

Maintenance Information

4341 Processor Installation Manual

PREFACE

This manual is intended for use by trained service personnel involved in the installation and maintenance of the *IBM 4341 Processor*.

Complete installation instructions for I/O devices connected to the Processor are covered in their individual installation manuals.

Keep this manual with the system documentation for future use. (Updated manuals can lack information pertinent to these units.)

Technical changes and additions to the text and illustrations are indicated by a line to the left of the change.

SAFETY

PERSONAL SAFETY

Personal safety cannot be overemphasized: it is a vital part of customer engineering. To ensure your safety and that of co-workers, always observe the safety precautions given during your safety training and adhere to the following:

Danger Notices

Observe all DANGER notices in this manual.

DANGER

Do not touch the connector in step 1.2 until a suitable ground check has been made (steps 8.5 and 8.6). In the following step (1.2), it is enough to verify with the customer and/or customer's electrician that the connector exists. (Page 48 020, step 1.2)

DANGER

Read and perform the checks in General/Safety CEM 59 on page 48 015 of this manual before doing the next step. (Page 48 060, step 8.5)

DANGER

Do not make any voltage measurements at the wall outlet. (Page 48 025.)

General Safety Practices

Observe the general safety practices and the procedure for performing artificial respiration outlined in the *CE Safety Practices* card shown on the next page.

Grounding

Never operate the system with the grounding conductor removed.

Line-Powered Equipment

Ground all line-powered test equipment through the third-wire grounding conductor in the power cord of the machine being tested.

Machine Warning Labels

Heed the warning labels placed in hazardous areas of the machines.

The drawings and/or specifications contained herein shall not be produced in whole or in part without written permission from IBM.

IBM has prepared this maintenance documentation for the use of IBM customer engineers for installation, maintenance, and repair of the specific machines indicated. IBM makes no representations that it is suitable for any other purpose.

Information contained in this documentation is subject to change from time to time. Changes will be reflected in subsequent revisions.

EC 379602 15Sep80	PN 5666435	48 010
EC 379607 05Jun81	2 of 2	

General/Safety CEM 59

A serious shock hazard may exist when connecting the power cord of a device to its power source.

Power cords which employ metal clad plugs, such as the Russell and Stoll connectors used on most systems, have the outside metal shell physically connected to the ground lead within the cable. Therefore, if a phase line is accidentally reversed with the ground lead at the supply, it is possible to have line voltage present on the metal exteriors of the customer's power receptacle, even with the CB tripped. Under certain conditions, it is also possible to have line voltage present on the machine frame. It is, therefore, extremely important that the following two steps be taken before making any power connections which employ this type of plug:

Note: Be careful not to touch any of the surfaces involved until the successful completion of each step.

1. With the branch circuit CB OFF (see figure below), check for zero volts between the metal exterior of the customer's power receptacle and:
 - a. Building ground (i.e. building steel or grounded raised floor sub-strata).
 - b. The metal exterior of the IBM power plug.

If a voltage is present in either measurement, notify the customer immediately and do not proceed until the problem is corrected. Do not touch the receptacle. A zero volt reading in the above two measurements will ensure that it is safe to touch the customer's receptacle with power off. With the branch circuit breaker still tripped, make the power cord connection (be sure that the connection is mechanically sound).

Make certain that everyone is clear of the power connection and all parts of the machines (it is possible that the machine frame could be electrified when power is applied) and proceed with step two.

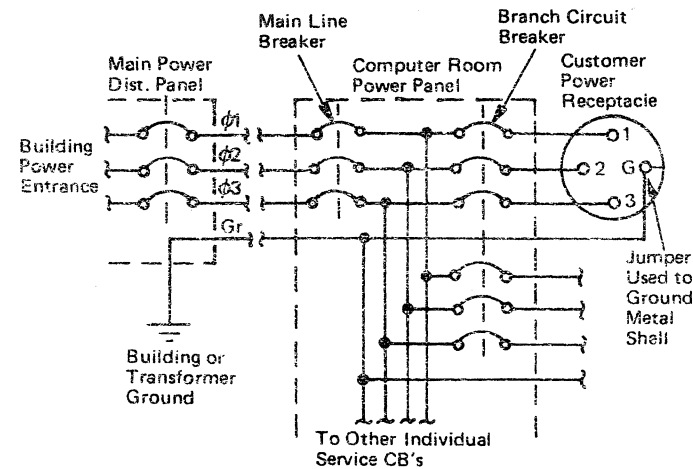
2. Energize the branch circuit breaker and check for zero volts between:
 - a. Power plug shell and building ground.
 - b. Machine frame and building ground.

If a voltage is measured in either step, or if the circuit breaker trips, a wiring error is indicated and must be investigated. Trip the circuit breakers involved and notify the customer immediately. Do not proceed until the problem is corrected.

At the successful completion of the above procedure, it is safe to continue with the installation procedure power checkout.

Although this CEM is primarily concerned with line power connections, the CE should be aware that this hazard may exist wherever metal clad plugs are used, and appropriate caution should be exercised when handling them.

See General Safety CEM #27 for additional information.



A wiring error or open ground anywhere in this network can expose you to lethal voltages. For example: If Phase 3 and ground are reversed in the receptacle, 208 Vac will be present on the shell as soon as the branch CB is energized. If they were reversed ahead of the branch CB, 208 Vac would be present on the shell as soon as the main line breaker is energized.

Remember also that a 4-ohm short between phase and ground will not trip a 60-amp circuit breaker:

$$I = E/R = 208/4 = 52 \text{ amps.}$$

This means that a direct connection between phase and the ground circuit may not trip the breaker involved if the ground circuit contains any dc resistance.

The product installation manual instructs the customer engineer to check the machine for proper voltage phasing, and in most cases, gives detailed instructions to do so. Should it become necessary to check phasing with a scope, the following procedure should be used. Use a 453, 454, or 454A Scope with a x10 probe, and an insulating ring (part 453178), or a retractable hook tip (parts 453181, 5500898) depending on the measurement being made. Checking phasing at the Russell and Stoll connectors should be discouraged, and the checks made on the power panel or the machine master CB. Everyone checking input power should be familiar with the contents of General CEMs 34 and 269, General Safety CEMs 27 and 59, and Tools and Test Equipment CEM 102.

203/09-03-71 181/10-16-70

CE Safety Practices

All Customer Engineers are expected to take every safety precaution possible, and to observe the following safety practices while maintaining IBM equipment:

1. You should not work alone under hazardous conditions or around equipment with dangerous voltage. Always advise your manager if you MUST work alone.
2. Remove all power ac and dc when removing or assembling major components, working in the immediate area of power supplies, performing mechanical inspection of power supplies, and installing changes in machine circuitry.
3. Wall box power switch, when turned off, should be locked or tagged in off position. 'Do Not Operate' tags, order number S229-1266, should be affixed when applicable. Pull power supply cord whenever possible.
4. When it is absolutely necessary to work on equipment having exposed operating mechanical parts or exposed live electrical circuitry anywhere in the machine, the following precautions must be followed:
 - a. Another person familiar with power off controls must be in the immediate vicinity.
 - b. Rings, wrist watches, chains, bracelets, and metal cuff links shall not be worn.
 - c. Only insulated pliers and screwdrivers shall be used.
 - d. Keep one hand in pocket.
 - e. When using test equipment, be certain that controls are set correctly and to the proper capacity, and that insulated probes are used.
 - f. Avoid contacting ground potential (metal floor strips, machine frames, etc. - use suitable rubber mats, purchased locally if necessary).
5. Safety glasses must be worn when:
 - a. Using a hammer to drive pins, riveting, staking, etc.
 - b. Power hand drilling, reaming, grinding, etc.
 - c. Using spring hooks, or attaching springs.
 - d. Soldering, wire cutting, or removing steel bands.
 - e. Parts cleaning using solvents, sprays, cleaners, chemicals, etc.
 - f. Exposed to any other condition that may be hazardous to your eyes. **REMEMBER, THEY ARE YOUR EYES.**
6. Special safety instructions, such as for handling cathode ray tubes and extreme high voltages, must be followed as outlined in CEMs and in the Safety section of the Maintenance Manuals.
7. Do not use solvents, chemicals, greases, or oils that have not been approved by IBM.
8. Avoid using tools or test equipment that has not been approved by IBM.
9. Replace worn or broken tools and test equipment.
10. The maximum load to be lifted is that which, in the opinion of you and of management, does not jeopardize your own health or well-being, or that of other employees.
11. All safety devices, such as guards, shields, signs, ground wires, etc., shall be restored after maintenance.
12. Each Customer Engineer is responsible to be certain that no action on his part renders a product unsafe, or exposes hazards to customer personnel.
13. Place removed covers in an out-of-the-way place where no one can trip over them.
14. All machine covers must be in place before the machine is returned to the customer.
15. Always place CE tool kit away from walk areas (that is, under desk or table) where no one can trip over it.

16. Avoid touching moving mechanical parts (that is, when lubricating, checking for play, etc.).
17. When using stroboscope, do not touch ANYTHING; it may be moving.
18. Avoid wearing loose clothing that may become caught in machinery. Shirt sleeves must be left buttoned, or rolled to above the elbow.
19. Ties must be tucked in shirt or fastened with a tie clasp (preferably non-conductive), approximately 3 inches from the end. Tie chains are not recommended.
20. Before starting equipment, make certain that fellow CEs and customer personnel are not in a hazardous position.
21. Maintain good housekeeping in the area of machines while performing, and after completing, maintenance.

Artificial Respiration

General Considerations

1. Start Immediately. Seconds Count. Do not move victim unless absolutely necessary to remove from danger. Do not wait or look for help or stop to loosen clothing, warm the victim, or apply stimulants.
2. Check Mouth for Obstructions. Remove foreign objects; pull tongue forward.
3. Loosen Clothing; Keep Warm. Take care of these items after victim is breathing by himself, or when help becomes available.
4. Remain in Position. After victim revives, be ready to resume respiration if necessary.
5. Call a Doctor. Have someone summon medical aid.
6. Don't Give Up. Continue without interruption until victim is breathing without help, or until victim is certainly dead.

Rescue Breathing for Adults

Victim on His Back immediately.

1. Clear throat of water, food, or foreign matter.
2. Tilt head back to open air passage.
3. Lift jaw up to keep tongue out of air passage.
4. Pinch nostrils to prevent air leakage when you blow.
5. Blow until you see the chest rise.
6. Remove your lips and allow the lungs to empty.
7. Listen for snoring and gurgling, signs of throat obstruction.
8. Repeat mouth-to-mouth breathing 10-20 times per minute. Continue rescue breathing until victim breathes for himself.



Thumb and finger position



Final mouth-to-mouth position

Reprint Courtesy Mine Safety Appliance Co.

Model Group 1 and 2

EC 379605 06Mar81	PN 5666436	48 015
EC 379814 02Oct81		
1 of 2		

1.0 BEFORE STARTING PROCESSOR INSTALLATION

1.1 ... Ensure that last-minute changes did not affect I/O cable lengths or location of power outlets.

DANGER
Do not touch the connector in step 1.2 until a ground check has been made (step 8.2b). In the following step (1.2), it is enough to verify with the customer and/or customer's electrician that the connector exists.

1.2 ... For correct system operation, a shield must be provided at the customer-supplied outlet for connection to the 4341 power-cord shield.

1.3 ... Subfloor installations:

- The cable entry/exit holes shown in Figure 1 represent locations on the machine and do not represent or require a corresponding hole in the floor for subfloor installations. Cables from more than one cable entry/exit hole may be routed through one hole in the floor.
- Position the frames so the interface cables can be connected later.

1.4 ... For correct system operation, refer to your support structure for information in the following cases:

1. If an attached 3203-5 has a bit-2 in its address (xx1x xxxx).
2. If an attached 3830-2 is below EC 437466.
3. If this system has a 3851 Mass Storage Facility attached.
4. If an attached 3272 Control Unit is below EC 747007.

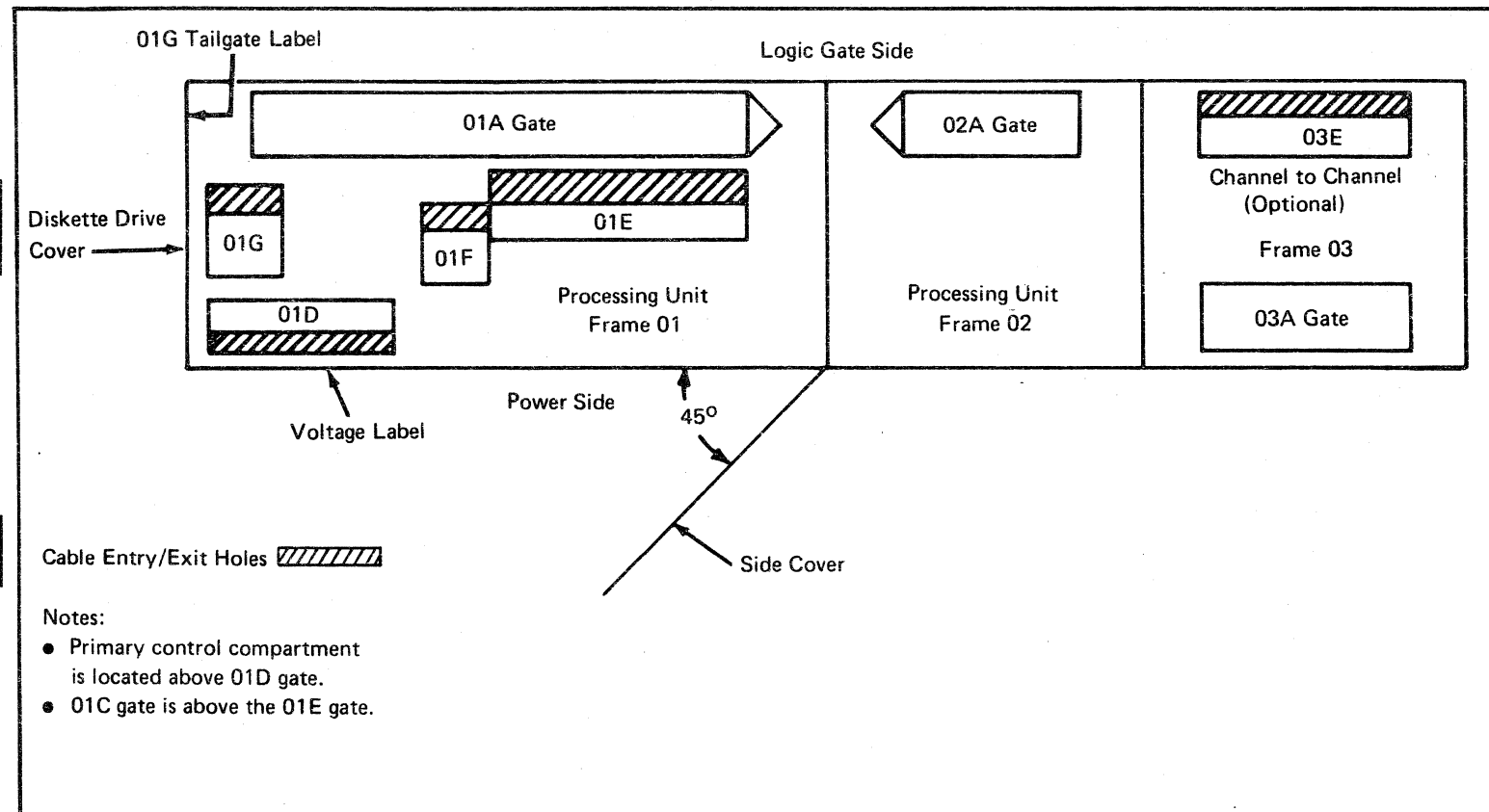


FIGURE 1 - Locations (Top View)

Model Group 1 and 2

EC 379605 06Mar81	PN 5666436	48 020
EC 379814 02Oct81	2 of 2	

2.0 PROCESSOR CHECKS AND PREPARATION

2.1 ... After using the *Unpacking/Packing Instructions*, perform the following:

1. Check the processor for damage.
 - If any, inform the IBM branch office.
2. Check the serial number of each frame, located on the lower frame rails of the power side.
 - If the serial numbers on the frames are not the same, inform the IBM branch office.
3. Check for the MI documentation volumes and form numbered-documents (BM 4155015):
 - The MI documentation that you should receive with this machine is Volumes 1, 2, 3, 13/16, 17, 18, 30, 40, and 41.

Note: If Channel-to-Channel feature (CTCA) is to be installed, Volume 32 is also shipped.

4. Check for BM 4155016 (two frames) or BM 6831385 (CTCA frame 03) that contains hardware that must be installed.
 - If this is a Remote Support Facility machine, another box contains the RSF external cable or the RSF cable is already installed in the 01G tailgate. For location of the 01G tailgate, see Figure 1 on page 48 020.
 - If not received, determine if you should have it by using the *Machine History* in Volume 30. If necessary, inform your branch office.
5. Release the 01A gate by adjusting the orange shipping brackets:
 - Turn the upper bracket 180 degrees; then tighten. (Located near the gate latch.)
 - Slide the lower bracket up; then tighten. (Located on the lower-inside part of the gate, below the upper bracket.)

CAUTION

Do not connect the power cord in the following step.

6. Uncoil the power cord, and place it near the customer-supplied outlet.
7. Ensure that all cables on the open end of the frames have been untaped.

DANGER

Do not make any voltage measurements at the wall outlet.

8. Check the voltage label (see Figure 1) on the cover of the primary control compartment (PCC) box to ensure that system and input power are the same. If they do not match, see YA015 to make the correct wiring adjustment, or invoke your support structure.

2.2 ... Install two leveling pads (part 1310170) under frame 01, and adjust them until the casters are just **free to turn**.

- This is done to hold the frame stationary while installing the cables and other for procedures.

Note: If you determine that no frame covers need to be removed, continue with step 2.4.

2.3 ... If it is difficult to get at the cables leaving frame 01 for connection to frame 02, remove the left and right rear side covers (nearest to frame 02) of frame 01:

1. Open the covers to an angle of 45 degrees (Figure 1).

2. Lift the covers off their brackets.

Note: If the covers are difficult to remove loosen the bottom bracket, and then remove the cover.

3. Disconnect wire at the top of the cover by removing the screw that connects the wire to the frame.
4. Mark or number the covers removed so you can return them to the same location.
5. Ensure that you tighten the bottom bracket and connect the wire when the cover is reinstalled.

2.4 ... Move frame 02 to 150 mm (6 in) of frame 01 to connect the interframe cables.

- Hold frame 02 in place temporarily by using a single leveling pad.

Warning: The weight of gate 02A can cause frame 02 to tip if gate 02A is open before frame 02 is bolted to frame 01.

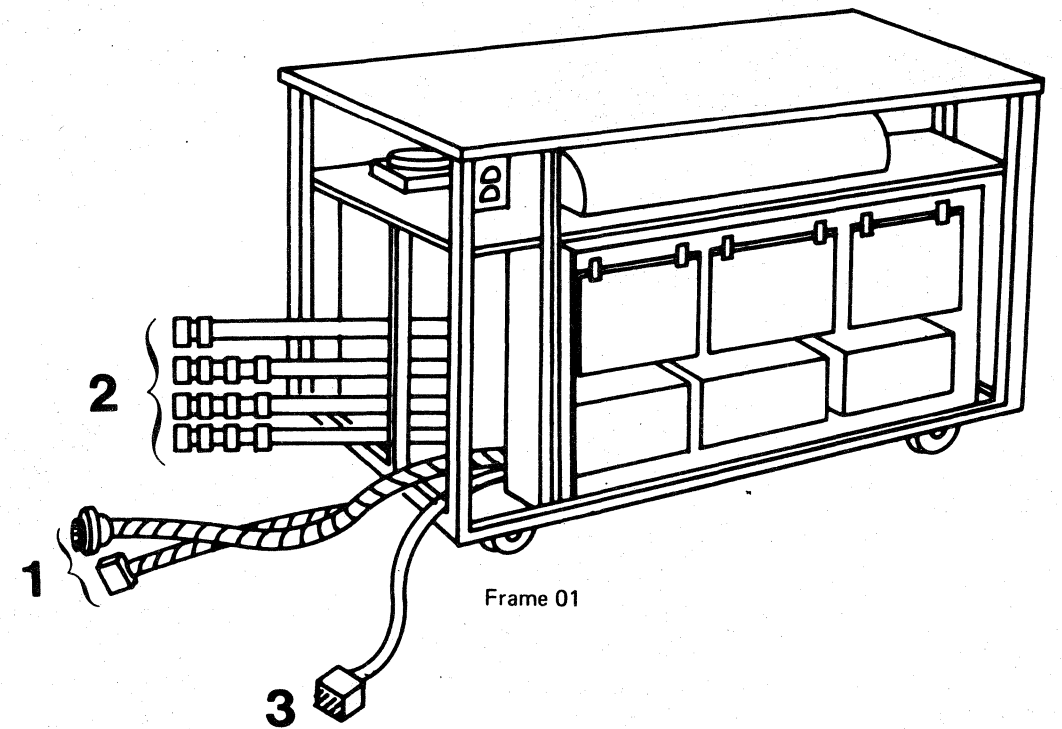
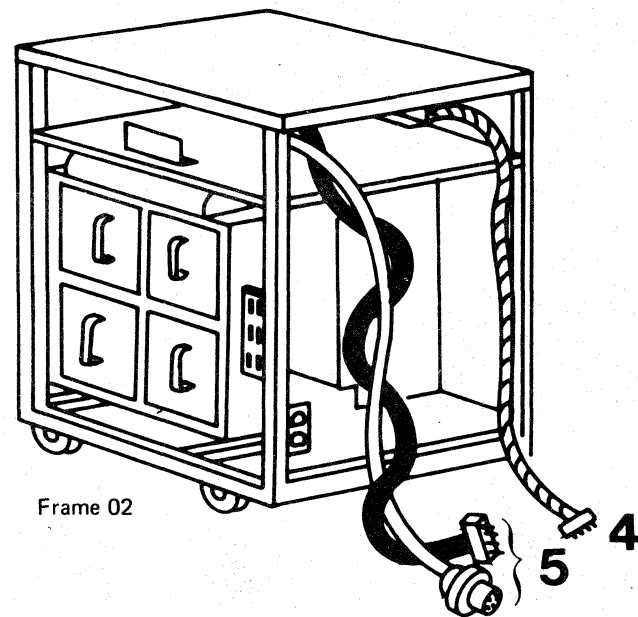
3.0 INTERFRAME CABLES

3.1 ... Install the logic-gate-side interframe cables as shown in the following steps.

- Before connecting cables, check for bent or pushed back pins.

Note: Each number on the illustration to the right indicates a cable or group of cables. The same number indicates the same cable and its connection in the following illustrations.

Warning: Do not open GATE 02A until frame 01 and frame 02 are bolted together. This ensures that frame 02 will not tip because of the weight of GATE 02A.



1

LOCATE connectors 240 and 244.

CONNECT connectors as labeled.

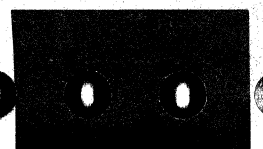
If **CTCA FEATURE** (frame 03) is installed:

LOCATE connectors P300, PS301-4, and P342; leaving frame 01. Also locate a plastic six-pac (used to group wires), labeled 03A A1M6E02, with four wires attached: two black and two yellow.

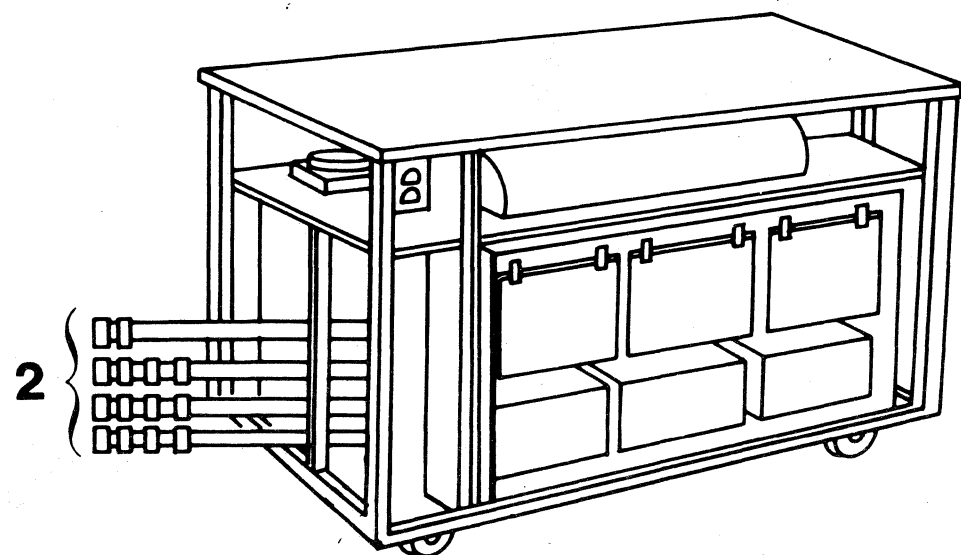
ROUTE these CTCA cables through frame 02 to frame 03.

ROUTE cables to connector panel.

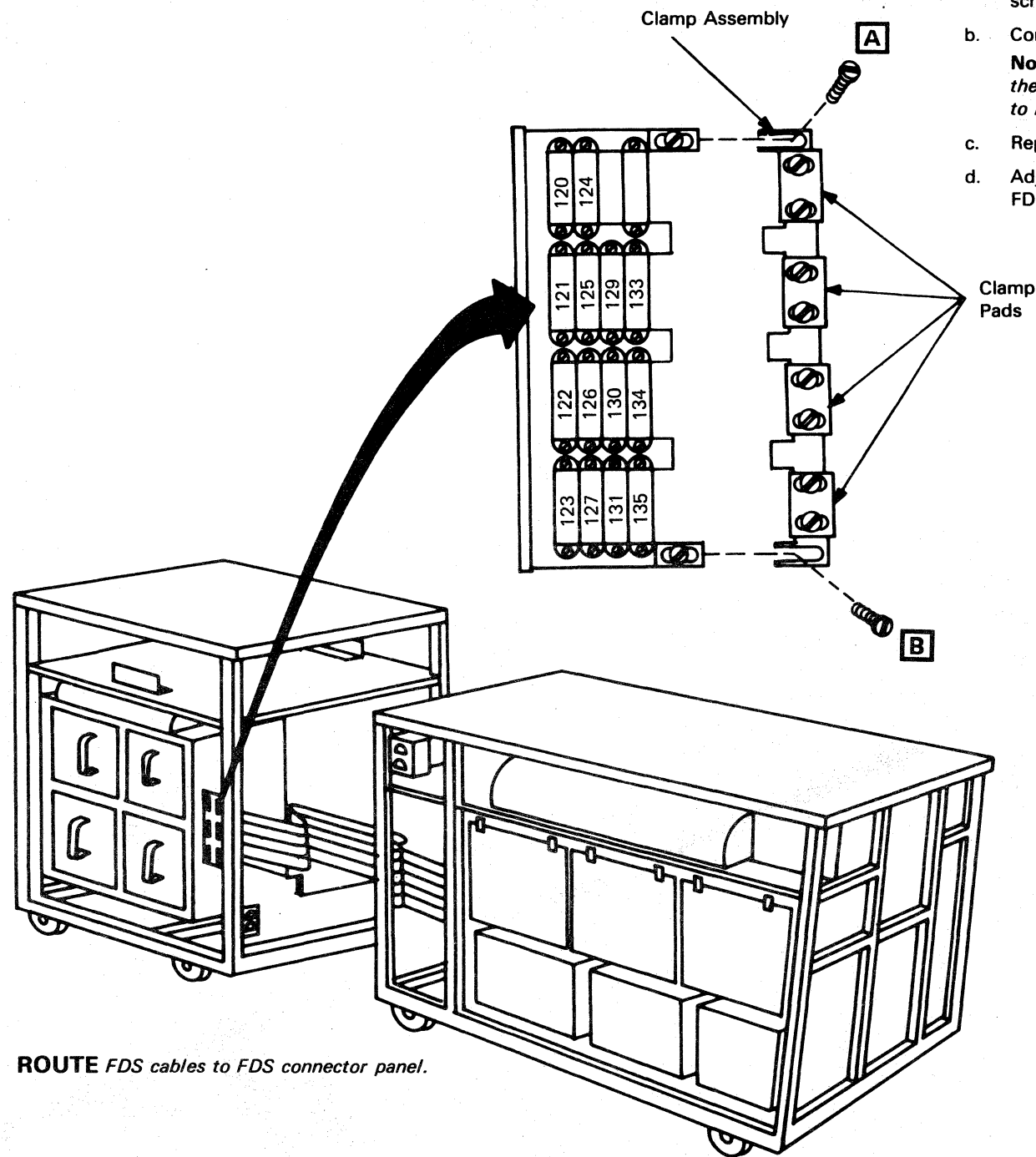
Model Group 2, Switching Regulators		
EC 379607 05Jun81	PN 2676496	48 030d
EC 379814 02Oct81	2 of 2	



2 MOVE frame 02 closer to frame 01.
Temporarily hold them in place
with a leveling pad.



LOCATE Flexible distribution system (FDS)
cables 120-127, 129-131, and 133-135.



ROUTE FDS cables to FDS connector panel.

CONNECTING FDS CONNECTORS:

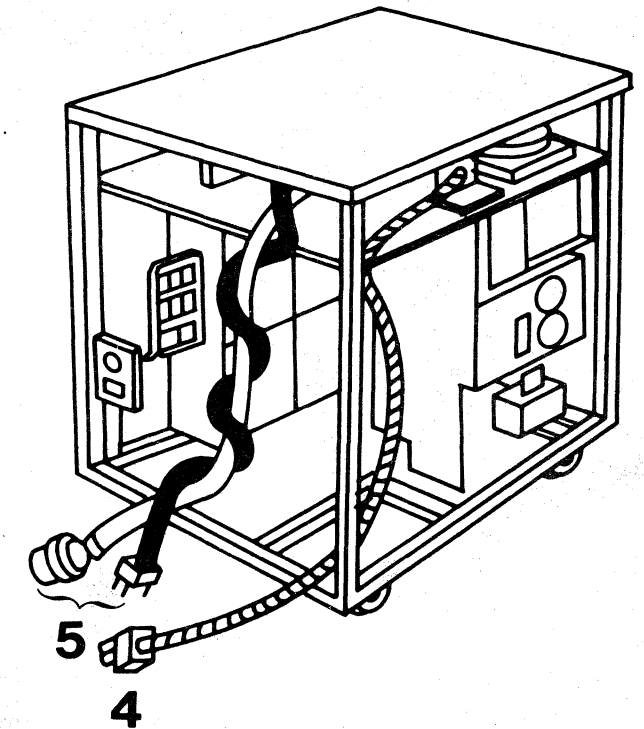
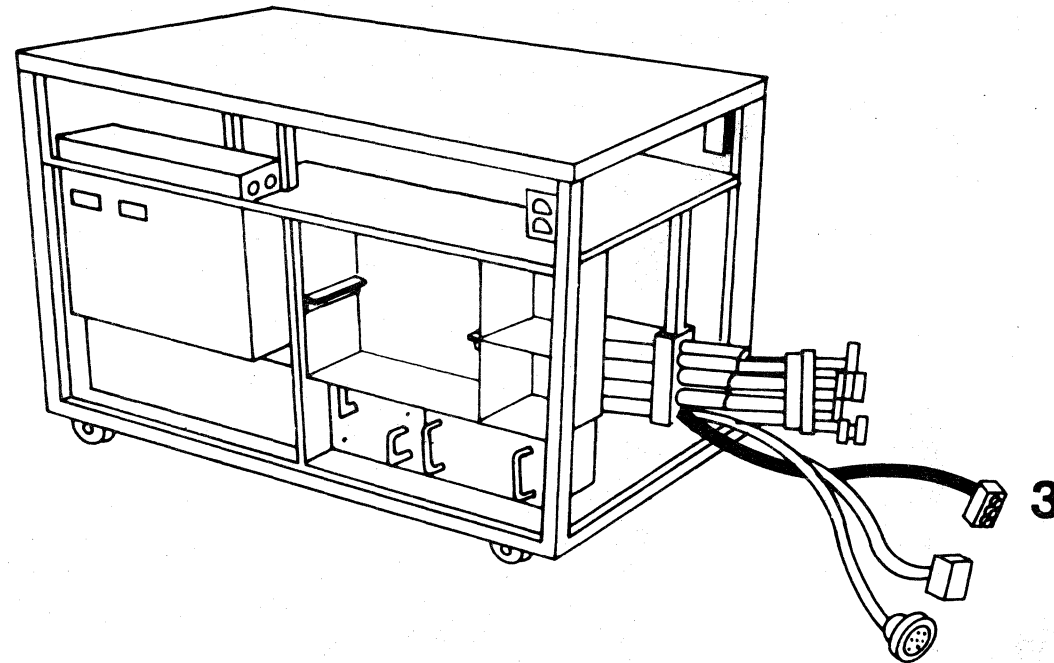
- a. Remove clamp assembly by loosening screws **A** and **B**.
- b. Connect FDS cables as labeled.
Note: Install cables starting at position 135, and then connect in direction of bottom to top and right to left.
- c. Replace clamp assembly.
- d. Adjust clamp pads to hold FDS connectors in position.

3.0 INTERFRAME CABLES (CONTINUED)

3.2 ... Install the power-side interframe cables as shown in the following steps.

- Before connecting cables, check for bent or pushed back pins.

Note: Each number on the illustration to the right indicates a cable or group of cables. The same number indicates the same cable and its connection in the following illustrations.



3

LOCATE connector PS216 CON3.

ROUTE cable to PS216 power supply.

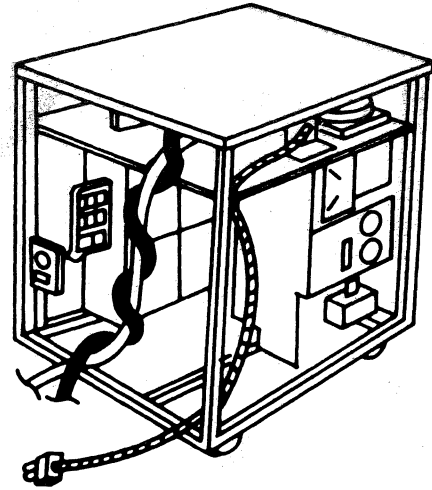
CONNECT to CON3.

PS216

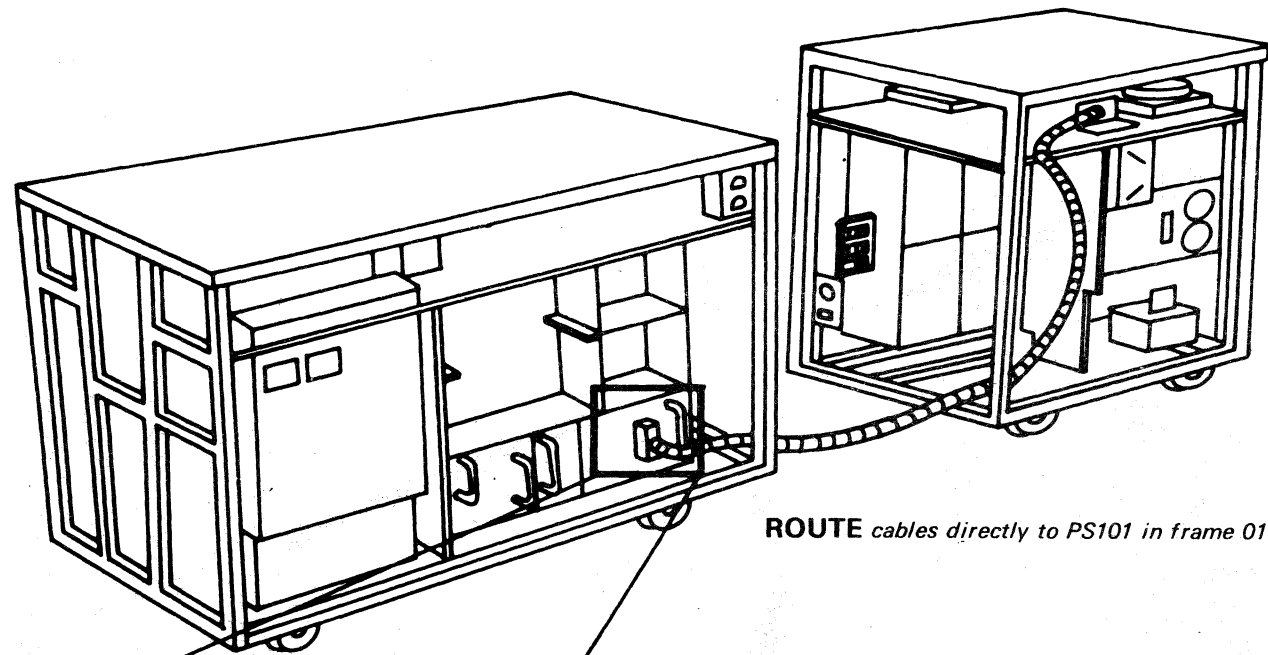
Model Group 2, Switching Regulators

EC 379605 06Mar81	PN 2676497	48 040d
EC 379606 20Apr81	2 of 3	

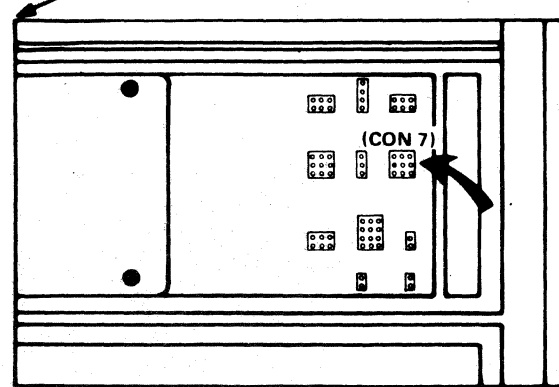
4



4 LOCATE connector PS101-7.

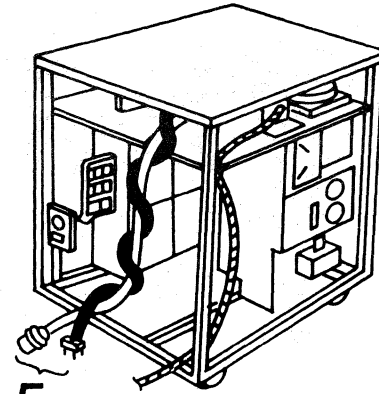


ROUTE cables directly to PS101 in frame 01.



CONNECT to CON7.

5

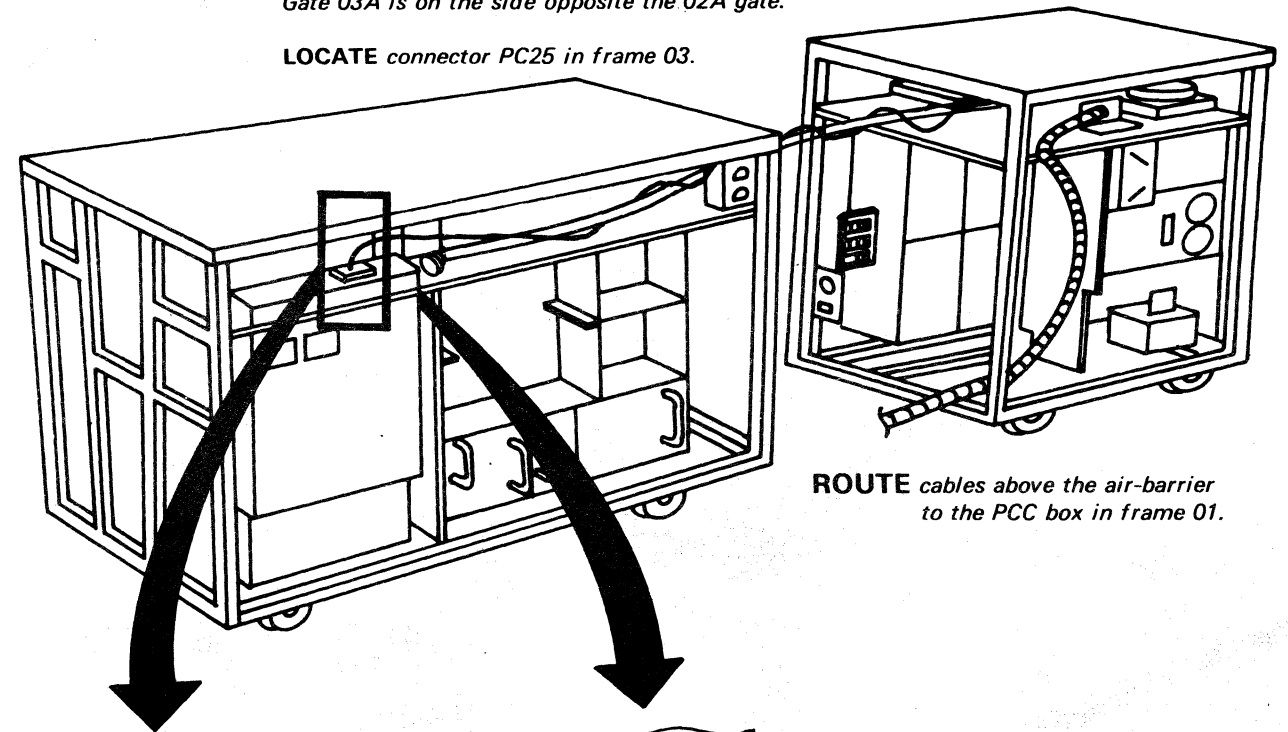


5 LOCATE connector PC24 and CONN 57. They are coiled on the air barrier of frame 02.

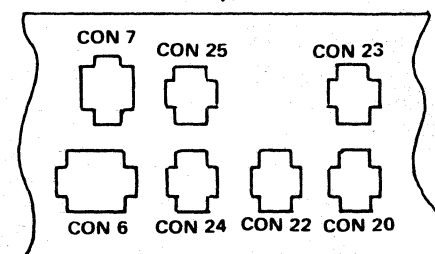
If CTCA FEATURE is installed (frame 03):

MOVE frame 03 next to frame 02. Gate 03A is on the side opposite the 02A gate.

LOCATE connector PC25 in frame 03.

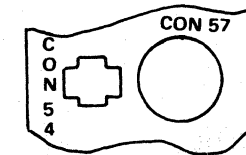


ROUTE cables above the air-barrier to the PCC box in frame 01.



CONNECT PC24 to CON24.

CONNECT PC25 to CON25 (if you have CTCA Feature).



CONNECT PC57 to CON57.

Model Group 2, Switching Regulators

EC 379605 06Mar81
EC 379606 20Apr81

PN 2676497

3 of 3

48 045d



3.0 INTERFRAME CABLES (CONTINUED)

Note: If you do not have the frame 03 (CTCA), go to 4.0.

3.3 ... Connect the channel-to-channel cables to and from frame 03 as follows:

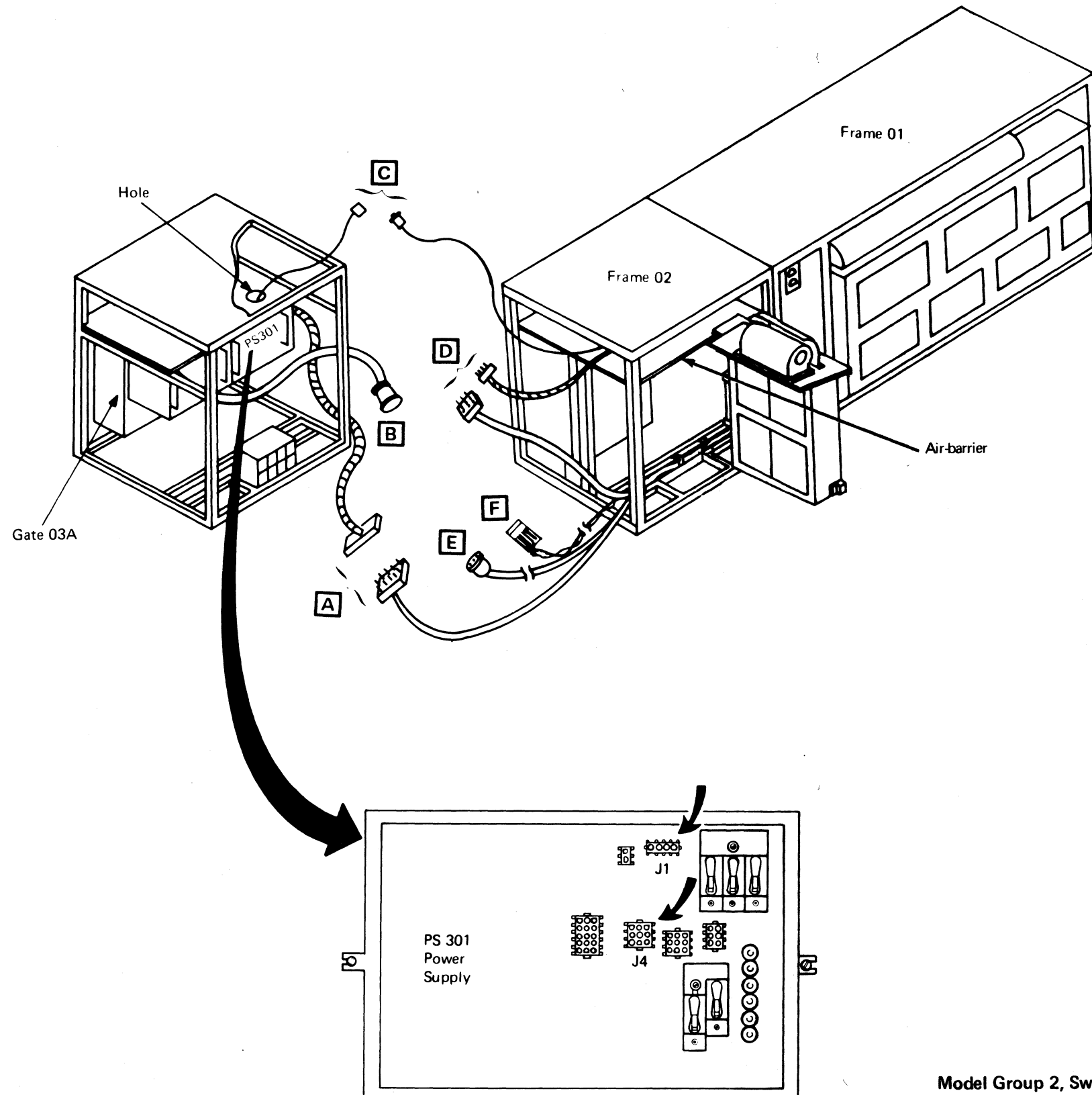
1. Locate and connect P300 to J300 **A**.
2. Locate and connect TR301-CONN1 **B** to socket labeled TR301 in frame 02, below the air-barrier.
3. Locate and connect P247 to J247 **C**.

Note: Ensure J247 and PS301-1 are routed through the hole in the air-barrier on frame 03.

4. Locate and connect PS301-1 and PS301-4 **D** to PS301 power supply as labeled.

Note: Check to ensure that connectors AMD301 and AMD302 are connected to the fan with the same label. The fans (labeled AMD301 and AMD302) are located in frame 03, on the air-barrier and gate 03A.

5. Go to next page to connect **E** and **F**.



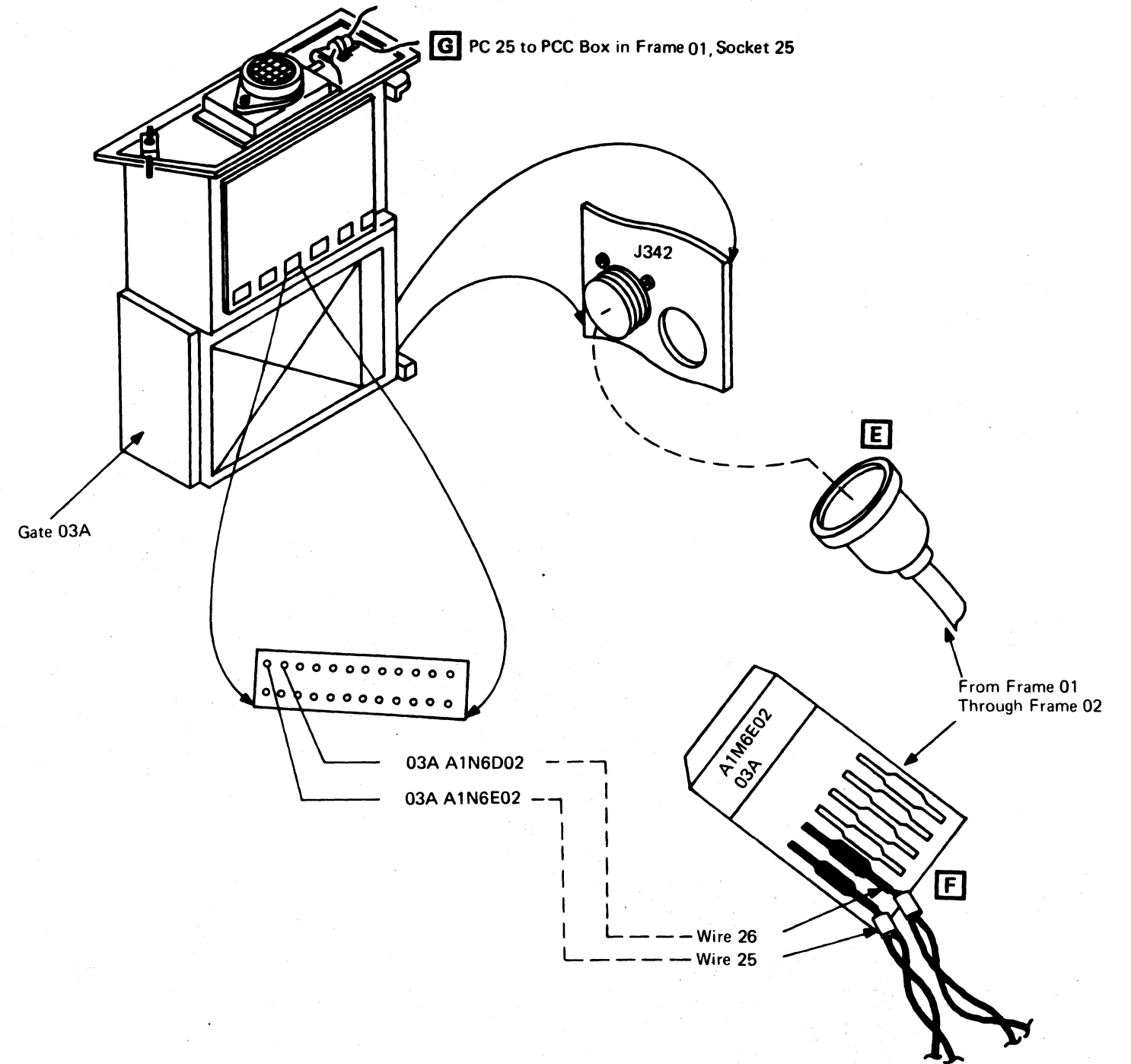
Model Group 2, Switching Regulators

EC 379605 06Mar81	PN 2676498	48 047d
EC 379606 20Apr81	1 of 2	

3.0 INTERFRAME CABLES (CONTINUED)

6. Locate and connect P342 **E** to J342.
7. Locate wires **F** and remove them from the plastic six-pac to which they are mounted. Connect wires 25 and 26 as indicated in drawing.

Note: Check to ensure PC25 **G** is connected to the socket 25 in the PCC box in frame 01. This connection was done in a previous step.



Model Group 2, Switching Regulators

EC 379605	06Mar81	PN 2676498	48 049d
EC 379606	20Apr81	2 of 2	

4.0 ASSEMBLE FRAMES

Warning: Do not pinch the cables between frames.

Note: If you have frame 03 (CTCA), BM 6831385 supplies twice the parts listed in the following step.

- 4.1... Unpack the following parts:
- 4 bolts (part 6831319)
 - 4 nuts (part 1622405)
 - 8 washers (part 1622306)
- 4.2... Move the machine frames to the final position.
- Note:** Ensure the leveling pads that were installed in step 2.2 are removed before trying to move the machine.
- 4.3... Assemble frames 01 to frame 02:
1. Insert the *top* power-side bolt from frame 01 to frame 02 as in Figure 2.
 2. Insert the *bottom* power-side bolt from frame 02 to frame 01.
 3. Insert the *top* logic-side bolt from frame 02 to frame 01.
 4. Insert the *bottom* logic-side bolts from frame 01 to frame 02.
 5. Do not tighten the nuts.
- Note:** If you do not have frame 03 (CTCA feature), go to step 4.5.
- 4.4... Assemble frame 03 (CTCA feature) to frame 02:
1. Insert the two power-side bolts from frame 02 to frame 03.
 2. Insert the two logic-side bolts from frame 02 to frame 03.
- 4.5... Perform the final frame assembly steps:
1. Install the leveling pads (part 1310170):
 - a. Put four leveling pads under each frame (two on each end).
 - b. Adjust the leveling pads until the tops of the frames are aligned and the frame covers can be opened and closed easily.
 2. Tighten all the interframe bolts.
 - This step keeps the machine aligned and provides good electromagnetic compatibility (EMC).
 3. Install the ground strap:
 - a. Unpack the screw (part 1621210) and lockwasher (part 1622347)
- Note:** One end of the ground strap is already connected to the frame 02 side as shown in figure 2.

- b. Fasten the ground strap as shown in Figure 2.
- c. Install the lockwasher between the ground strap and the frame.
- d. If this machine has frame 03, connect the ground strap on frame 03 to frame 02 in the same way.

5.0a INSTALL 3278-2A CONSOLE AND KEYBOARD

CAUTION
Display console weighs about 36 kg (80 lb).
Obtain aid in lifting.



Note: If you do not have to install a 3278-2A, continue with step 5.0b.

5.1a ...Unpack and socket the display console and keyboard at their installation location.

Note: The keyboard has an operator control panel (OCP) attached.

5.2a ...Remove the display console front cover as shown in Figure 3.

5.3a ...Connect the keyboard cable (the lower cable leaving back of the keyboard) to the display socket marked *KEYBD* as shown in Figure 5.

Note: Ensure that the ground shield is on the wing nut stud as shown in Figure 4.

5.4a ...Connect the other cable from the keyboard to the display socket marked *RDR* as shown in Figure 5. Ensure that the shield is grounded as shown in Figure 4.

5.5a ...Connect cable (part 5578498) from the display socket marked *PRTR* to the processor 01F tailgate socket marked *J2*. See Figures 5 and 6.

5.6a ...Connect the power cord to the customer-supplied outlet.

5.7a...Connect the coaxial signal cable (part 5578477) from the display socket marked *I/O* to the processor 01F tailgate socket marked *0*, as indicated in Figures 4 and 6.

- Ensure that the wire retainer is closed and that the coaxial connector rests on top of it. See Figure 4.

Note: If the display is equipped with the Security Keylock feature, ensure that the keylock is in the ON position. See Figure 3.

FIGURE 2 (Power-Side View)

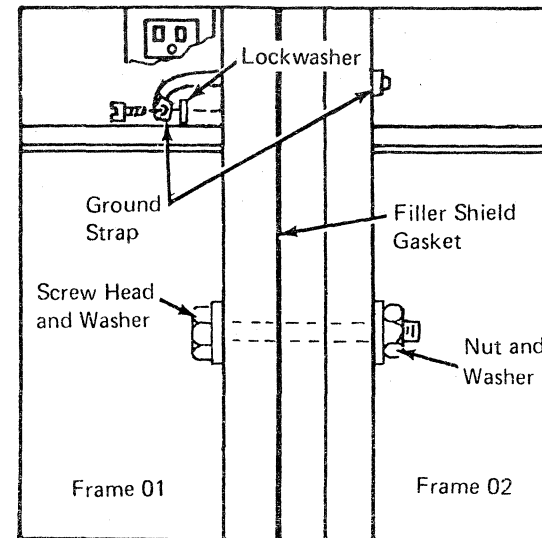


FIGURE 5

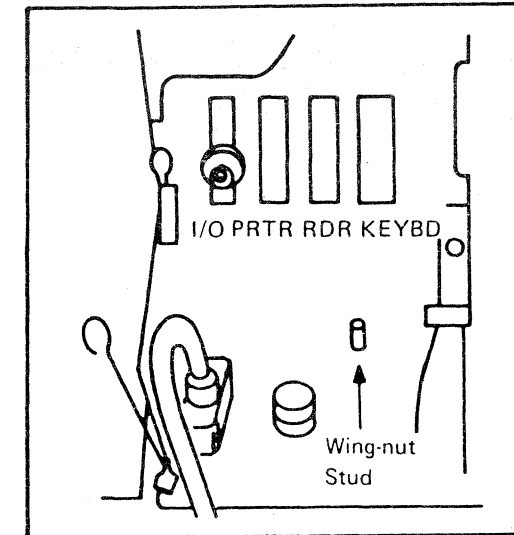


FIGURE 3

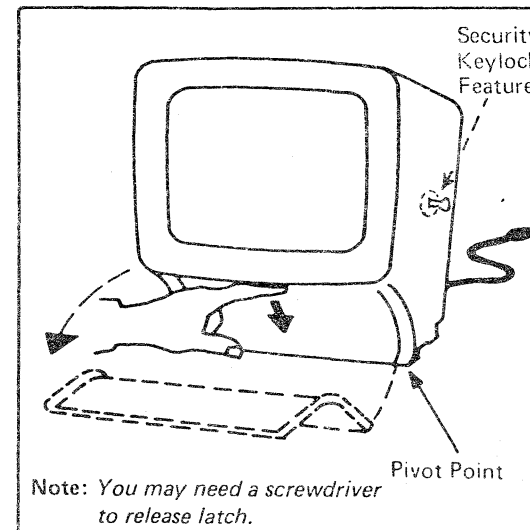


FIGURE 6

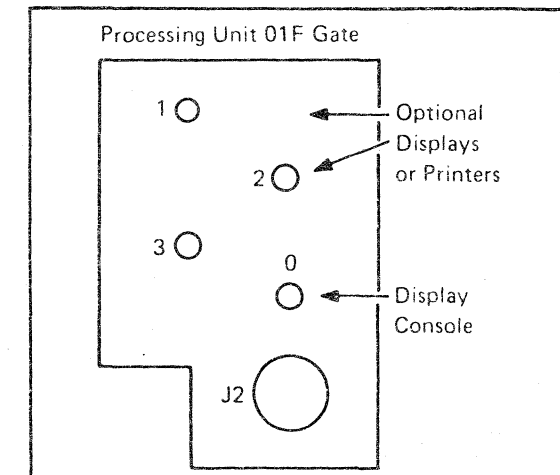
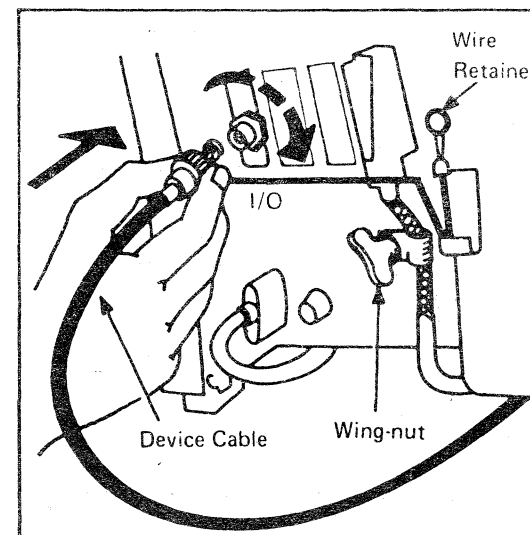


FIGURE 4



Model Groups 1 and 2

EC 379607 05Jun81	PN 2676490	48 051
EC 379814 02Oct81	1 of 2	

5.0b INSTALL 3279-2C CONSOLE AND KEYBOARD

CAUTION

Display console weighs about 27 kg (58 pounds). Obtain aid in lifting.



Note: If you do not have to install a 3279-2C, continue with step 6.0.

5.1b ... Unpack and position the display console and keyboard at their installation site.

Note: The keyboard has an operator control panel (OCP) attached; the ship group should also contain a package with three cable clamps (part 4423312).

5.2b ... Lift open the rear cover by pressing up on both clips holding the cover, and then swing the cover upward and toward you. See Figure 7a.

5.3b ... Compare the line voltage of the customer outlet to the voltage requirement for the display indicated on the voltage label. For voltage label location, see Figure 7b.

5.4b ... Locate the two cables connected to the rear of the keyboard, and then route them under and along the left side of the display.

5.5b ... Connect keyboard connector P23 to socket 3 as follows:

Note: Use Figures 7b and 7c as reference.

- Place the strap (part 4422106) on the stud under socket 3.
- Place the cable clamp (part 4423312) to the upper portion of P23, and then on the stud under socket 2 so that the cable passes under the strap.
- Attach the two clamps and strap to P23 and the stud as shown in Figure 7b and the detail in Figure 7c.

5.6b ... Connect the OCP cable 01S1-P2 to socket 2.

- Place the cable clamp (part 4423312) to the upper portion of the cable, and then to the stud under socket 2. See Figure 7b.

5.7b ... Connect cable 01S1-P3 (part 5578498) to socket 1.

- Place the cable clamp (part 4423312) to the upper portion of the cable, and then to the stud under socket 1; then tighten the thumbscrew. See Figure 7b.

5.8b ... Place the two loose leads from 01S1-P2 and 01S1-P3 on the stud under socket 2; then tighten the thumbscrew.

5.9b ... Connect the other end of cable (part 5578498) to the 01F tailgate, socket J2. See Figure 6.

5.10b ... Connect the power cord to the customer-supplied outlet.

5.11b ... Connect the coaxial signal cable (part 5578477) from the display connector to the processor 01F tailgate connector marked 0. See Figures 6 and 7b.

Note: If the display is equipped with the Security Keylock feature, ensure that it is in the ON position. See Figure 7d.

6.0 INSTALL OPTIONAL DISPLAY(S) OR PRINTER(S)

CAUTION

Display console weighs about 36 kg (80 lb). Obtain aid in lifting.



Note: If you do not have any optional displays or printers to install, continue with step 7.0.

6.1 ... Perform one or both of the following:

- If you have a printer to install:
 - Perform the Installation Instructions packed with the printer.
 - Connect the coaxial signal cable (part 5578477) from the printer to the processor 01F tailgate, sockets 1, 2, or 3. See Figures 4, 6, and 7b.
 - If you do not have an optional display to install, continue with step 7.0.
- If you have optional display(s) to install:
 - Unpack and position the display(s) and keyboard(s).
 - Connect the keyboard cable to the display connector:
 - Marked *KEYBD* for the 3278-2A.
 - As described in step 5.5b for the 3279-2C.
 - Connect the coaxial signal cable (part 5578477) from the display to the processor 01F tailgate, sockets 1, 2, or 3. See Figures 4, 6, and 7b.

Note: For the 3278-2A, ensure that the wire retainer is closed and the coaxial connector rest on top of it as shown in Figure 4.
 - Connect the display console or printer power cord to the customer outlet.

Note: If the displays are equipped with the Security Keylock feature, ensure that the keylock is in the ON position. See Figure 3 and 7d.

- Using the following documents, perform the off-line test.
 - "Off-line Tests" in *3278 Model 2A Display Console Maintenance Information*, Order No. SY27-2546.
 - "Off-line Tests" in *3279 Display Terminal Maintenance Information (Part 1)*, SY33-0069.

Figure 7a

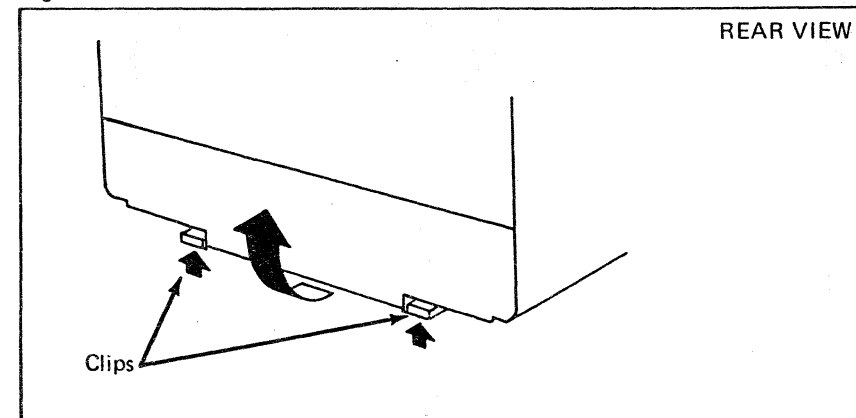


Figure 7b

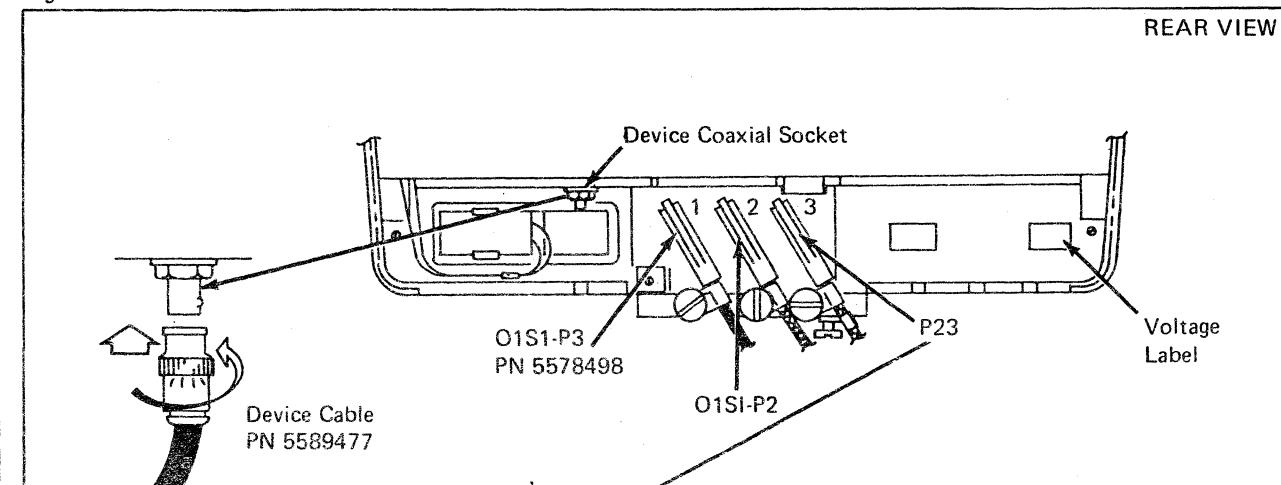


Figure 7c

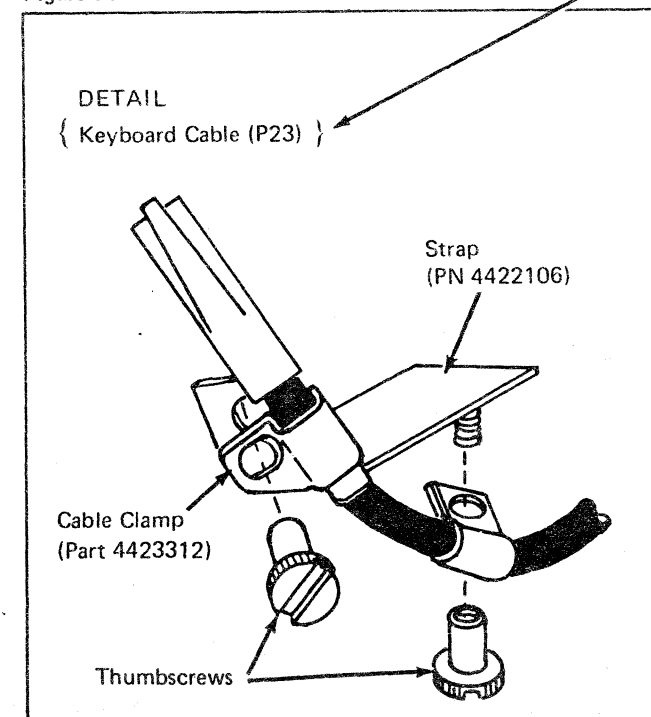
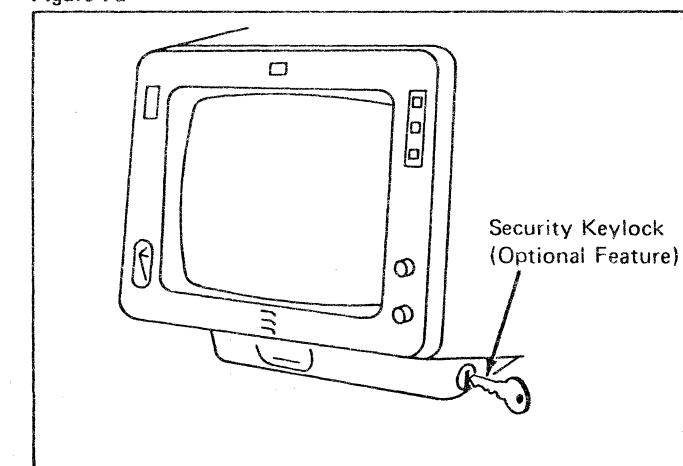


Figure 7d



Model Group 1 and 2

EC 379607 05Jun81	PN 2676490	48 052
EC 379814 02Oct81	2 of 2	

7.0 INSTALL REMOTE SUPPORT FACILITY (RSF)

Note: If this installation does not include the Remote Support Facility feature (RSF), continue with step 8.0a.

This section describes the installation of the RSF cable to the 01G tailgate. For wiring diagrams, go to *Volume 13/16*, "Service Aids Section 14," and see "RSF Service Aids."

7.1 ... Unpack *RSF Cable* box and check the external cable part number.

Note: *RSF external cable assembly part 4109531* is not in the ship group. It is already installed in the 01G tailgate. Go to step 7.5 to continue the cable installation.

Perform the step that apply to the RSF external cable being installed:

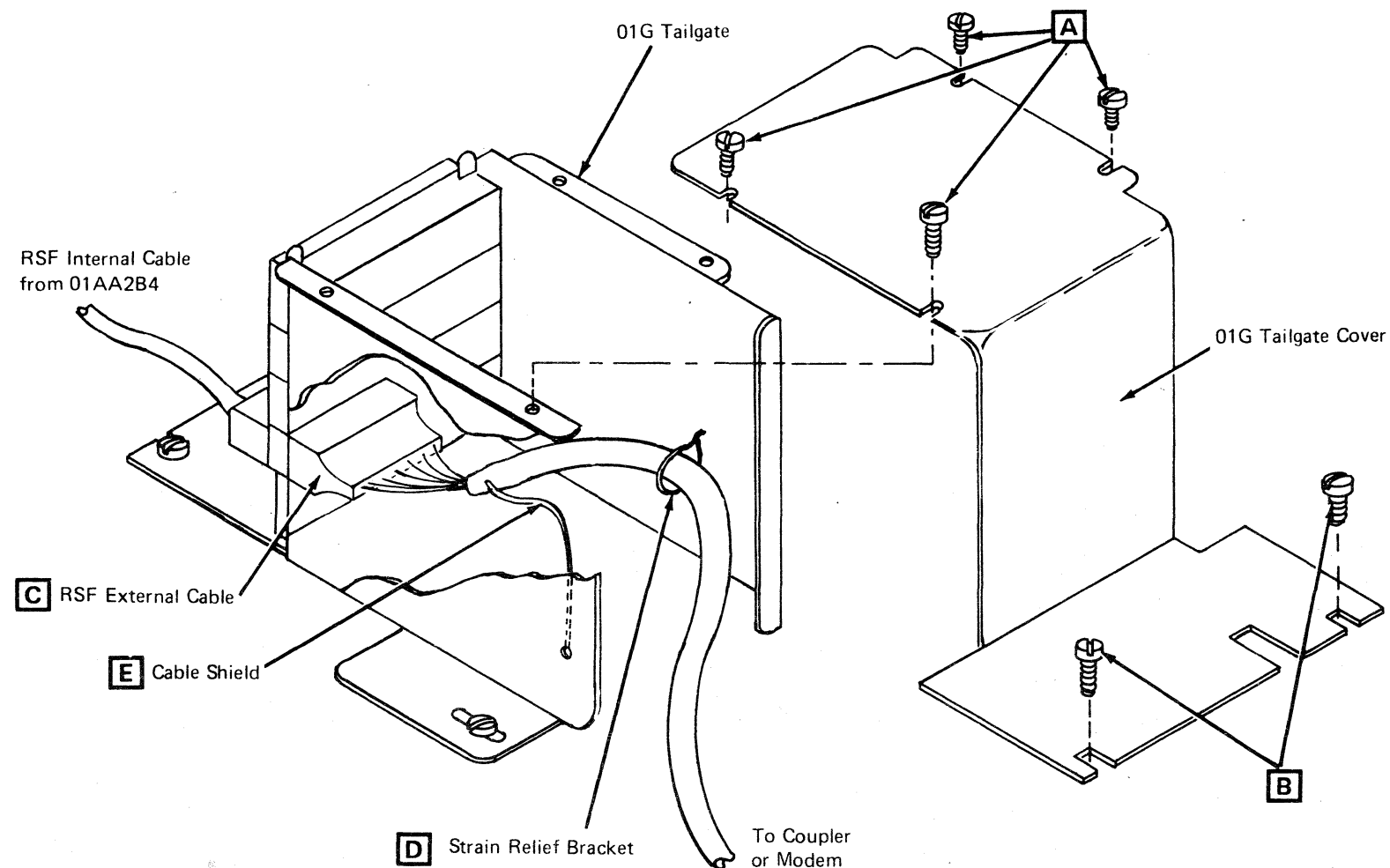
- For external cable part 8482930 perform step 7.2.
- For external cable part 8482931 perform step 7.2.
- For external cable part 8482934 perform step 7.3.
- For external cable part 8482933 perform step 7.4.
- For external cable part 4109531 perform step 7.5.

7.2 ... Use the following steps to install external cables:

- A. Part 8482931 - *U.S.A. and Canada*,
or
- B. Part 8482931 - *Japan*
or
- C. Part 8482930 - *External Modem*:

1. Locate 01G tailgate; see *Figure 1*.
2. Remove 01G tailgate cover by removing screws **A** and **B**.
3. Connect RSF external cable **C** in 01GA2 as shown.
4. Install strain relief bracket **D**.
5. Connect cable shield **E** to 01G tailgate.
6. Route RSF external cable through opening under 01G tailgate.
7. Reinstall 01G tailgate cover.
8. Do one of the following to complete the RSF external cable installation:
 - A. To connect external cable part 8482931 - *U.S.A and Canada*, first connect adapter (part 1853134), and then see your coupler instructions.
 - B. To connect external cable part 8482931 - *Japan*, see BM 1864633.
 - C. To connect external cable part 8482930 - *external modem*, see your modem instructions.

9. Continue with step 7.6.

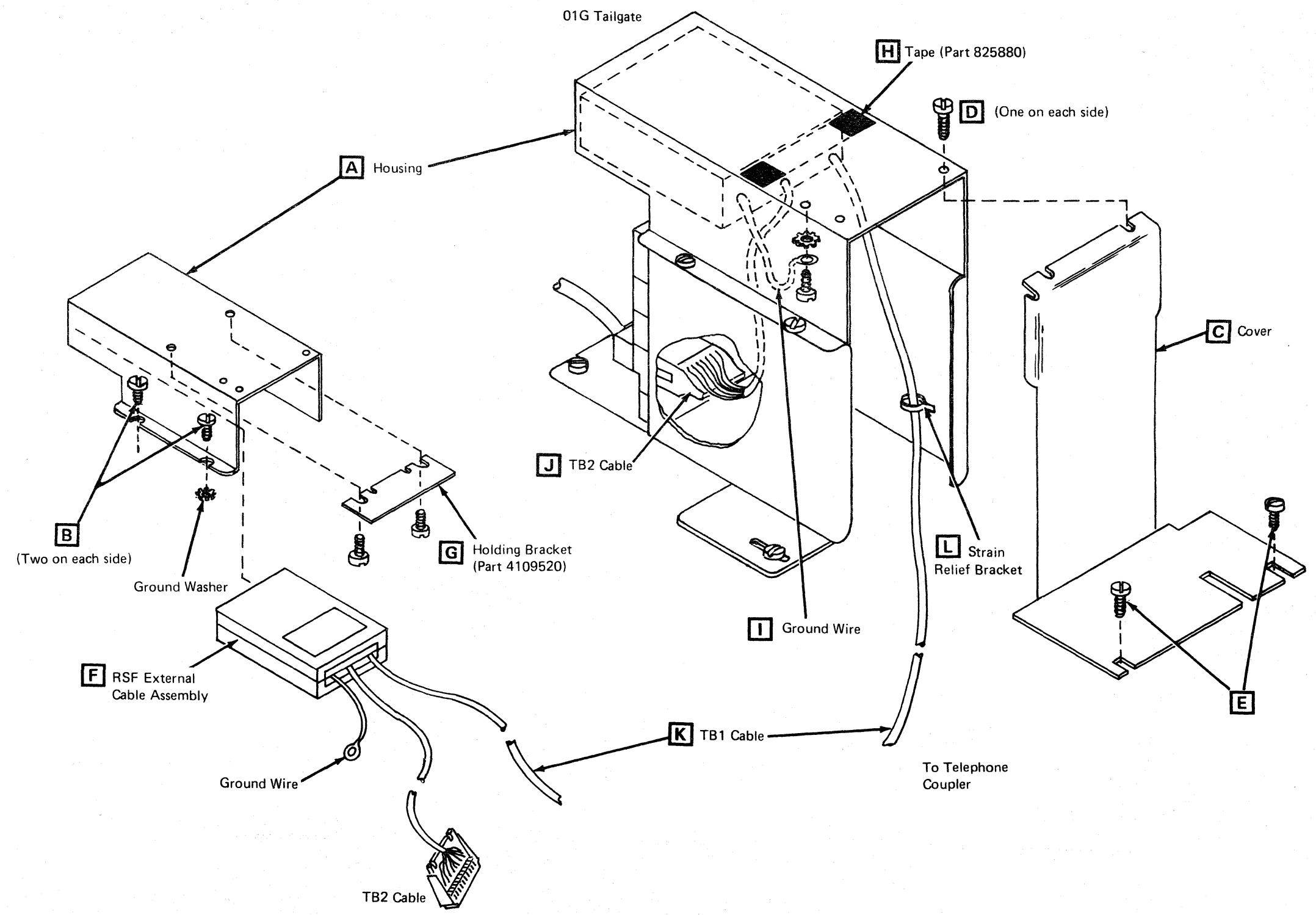


Model Groups 1 and 2

EC 379607 05Jun81	PN 5666440	48 055
EC 379814 02Oct81	1 of 4	

7.3 ...Use the following steps to install external cable part 8482934 - World Trade.

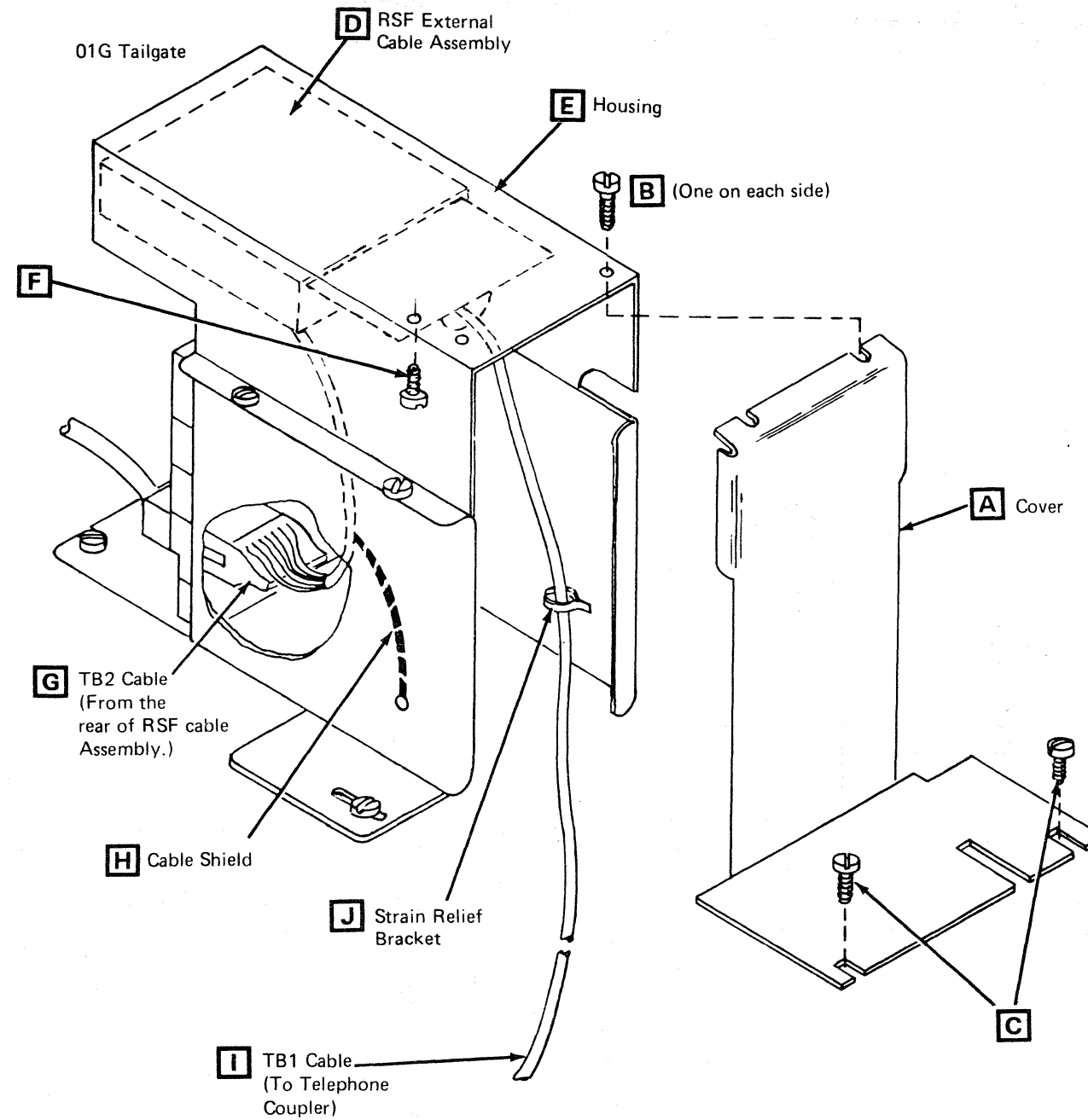
1. Locate O1G tailgate, see Figure 1.
2. Remove housing **A** and cover **C** by removing screws **B**, **D**, and **E**.
3. Place the RSF external cable assembly **F** in housing **A**.
4. Install holding bracket **G** by using two screws (part 1621020).
5. Place tape **H** over the portions of the bracket screws extending out the housing **A**.
6. Install ground wire **I** to housing.
7. Reinstall housing **A** by using screws **B**.
8. Install TB2 cable **J** to O1G tailgate.
9. Route TB1 cable **K** through opening below the O1G tailgate to location of telephone coupler.
10. Connect strain relief bracket **L**.
11. Reinstall O1G tailgate cover **C** by using screws **D** and **E**.
12. To complete the RSF external cable installation contact your telephone company representative. Wiring connections are shown in *Volume 13/16, Service Aids (Section 14)*, page 14 545, under "Line Plate Configuration."
13. Continue with step 7.6.



Model Groups 1 and 2		
EC 379607 05Jun81	PN 5666440	48 056
EC 379814 02Oct81	2 of 4	

7.4 ...Use the following steps to install external cable part 8482933 - United Kingdom

1. Locate 01G tailgate, see Figure 1.
2. Remove the cover **A** by removing screws **B** and **C**.
3. Push the RSF external cable assembly **D** in housing **E**.
4. Install the mounting screw **F** (part 1621199) as shown.
5. Install the rear part **G**, of the cable assembly **D**, to 01G tailgate as shown.
6. Connect the cable shield **H** to 01G tailgate.
7. Route the front part **I** of the cable assembly through the opening below the 01G tailgate, and then to the location of telephone coupler.
8. Connect strain relief bracket **J**.
9. To complete this cable installation see your modem instructions.
10. Reinstall the cover **A** by using screws **B** and **C**.
11. Continue with step 7.6.

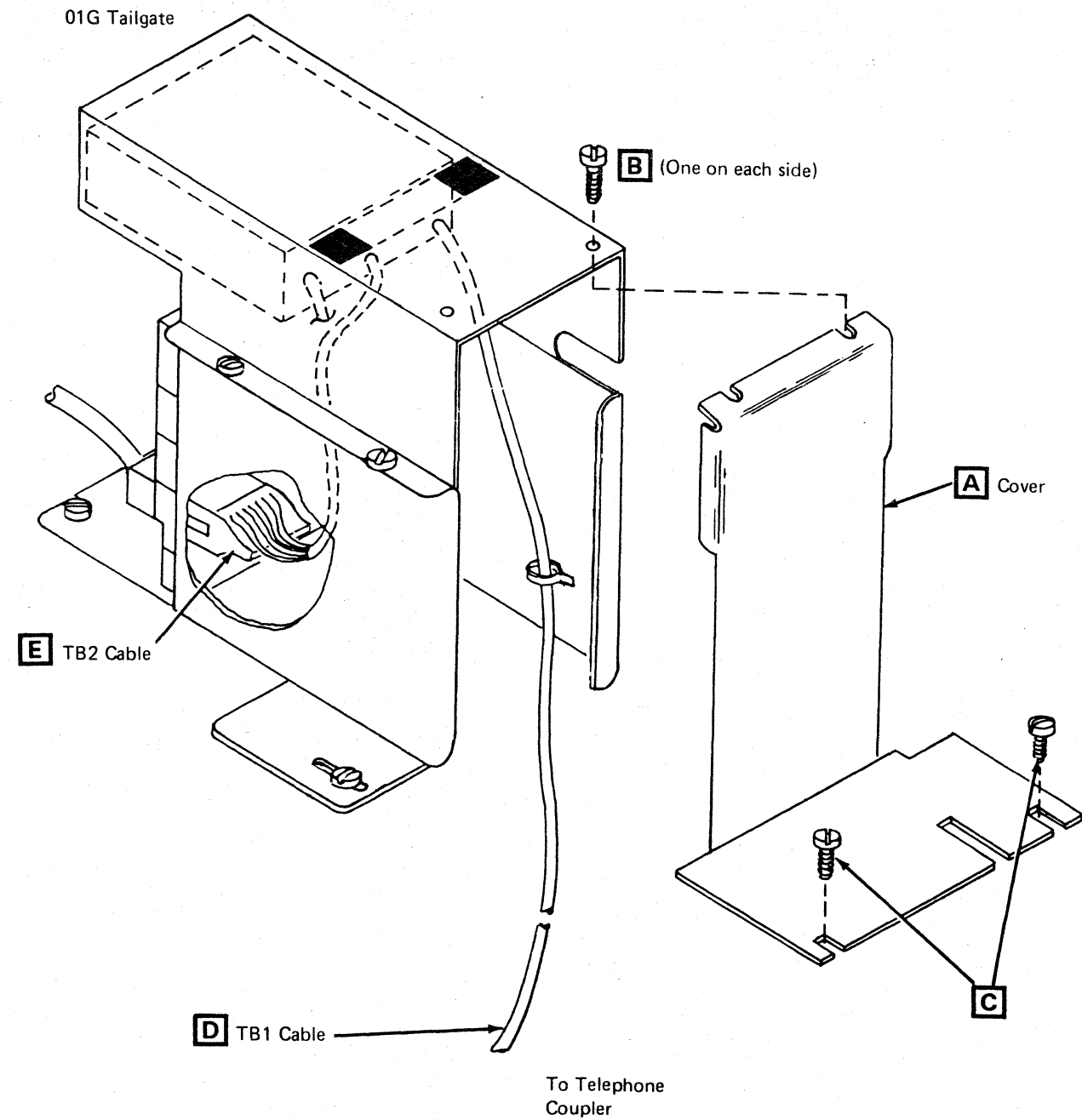


Model Groups 1 and 2

EC 379607 05Jun81	PN 5666440	48 057
EC 379814 02Oct81	3 of 4	

7.5 ...Use the following steps to complete the installation of external cable part 4109531 - U.S.A.

1. Remove the cover **A** by removing screws **B** and **C**.
2. Route TB1 cable **D** down through the opening below the 01G Tailgate, and then to the telephone coupler.
3. Ensure that the TB2 cable **E** is properly seated in the connector receptacle.
4. Reinstall the cover **A** by using screws **B** and **C**.
5. Plug the TB1 cable connector **D** in the telephone coupler.
6. Continue with step 7.6.



Model Groups 1 and 2

EC 379607 05Jun81	PN 5666440	48 058
EC 379814 02Oct81	4 of 4	

7.6 ...Match the external cable assembly part number (that you are installing) to one of the instruction groups in Figure 8. Perform the instruction group that matches.

FIGURE 8

<p>A. External Cable (Part 8482931), Adapter (Part 1853134) - U.S.A and Canada</p> <p>1. Verify that card (part 8526485) is at 01AA2L2. If not, get the card from your local tool supply.</p> <p>2. Obtain card (part 8564508 or 1756001) from 01AA2K4 or from your local tool supply.</p> <p>3. Set all Rocker switches to Off position.</p> <p>4. Set Rocker switch K to On position.</p>		<p>5. Using the "Transmit DBM" chart in <i>Figure 9</i>, match Rocker switches A through I to levels specified on the coupler. (X=On)</p> <p>6. If no level is shown, use the -8 dbm settings.</p> <p>7. Install the card in 01AA2K4.</p> <p>8. Continue with step 8.0a.</p>	
<p>B. External Cable (Part 4109531) - U.S.A</p> <p>1. Verify that card (part 8526485) is at 01AA2L2. If not, get the card from your local tool supply.</p> <p>2. Obtain card (part 8564508 or 1756001) from 01AA2K4 or from your local tool supply.</p> <p>3. Set all Rocker switches to Off position.</p>		<p>4. Using the "Transmit DBM" chart in <i>Figure 9</i>, match Rocker switches A through I to the 0 dbm Level. (X=On)</p> <p>5. Install the card in 01AA2K4.</p> <p>6. Continue with step 8.0a.</p>	
<p>C. External Cable (Part 8482931) - Japan</p> <p>1. Verify that card (part 8526485) is at 01AA2L2. If not, get the card from your local tool supply.</p> <p>2. Obtain card (part 8564481 or 1756011) from 01AA2K4 or from your local tool supply.</p> <p>3. Set all Rocker switches to Off.</p> <p>4. Set Rocker switches AA, BB, CC, DD, N, and M to On.</p>		<p>5. Using the "Transmit DBM" chart in <i>Figure 10</i>, match Rocker switches A through H and R to levels shown on the coupler. (X=On)</p> <p>6. If no level is shown, use the -8 dbm settings.</p> <p>7. Install the card in 01AA2K4.</p> <p>8. Continue with step 8.0a.</p>	
<p>D. External Cable (Part 8482934) - World Trade</p> <p>1. Verify that card (part 8526485) is at 01AA2L2. If not, get the card from your local tool supply.</p> <p>2. Obtain card (part 8564479 or 1756007) from 01AA2K4 or from your local tool supply.</p> <p>3. Set all Rocker switches to Off.</p> <p>4. Set Rocker switches I, J, K, P, and N to On.</p>		<p>5. Using the "Transmit DBM" chart in <i>Figure 10</i>, match Rocker switches A through H and R to levels specified on the coupler. (X=On)</p> <p>6. If no level is shown, use the -8 dbm settings.</p> <p>7. Install the card in 01AA2K4.</p> <p>8. Continue with step 8.0a.</p>	
<p>E. External Cables (Part 8482930) or (Part 8482933) - External Modems</p> <p>1. Verify that card (part 8526485) is at 01AA2L2. If not, get the card from your local tool supply.</p> <p>2. Obtain card (part 5864668 or 5864660) from 01AA2K4 or from your local tool supply.</p>		<p>3. Verify that positions D and F in <i>Figure 11</i> have jumpers installed as shown.</p> <p>4. Install the card in 01AA2K4.</p> <p>5. Continue with step 8.0a.</p>	

FIGURE 9

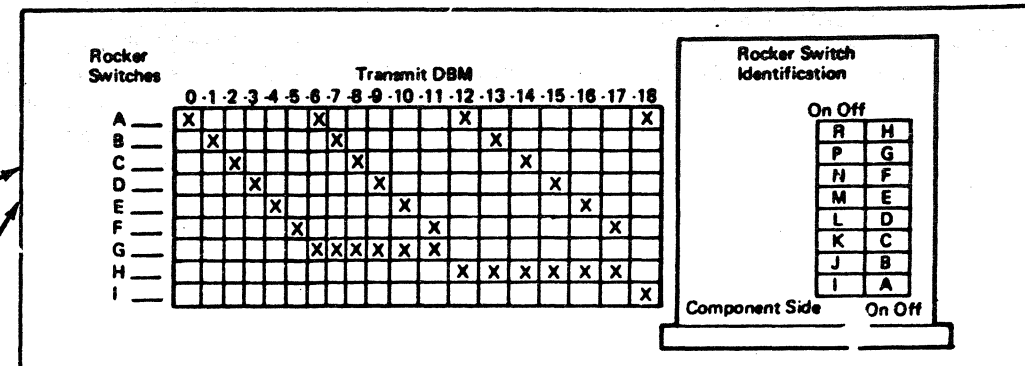


FIGURE 10

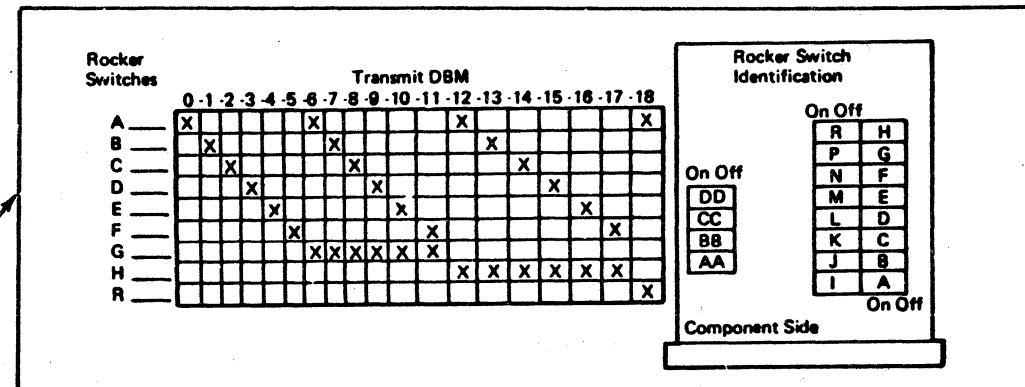
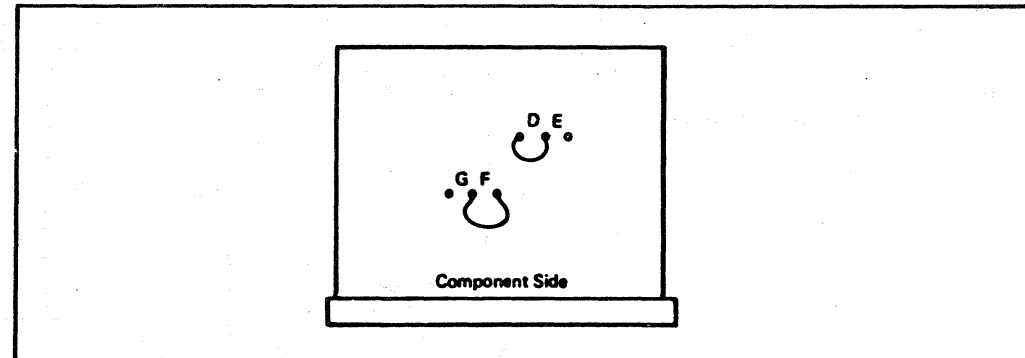


FIGURE 11



Model Groups 1 and 2

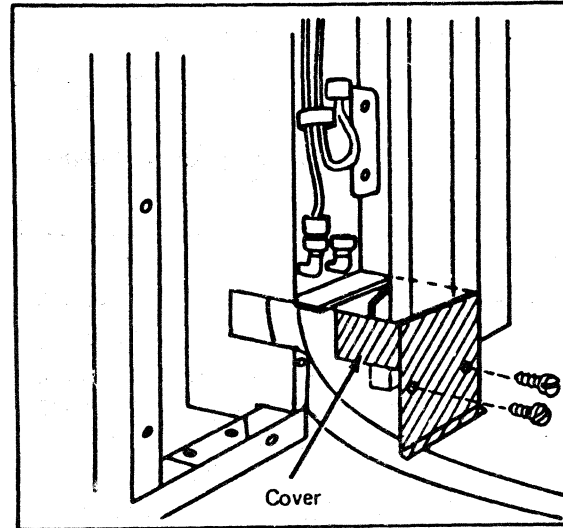
EC 379814 02Oct81	PN 2676048	48 061
EC 379837 28Jun82	1 of 3	

8.0a INSTALL FINAL HARDWARE

8.1a ...Install the line-cord cover (part 1310059) over the power cord filter box:

1. Unpack the line-cord cover, two screws (part 1621190), and two washers (part 2125963).
2. Install the line-cord cover as shown in the figure below.

Note: Ensure that any tape that blocks the screw holes for the line-cord cover is removed.



8.2a ... Install plate (part 6831473):

1. Unpack the plate and five screws (part 1621198).
2. Install the plate just to the left of the line-cord cover, which was installed in step 8.1.

8.0b POWER PLUG INSTALLATION PROCEDURE

This procedure applies only in countries where the machine is shipped without a plug on the power cable. Go to the next page if this procedure does not apply or does not need to be performed.

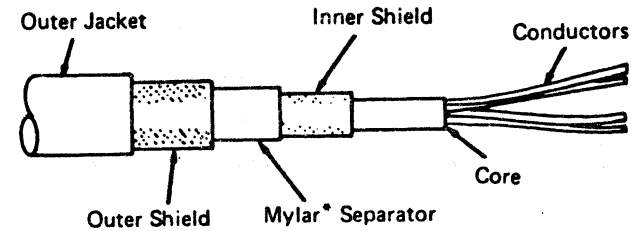
Note the following two points *carefully*:

- Use your own discretion to ensure proper assembly of the cable and plug. This procedure is to be used as a guide. Because of the various plugs used, the dimensions are for reference only.
- The inner shield must be properly terminated at the plug to make effective shielding of the power cable.

****PREPARE POWER CABLE FOR PLUG****

Review the diagram below before starting this procedure. Also refer to this diagram during the procedure.

POWER CABLE COMPONENTS



*Trademark of E.I. duPont de Nemours & Co., Inc.

1. Remove about 38 mm (1-1/2 inches) of the outer jacket, starting at the end of the cable.
2. Remove the outer shield to the same length as the outer jacket.
 - The Mylar separator should be exposed.
3. Wrap the part of the cable where the outer jacket and the outer shield meet with one full turn of electrical tape.
 - This is done to insulate the outer shield from the other parts of the power plug.

Warning: Do not cut the inner shield.

4. Remove about 25 mm (1 inch) of the Mylar separator.
5. Unbraid, loosen, and carefully pull back the strands of the inner shield.
6. Carefully lay the inner shield over the outer jacket of the power cable. Then wrap tape around the shield for temporary protection.
7. Remove a minimum of 19 mm (3/4 inch) of the core.

Note the following points:

- The outer shield must be insulated from the power plug, equipment ground (earth) wire, and conduit, as done in step 3 with the electrical tape.
- The outer shield must be grounded only at the machine end of the power cable.
- The inner shield should be grounded through the shell of the power plug to the branch circuit conduit. The inner shield must make contact with the power plug shell all the way around (360 degrees).

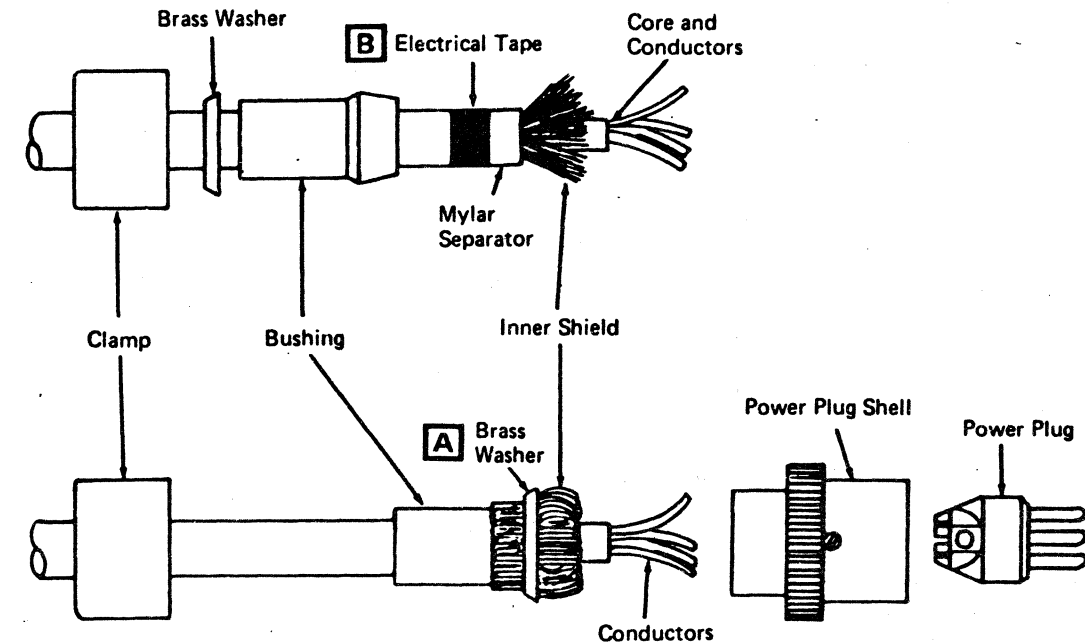
8. Continue to the next procedure, "Install Power Plug."

****INSTALL POWER PLUG****

The following steps show how to attach one type of power plug.

Review "Power Plug Assembly" before starting the procedure; then refer to it during the procedure.

POWER PLUG ASSEMBLY



1. Install the clamp, brass washer, and bushing over the end of the power cable as shown.
2. Remove the tape from the inner shield, and then loosen and spread the shield strands.
3. Slide the bushing up against the inner shield (where the inner shield and the Mylar separator meet).
4. Carefully lay the inner shield over the bushing.
 - Be sure that the strands of the shield are spread evenly over the bushing surface.
5. Move the brass washer over the shield and up against the mating surface of the bushing as shown **A**.
6. Wrap one full turn of electrical tape around the shield **B**, and then trim the exposed strands of the shield.
7. Move the clamp tightly against the brass washer.
8. Complete the installation of the power plug by installing the power plug shell and connecting the conductors to the terminals of the power plug. To identify parts, see the "Power Plug Assembly."
 - Ensure that the shell makes contact with the shield all the way around (360 degrees).
 - Ensure that the ground wire is longer than the other wires.

Model Groups 1 and 2

EC 379814 02Oct81	PN 2676048	48 062
EC 379837 28Jun82	2 of 3	

8.0c PREPARE FOR PARTIAL POWER-UP

Warning: Before powering on, perform the following checks

1. Ensure that all cards are properly seated.
2. Ensure that all top card connectors (TCC) are properly seated.
3. Ensure that all card mounting screws are tight.
4. Ensure that all internal cables are properly seated.
 - Loose connectors can burn.
5. Ensure that the system wall breakers are off.

8.1c... Set all 4341 circuit breakers on.

8.2c... Check frame grounding:

- Verify the continuity from the metal cover of the 4341 power plug to each frame of the processor.
 - If there is no plug, verify the continuity between the green/yellow wire and each frame.

Note: Interframe grounding is done in step 4.5.3.

DANGER

Read and perform the checks in General/Safety CEM 59 on page 48 015 of this manual before continuing.

8.3c... Connect the main and console power cords to their outlets.

- Ensure that the main power cord shield is connected to the customer-supplied shield at the outlet.

9.0 PREFORM MSS POWER-ON CHECKS AND DIAGNOSTICS

Note: If machine failures occur while performing the following instructions, go to the Start MAP or the MAP indicated on the screen. After correcting the failure, return to these instructions.

CAUTION

The UEPO interlocking hardware must be released before switching from the off position to the enable position.

9.1... Ensure the UEPO switch (on frame 01) is in the POWER ENABLE position, and then turn on the wall power.

9.2... Set the CE MODE to ON and POWER OFF switch to Normal:

- Verify the following:
 - a. All SP DISPLAY indicators are on.
 - b. The basic check light is on.
 - c. The two power indicators: 5V/PS101 and 24V/PS101, are on.

9.3... Press POWER LAMP TEST switch on the CE panel. Verify that the remaining power indicators are on.

9.4... With no diskette in the diskette drive, press the POWER ON switch on the CE panel.

- After 30 seconds, press and hold switch C on the CE panel. Verify that all SP DISPLAY indicators are off.

9.5... The Stop Word 16BC indicates that the SP ROS Resident Diagnostics ran error-free. To check for Stop Word 16BC at the CE panel:

1. Clear the display by pressing switches A and C at the same time.
2. Display the high-order byte of the Stop Word by pressing switch B.
3. Display the low-order byte of the Stop Word by pressing switches A and B at the same time.

9.6... Run Extended MSS diagnostics:

1. Turn on all displays and/or printers, and ensure that all device TEST switches are set to NORMAL.
2. Install the DIAG4 diskette in the diskette drive.
3. Perform an SP IML by pressing the D switch on the CE panel.
4. When the MSS Diagnostic Selection screen displays:
 - Key in A0 and press ENTER.
 - For JAPAN/ENGLISH keyboard:
 - Key in A, PF10 and press ENTER.

The end of the test is indicated when the TEST xx RUNNING message is cleared.

5. Run the Display-Print test:

- Key in C0 and press ENTER.
- For JAPAN/ENGLISH keyboard:
 - Key in V, PF10 and press ENTER.

A reference code of F8C103F8, F8C203F8, or F8C303F8, respectively, is displayed if an optional device is not installed, not ready, or not powered up. To bypass each device causing the reference codes, you must do one of the following:

- For machines with a microcode EC level up to and including 154322:
 - Key in BB
 - or
 - NN if using JAPAN/ENGLISH keyboard.
- For machines with any other microcode EC level, (including JAPAN/ENGLISH):
 - Key in G and press ENTER.

6. Perform RSF adapter test:

Note: If RSF is not installed, continue with step 9.7.

A. External cable (Part 8482930); Place wrap plug on the end of cable; then:

- Key in E0 and press ENTER.
 - For JAPAN/ENGLISH keyboard:
 - Key in E, PF10 and press ENTER.
- (In Australia you MUST run this test.)

B. All other RSF installations (internal modems):

- Key in D0 and press ENTER.
- For JAPAN/ENGLISH keyboard:
 - Key in D, PF10 and press ENTER.

The RSF adapter test is now running. The end of the test is indicated when the TEST xx RUNNING message is cleared.

9.7... Perform an SP IML:

1. Mount the FUNCT diskette.
2. Press the D switch on the CE panel.
 - Displays the Partial Power Up/Down screen.

Note: Ignore any configuration messages that may be displayed during this step. The System Configuration screen (QFS) is updated in the following steps.

Notes:

1. Ignore any configuration messages that may be displayed during this step. The System Configuration screen (QFS) is updated in the following steps.
2. If the machine does not have the RSF feature and a 4341 Processor Unit Analysis diskette as part of the diskette package, continue with step 9.9.

9.8... Update the Service Request IBM Data screen:

1. Ensure that the FUNCT diskette is mounted, then press the MODE SEL key.
 - Displays the Gener. Selection screen.
2. Key in PA and press ENTER.
 - Displays the Problem Analysis screen.
3. Key in 4 and press ENTER.
 - Displays the Service Request IBM Data screen.
4. Invoke your Support Structure to obtain the region/country code, primary and backup system phone numbers, routing codes, and to register the machine.

Note: If the system is being installed in the U.S.A., primary and backup system phone numbers and routing codes are not required.
5. Key in information in all blank fields.
 - Some information should be obtained from the customer.
 - Line Speed defaults to 1200BPS; 600BPS must be selected for some World Trade countries.
 - Data Block Size defaults to 2Kb.
 - Line Plate Installed defaults to no (N).
6. Verify all entries, press ENTER.
 - Displays Service Request and Send Service Information screen.
7. Key in information in all blank fields.
8. Perform Action Steps 1 and 2, which are on the screen.
 - This action opens a incident with RETAIN and a data transmission test is done. The data that is transmitted does not represent any meaningful status of the machine at this point.
9. Press the MODE SEL key; then go to step 10.2.
 - This cancels option 4 and displays the General Selection screen.

9.9... Invoke your Support Structure for incident report.

Model Groups 1 and 2

EC 379814 02Oct81	PN 2676048	48 063
EC 379837 28Jun82	3 of 3	



10.0 PREPARE FOR FULL POWER-UP

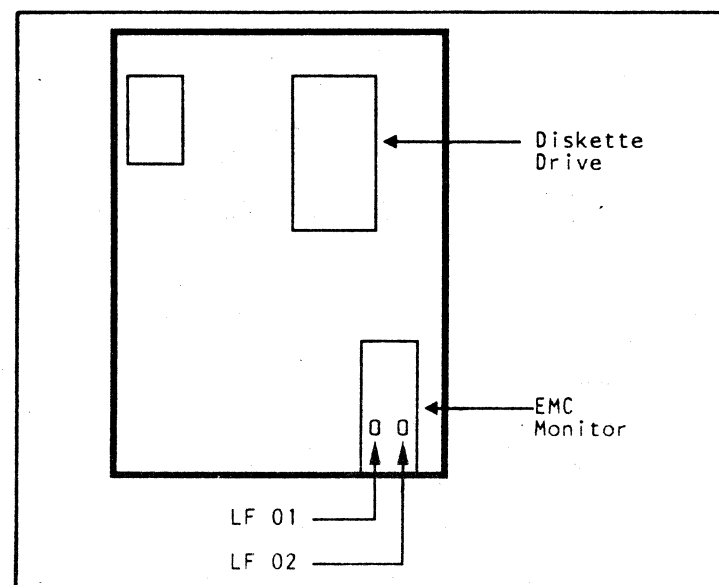
Notes:

1. If necessary, refer to other volumes of the 4341 documentation, as suggested in the following steps.
2. In the following steps, the unmounted FUNCT diskette is referred to as the **second FUNCT diskette**. Ensure that the two FUNCT diskettes are kept separated to ensure that the mounted FUNCT diskette receives all logs and other update data.

- 10.1... Press the **MODE SEL** key. The General Selection screen displays.
- 10.2... Key in **QFS** and press **ENTER**. The System Configuration screen displays.
- Note:** The fields contained in this note are variable. Do not verify these during step 10.3 because they are updated in the steps that follow:
- **ROCF AUTO-ANSWER MODEM**
 - **CHANNEL TO CHANNEL**
 - **CONSOLE LANGUAGE CODE**
 - **CONSOLE DEVICES**
 - **I/O POWER-UP TIMEOUT.**
- 10.3... Compare the fields on the System Configuration (QFS) screen with the QFS screen hard copy shipped in the same package as the system diskettes. If the fields are incorrect (except those indicated in the note above) invoke your support structure.
- 10.4... If the machine being installed has the Remote Operator Console (ROCF), enter an **X** next to **ROCF AUTO-ANSWER MODEM** on the QFS screen.
- 10.5... If the machine being installed has frame 03, enter an **X** next to **CHANNEL TO CHANNEL:** on the QFS screen.
- 10.6... Next to **CONSOLE LANGUAGE CODE:**, enter the language group code that applies to the machine being installed.
- Note:** For language group code definitions, go to Volume 13/16, Service Aids, page 14 015, and see "System Configuration Screen (QFS)."
- 10.7... Set up the System Configuration screen for the **CONSOLE DEVICES:**
1. For each installed console display and/or printer, put an **X** on the **INSTALLED** line under the socket number where it is installed on the 01F tailgate; then press **ENTER**.
01F tailgate sockets 0, 1, 2, and 3 compare to **NO**, **N1**, **N2**, and **N3**, respectively.
 2. For each printer, put an **X** in the **HARDCOPY** row (under the socket where it is installed on the 01F tailgate); then press **ENTER**.
 3. Press the **POWER ON/IML** key at the OCP. When the Partial Power On screen displays, press **MODE SEL**. The General Selection screen displays.

- 10.8... Display the Program Load screen by keying in **QL** and pressing **ENTER**; then:
1. Enter the addresses (supplied by the customer) of the console devices.
 2. If a printer is attached, key in **Kx**. **x** is the 01F tailgate socket where the printer is connected.
- 10.9... Display the UCW/Device Directory screen by keying in **QDU** and pressing **ENTER**.
- Note:** Do not **IML** the processor while performing the UCW assignment procedures during this installation.
- 10.10... Make the UCW Directory; see *Volume 13/16, Service Aids*, and use the "UCW Assignment Procedures."
- 10.11... Perform the electromagnetic compatibility (EMC) test:
1. Press **MODE SEL** key.
 2. Key in **MP** and press **ENTER**.
 3. Follow screen messages containing EMC related references; then return.
- 10.12... Press the **POWER OFF** switch at the OCP.
- 10.13... If you have the CTCA feature, obtain the customer information to perform the following steps:
1. Setup the card at 03A A1L2 for correct priority. For directions refer to logic page XX941.
 2. Setup the address cards at 03A A1N2 and R2. For directions, refer to logic page XX942.

FRAME 01 (SIDE VIEW)



11.0 PERFORM PROCESSOR DIAGNOSTICS AND FULL POWER-UP

Note: If machine failures occur while performing the following instructions, go to the **Start MAP** or to the **MAP** indicated on the screen. After correcting the failure, return to these instructions.

- 11.1... Check processing unit voltages:
1. Perform voltage checks by using **MAP 1003, Entry point A**. Then return to the following step.
 2. File the **VOLTAGE PROFILE** hard copy in front of *Volume 30*.
- 11.2... Verify that the clock values on the hard copy match the FUNCT diskette as follows:
- Note:** The hard copy is shipped in the same package as the diskettes.
1. Press the **MODE SEL** key; then key in **QCM** and press **ENTER**.
 2. Key in **QVW2B** and press **ENTER**.
 3. Key in **QVY22** and press **ENTER**.
 4. Verify the screen displayed with the **CLOCK RING** hard copy (shipped with the machine).
 5. If they are different, update the **CLOCK SKEW DATA** by using the **Clock Scan Ring** hard-copy figures as a reference. For aid, go to *Volume 13/16, Adjustments*, and see the "Initial Clock Settings" procedure.
- 11.3... Transfer information to the second FUNCT diskette, **DIAG4** diskette, and **PROCESSING UNIT ANALYSIS DISKETTE (PUAD)** as follows:
1. Display the Module Transfer screen:
 - Key in **QFM** and press **ENTER**.
 - **X**: Selects a modules for transfer.
 - **_** (underscore): Selects the modules *not* for transfer.
 2. Select only modules (**8001-8004**) and (**0001-20A0**) for transfer:
 - All module are automatically selected for transfer.
 - Enter an **_** (underscore) next to the modules you do not want to transfer.
- Notes:**
- a. Observe all screen messages.
 - b. The **FROM** and the **ORIGINAL** disk is the **FUNCT** diskette already mounted.
- WARNING:** The **STARTD** transfer option only transfers part of the information when the **ENTER** key is pressed. Follow screen messages until you receive a **DONE-PUT IN ORIGINAL DISK** message.

3. Update the **TO** diskette:
 - Key in **STARTD** next to **SELECTION: M** and press **ENTER**.
 - Mount **TO** disk and press **ENTER**.
 4. Swap between the **FROM** disk and the **TO** disk as the screen messages indicate.
 5. Repeat steps 2-4; use **DIAG4** as the **TO** disk.
 6. Repeat steps 2-4; use **PUAD** as the **TO** disk.
- 11.4... Run Basic and MSMD diagnostics:
1. Ensure that the channel bus and tag terminators are installed.
 2. Ensure that the **CE MODE** switch is in the **ON** position.
 3. While holding the **ALT** key down, press the **DIAG** key.
 4. Select Option **A** from the Diagnostic Mode-General Selection screen and press **ENTER**.
 5. Mount each diagnostic diskette when requested by the Display screen.
 - The approximate run time for each diagnostic diskette is:
 - DIAG1** 7 minutes
 - DIAG2** 11 minutes
 - DIAG3** 15 minutes
 - DIAG4** 8 minutes.
- 11.5... Run **PUAD** diskette:
1. Put the functional diskette in the diskette drive.
 2. Press the **MODE SEL** key.
 3. Key in **PA** and press **ENTER**.
 4. Key in **3** and press **ENTER**.
 5. Follow directions displayed on the screen.
- 11.6... Press the **POWER OFF** switch on the CE panel then return it to the **NORMAL** position.
- 11.7... Set the **CE MODE** switch to its **NORMAL** position.
- 11.8... Power up the processor.
1. Ensure the functional diskette is in the diskette drive.
 2. Press **POWER ON/IML** on the OCP.
 - The Program Load (**QL**) screen is displayed.
 - The **QL** screen indicates that the power-on is complete.
- 11.9... **IML** the processor by keying in **M** and pressing **ENTER**.

Model Groups 1 and 2

EC 379837	28Jun82	PN 5666441	48 065
EC 379839	30Dec82	1 of 2	

11.10... Make new copies of the following screens. For direction on screen copy procedures, go to *Volume 13/16, Service Aids*, and see "Screen Copy Options."

1. Set the **CE MODE** switch to the **ON** position.
2. Display the System Configuration screen *QFS* screen, and then make a copy.
3. Display the UCW screens *QDUC* and make copies of all UCW screens.
4. If you do not have a printer on this system, save all the customer-supplied data and hard copies (shipped with the processor diskettes).
5. File any hard copies in front of *Volume 30*.
6. Press the **MODE SEL** key.

12.0 PERFORM CHANNEL-TO-CHANNEL (CTCA) DIAGNOSTICS

12.1... If you do not have frame 03 (CTCA feature), continue with 13.0.

Note: During the next step, the last IML in the Channel-to-Channel Adapter Test is not necessary.

12.2... Cable and run the CTCA diagnostics:

1. Go to *Volume 17, Features*, and perform "CTCA TEST RUN PROCEDURE."

13.0 INSTALL INTERFACE CABLES

- 13.1... Set the **CE MODE** switch to the **NORMAL** position, and press **POWER OFF**.
 - 13.2... Plug the SPI cables (also known as *EPO cables*) in the Standard Power Interface (SPI) box (gate 01D):
 - a. Locate gate 01D, see Figure 1 on page 48 020.
 - b. Start with SPI panel 01, which is closest to the outer side of frame 01.
 - c. Remove the single yellow wire connector from its plug position.
 - d. Plug the SPI cables in the direction shown by *Figure 12* until all SPI cables are plugged.
 - e. Plug the single yellow wire connector in the position following the last plugged SPI cable.
 - 13.3... Run "Channel Cable Wrap Test (CWT)," *Volume 17, page 36 071*.
 - 13.4... Connect channel cables as shown on the 01E tailgate label. To prevent cable interference, install the channel-0 cables before the channel-1 cables.
- Warning:** The terminators in each channel must be: tag (part 2282676) and bus (part 2282675).
- 13.5... If CTCA feature is installed, connect the interface cables as shown on the 03E tailgate label.

13.6... If a device being installed has an interrupt cable that must be connected to the 4341, go to *Volume 13/16, Service Aids*, page 14 241, and perform the procedure "Connect External Interrupt Cable," and then return.

14.0 PERFORM SYSTEM DIAGNOSTICS

14.1... Ensure that the first FUNCT diskette is mounted in the diskette drive, and then press the **POWER ON/IML** key.

- A message on the Program Load (QL) screen indicates when the power-on is complete. If a reference code displays, go to the suitable MAP.

14.2... Run ST4300. For run details, go to *Volume 17, System Test*, and see "ST4300."

1. Ready all attached I/O devices.
2. Setup the Program Load (QL) screen for automatic IML during the power-on process; also select the *S/370* mode:
 - a. Key in *QLX1* and press **ENTER**.
 - Enables an IML at power-on time.
 - b. Key in *IW1* and press **ENTER**.
 - Selects *S/370* mode.
 - c. Key in *M* and press **ENTER**.
 - IMLs the processor to store the selections.

3. Load ST4300 and run for ten minutes. While ST4300 is running:

- a. Visually check that meters are running on the devices that are operating.
- b. Verify that these same meters do not run when the **STOP** key is pressed on the OCP.

Notes:

1. If all the I/O units were installed earlier, checking one meter on a channel is enough. However, all newly installed I/O device meters must be checked.
2. If an attached device meter fails to meet these requirements, go to *Volume 13/16, Service Aids*, and see "Metering Service Procedure."

4. Ensure that the same IML process is performed from both FUNCT diskettes:

- a. Mount the second FUNCT diskette.
- b. Repeat step 2, and then continue with step 5.

5. Load ST4300, and run for ten minutes. While ST4300 is running:

- a. Visually check that meters are running on the devices that are operating.

14.3... Ensure that the **CE MODE** switch is set to the **NORMAL** position.

14.4... Install the machine covers.

15.0 END OF INSTALLATION

15.1... If possible, have the customer run the system using their normal job programs.

15.2... If you have installed more than one machine in this system, report your time accurately on each machine. Accurate reports aid in prompt product improvement.

15.3... Insert processing unit analysis diskette (PUAD) in pocket on rear cover of "IBM 4341 Processor Problem Analysis Guide", form SA24-3925. Then place this guide in the door rack of processor.

15.4... Give customer appropriate documentation.

15.5... File all documents and complete any associated paper work.

16.0 RELOCATION PROCEDURES

16.1... Equipment location change:

By using the preceding sections on "Interframe Cables" and "When the Processor Arrives," you can disconnect the system for equipment location change.

Note: Ensure that the safety labels on the machine are in the language of the place where it is to be relocated.

16.2... Discontinuance:

By using the "IBM 4341 Unpack/Pack Instructions" with this "Installation Manual," you can disconnect and pack the system for shipment.

STANDARD POWER INTERFACE (SPI) PANEL

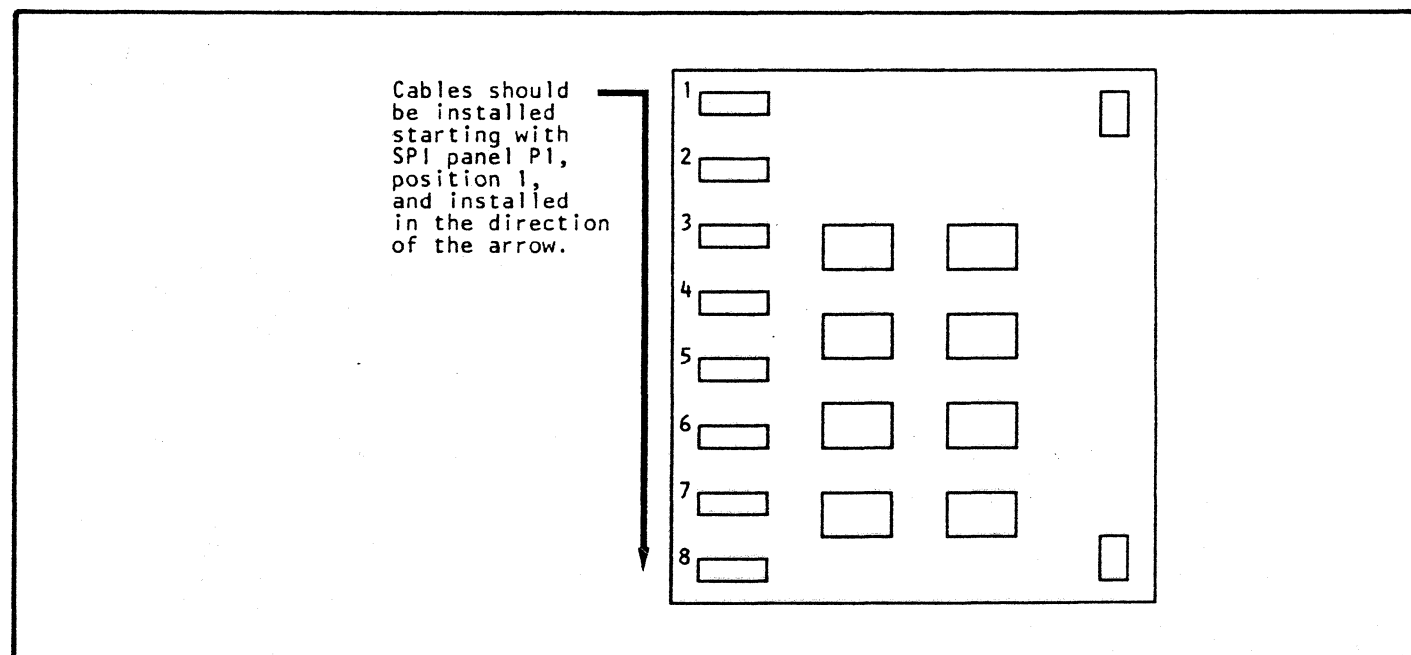


FIGURE 12

Model Groups 1 and 2

EC 379837 28Jun82	PN 5666441	48 070
EC 379839 30Dec82	2 of 2	

**EC DOCUMENT
READER'S
COMMENT
FORM**

This form may be used to communicate your views about this publication. They will be sent to the author's department for whatever review and action, if any, is deemed appropriate. Comments may be written in your own language; use of English is not required.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation whatever. You may, of course, continue to use the information you supply.

Comments:

Please fill in:

Subject: _____ Page No.: _____

Document Title: _____ P/N: _____

Number of latest Technical Update (if any) concerning this publication (EC): _____

Thank you for your cooperation
No postage stamp necessary if mailed
in the U.S.A.

**EC DOCUMENT
READER'S
COMMENT
FORM**

This form may be used to communicate your views about this publication. They will be sent to the author's department for whatever review and action, if any, is deemed appropriate. Comments may be written in your own language; use of English is not required.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation whatever. You may, of course, continue to use the information you supply.

Comments:

Please fill in:

Subject: _____ Page No.: _____

Document Title: _____ P/N: _____

Number of latest Technical Update (if any) concerning this publication (EC): _____

Thank you for your cooperation.
No postage stamp necessary if mailed
in the U.S.A.

EC 379600 30Jun80	PN 5666425	49 005
	1 of 2	

Fold and Tape

Please Do Not Staple

Fold and Tape



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 40 ARMONK, N.Y.

POSTAGE WILL BE PAID BY ADDRESSEE:

International Business Machines Corporation
Department K10
P.O. Box 6
Endicott, New York 13760



Fold

Fold

If you would like a reply, please print:

Your Name _____

Street Address _____

City _____

State _____ Zip Code _____



International Business Machines Corporation
Data Processing Division
1133 Westchester Avenue, White Plains, N. Y. 10604

IBM World Trade Americas/Far East Corporation
Town of Mount Pleasant, Route 9, North Tarrytown, N. Y., U. S. A. 10591

IBM World Trade Europe/Middle East/Africa Corporation
360 Hamilton Avenue, White Plains, N. Y., U. S. A. 10601

Fold and Tape

Please Do Not Staple

Fold and Tape

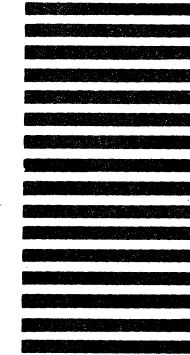


NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 40 ARMONK, N.Y.

POSTAGE WILL BE PAID BY ADDRESSEE:

International Business Machines Corporation
Department K10
P.O. Box 6
Endicott, New York 13760



Fold

Fold

If you would like a reply, please print:

Your Name _____

Street Address _____

City _____

State _____ Zip Code _____



International Business Machines Corporation
Data Processing Division
1133 Westchester Avenue, White Plains, N. Y. 10604

IBM World Trade Americas/Far East Corporation
Town of Mount Pleasant, Route 9, North Tarrytown, N. Y., U. S. A. 10591

IBM World Trade Europe/Middle East/Africa Corporation
360 Hamilton Avenue, White Plains, N. Y., U. S. A. 10601

EC 379600 30Jun80	PN 5666425	49 010
	2 of 2	