Field Feature Bill of Material

PN 08J5224 - Storage Expansion (FC 5028) in Service Processor (SP) type 3172 in IBM 3745 Model XXA or 3746 Model 9X0 with FC 5021 and SC 9281

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Before Installation (Steps 1-8)

1.0 Machines Affected

3745 Model XXA or 3746 Model 9X0 with FC 5021 and SC 9281.

This feature should only be applied on the machine serial for which it is specified.

2.0 Related BMs and ECs

2.1 Prerequisites

• Microcode level: D46120 or higher.

Checkpoint: Check that the Basic Level Packaging Unit APPN EC level is D46120.000 or higher.

Note: Refer to *SPIM*, Chapter 3. 'Displaying the EC Level of Code'.

2.2 Concurrent ECs

None.

2.3 Companion ECs

None.

3.0 BMs to be Installed

08J5224 Service Processor Memory Expansion

4.0 Preparation

1. Familiarize yourself with the purpose and details of the installation instruction before negotiating machine time with the customer.

2. Check all items listed on the BM(s) to determine that all parts have been received.

5.0 Programming

None.

6.0 Purpose and Description

6.1 Purpose

To support large network configuration on 3745-XXA or 3746-9X0.

6.2 Description

The installation of this B/M is divided into two main procedures:

1. Installing the storage expansion by **adding "SIMM" modules** on system board of the Service Processor type 3172.
2. Update the configuration of the system.

7.0 Installation Time

FFBM	Machine Hrs.	System Hrs.	Nbr of CEs
08J5224	0.0	0.0	1

8.0 Tools/Material Required

E.S.D. Kit p/n 6428316

Installation (Steps 9-11)

9.0 Safety

See *Safety Notices* located at the beginning of the:

- *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054, or
- *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070
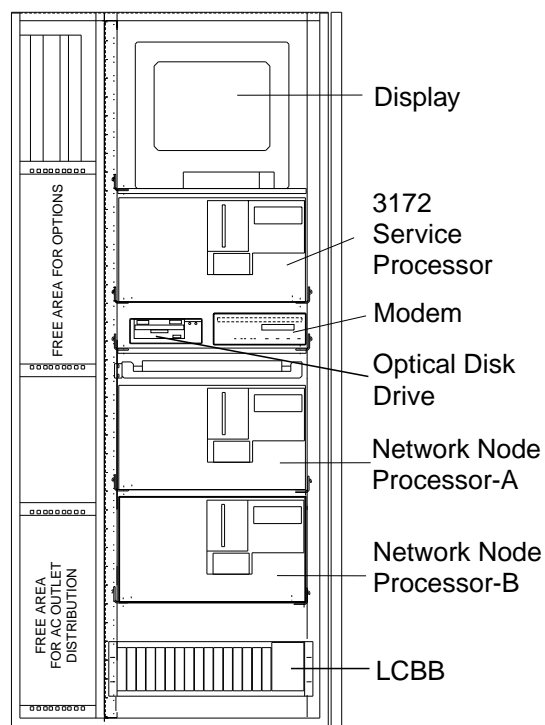
10.0 Details of Installation.

10.1 Preparing for the Installation

___ 1. Locate the Service Processor base unit, it can be installed inside the Controller Expansion or outside.

Is the SP in a Controller Expansion?

- **NO,** go to 3 on page 5

- **YES,** continue with next step.

___ 2. Open the front and rear doors of the Controller Expansion.

Display

3172 Service Processor

Modem

Optical Disk Drive

Network Node Processor-A

Network Node Processor-B

LCBB

FREE AREA FOR OPTIONS

FREE AREA FOR AC OUTLET DISTRIBUTION

On the front side of the Service Processor:

___ 3. Remove any media from the drives.

___ 4. Shut-down the Service Processor.

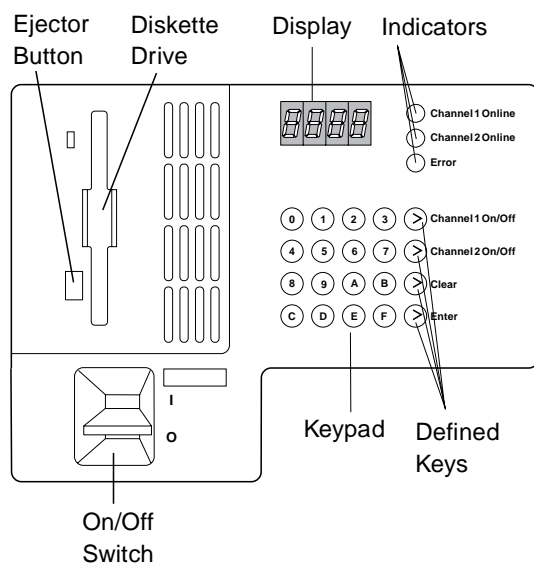___ 5. Switch the power **OFF (O)** of the Optical Disk Drive, the Modem and Service Processor.

Ejector Button   Diskette Drive   Display   Indicators

Channel 1 Online
Channel 2 Online
Error

Channel 1 On/Off
Channel 2 On/Off
Clear
Enter

Keypad   Defined Keys

On/Off Switch

Figure 1. Processor Panel.

On the rear side of the Processor:

___ 6. Disconnect the Keyboard cable **A** and **B**,

___ 7. the Power cord **C** ,

___ 8. the Optical Disk Drive cable **D** ,

___ 9. the LAN cable **E** ,

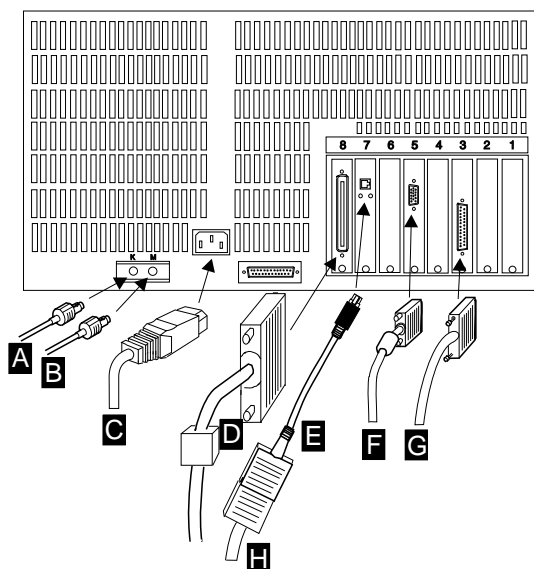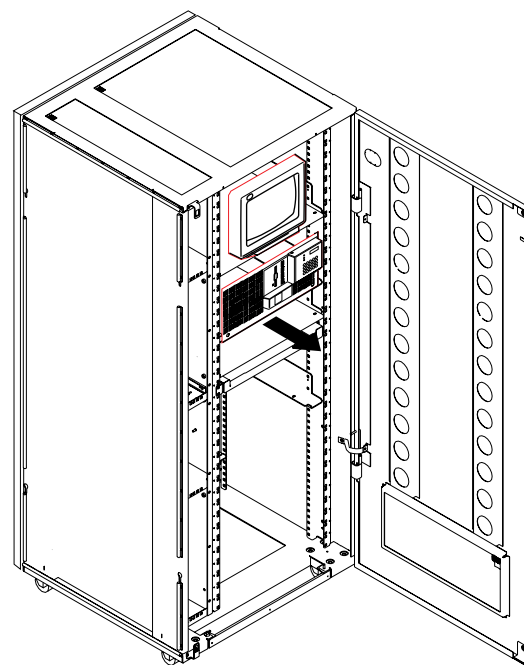___ 10. the Display cable **F** , and

___ 11. the Modem cable **G** .

Figure 2. Cable locations.

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Is the SP in a Controller Expansion?
- **NO,** go to 10.2, "Removing the SP Covers."
- **YES,** continue with next step.

On the front side of the 3746-9x0:

__ 12. Slide the base unit from the rack.

__ 13. Take this unit and put it down on a table.

10.2 Removing the SP Covers.

__ 1. Loosen the quarter-turn fasteners on the top of the SP

__ 2. Hold the edges of the top and lift up.

__ 3. As you remove the top, note the position of the plastic baffle attached to the inside surface. You must reinstall the top so that the baffle covers the left side of the SP.
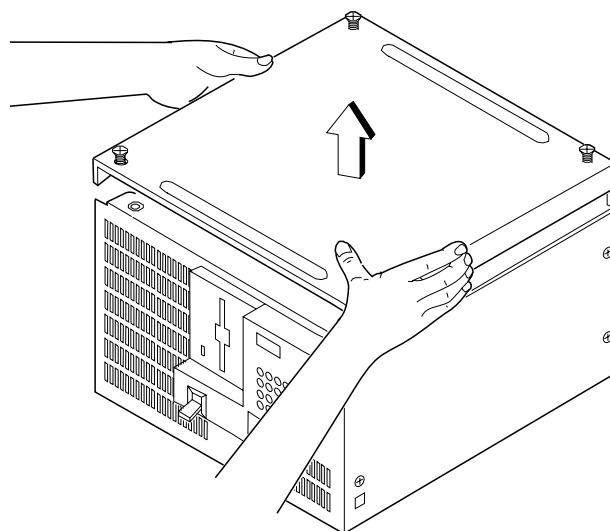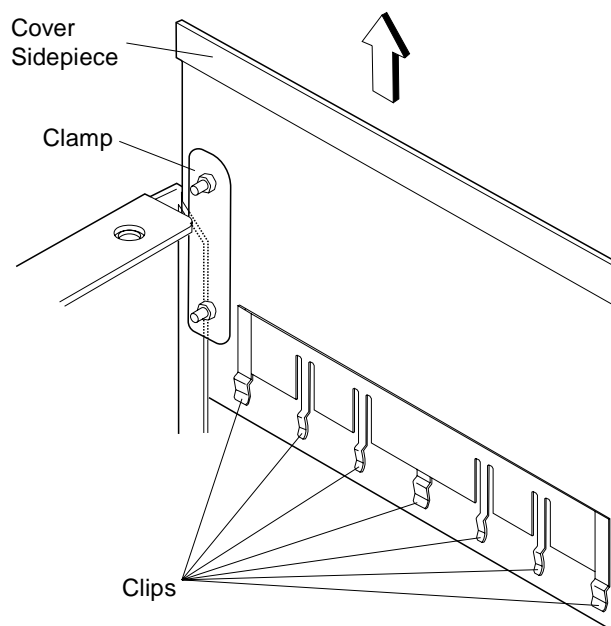
Figure 3. Removing the Top Cover.

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___ 4. Remove the right sidepiece (near air duct assembly). Loosen, but do not remove, the four screws with a screwdriver.

___ 5. Holding the top of sidepiece with both hands, lift straight up.

Cover
Sidepiece

Clamp

Clips

10.3 Removing the Air Duct.

___ 1. Remove the back screw near the SIMM in memory slot A4.

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Front

Screw

Air Duct

Planar
Board
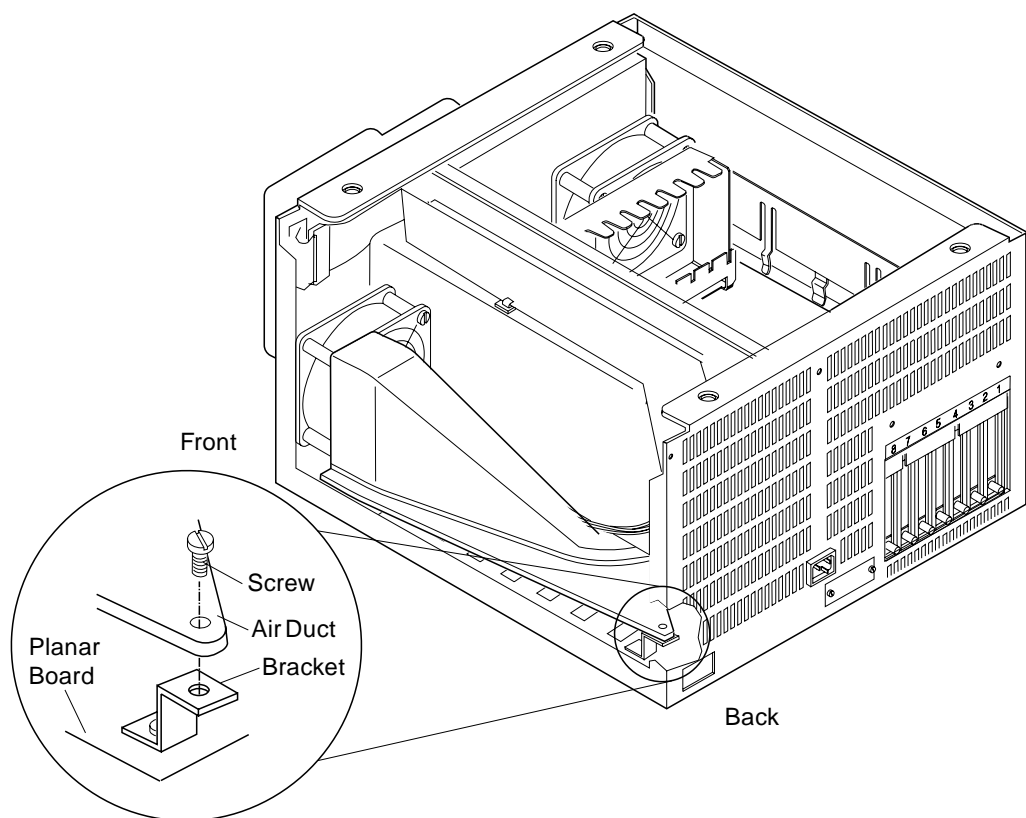
Bracket

Back

Figure 4. Air duct (fixation details)

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__ 2. Slide the air duct approximately half an inch towards the back of the base unit to clear the duct bracket mounted on the fan.

__ 3. Lift the air duct out of the machine ; as you do, make sure that you clear the duct bracket.

> **Note:** The Z-bracket remains attached to the planar board.

Front

Duct Bracket

Air Duct

Bulkhead Clip

Back

Mounting Hole
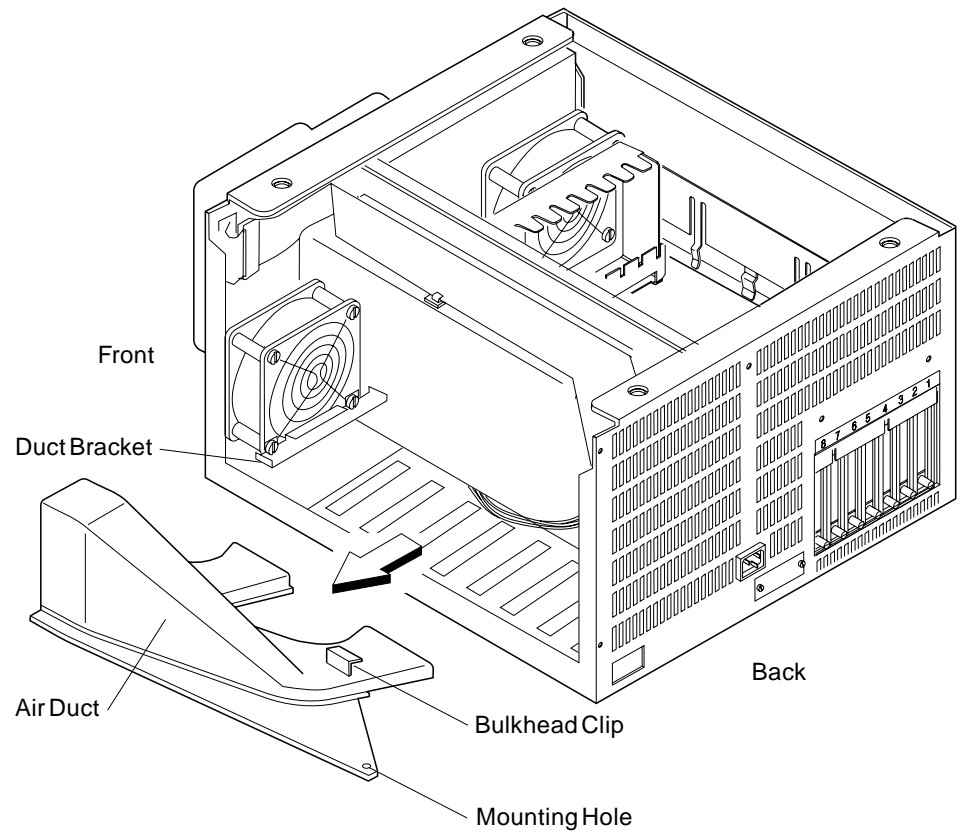
10.4 SIMM installation.

┌─ **Caution** ──
│
│ You should use the field electrostatic discharge (ESD) kit when you are han-
│ dling a SIMM. Guidelines for using the ESD tools are printed inside the kit lid.
│
└──

A4 A3 A2 A1 B4 B3 B2 B1
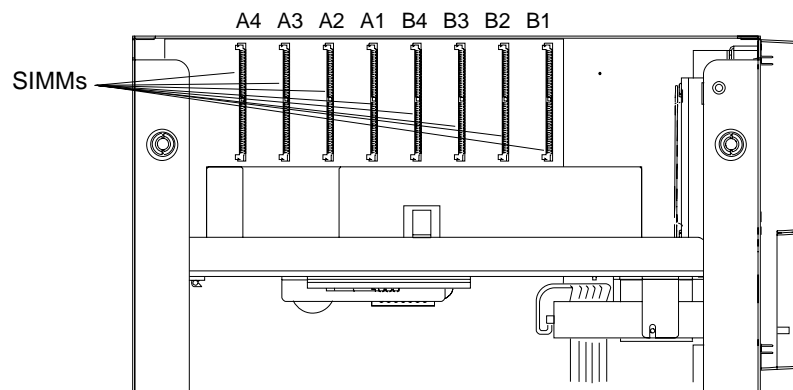
SIMMs

Install the two SIMMs modules in the first spare position in bank A and bank B:

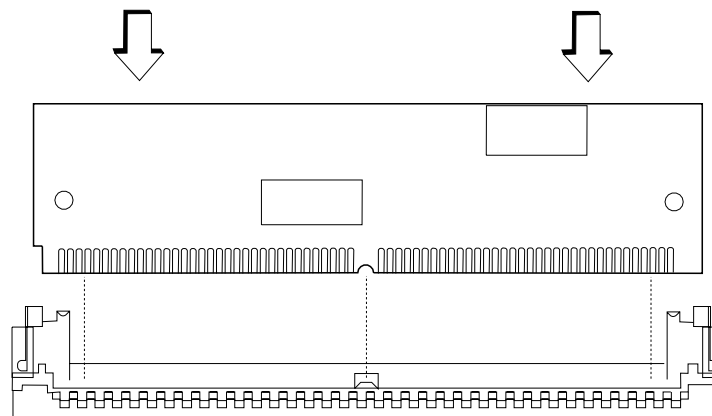___ 1. Align the notch on the side of the SIMM with the side of the socket.

___ 2. Using both hands, gently press the SIMM into the socket until it slips into place.

___ 3. Gently press the SIMM back with your thumbs until the silver clips snap around the SIMM, holding it firmly in place.

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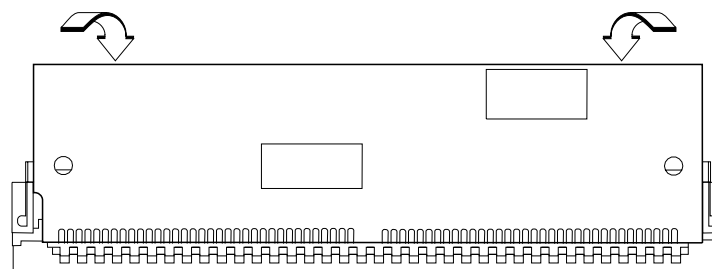
10.5 Reinstalling the air duct.

___ 1. Make sure the DC power cable is pulled back to position shown and held in place.

___ 2. While holding the dc power cable in place, insert the air duct so that the bulkhead clip rests on the ledge of the bulkhead, which is located under the power supply.
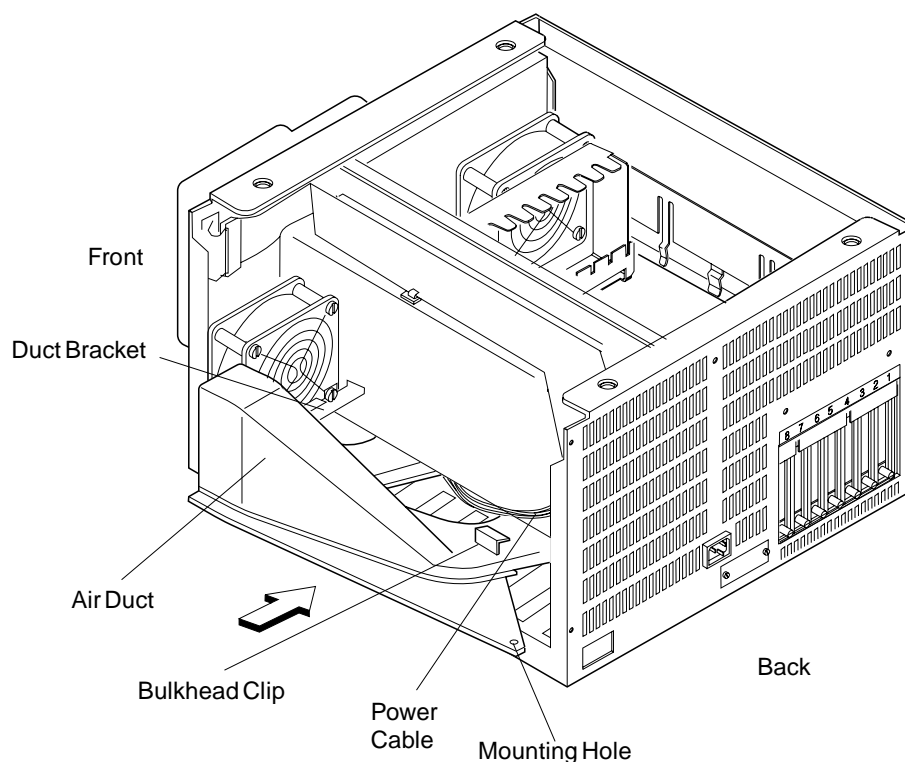
Figure 5. Reinstalling the Air Duct.

Note: The AC receptacle cable, resting on the ledge of the bulkhead, must be lifted slightly to allow the bulkhead clip to rest on the ledge.

___ 3. Slide the air duct towards the back of the base unit approximately half an inch. In this position, the air duct can be inserted into the front duct bracket mounted on the fan.

___ 4. Slide the air duct towards the fan, make sure that the bulkhead clip remains on the bulkhead ledge, and align the mounting hole of the air duct with the Z-bracket.

___ 5. Install the retainer screw to hold the air duct in place against the Z-bracket.*(see Figure 4 on page 8)*

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10.6 Reinstalling the Covers.

__ 1. Hold the sidepiece so that the clips are on the bottom.

__ 2. Slide the sidepiece down, so that the lips on the side of the SP are between the side piece and the clamps on the cover.

__ 3. Make sure that the clips on the bottom of the sidepiece are attached firmly to the lip on the bottom of the NNP.

__ 4. Tighten the four retainer screws with a screwdriver to clamp the side firmly.

Cover Sidepiece

Clamp

Clips
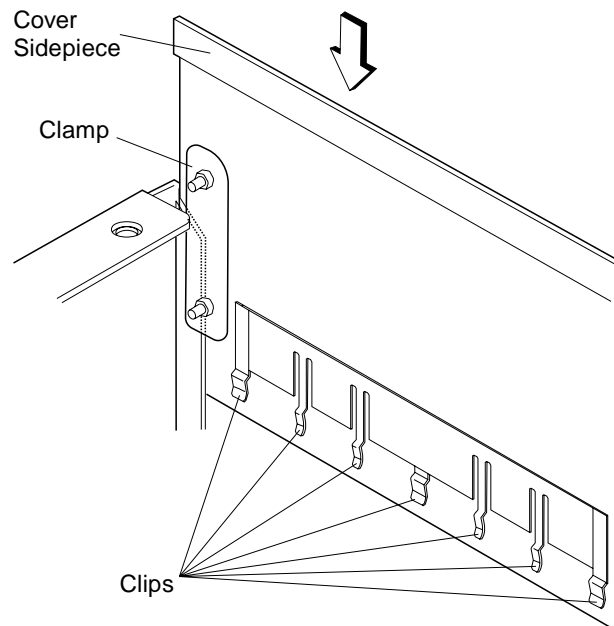
Figure 6. Reinstalling the Right Side Piece

__ 5. Position the top so that the plastic baffle covers the left side as you face the front of the NNP.

__ 6. Slide the top cover down so that its edges overlap the top edges of the sidepieces.

__ 7. Push down and turn clockwise the four quarter-turn fasteners on the top of the processor.

Figure 7. Reinstalling the Top Cover.

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10.7 Reinstalling the Service Processor.

__ 1. Reinstall the Service Processor at its original place.

On the rear side of the Processor:

__ 2. Reconnect the Keyboard cable **A** and **B**,

__ 3. the Power cord **C** ,

__ 4. the Optical Disk Drive cable **D**

__ 5. the LAN cable **E**

__ 6. the Display cable **F**

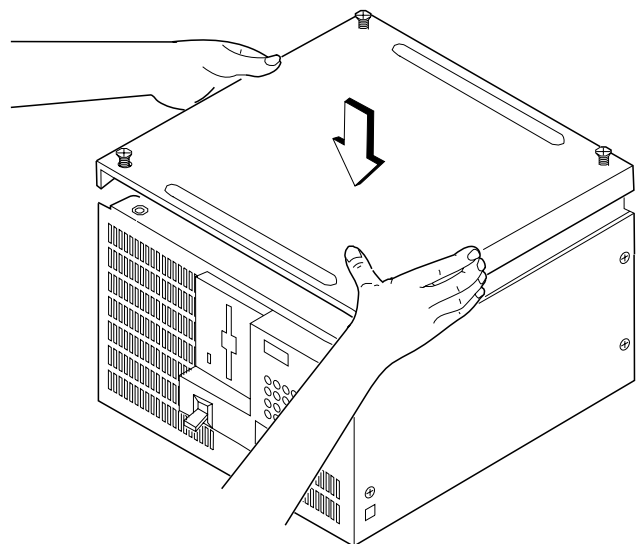__ 7. the Modem cable **G**
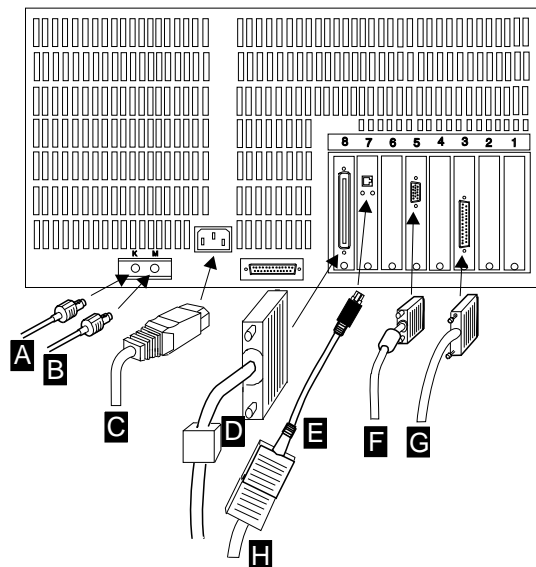
Figure 8. Cable locations.

10.8 Updating System Programs.

The procedure to update the system program depends on the type of micro processor installed on the Service Processor. Two types of micro processor are used 80486 or Pentium.

To determine the procedure to be used, look the label sticked on the Service Processor front panel, then note the Part Number.

What is the P/N of the SP?

- 41H7520, go to 10.8.1, "Reconfiguring the Service Processor with a Processor 80486." on page 14

- 55H7630, go to 10.8.2, "Reconfiguring the Service Processor with a Processor Pentium." on page 17

10.8.1 Reconfiguring the Service Processor with a Processor 80486.

___ 1. Insert the **Reference Diskette A** (Not provided with the MES B/M), in the Service Processor.

Label Indicating
Processor Type

Service Processor
Type 3172
Reference Diskette
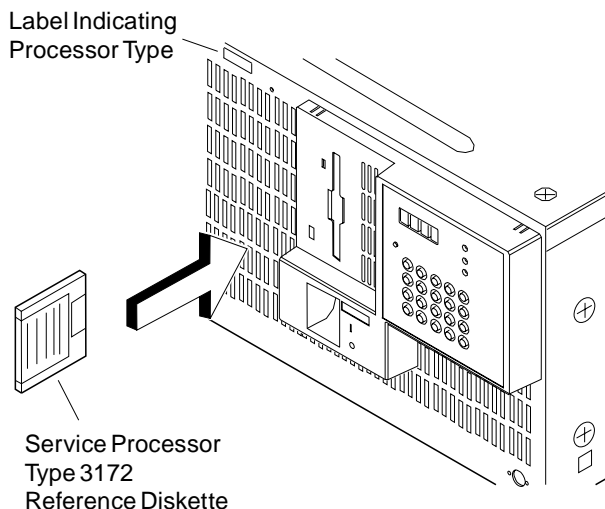
Figure 9. Inserting the Reference Diskette.

___ 2. Switch the power **ON (I)** to the processor (See Figure 1 on page 5.

On the Service Processor Monitor:

```
0164 - Memory Configuration Change.
```

```
Memory Size Error.
```

___ 3. On the Keyboard, type: **YES**.

```
Automatic Configuration is Running.
```

```
Automatic Configuration Completed.
```

___ 4. On the Keyboard, press: **ENTER**.

```
The System will Restart
```

___ 5. On the Keyboard, press: **ENTER**.

___ 6. Verify, under **IBM** logo and Copyright notice, that the **Memory Checking Value** is around 96,000KB

___ 7. From the **Main Menu** window, select the **Set Configuration** option, then press **ENTER**.

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___ 8. From the **Set Configuration** window, select the **Change Configuration** option, then press **ENTER**.

___ 9. From the **Change Configuration** window, verify that:

- Installed and usable memory value are cloded.

- Token Ring Adapter Data Rate is 16 Mbps.

Change the system value when needed

```
                        Change Configuration

Total System Memory

    Installed Memory...................... 96000KB (96.0MB)
    Usable Memory......................... 95XXXKB (95.XMB)

Built in Features

    Installed Memory...................... 95XXXKB (96.0MB)
    Diskette Drive 0 Type................. 2.88MB 3.5"
    Diskette Drive 1 Type................. Not Installed
    Diskette Drive 2 Type................. Not Installed
    Math Coprocessor...................... Not Installed
    Display F1 Prompt to Access System pro. YES
    Serial Port........................... SERIAL 1
    Second Serial Port.................... SERIAL 2, IRQ 3
    Parallel Port......................... PARALLEL 1
    Parallel Port DMA Arbitration Level.... Shared Level 7
    Serial Transmit Arbitration Level...... Shared 4
    Serial Received Arbitration Level...... Shared 3
    Parallel Port Arbitration Level........ PARALLEL 1
    Parallel Port Arbitration Level........ Shared 7
    Preempt Enable/Disable................. Enable
    Usable System-Board Memory............. ECC
    Bypass System Progress on Error........ Disable
    Processor............................. 66MHZ 80486 DX2

Slot 1 - Empty
Slot 2 - Empty
Slot 3 - IBM Multi-Protocol Communication Adapter (note 1)

    Communication Port.................... SDLC 1, Arb 1

Slot 4 - Empty

Slot 5 - XGA-2 Display Adapter/A

    Video I/O Address..................... Instance 6: 2160h - 216Fh
    1 MB VRAM Aperture Base Address........ Disabled
    Video Arbitration Level............... Arbitration Level 13
    Video Fairness........................ Fairness On
    ROM Address Range..................... C0000h - C1FFFh

Slot 7 - IBM Token-Ring Network 16/4 Adapter/A

    Primary or Alternate adapter.......... Primary
    Adapter Data Rate..................... 16 Mbps
    ROM Address Range..................... DA000/DBFFF
    RAM Size and Address Range............ 16 KB /DC000-DFFFF
    Interrupt Level....................... Interrupt 2

Slot 8 - IBM PS/2 SCSI AdapterW/Cache

    I/O Address........................... 3540-3547
    DMA Arbitration Level................. Level C
    Fairness On/Off....................... On
    ROM Wait State Disable................ Enable Wait State
    SCSI Adapter Address (ID)............. 7
    ROM Address Range..................... No Ressources Allocated
```

___ 10. Press **F3** key to exit from Change Configuration.

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__ 11. Press **F3** key to exit from Set Configuration.

__ 12. From the **Main Menu** window, select the **Update System Program** option, then press **ENTER**.

__ 13. Follow the instructions on the screen, then requested remove the reference diskette and insert the diagnostic diskette provided with the MES B/M.

__ 14. When the **Update of the System Program** is complete, press **ENTER**. Then, press **F3** key to return to the Main Menu.

__ 15. From the **Main Menu** window, select the **Backup/Restore System Programs** option, then press **ENTER**.

__ 16. From the **Backup/Restore System Programs Menu** window, select **Backup System Partition** option, then press **ENTER**.

__ 17. Follow the instructions on the screen.

__ 18. When the **Backup** is complete, press **ENTER**. Then, press **F3** key to return to the Main Menu.

```
The System will Restart
```

__ 19. Press: **ENTER**. Remove the diskette from the drive. (The configuration information and system programs were copied to the diskettes.

__ 20. **Go to 11.0, "Test Procedures" on page 19** .

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10.8.2 Reconfiguring the Service Processor with a Processor Pentium.

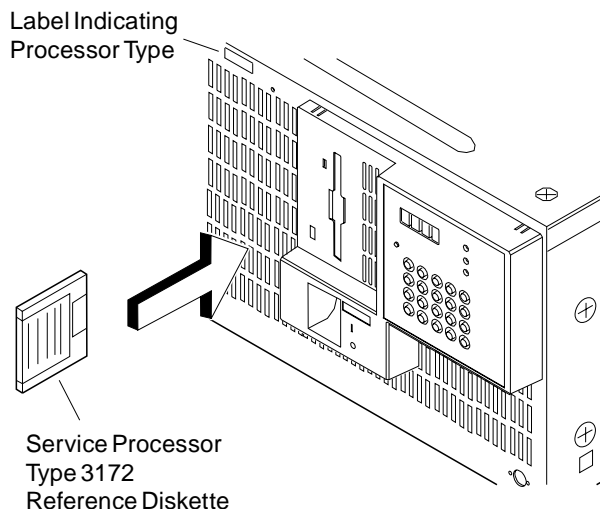__ 1. Insert the **Reference Diskette A**, provided with the MES B/M., in the Service Processor.

Figure 10. Inserting the Reference Diskette.

__ 2. Switch the power **ON (I)** to the processor (See Figure 1 on page 5.

On the Service Processor Monitor:

```
0164 - Memory Configuration Change.
```

```
Memory Size Error.
```

__ 3. On the Keyboard, type: **YES**.

```
Automatic Configuration is Running.
```

```
Automatic Configuration Completed.
```

__ 4. On the Keyboard, press: **ENTER**.

```
The System will Restart
```

__ 5. On the Keyboard, press: **ENTER**.

__ 6. Verify, under **IBM** logo and Copyright notice, that the **Memory Checking Value** is around 96,000KB

__ 7. From the **Main Menu** window, select the **Set Configuration** option, then press **ENTER**.

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__ 8. From the **Set Configuration** window, select the **Change Configuration** option, then press **ENTER**.

__ 9. From the **Change Configuration** window, verify that:

   • Installed and usable memory value are cloded.

   • Token Ring Adapter Data Rate is 16 Mbps.

   Change the system value when needed

```
                    Change Configuration

Total System Memory

    Installed Memory...................... 96000KB (96.0MB)
    Usable Memory......................... 95XXXKB (95.XMB)

Built in Features

    Installed Memory...................... 95XXXKB (96.0MB)
    Diskette Drive 0 Type................. 2.88MB 3.5"
    Diskette Drive 1 Type................. Not Installed
    Diskette Drive 2 Type................. Not Installed
    Math Coprocessor...................... Installed
    Display F1 Prompt to Access System pro. YES
    Serial Port........................... SERIAL 1
    Serial Transmit Arbitration Level...... Shared 4
    Serial Received Arbitration Level...... Shared 3
    Parallel Port Arbitration Level........ PARALLEL 1
    Parallel Port Arbitration Level........ Shared 7
    Preempt Enable/Disable................. Enable
    Usable System-Board Memeory............ ECC
    Bypass System Progress on Error........ Disable
    Processor............................. 90MHZ Pentium(tm) CPU

Slot 1 - Empty

Slot 2 - Empty

Slot 3 -  IBM Multi-Protocol Communication Adapter (note 1)

    Communication Port.................... SDLC 1, Arb 1

Slot 4 - Empty

Slot 5 - XGA-2 Display Adapter/A

    Video I/O Address..................... Instance 6: 2160h - 216Fh
    1 MB VRAM Aperture Base Address........ Disabled
    Video Arbitration Level............... Arbitration Level 13
    Video Fairness........................ Fairness On
    ROM Address Range..................... C0000h - C1FFFh

Slot 7 -  IBM Token-Ring Network 16/4 Adapter/A

    Primary or Alternate adapter........... Primary
    Adapter Data Rate..................... 16 Mbps
    ROM Address Range..................... DA000/DBFFF
    RAM Size and Address Range............. 16 KB /DC000-DFFFF
    Interrupt Level....................... Interrupt 2

Slot 8 -  IBM PS/2 SCSI AdapterW/Cache

    I/O Address........................... 3540-3547
    DMA Arbitration Level................. Level C
    Fairness On/Off....................... On
    ROM Wait State Disable................ Enable Wait State
    SCSI Adapter Address (ID)............. 7
    ROM Address Range..................... No Ressources Allocated
```

__ 10. Press **F3** key to exit from Change Configuration.

___ 11. Press **F3** key to exit from Set Configuration.

___ 12. Press **F3** key to exit from Main Menu.

On Popup Window:

```
    The System will Restart
```

___ 13. Press **ENTER**.

___ 14. Remove the **Reference Diskette A**.

11.0 Test Procedures

No test required.

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After Installation (steps 12-15)

12.0 Field Updating

If the P/N of the processor is 41H7520:

- replace the **diagnostic** diskette in the wallet by the diskette provided with the MES B/M, then return to manufacturing the old diagnostic diskette and the reference (Pentium) diskette provided with the MES B/M.

If the P/N of the processor is 55H7630:

- replace the **reference** (Pentium) diskette in the wallet by the diskette provided with the MES B/M, then return to manufacturing the old reference diskette and the diagnostic diskette provided with the MES B/M.

13.0 Publications Update

None.

14.0 Parts Disposition

14.1 Purchased Machines

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

15.0 Machine Records

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

End of instructions.

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