

CONVERT an IBM 3745 Model 130 to 170

Written by: JP. Aubin/R.Lympany
Checked by: B. Bigati
Approved by: F. Charron
Reviewed by: B. Kelly

3745 FFBM	PN 03F5140 1 of 12	EC A73532 03AUG89	EC D55799 16SEP94	EC D55883 11MAY95		
--------------	-----------------------	----------------------	----------------------	----------------------	--	--



PN 03F5140 2 of 12	EC A73532 03AUG89	EC D55799 16SEP94	EC D55883 11MAY95		
-----------------------	----------------------	----------------------	----------------------	--	--

Before Installation (Steps 1-8)

Net Priced Feature

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

1.0 Machines Affected

3745 Model 130.

2.0 Related BMs and ECs

None.

3.0 FFBMs to be Installed

FFBM 03F5139 - 3745 Model 130 conversion to 170
03F5140 - Installation instructions

3.1 As required FFBM

03F5056 - BPC1 card installation
(if TRA feature is installed)

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.

Additional information:

- Up to two TRAs may be installed in a 3745-130. In a 3745-170 there is room for only one TRA. If installed, the second TRA will not be reinstalled in 3745-170.
- All adapter cards (except TRA2) will be reinstalled in the same position after the Model conversion.
- If a TRA feature is installed, the BPC1 card must be plugged in positions A1M4, N4, P4,

Q4, R4, and T4 when these card positions are free.

- If a TPS feature is installed, a BPC1 card must be plugged in position E4 (for APG/LA only).

5.0 Programming

5.1 Diagnostic programs

To reflect this change, CDF will be performed in Step 11.2.1, "Update the CDF" on page 11. This is essential to allow the internal diagnostics to be run properly.

5.2 System Programs

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

6.0 Purpose and Description

6.1 Purpose

Convert a 3745 Model 130 to 170.

6.2 Description

Replace the base board.

7.0 Installation Time

FFBM Installed	Machine Hours	System Hours
03F5140	2.5	0.0
Test Time	2.5	0.0
Total Time	5.0	0.0

8.0 Tools/Materials Required

- ESD kit (PN 6428316).
- Freon TF or isopropyl alcohol.

3745 FFBM	PN 03F5140 3 of 12	EC A73532 03AUG89	EC D55799 16SEP94	EC D55883 11MAY95		
--------------	-----------------------	----------------------	----------------------	----------------------	--	--

Installation (Steps 9-11)

9.0 Safety

- Remove all electrical power from the machine and associated machines before the hardware installation.
- Review the **Safety Procedures** and the **Safety Notices** located at the beginning of the *3745 Maintenance Information Procedures (MIP)* manual, SY33-2070.

10.0 Details of Installation

Before the installation, ask the customer:

- To set all the lines off-line for this 3745.
- The maintenance password.
- To log OFF the console, if not already done.

10.1 Checking, Diagnostics, Power OFF

10.1.1 From the Control Panel

- 1. Check that **Power Control** displays 3.
- 2. If it does not, record the value ____.
Set the **Power Control** value to 3.
Press the **Validate** key.

10.1.2 From the Local Console

- 1. When the **CA INTERFACE DISPLAY** screen is displayed, press **F4**.

Note: For APG/LA countries: if a channel adapter is installed, disable the channel adapter first.
- 2. Enter the maintenance password, press **Send**.
- 3. If the CCU is running, enter **RST** to reset the CCU, otherwise, proceed.
The MOSS goes in **MOSS ALONE** state.

10.1.3 CDF Verify

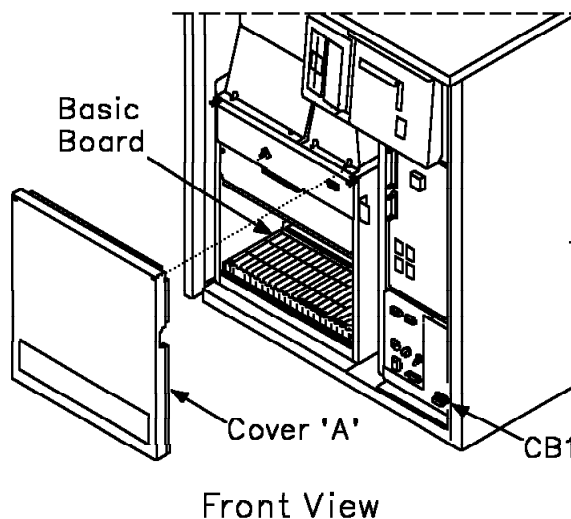
- 1. Enter **CDF**, press **Send**.
- 2. Select **VERIFY**, enter 4, press **Send**.
The value from the **CDF DATA** and the **MACHINE DATA** should be identical.
- 3. When the message **CDF VERIFY COMPLETED** is displayed, press **F1**.

10.1.4 Run the Diagnostics

- 1. Enter **ODG**, press **Send**.
- 2. Select **ALL**, enter 1, Press **Send**.
 - If **NO ERROR FOUND** is displayed, press **F1**.
 - Otherwise, see the *MIP*.

10.1.5 Power off

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



3745 FFBM	PN 03F5140 4 of 12	EC A73532 03AUG89	EC D55799 16SEP94	EC D55883 11MAY95		
--------------	-----------------------	----------------------	----------------------	----------------------	--	--

10.2 Hardware Installation

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

10.3 Mechanicals

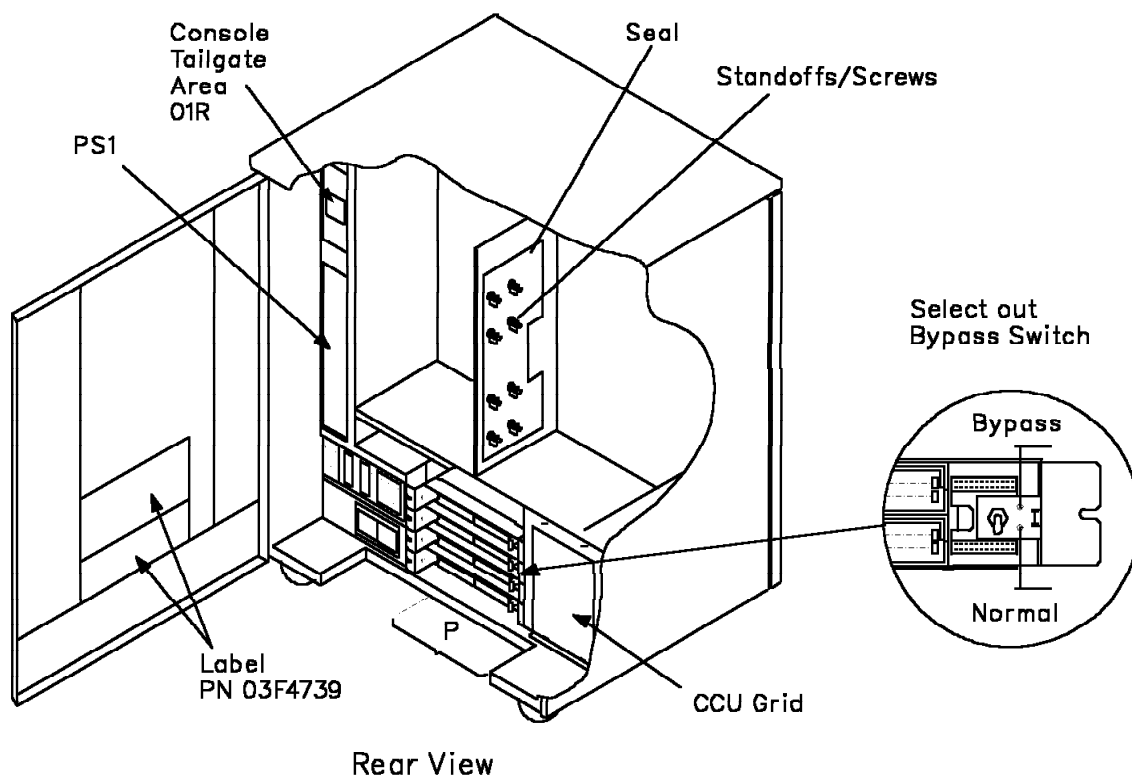
Open the rear cover of the 3745.

— Inside the cover, remove the existing label and stick the new label (PN 03F4739).

10.3.1 CA Tailgate (APG/LA Countries only)

Note: For other countries, skip to next Step.

— 1. Locate the CA tailgate(s) and set the select out bypass switch to the bypass position on each tailgate.



— 2. Locate and remove the CCU grid (four screws).

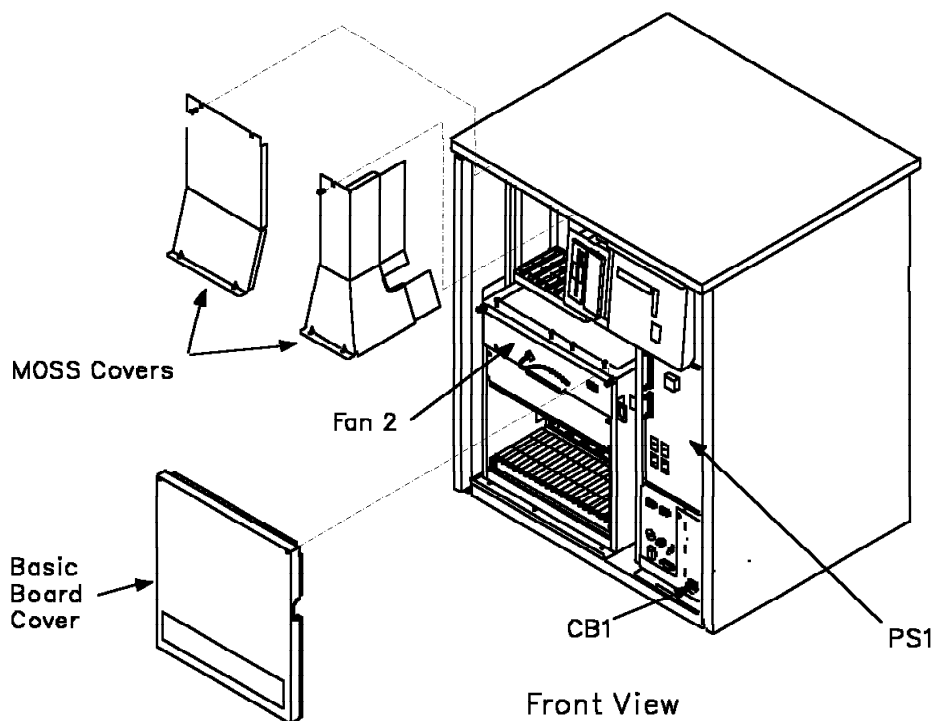
— 3. Disconnect the CA tailgate cables from the basic board (knurled screws) (note their positions - reference YZ052).

3745 FFBM	PN 03F5140 5 of 12	EC A73532 03AUG89	EC D55799 16SEP94	EC D55883 11MAY95		
--------------	-----------------------	----------------------	----------------------	----------------------	--	--

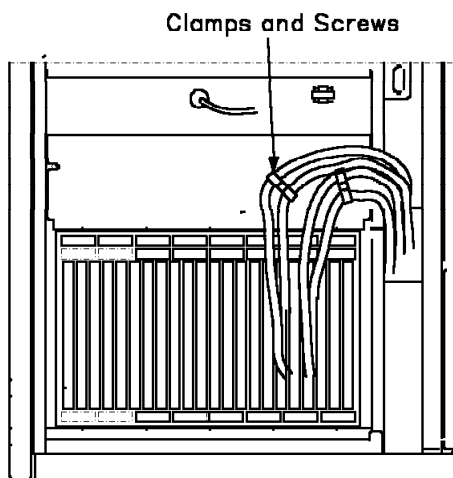
10.3.2 Adapter Cables

Open the front cover of the 3745:

- ___ 1. Locate the basic board in the position 01G and the MOSS board in 01A areas.
- ___ 2. Remove the basic board cover (two screws) by lifting upwards using the finger hole.
- ___ 3. Remove the two covers of the MOSS board (seven screws).

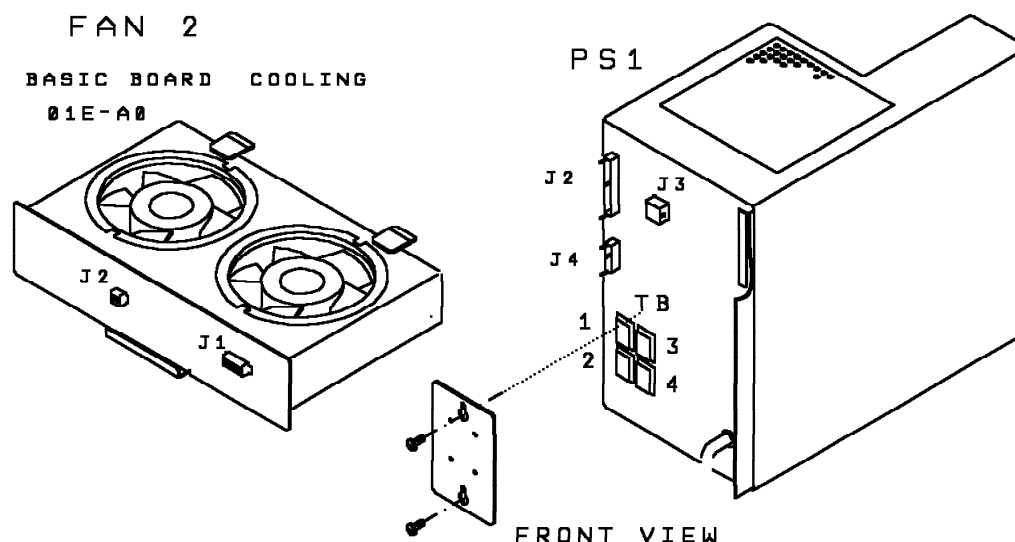


- ___ 4. On all adapters installed, remove the screws securing the adapter cables to the frame. Save for the reinstallation.

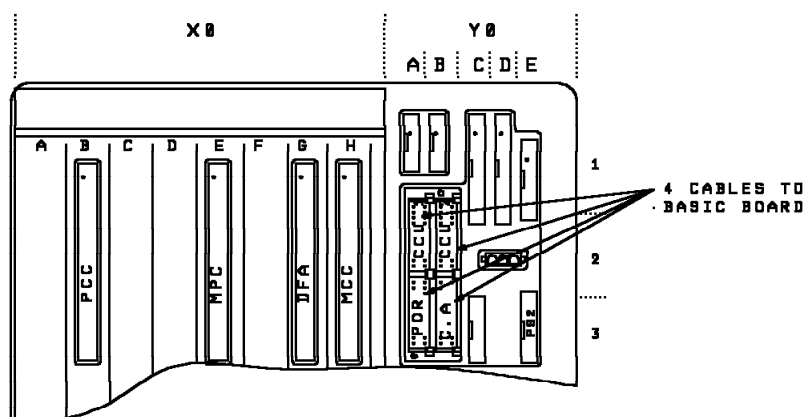


10.3.3 Power Cables, Fan and MOSS Cables

- ___ 1. Locate the PS1 and the fan 2 (see the preceeding figure).



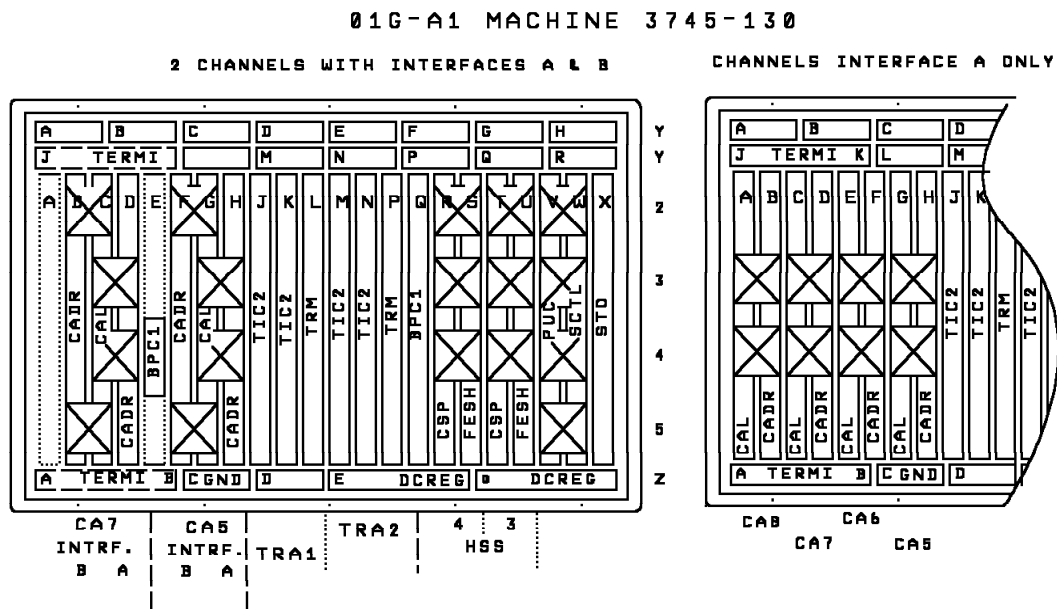
- ___ 2. On the PS1, remove the plastic cover from the TB, and disconnect the FDS cables from TB1, TB2, TB3, and TB4.
- ___ 3. Disconnect the multivoltage cable from the connector J4.
- ___ 4. On the fan box asm, unplug the air flow detector cable from J1, and the power cable from J2.
- ___ 5. Remove the fan box (two screws) from the enclosure.
- ___ 6. Locate the MOSS board and unplug the four flat cables from Y0A2, Y0A3, Y0B2, and Y0B3.



- ___ 7. Carefully, free the cables from the two retainers on the side of the MOSS board.

3745 FFBM	PN 03F5140 7 of 12	EC A73532 03AUG89	EC D55799 16SEP94	EC D55883 11MAY95		
--------------	-----------------------	----------------------	----------------------	----------------------	--	--

10.3.4 Card Removal

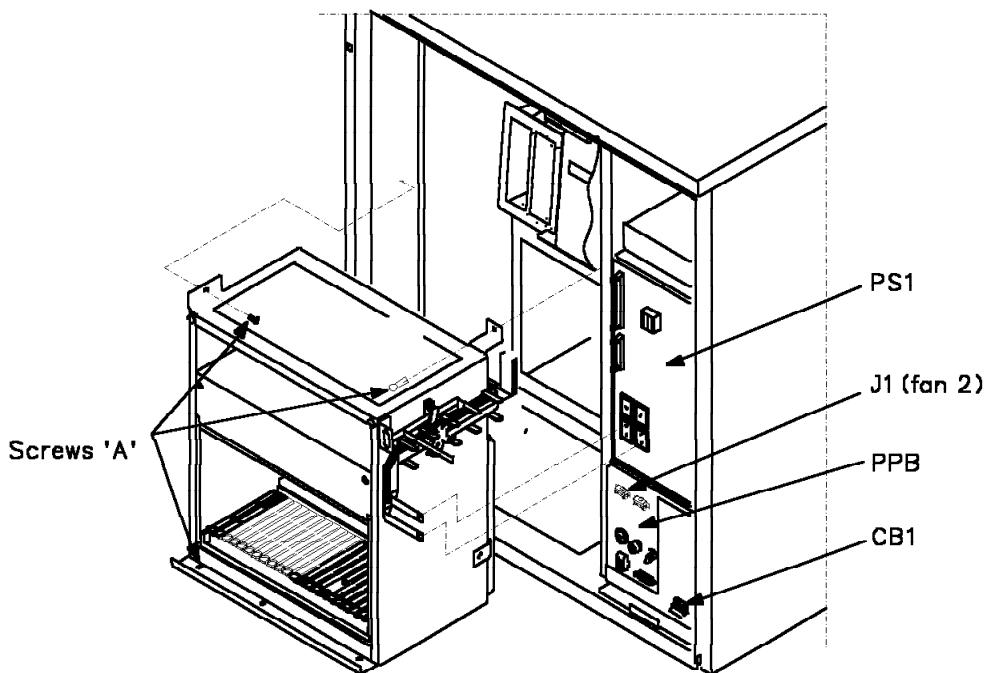


1. Remove the crossovers from the cards, and note their positions.
2. Remove all cards and spacers from the board. Be sure that the cards are labelled according to their positions (use label PN 811825).

Note: The TIC2 and FESH cards have cables plugged on, **note their positions.**

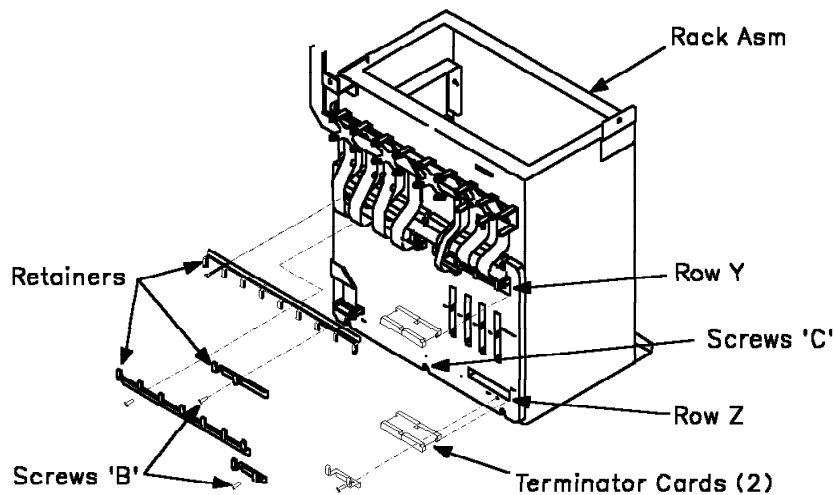
3. Keep the cards and crossovers in a safe place.

10.3.5 Board Enclosure Removal

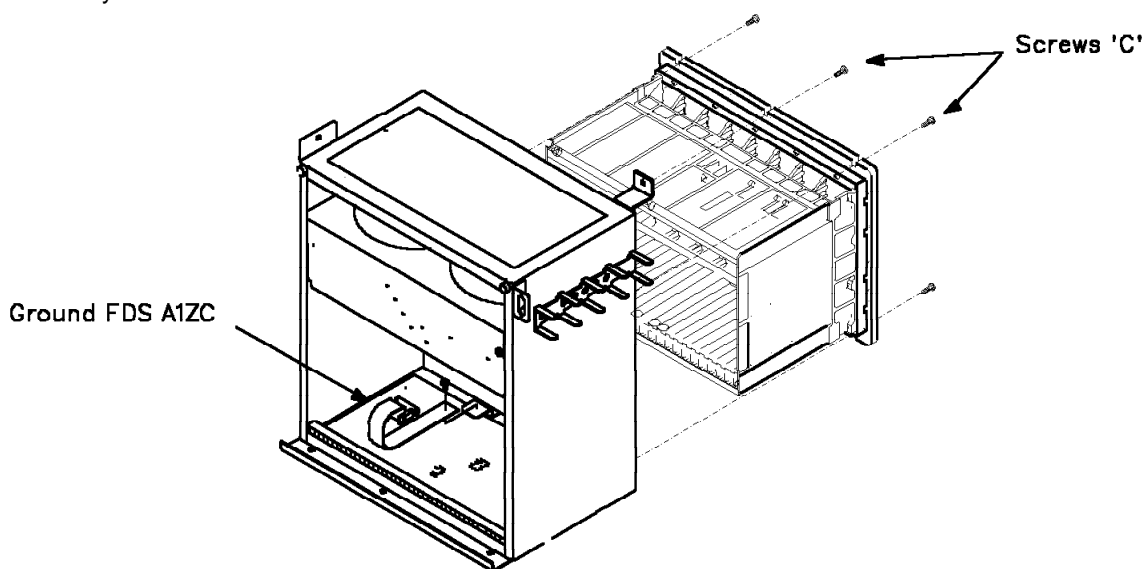


- ___ 1. Remove the enclosure (5 screws 'A') from the frame, taking care not to damage the cables.
- ___ 2. Place the enclosure on a table.

10.3.6 Base Board asm Removal from Enclosure

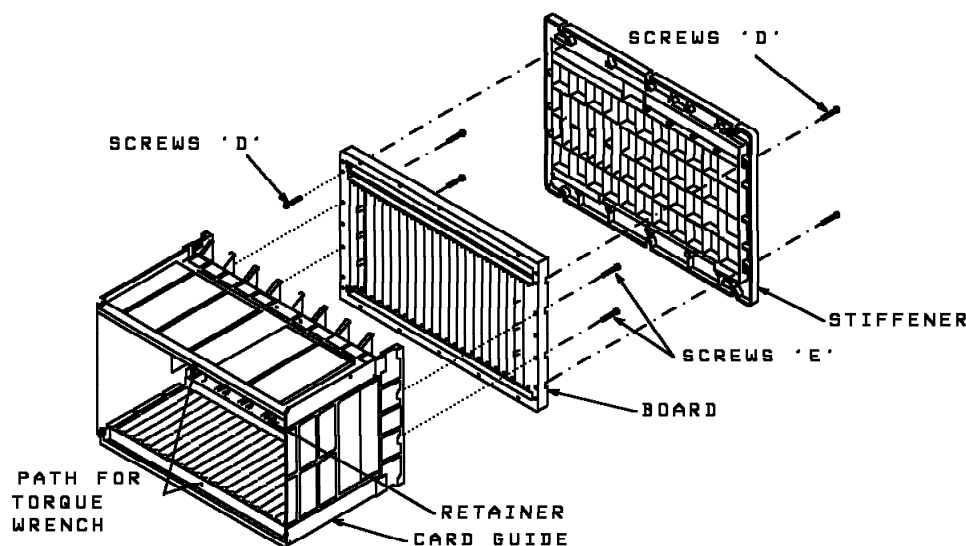


- ___ 1. Remove the cable retainers (ten screws 'B') from rows Y and Z.
- ___ 2. Disconnect all cables from the board.
- ___ 3. Remove the terminator cards and keep them for the reinstallation.
- ___ 4. From the card side, unscrew the bottom retainer screw (see figure next page: torque wrench path), and unplug the FDS ground cable from the position A1ZC (keep this cable secured by its screw on the enclosure).
- ___ 5. Unplug the two DCREG cards from positions ZE and ZG. Save for the reinstallation.
- ___ 6. From the rear side, remove the six screws 'C', and slide the board asm out of the rack assembly.



3745 FFBM	PN 03F5140 9 of 12	EC A73532 03AUG89	EC D55799 16SEP94	EC D55883 11MAY95		
--------------	-----------------------	----------------------	----------------------	----------------------	--	--

10.3.7 Base Board Removal from Assembly



- ___ 1. Remove the stiffener (fourteen screws 'D') from the board.
- ___ 2. Remove the board (eight screws 'E') from the card guide.

10.4 Board Reinstallation

10.4.1 Gate Asm

- ___ 1. Install the new board (eight screws 'E') received with this FFB/M on the card guide.
- ___ 2. Reinstall the stiffener (fourteen screws 'D') on the board.

10.4.2 Install the Gate in the Rack

- ___ 1. Ensure that the FDS ground cable is plugged in position A1ZC.
- ___ 2. Reinstall the gate asm (six screws 'C') in the rack.
- ___ 3. Reinstall the cables and the terminator cards on the back side of the board (A1ZA and A1YJ).

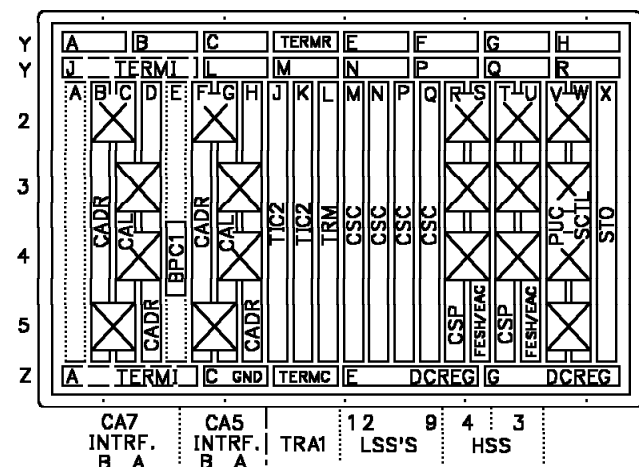
Note: First, connect the cables in Y upper row, then in Y lower row, and at last in the Z row.

- ___ 4. Reinstall the cable retainers.
- ___ 5. From the card side, replug the DCREG cards in A1ZE and A1ZG, and the FDS ground cable in A1ZC. Secure them with the bottom retainer.

10.4.3 Enclosure and Cable Reinstallation

- ___ 1. Reinstall the enclosure (five screws 'A') in the frame, taking care not to damage the cables.
- ___ 2. Route the cables from the base board to the MOSS board and reconnect the cables in positions Y0A2, Y0A3, Y0B2, and Y0B3.
- ___ 3. Route the cables from the base board to the PS1. Reconnect the FDS cables and the multivoltage cable.
- ___ 4. Reinstall the fan asm (two screws), and reconnect the power and the air flow detector cables.

10.4.4 Card Reinstallation



- ___ 1. According to their labels, reinstall the cards in the board.

Note: Before locking adapter cards reconnect the adapter cables on the cards.

- ___ 2. Replug the crossovers on the top card positions.
- ___ 3. Secure the adapter cables with the clamps and screws on the enclosure.

Note: If you have received additional MES, you can proceed to their installation at this Step.

10.5 BPC1 Card Installation

If no TRA feature is installed, skip to next Step, otherwise, proceed.

- ___ 1. If the TRA feature is installed in positions J2, K2, and L2, you must install an IOC bus bypass card in positions M4, N4, P4, Q4, R4, or T4, if they are free.
- ___ 2. Mount the BPC1 card on its extender (PN 1953093), and plug it in position.
- ___ 3. Secure the BPC1 card with the intermix bracket (PN 1953110).

10.6 Name Plate

- ___ 1. Remove the name plates from the front and back system covers.
- ___ 2. Clean the adhesive residue from the recessed area of covers with freon or isopropyl alcohol.
- ___ 3. Remove the paper from the back of the

new name plates (PN 26F1443) and stick in place.

- ___ 4. Strike out the model number on the S/N label located on the Control Panel. Now only the name plate will identify the model number

10.7 Covers

Reinstall MOSS board and basic board covers.

11.0 Test Procedures

11.1 Power ON

- ___ 1. Switch **CB1** ON and close the covers.
- ___ 2. Set the **Function** indicator to 1.
Press the **Validate** key.
- ___ 3. Press the **Power ON Reset** key.

A **MOSS IML** is performed.

11.2 From the Local Console

- ___ 1. When the **CA INTERFACE DISPLAY** screen is displayed, press **F4**.
- ___ 2. Enter the maintenance password, press **Send**.

Note: 3745 130 is still displayed on the first line of the display.

11.2.1 Update the CDF

- ___ 1. Enter **CDF**, press **Send**.
- ___ 2. Select **VERIFY**, enter **4**, press **Send**.
- ___ 3. When the message **CDF VERIFY COMPLETED** is displayed, press **F1**.
- ___ 4. Enter **OFF**, press **Send** to logoff the console.

Note: 3745 170 is now displayed on the first line of the display.

- ___ 5. When the **CA INTERFACE DISPLAY** screen is displayed, press **F4**.
- ___ 6. Enter the maintenance password, press **Send**.

3745 FFBM	PN 03F5140 11 of 12	EC A73532 03AUG89	EC D55799 16SEP94	EC D55883 11MAY95		
--------------	------------------------	----------------------	----------------------	----------------------	--	--

11.2.2 Display the CDF

- 1. Select **CDF**, press **Send**.
- 2. Select **DISPLAY/UPDATE**, enter **1**, press **Send**.
- 3. Select **LA**, enter **10**, press **Send**.
Check that the CDF files matches to your hardware configuration.
- 4. When the checking is completed, press **F6**.
- 5. Select **CA**, enter **9**, press **Send**.
Check that the CDF files matches to your hardware configuration.
- 6. When the checking is completed, press **F1**.

11.2.3 Run the Diagnostics

- 1. Enter **ODG**, press **Send**.
 - 2. Select **ALL**, enter **1**.
- If **NO ERROR FOUND** is displayed, press **F1**.
 - Otherwise, see the *MIP*.

11.2.4 Save Hard Disk Contents onto the Backup Set of Diskettes

- 1. Enter **DIF**, press **Send**.
- 2. Select **2**,
- 3. Enter the date and save ID, press **Send**.
- 4. Follow the prompts on the console.
When the function is completed, press **F1**.

Note: Repeat this Step for each set of diskettes.

11.2.5 Log OFF the Local Console

- Enter **OFF**, press **Send**.

Note: For APG/LA countries: reenale the channel adapter, if installed.

11.3 General IPL

From the control panel:

- 1. Set the **Power Control** indicator to the value recorded in Step 10.1.1, "From the Control Panel" on page 4.
- 2. Set the **Function** indicator value to **0** (General IPL).
- 3. Press the **Validate** key.

The general IPL starts.

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

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

After Installation (steps 12-15)

12.0 Field Updating

None.

13.0 Publications Update

None.

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.

- For parts not listed in the RMER

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

15.0 Machine Records

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

End of instructions.