

MAGNETIC TAPE UNIT INSTALLATION PROCEDURE (NRZI, PE, AND NRZI/PE TAPE UNITS)

SUBJECT

Provides Procedures to Install MIU with Basic Cabinet and/or Expansion Cabinet and System Cabling.

SPECIAL INSTRUCTIONS

This procedure provides instructions for the installation of the Magnetic Tape Units MTU9104, MTU9105, MTU9109 (MTU9609), MTU9110 (MTU9610), MTU9112, MTU9113, MTU9114 (MTU9614), MTU9115 (MTU9615). Use this procedure in conjunction with the appropriate Level 6 System Installation Manual.

This manual has been revised to the -400 level. It supersedes all previous issues.

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ORDER NUMBER

FX68-03

DOCUMENT NUMBER

71010674-400

September 1983

Honeywell

This document was originally issued under authority of Honeywell Document Issue Notice Number BLCD87407 (April 1978); revised under Change Order Number BLCO90969 (July 1979); and revised under BLCOA0997 (July 1980); updated under authority of BLCOB0481 (April 1981); updated under the authority of BLCOB0558 (August 1981); revised under BLCOC0721 and BLCOC1325 (August 1983).

NOTES

WARNING

To avoid bodily injury, DO NOT connect MTU ac power until MTU installation is completed.

START

1. Installer must be familiar with installation procedures before proceeding.
2. Before installing MTU for initial system installation and system modification, refer to the System Installation Flow Chart in the System Installation Manual to ensure that the system level installation is completed.

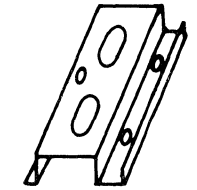
MTU supplied in a cabinet?	Yes
	No

MTU is to be installed in an existing cabinet.
Prepare the cabinet and use the Portable Lifting Mechanism (PLM) to install the MTU. (Refer to subsection 2.2.3.)

This procedure assumes that cabinet unpacking, placement, and leveling installation procedures were completed according to the System Installation Flow Chart.

1. REMOVE shipping RESTRAINERS internal to the MTU. (Refer to subsection 2.1.1.)

After removing the SHIPPING PANEL ASSEMBLY, locate the VACUUM MOTOR COVER as shown and ATTACH it per installation procedure.



VACUUM MOTOR COVER

2. Cable the system for First MTU and daisy chaining MTUs (if applicable) including installation/removal of terminators.
3. If nonbulkhead system is to be cabled, refer to subsection 2.1.2.1. If bulkhead system is to be cabled, refer to subsection 2.1.2.2.
Verify or secure (using connector mounting blocks) cable connections to the MTU control board and the MTU data board (bottom board connectors only). (Refer to subsection 2.1.2.)
4. CONNECT THE MTU AC POWER
DO NOT TURN POWER SWITCH ON
(Refer to subsection 2.1.3.)
5. INSTALL OTHER system PERIPHERALS. (Refer to System Installation Manual or peripheral being installed next.)
6. REFER to System Power Up and Checkout on the SYSTEM LEVEL INSTALLATION FLOW CHART and/or MTU9104/9105/9112/9113 NRZI 7- to 9-Track Operation Manual (Order No. CF10) or MTU9109/9110/9114/9115 Operation Manual (Order No. CC61).

NOTES

1. If the MTU operation FAILS on power up, refer to the specific vendor maintenance manual.
2. Ensure that the Remote Power switch is ON.
3. For information on switch settings, refer to subsection 2.3.

**MAGNETIC TAPE UNIT
INSTALLATION FLOW CHART**

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Section 1

INTRODUCTION

Figure 1-1 shows a typical Level 6 Magnetic Tape Unit (MTU) System. All subsequently mentioned MTU general characteristics are for various MTU configurations. The MTU is a vacuum tape transport system that records data on seven- or nine-track tape at recording speeds of 45 or 75 inches per second. Selectively, it records data at bit densities of 556, 800, or 1600 bits per inch (bpi) or combinations thereof. The MTU is mounted on a precision baseplate, called the tape transport or tape deck, and is rack mounted in a 60-inch cabinet (see Figure 1-2).

The MTU recording characteristics are defined by type number for a particular MTU recording configuration as listed in Table 1-1. Prior to installing an MTU system, exercise care to ensure that the correct MTU is received as specified by the order number (type number) on the shipping invoice. Ensure also that the associated installation material is received for the configuration.

Up to four daisy-chained MTUs are allowed with one Magnetic Tape Controller (MTC board), and the maximum cable length between the MTC and the last MTU in a daisy-chain configuration must not exceed 25 feet. Upon completing an installation, the responsible personnel (installer) must ensure that all ac power is restored (connected) to the system. Also, to verify satisfactory system and MTU operation, run all the necessary test and verification routines (refer to the specific system level installation flow chart).

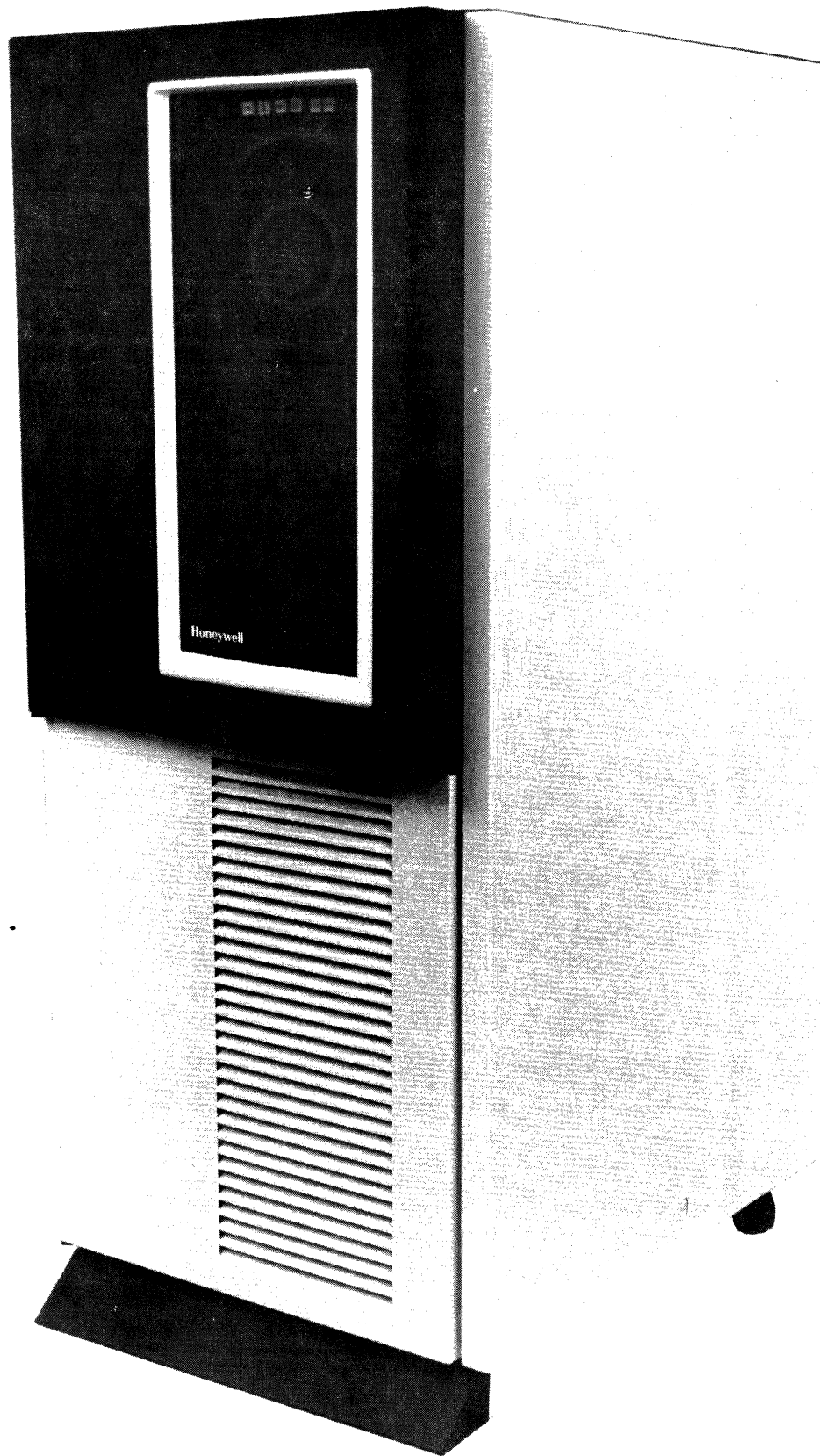
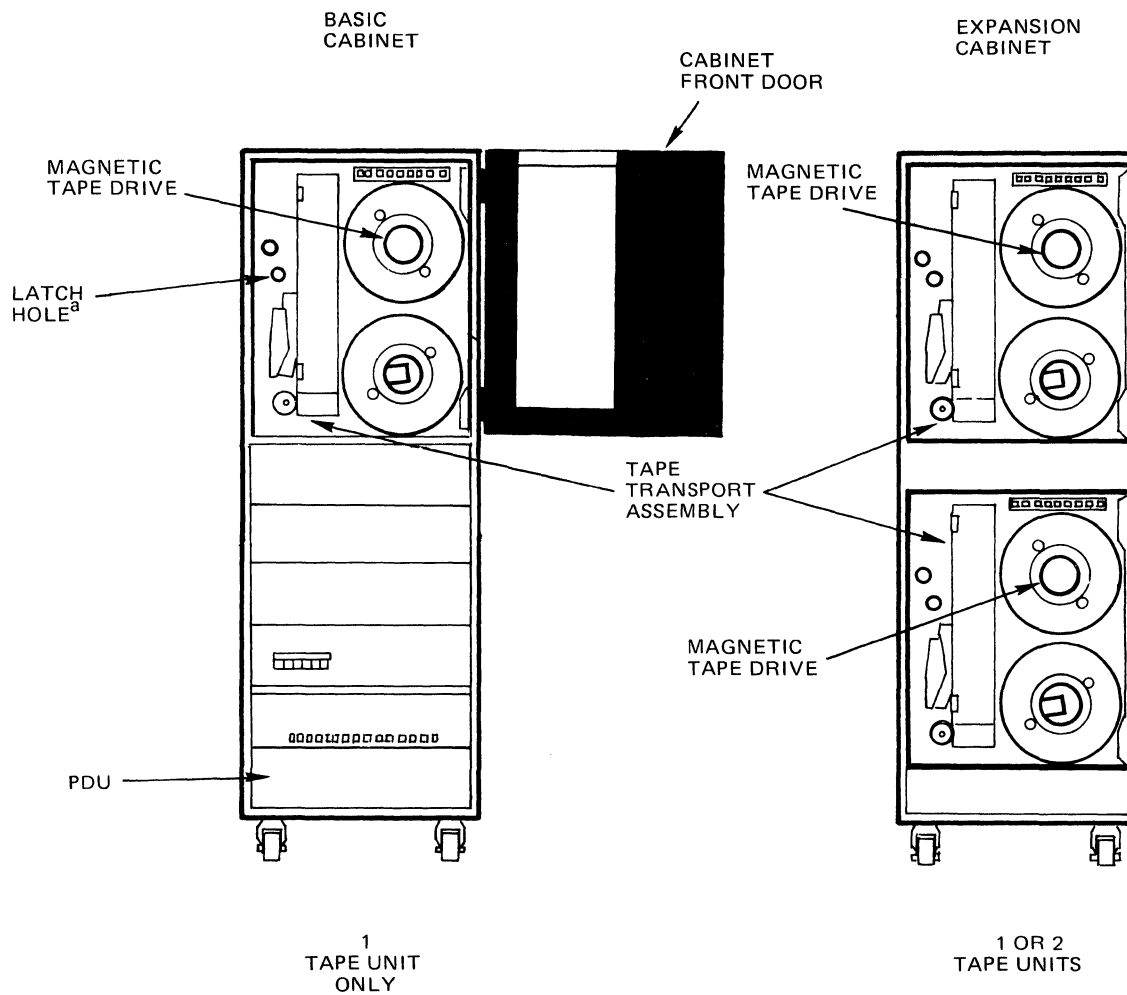


Figure 1-1. Typical Level 6 Magnetic Tape Unit System



^aPROVIDE ACCESS TO ¼-TURN FASTENER THAT SECURES THE TAPE TRANSPORT (UNIT) TO THE CABINET.

Figure 1-2. Sample of MTU Cabinet Configuration

Table 1-1. MTU Recording Characteristics

MTU Type	Track Number	Recording Type	Density (bpi)	Speed (ips)
MTU9104	9	NRZI	800	45
MTU9105	9	NRZI	800	75
MTU9109	9	NRZI/PE	800/1600	45
MTU9609	9	NRZI/PE	800/1600	45
MTU9110	9	NRZI/PE	800/1600	75
MTU9610	9	NRZI/PE	800/1600	75
MTU9112	7	NRZI	556/800	45
MTU9113	7	NRZI	556/800	75
MTU9114	9	PE	1600	45
MTU9614	9	PE	1600	45
MTU9115	9	PE	1600	75
MTU9615	9	PE	1600	75
NOTE				
<p>Available for an Office Furniture Package (OFP) configuration is CAB9035, a 60-inch stand-alone remote cabinet containing any MTU Type completely installed with a 23-foot cable.</p>				

Section 2

DEVICE INSTALLATION

This section provides the procedures to install a basic cabinet and/or expansion cabinet containing a Magnetic Tape Unit (MTU), along with cabling instructions on how the MTU is electrically interconnected in a system. The cabling instructions cover installation of a nonbulkhead system or a bulkhead system. The bulkhead system has a connector bulkhead mounted on the rear of the basic cabinet. Initial installation, system modification, and device configuration (switch settings) are covered. A portable lifting mechanism is provided as an aid in installing MTUs and instructions are included for using this device.

2.1 INITIAL INSTALLATION

This subsection contains the steps for removing shipping restrainers, connecting cables, installing or removing terminators, and connecting ac power.

2.1.1 Removal of Shipping Restrainers

Removal of the MTU shipping bracket assembly and shipping panel assembly is presented in the following subsections:

- Subsection 2.1.1.1 Shipping Bracket Assembly
- Subsection 2.1.1.2 Shipping Panel Assembly

2.1.1.1 SHIPPING BRACKET ASSEMBLY

1. Open the rear door of the cabinet to gain access to the rear of the MTU transport assembly.

2. From the rear of the cabinet, locate the shipping bracket assembly (see Figure 2-1) and remove the two shipping bracket assembly nuts and washers from the upper right-hand side of the MTU transport assembly. Save the shipping bracket assembly nuts and washers for use in step 7 of this procedure.

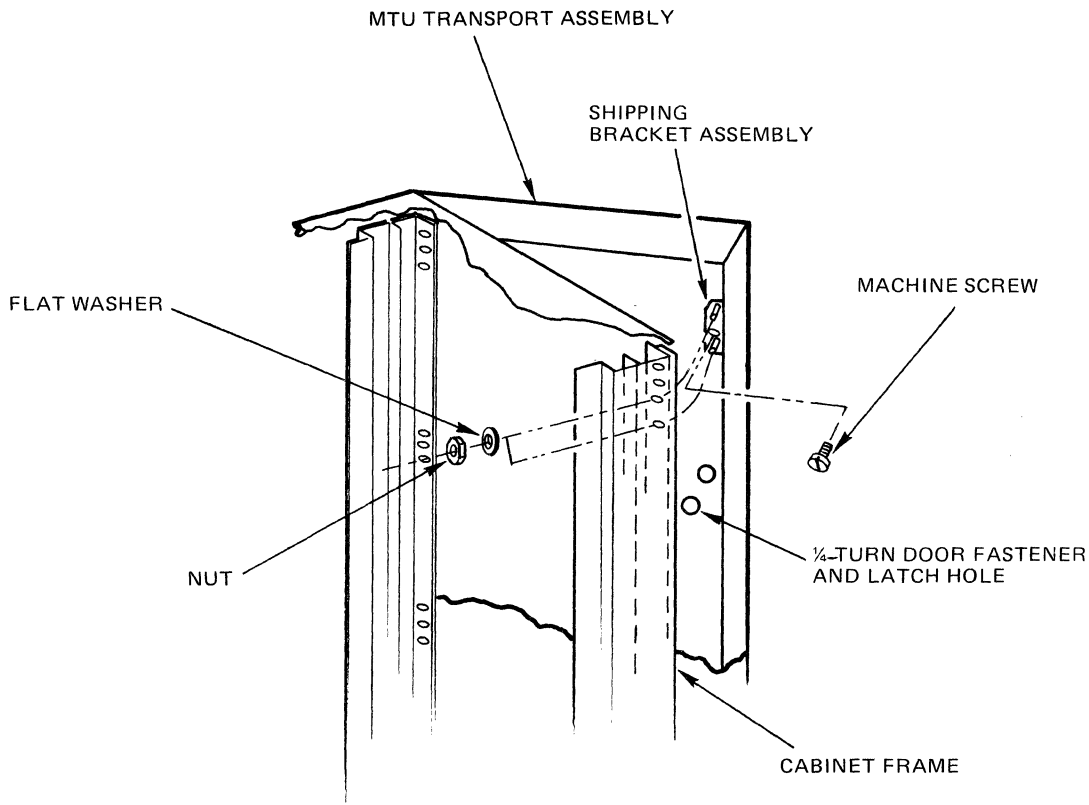


Figure 2-1. Basic/Expansion Cabinet Frame (Top Front)

3. From the front of the cabinet (see Figure 1-2), pull open the cabinet front door to gain access to the MTU transport assembly.
4. Locate the latch hole on the MTU transport assembly (see Figure 1-2). Using a blade type screwdriver, release the 1/4-turn fastener and pull open the MTU transport assembly, exposing the MTU electronics.
5. Remove the machine screw (see Figure 2-1), securing the shipping bracket assembly onto the MTU transport assembly, and the shipping bracket assembly.
6. Reinstall the machine screw into the same hole just vacated on the MTU transport assembly for future use.

7. Store the shipping bracket assembly by mounting it in the cabinet in the following manner:
 - a. From the rear of the cabinet, insert the two studs on the shipping bracket assembly through the holes located in the left-hand side of cabinet opening about 3 inches from bottom (see Figure 2-2).
 - b. Secure the shipping bracket assembly to the cabinet with the two nuts and washers saved in step 2 of these procedures. Ensure that the shipping bracket assembly is properly mounted and flush with the exterior surface of the cabinet.

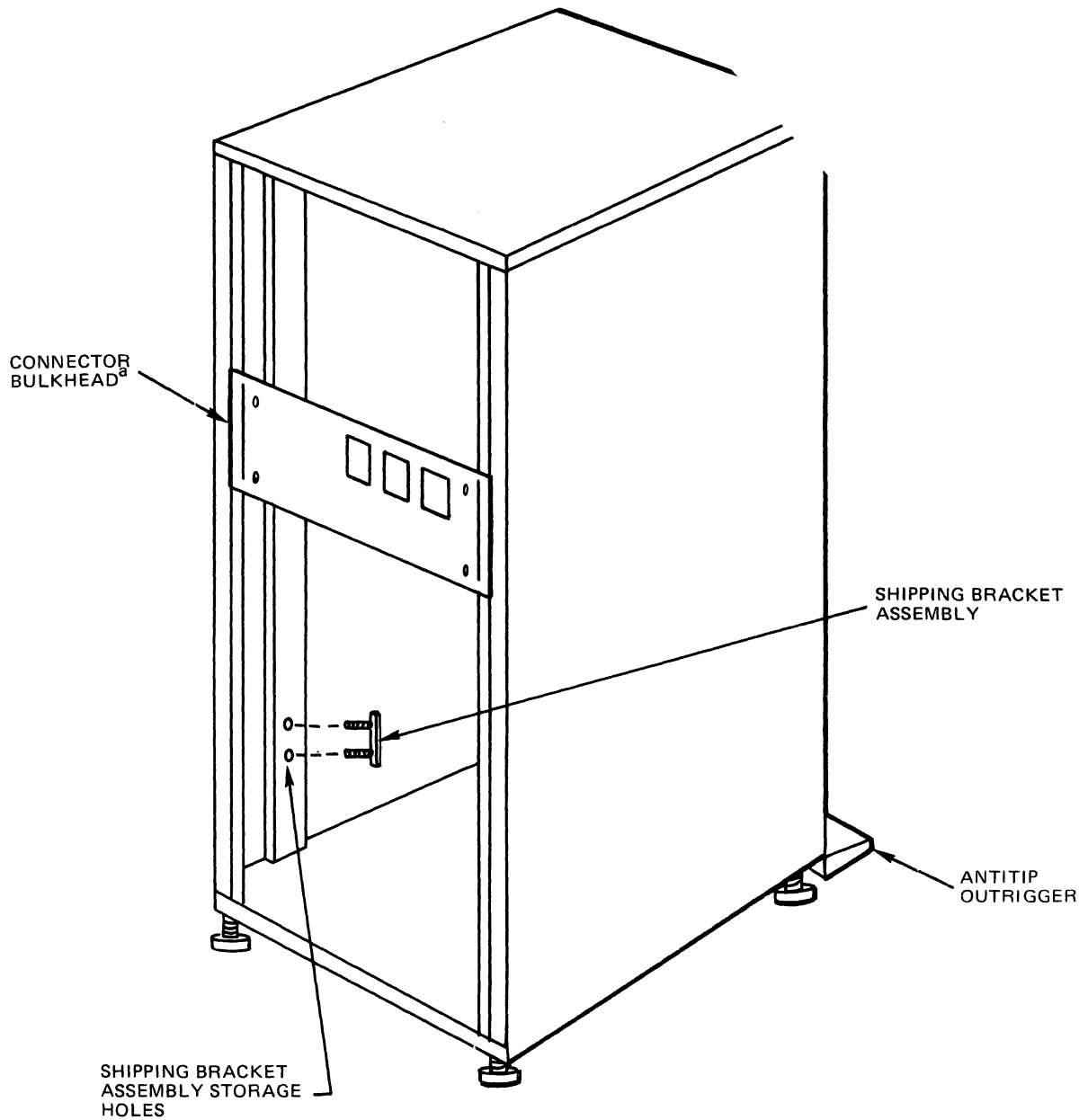
2.1.1.2 SHIPPING PANEL ASSEMBLY

1. From the rear of the MTU transport assembly, locate and remove the screw from the right-hand side of the vacuum motor assembly (see Figure 2-3). This screw secures the shipping panel assembly to the MTU transport assembly.
2. Locate and remove (by cutting) the two shipping panel loop-strap fasteners (see Figure 2-3) from the heat sink and shipping panel assembly, and remove the shipping panel assembly.
3. Reinstall the screw into the same hole on the MTU transport assembly from which it was removed in step 1 of this procedure. The screw is there to aid in securing the vacuum motor assembly to the MTU.
4. Stow the shipping panel assembly and fasteners, for reshipping.
5. With the shipping panel assembly removed, locate the vacuum motor cover (see Figure 2-4) in the spare parts kit (separate shipping container).

NOTE

The four mounting screws to be used for the installation of the vacuum motor cover are taped to the cover.

6. Unlatch and swing open the circuit board assemblies (control and data boards).
7. Attach the vacuum motor cover to the vacuum motor assembly (see Figure 2-5) with the four mounting screws supplied.



^a INSTALLED ON BULKHEAD SYSTEM ONLY. REFER TO THE COMPUTER CONFIGURATION SHEET (CCS) FOR CONNECTOR LOCATION AND DESIGNATIONS

Figure 2-2. Basic Cabinet (Rear View) Storage of Shipping Bracket Assembly and Location of Connector Bulkhead

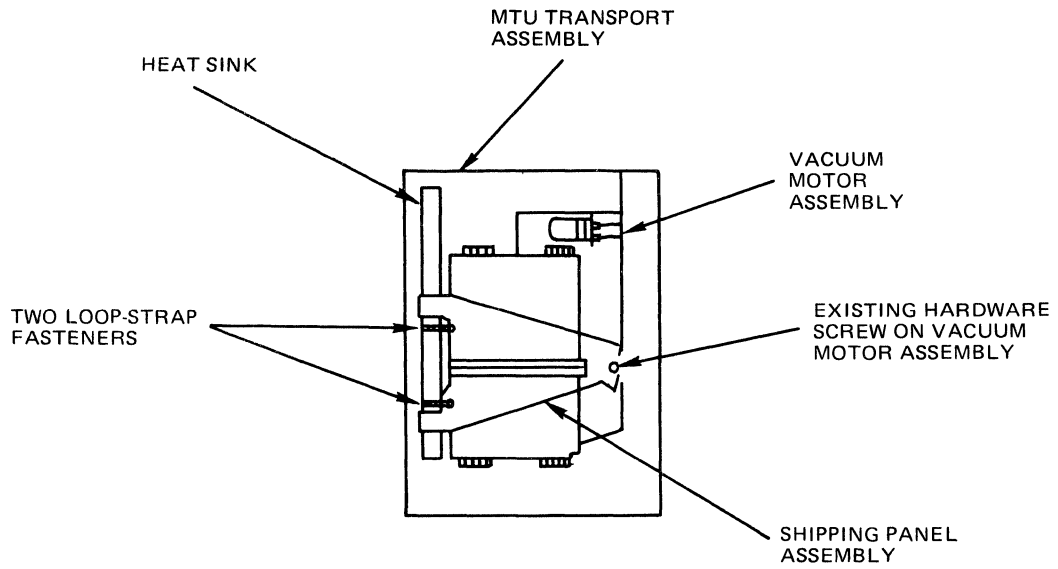


Figure 2-3. MTU (Rear View) Shipping Panel Assembly

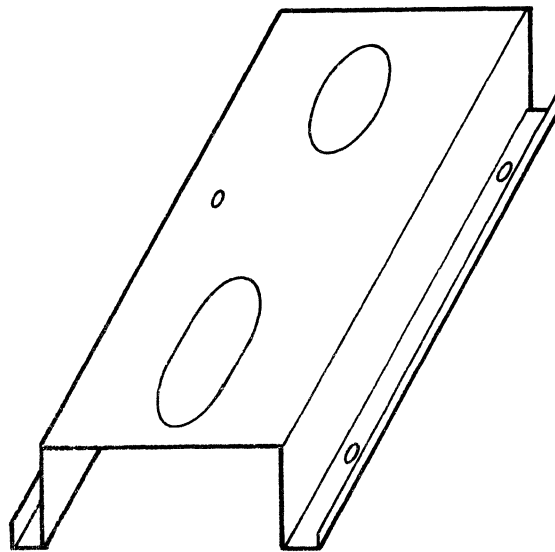


Figure 2-4. Vacuum Motor Cover

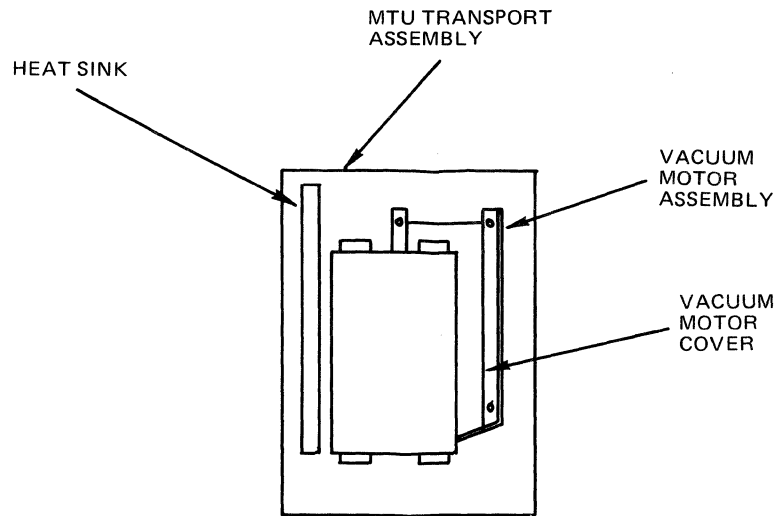


Figure 2-5. MTU (Rear View) Vacuum Motor Cover

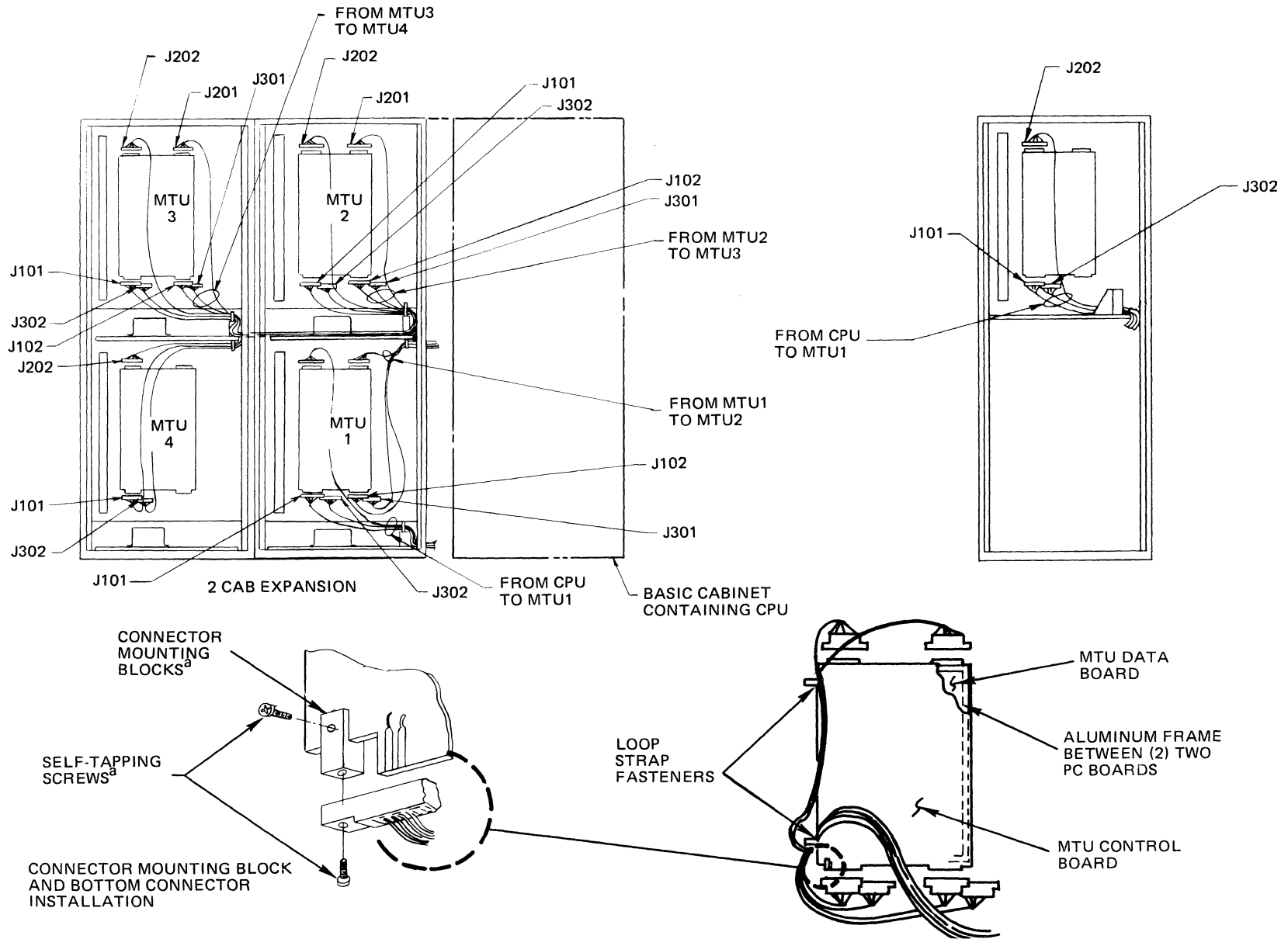
2.1.2 System Cabling

This subsection provides the interrack (between cabinets) and intrarack (within cabinets) cabling procedures for NRZI, PE, and NRZI/PE MTUs (refer to Table 1-1 for MTU Types) in a single (first MTU) or multiple (daisy-chained MTUs) basic/expansion cabinet configuration. Instructions are given for cabling nonbulkhead systems and for cabling bulkhead systems. The cabling information is presented in the following subsections.

- Subsection 2.1.2.1 Cabling Nonbulkhead Systems
- Subsection 2.1.2.1.1 NRZI MTU Cabling
- Subsection 2.1.2.1.2 PE MTU Cabling
- Subsection 2.1.2.1.3 NRZI/PE MTU Cabling
- Subsection 2.1.2.1.4 NRZI/PE and PE Combined Cabling
- Subsection 2.1.2.2 Cabling Bulkhead Systems
- Subsection 2.1.2.2.1 NRZI MTU Cabling
- Subsection 2.1.2.2.2 PE MTU Cabling
- Subsection 2.1.2.2.3 NRZI/PE MTU Cabling
- Subsection 2.1.2.2.4 NRZI/PE and PE Combined Cabling

NOTES

1. If applicable, route the MTU cables (allowing slack were necessary) and secure them to the cabinet frame, ensuring proper cable strain relief (see Figure 2-6).
2. The installer must verify or secure cable connectors to the MTU control board and the MTU data board (bottom board connectors) by using the connector mounting blocks and self-tapping screws (see Figure 2-6) supplied in a plastic bag taped to the rear of the MTU.



^aIF MOUNTING BLOCK AND SCREWS ARE NOT PROVIDED, SECURE CONNECTOR TO BOARD WITH LOOP STRAP FASTENER 03510004-002.

Figure 2-6. MTU Cabinet Cable Interconnection Routing and Securing of Cables Nonbulkhead System

2.1.2.1 CABLING NONBULKHEAD SYSTEMS

A nonbulkhead system does not have a connector bulkhead mounted on the rear of the basic cabinet and the interrack cables are connected directly between the controller board and the MTUs. There are no connector bulkheads installed in the MTU expansion cabinets.

2.1.2.1.1 NRZI MTU Cabling

The NRZI cabling procedures for the first MTU and for multiple MTUs are as follows:

First MTU

To cable the first MTU from the Magnetic Tape Controller (adapter board) in the basic cabinet (see Figure 2-7), perform the following procedures.

1. Locate the Magnetic Tape Adapter cable rolled up in the rear of the basic cabinet (cable part no. 60128703-002 or 60128703-003).
2. Unroll the cable and route it to the first MTU in the basic/expansion cabinet, and connect the connector plugs as follows:
 - a. P101 to J101 at the bottom of the MTU control board.
 - b. P202 to J202 at the top of the MTU NRZI data board.
 - c. P302 to J302 at the bottom of the MTU NRZI data board.
3. Single MTU Only Ensure that an external terminator is installed in J201 at the top of the MTU NRZI data board (external terminator part no. 60129894-029 or 60129894-032).
4. Single MTU Only Ensure that internal terminating networks RT1 and RT2 on the MTU control board and the MTU NRZI data board are installed (terminating network part no. 60129894-036).

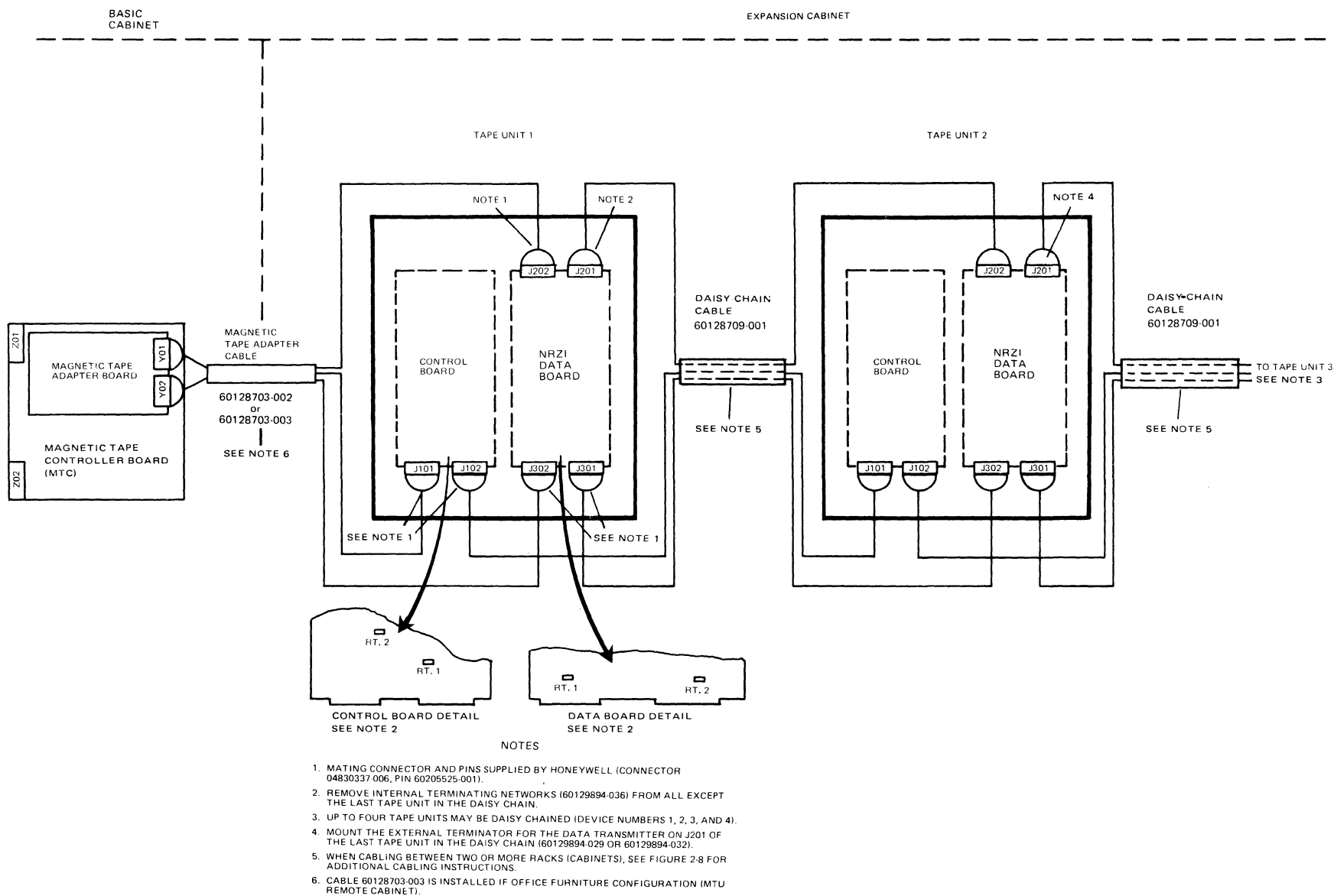


Figure 2-7. NRZI MTU Interrack/Intracabinet Cabling Configuration - Nonbulkhead System

Multiple MTUs

For multiple MTU interrack and intrarack cabling, perform the following procedures.

NOTE

A maximum of four MTUs can be daisy-chained per MTC.

1. Locate the MTU to MTU cable (60128709-001) either cabled (intrarack) or supplied in the shipping container for interrack cabling.

Ensure that the first MTU cabling procedures are performed in the configuration (see Figure 2-7). Then, from the first MTU, verify or connect the connector plugs as follows:

- a. P102 to J102 at the bottom of the MTU control board.
 - b. P201 to J201 at the bottom of the MTU NRZI data board.
 - c. P301 to J301 at the bottom of the MTU NRZI data board.
2. At the second MTU (see Figure 2-7) verify or connect the connector plugs as follows:
 - a. P101 to J101 at the bottom of the MTU control board.
 - b. P202 to J202 at the top of the MTU NRZI data board.
 - c. P302 to J302 at the bottom of the MTU NRZI data board.
 3. Daisy chain each additional MTU as shown in Figure 2-8, and verify the conditions described in steps 4 and 5 of this procedure.

NOTE

The last MTU in the daisy chain must have an external terminator (see Figure 2-7) connected to J201 at the top of the MTU NRZI data board (external terminator part no. 60129894-029 or 60129894-032).

4. Ensure that the external terminator is removed from all other MTUs in the daisy chain.

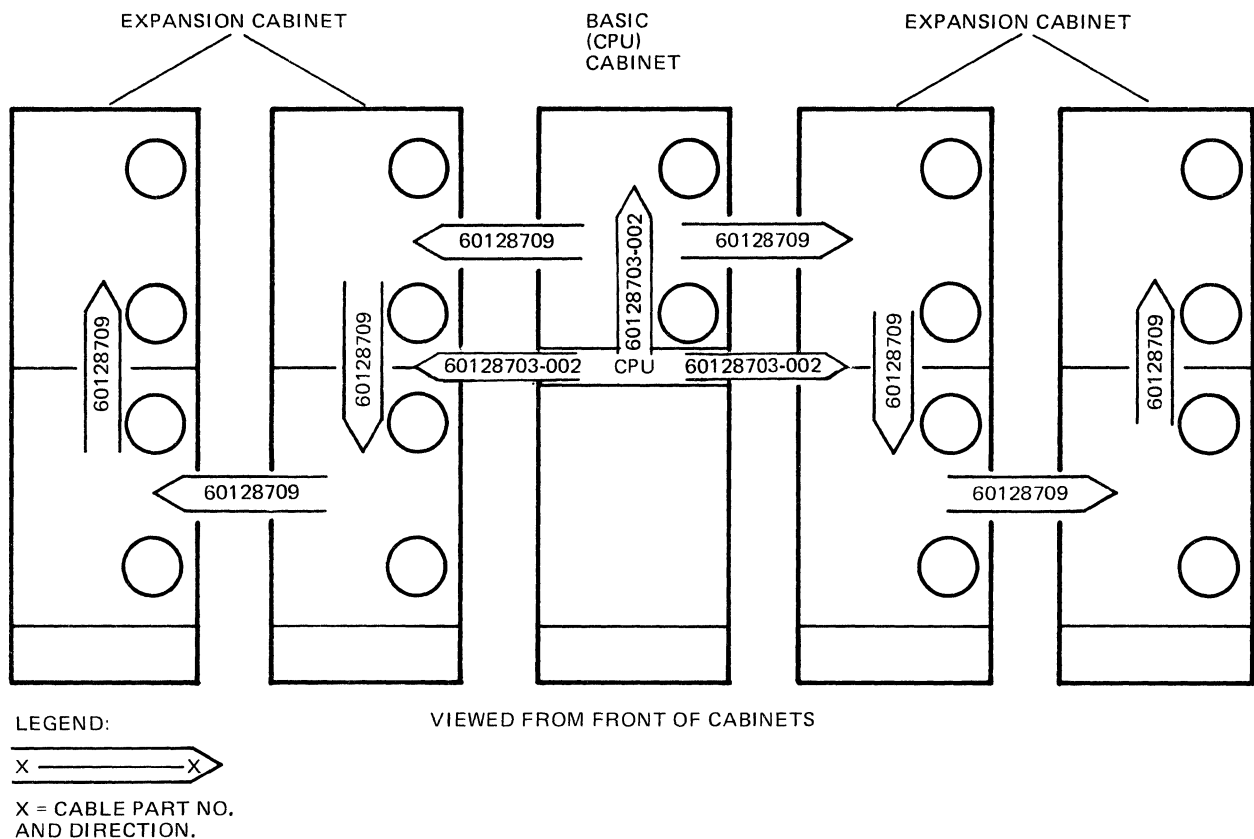


Figure 2-8. Typical MTU to MTU Configuration - Nonbulkhead System

5. Ensure that the internal terminator networks RT1 and RT2 (see Figure 2-7) are removed from the MTU control board and MTU NRZI data board in all MTUs except the last MTU in the daisy chain (terminating network part number 60129894-036).

2.1.2.1.2 PE MTU Cabling

The PE cabling procedure for the first MTU and for multiple MTUs are as follows:

First MTU

To cable the first MTU from the MTC/Data Recovery Unit in the basic cabinet (see Figure 2-9), perform the following procedures.

1. Locate the Data Recovery Unit to MTU cable rolled up in the rear of the basic cabinet (cable part no. 60134257-001 or 60134257-002).

2. Unroll the cable and route it to the first MTU in the basic/expansion cabinet, and connect the connector plugs as follows:
 - a. P101 to J101 at the bottom of the MTU control board.
 - b. P202 to J202 at the top of the MTU PE data board.
 - c. P302 to J302 at the bottom of the MTU PE data board.
3. Single MTU Only Ensure that the following external terminators are installed and connected as follows:
 - a. J201 at the top of the MTU PE data board (external read terminator part no. 60129894-032).
 - b. J301 at the bottom of the MTU PE data board (external write terminator part no. 60129894-031).
4. Single MTU Only Ensure that the internal terminating networks RT1 and RT2 on the MTU control board are installed (terminating network part no. 60129894-036).

Multiple MTUs

For multiple MTU interrack and intrarack cabling, perform the following procedures.

NOTE

A maximum of four MTUs can be daisy chained per MTC/Data Recovery Unit.

1. Locate the MTU to MTU cable (60128709-001) either cabled (intrarack) or supplied in the shipping container for interrack cabling.

Ensure that the first MTU cabling procedures are performed in the configuration (see Figure 2-9). Then, from the first MTU, verify or connect the connector plugs as follows:

- a. P102 to J102 at the bottom of the MTU control board.
 - b. P202 to J202 at the top of the MTU PE data board.
 - c. P301 to J301 at the bottom of the MTU PE data board.
2. At the second MTU (see Figure 2-9), verify or connect the connector plugs as follows:
 - a. P101 to J101 at the bottom of the MTU control board.
 - b. P202 to J202 at the top of the MTU PE data board.
 - c. P302 to J302 at the bottom of the MTU PE data board.
 3. Daisy chain each additional MTU as shown in Figure 2-8, and verify conditions described in steps 4 and 5 of this procedure.

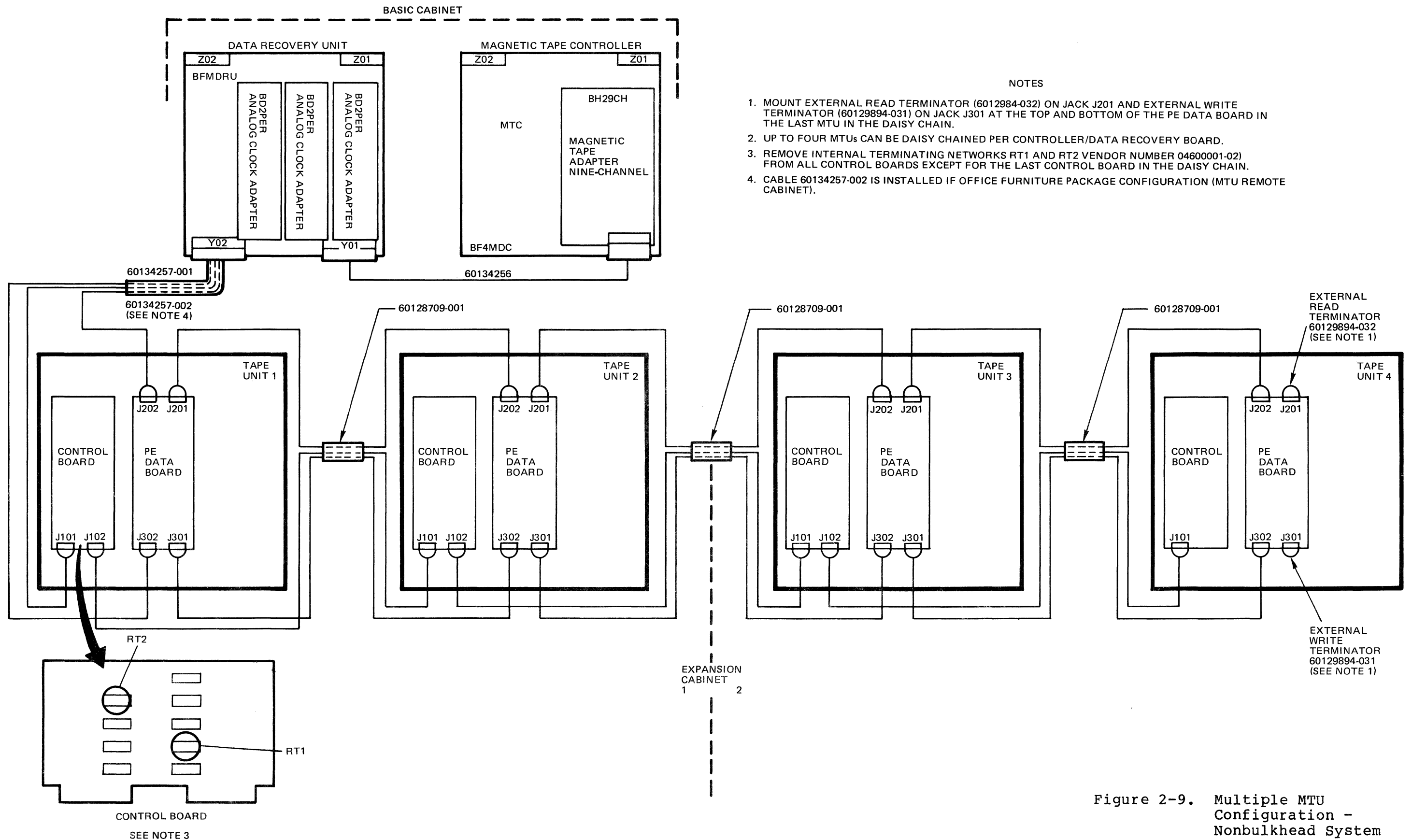


Figure 2-9. Multiple MTU Configuration - Nonbulkhead System

4. Ensure that the last MTU in the daisy chain has the following external terminators (see Figure 2-9) installed and connected as follows:
 - a. J201 at the top of the MTU PE data board (external read terminator part no. 60129894-032).
 - b. J301 at the bottom of the MTU PE data board (external write terminator part no. 60129894-031).
- Also, ensure that the external terminators are removed from all other MTUs in the daisy chain.
5. Ensure that internal terminating networks RT1 and RT2 (see Figure 2-9) are removed from the MTU control board in all MTUs except the last MTU in the daisy chain (terminating network part no. 60129894-036).

2.1.2.1.3 NRZI/PE MTU Cabling

The NRZI/PE cabling procedure for the first MTU and for multiple MTUs is as follows:

First MTU

To cable the first MTU from the MTC/Data Recovery Unit in the basic cabinet (see Figure 2-10), perform the following procedures.

1. Locate the Data Recovery Unit to the MTU cable rolled up in the rear of the basic cabinet (cable part no. 60134257-001 or 60134257-002).
2. Unroll the cable and route it to the first MTU in the basic/expansion cabinet, and connect the connector plugs as follows:
 - a. P101 to J101 at the bottom of the MTU control board.
 - b. P202 to J202 at the top of the MTU NRZI data board.
 - c. P302 to J302 at the bottom of the MTU NRZI data board.
3. Ensure that the following vendor jumper cables are installed between the MTU NRZI data board and the MTU PE data board as follows:
 - a. J201 from the top of the MTU NRZI data board to J202 at the top of the MTU PE data board.
 - b. J301 from the bottom of the MTU NRZI data board to J302 at the bottom of the MTU PE data board.

4. Single MTU Only Ensure that the following external terminators are installed and connected as follows:
 - a. J201 at the top of the MTU PE data board (external read terminator part no. 60129894-032).
 - b. J301 at the bottom of the MTU PE data board (external write terminator part no. 60129894-031).
5. Single MTU Only Ensure that the internal terminating networks RT1 and RT2 on the MTU control board and MTU NRZI data board are installed (terminating network part no. 60129894-036).

Multiple MTUs

For multiple MTU interrack and intrarack cabling perform the following procedures.

NOTE

A maximum of four MTUs can be daisy chained per MTC/Data Recovery Unit.

1. Locate the MTU to MTU cable (60128709-001) either cabled (intrarack) or supplied in the shipping container for interrack cabling.

Ensure that the first MTU cabling procedures are performed in the configuration (see Figure 2-10). Then, from the first MTU, verify or connect the connector plugs as follows:

- a. P102 to J102 at the bottom of the MTU control board.
 - b. P201 to J201 at the top of the MTU PE data board.
 - c. P301 to J301 at the bottom of the MTU PE data board.
2. At the second MTU (see Figure 2-10), verify or connect the connector plugs as follows:
 - a. P101 to J101 at the bottom of the MTU control board.
 - b. P202 to J202 at the top of the MTU NRZI data board.
 - c. P302 to J302 at the bottom of the MTU NRZI data board.

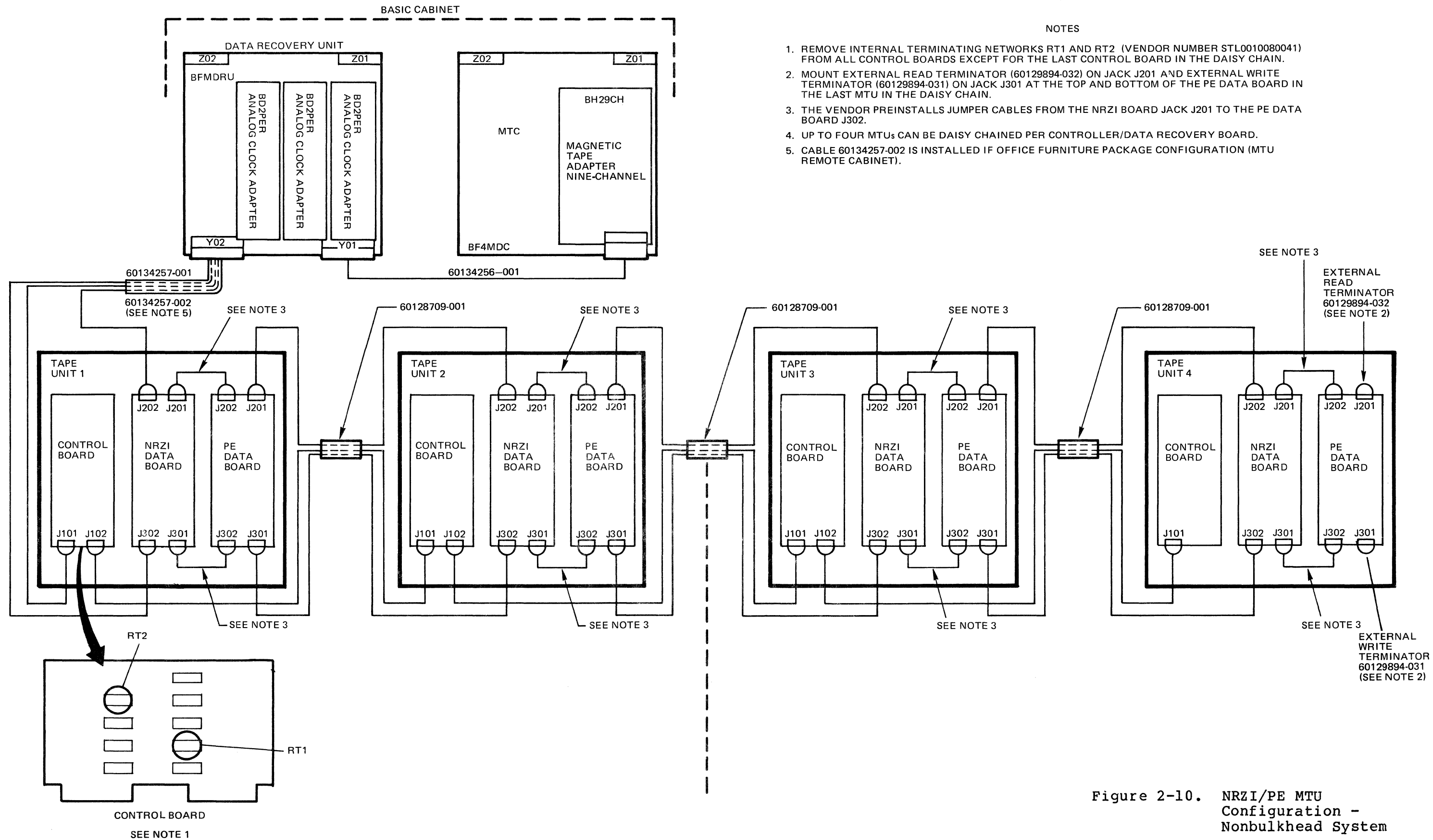


Figure 2-10. NRZI/PE MTU Configuration - Nonbulkhead System

3. Ensure that the following vendor jumper cables are installed between the MTU NRZI data board and the MTU PE data board as follows:
 - a. J201 from the top of the MTU NRZI data board to J202 at the top of the MTU PE data board.
 - b. J301 from the bottom of the MTU NRZI data board to J302 at the bottom of the MTU PE data board.
4. Daisy chain each additional MTU as shown in Figure 2-8, and verify conditions described in steps 2 and 3 of this procedure.
5. Ensure that the last MTU in the daisy chain has the following external terminators (see Figure 2-10) installed and connected as follows:
 - a. J201 at the top of the MTU PE data board (external read terminator part no. 60129894-032).
 - b. J301 at the bottom of the MTU PE data board (external write terminator part no. 60129894-031).

Also, ensure that the external terminators are removed from all other MTUs in the daisy chain.

6. Ensure that the internal terminating networks RT1 and RT2 (see Figure 2-10) are removed from the MTU control board in all MTUs except the last MTU in the daisy chain (terminating network vendor part no. STL001008004).

2.1.2.1.4 NRZI/PE and PE Combined Cabling

The cabling procedure to combine NRZI/PE and PE for multiple MTUs (including the first MTU) are as follows:

First MTU

To cable the first MTU in a NRZI/PE and PE MTU combined configuration, perform the following procedures.

1. NRZI/PE first MTU Refer to subsection 2.1.2.1.3 (first MTU), steps 1 through 3.
2. PE first MTU Refer to subsection 2.1.2.1.2 (first MTU), steps 1 through 4.

Multiple MTUs

For multiple MTU NRZI/PE and PE combined interrack and intrarack cabling perform the following procedures.

NOTE

A maximum of four MTUs can be daisy chained per MTC/Data Recovery Unit.

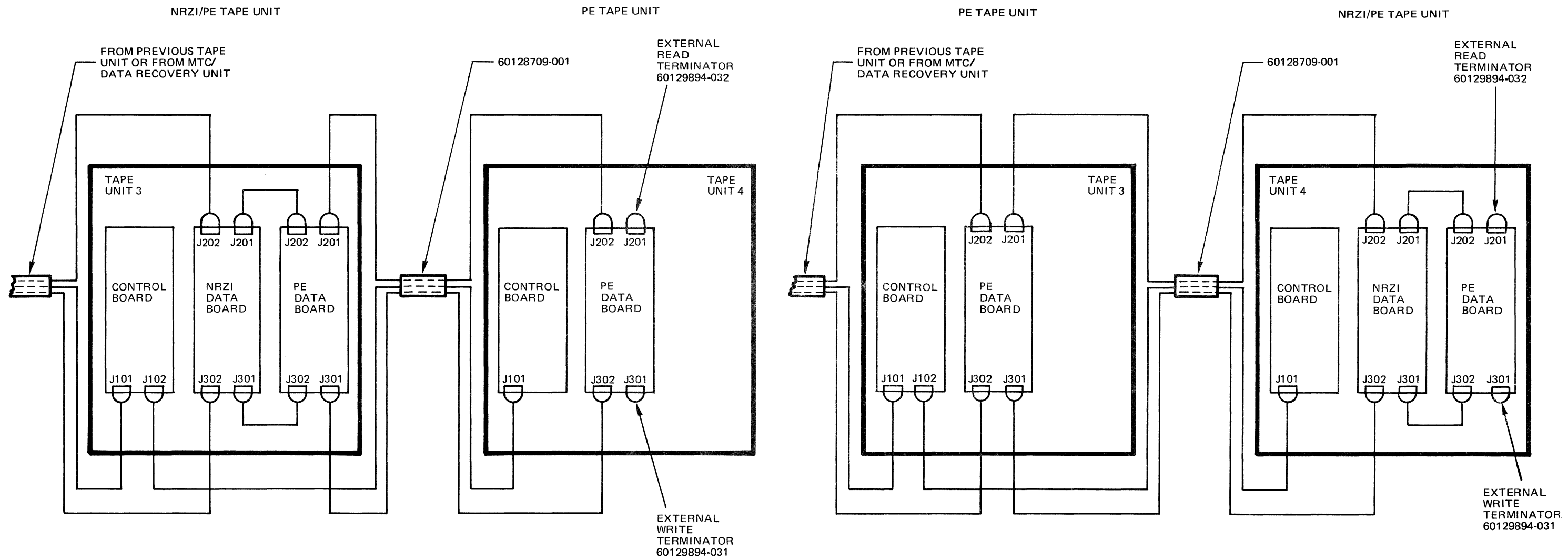
1. Determine the cabinet configuration (see Figure 2-8), and complete the appropriate (First MTU) step 1 or 2 above.
2. NRZI/PE and PE MTU combined with PE terminating (see Figure 2-11 (A)) Perform (multiple MTUs) steps 2 and 3 in subsection 2.1.2.3. Then perform (multiple MTUs) steps 2, 4, and 5 in subsection 2.1.2.1.2.
3. PE and NRZI/PE MTU combined with NRZI/PE terminating (see Figure 2-11 (B)) Perform (multiple MTUs) step 3 in subsection 2.1.2.2. Then perform (multiple MTUs) steps 2, 3, 5, and 6 in subsection 2.1.2.1.3.

2.1.2.2 CABLING BULKHEAD SYSTEMS

A bulkhead system has a connector bulkhead mounted on the rear of the basic cabinet (see Figure 2-2) and a connector bulkhead for attaching input cables installed in the MTU cabinet (see Figure 2-12). The interrack cables from the basic cabinet to the input of the MTU are connected between these two bulkheads. If more than one MTU is being connected in a daisy chain, the interrack cables are installed as in a nonbulkhead system.

One MTU is installed in each cabinet and a maximum of four MTUs can be connected in a daisy chain for each Magnetic Tape Controller (MTC) board. The last MTU in the daisy chain has internal and external terminators that are installed in accordance with the particular MTU cabling procedure.

A Computer Configuration Sheet (CCS) is furnished with each system and lists the necessary cable connector designations and location information.



A. NRZI/PE AND PE COMBINED WITH PE TERMINATING

B. PE AND NRZI/PE COMBINED WITH NRZI/PE TERMINATING

Figure 2-11. Cabling for Combined NRZI/PE and PE Tape Units

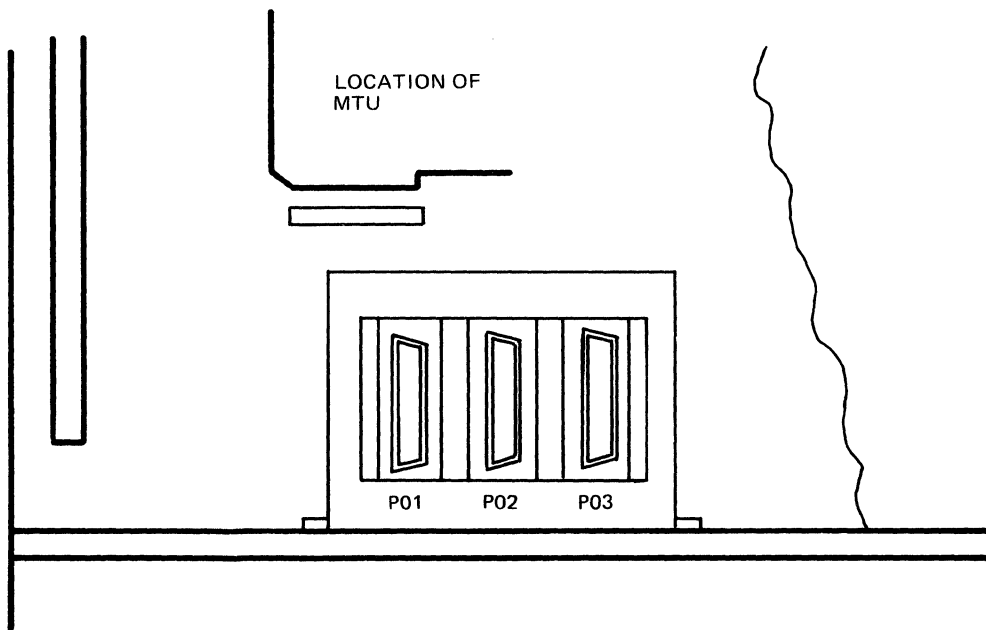


Figure 2-12. MTU Cabinet (Partial Rear View) -
Location of Connector Bulkhead

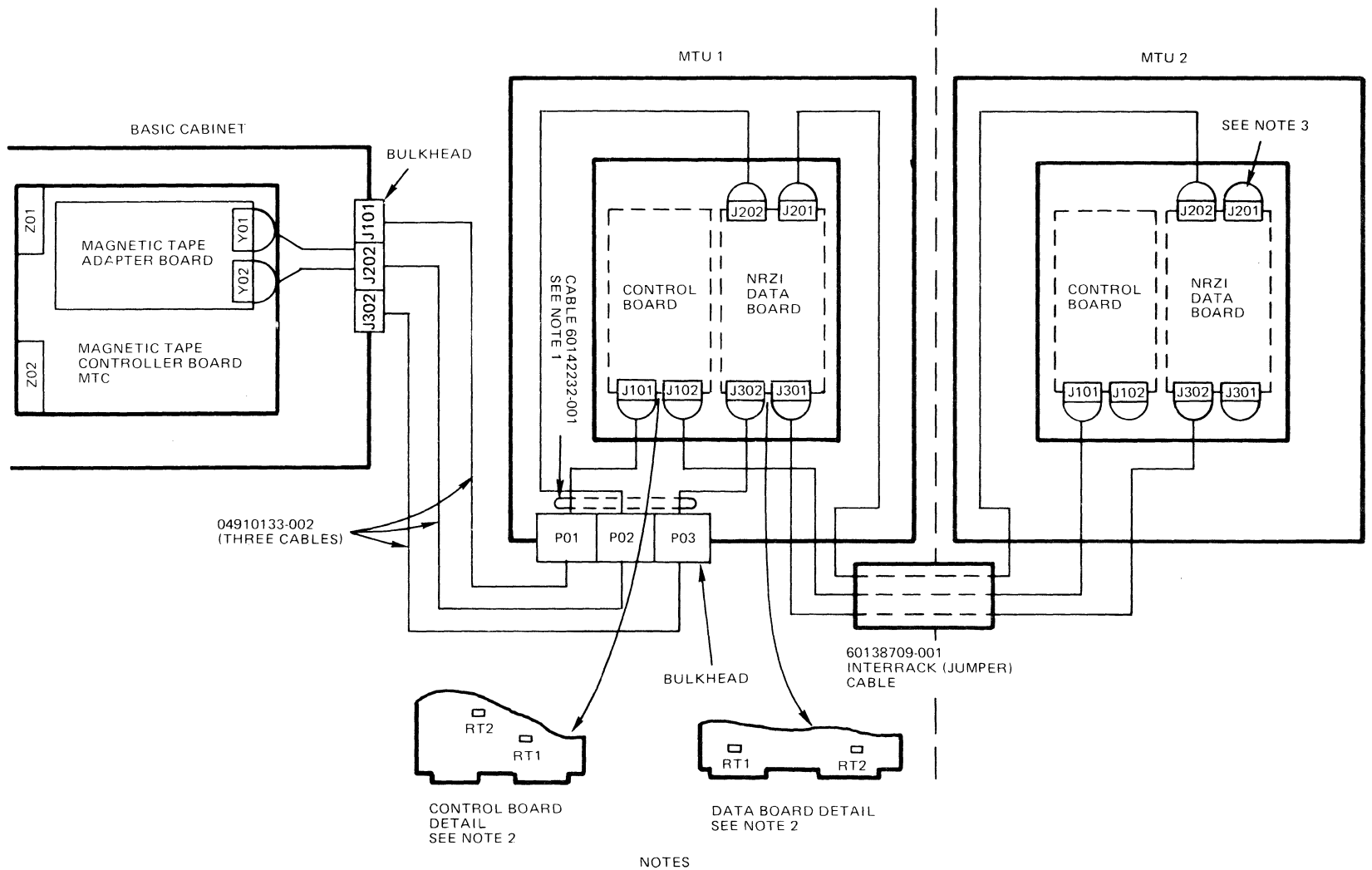
2.1.2.2.1 NRZI MTU Cabling

Refer to the Computer Configuration Sheet (CCS) and to Figure 2-13 for cable connector designations and location information. The NRZI cabling procedure for the first MTU and for multiple MTUs in a bulkhead system are as follows:

First MTU (MTU 1)

To cable the first MTU from the basic cabinet (MTC board), perform the following procedure.

1. Locate and remove the three external cables (04910133002) from the shipping container.
2. Install the three cables between the bulkhead on the basic cabinet and the bulkhead installed in the first MTU (refer to the CCS and to Figure 2-13).
3. Single MTU Only Ensure that an external terminator is installed in J201 at the top of the MTU NRZI data board (external terminator part no. 60129894-029 or 60129894032).
4. Single MTU Only Ensure that the internal terminating networks RT1 and RT2 on the MTU control board and the MTU NRZI data board are installed (terminating network part no. 60129894-036).



- NOTES
1. CABLE 60142232-001 IS FACTORY INSTALLED.
 2. REMOVE INTERNAL TERMINATING NETWORKS (60129894-036) FROM ALL EXCEPT THE LAST MTU IN THE DAISY CHAIN.
 3. MOUNT EXTERNAL TERMINATOR FOR THE LAST MTU IN THE DAISY CHAIN ON J201 (60129894-029 OR 60129894-032).

Figure 2-13. NRZI MTU Cabling Bulkhead System

Multiple MTUs

To cable multiple MTUs, perform the following procedure.

NOTE

A maximum of four MTUs can be connected in a daisy chain for each MTC board.

1. Locate and remove the interrack (jumper) cable(s) (part no. 60138709-001) from the shipping container.
2. Ensure that the first MTU cabling procedures have been performed.
3. See Figure 2-13. Install the interrack cable as follows:
 - a. Cable connector P102 to J102 at the bottom of the MTU 1 control board.
 - b. Cable connector P201 to J201 at the top of the MTU 1 NRZI data board.
 - c. Cable connector P301 to J301 at the bottom of the MTU 1 NRZI data board.
4. At MTU 2 connect the other end of the interrack cable as follows:
 - a. Cable connector P101 to J101 at the bottom of the MTU 2 control board.
 - b. Cable connector P202 to J202 at the top of the MTU 2 NRZI data board.
 - c. Cable connector P302 to J302 at the bottom of the MTU 2 NRZI data board.
5. Cable each additional MTU in the daisy chain in accordance with steps 3 and 4 of this subsection.

NOTE

The last MTU in the daisy chain must have an external terminator (see Figure 2-13) connected to J201 at the top of the NRZI data board (external terminator part no. 60129894-029 or 60129894-032).

6. Ensure that the external terminator is removed from all other MTUs in the daisy chain.

7. Ensure that the internal terminating networks RT1 and RT2 (see Figure 2-13) are removed from the MTU control board and MTU NRZI data board in all MTUs except the last MTU in the daisy chain (terminating network part no. 60129894-036).

2.1.2.2.2 PE MTU Cabling

The PE cabling procedure for the first MTU and for multiple MTUs in a bulkhead system are as follows:

First MTU

To cable the first MTU from the basic cabinet (MTC board), perform the following procedure.

1. Locate and remove the three external cables (04910133-002) from the shipping container.
2. Install the three cables between the bulkhead on the basic cabinet and the bulkhead installed in the first MTU (refer to the CCS and to Figure 2-14).
3. Single MTU Only Ensure that the following external terminators are installed:
 - a. J201 at the top of the MTU PE data board (external read terminator part no. 60129894-032).
 - b. J301 at the bottom of the MTU PE data board (external write terminator part no. 60129894-031).
4. Single MTU Only Ensure that the internal terminating networks RT1 and RT2 on the MTU control board are installed (terminating network part no. 60129894-036).

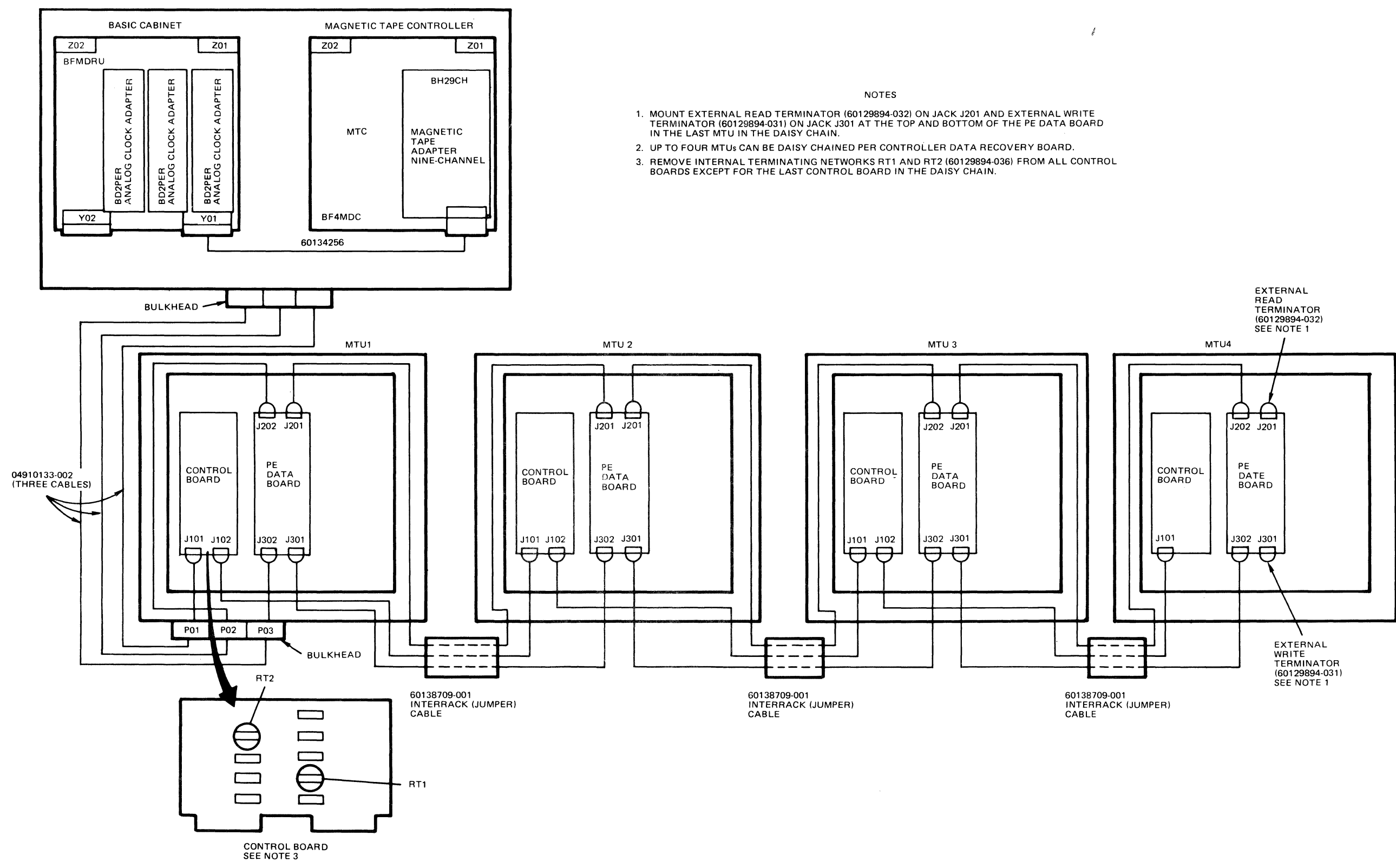
Multiple MTUs

To cable multiple MTUs, perform the following procedure.

NOTE

A maximum of four MTUs can be connected in a daisy chain for each MTC board.

1. Locate and remove the interrack (jumper) cable(s) (part no. 60138709-001) from the shipping container (see Figure 2-14).
2. Ensure that the first MTU cabling procedure has been performed.



- NOTES
1. MOUNT EXTERNAL READ TERMINATOR (60129894-032) ON JACK J201 AND EXTERNAL WRITE TERMINATOR (60129894-031) ON JACK J301 AT THE TOP AND BOTTOM OF THE PE DATA BOARD IN THE LAST MTU IN THE DAISY CHAIN.
 2. UP TO FOUR MTUs CAN BE DAISY CHAINED PER CONTROLLER DATA RECOVERY BOARD.
 3. REMOVE INTERNAL TERMINATING NETWORKS RT1 AND RT2 (60129894-036) FROM ALL CONTROL BOARDS EXCEPT FOR THE LAST CONTROL BOARD IN THE DAISY CHAIN.

Figure 2-14. PE Multiple MTU Configuration - Bulkhead System

3. Install the interrack cable as follows (see Figure 2-14):
 - a. Cable connector P102 to J102 at the bottom of the MTU 1 control board.
 - b. Cable connector P201 to J201 at the top of the MTU 1 PE data board.
 - c. Cable connector P301 to J301 at the bottom of the MTU 1 PE data board.
4. At MTU 2 connect the other end of the interrack cable as follows:
 - a. Cable connector P101 to J101 at the bottom of the MTU 2 control board.
 - b. Cable connector P202 to J202 at the top of the MTU 2 PE data board.
 - c. Cable connector P302 to J302 at the bottom of the MTU 2 PE data board.
5. Cable each additional MTU in the daisy chain in accordance with steps 3 and 4 of this subsection.
6. Ensure that the last MTU in the daisy chain has the following external terminators (see Figure 2-14) installed:
 - a. J201 at the top of the MTU PE data board (external read terminator part no. 60129894-032).
 - b. J301 at the bottom of the MTU PE data board (external write terminator part no. 60129894-031).

Ensure that the external terminators are removed from all other MTUs in the daisy chain.
7. Ensure that internal terminating networks RT1 and RT2 (see Figure 2-14) are removed from the MTU control board in all MTUs except the last MTU in the daisy chain (terminating network part no. 60129894-036).

2.1.2.2.3 NRZI/PE MTU Cabling

The NRZI/PE cabling procedure for the first MTU and for multiple MTUs in a bulkhead system are as follows:

First MTU

To cable the first MTU from the basic cabinet (MTC board), perform the following procedure.

1. Locate and remove the three external cables (04910133002) from the shipping container.

2. Install the three cables between the bulkhead on the basic cabinet and the bulkhead installed in the first MTU (refer to the CCS and to Figure 2-15).
3. Ensure that the following vendor jumper cables are installed between the MTU NRZI data board and the MTU PE data board.
 - a. J201 from the top of the MTU NRZI data board to J202 at the top of the MTU PE data board.
 - b. J301 from the bottom of the MTU NRZI data board to J302 at the bottom of the MTU PE data board.
4. Single MTU Only Ensure that the following external terminators are installed.
 - a. J201 at the top of the MTU PE data board (external read terminator part no. 60129894-032).
 - b. J301 at the bottom of the MTU PE data board (external write terminator part no. 60129894-031).
5. Single MTU Only Ensure that the internal terminating networks RT1 and RT2 on the MTU control board and MTU NRZI data board are installed (terminating network part no. 60129894-036).

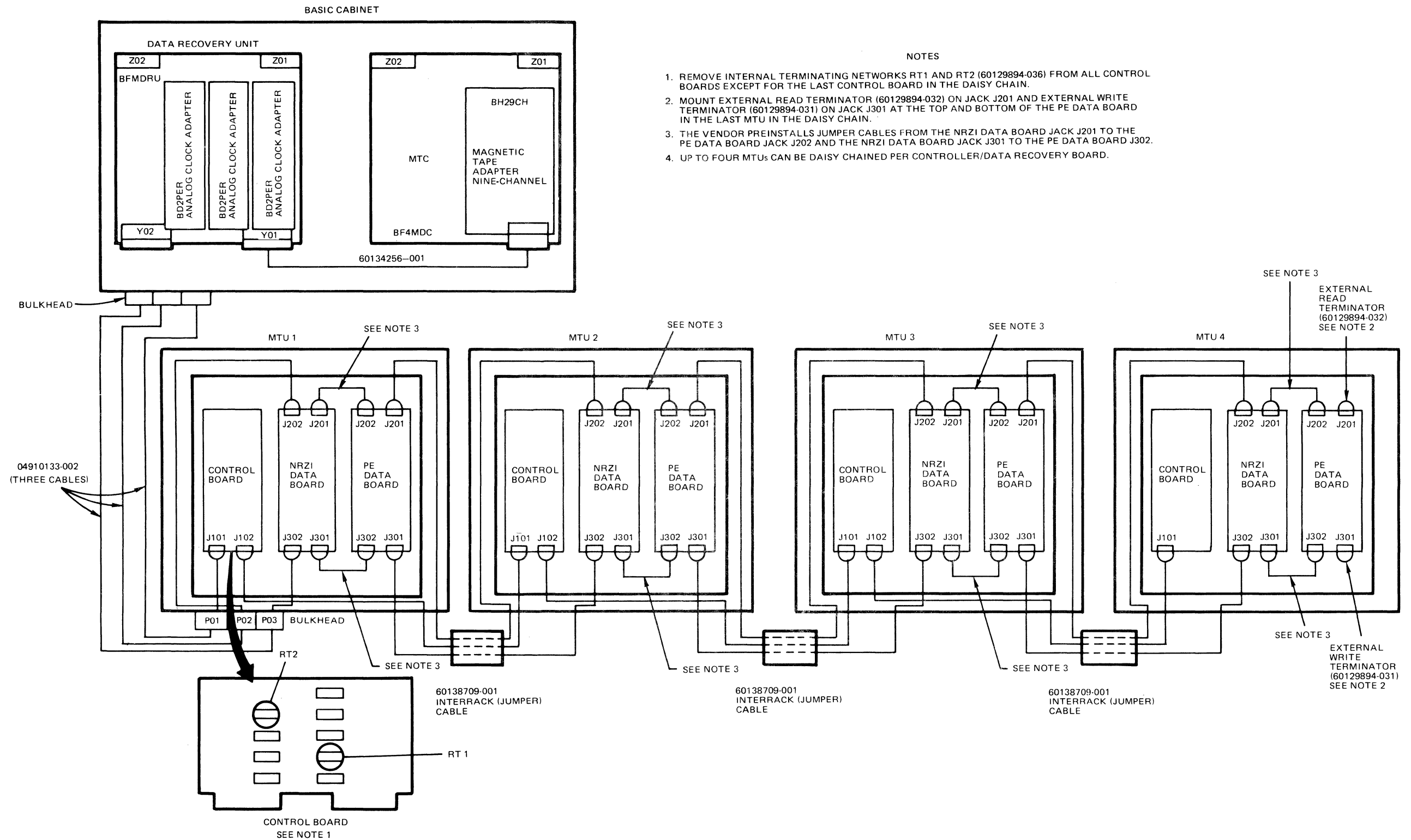
Multiple MTUs

To cable multiple MTUs, perform the following procedure.

NOTE

A maximum of four MTUs can be connected in a daisy chain for each MTC board.

1. Locate and remove the interrack (jumper) cable (part no. 60138709-001) from the shipping container (see Figure 2-15).
2. Ensure that the first MTU cabling procedure has been performed.
3. Install the interrack cable as follows (see Figure 2-15).
 - a. Cable connector P102 to J102 at the bottom of the MTU 1 control board.
 - b. Cable connector P201 to J201 at the top of the MTU 1 PE data board.
 - c. Cable connector P301 to J301 at the bottom of the MTU 1 PE data board.



- NOTES
1. REMOVE INTERNAL TERMINATING NETWORKS RT1 AND RT2 (60129894-036) FROM ALL CONTROL BOARDS EXCEPT FOR THE LAST CONTROL BOARD IN THE DAISY CHAIN.
 2. MOUNT EXTERNAL READ TERMINATOR (60129894-032) ON JACK J201 AND EXTERNAL WRITE TERMINATOR (60129894-031) ON JACK J301 AT THE TOP AND BOTTOM OF THE PE DATA BOARD IN THE LAST MTU IN THE DAISY CHAIN.
 3. THE VENDOR PREINSTALS JUMPER CABLES FROM THE NRZI DATA BOARD JACK J201 TO THE PE DATA BOARD JACK J202 AND THE NRZI DATA BOARD JACK J301 TO THE PE DATA BOARD JACK J302.
 4. UP TO FOUR MTUs CAN BE DAISY CHAINED PER CONTROLLER/DATA RECOVERY BOARD.

Figure 2-15. NRZI PE MTU Configuration - Bulkhead System

4. At MTU 2 connect the other end of the interrack cable as follows:
 - a. Cable connector P101 to J101 at the bottom of the MTU 2 control board.
 - b. Cable connector P202 to J202 at the top of the MTU 2 NRZI data board.
 - c. Cable connector P302 to J302 at the bottom of the MTU 2 NRZI data board.
5. Ensure that the following vendor jumper cables are installed between the MTU 2 NRZI data board and the MTU 2 PE data board.
 - a. J201 from the top of the MTU NRZI data board to J202 at the top of the MTU data board.
 - b. J301 from the bottom of the MTU NRZI data board to J302 at the bottom of the MTU PE data board.
6. Cable each additional MTU in the daisy chain in accordance with steps 3 through 5 of this subsection.
7. Ensure that the last MTU in the daisy chain has the following external terminators installed (see Figure 2-15).
 - a. J201 at the top of the MTU PE data board (external read terminator part no. 60129894-032).
 - b. J301 at the bottom of the MTU PE data board (external write terminator part no. 60129894-031).

Ensure that the external terminators are removed from all other MTUs in the daisy chain.
8. Ensure that the internal terminating networks RT1 and RT2 (see Figure 2-15) are removed from the MTU control board in all MTUs except the last MTU in the daisy chain (terminating network part no. 60129894-036).

2.1.2.2.4 NRZI/PE and PE Combined Cabling

The cabling procedure to combine NRZI/PE and PE MTUs in a configuration utilizing bulkhead systems is as follows:

First MTU

To cable the first MTU in a NRZI/PE and PE MTU combination, perform the following procedure.

1. NRZI/PE First MTU Refer to subsection 2.1.2.2.3 (first MTU), and perform steps 1 through 3.

2. PE First MTU Refer to subsection 2.1.2.2.2 (first MTU), and perform steps 1 through 4.

Multiple MTUs

To cable multiple NRZI/PE and PE MTUs in a combined configuration, perform the following procedure.

NOTE

A maximum of four MTUs can be connected in a daisy chain for each MTC board.

1. Refer to subsection 2.1.2.2.4 (first MTU). Perform the step, 1 or 2, that is applicable to the system being cabled.
2. NRZI/PE and PE MTU combined with PE terminating (see Figure 2-11(A)) refer to subsection 2.1.2.2.3 (Multiple MTUs) and perform steps 4 and 5. Refer to subsection 2.1.2.2.2 (Multiple MTUs) and perform steps 4, 6, and 7.
3. PE and NRZI/PE MTUs combined with NRZI/PE terminating (see Figure 2-11(B)) refer to subsection 2.1.2.2.2 (Multiple MTUs) and cable each MTU in the daisy chain in accordance with steps 3 and 4. Refer to subsection 2.1.2.2.3 (Multiple MTUs) and perform steps 3 through 5, 7, and 8.

2.1.3 MTU AC Power

Ensure that all system component (including MTU) power-on switches are OFF and connect each MTU to the ac power source as follows:

WARNING

To avoid bodily injury, ensure that all system component power-on switches are OFF.

2.1.3.1 AC POWER CONNECTION FOR PACKAGE (DPS 6/XX) SYSTEM CONFIGURATION

In this configuration, all MTU power cords are plugged into a Power Distribution Unit (PDU) that is installed at the base of the cabinet that houses the first MTU. If four MTUs are being connected, proceed as follows:

1. Connect the power cords from the fourth MTU to the PDU with two extension cords (part no. 70940252-001).

2. Ensure that cable (part no. 60 Hz-60128679-001 or 50 Hz-60128681-001) is installed between connector J07 on the rear of the PDU installed in the basic cabinet and connector J01 on the rear of the PDU installed in the MTU cabinet.
3. Close the rear access door on all cabinets.

2.1.3.2 AC POWER CONNECTION FOR ALL OTHER SYSTEM CONFIGURATIONS

In these configurations, the power cords from the first three MTUs are plugged into the PDU installed at the base of the basic cabinet. If four MTUs are being connected, proceed as follows:

1. The expansion cabinet that houses the fourth MTU (third expansion cabinet) will have a PDU installed at its base. Connect the power cords from the fourth MTU to this PDU.
2. Ensure that cable (part no. 60 Hz-60128679-001 or 50 Hz-60128681-001) is installed between connector J07 on the rear of the PDU installed in the basic cabinet and connector J01 on the rear of the PDU installed in the third expansion cabinet.
3. Close the rear access door on all cabinets.

2.2 SYSTEM MODIFICATION

When one or more Magnetic Tape Units (MTUs) are to be added to an existing system, the MTUs are supplied with a Magnetic Tape Controller (MTC) board and/or adapter (if required), ground cables, and MTU installation cables. To install a MTC board and/or adapter with the associated cables in a Level 6 basic cabinet, refer to the System Level Installation Flow Chart in the appropriate Level 6 System Installation Manual. After the MTC board and/or adapter and associated cables are installed in the basic cabinet, refer to subsection 2.2.2 for the instructions required to install a MTU that is supplied in a cabinet and to subsection 2.2.3 for instructions to install a MTU that is supplied without a cabinet. When the MTU and cabinet installation is completed, refer to subsection 2.1.2.1 for instructions on cabling a non-bulkhead system and to subsection 2.1.2.2 for instructions on cabling a bulkhead system.

NOTE

When additional MTUs are being added to an existing system that has a MTC board installed in the basic cabinet, refer to the appropriate Level 6 System Installation Manual for the MTC board and adapter switch settings. Set the switches for channel address, bit densities, number of MTUs in the daisy chain (maximum of four), and logical address.

2.2.1 Power/Safety Requirements

Perform the following safety requirements before proceeding with any system modification procedure.

1. Power down the system and disconnect all system component ac input power cord(s) from the ac power source.
2. Ensure that the antitip outrigger is in place at the bottom of the cabinet (see Figure 2-2).

WARNING

To avoid bodily injury and equipment damage, disconnect all ac power cords from the ac power source, and position the antitip outrigger.

2.2.2 Installation of MTU Supplied in a Cabinet

Procedures for installing a MTU that is supplied in a cabinet are contained in the following subsections:

- Subsection 2.1.1 Removal of Shipping Restrainers
- Subsection 2.1.2 System Cabling

2.2.3 Installation of MTU Supplied Without a Cabinet

See Figure 2-16 and Table 2-1 and perform the following installations.

2.2.3.1 TAPE UNIT INSTALLATION PARTS REQUIREMENT

Ensure that all of the required parts are included in the shipment for the installation of the first or additional tape unit in an expansion cabinet. The Level 6 system cabinet assembly (item 1 or 55) is a part of the existing system and is not included in the shipment. In addition to the parts shown in the table, there is a tape unit counterbalance lead weight and mounting hardware (part no. 60129915-001 or 60129915-00) required for each tape unit in a cabinet. Install this hardware in the cabinet before installing its associated tape unit.

2.2.3.2 INSTALLATION OF COUNTERBALANCE WEIGHTS

Install the two counterbalance weights in the lower rear section of the MTU cabinet using the hardware and instructions furnished with the counterbalance weights (see Figure 2-17).

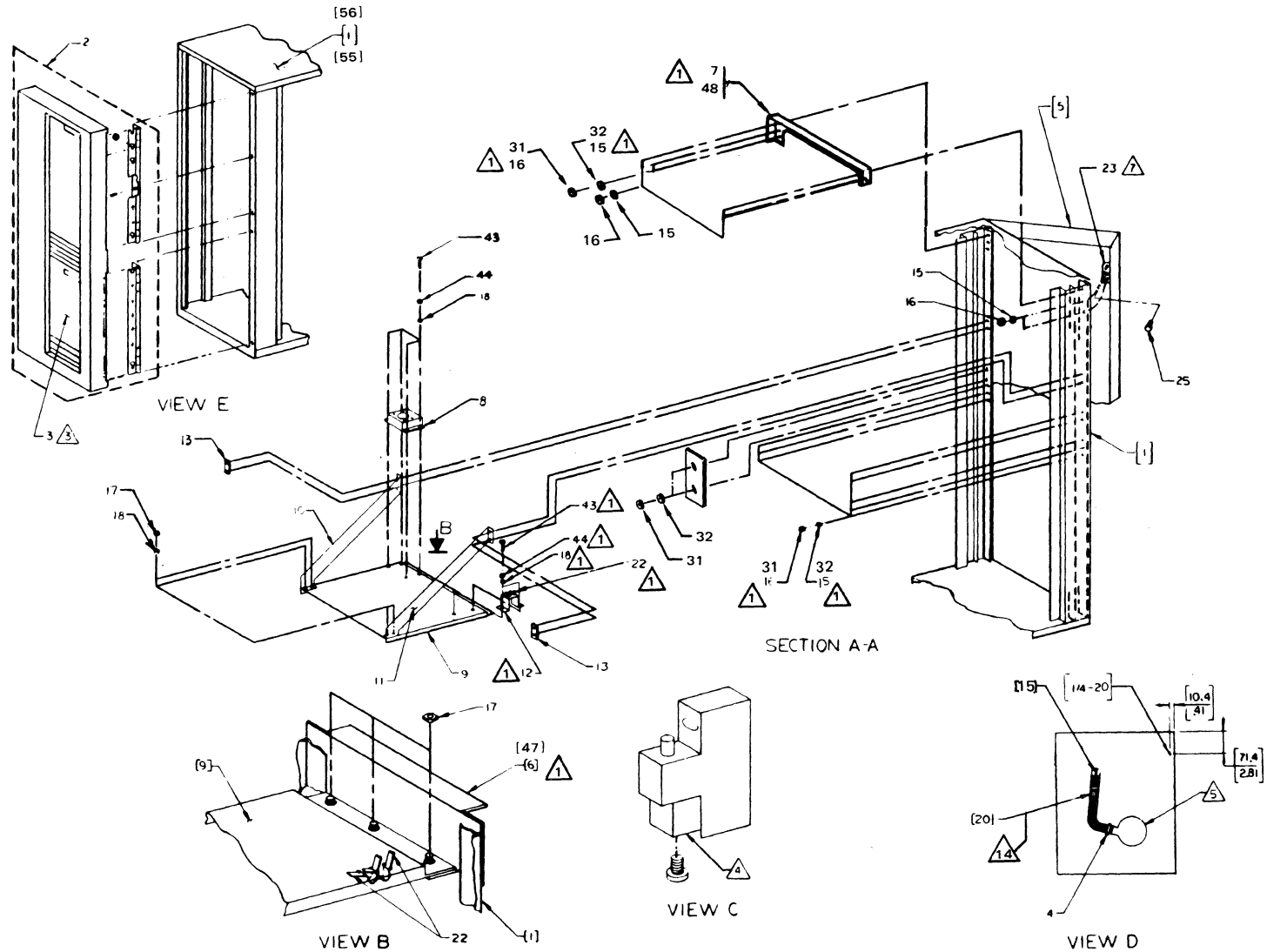
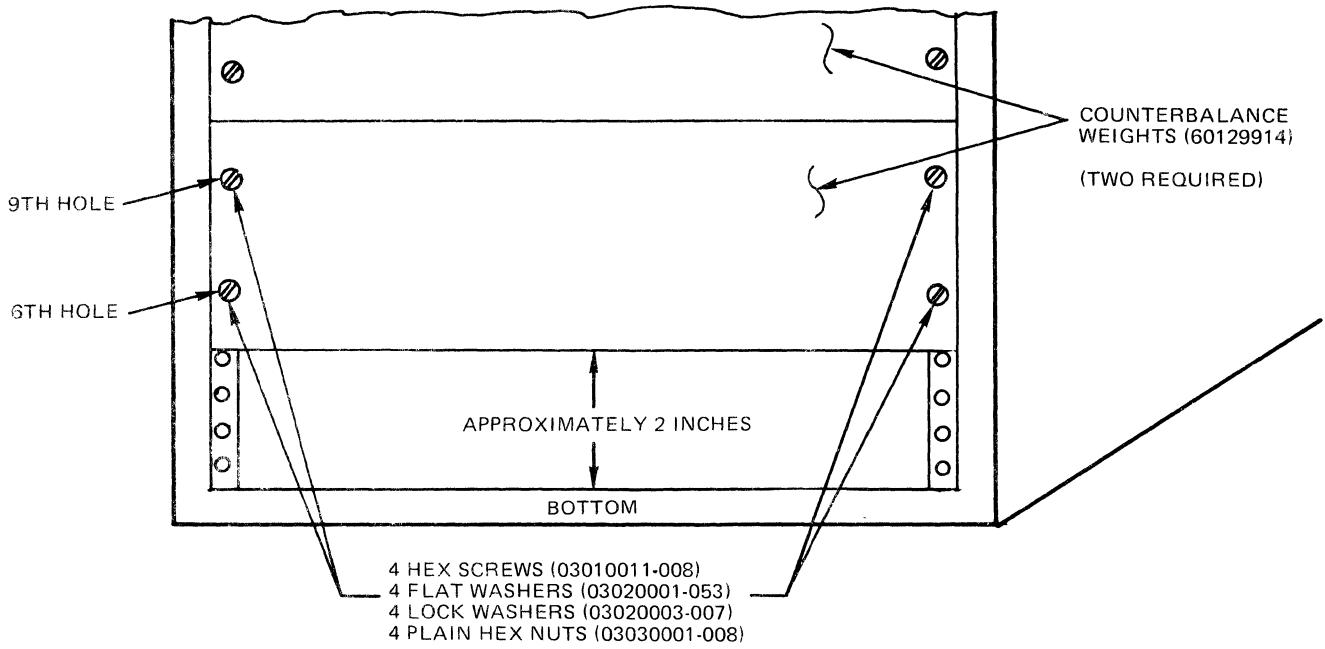
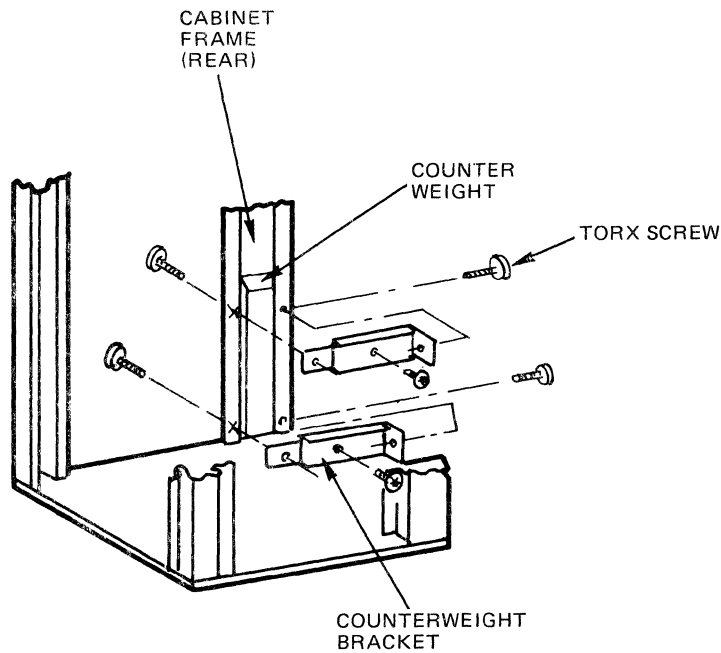


Figure 2-16. MTU Expanded Cabinet Installation (Sheet 2 of 2)



A. Counter Balance Weights (60129915-001) - Light Duty Cabinet



B. Counter Balance Weights (60129915-003) - Heavy Duty Cabinet

Figure 2-17. Installation of Counterbalance Weights

Table 2-1. Tape Unit Expanded Cabinet Parts List
(Sheet 1 of 2)

Item Number	Part Number	Description	Quantity	
			First MTU	Second MTU
1 ^a	60128315-XXX	NML SYSTEM CAB ASSY	X	X
2	60133708-007	TAPE DRIVE DOOR KIT	1	-
3	60132113-001	DOOR PANEL		1
4	03510006-003	HOSE CLAMP	1	1
5	60129894-XXX	MAGNETIC TAPE UNIT	X	X
6 ^a	60132192-001	FRONT PANEL	1	1
7 ^a	60132190-001	FRAME	1	1
8	60132398-XXX	FAN ASSY	1	1
9	60132193-002	BAFFLE ASSY	1	1
10	60132209-001	GUSSET	1	1
11	60132209-002	GUSSET	1	1
12 ^a	60132191-001	SPACER	1	1
13	03720030-001	BAR-NJT	2	2
14	03010155-019	SCREW SCAP SKT BUTN	3(9) ^b	3(9) ^b
15	03020001-012	WASHER FLAT 10	5(15) ^b	5(15) ^b
16	03030004-002	NUT LW 10	5(15) ^b	5(15) ^b
17	03030004-003	NUT LW 8	7	7
18	03020001-050	WASHER FLAT 8	8(10)	8(10)
19	03010155-026	SCREW CAP SKT BUTN	4	4
20	60132434-001	HOSE	1	1
21	60132401-001	ELBOW	1	1
22	03510004-006	LOOP STRAP FASTENER	6	6
23	60133569-001	BRACKET ASSY	1	1
24 ^a	03010002-061	SCREW PH 10	2	2
25	03010008-110	SCREW MACHINE	1	1
26	60133733-002	SPACER	2	2
27	60133713-001	SHIPPING PNL ASSY	X	X
28	03510004-003	LOOP STRAP FASTENER	2	2
29 ^a	60133736-001	SHEAR PANEL	1	-
30	03010015-008	SCREW CAP BUTTN HEX	6(4) ^b	6(-) ^b
31	03030001-008	NUT PLAIN HEX 1/4	10(4) ^b	10(-) ^b
32	03020003-007	WASHER LOCK 1/4 STL	10(4) ^b	10(-) ^b
33 ^a	03020001-017	WASHER FLAT 1/4	8	-
35	60128703-002	CA TAPE DRIVE TO NML	X	-
36	60128709-001	CA DEVICE TO DEVICE	X	X
37 ^a	60128887-001	CA DEV TO DEV		X
38	60132231-000	EXP CAB T DR INSTL	X	X
39	60129915-003	CTRWEIGHT INSTL KIT	2	X
40	60134504-001	SHIPPING PNL ASSY	X	X
41	60132231-000	EXP CAB T DR INSTL	X	X
42	03910259-001	LABEL	1	1
43	03010002-049	SCREW PH 8	4(6) ^b	4(6) ^b
44	03200003-004	WASHER LOCK 8 STL	4(6) ^b	4(6) ^b

Table 2-1. Tape Unit Expanded Cabinet Parts List
(Sheet 2 of 2)

Item Number	Part Number	Description	Quantity	
			First MTU	Second MTU
45	60134257-001	CA TAPE DRIVE TO ICAB	X	-
46	03010015-009	SCREW CAX 2520 7/8	4(-) ^b	4(-) ^b
47	60132192-002	FRONT PANEL	1(-) ^b	1(-) ^b
48	60132190-002	FRAME	1(-) ^b	1(-) ^b
49	60138231-001	PWB LIMITS	1(-) ^b	1(-) ^b
50	60128703-003	CA TAPE DRIVE TO NML	X(-) ^b	-(-) ^b
51	03102270-001	LABEL	1(-) ^b	1(-) ^b
52	60138347-002	SHIPPING PANEL	X(-) ^b	X(-) ^b
54	03510004-003	CABLE CLAMP	X(-) ^b	X(-) ^b
55	60135778-XXX	HD CABINET ASSEMBLY	X(-) ^b	X(-) ^b
56	60135932-000	HD CAB INSTALLATION	X(-) ^b	X(-) ^b
57	03510004-002	CABLE CLAMP	9(-) ^b	9(-) ^b

^a For use on light duty cabinets (item 1) only.

^b Quantities in parentheses used for light duty cabinets (item 1)

2.2.3.3 CABINET FRONT PANEL INSTALLATION

To install the front panel, perform the following procedure.

1. Locate front panel (item 47) and six socket head screws (item 30) in parts kit and Figure 2-16 (sheet 1).
2. Position front panel with its top holes lined up with cabinet holes 24.25 inches from inside top edge of cabinet for upper installation, or 52.25 inches from inside top edge for lower installation.
3. From front of cabinet, insert the six socket head screws through holes in front panel and cabinet, and install and secure panel with six lock washers (item 32) and six nuts (item 31).

2.2.3.4 BAFFLE ASSEMBLY INSTALLATION

To install baffle assembly, perform the following procedure.

1. Locate the baffle assembly (item 9) in the parts kit and in Figure 2-16 (sheet 2).

2. Using studs on the baffle assembly, mount the right-hand gusset (item 10) and the left-hand gusset (item 11) with four flat washers (item 15) and four nuts (item 17).
3. If installing on MTU into a light duty cabinet (item 1), mount the spacer (item 12) onto the studs on the baffle assembly and secure with two flat washers (item 15) and two nuts (item 17). The spacer is used with clamp loops (item 22) to secure cables after installation. The spacer positioning is shown in Figure 2-16 (sheet 2).
4. Position the assembled baffle into the expansion cabinet with the three holes in the baffle assembly over the three studs in the front panel (see View B in Figure 2-17 sheet 2).
5. Using the studs on the front panel, attach the baffle assembly with the three nuts (item 17).
6. Locate four socket head screws (item 19).
7. From the front of the cabinet, insert the four socket head screws through the cabinet and upper end of the gusset and secure in place with two bar nuts (item 13 sheet 2).
8. Using the studs on the baffle assembly, mount the fan assembly (item 8) with four flat washers (item 18) four lock washers (item 44) and four screws (item 43) as shown in Figure 2-17 (sheet 2).

2.2.3.5 FRAME INSTALLATION

To install the frame assembly, perform the following procedure.

1. Locate frame (item 7 or 48) and position it as shown in Figure 2-16 (sheet 2) for an upper installation, or on the inside of the cabinet just below the lip of the front panel for a lower installation.
2. Locate three socket head screws (item 14).
3. On the front panel of the cabinet, insert two screws through the cabinet and left-hand side of the frame, and insert one screw through the cabinet and the upper hole in the right-hand side of the frame, secure bolts in place with three washers (item 15) and three nuts (item 16).

2.2.3.6 UPPER TAPE UNIT HINGE INSTALLATION

To install the upper tape unit hinge, perform the following procedure.

1. Locate one spacer (item 26) and tape unit hinge in the spare parts kit and in Figure 2-16 (sheet 1).
2. From the front of the cabinet, align tape unit hinge and spacer with the two unused holes in the right-hand side of the frame. The upper tape unit hinge hole is 1.5 inches from the top of the cabinet for an upper installation, or 29.5 inches for a lower installation.
3. Insert the two pan-head screws (item 24 or 46) through hinge, spacer, cabinet, and frame. (Note that these are not the screws that are packed with the hinge.) Use two flat washers (item 15 or 32) and two nuts (item 16 or 31) to secure the bolts in place.

NOTE

The tape unit hinge safety block shown in View C of Figure 2-16 (sheet 1) is attached at a later time.

2.2.3.7 LOWER TAPE UNIT HINGE INSTALLATION

To install the lower tape unit hinge, perform the following procedure.

1. Locate a second tape unit hinge and spacer (item 26) in the spare parts kit and in Figure 2-16 (sheet 1).
2. If installing an MTU into a heavy duty cabinet, also locate a bracket (item 49), two lock washers (item 32), and two nuts (item 31).
3. From the front of the cabinet, align the top hole of the hinge with the hole in the cabinet, 19.25 inches from the top hole of the upper hinge.
4. If installing an MTU into a light duty cabinet, insert the two long screws, packed with the hinge, through the hinge, spacer, and cabinet, and secure bolts in place with two flat washers (item 15) and two nuts (item 16).
5. If installing an MTU into a heavy duty cabinet, insert two screws (item 46) through the hinge, spacer, cabinet, and bracket, and secure in place with two lock washers and two nuts.
6. The cabinet is now ready for installation.

2.2.3.8 INSTALLATION OF THE MTU USING THE PORTABLE LIFTING MECHANISM (PLM)

WARNING

Ensure that the counterbalance weights are installed in the cabinet before proceeding.

Use the PLM (part no. 60140852) to install or remove a MTU in accordance with the following procedure.

1. Remove the MTU from the shipping container. Do not remove the shipping bracket from the MTU (see Figure 2-18).

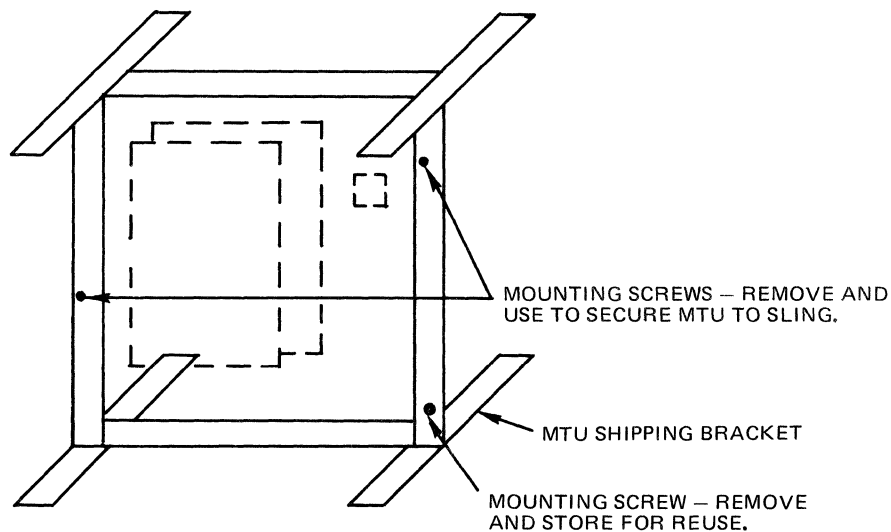


Figure 2-18. MTU Transport Assembly

2. Remove the shipping panel assembly from the MTU in accordance with subsection 2.1.1.2.
3. Open the rear door on the cabinet and remove all loose items from the top of the cabinet.
4. Position the PLM on the top of the cabinet as shown (see Figure 2-19). The lip on the rear of the PLM slips under the top of the cabinet. The PLM must be positioned so that the right side of the lip is 5 1/2 inches from the right side of the cabinet.
5. Position the MTU under the PLM sling.

CAUTION

To avoid damage to the MTU, do not allow the MTU to slip to the floor when removing the three screws from the shipping bracket.

6. Remove the three 1/4-20 Phillips head screws securing the MTU to the shipping bracket. Two of these screws are used to secure the MTU to the PLM sling.
7. Attach the MTU to the PLM sling with two of the 1/4-20 screws. Two of the mounting holes in the MTU mate with the sling mounting holes.
8. Lift the MTU to the desired height by rotating the PLM crank handle. Guide the MTU so that it does not scrape against the cabinet.
9. Align the hinge guide pins with the hinges and lower the MTU into position.
10. Remove the two mounting screws securing the MTU to the sling.
11. Remove the PLM from the top of the cabinet. Store the shipping bracket for future use.
12. Install the hinge safety block with two screws from the hinge package supplied with the cabinet (see Figure 2-19).
13. Close the rear door of the cabinet.

2.2.3.9 SHIPPING BRACKET INSTALLATION

Although the shipping bracket is required only during cabinet shipment, it should be stored for future use by mounting it in the cabinet as follows:

1. Locate the shipping bracket (item 27) and its physical position in the cabinet as shown in Figure 2-16 (sheet 2).
2. Face the front of the cabinet and insert the two studs on the shipping bracket through the holes in the left-hand side of the cabinet opening about 3 inches from the bottom. Secure the bracket to the cabinet with two flat washers (item 15) and two nuts (item 16), ensuring that it is properly mounted and flush with the exterior surface of the cabinet.

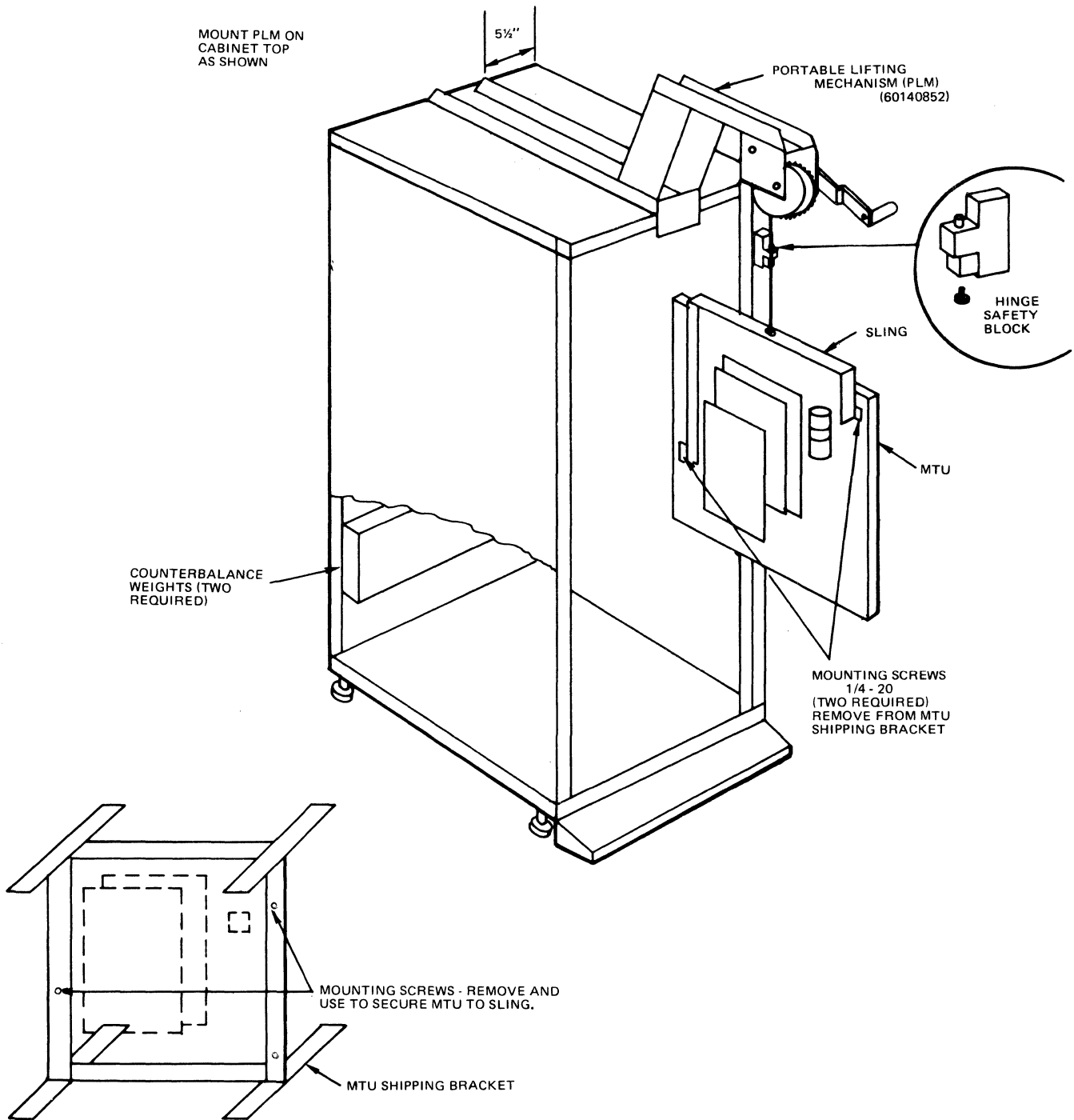


Figure 2-19. Installation of the MTU Using the Portable Lifting Mechanism

3. Locate the machine screw (item 25) and thread it all the way into the hole in the upper inside corner of the tape unit (see View D in Figure 2-16 sheet 2).
4. For shipment, the bracket is mounted in the position shown in Section A-A of Figure 2-16 (sheet 2) with attached hardware. The top stud of the bracket should line up with the fourth hole of the upper or lower cabinet opening.

2.2.3.10 HOSE ASSEMBLY INSTALLATION

To install the hose assembly, perform the following procedure.

1. Locate the hose assembly (item 20) in the spare parts package and in Figure 2-16 (sheet 1).
2. Insert the preformed elbow (item 21) completely into the end of the hose until the visible end is approximately 2 inches into the hose.
3. Place the hose clamp (item 4) over the end without the preformed elbow.
4. Position the hose over the blower flange as shown in View D of Figure 2-16 (sheet 2), and tighten the hose clamp. Ensure that the exhaust is directed away from the face of the tape unit at a right angle.
5. Close and secure the tape unit to the cabinet frame by turning the 1/4-turn faster, located through an access hole in the left center side of the transport assembly (see Figure 2-1), clockwise with a screwdriver.

2.2.3.11 SHEAR PANEL INSTALLATION

Shear panels are installed on light duty cabinets only.

To install the shear panel, perform the following procedure.

1. Locate the shear panel (item 29) in View G of Figure 2-16 (sheet 1) and in the parts package.
2. Place four flat washers (item 33) over four buttonhead screws (item 30).
3. Position the shear panel with its bottom holes lined up with the cabinet holes about 28 inches from the inside top of the cabinet.
4. From the rear of the cabinet, insert the four buttonhead screws through the holes in the shear panel and cabinet, and secure the bolts with four flat washers (item 32) and four nuts (item 31).

2.2.3.12 CABINET DOOR INSTALLATION

If the door on the cabinet is not the same as shown in Figure 2-16 (sheet 1), it must be replaced with the one supplied in the shipment. Replacement of the hinge may or may not be necessary. If the hinge is the type with keys for door removal, only door replacement steps 1 and 4 through 6 need to be performed. If the hinge is the type with holes and no keys, perform all six steps to replace the door and hinge.

1. With the door fully extended, remove the 16 nuts on the door studs that attach the door to the hinge.
2. If the hinges have holes and no keys, remove the 16 screws securing the two hinges to the cabinet.
3. Install the two new hinges to the cabinet with the 16 buttonhead screws provided in the cabinet door kit.
4. Partially install 16 hex lock nuts onto the studs of the new cabinet door.
5. Hook the studs on the door into the keyed slots in the hinge and tighten the nuts on the studs to secure the door.
6. Install two striker latches onto the studs on the door and secure each striker with two locking washers and two nuts.

2.2.3.13 FRONT PANEL INSTALLATION

It may be necessary to reverse the Plexiglas and the louvered panels in the door due to the system configuration, or to install the Plexiglas panel in the bottom of the door for a lower installation. To reverse the door panels, perform the following procedure:

1. Remove the four retaining screws in the long louvered panel and the four retaining screws in the Plexiglas panel.
2. Using the same screws, attach the louvered panel in the upper position and the Plexiglas panel in the lower position.

To install a Plexiglas panel in the bottom of the door, perform the following:

1. Remove the four retaining screws in the long louvered panel in the lower door position.
2. Using the same screws, attach the Plexiglas panel in the lower door position.

2.2.3.14 MTU CABLING

After the cabinet assembly and MTU installation is completed, cable the MTU in accordance with subsection 2.1.2.

2.3 DEVICE CONFIGURATION

This subsection provides the Magnetic Tape unit (MTU) switch setting information to be referenced only during initial power up or if the device configuration is to be changed.

There are three relevant MTU switches as follows:

- Remote Power Switch
- FWD/REV Offline Motion Switch
- MTU Address Switch

2.3.1 Remote Power Switch

The Remote Power Switch (see Figure 2-20) is a two-position toggle switch mounted on the fuse holder in the rear of the MTU. For initial power up, ensure that this switch is ON.

NOTE

When the Remote Power Switch is OFF, it disables all power to the MTU.

2.3.2 FWD/REV Offline Motion Switch

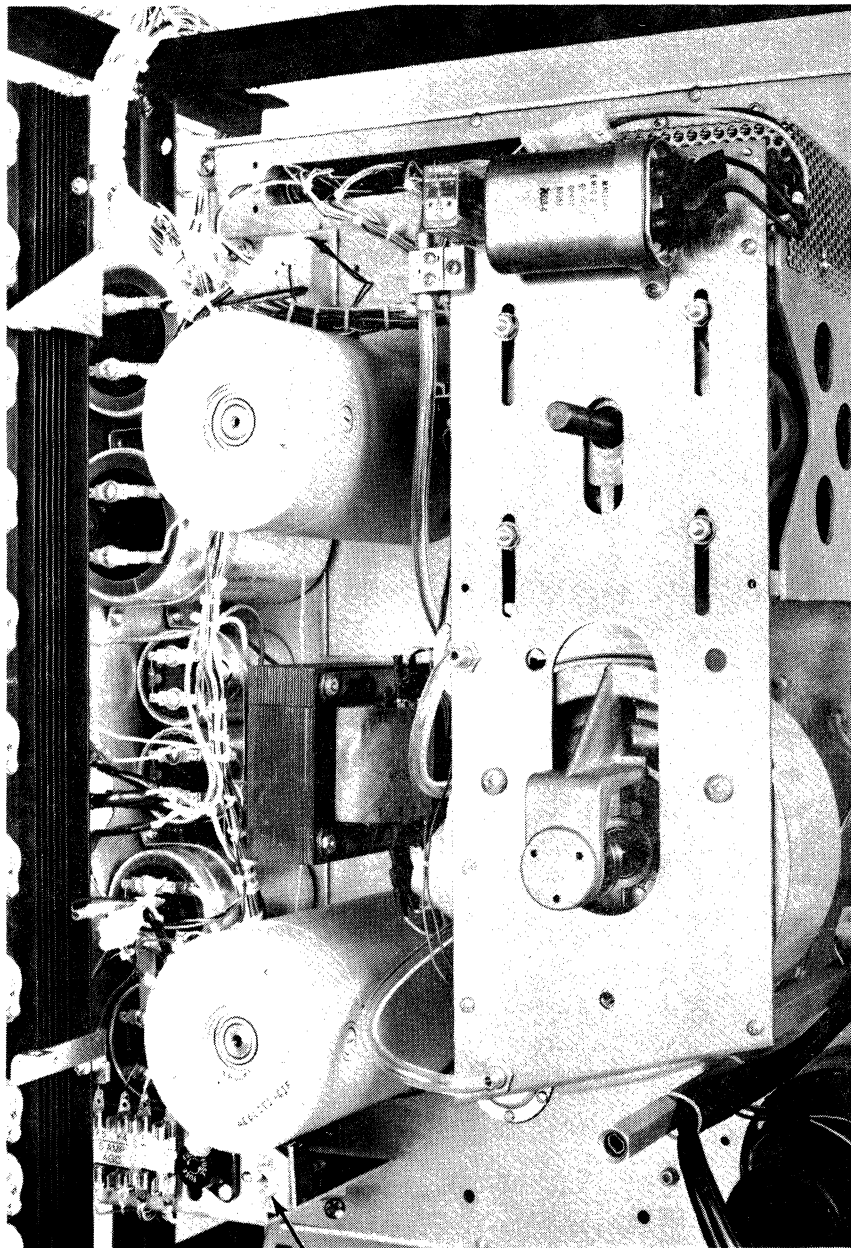
The FWD/REV Offline Motion Switch (see Figure 2-21) is a three-position toggle switch located on the lower right-hand side of the MTU control board. This switch must be OFF (center position).

2.3.3 MTU Address Switch

The MTU Address Switch (see Figure 2-22) is on the operator's panel at the top front of the MTU. This switch specifies the logic address of this MTU. Only switch positions 0, 1, 2, and 3 are used. Set this switch to the logic address of this MTU in the daisy chain or, if only a single MTU, set the logic address of this MTU to 0.

NOTE

One of the MTUs in the daisy chain must have a logic address of 0.



REMOTE POWER SWITCH

Figure 2-20. MTU (Rear View) Remote Power Switch Location

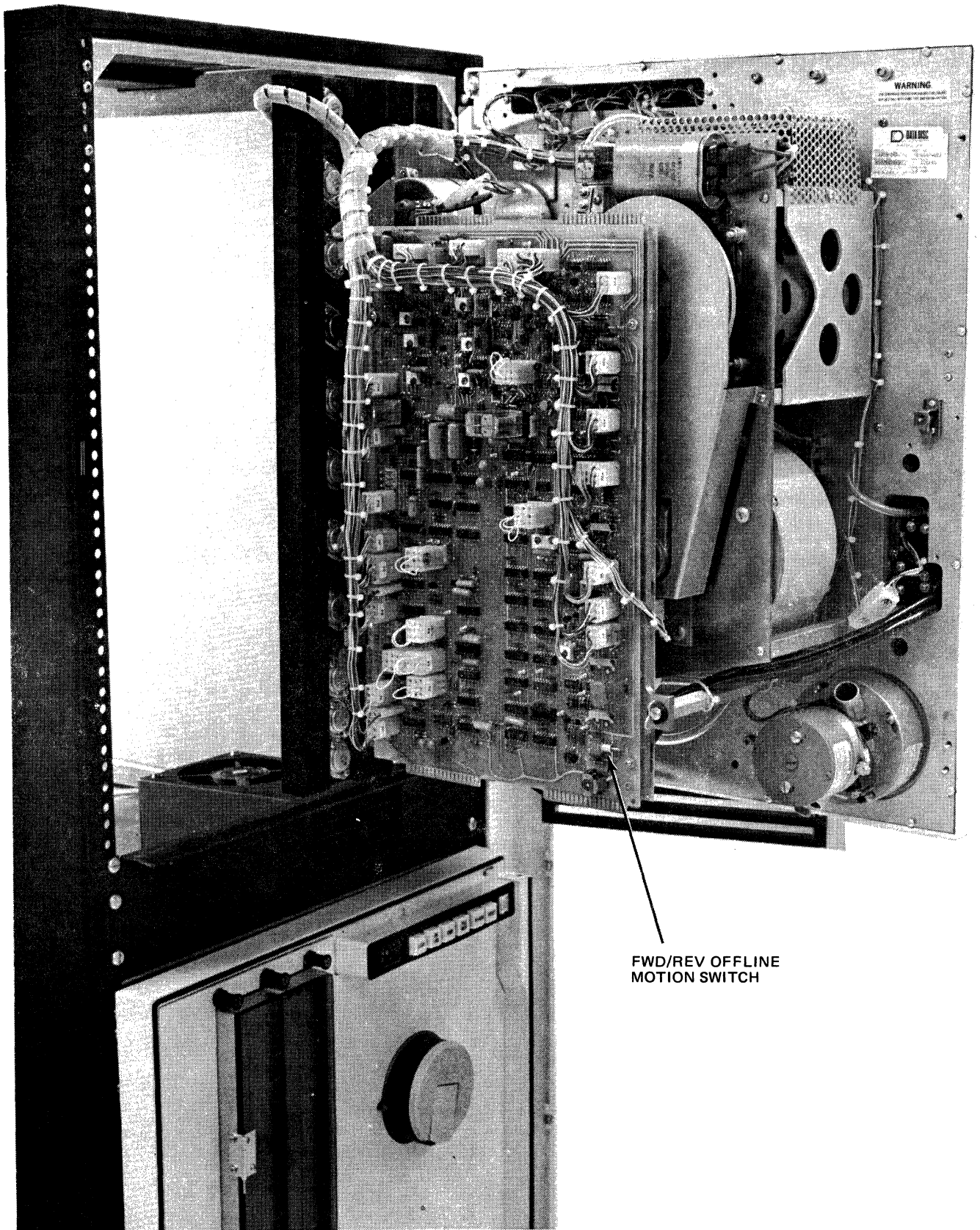
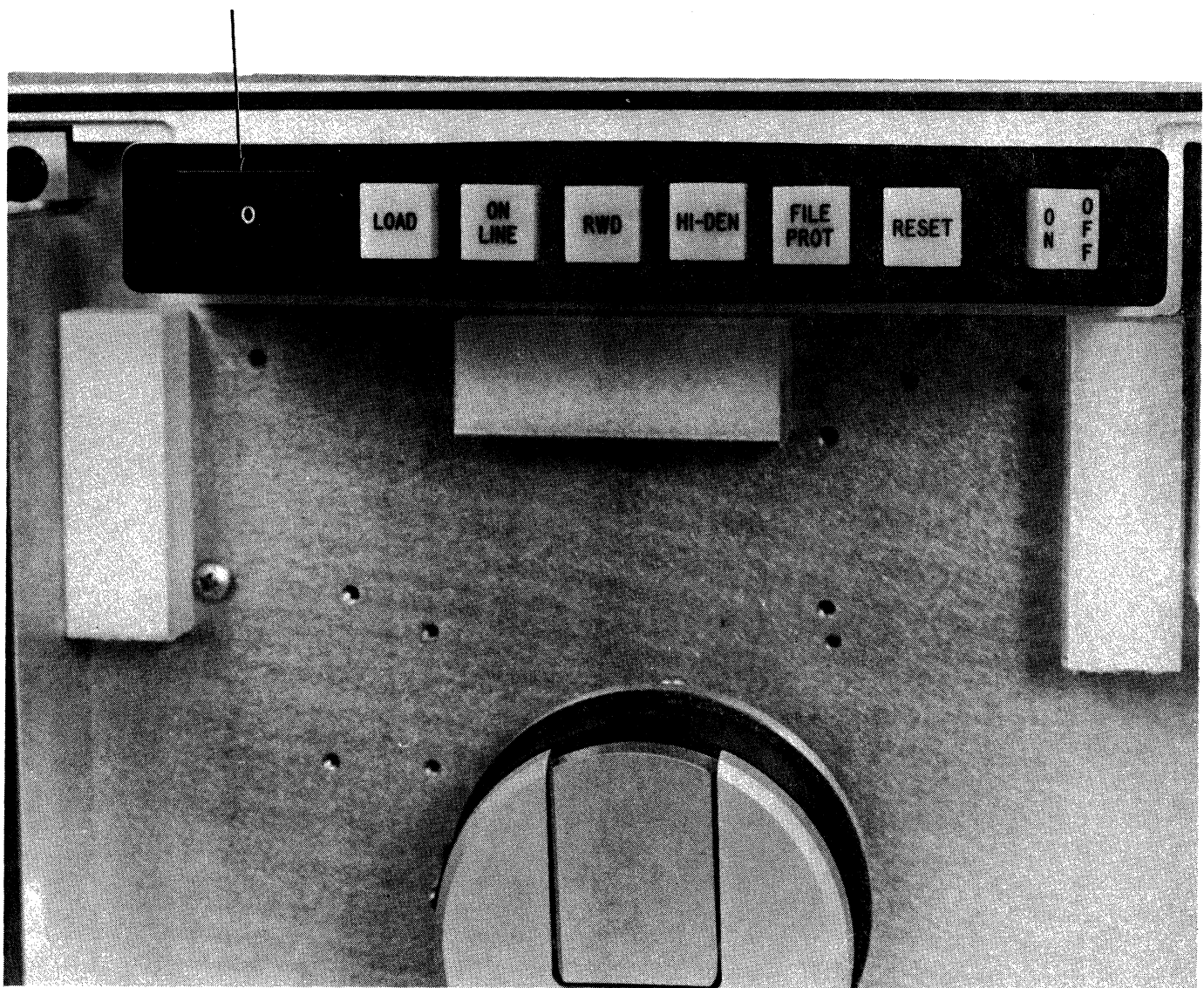


Figure 2-21. MTU (Rear View) FWD/REV Offline Motion Switch Location

MTU ADDRESS SWITCH



FX68

Figure 2-22. Operator Panel (Front View) MTU Address Switch

2.4 VACUUM AND ELECTRICAL ADJUSTMENTS

1. Insert vacuum gauge per instructions in subsection 2.4.2.
2. Check vacuum for the following value:
45 ips tape drive - 30 ± 2 cm of water (12 ± 1 in. of water)
75 ips tape drive - 40 ± 2 cm of water (16 ± 1 in. of water)

3. If vacuum is found to be outside the value specified in item 2, adjust to the following value:

45 ips tape drive - 30 cm of water (12 in. of water)
75 ips tape drive - 40 cm of water (16 in. of water)

2.4.1 Read After Write Amplitude Adjustment

1. If during the initial checkout on the L6 a high read/write error rate is encountered, check the amplitudes for the following values:

NRZI - 10V p-p \pm 10%

PE - 6V p-p \pm 25%
10%

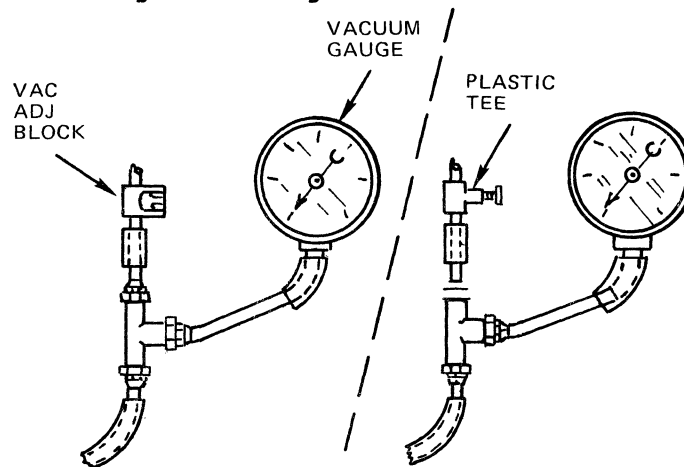
2. If the amplitudes are outside the limits specified in item 1, adjust to the following values:

NRZI - 10V p-p

PE - 6V p-p

2.4.2 Adjustment Procedure

1. Remove the bottom hose from the vacuum adjustment block or the plastic tee fitting, whichever the drive is equipped with.
2. Insert the Vacuum Gauge (Part No. 03610013-001).
3. Cycle up the drive using a work tape to obtain vacuum.
4. If adjustment is necessary, remove the work tape and install a loop of tape.
5. Cycle up the drive and adjust the vacuum via the port cover or the tee screw.
6. No adjustment of the servos may be necessary if the vacuum setting is changed.





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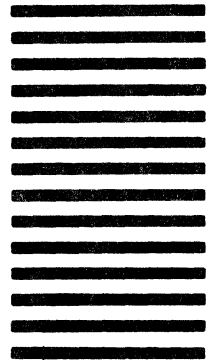


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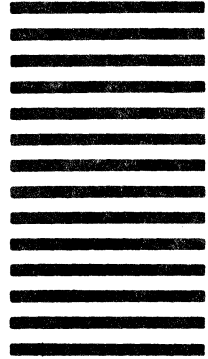


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