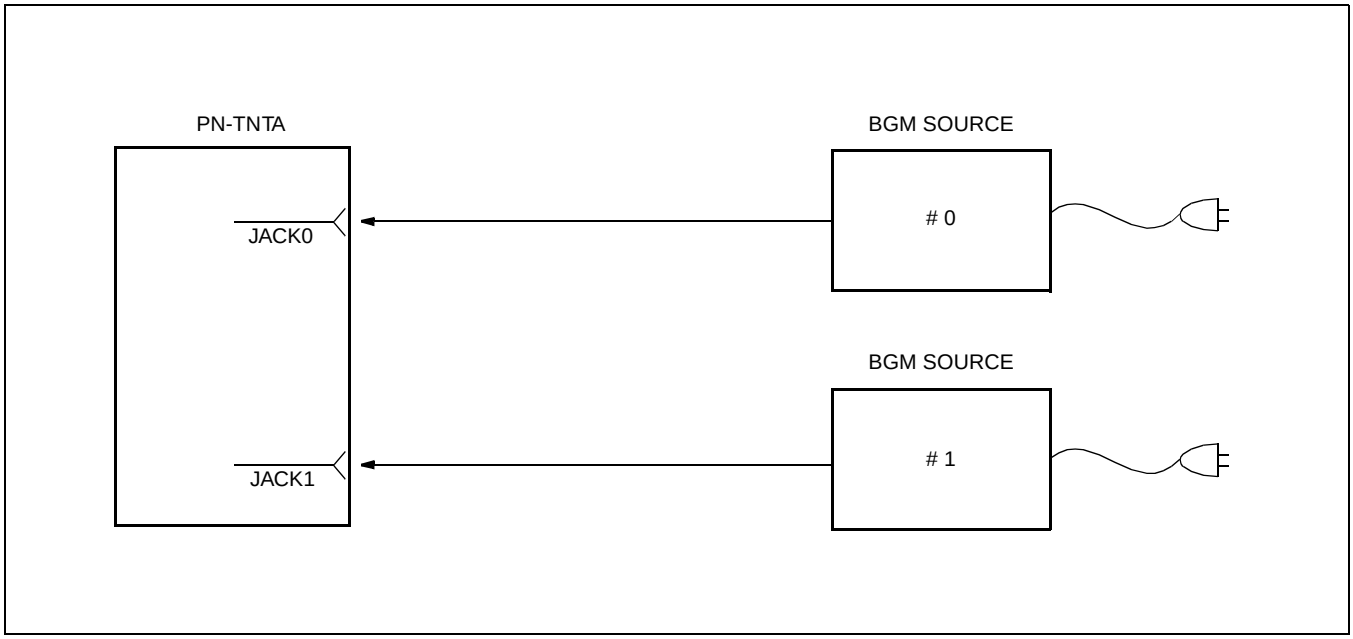

Figure 007-37 Cable Connection between PN-TNTA and External BGM Sources

(13) Power Failure Transfer (PFT)

The PN-AUCA card or the PZ-8PFTA card can be used as the PFT card.

(a) When using PN-AUCA card

- An outline of a PFT (PN-AUCA) connection is shown in Figure 007-38.
- The MDF cross connection for a PFT (PN-AUCA) is shown in Figure 007-39.

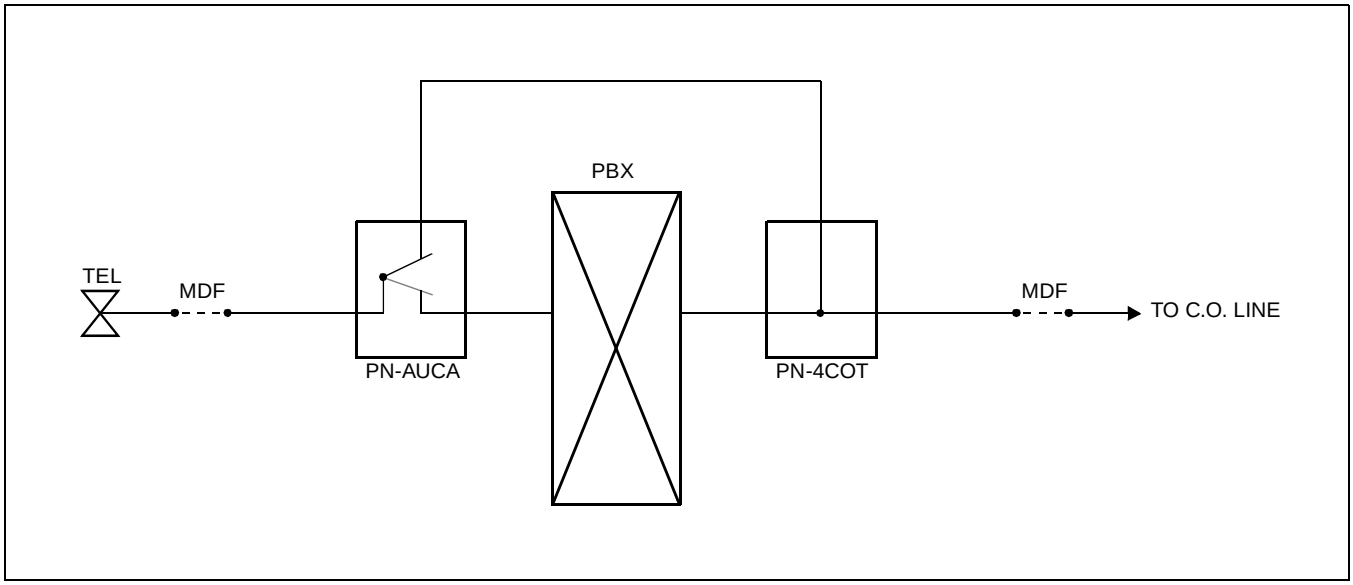

Figure 007-38 Outline of the PFT (PN-AUCA) Connection

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Termination of Cables on the MDF

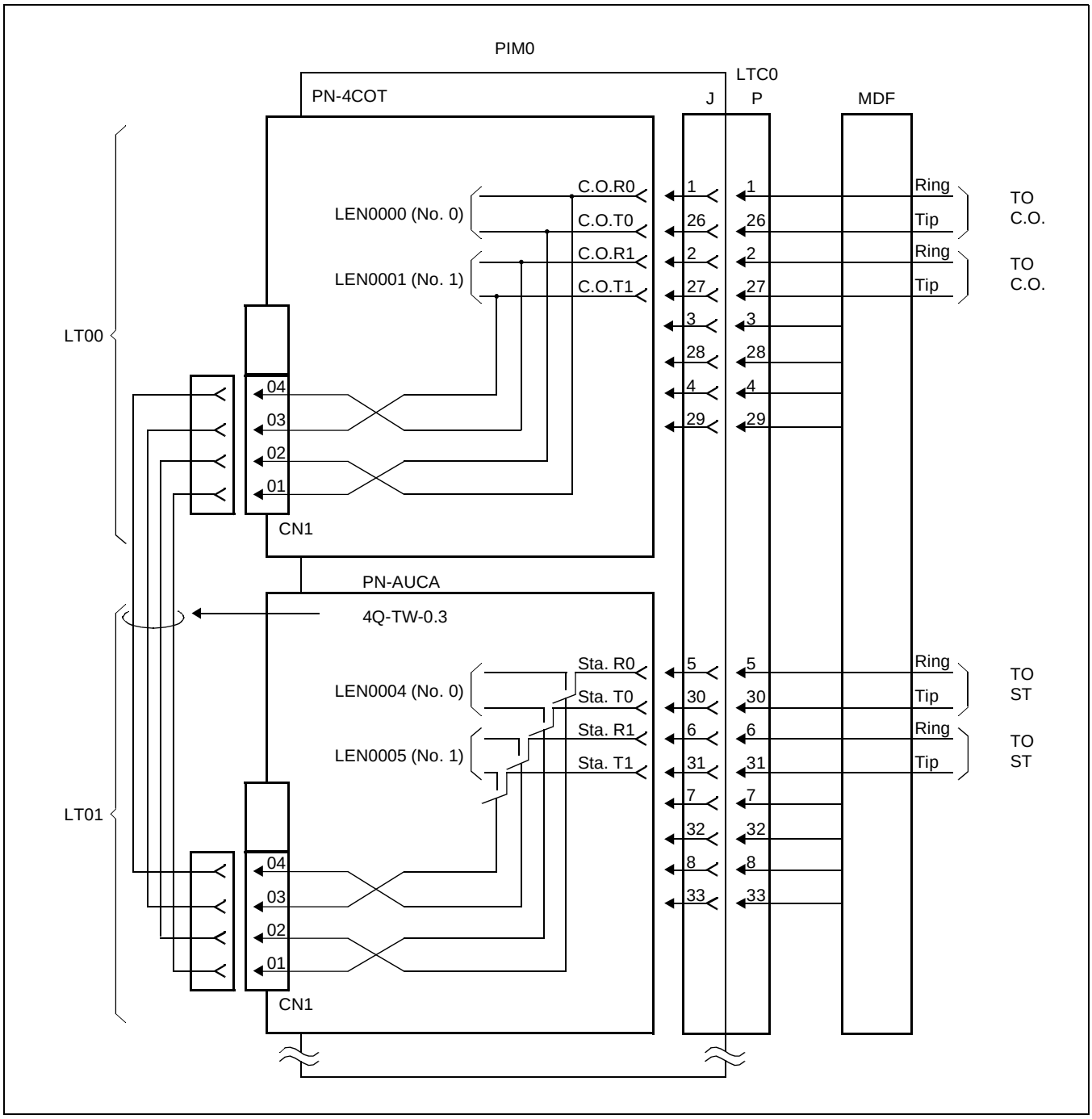

Figure 007-39 MDF Cross Connection for the PFT (PN-AUCA) (1 of 2)

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Termination of Cables on the MDF

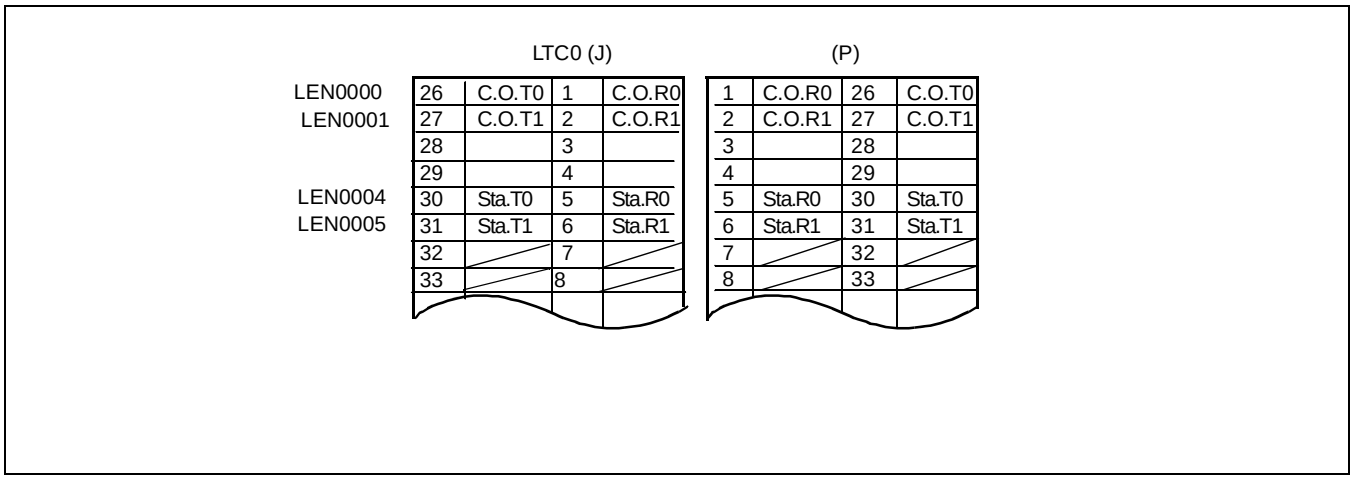


Figure 007-40 MDF Cross Connection for the PFT (PN-AUCA) (2 of 2)

Note 1: *The No. 2 and No. 3 circuit in the PN-4COT card can not be used with the PFT function.*

Note 2: *When using Ground Start trunks with the PFT function, the single line stations must have a ground sending button and a ground lead must be run to the station.*

(b) When using PZ-8PFTA card

- An outline of a PFT (PZ-8PFTA) connection is shown in Figure 007-41.

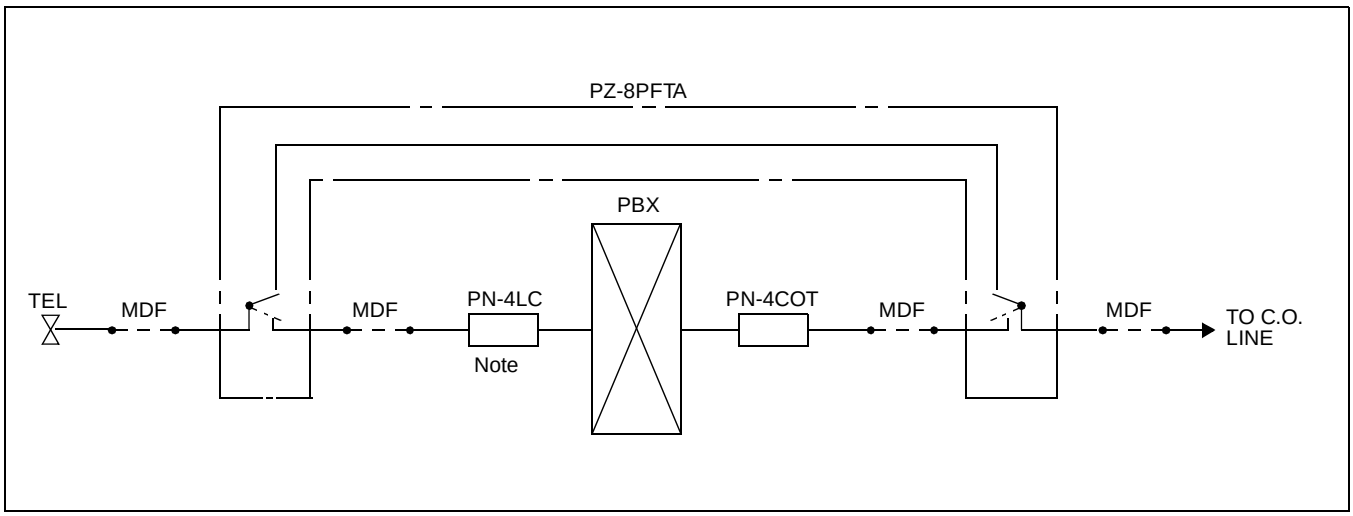


Figure 007-41 Outline of the PFT (PZ-8PFTA) Connection

Note: *Using the PN-AUCA card (long line card) instead of the PN-4LC card is not recommended due to the variations from Central Office to the PBX; line quality can not be assured.*

- Install the PZ-8PFTA card to the PIM according to the following steps.

STEP 1: Connect the champ connectors of 25-pair cables to the PFT0 and PFT1 connectors on the PZ-8PFTA card as shown in Figure 007-42. Then, secure them to each other using screws and tie wraps.

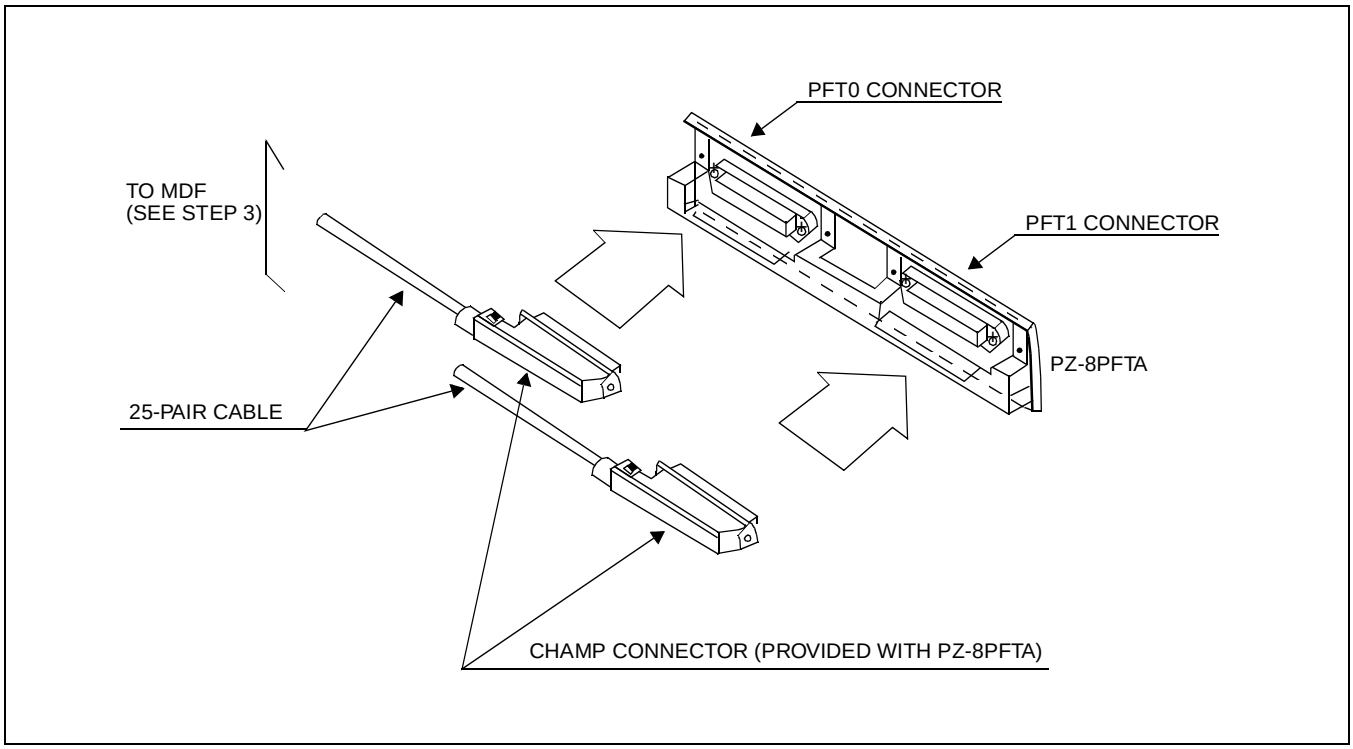


Figure 007-42 Connection of 25-Pair Cable and PZ-8PFTA

STEP 2: Hook the PZ-8PFTA card at the front bracket on the PIM, and secure them to each other using screws and SPL washers, as shown in Figure 007-43.

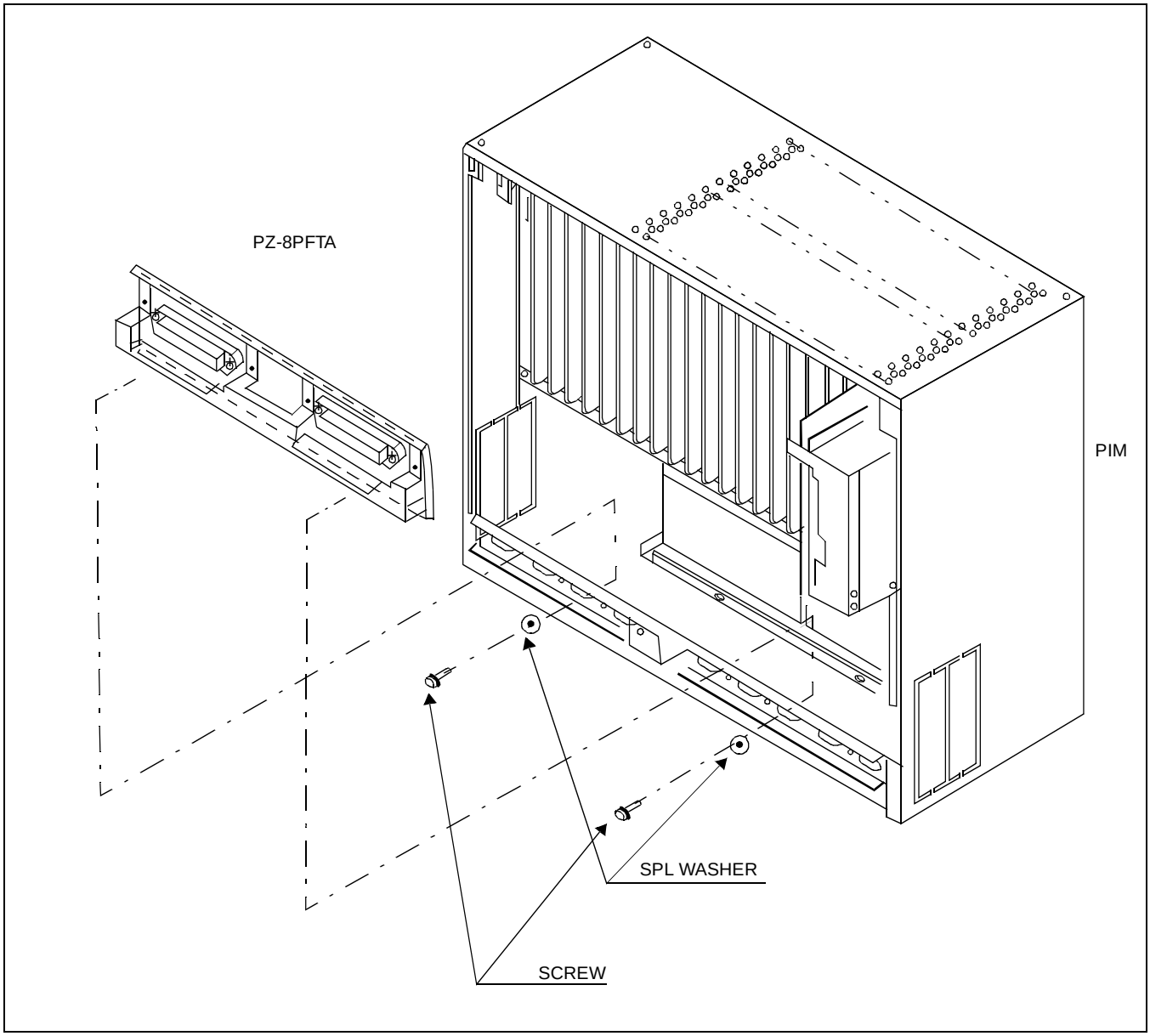
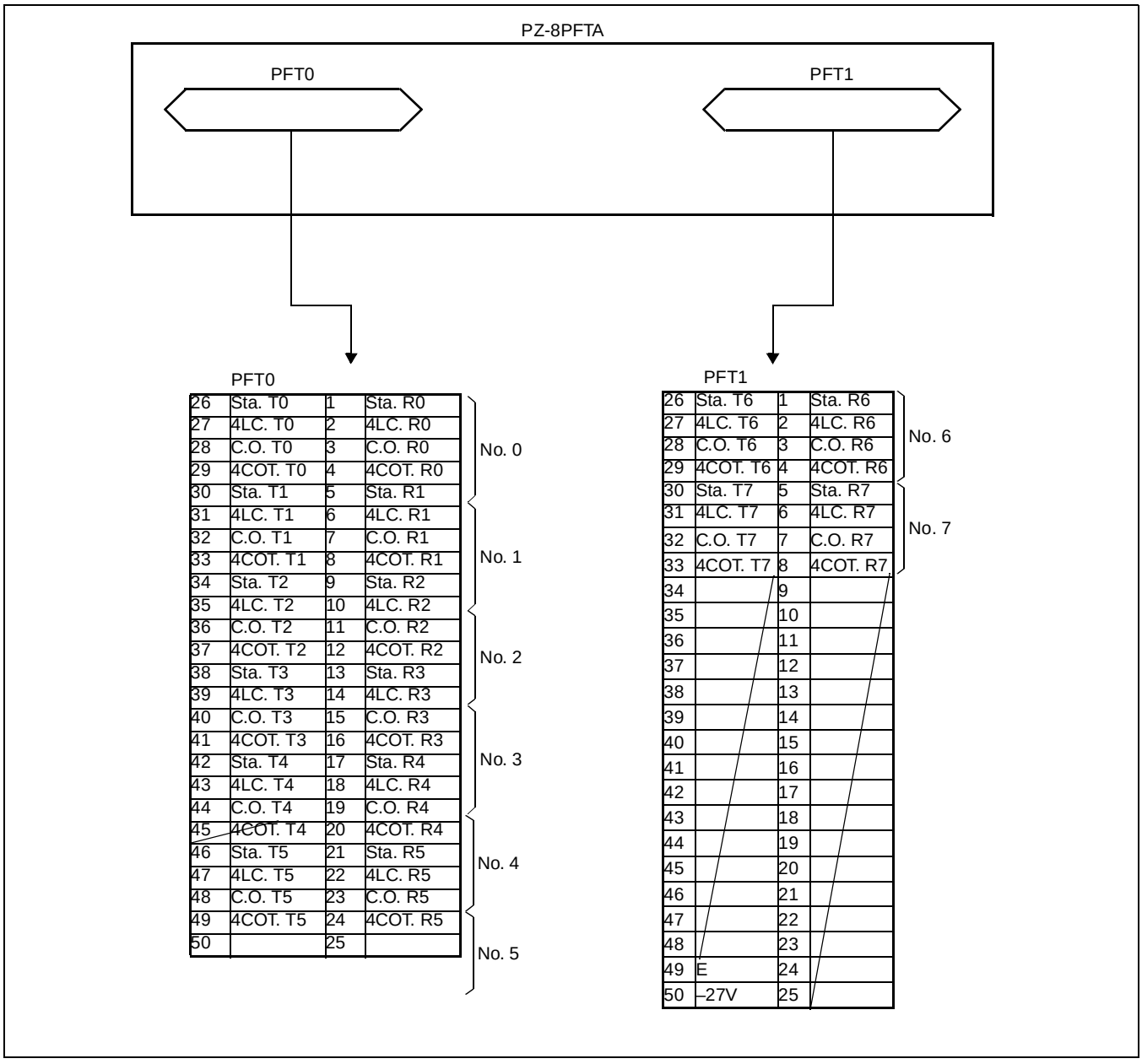


Figure 007-43 Mounting the PZ-8PFTA Card to the PIM

STEP 3: Connect the 25-pair cables on the MDF referring Figure 007-44 and Figure 007-45.

- Figure 007-44 shows the PFT connector pin assignment for each PFT circuit number (No. 0 -No. 7).



26	Sta. T0	1	Sta. R0
27	4LC. T0	2	4LC. R0
28	C.O. T0	3	C.O. R0
29	4COT. T0	4	4COT. R0
30	Sta. T1	5	Sta. R1
31	4LC. T1	6	4LC. R1
32	C.O. T1	7	C.O. R1
33	4COT. T1	8	4COT. R1
34	Sta. T2	9	Sta. R2
35	4LC. T2	10	4LC. R2
36	C.O. T2	11	C.O. R2
37	4COT. T2	12	4COT. R2
38	Sta. T3	13	Sta. R3
39	4LC. T3	14	4LC. R3
40	C.O. T3	15	C.O. R3
41	4COT. T3	16	4COT. R3
42	Sta. T4	17	Sta. R4
43	4LC. T4	18	4LC. R4
44	C.O. T4	19	C.O. R4
45	4COT. T4	20	4COT. R4
46	Sta. T5	21	Sta. R5
47	4LC. T5	22	4LC. R5
48	C.O. T5	23	C.O. R5
49	4COT. T5	24	4COT. R5
50		25	

26	Sta. T6	1	Sta. R6
27	4LC. T6	2	4LC. R6
28	C.O. T6	3	C.O. R6
29	4COT. T6	4	4COT. R6
30	Sta. T7	5	Sta. R7
31	4LC. T7	6	4LC. R7
32	C.O. T7	7	C.O. R7
33	4COT. T7	8	4COT. R7
34		9	
35		10	
36		11	
37		12	
38		13	
39		14	
40		15	
41		16	
42		17	
43		18	
44		19	
45		20	
46		21	
47		22	
48		23	
49	E	24	
50	–27V	25	

Figure 007-44 PFT Connector Pin Assignment

- Figure 007-45 shows the MDF cross connection for the No. 0 circuit on the PFT (PZ-8PFTA), as an example.

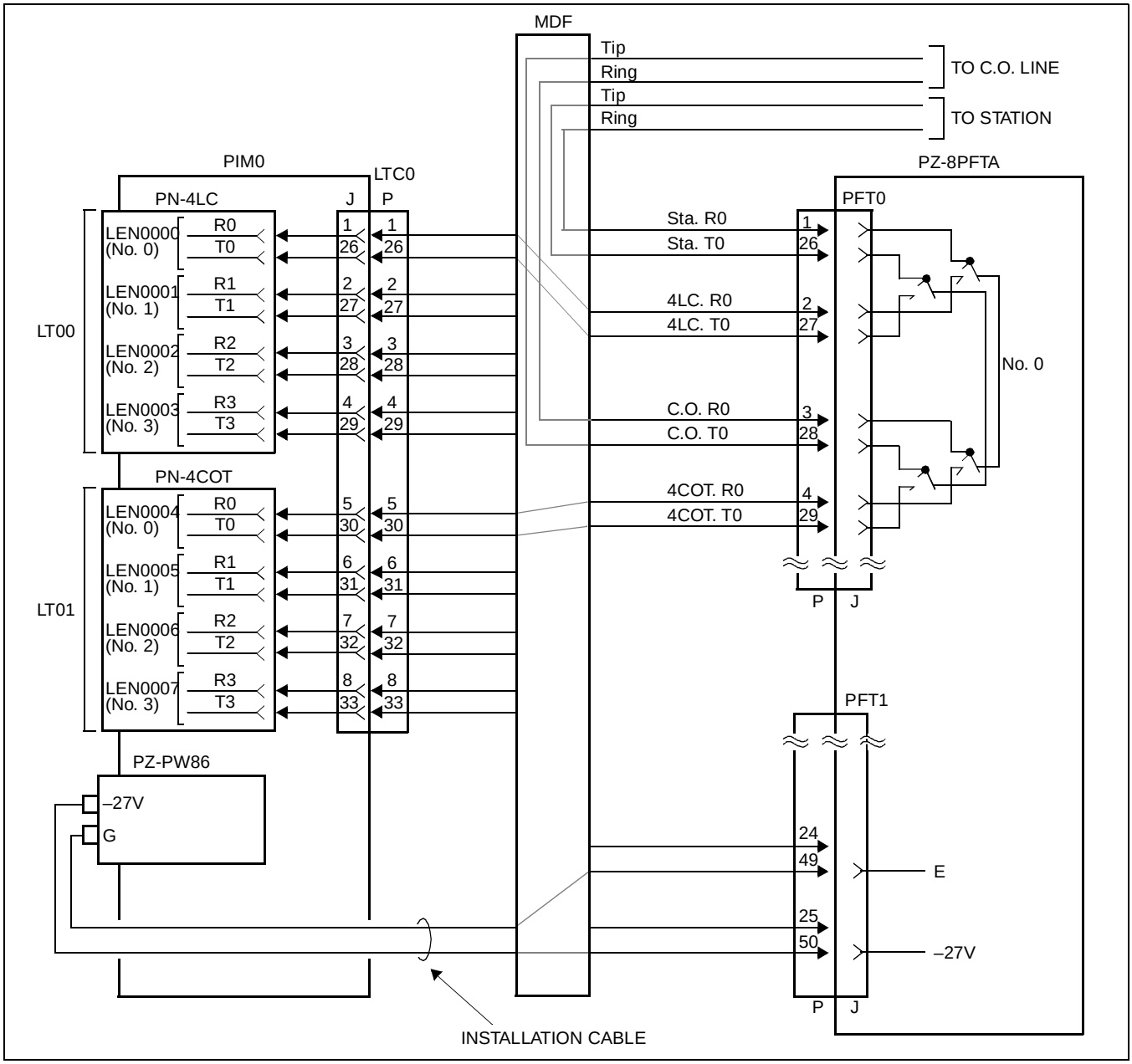


Figure 007-45 MDF Cross Connection for the PFT (PZ-8PFTA) (1 of 2)

(1) PFT0 CONNECTOR

PFT0 (J)

26	Sta. T0	1	Sta. R0
27	4LC. T0	2	4LC. R0
28	C.O. T0	3	C.O. R0
29	4COT. T0	4	4COT. R0 T0

(P)

1	Sta. R0	26	Sta. T0
2	4LC. R0	27	4LC. T0
3	C.O. R0	28	C.O. T0
4	4COT. R0	29	4COT. T0 T0

TO STATION
TO PN-4LC
TO C.O. LINE
TO PN-4COT

(2) PFT1 CONNECTOR

PFT1 (J)

49	E	24	
50	–27V	25	

(P)

24		49	E
25		50	–27V

TO PZ-PW86

(3) LTC0 CONNECTOR

LTC0 (J)

LEN0000	26	T0	1	R0
	27		2	
	28		3	
	29		4	
LEN0004	30	T0	5	R0
	31		6	
	32		7	
	33		8	

(P)

1	R0	26	T0
2		27	
3		28	
4		29	
5	R0	30	T0
6		31	
7		32	
8		33	

TO PZ-8PFTA

TO PZ-8PFTA

Figure 007-46 MDF Cross Connection for the PFT (PZ-8PFTA) (2 of 2)

(14) Alarm Display Panel

The cross connection for an Alarm Display Panel is shown below.

(a) When using the PN-CP00/CP03 card (Single MP System)

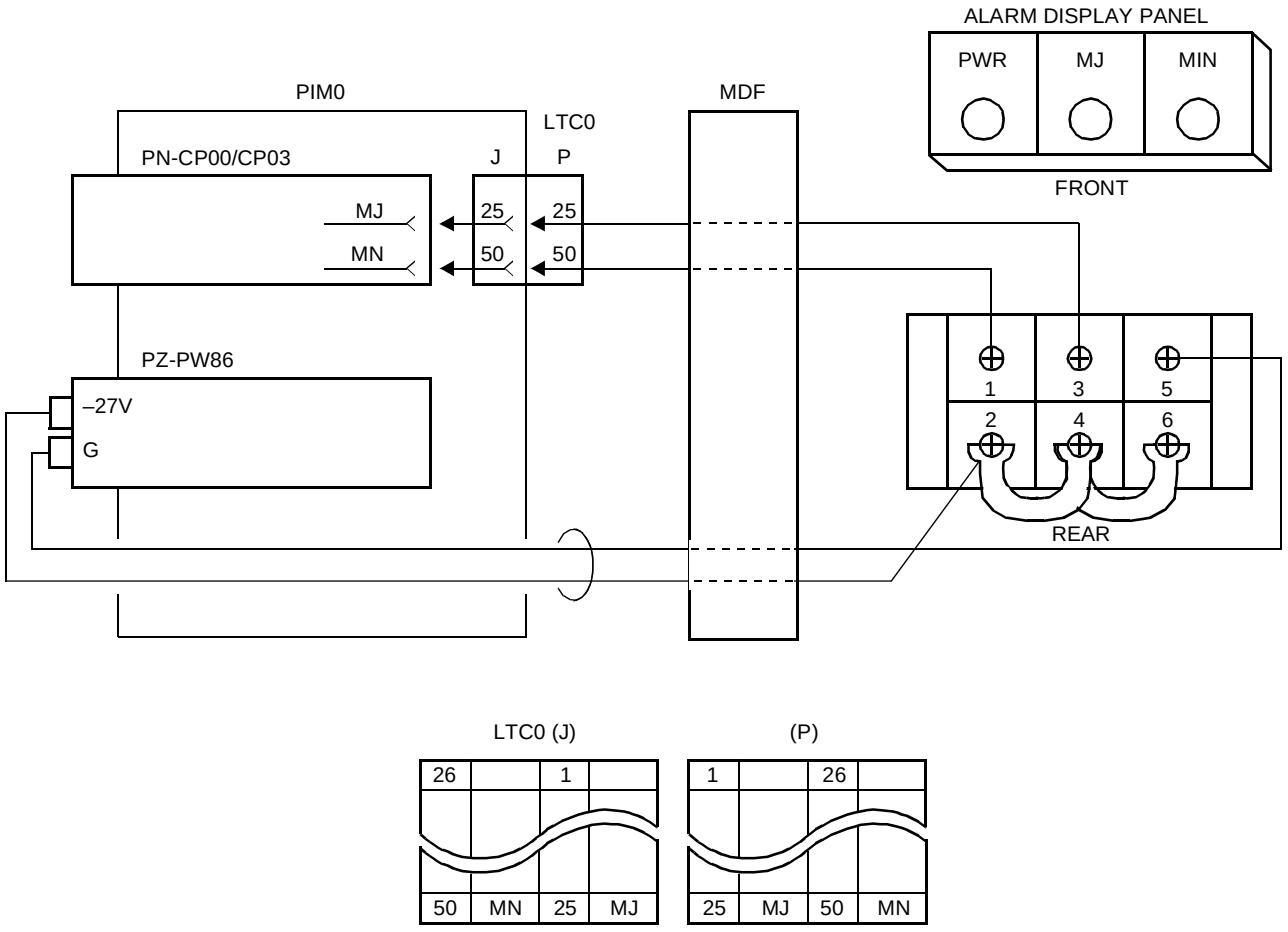


Figure 007-47 MDF Cross Connection for an Alarm Display Panel

NAP 200-007
Sheet 56/56
Termination of Cables on the MDF

(b) When using the PN-CP02 cards (Back up MP System)

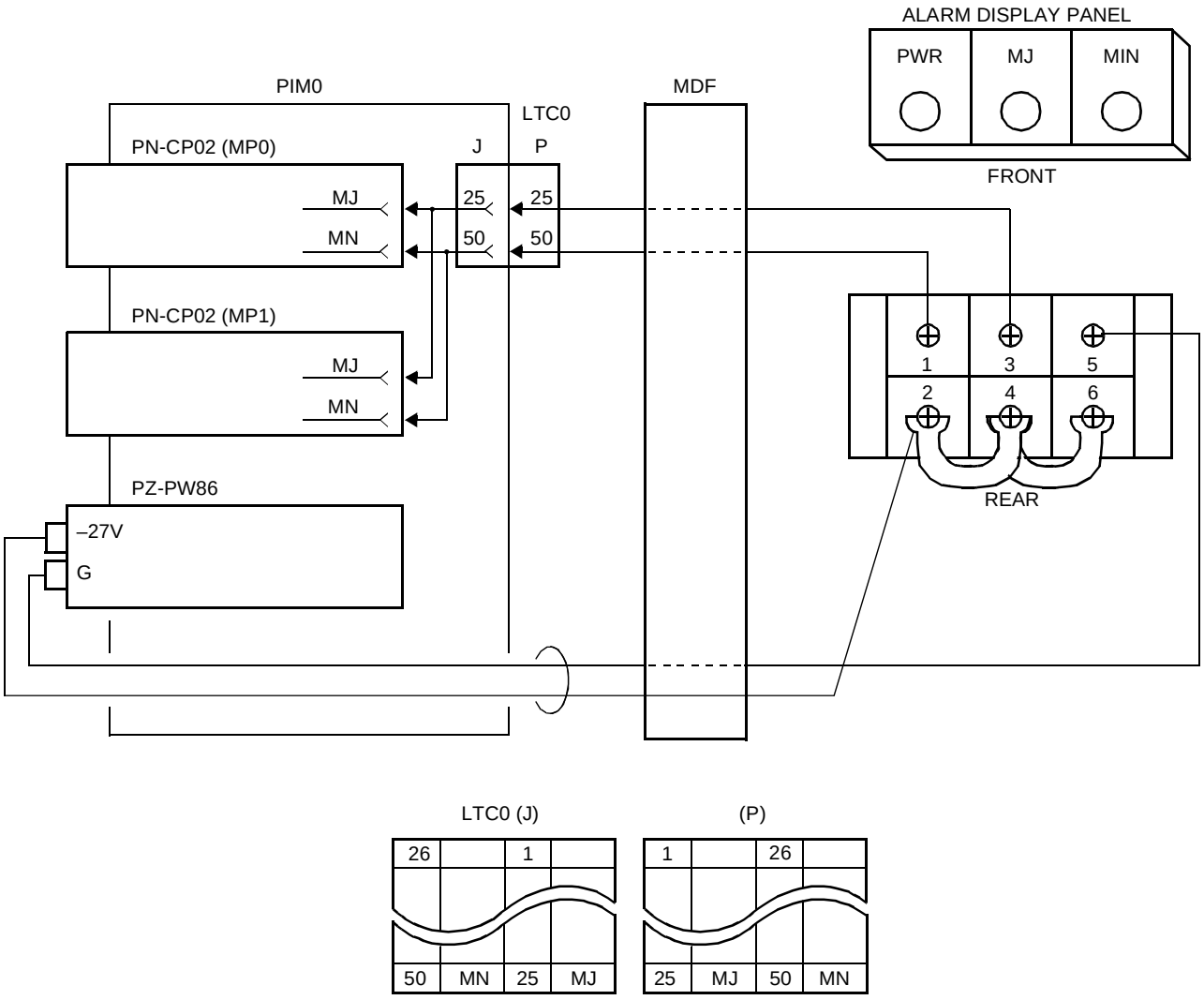


Figure 007-48 MDF Cross Connection for an Alarm Display Panel (Continued)

(1) For testing, turn on the “SW1” switch on the PZ-PW86 Card. Make sure that the “ON” lamp (Green) is lit.

(2) Turn off the “SW1” switch.

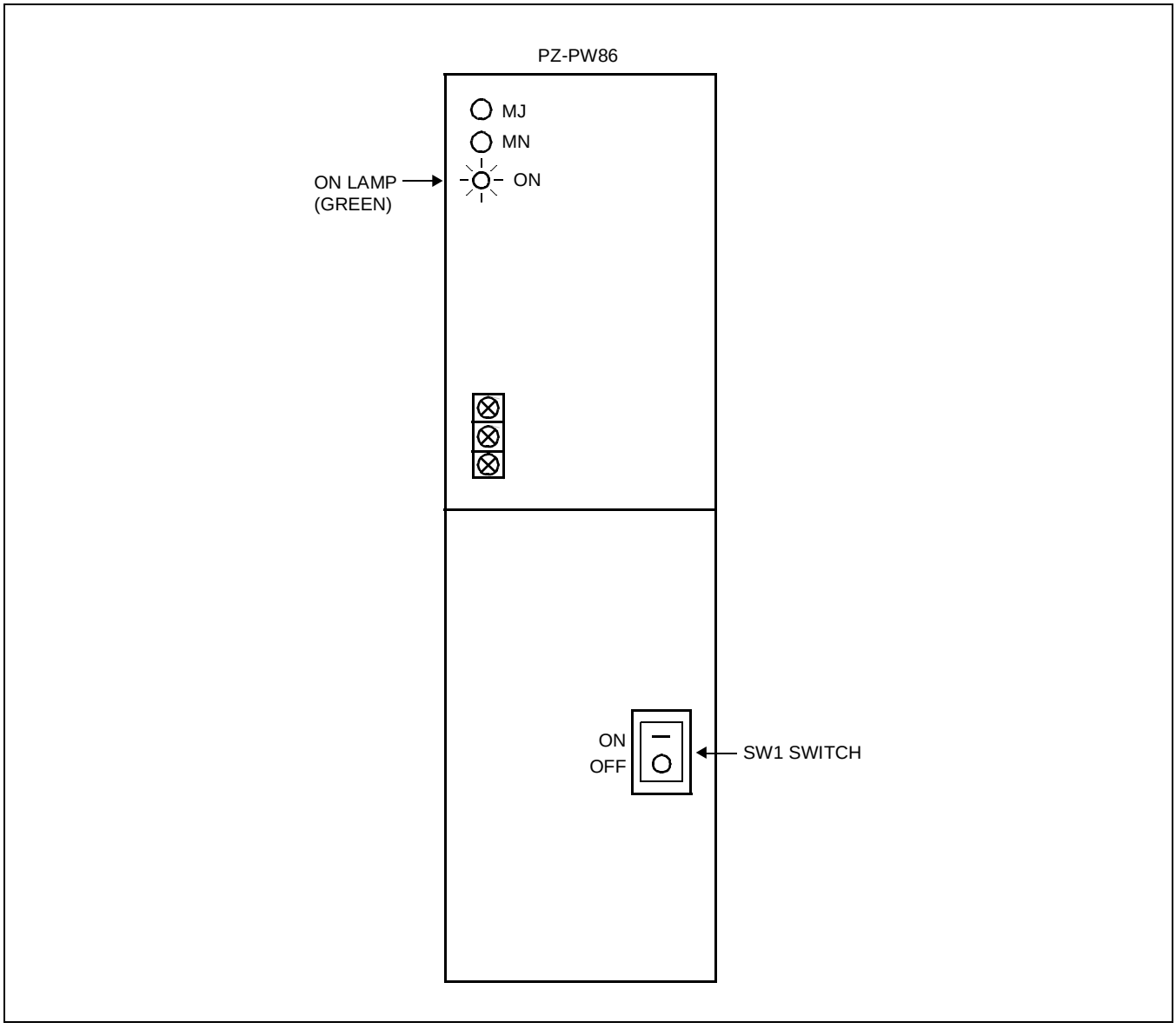


Figure 008-1 Lamp Indication on the PZ-PW86 Card

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(3) Before mounting the circuit cards, confirm the following items.
- Wrist Strap is connected to Frame Ground.
- Switch setting of circuit cards is already completed (Refer to the Circuit Card Manual).
- The “SW1” switches of all PZ-PW86 Cards are turned off.

(4) Mount circuit cards into their mounting positions according to the “Bay Face Layout” and “Port Assignment Table” given in the System Data Sheet.
Figure 008-2 shows the mounting method of circuit cards.

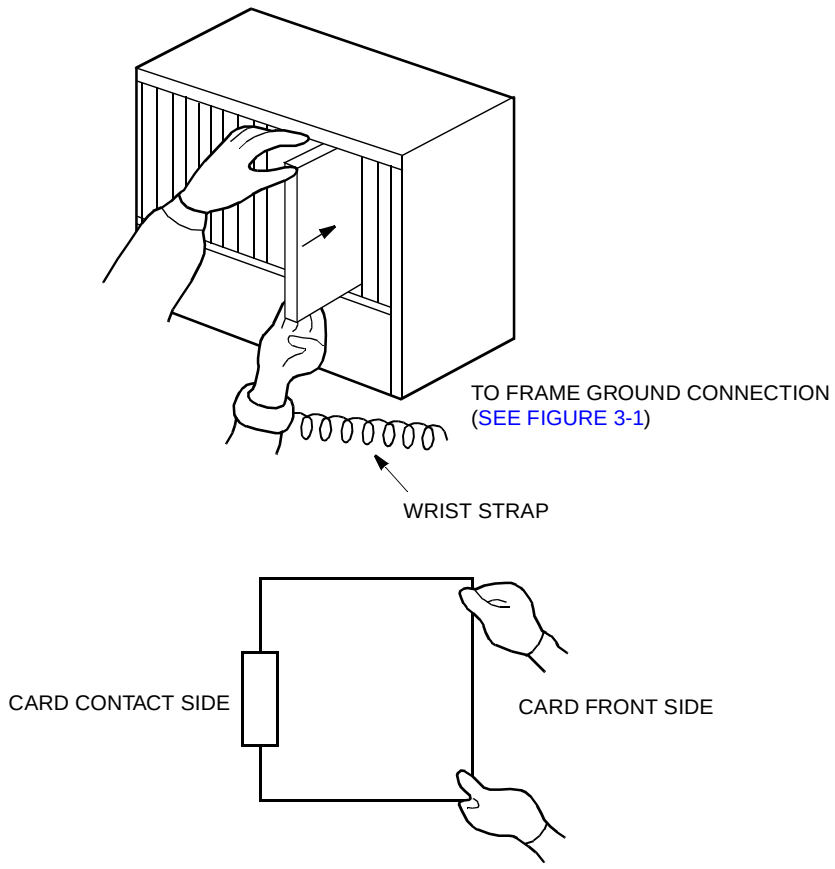


Figure 008-2 Mounting of the Circuit Cards

ATTENTION
Contents
Static Sensitive
Handling
Precautions Required

(5) Install the Card Stopper according to the following procedure.

(a) Insert the left side of the Card Stopper to the slot for the card Stopper as shown in Fig. A of Figure 008-3.

(b) Loosen the attached screw for the Card Stopper, and hang the right side of the Card Stopper onto the screw. Then, tighten the screw as shown in Fig. B of Figure 008-3.

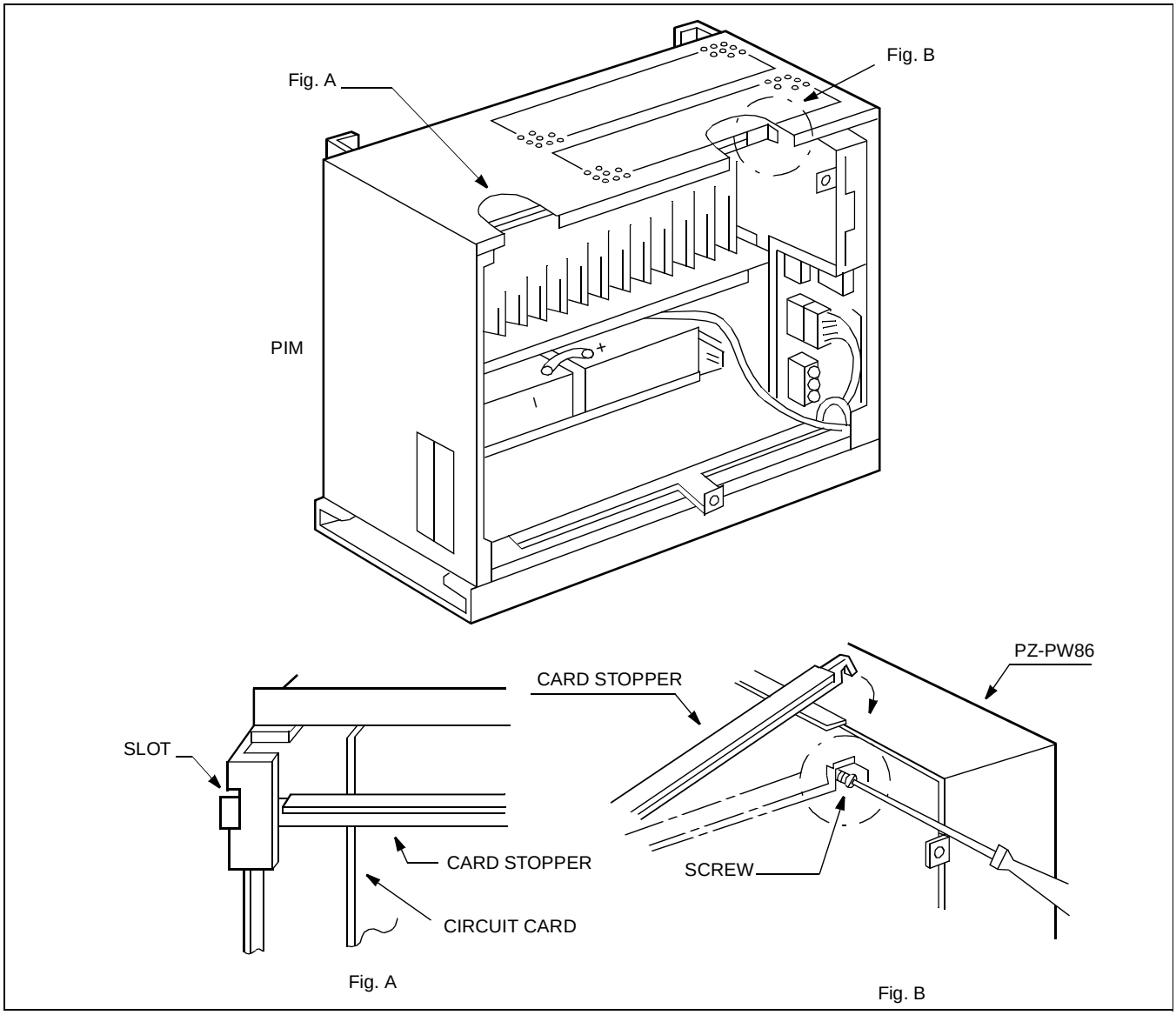


Figure 008-3 Installation of the Card Stopper

NAP 200-009
Sheet 1/6
Installation of Back up MP System

1. Mounting of MP Cards

Mount the MP cards (PN-CP02) in the MP0 and MP1 slot of PIM(D)0.

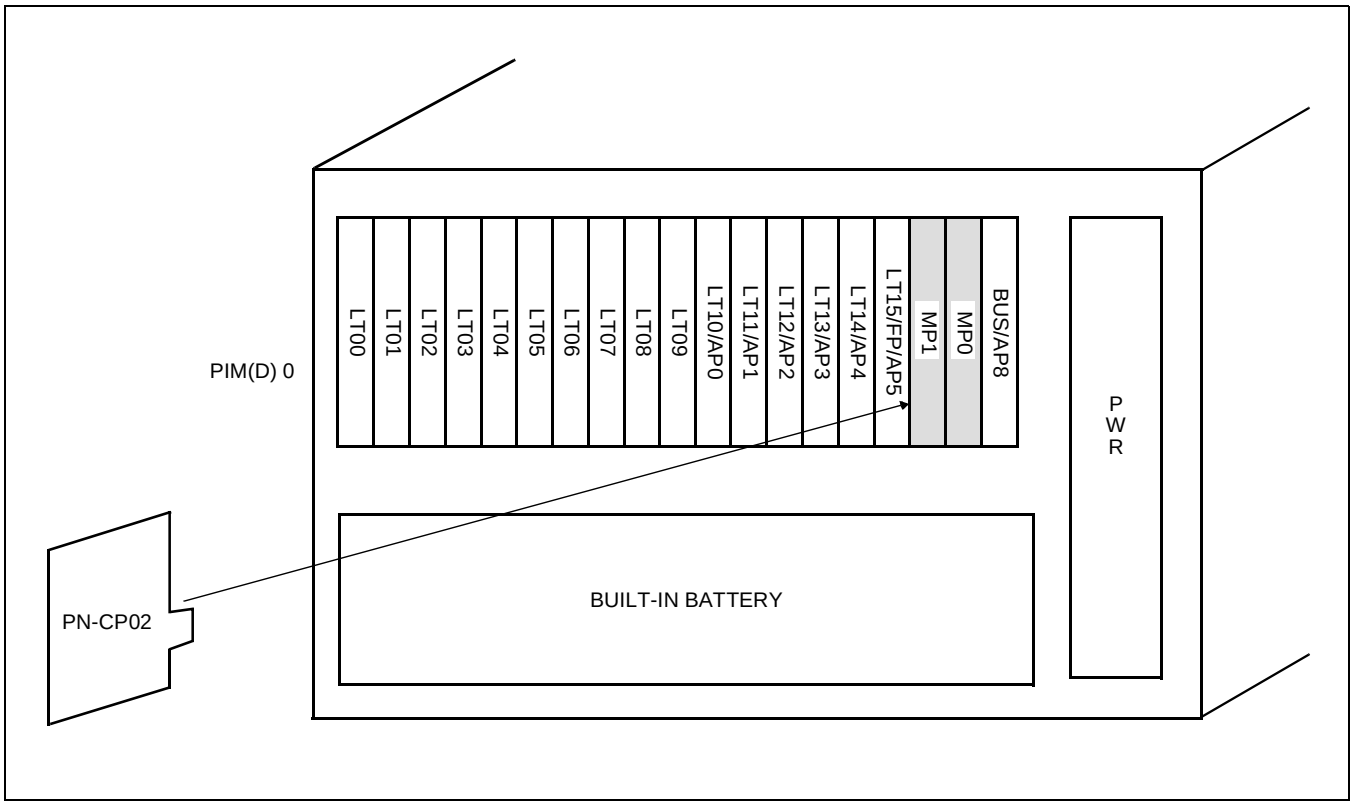


Figure 009-1 Mounting Location of the PN-CP02 Card

2. Cable Connection between MP Cards

Connect the 17-TW-0.3 CABLE between the MP0 card (mounted in the MP0 slot) and the MP1 card (mounted in the MP1 slot) through the MT connectors, as shown in Figure 009-2.

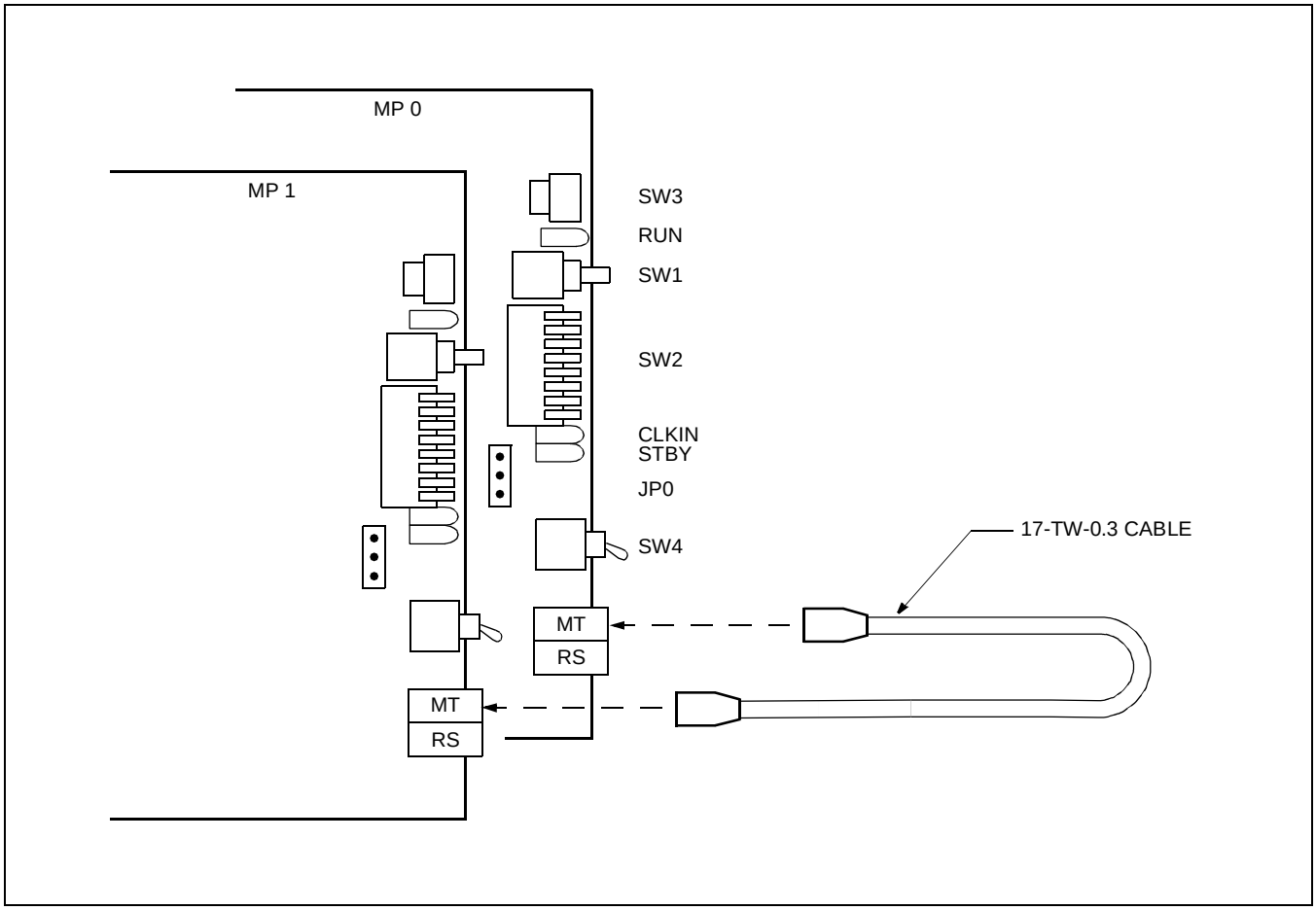


Figure 009-2 Cable Connection between MP Cards

- Figure 006-35 shows the MDF cross connection for the No. 0 circuit on the PFT (PZ-8PFTA), as an example.

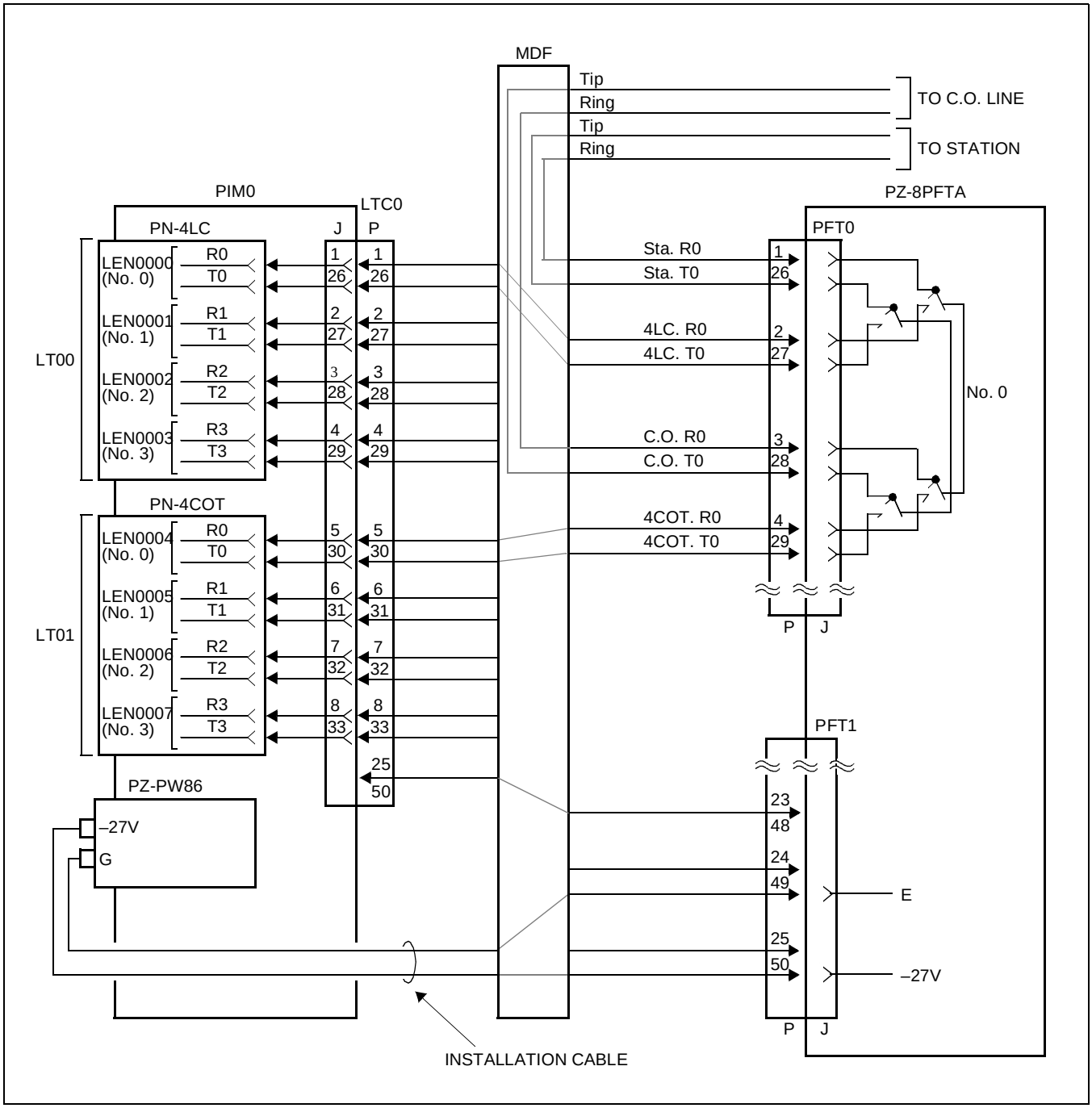


Figure 009-3 MDF Cross Connection for the PFT (PZ-8PFTA)

3. Starting Up the Back up MP System

To start up the Back up MP system, do the following steps. For details of switch settings on the MP card (PN-CP02), refer to the Circuit Card Manual.

STEP 1: After serial numbers (Compact and Advantage) have been loaded, see Note 1.
make Busy Side 0 SW 4 in the UP position.
Side 1 (MP1) SW4 is in the DOWN position.

STEP 2: Turn on the SW switch on the PZ-PW86.

STEP 3: The Run lamp on the MP1 card flashes at 120IPM. Turn SW3 on the MP1 card to B reset (push) SW1; wait for the minor Alarm.
Turn SW3 to 0 (on line). Reset SW1. Turn SW3 to C, reset SW1, wait for minor alarm, then turn SW1 back to 0 (on line). Reset SW1

STEP 4: Make Busy SW 4 (UP position) on the MP1. On side 0 (MP0) put SW4 in the DOWN position. Reset SW1 when MP0 run LED is flashing 120IPM.

STEP 5: Repeat Step 3 for side 0 (MP0).

STEP 6: Enter the data required for Back up MP System from the CAT/MAT.

- CM40 (Attribute data assignment for RS-232C port)
  YY = 01 (Data length) 1st data: 0 (Port 0) 2nd data: 1 (8 bits)
  YY = 02 (Parity check) 1st data: 0 (Port 0) 2nd data: 1 (Ineffective)
  YY = 04 (Stop bit) 1st data: 0 (Port 0) 2nd data: 1 (2 bits)
  YY = 05 (DTR signal) 1st data: 0 (Port 0) 2nd data: 1 (High)
  YY = 06 (RTS signal) 1st data: 0 (Port 0) 2nd data: 1 (High)
  YY = 08 (Data speed) 1st data: 0 (Port 0) 2nd data: 4 (9600 bps)
  YY = 09 (Port for data load/save/verify) 1st data: 1 2nd data: 1 (Port 0)
  In addition to the above mentioned data, set the following data, if it is necessary.
- CMEA Y = 2 1st data: 01 (Registration into the Fault Information Memory and external alarm kind of System Initialization)
  2nd data : 0 (Fault information is registered, external alarm is not output)
  : 1 (Fault information is registered, external alarm is MN alarm)
  : 2 (Fault information is registered, external alarm is MJ alarm)
  : 3 (Fault information is registered, external alarm is determined in standard data <Refer to the Command Manual for details>)
  : NONE (Fault information is not registered, external alarm is not output)

STEP 7: On side 1 (MP1) place SW4 in the DOWN position.
Ensure that SW2 1-8 are OFF and Side 0 (MP0)SW2-8 is ON.
Start programming Office Data from either the CAT or MAT.

STEP 8: When Office Data is completed, set SW2-8 OFF on Side 0 (MP0) and on side 1 (MP1) Reset (push) SW1. The run LED on side 1 (MP1) will light solid. After about 5 minutes, the run LED on the MP1 will flash (3 seconds on, 1 second off). The system data stored in the MP0 card is copied to the MP1 card.
After about 30 minutes, the Run LED lamp flashing pattern on side 1 (MP1) is changed to 1 second on, 1 second off.
The MP1 card starts up as the stand-by MP.

Note 1: *The Compact serial number, Advantage serial number, CPN serial number and System CPU ID code must be loaded separately on each MP.*

For example:

MP0	*MP1*
CPU # 0123456789101	*CPU # 9876543210000*
Compact # 0123456789	*Compact # 9876543210*
Advantage # 0123456789	*Advantage # 9876543210*
IVR ID # 0123456789	*IVR ID # 9876543210*

4. Operation Test

To confirm the operation on the MP0 card (active MP), do the operation tests by referring NAP-200-010.

5. MP Changeover Test

(1) To confirm whether the system changeover (MP0 to MP1) can be performed, do the following steps.

STEP 1: Set the SW4 on the MP0 card to “UP” position (make busy on).

- The STBY lamp on the MP0 card turns on.
- After about 30 sec., the RUN lamp on the MP1 card flashes at 120 IPM (The MP1 card starts up as the active MP).

STEP 2: Confirm the operation on the MP1 card (active MP) by making a station to station connection and an outgoing trunk connection.

(2) To return the active MP from the MP1 card to the MP0 card, do the following steps.

STEP 1: Set the SW4 on the MP1 card to “UP” position (make busy on).

- The STBY lamp on the MP1 card turns on.
- The system is in make busy status temporarily.

STEP 2: Set the SW4 on the MP0 card to “DOWN” position (make busy off).

- The RUN lamp on the MP0 card flashes at 120 IPM (The MP0 card starts up as the active MP).

STEP 3: After confirming the 120 IPM flashing on the MP0 card, set the SW4 on the MP1 card to “DOWN” position (make busy off).

- The RUN lamp on the MP1 card turns on.
- After about 5 minutes, the RUN lamp flashes (3 sec. ON - 1 sec. OFF).
  The system data stored in the MP0 card is copied to the MP1 card.
- After about 30 minutes, the RUN lamp flashing pattern is changed to 1 sec. ON - 1 sec. OFF.
  (The MP1 card starts up as the stand-by MP).

1. System Initialization

- There are two methods for System Initialization. The first method is to Clear All Data, except LEN0000 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 Data Sheet, for the default settings.
- Turn on the "SW1" switch on all the PZ-PW86 units.
- The "ON" lamp must be lit on all the PZ-PW86 units.

1.1. All Clear, Except LEN0000 CAT

STEP 1: On the MP Card, set SW3 to "B" and press SW1.

STEP 2: When the "MN" lamp on the system is lit, set SW3 to the "0" position and press SW1.
- The operating mode has been changed to the ON LINE mode.

Note: *Refer to the Circuit Card Manual for information on switch settings.*

1.2. Resident System Program

STEP 1: Mount the Line/Trunk cards into PIM.

STEP 2: On the MP Card, set SW3 to "C" and press SW1.
- After 30 to 40 seconds, the "MN" lamp turns on.
- The system has loaded the Resident System Program.

Note: *If the "MJ" lamp is lit, repeat Step 2.*

STEP 1: Set SW3 to the "0" position and press SW1.
- The operating mode has been changed to the ON LINE mode.

Note: *Refer to the System Data Sheet for additional information on the Resident System Program and the initialization of the system without a MAT (enabling CAT mode).*

4. System Data Entry

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

1.3. CAT

Any D^{term} can be assigned as a CAT terminal through programming. The D^{term} 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 D^{term} will be able to go into CAT mode. If the system is initialized by "B" (All Clear), only LEN0000 is assigned as a CAT port (the DLC card must be installed in slot LT00).

To use a D^{term} as a CAT, follow the procedures shown below.

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 flahses

(6) Press [#]
- CNF, SPKR, ANS lamps are lit
- "CAT MODE" is displayed on the LCD

(7) Press [ST]
- "COMMAND = -" is displayed on the LCD

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

To reset CAT mode:

While “COMMAND = -” is displayed on the LCD:

(1) Lift the handset (off hook)
- SPKR lamp turns off.

(2) Restore the handset (on hook)
- CNF, ANS lamps turn off.
- LCD returns to clock.

1.4. MAT

In addition to the CAT mode programming, the MAT can also be used in the MAT mode. Refer to the MAT Operation Guide and the Command Manual.

NAP 200-011
Sheet 1/1
Operation Test

Confirm the entered system data and hardware, including cable connection, by completing the following operational tests.

- Basic Connection Test at MDF
  - Station Line Test (Operator Call from all stations)
  - Central Office Trunk Test (Incoming, Outgoing)
  - Tie Line Trunk Test (Incoming, Outgoing)
- Service Feature Test
  - Call Transfer
  - Step Call
  - Executive Right of Way
  - Call Hold
  - Call Back
  - Call Forwarding-All Calls/Don’t Answer/Busy Line
  - Call Pickup
  - Station Hunting-Pilot/Circular
  - Speed Calling-System/Station
  - Paging Access
  - Announcement Service
  - etc.

NAP 200-012
Sheet 1/1
Cleaning and Visual Check

1. Cleaning

Clean the following places:

- Inside of the main equipment, especially the bottom of the base.
- On the Top Cover.
- Around the Main Equipment and the MDF.
- Keyboard on the Attendant Console.

2. Visual Check

(1) Check to see if all circuit cards are in their positions correctly.

(2) Check that the cable connections in the PIM are correctly and completely connected, and the routing of the cables has been done smoothly and neatly.

(3) Check to see if the MAT is removed.

NAP 200-013
Sheet 1/1
Mounting of the Front Cover

Mount the Front Cover onto each PIM and attach it with the screw provided, as shown in Figure 013-1.

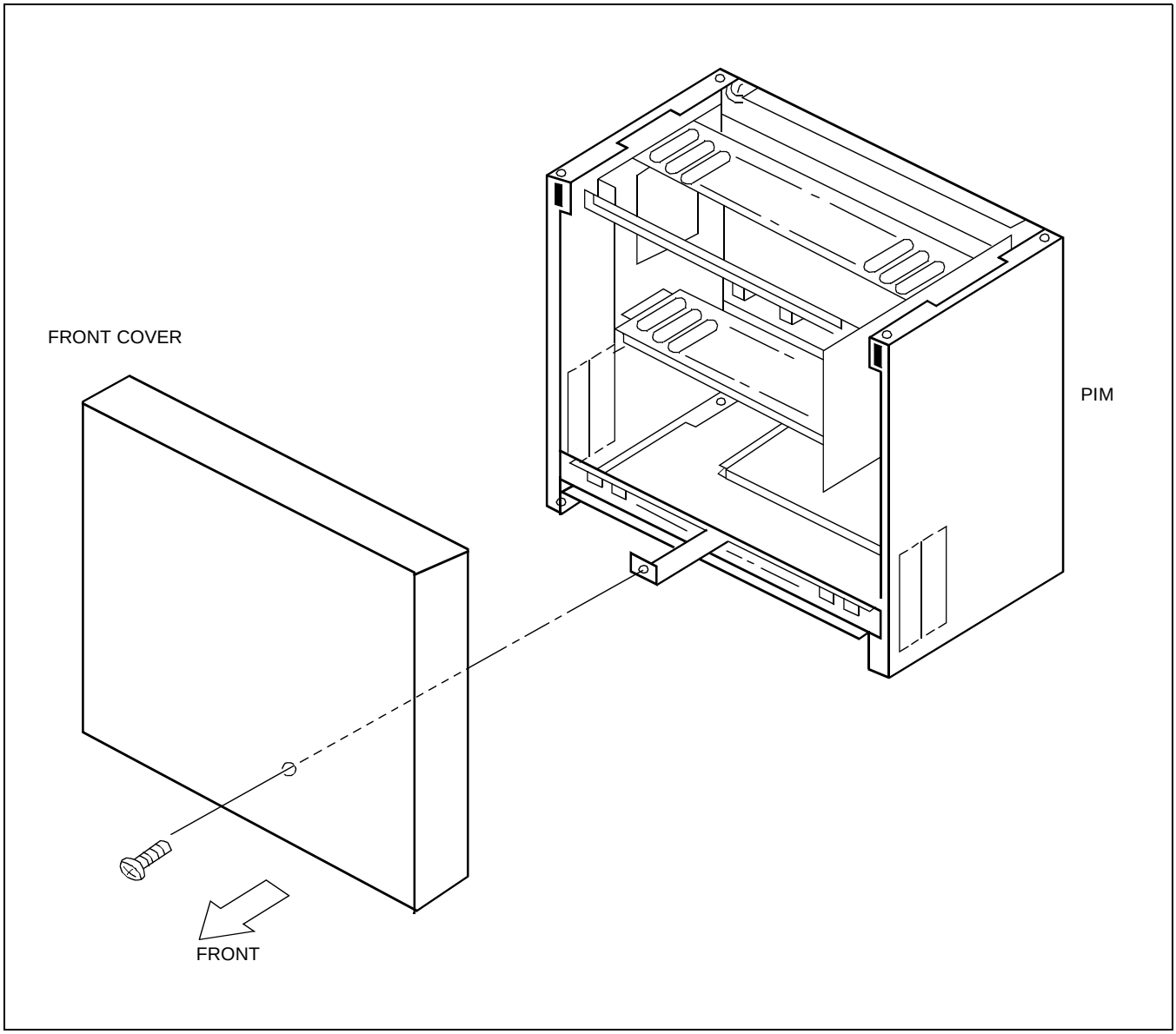


Figure 013-1 Mounting of the Front Cover