



## Field Feature Bill of Material (FFBM)

**PN 17G5534**

**CONVERT an IBM 3745 Model 21A to 31A**

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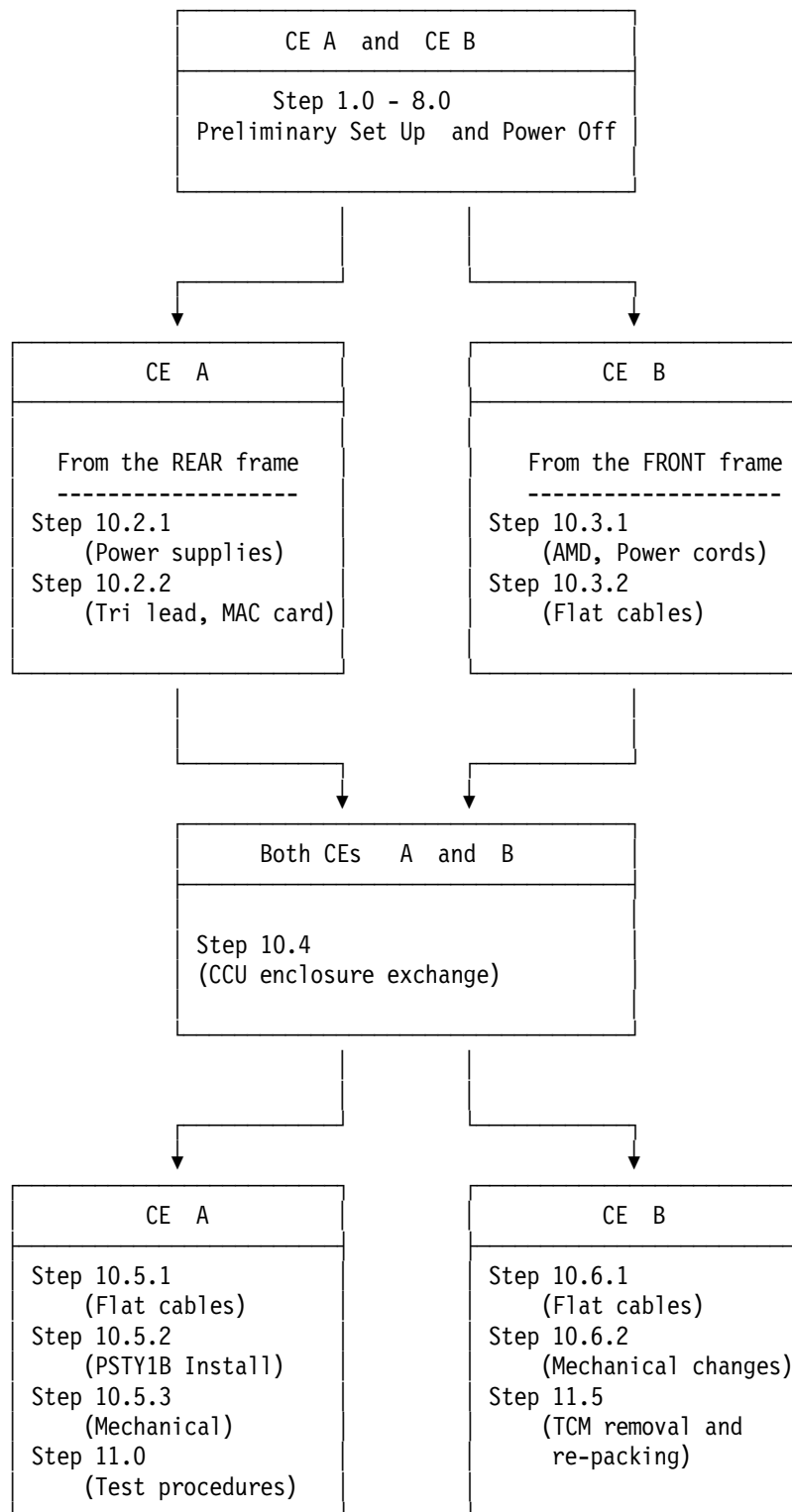
3745	PN 17G5534	EC C38405	EC C38405A	EC D55799	EC D55883	EC E27926
FFBM	1 of 22	06APR93	17JUN93	16SEP94	11MAY95	14MAR97



PN 17G5534 2 of 22	EC C38405 06APR93	EC C38405A 17JUN93	EC D55799 16SEP94	EC D55883 11MAY95	EC E27926 14MAR97
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As instructions are divided in two procedures, 2 CEs may be used for the installation.  
An additional person may be called to move the enclosure unit.





## Before Installation (steps 1-8)

### VERY IMPORTANT

MES should be installed without delay, after receipt, to avoid multiple MCLs needed for the microcode.

### Net Priced Feature

All parts removed from this machine are IBM property and must be returned to IBM.

## 1.0 Machines Affected

3745 Model 21A.

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

## 2.0 Related BMs and ECs

None.

## 3.0 BMs to be Installed

FFBM 17G5537 - Convert a 3745 21A into a 31A (4MB memory size)  
 or 17G5538 - Convert a 3745 21A into a 31A (8MB memory size)  
 or 17G5539 - Convert a 3745 21A into a 31A (16MB memory size)  
 17G5534 - Installation Instructions

## 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.
3. The installation must be performed off-line.

4. Ensure that RETAIN search has been performed and all prerequisites have been installed. Perform a search using **3745CCUPGRADE** as **SAS keyword**.
5. To check if a new MCLs level is necessary, perform a RETAIN search using **3745UPGRADE CODE LEVEL** for the TDR which gives the most recent level of microcode available for this machine (model).

To install the last level of MCLs, the most efficient way is with the LIC upgrade procedure. Use the RETAIN search, **3745ECA134 COF**, for the TDR which explains the procedure for ordering the latest level microcode from COF.

Third party can get the latest level of code through their normal microcode ordering procedures.

MCLs can be obtained from RETAIN (If the customer provide an RSF link), or by ordering the 3746 optical disk MCL via CCSS.

6. Follow the instructions attached to the case to unpack the MES material.  
Do not damage the packing boxes, they will be used for repacking.
7. Before starting Model conversion ensure that the complete 3745 is available.

### Additional Information:

- All parts to be removed should be handled carefully. Returnable parts must be received at the factory in good working order.
- To save installation time and machine down time, some tasks will be performed after the General IPL section.
- When hardware installation is complete, and before starting the test procedure, each CE should check the others CE's work.

## 5.0 Programming

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## 5.1 Diagnostic Programs

To reflect this change, CDF will be upgraded in Step 11.0. This is essential to allow the internal diagnostics to be run properly.

## 5.2 System Programs

The customer must update the control program to implement this change.

## 6.0 Purpose and Description

### 6.1 Purpose

Convert a 3745 Model 21A to a 3745 Model 31A.

### 6.2 Description

- Remove the TCM CCU enclosure, PSTY1, air moving device, and associated cabling.
- Install a new CCU enclosure with FAN, new PSTY1B, and associated cabling.  
Logic cards will not be re-used.

## 7.0 Installation Time

To be reported as MES

FFBM	Machine hours	System Hours	Nbr of CEs
17G5537 or 17G5538 or 17G5539	2.0	0.0	2
<b>Test Time</b>	1.15	0.0	
<b>Total Time</b>	3.15	0.0	

## 8.0 Tools/Materials Required

- ESD kit (PN 6428316)
- TCM tool kit (PN 69X7667)
- Isopropyl alcohol.

3745 FFBM	PN 17G5534 5 of 22	EC C38405 06APR93	EC C38405A 17JUN93	EC D55799 16SEP94	EC D55883 11MAY95	EC E27926 14MAR97
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## Installation (steps 9-11)

### 9.0 Safety

- Review the **Safety Notices** and the **Service Inspection Procedures** located at the beginning of the *3745 Maintenance Information Procedure (MIP)* manual, SY33-2054.

\* Steps 10.0 to 10.1.4.

### 10.0 Details of Installation

Before the installation of this MES ask the customer:

- To set all lines and channel addresses offline for this controller and associated machines.
- To provide the maintenance password.
- To logoff the Service Processor if not already done.

### 10.1 Checking, Diagnostics

#### 10.1.1 MOSS IML

From the control panel:

1. Check that the **Power Control** indicator displays **3**. If it does not, record the value \_\_\_\_\_. Then, set the **Power Control** indicator to **3**. Press the **Validate** key.
2. Set the **Function** indicator to **1**. Press the **Validate** key.
3. Set the **Service Mode** indicator to **2**. Press the **Validate** key.

The **MOSS IML** is completed when **F0E** is displayed on the control panel.

#### 10.1.2 Logon

From the Service Processor:

1. In **MOSS-E View** window, click on **Program**.
2. Click on **LOG ON MOSS-E**.
3. Enter the maintenance password, press **Enter**.

**Administrator Maintenance Mode** is displayed on the lower line of the window.

#### 10.1.3 Open MOSS/MOSS-E Session

1. On the **MOSS-E View** window, double click on the **ICON** of the identified 3745.
2. On the **3745 Menu** window, double click on **MOSS Console**.

Wait for **Function Selection Rules** screen.

#### 10.1.4 Disable Channels Adapters

1. Enter **CID**, press **Enter**.
2. On the **CA Interface Display** screen, record the **Enable Channel Adapters**, then **Disable** all the Channel Adapters.

**Note:** If 3746 A11 is installed, press **F8** to display channels 8 through 16.

3. Wait for **Interface Status Disabled** for all channels.
4. Press **F1**.
5. If CCU running, enter **RST** to reset the CCU. MOSS goes in **MOSS ALONE** state.

#### 10.1.5 Verify the CDF

1. Enter **CDF**, press **Enter**.
2. Enter **4** (VERIFY), press **Enter**.  
The value from the **CDF DATA** and **MACHINE DATA** should be identical. If there is a discrepancy, verify the features. If correct, update the CDF with the machine values, enter **2**, press **Enter**.

- \_\_\_ 3. When **CDF VERIFY COMPLETED** is displayed, press **F1**.

### 10.1.6 Run the Diagnostics

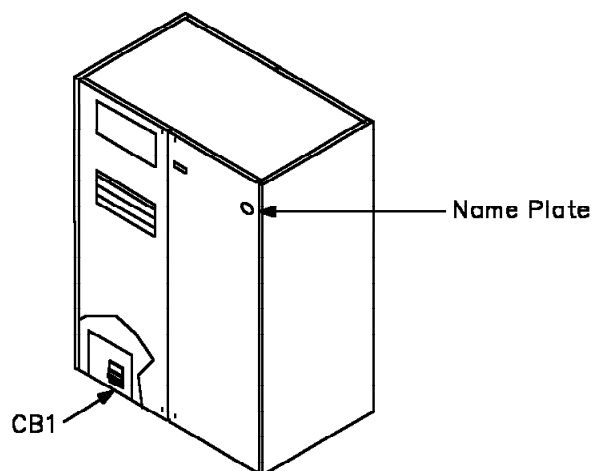
- \_\_\_ 1. Enter **ODG**, press **Enter**.
- \_\_\_ 2. Enter **3** (IOCB), press **Enter**.
  - If **NO ERROR FOUND** is displayed, press **F1**.
  - Otherwise, see the *MIP*, Chapter 1.

### 10.1.7 Power OFF

**Note**

Remove all electrical power from the machine and associated machines before the hardware installation.

- \_\_\_ 1. From the control panel, press the **Power OFF** key.
- \_\_\_ 2. Open the front system cover, then switch OFF **CB1**.



Follow flow chart on page 3 for 2 CE/FE activity.



## 10.2 CE 'A' Tasks

**Warning:** Follow the existing ESD procedures when handling logic parts.

### 10.2.1 Power Supplies

Open the rear system doors. Disconnect the ground wire(s) (if present) from the right door, and remove the door.

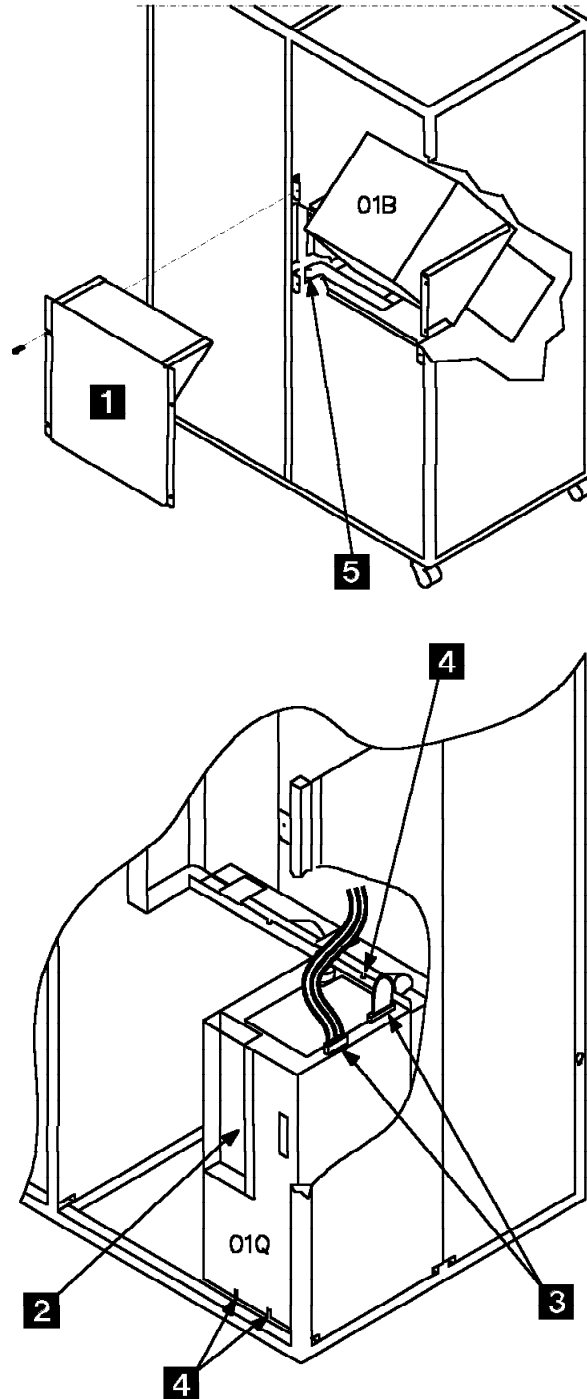
**Note:** To provide clearance for easier door removal, you may have to loosen two screws securing the end cover.

- \_\_\_ 1. From the rear, remove the shield **1** over the CCU cards, if present.
- \_\_\_ 2. Locate the PSTY1 in location 01Q and remove the plastic cover from the power TB **2**.  
Disconnect all FDS cables from the TB.  
Tape the FDS cable ends to the enclosure (use tape provided for repacking).
- \_\_\_ 3. From the top of PSTY1, unplug the power control bus cable from connector J2 and the Power On Reset cable from J1 **3**.

**Warning**

Secure the power bus cable in its raceway to prevent damage during CCU enclosure exchange.

- \_\_\_ 4. Remove the 3 screws **4**. Then, remove the PSTY1 from the 3745 (the power cord has been routed back by CE 'B').
- \_\_\_ 5. Disconnect the FDS ground cable attached to the frame **5**.  
Save screws.







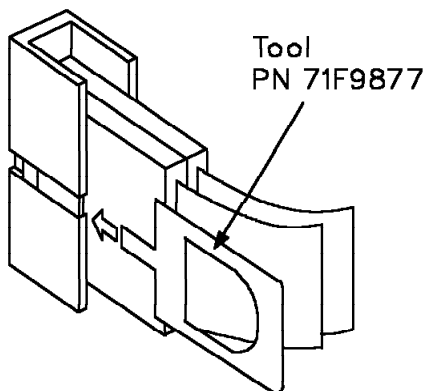
## 10.2.2 Tri Lead Cables, MAC Card Exchange

1. Locate the MOSS board in 01A, and the tri lead cables connected in 01A-Y0D4/D5 and E4/E5 **1**.

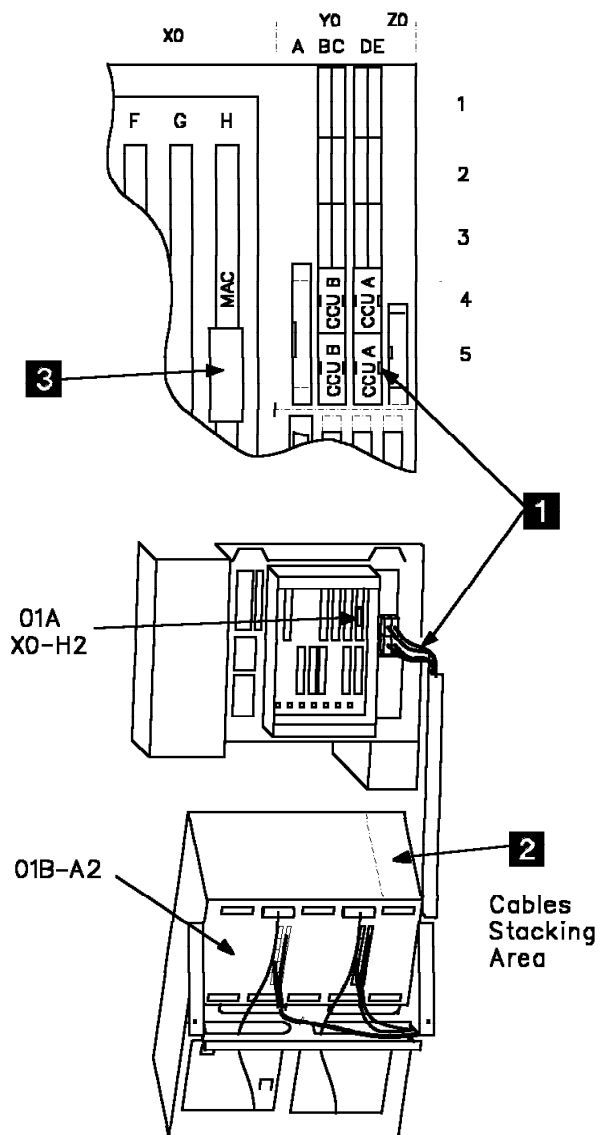
### Note

To prevent damages to cables and board, use the tool (PN 71F9877) to unlock the connector as shown in the figure below.

Gently insert the blade, then pull on the cable housing to remove the cable.



2. Unplug the cables and route them back to the CCU enclosure. Secure the tri lead cables in the right side of the CCU cage **2**.
3. In the MOSS board, locate the MAC card in 01A-X0H2, and remove the cable connected to the MAC card **3**. Route the cable back to the CCU enclosure, and secure it in the right side of the CCU cage **2**.
4. Remove the spring clips securing the locks of the MAC card.
5. Remove the MAC card.
6. Install the new MAC card provided by the FFBM in the same position.
7. Reinstall the spring clips on the MAC card, then take 'H' label off the old card and put it on the new card.





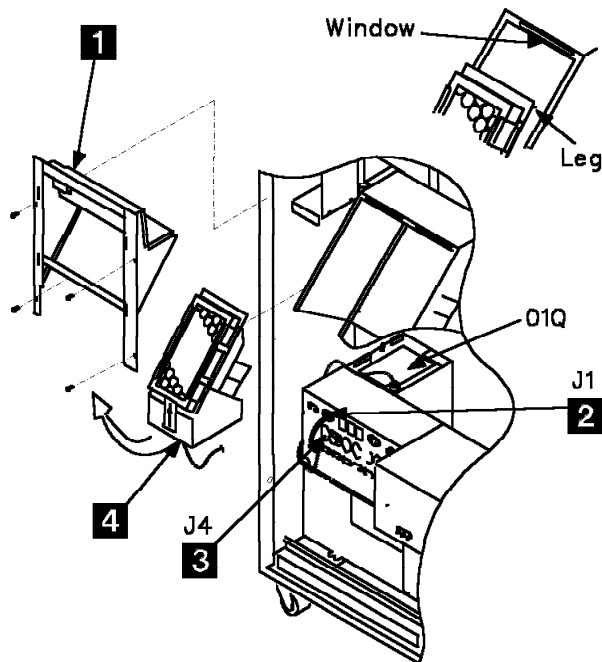
## 10.3 CE 'B' Tasks

**Warning:** Follow the existing ESD procedures when handling logic parts.

### 10.3.1 AMD, Power Cords

1. From the front of the 3745, remove the shield **1** (four screws) over the AMD (Air Moving Device). It will not be re-used.
2. Unplug the AMD power cable from the primary power box connector J1 **2**.
3. Remove the AMD (four screws) **4**.  
**Note:** Swing out the bottom of the AMD to disengage the top leg.
4. Unplug the PSTY1 power cable from the connector J4, and route it to the rear of the 3745 **3**.
5. Remove the dummy AMD bracket placed over the empty CCUB TCM location.

next page (view A), on the 2 top holes of the AMD asm.



### 10.3.2 Flat Cables

1. Open the control panel gate.

**Note**

To prevent damages to cables and board, use the tool (PN 71F9877) to unlock the connector as shown in the figure on previous page. Gently insert the blade, then pull on the cable.

2. Check that all cables connected to the SACU board are correctly labelled. Rewrite the plug location on the cables if not readable.
3. Unplug the flat cables from the SACU board.

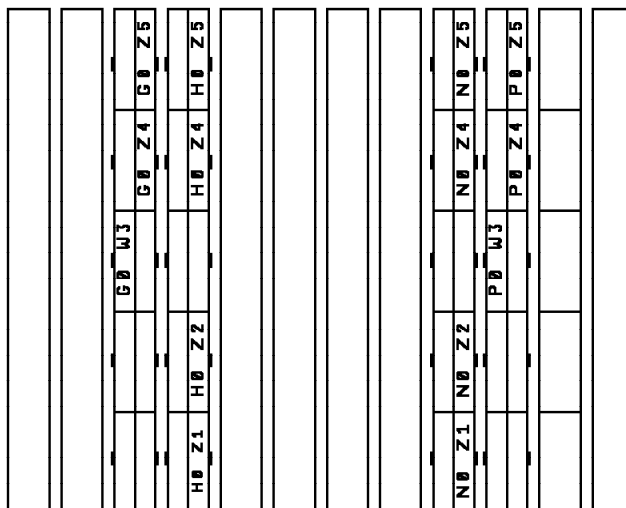
**Warning**

Secure the cables in the raceway to prevent damage during the CCU enclosure exchange.

4. Attach the handhold (PN 76F9077) **2** with 2 screws as shown on figure on the

E 0 F 0 G 0 H 0 J 0

M 0 N 0 P 0 Q 0 R 0





## 10.4 CCU Enclosure Exchange

### CAUTION:

The CCU enclosure can weight up to 37 kg (81.5 lb).

An additional person may be needed because of the weight of the enclosure unit.

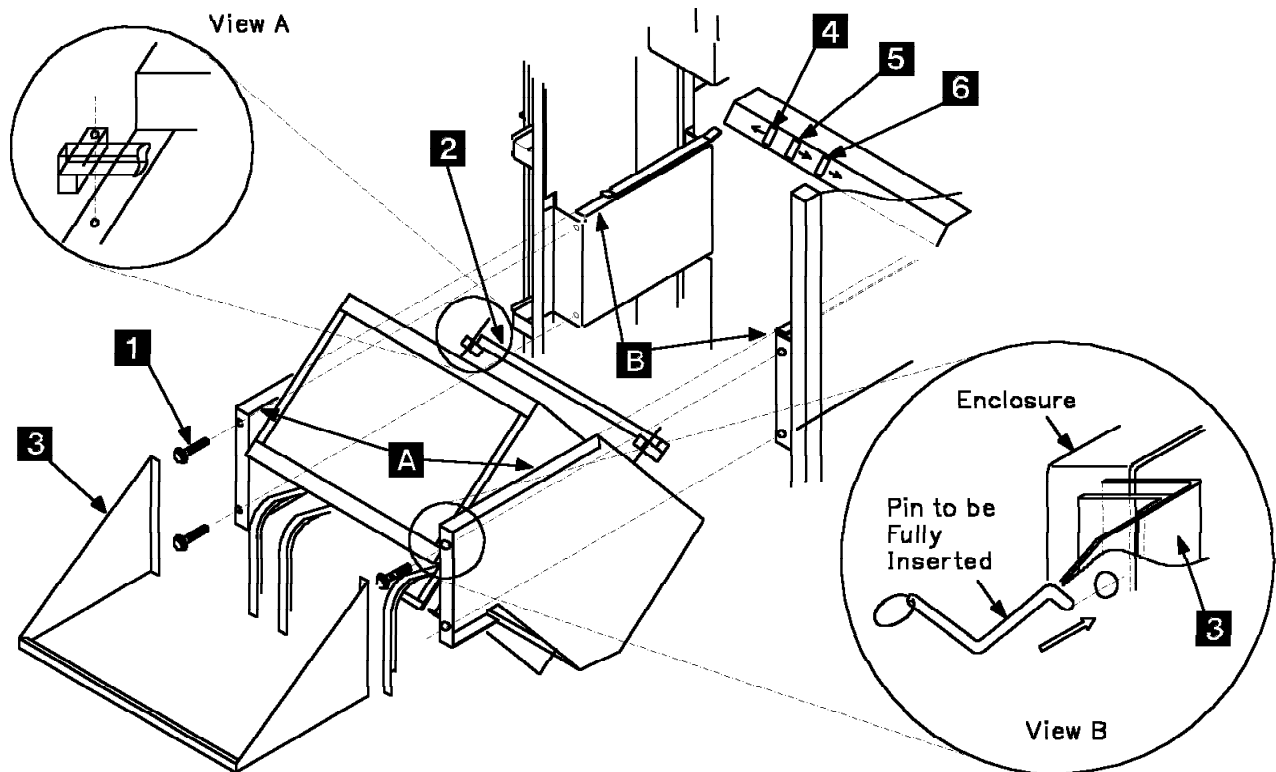
The first person is placed on the right side of the enclosure, the second on the left side, and the third, if needed, at the front of the enclosure using the provided handhold.

**Note:** Ensure that all flat cables are protected from damage during the CCU enclosure exchange.

### 10.4.1 TCM Enclosure Removal

- 1. Remove the 4 screws **1** securing the CCU enclosure.
- 2. Pull the complete enclosure partially out of the 3745 (approximately 15 cm).

- 3. From the rear of the 3745, attach the handhold (PN 76F9076) **3** to the enclosure as shown on the figure below. This will allow the third person involvement. The handhold is clipped to the right and left sides of the CCU enclosure (see view B). Secure the handhold with the attached pins.
- 4. Two persons grasp the enclosure assembly by the handhold **2** and at the SACL board. The third person, if needed, grasps the front handhold **3**. Slide the assembly out of the 3745.
- 5. Put the enclosure in a safe place.
- 6. Install 3 clamps (PN 34F1295) as follows:  
Remove the clamp **4**, and stick a clamp 9 cm (3.5 in.) to the left.  
Remove the clamp **5** and stick a clamp 3 cm (1.1 in.) to the right.  
Remove the clamp **6** and stick a clamp 1 cm (0.4 in.) to the right.





### 10.4.2 New CCU Enclosure Installation

- 1. Move the new CCU enclosure, still sitting on its shipping pallet assembly, close to the machine.
- 2. If a third person is needed, remove the handhold (PN 76F9076) from the TCM CCU enclosure and attach it to the new CCU enclosure (need to tilt the enclosure on the shipping pallet).
- 3. Lift the enclosure from the shipping pallet using the enclosure top bar, and put the part of the enclosure marked **A** on the slides **B** in 3745 (refer to figure on previous page). Slide the enclosure partially in the 3745.

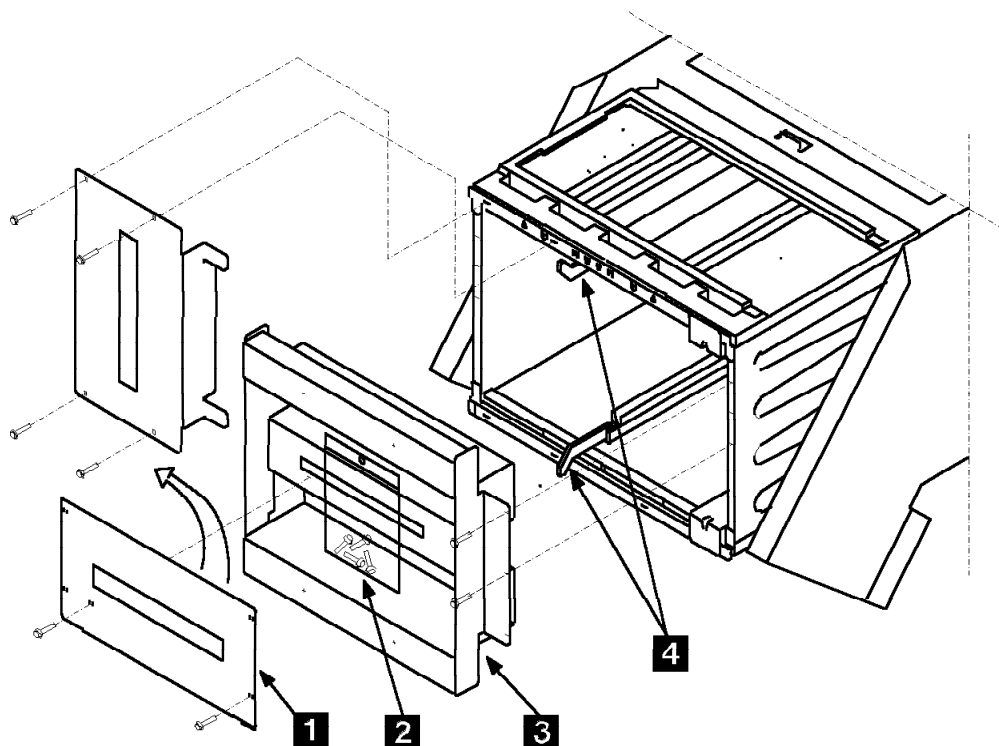
**Note**

When the enclosure is put on its slides in the 3745, check from the front of the 3745 that there is no risk of damaging flat cables, FDS cables, and FAN power cords.

- 4. Remove the handhold and slide the enclosure in place.

### 10.4.3 Card Locking

- 1. Remove the red bracket **3** (four screws) and place it on a table.
- 2. Remove the plate **1** which is shipped attached to the Red Bracket. Save screws and plate for re-use.
- 3. Secure the enclosure with the screws provided in the bag attached to the red bracket **2**. Save the red bracket for the reinstallation.
- 4. On each card, move levers **4** inwards simultaneously.  
**Note:** To improve contact, operate the levers 3 times.
- 5. Position the plate **1** to lock **STER** cards and block card locations which are used for CCU B cards. Secure with 4 screws saved in previous Steps 1 and/or 2.



## 10.5 CE 'A' Tasks

### 10.5.1 Flat Cables

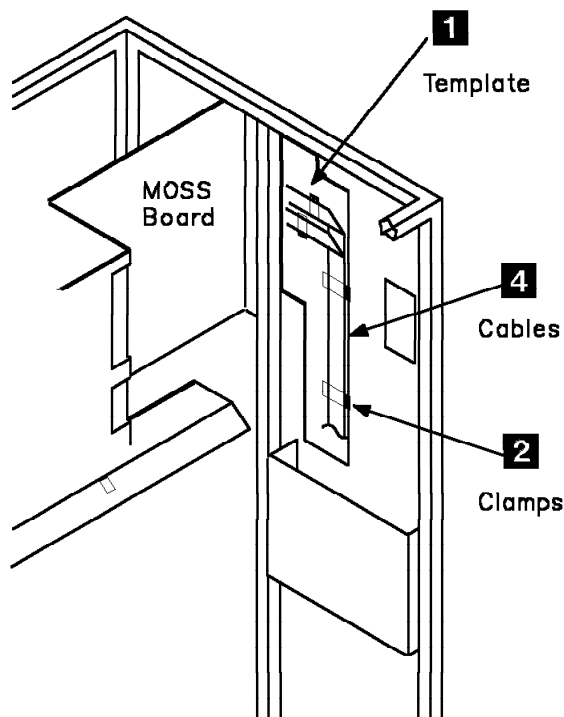
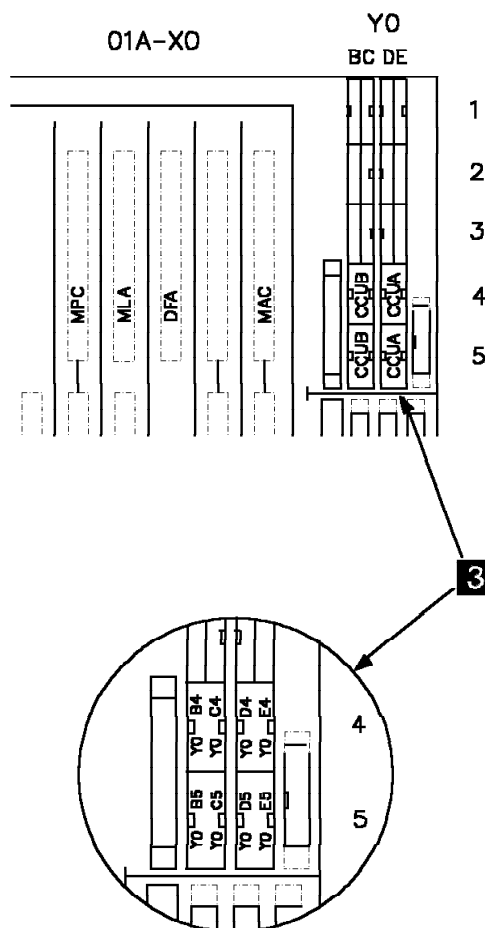
1. Place the template (PN 76F8595) **1** as shown on figure. Template should be positioned as far up and left as permitted by the frame.

**Note:** Remove existing cable clamps which interfere with the correct placement of the template.

2. Attach 4 clamps (PN 34F1295) in the windows of the template **2**.

**Note:** Place the clamps as shown on the template.

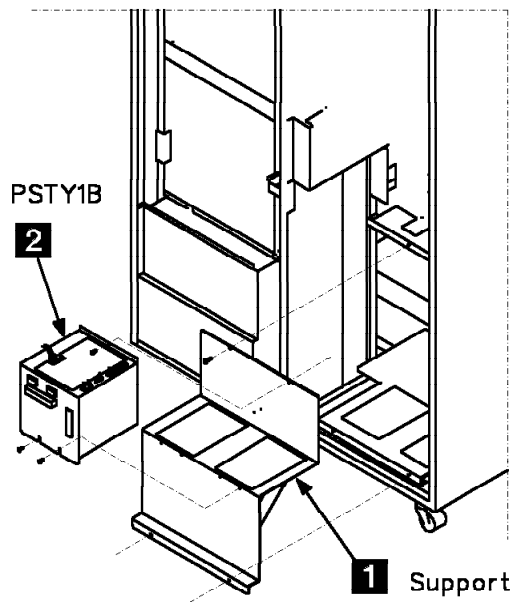
3. Remove the template.
4. Install the pre-folded flat cables (PN 76F8591) in the clamps.
5. Plug the flat cables, one at a time, on the MOSS board **3** in the following sequence:
  - Y0E4, Y0D4, Y0E5, and Y0D5.
6. Route the flat cables **4** through the machine to CE 'B'.





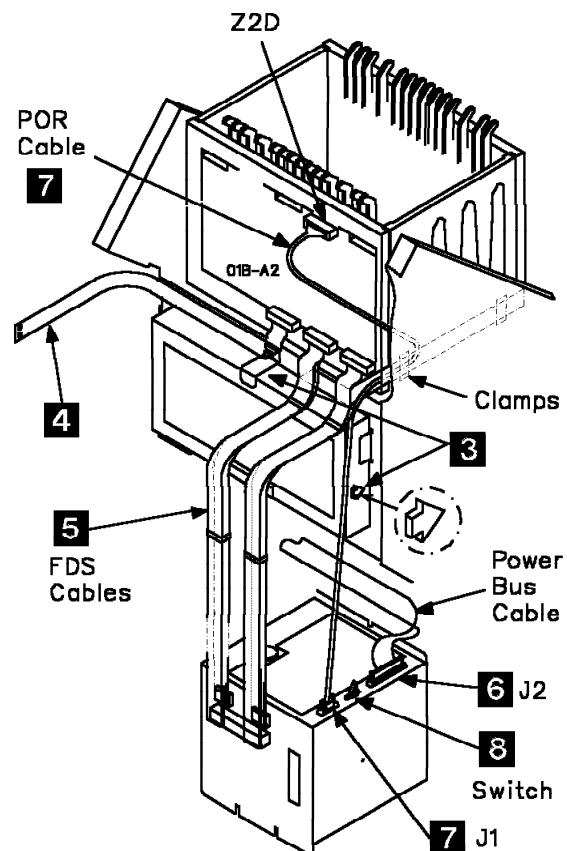
## 10.5.2 PSTY1B installation

- 1. Install the PSTY1B support asm (PN 71F9950) **1** and secure it at the bottom and at the top left with 3 screws provided in the bag attached to it. Do not tighten the screws.
- 2. Install the PSTY1B (PN 26F1733) **2** with 3 screws (PN 2665528) provided in the bag attached to the support bracket.
- 3. Tighten the bottom screws of the power supply bracket. Feed the PSTY1B power cable to the front of the machine.



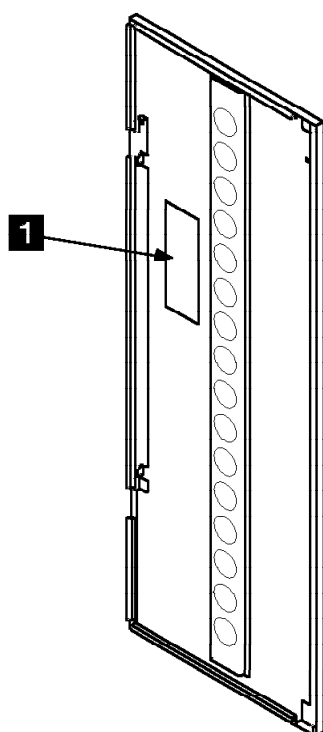
- 4. Loosen the screw securing the bracket **3** that secures the air filter and install the air filter (PN 58X9295) under the CCU enclosure. Note the arrow direction for the air flow. Tighten the screw.
- 5. Connect the FDS ground cable **4** to the frame. Secure it with the screws saved in Step 10.2.1.

- 6. Connect the FDS cables **5** to the PSTY1B with screws (PN 61F4511) provided in a bag attached to the power supply. Connect the cables on TB1/TB2 first.
- 7. Connect the power control bus cable to the connector J2 of the power supply **6**.
- 8. Locate the Power On Reset cable (PN 61F4448) connected in the SACL 01B-A1Z2-D. Route the cable to PSTY1B and connect it to connector J1 **7**.
- 9. On PSTY1B, check that the switch 1 is set to A (CCUA) **8**.



### 10.5.3 Mechanical

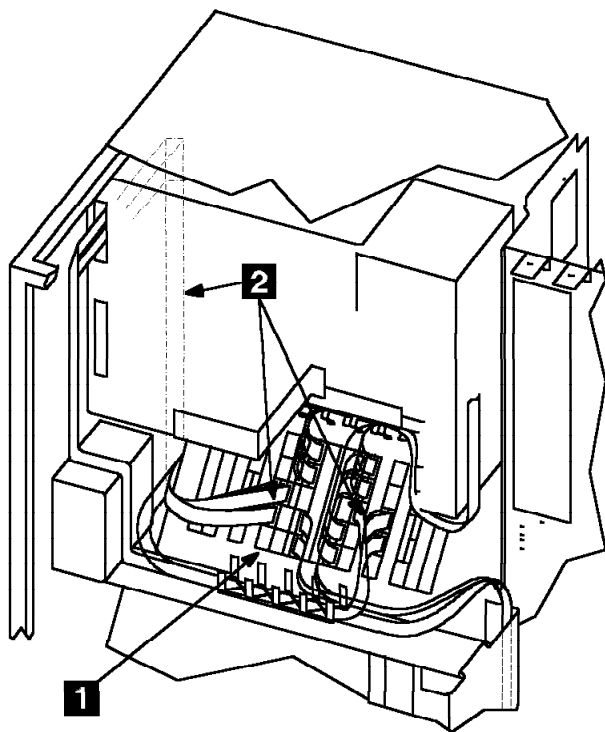
- \_\_\_ 1. Re-install the shield over the CCU board (if used).
- \_\_\_ 2. Re-install the rear door removed in Step 10.2.1, "Power Supplies" on page 8.  
  
**Note:** Tighten end cover screws if they were loosened.
- \_\_\_ 3. Re-connect the ground wires, if present.
- \_\_\_ 4. Affix the label (PN 71F9997) over the existing label on the door **1**.  
Close the door.



## 10.6 CE 'B' Tasks

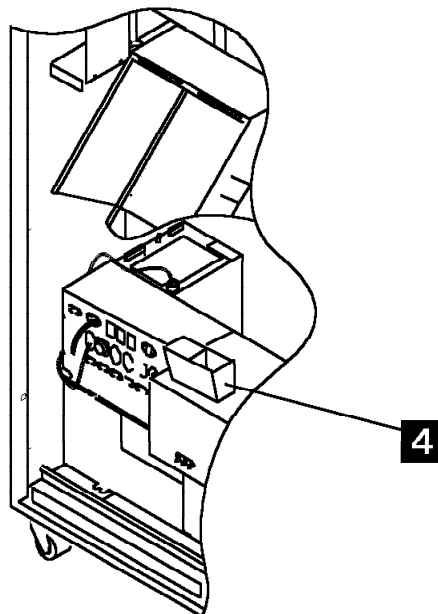
### 10.6.1 Flat Cables

- 1. Reconnect flat cables to the SACU board **1**.  
Refer to the template on the SACU board.
- 2. Route and connect to the SACU board the flat cable group (PN 76F8591) which was prepared by CE 'A' **2**.

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### 10.6.2 Diskette Storage Box

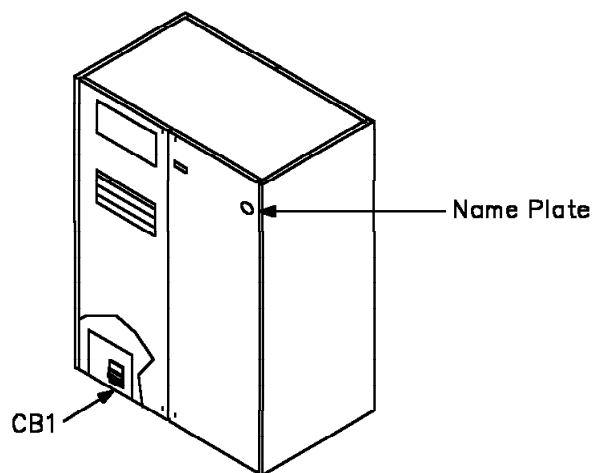
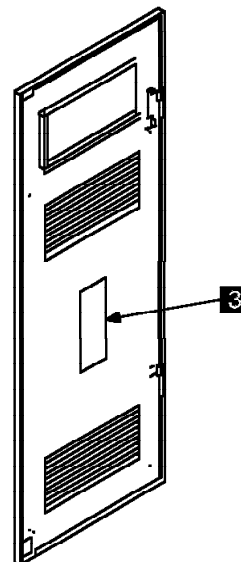
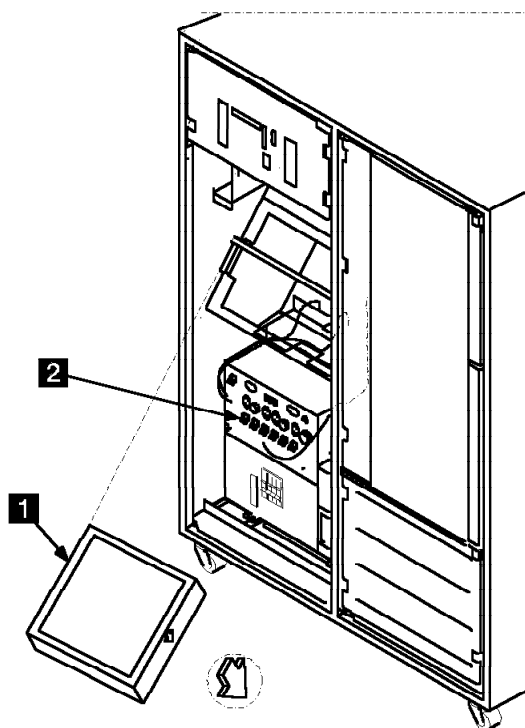
- Install the new diskette storage box supplied on the top of the PS6 **4**.





### 10.6.3 Mechanical Changes

- 1. Install the air filter (PN 58X9296) **1** on the CCU enclosure. Note the arrow direction for the air flow. Secure it with the bottom bracket.
- 2. Plug the power cords in the primary power box **2** as follows:
  - a. PSTY1B 01Q Connector J4.
  - b. FAN CCU Connector J1.
- 3. Affix the label (PN 71F9996) over existing labels in the front door **3**.
- 4. Remove the name plate from the front system cover(s), and clean any adhesive residue from the recessed area with Isopropyl alcohol. Remove the paper from the back of the new name plate (PN 17G5603) and affix the plate.
- 5. Strike out the model number on the S/N label, only the nameplate will identify the model type from now on.



## 11.0 Test Procedures

**Note:** Ensure that each CE has verified the other's work before powering on the 3745.

### 11.1 Power ON

- • Switch **CB1** ON and close the system cover(s).



From the control panel:

- \_\_\_ 1. Set the **Function** indicator to **1**.  
Press the **Validate** key.
- \_\_\_ 2. Set the **Service Mode** indicator to **2**.  
Press the **Validate** key.
- \_\_\_ 3. Press the **Power On Reset** key.

The **MOSS IML** is completed when **F0E** is displayed on the control panel.

## 11.2 Open MOSS/MOSS-E Session

From the Service Processor, wait until the **ICON** of the identified 3745 becomes purple.

- \_\_\_ 1. On the **3745 Menu** window, double click on **MOSS Console**.

Wait for **Function Selection Rules** screen.

### 11.2.1 Update the CDF

- \_\_\_ 1. Enter **CDF**, press **Enter**.
- \_\_\_ 2. Enter **4** (VERIFY), press **Enter**.  
The value from the **CDF DATA** and the **MACHINE DATA** should be identical except for the new hardware installed.
- \_\_\_ 3. To update the CDF with machine values, enter **2**, press **Enter**.
- \_\_\_ 4. When **CDF VERIFY COMPLETED** is displayed, press **F1**.

### 11.2.2 Record the 3745 Model

From the Service Processor:

- \_\_\_ 1. On the **Service Processor** menu, double click on **Manage 3745/3746-900 Installation**.
- \_\_\_ 2. Click on the line of the 3745 you have just converted.
- \_\_\_ 3. Click on **Change**.
- \_\_\_ 4. On **Controller Model Change** message, click on **Yes**.

From the 3745 control panel:

- \_\_\_ 5. Press the **Power OFF** key.

- \_\_\_ 6. Set the **Service Mode** indicator to **2**.  
Press the **Validate** key.
- \_\_\_ 7. Set the **Function** indicator to **1**.  
Press the **Validate** key.
- \_\_\_ 8. Press the **Power On Reset** key.  
The **MOSS IML** is completed when **F0E** is displayed on the control panel.

From the Service Processor:

- \_\_\_ 9. Click on **OK**.  
The 3745 Model number is being recorded.
- \_\_\_ 10. When the operation is completed, click on **OK**.
- \_\_\_ 11. Click on **Cancel**.
- \_\_\_ 12. On the **3745 Menu** window, double click on **MOSS Console**.

Wait for **Function Selection Rules** screen.

### 11.2.3 Run the Diagnostics

- \_\_\_ 1. Enter **ODG**, press **Enter**.
- \_\_\_ 2. Enter **2** (CCU), press **Enter**.
  - If **NO ERROR FOUND** is displayed, press **F1**.
  - Otherwise, see the *MIP*, Chapter 1.
- \_\_\_ 3. Enter **3** (IOCB), press **Enter**.
  - If **NO ERROR FOUND** is displayed, press **F1**.
  - Otherwise, see the *MIP*, Chapter 1.
- \_\_\_ 4. If no HSS/ELA feature installed, press **F1** and go to next Step.  
If HSS/ELA feature is installed in your 3745, run HSS/ELA diags on at least one HSS or ELA on each DMA bus (Adp 1-4 and 5-8) with HSS/ELA adapter.
  - If **NO ERROR FOUND** is displayed, press **F1**.
  - Otherwise, see the *MIP*, Chapter 1.

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### 11.2.4 Air Filter Acknowledge

- \_\_\_ 1. Check all frame filters. replace if needed.
- \_\_\_ 2. Enter **POS**, press **Enter**.
- \_\_\_ 3. Select option **A**, press **Enter**.
- \_\_\_ 4. Select option **F** (Acknowledge Air Filter change), press **Enter**.
- \_\_\_ 5. Enter a **Y** to confirm, press **Enter**. When completed, press **F1**.

### 11.3 Close MOSS/MOSS-E Session

- \_\_\_ 1. Enter **CID**, press **Enter**.
- \_\_\_ 2. Re-enable all channel Adapters disabled in step 10.1.4, "Disable Channels Adapters" on page 6.
- \_\_\_ 3. When CA are enabled, press **F1**.
- \_\_\_ 4. Enter **OFF**, press **Enter**.
- \_\_\_ 5. On **3745 Menu**, click on **Function**. Then, click on **Exit**.

The **MOSS-E View** window is displayed.

### 11.4 General IPL

From the control panel:

- \_\_\_ 1. Set the **Power Control** indicator to its original value, as per step 10.1.1, "MOSS IML" on page 6
- \_\_\_ 2. Set the **Service Mode** indicator to **0**  
Press the **Validate** key.
- \_\_\_ 3. Set the **Function** indicator to **0**.  
(General IPL).  
Press the **Validate** key.

The General IPL starts.

- If **FF4** code is displayed on control panel, ask customer to load the control program.
- If the control program is loaded from hard disk, **000** will be displayed when **IPL** successful.

**Note:** The control program load can fail if a mismatch exists between control program and hardware configuration.

### 11.5 Disk Save

When the customer network is restarted, save the contents of the hard disk on the **BACKUP** set of diskettes.

#### 11.5.1 Open MOSS/MOSS-E Session

From the Service Processor:

- \_\_\_ 1. On the **MOSS-E View** window, double click on the **ICON** of the identified 3745.
- \_\_\_ 2. On the **3745 Menu** window, double click on **MOSS Console**.

Wait for **Function selection rules** screen.

#### 11.5.2 Save Disk Contents onto Diskettes

- \_\_\_ 1. If NCP is restarted and MOSS ONLINE, set the **MOSS OFF LINE**, enter **MOF**, press **Enter**.
- \_\_\_ 2. Select **DIF**, press **Enter**.
- \_\_\_ 3. Select **2**.
- \_\_\_ 4. Enter the save-ID and press **Enter**.
- \_\_\_ 5. Follow prompts on console.
- \_\_\_ 6. When the function is completed, press **F1**.

### 11.6 Install Latest MLCs.

Prior to returning the 3745 to the customer, you must install the latest MCLs.

- \_\_\_ 1. If you have an RSF link:  
Refer to the *SP Installation and Maintenance Manual*. Follow the procedure **Reporting problem to retain** in Chapter 3 and, when requested enter **Converting a Model A and testing the RSF link** as short description of the problem. The latest MCLs are automatically downloaded. Then go to **Handling Micro-code Change level** in Chapter 3. When the RSF link is completed and the MCLs are installed, go to 11.7, "Close MOSS/MOSS-E Session" on page 20.
- \_\_\_ 2. If you use the LIC Upgrade kit:  
Refer to the *SP Installation and Maintenance Manual*. Follow the procedure



**Installing a new version of the Licensed Internal Code** in Chapter 3. When done go to 11.7, "Close MOSS/MOSS-E Session" on page 20.

- \_\_\_ 3. If you use the 3746 Optical Disk MCLs: Refer to the *SP Installation and Maintenance* Manual. Follow the procedure **Handling Microcode Change Level** in Chapter 3. When done go to 11.7, "Close MOSS/MOSS-E Session."

## 11.7 Close MOSS/MOSS-E Session

- \_\_\_ 1. Enter **OFF**, press **Enter**.
- \_\_\_ 2. On **3745 Menu**, click on **Function**. Then, click on **Exit**.

The **MOSS-E View** window is displayed.

## 11.8 Logging OFF from SP

- \_\_\_ 1. On **MOSS-E View** window, click on **Program**.
- \_\_\_ 2. Click on **LOG OFF MOSS-E**.

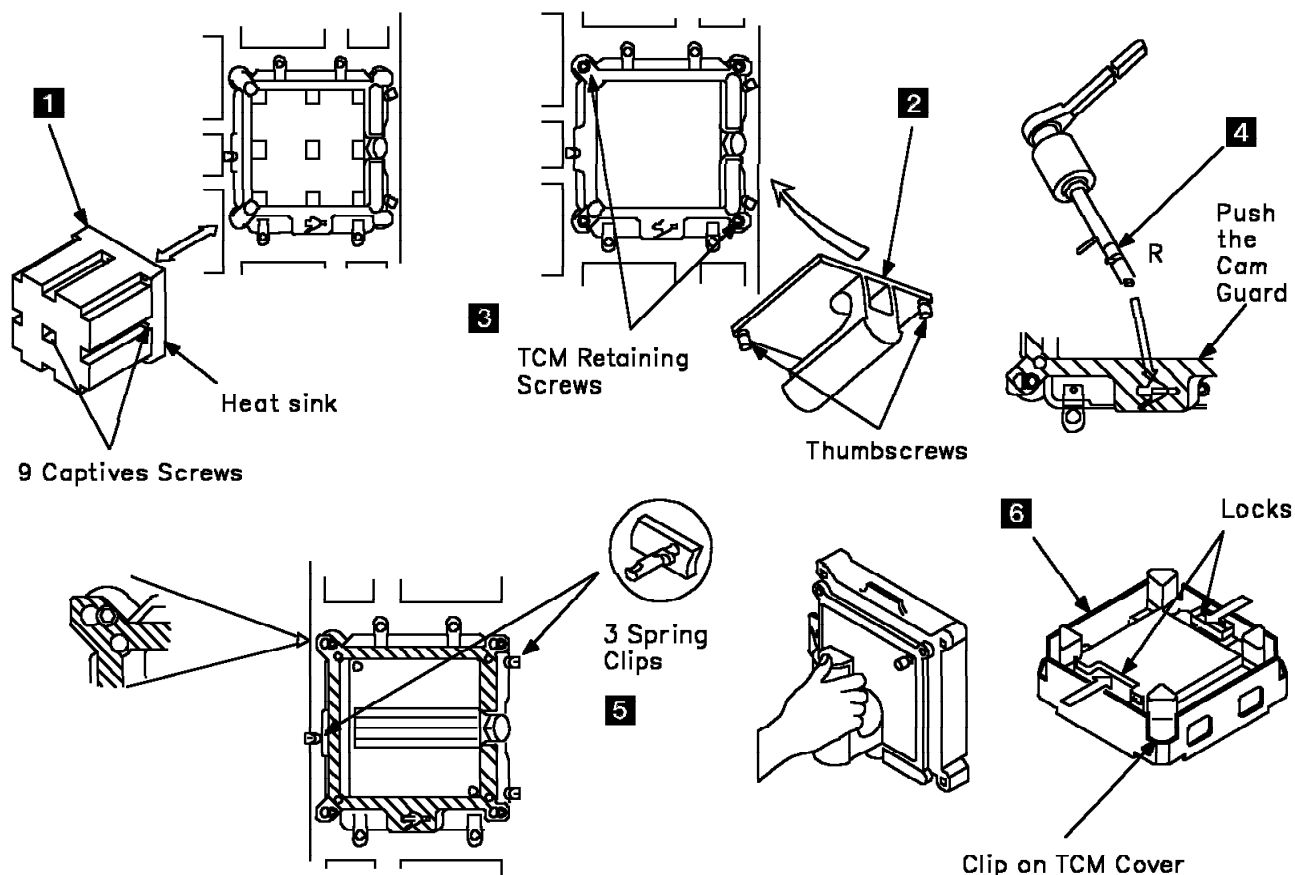
## 11.9 Re-packing

### 11.9.1 TCM Removal

- TCM will be sent back to IBM in the TCM BOX provided by the FFBM.
- Tools to be used in this section are provided by TCM tool kit.

- 1. Use the torque tool (PN 2360092) to loosen the 9 captives screws securing the TCM heat sink **1**. Carefully remove the heat-sink.
- 2. Install the handle provided by FFBM. Tighten the 2 thumbscrews **2**.
- 3. Use the torque tool (PN 2360092) to loosen completely the four TCM retaining screws (captives screws) **3**.
- 4. Use the TCM actuating tool (PN 5665909) **4** to remove the TCM as follows:

- a. Check that the detent pin in the tool is in the **Removal Position (R)**.
- b. Set the lever on the handle to drive in a counter clockwise direction. On the TCM, slide the cam guard to its left side limit.
- c. Insert the actuating tool into the module with indicator pin pointing to cammed position (9 o'clock). Be sure that the TCM actuation tool is fully inserted (red line not visible).
- d. Turn the actuating tool counter clockwise, to deactivate the latch. Remove the actuating tool.
- 5. Unlatch the 3 spring clip retainers **5**, hold the TCM handle, and carefully remove the TCM from the enclosure.
- 6. Install the clip on the TCM cover **6** (PN 7331541). Then, put the TCM in the TCM shipping container.





## 11.9.2 TCM Enclosure

- \_\_\_ 1. Place the TCM enclosure on the shipping pallet assembly provided with the new enclosure.
- \_\_\_ 2. Secure it with the screws and nuts.
- \_\_\_ 3. Remove the bracket locking the **STER** cards in the TCM enclosure by removing 2 screws.
- \_\_\_ 4. Open carefully the **ZIF connectors** on all cards.

### Notes:

- a. For US, remove all the cards from the CCU enclosure, and put them in ESD envelopes and containers provided by the MES.
  - b. For EMEA, remove the storage cards from the CCU enclosure, and put them in ESD envelopes and containers provided by the MES.
- \_\_\_ 5. Install the red bracket removed in Step 10.4.3.3 over the CCU cards, and secure it with 4 screws.
  - \_\_\_ 6. Follow the re-packing instructions to send parts back to IBM.

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## After Installation (steps 12-15)

### 12.0 Field Updating

None.

- For parts not listed in the RMER

All these parts should be returned according to your local procedure.

### 13.0 Publications Update

None.

### 15.0 Machine Records

- Install the new **MACHINE HISTORY** supplied.
- Report installation (As MES activity) and quality to existing procedures.

End of instructions.

### 14.0 Parts Disposition

- For parts listed in the RMER

All these parts become the property of IBM. You **MUST RETURN** these parts following the instructions given on the Returned Material Equipment Report (RMER) provided with this FFBM.

3745 FFBM	PN 17G5534 22 of 22	EC C38405 06APR93	EC C38405A 17JUN93	EC D55799 16SEP94	EC D55883 11MAY95	EC E27926 14MAR97
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