CONVERT an IBM 3745 Model 310 to 610

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PN 71F9882	EC A98193	EC A98318	EC D55883		
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BEFORE INSTALLATION (Steps 1- 8)

1.0 Machines affected:

3745 MODEL 310.

2.0 Prerequisites/concurrent/ Companion:

2.1 Prerequisite:

None.

2.2 Concurrent - (Must be installed together)

None.

2.3 Companion - (May be installed separately)

None.

3.0 B/M(S) to be installed:

3.1 Install the following B/Ms:

```
FFB/M 71F9948 - Convert a 3745 310 to model 610.
      71F9882 - Installation instructions.
```

3.2 Additional FFB/Ms.

```
FFB/M 66X1101 - DMSW card in CCU B.
 Only if a HPTSS feature is installed in your 3745.
```

4.0 Preparation:

1. Familiarize yourself with the purpose and details of the installation instruction prior to obtaining the customer machine time commitment.

2. Check all the items and count the parts listed on the B/M to be installed to determine that all the parts were received.

3. Ensure that RETAIN search has been performed and all prerequisites have been installed.
   Use *3745CCUPGRADE* as *SAS keyword*.

4. Before starting model conversion ensure that the complete 3745 is available.

5.0 Programming.

5.1 Diagnostic programs.

CDF to reflect this change will be performed in step 11.0. This is essential to allow internal diagnostics to be run properly.

5.2 System programs.

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

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6.0 Purpose and description:

6.1 Purpose.

To convert a 3745 310 to a 3745 610.

6.2 Description.

Add a second CCU logic in 3745 with the associated power, fan and cabling.

7.0 Installation time:

```
 FFB/M    Machine Hrs.  System Hrs.

 71F9948    2.5          00.0
```

8.0 Special tools and/or Materials required:

ESD kit   P/N 6428316

Isoprophyl alcohol.

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9.0 Safety.

Review *Safety Notices* located at the beginning of the *Maintenance Information Procedures* manual.

Review the *Service Inspection Procedures* located at the beginning of the *3745 Maintenance Information Procedure (MIP)* manual.

10.0 Details of Installation.

Before proceeding with installation the following steps must be performed:

- Ask customer to set all lines and channel addresses off-line for this controller.

- Ask customer to logoff the console if not already done.

- Ask customer for *Maintenance Password*.

10.1 Checking, Diagnostics.

10.1.1 On control panel:

Check that *Power Control* indicator displays *3*. If not, record the value __, then press *power control* key until *3* is displayed.
Press *validate* key.

10.1.2 On local console:

- From interface display screen, record *Enabled Channel Adapters* then *Disable* all channel adapters.

- Wait for *Interface Status Disabled* for all CA's.
Press *F4*.

- Enter the *Maintenance Password*, press *SEND*.

- If CCU running, enter *RST* to reset the CCU. MOSS goes in *MOSS Alone* state.

10.1.3 Verify the Configuration Data File (CDF).

- Enter *CDF*, Press *SEND*.

- Select *Verify*, Press *SEND*.
The value from the disk and from the machine should be identical. If there are discrepancies, physically verify features and, if correct update the CDF with the machine values, enter 2, press *Send*.

  When function completed, msg *CDF verify completed,* is displayed.

- Press *F1*.

10.1.4 Run Diagnostics.

- Enter *ODG*, Press *SEND*.

- Select *IOCB*, Enter *3*, Press *SEND*.

  – If any error is reported, go to *Maintenance Information Procedure (MIP)* chapter 1 and follow appropriate procedure.

  – If no error reported,   Press *F1*.

10.1.5 Power off.

> **Note**
>
> Remove all electrical power from the machine and associated machines prior to beginning hardware installation.

- Power off the 3745 from control panel.

- Open the front system covers, then switch off *CB1*.
Open the rear system cover.

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10.2 Hardware Installation.

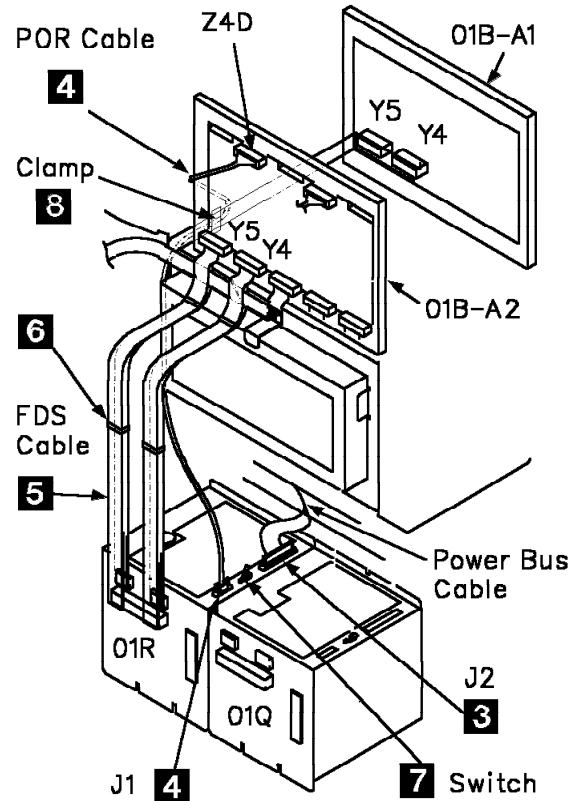**Warning:** Follow existing ESD procedures when handling logic parts.

Place a check mark in the blank space as each section is completed.
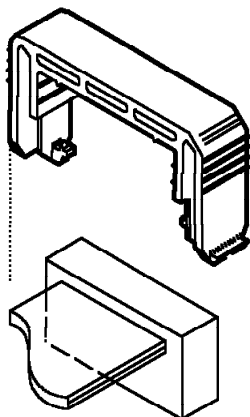
10.2.1 PSTY1B installation.

__ 1. Remove from the top left the screw securing the PSTY1B bracket.   .**1**.

__ 2. Install the PSTY1B P/N 26F1733 .**2**. in 01R with 3 screws P/N 2665528. (2 are provided by FFB/M and 1 is to be re-used from previous step).

1 Screw
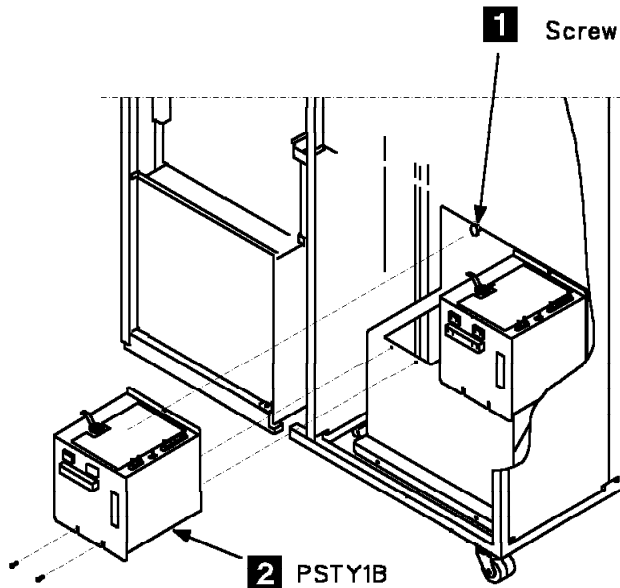
2 PSTY1B

__ 3. Locate the power control bus cable tied on the raceway (at the top of the PSTY1) and plug it in power connector J2.   .**3**.

POR Cable   Z4D   01B-A1
4   Y5 Y4
Clamp   **8**   Y5 Y4   01B-A2
6
FDS Cable   **5**   Power Bus Cable
01R   J2
01Q   **3**
J1 **4**   **7** Switch

__ 4. Attach retainer P/N 62X4516 to the FDS connector as shown.

__ 5. Route and connect the FDS cables .**5**. from the PSTY1B to the SACU board as follow:

P/N	From	To
61F4453	01B-A1-Y5	01R-TB1/3
61F4455	01B-A1-Y4	01R-TB2/4
61F4454	01B-A2-Y5	01R-TB1/3
61F4456	01B-A2-Y4	01R-TB2/4

Note: Screws P/N 61F4511 are provided in a bag attached to the power.

__ 6. Tie FDS cables together with tie wrap P/N 6846576..**6**.

__ 7. Mount retainer P/N 05F0061 on the *Power On Reset* cable P/N 61F4448 as shown on figure.
Note the positions of intrusions .**A**.
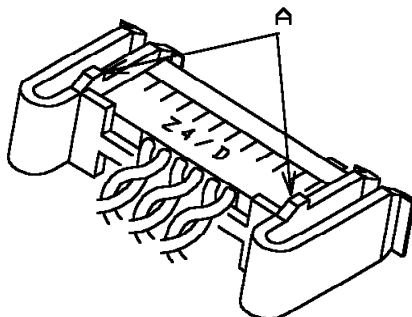
__ 8. Route and connect the cable from PSTY1B 01R-J1 to SACL board 01B-A2Z4-D..**4**.

Secure the cable in the clamp on the left side of enclosure as shown on figure.

__ 9. On PSTY1B in 01R, Set the switch 1 to position B (CCUB)..**7**.

__ 10. Route the PSTY1B power cord to the front of the machine.

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10.2.2 I/O cables.

___ 1. From the rear of 3745,Locate the MOSS board in 01A..**3**.

___ 2. Install and route flat cable group P/N 76F8592.
Secure cables in existing clamps.

___ 3. Plug the flat cables, one at a time, on MOSS in the following sequence:

- 01A-Y0C4, Y0B4, Y0C5, Y0B5.

___ 4. Route the cables thru the machine to the SACU and connect them. according to their labels.   .**1**. .**2**.
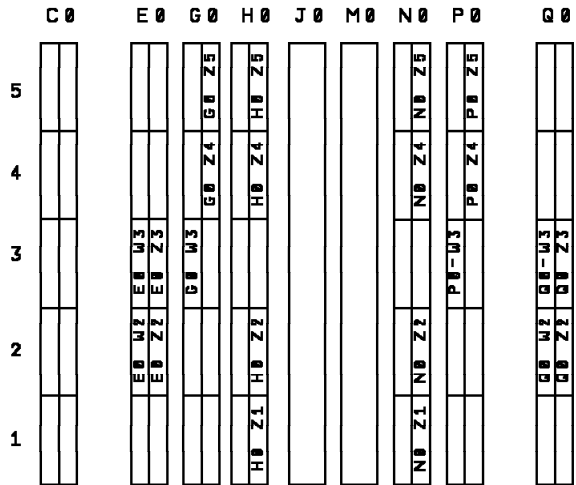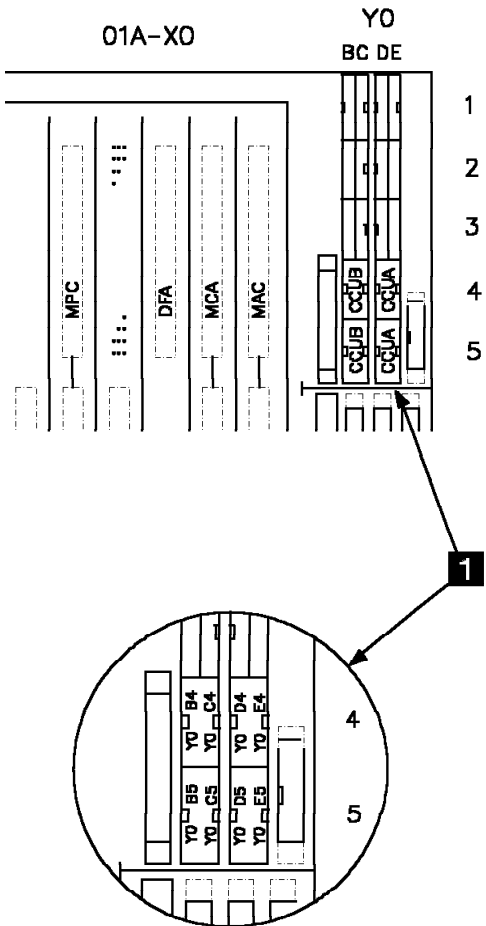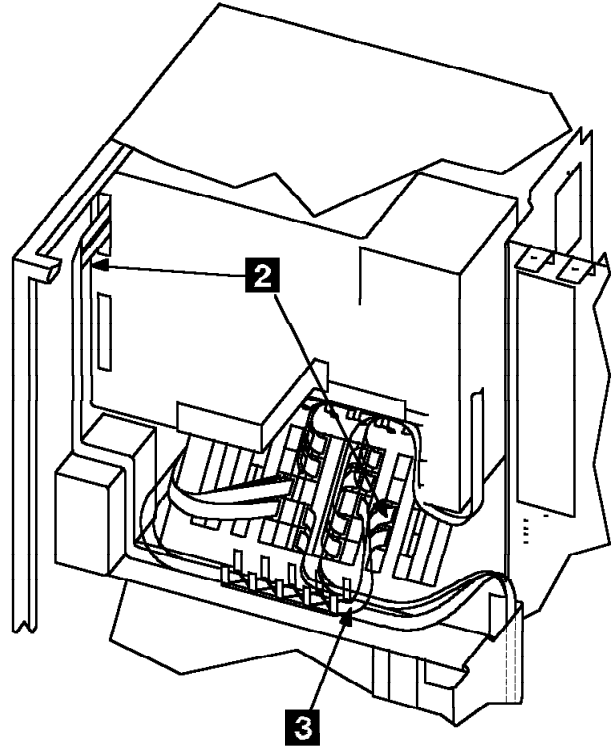
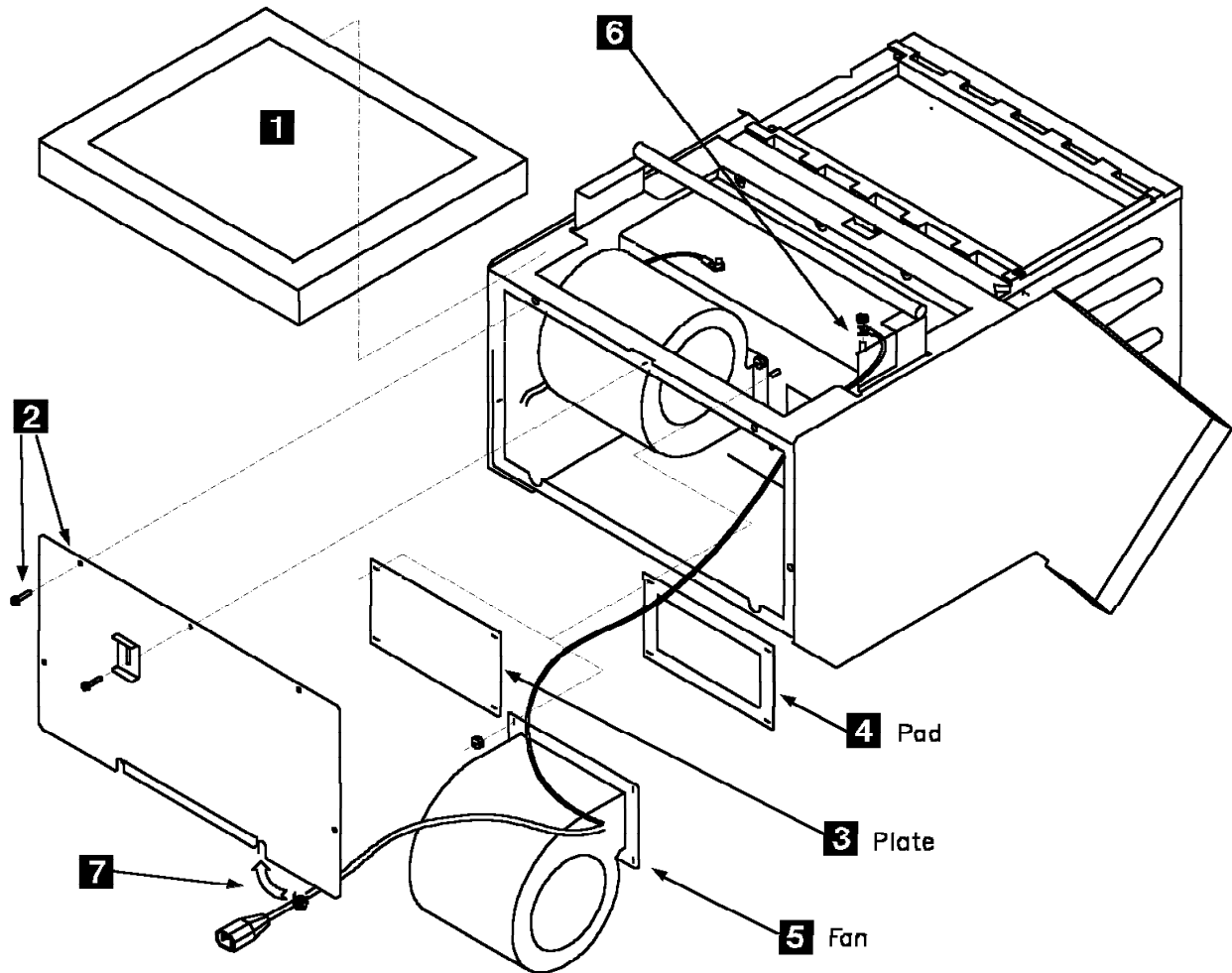Flat cables connection on SACU board.

10.2.3 FAN installation, power cords.

From the front of the machine:

___ 1. Remove the CCU air filter. .**1**.

___ 2. Remove 5 screws then remove the bottom bracket from the enclosure..**2**.

___ 3. Remove 4 nuts then remove the plate .**3**. and the pad..**4**.
Save nuts and pad for re-installation.

___ 4. Install the blower P/N 61F4494 .**5**. and the pad .**4**. saved in the previous step as shown on the figure.
Secure the fan with the nuts saved in previous step.(P/N 1622419).

___ 5. Connect the ground wire .**6**. on the enclosure with a lookwasher P/N 1622348 and a nut P/N 1622419.

___ 6. Place the fan power cord .**7**. as shown and re-install the bottom bracket of enclosure.

___ 7. Re-install the filter on the cage and secure it.

___ 8. Plug the power cords in primary power box as follow:

```
PSTY1 01R    Connector J9
FAN CCUB     Connector J2
```


4 Pad

3 Plate

5 Fan

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10.3 Mechanical.

___ 1. From the rear of CCU cage, remove the bracket .**1**. with its 4 screws.

___ 2. Attach label P/N 34F1289 to bracket P/N 34F1363 and install the bracket P/N 34F1363on the left side of enclosure. (Re-use 2 screws removed in step 1.) .**2**.

___ 3. Install bracket P/N 61F4485 .**3**. with 2 screws P/N 61F4511 at the top of the CCU cage to secure the *STER* cards.

___ 4. Install bracket P/N 61F4486 .**4**. with 2 screws P/N 61F4511 at the bottom of the CCU cage to secure the *STER* cards.
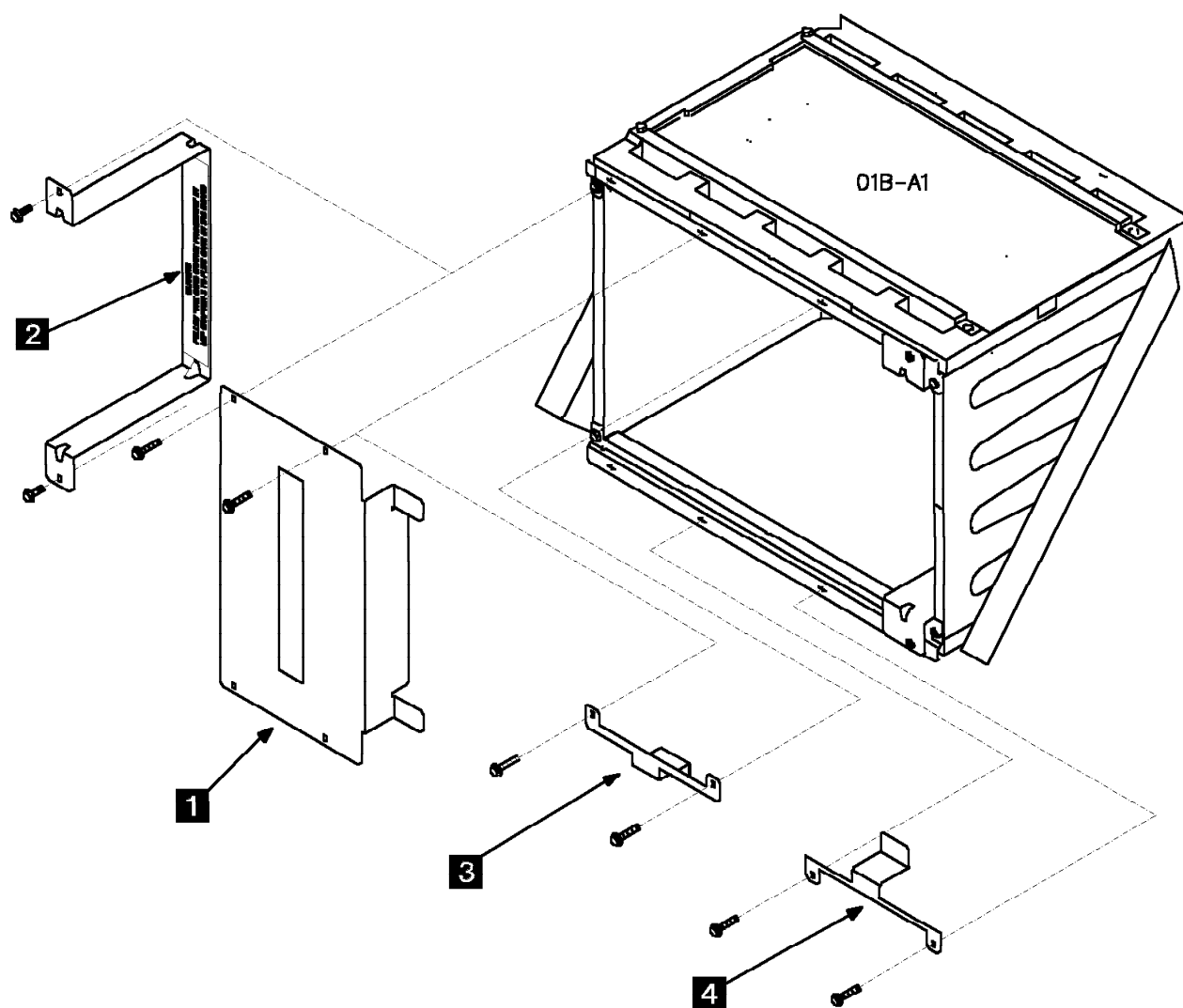
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10.4 Cards installation.

Install carefully the cards provided by FFB/M as follow:

__ 1. At card positions N0, Q0, S0, U0, move levers A and B outwards and carefully remove the dummy cards.

__ 2. Insert the cards into their slots and allow them to seat under their own weight ensuring that they have reached the end of their slots.

```
IOSW2  card in position N0
PUC    card in position Q0
SCTL2  card in position S0
STO    card in position U0
```

__ 3. Lock cards in place by pushing gently on button C andD.

__ 4. Using both hands, move levers A and B inwards simultaneously.

__ 5. If a DMSW card is installed in position G0 of CCU board, then a DMSW card is required in CCUB. If not,skip to next step.
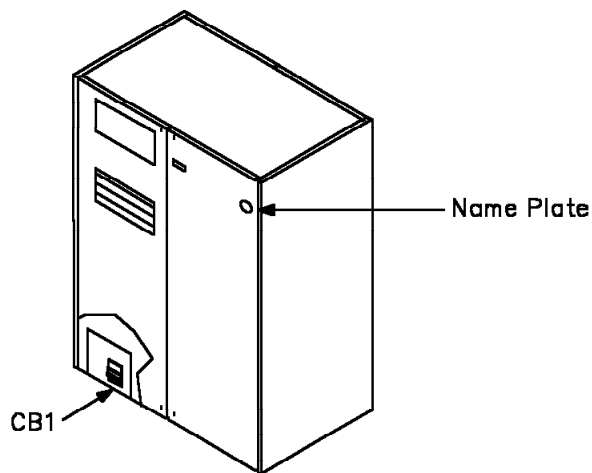Install the card provided by FFB/M 66X1101 in position P0 following the above procedure.

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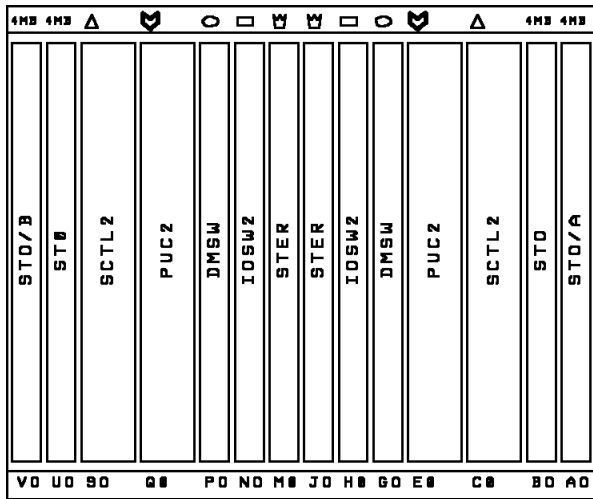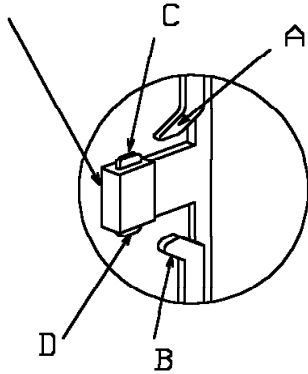
10.5 Name plate installation.

__ 1. Remove the name plate from the front system cover, and clean any adhesive residue from the recessed area with Isopropyl alcohol.
Remove the paper from the back of new name plate P/N 71F9546 and attach the plate..4.

__ 2. Strike out the model number on the S/N label, only the nameplate will identify the model type from now on.

__ 3. Close all system covers.

Name Plate

CB1

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11.0 Test procedures:

11.1 Power on

Switch *CB1* in 3745 *ON* and close the system cover(s)

Ensure that all *CPs* are switched ON.

On control panel:

- Check that *Service mode* indicator displays *1.*.

- Press *Function* key until a flashing *1* is displayed.
  Press *Validate* key.
  Press *Power On* key.

- A *MOSS IML* is performed.

11.2 On local console:

- When *CA interface display screen* is displayed, press *F4*.

- Enter *Maintenance Password*, press *SEND*.

11.2.1 Power configuration table.

- Enter *POS* (Power services), Press *SEND*.

- Enter *C* (create) Press *SEND*.
  When the *Created power configuration table* msg is displayed, check on *Base Frame* line that number *3* is displayed.

- Enter *Y* to confirm.

- Enter *1* to display the Base frame 1 power status, Press *SEND*.
  Check that the PSTY1B ID 3 is *UP*. If not enter *U03* to set the power supply *UP*.

- Press *F1*.

11.2.2 Update the Configuration Data File (CDF)

- Enter *CDF*, Press *SEND*.

- Select *Verify*, Press *SEND*.
  The value from the disk and the machine should be identical except for the new hardware installed.
  To update the CDF with machine values, enter 2, press *Send*.

  When function completed, msg *CDF verify completed*, is displayed.
  Press *F6*.

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11.2.3 Define the CCU mode.

- Select *DISPLAY/UPDATE*, Enter *1*, Press *SEND*.

- Select *CCU Operating Mode*, Enter *9*, Press *SEND*.

- Press *F5* for update.
  Choose the correct mode according to customer request.(Default value is *Twin Back Up*), press *Send*.

- Press *F1*.

11.2.4 Run Diagnostics.

- Enter *ODG*, Press *SEND*.

- Select *CCU*, Enter *2*,
  Enter *B* in ADPT field,
  Press *SEND*.

  - If any error is reported, go to *Maintenance Information Procedure (MIP)* chapter 1 and follow appropriate procedure.

  - If no error reported,   Press *F6*.

- Select *IOCB*, Enter *3*,
  Press *SEND*.

  - If any error is reported, go to *Maintenance Information Procedure (MIP)* chapter 1 and follow appropriate procedure.

  - If no error reported, Press *F1*.

11.2.5 Logoff local console.

Re-enable all channel adapters disabled in step 10.1.1

11.3 General IPL.

11.3.1 On control Panel.

- Set the Power control indicator to its original value recorded in step 10.1.1

- Set the *Function* indicator value to *0*.
  Press *Validate* key.

- General IPL starts.

If steady FF4 code is displayed on control panel, ask customer to load the control program.

If control program is loaded from hard disk, *000* will be displayed when *IPL* successful.

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

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11.4 Save Disk Contents onto Diskettes.

When network is restarted, save the hard diskcontents on *Back Up* set of diskettes.

- Enter *Maintenance Password*, Press *Send*.

- Set the MOSS OFF LINE, enter *MOF*, Press *Send*.

- Select *DIF*, Press *Send*.

- Select option 2, press *Send*.

- Enter the date and save ID , Press *Send*
  Follow prompts on console.
  When function complete, press *F1*.

- Set the MOSS ON LINE, enter *MON*, Press *Send*.

- Logoff Local console.

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AFTER INSTALLATION. (Steps 12-15)

12.0 Field Installation:

None

13.0 Field support publications:

None

14.0 Parts disposition:

14.1 Purchased machines.

Refer to the ownership of the parts matrix to determine the correct owner of the removed/unused parts.
All parts determined to be the property of IBM , should be processed as stated in rental machines direction below.

14.2 Rental machines.

Return all parts to the IBM branch office for potential return in accordance with existing return recovery and reclamation programs.

15.0 Machine records:

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

  END OF INSTRUCTIONS

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