

**Maintenance Library**

**3115**

**Processing Unit  
Installation Manual**

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Date

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# Safety

## Personal Safety

Personal Safety cannot be over-emphasized. To ensure your safety and that of your co-workers, follow safety practices at all times.

### General Safety Practices

Become thoroughly familiar with the general safety practices and the procedures for artificial respiration that are outlined in CE Safety Practices, S 229-1264 reproduced on this page. This card is obtainable from IBM Distribution Center, East Simpsom Ferry Road, Mechanicsburg, Pennsylvania 17055, USA.

### System Safety Practices

**DANGER** Notices in Manual: Heed the **DANGER** notices given in the text of this manual.  
**Grounding:** Ground current can reach dangerous levels. Never operate the systems with the grounding conductors removed.  
**Line-powered Test Equipment:** Always ground line-powered test equipment before using it.  
**Machine Warning Labels:** Heed the warning labels that are placed in hazardous areas of the machine.

## Equipment Safety

Heed the **CAUTION** notices that are given in the text of this manual, otherwise the machine or the test equipment can be damaged.

## Emergency Information

Memorize location of fire extinguishers. Carbon dioxide (CO<sub>2</sub>) extinguishers are recommended for electrical fires.

Memorize the location of emergency exits.

Memorize the proper method and sequence for switching off all electrical power.

Make a note of emergency telephone numbers in case of accident or fire.

Accident ..... Fire .....

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## CE SAFETY PRACTICES

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

- You should not work alone under hazardous conditions or around equipment with dangerous voltage. Always advise your manager if you **MUST** work alone.
- Remove all power AC and DC when removing or assembling major components, working in immediate area of power supplies, performing mechanical inspection of power supplies and installing changes in machine circuitry.
- Wall box power switch when turned off should be locked or tagged in off position. "Do not Operate" tags, form 229-1266, affixed when applicable. Pull power supply cord whenever possible.
- 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:
  - Another person familiar with power off controls must be in immediate vicinity.
  - Rings, wrist watches, chains, bracelets, metal cuff links, shall not be worn.
  - Only insulated pliers and screwdrivers shall be used.
  - Keep one hand in pocket.
  - When using test instruments be certain controls are set correctly and proper capacity, insulated probes are used.
  - Avoid contacting ground potential (metal floor strips, machine frames, etc.—use suitable rubber mats purchased locally if necessary).
- Safety Glasses must be worn when:
  - Using a hammer to drive pins, riveting, staking, etc.
  - Power hand drilling, reaming, grinding, etc.
  - Using spring hooks, attaching springs.
  - Soldering, wire cutting, removing steel bands.
  - Parts cleaning, using solvents, sprays, cleaners, chemicals, etc.
  - All other conditions that may be hazardous to your eyes. **REMEMBER, THEY ARE YOUR EYES.**
- Special safety instructions such as handling Cathode Ray Tubes and extreme high voltages, must be followed as outlined in CEM's and Safety Section of the Maintenance Manuals.
- Do not use solvents, chemicals, greases or oils that have not been approved by IBM.
- Avoid using tools or test equipment that have not been approved by IBM.
- Replace worn or broken tools and test equipment.
- The maximum load to be lifted is that which in the opinion of you and management does not jeopardize your own health or well-being or that of other employees.
- All safety devices such as guards, shields, signs, ground wires, etc. shall be restored after maintenance.

KNOWING SAFETY RULES IS NOT ENOUGH  
 AN UNSAFE ACT WILL INEVITABLY LEAD TO AN ACCIDENT  
 USE GOOD JUDGMENT — ELIMINATE UNSAFE ACTS

11/71 S229-1264-2

- Each Customer Engineer is responsible to be certain that no action on his part renders product unsafe or exposes hazards to customer personnel.
- Place removed machine covers in a safe out-of-the-way place where no one can trip over them.
- All machine covers must be in place before machine is returned to customer.
- Always place CE tool kit away from walk areas where no one can trip over it (i.e., under desk or table).
- Avoid touching mechanical moving parts (i.e., when lubricating, checking for play, etc.).
- When using stroboscope — do not touch **ANYTHING** — it may be moving.
- Avoid wearing loose clothing that may be caught in machinery. Shirt sleeves must be left buttoned or rolled above the elbow.
- Ties must be tucked in shirt or have a tie clasp (preferably nonconductive) approximately 3 inches from end. Tie chains are not recommended.
- Before starting equipment, make certain fellow CE's and customer personnel are not in a hazardous position.
- Maintain good housekeeping in area of machines while performing and after completing maintenance.

### Artificial Respiration

#### GENERAL CONSIDERATIONS

- 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.
- Check Mouth for Obstructions**  
Remove foreign objects — Pull tongue forward.
- Loosen Clothing — Keep Warm**  
Take care of these items after victim is breathing by himself or when help is available.
- Remain in Position**  
After victim revives, be ready to resume respiration if necessary.
- Call a Doctor**  
Have someone summon medical aid.
- Don't Give Up**  
Continue without interruption until victim is breathing without help or is certainly dead.

Reprint Courtesy Mine Safety Appliances Co.

#### Rescue Breathing for Adults Victim on His Back Immediately

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



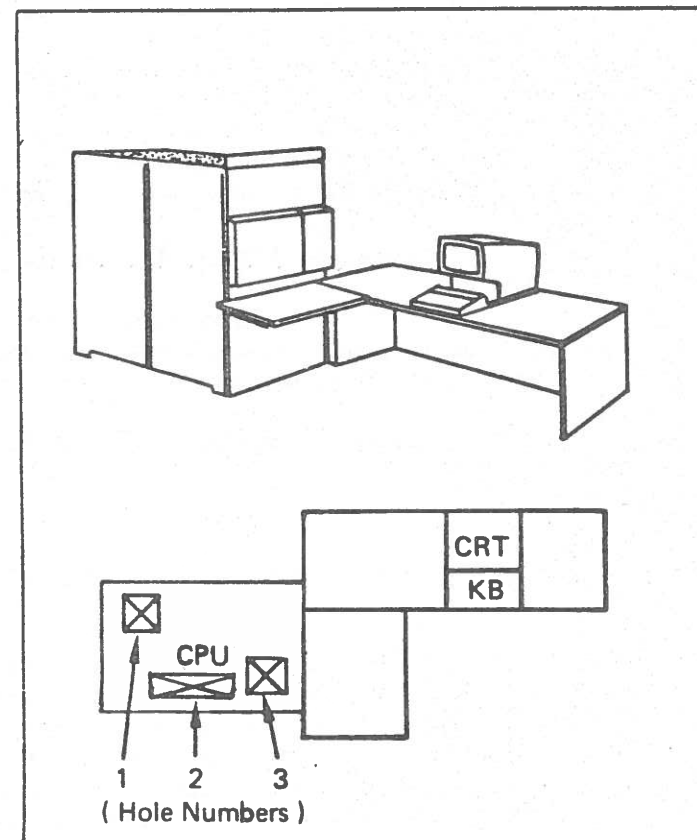
Thumb and finger positions



Final mouth to mouth position

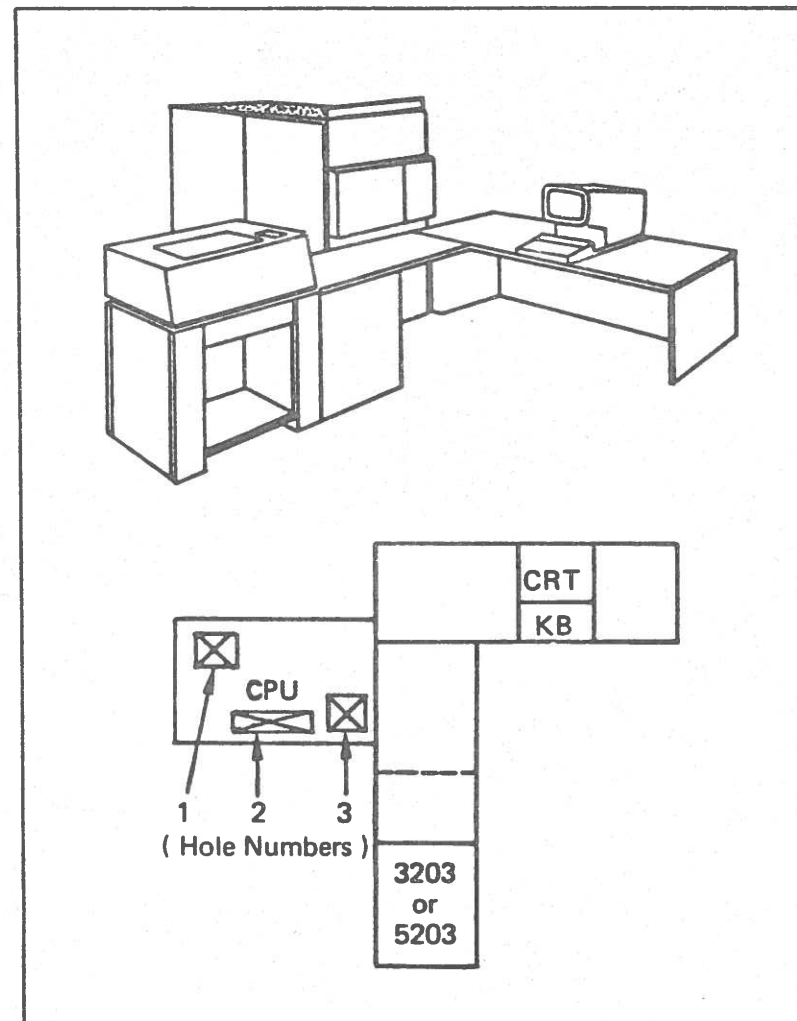
## Basic System Configurations of Model 115

System Configuration A



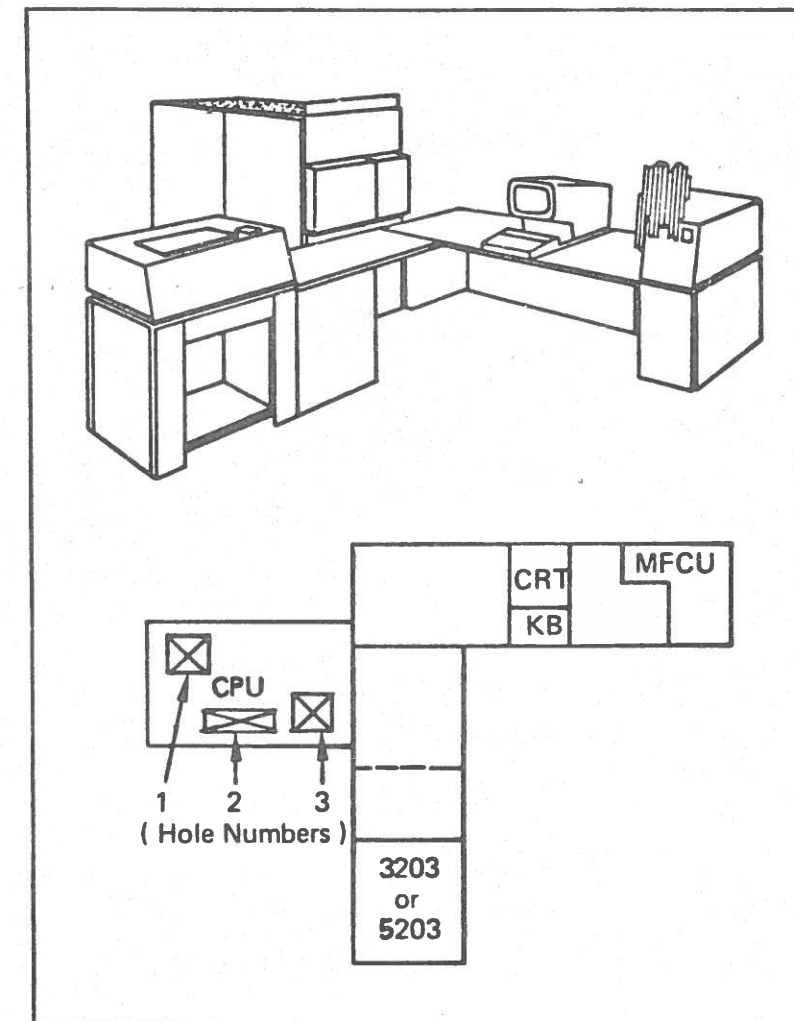
CPU without 5425 and without 3203/5203

System Configuration B



CPU with 3203 or 5203 and without 5425

System Configuration C



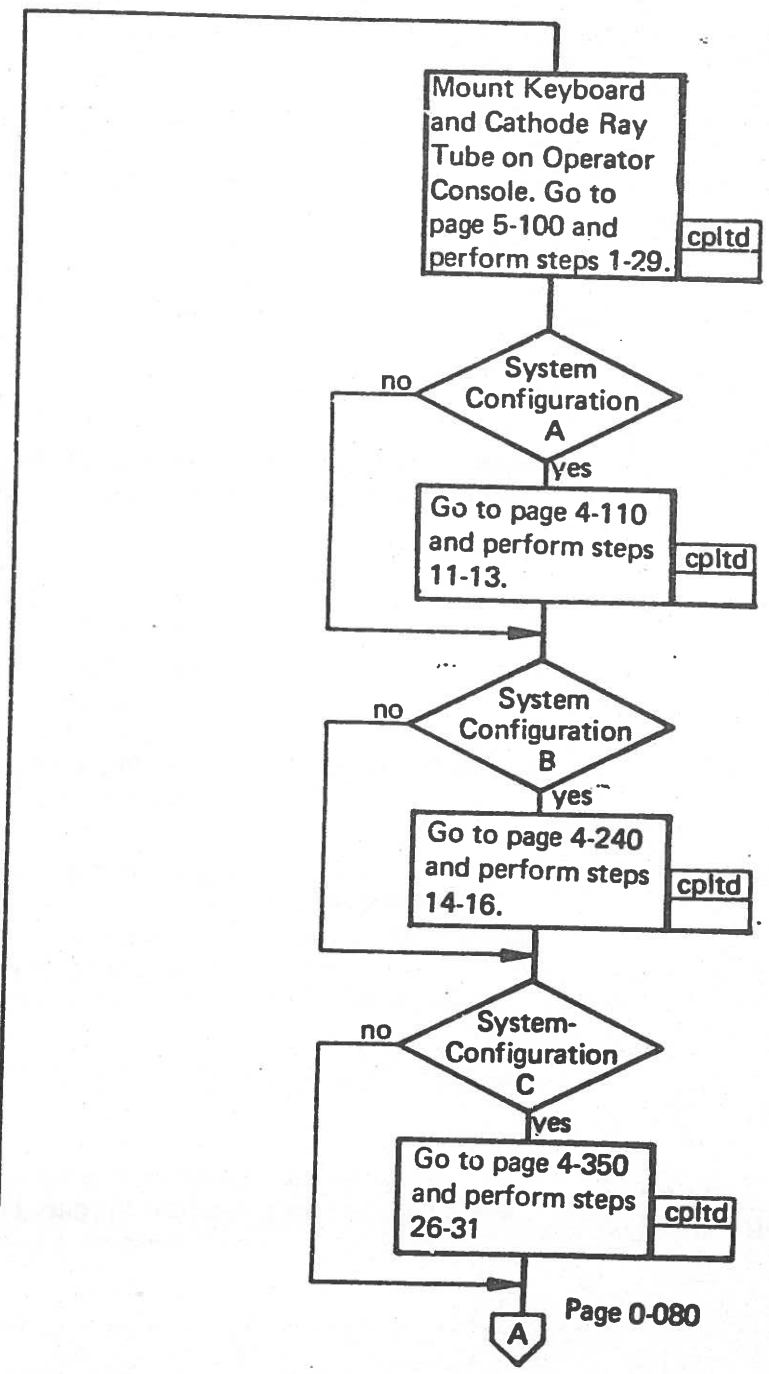
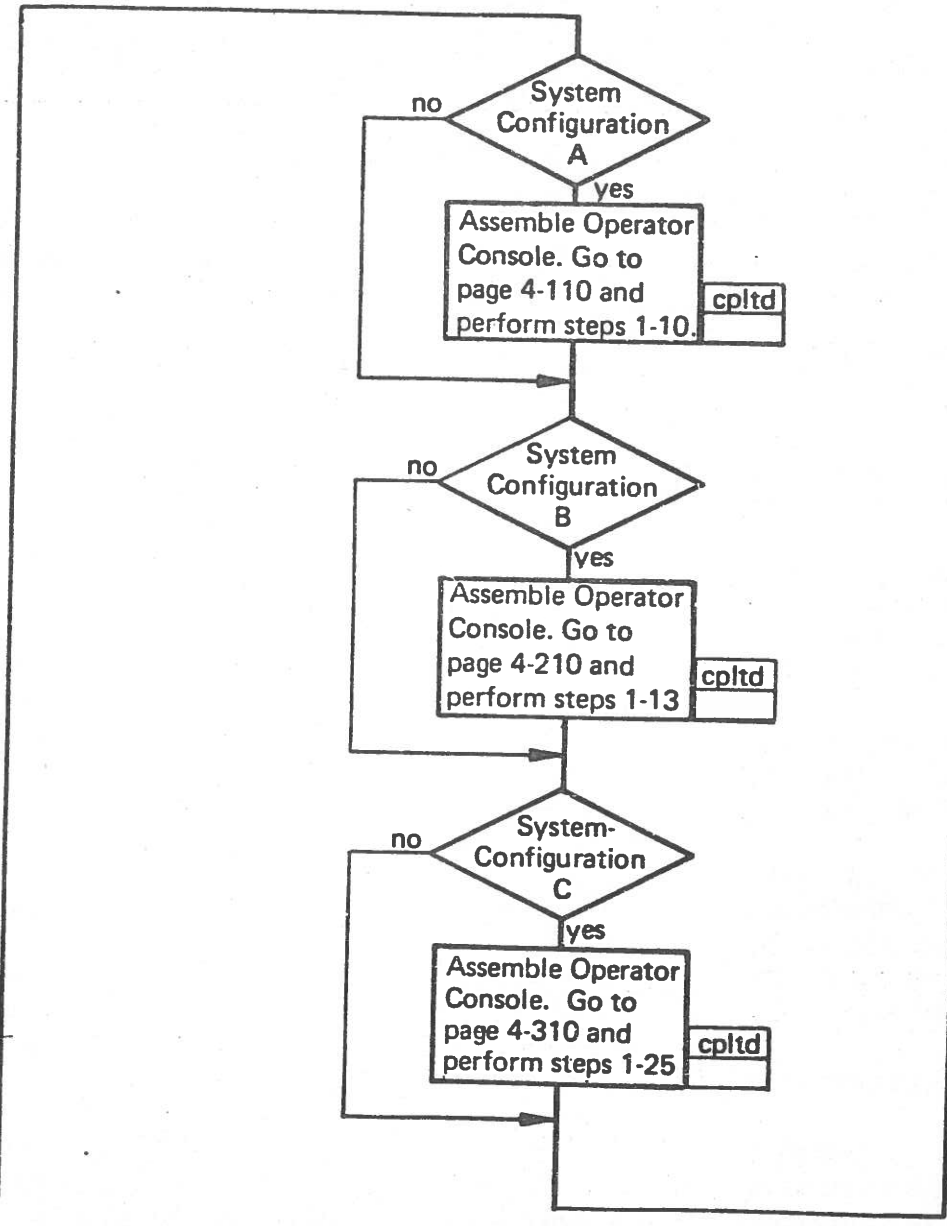
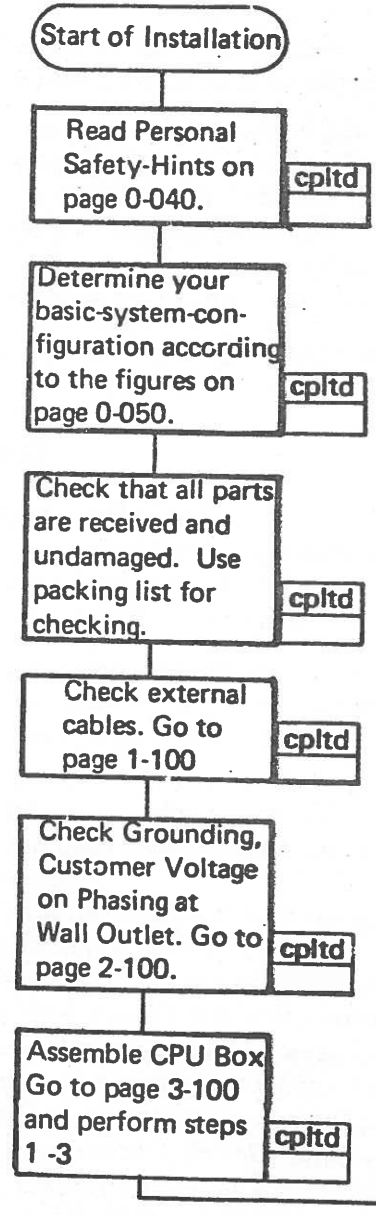
CPU with 5425 and with 3203 or 5203

Note: The system configuration is identified by the letters A-C. This identification is used in this Installation Manual only.

☒=Holes in the floor (used for underfloor installation):

Hole number 1	Used for power line cord, AC-cables and EPO cables.
Hole number 2	Used for signal cables to gate 01D.
Hole number 3	Used for DC-cables to DC-plate.

# Installation Guide (Part 1 of 2)



Note: When you have carried out the instructions contained in a particular flow chart block, mark off that block and continue with the next one. (cpltd = completed)

## Preface

This manual provides the CE with information needed to install the System /370 Model 115. This manual is also valid for 3115-2 machines. When the installation has been completed, this manual should be kept with the machine for possible reinstallation of the system.

The CE should follow the Installation Guide (see page 0-070). The Installation Guide leads the CE to the different sections of this Installation Manual. Each section contains a number of single steps which should be performed by the CE. Each step is identified by a number in front of the text. A square box around the number relates the text to the corresponding illustration.

Each step which has been completed by the CE should be ticked off in the box to the right of the text.

An additional box beside the "step completed box" contains information for the users of the tray package. Small parts are packaged in trays by Bill of Material and in sequence of use.

The tray pack column is used to locate the parts as needed. The digits are the last three digits of the B/M number that selects the tray. The letter indicates the pocket of the tray containing the parts needed for that step.

Example: 190-A



B/M X XXX 190    pocket identification on tray

Parts which are too large for trays are packaged separately. If the manufacturing location of your machine did not use the tray packaging, please skip this information.

If the whole section or a group of steps in a section has been completed the CE returns to the Installation Guide and ticks off the box next to the block in the flowchart.

Bold arrows in the figures point from details to the place in the system where these details are located.

The figures are identified as shown in the following example:

Figure 3-100-A

Page where figure is located

A = first figure on page  
B = second figure on page  
C = third figure on page

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## Preliminary Work

Study this manual and the planning documents that have been drawn up by the Branch Installation Planning Engineer.

Unpack all units. Refer to unpacking instructions of each unit.

Remove any wedges and supports that may have been used to secure the unit for transportation.

Make a physical inspection of all units for damage resulting from shipment. Report any serious damage observed immediately to your Branch Office.

The CRT replacement requires care.

For personal safety the following part numbers should be obtained from the Branch Office:

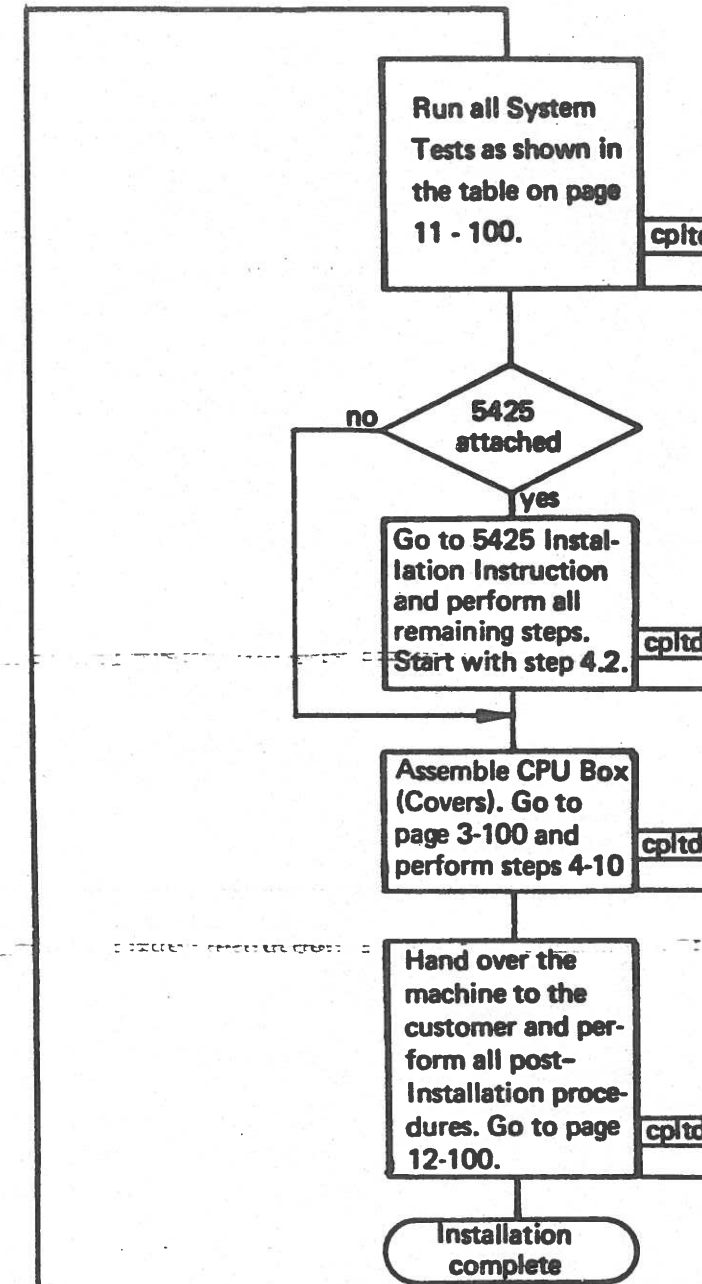
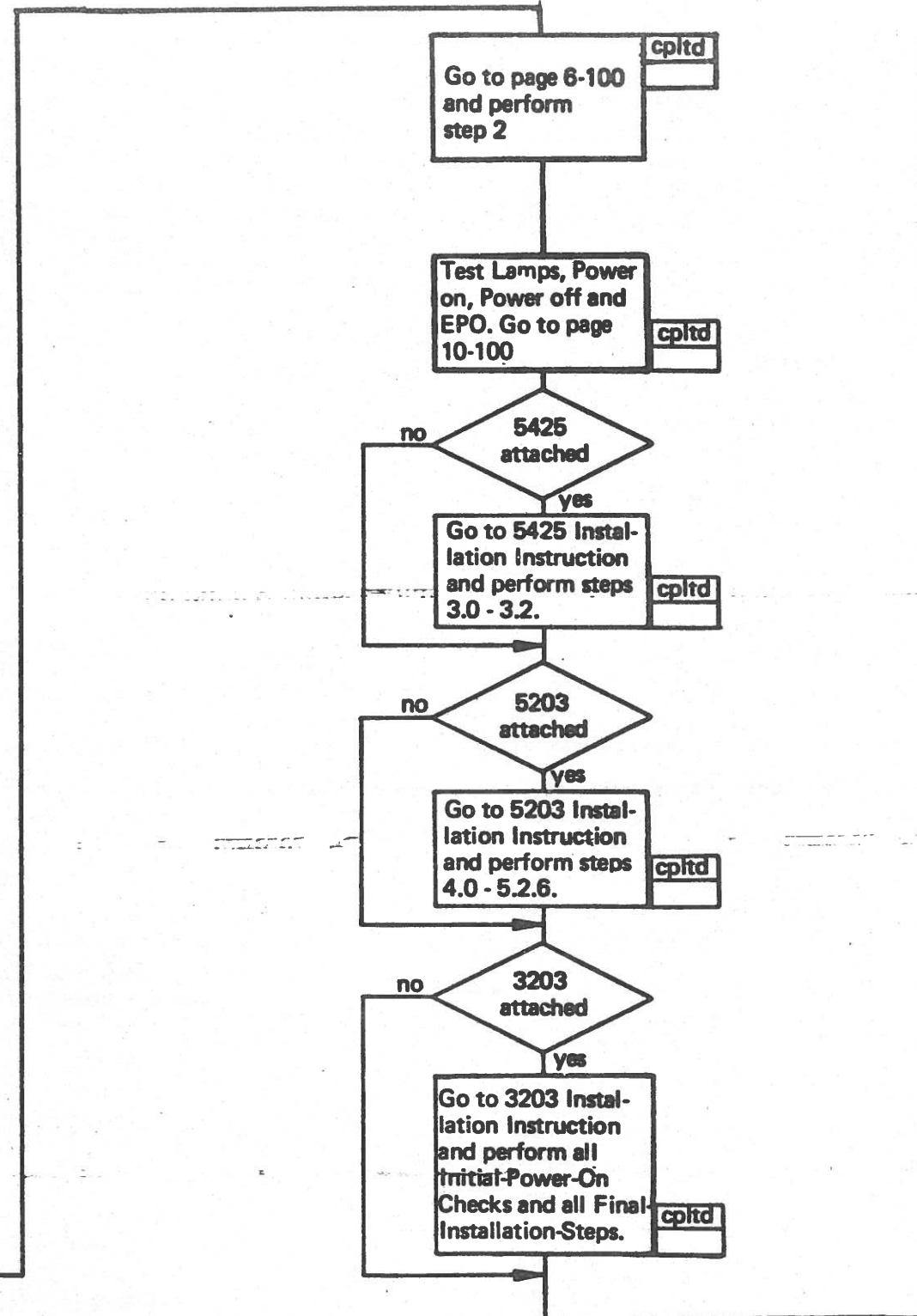
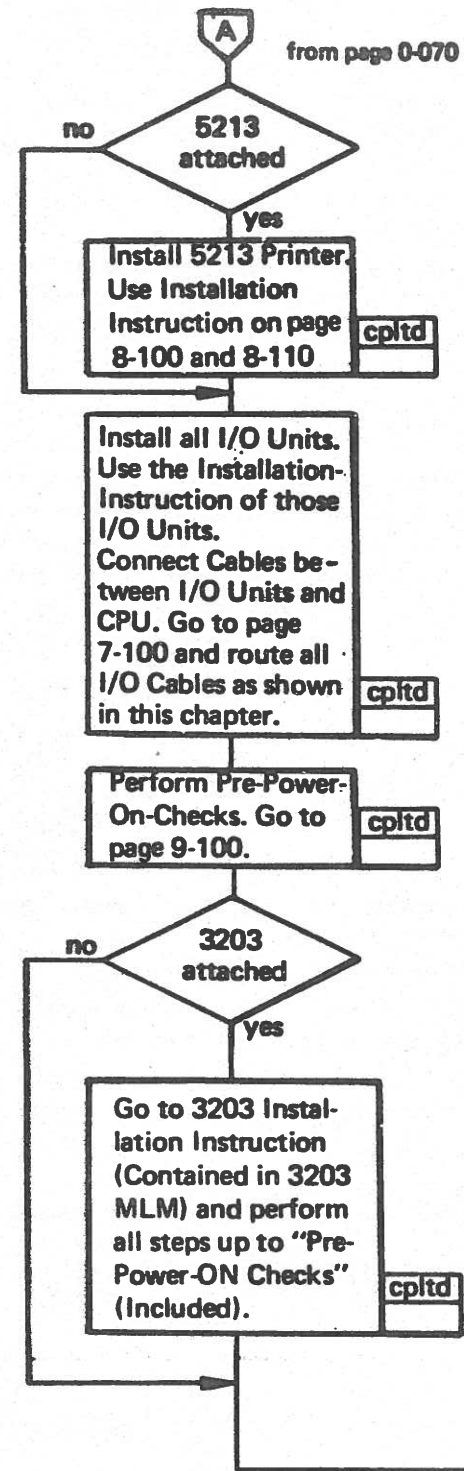
Gloves	P/N 5715011
Apron	P/N 575009
Cape	P/N 575008
Face shield	P/N 5715010

Prepare the customers premises.

Check external cables upon their receipt. If the cables are supplied by IBM, the work also includes laying these cables.



# Installation Guide (Part 2 of 2)



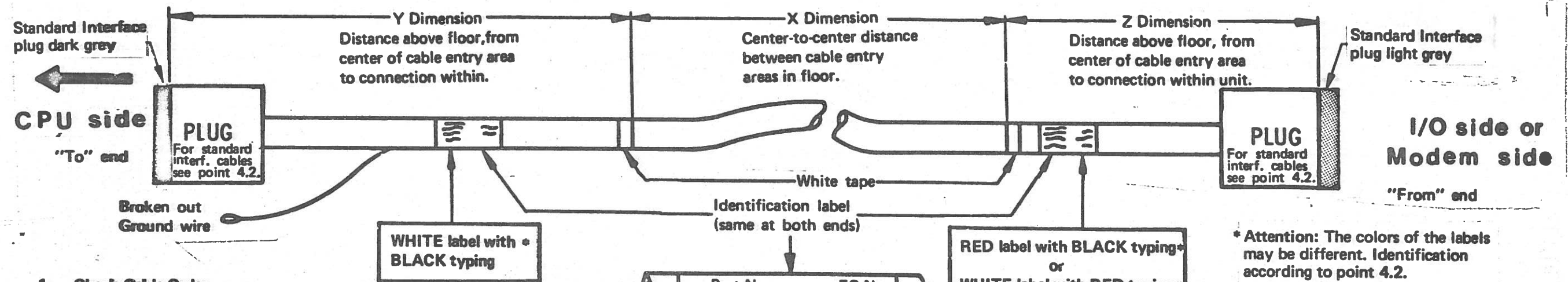
**Note:** When you have carried out the instructions contained in a particular flowchart block, mark off that block and continue with the next one. (cpltd = completed)

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# CHAPTER 1: EXTERNAL CABLES

## Check External Cables



- 1. Check Cable Order**  
Sort the cables by cable group number and check against the cable order form that all cables are present and are of the correct length. See also table on pages 7-100 through 7-150. Check that the cables are undamaged. Report any discrepancy or damage; installation cannot be completed until such faults have been corrected.
- 2. Onfloor Cables**  
Installation of onfloor cables proceeds as the system is installed. Install only those cables that are supplied by IBM. All cables supplied by the customer, even if purchased from IBM, are installed by the customer.
- 3. Underfloor Cables**  
Underfloor cables may have been installed before the system is delivered. While the system is being installed, connect the cables to the various units; details of this work are given in Chapter 7. As the cables are pulled from the floor ducts or raceways, check that the white tapes on the cables coincide with the exit and entry areas in the floor.
- 4. Standard Interface Cables**
  - 4.1** To prevent mistakes in connecting the standard interface cables, both ends of each cable should be marked with the same label, either "BUS or TAG", depending on usage. This should be done prior to cable installation if the labels are not already present.
  - 4.2** The dark grey plug must be plugged into the CPU and the light grey one into the I/O-unit. Plated connectors can be identified by the color of the plastic material between the 2 contact rows.  
**General rule:**  
A dark grey plug must always be connected to a light grey one and vice versa.

Step	Step
cp1td	cp1td
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Part No.	EC No.
Key No.	Total
X Length	Chan
From	Chan
To	

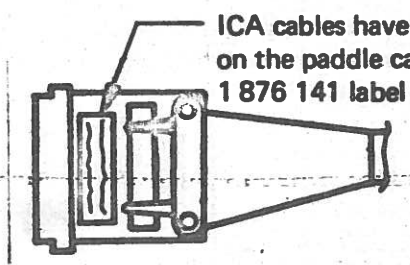
TYPICAL UNDERFLOOR INPUT/OUTPUT CABLE

FIGURE 1-100-A

- 5. General Cabling**  
During installation of the cables, refer to the system floor plan and to the system layout and physical cabling priority assignment chart (refer also to section 7 of this manual) and perform the following:  
Do not remove protective coverings from connectors.  
Place cable CPU end, identified by a white label with black typing, towards the CPU location.  
Keep power cords, signal cables and emergency power-off (EPO) cables as far apart as possible. Ensure that power cords, signal cables and EPO cables do not lie parallel to conduits or power cords. For standard interface cables plug light grey to dark grey.  
For non-IBM equipment:  
Ensure that signal cables are not intertwined.  
Ensure that signal cables pass through a minimum of metal structure.  
Place protective floor ramps around onfloor cables in open areas to prevent injury to personnel and damage to cables.

Step
cp1td
<input type="checkbox"/>

### 6. ICA - Cabling



Step	Tray-
cp1td	Pack
<input type="checkbox"/>	102-A

ICA cables have an additional label on the paddle card at the CPU side 1 876 141 label

\*\* Complete B/M number is 1 878 102

For ICA external cable installation refer to ICA MLM:

ICA cables	MLM page
External cables	4-091 through 4-096
External cables	7-032
Tailgate positions	7-030 (ICA only)
ICA plug list	7-030a & 7-030b (ICA+LAB)

For correct identification of the plugging position, select the correct self-adhesive label (provided in shipping group) and put the label on the CPU side connector (identified by a white label with black typing) at installation time. For plug positions refer to chapter 7 of this manual and to the ICA MLM pages 7-030. For TTY cables check the polarity of the line before installation.

Return to Installation Guide on page 0-070.



## CHAPTER 2: CHECK CUSTOMER LINE VOLTAGE

### Check Grounding, Customer Voltage and Phasing at Wall Outlet

#### Check Grounding

##### DANGER

Any device that locks the wall outlet circuit breaker in the on position is a potential safety hazard. Report any such hazard to your Field Manager.

Note: In this manual, the term "wall outlet" includes any other form of customer's power supply.

- 1 Switch the wall outlet circuit breakers to OFF.
- 2 Check for common connection between the outlet ground pin, outlet case, and buildings ground.
- 3 Check for high resistance (greater than one megohm) between each remaining pin of the outlet and the ground pin.

Step  
cptd

#### Check AC Line Voltage

##### DANGER

Switch the wall outlet circuit breaker to OFF before connecting or disconnecting the voltmeter to line voltage.

- 1 Check the customer AC-line voltage at the wall outlet. Measure phase to phase.
- 2 Check that the CPU AC-line voltage is wired according to the customer line voltage at the wall outlet. If the CPU AC-line voltage is not wired according to the customer's line voltage the CPU jumpering has to be changed. Refer to ALD YD 091 (50Hz) YD 191 (60Hz)

Note: The AC requirements for the system are indicated on a label located at the power supply side of the CPU box on the frame below the AC compartment. If CPU voltage jumpering is changed, the label at the CPU box must also be changed.

Note: Check other devices for proper phasing if powered separately. Use the Installation Manual of those devices.

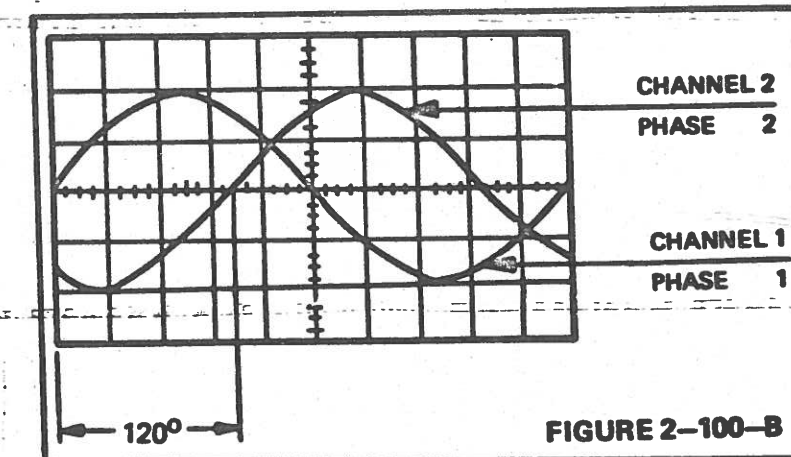
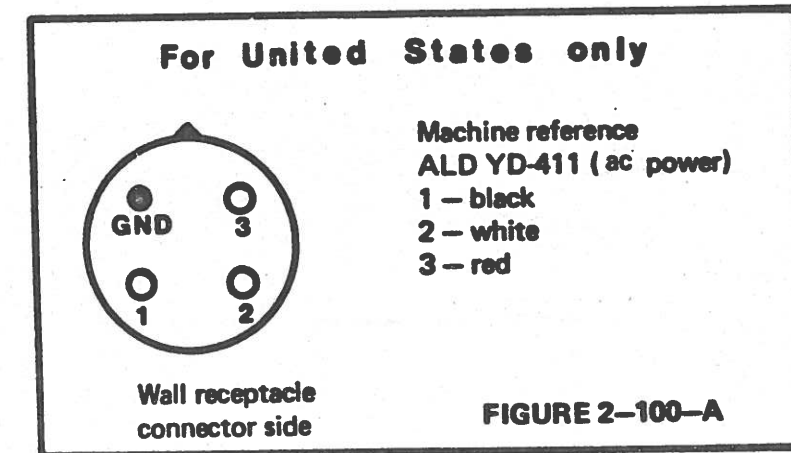
#### For United States only Check Phasing Using Oscilloscope

##### DANGER

Switch the wall outlet circuit breaker to OFF before connecting or disconnecting the oscilloscope to line voltage.

- 1 Ground the oscilloscope to the outlet ground pin.
- 2 Connect probe (x10) of channel 1 input to wall receptacle connector pin 1 and probe (x10) of channel 2 input to pin 2 (see Figure 2-100-A). Set switches "Volts/Div" of both channels to 10.
- 3 Switch wall outlet breakers to ON.
- 4 Use internal triggering 'Channel 1 only' and set mode switch to "CH1". Display on complete cycle of line voltage.
- 5 Change setting of mode switch to "CHOP". Now the voltage of channel 2 must be displayed additional. The voltage measured by channel 2 must occur 120 degrees after the voltage measured by channel 1 (see Fig. 2-100-B). If phasing is incorrect, 2 or 3 phases of the line voltage must be exchanged by an electrician at the customer's wall outlet before further tests are started.

Step  
cptd



#### For United States only Check Phasing Using Phase Meter (P/N 453 203)

##### DANGER

Switch the wall outlet circuit breaker to OFF before connecting or disconnecting the phase meter to line voltage.

- 1 Connect the phase meter to the wall outlet.
- 2 Switch the wall outlet circuit breaker to ON.
- 3 Check the voltage phase at each outlet pin.
- 4 If phasing is incorrect, ensure that the customer corrects it before CPU and I/O checks are started.

Step  
cptd

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### CHAPTER 3: ASSEMBLE CPU

#### Assemble CPU Box (Part 1 of 2)

PARTS SHOWN ON THIS PAGE ARE LOCATED IN B/M 1 570 190

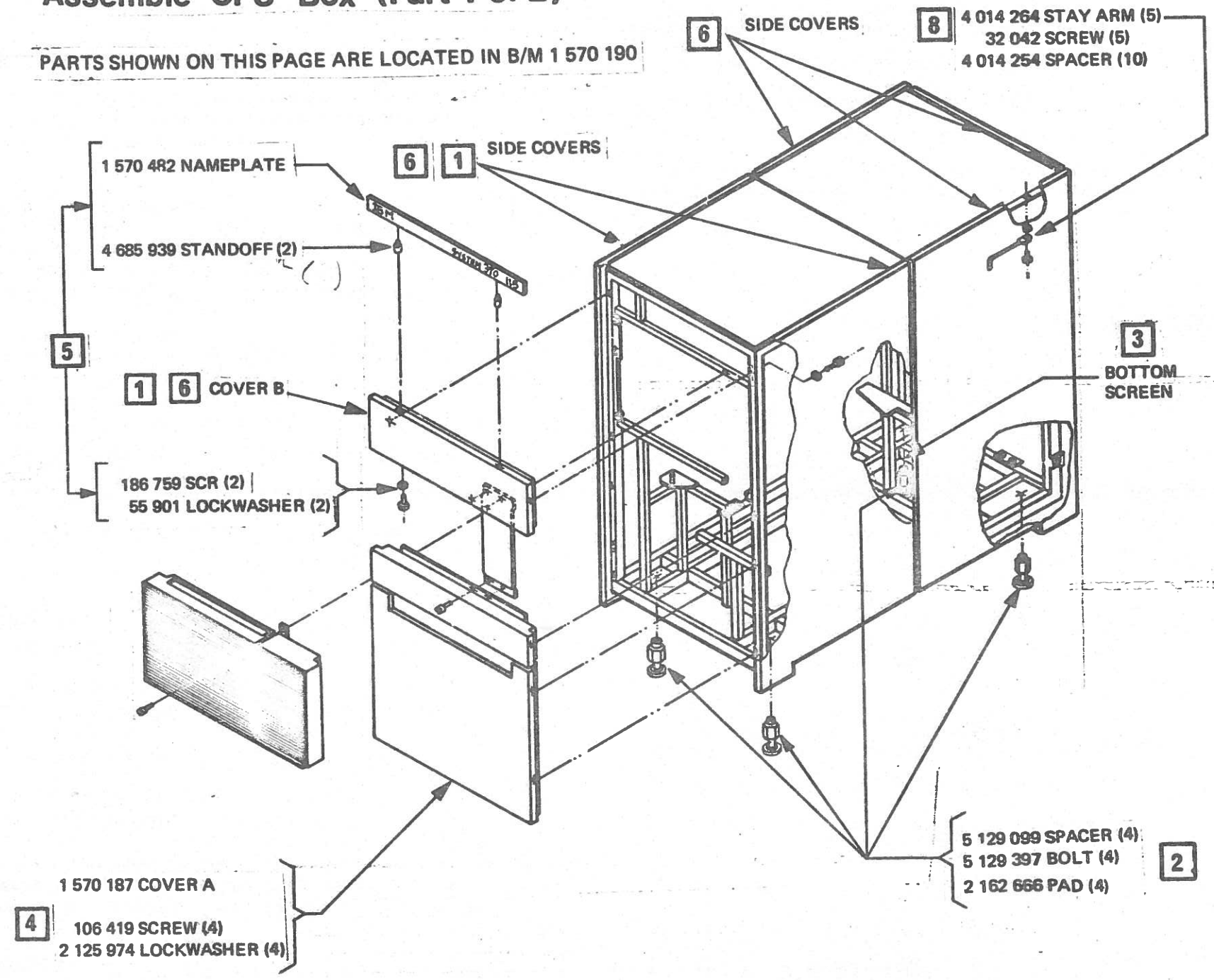


FIGURE 3-100-A

- Unpck CPU. Use the unpacking instructions shipped with CPU.
- 1 Remove cover B and 2 side covers (doors) next to the front of CPU and store the covers safely. Ground straps between door and CPU frame should be removed at CPU frame side. Move CPU to its final position.
- 2 Install 4 bolts and spacers and attach 4 pads to the bolts. Screw down the bolts so that the casters are free and the gap between the floor and lower part of the screen is minimum of 3 inches (76mm). Final adjustment will be done when operator console is assembled.
- 3 Remove bottom screen and route line cord through hole number 1 (see page 0-050) and replace screen. For On-floor installation remove locking-ring from connector, pass end of cable between floor and machine, and replace ring.
- Return to Installation Guide on page 0-070.
- 4 Attach cover A to CPU-frame with 4 screws.
- 5 Mount IBM nameplate on cover B by two standoffs and two screws.
- 6 Attach 2 side covers and cover B with nameplate (removed in step 1) to CPU. Use the normal hinge position of the covers and lower the 3 remaining covers to their normal position.
- 7 Fasten all ground straps between side covers (doors) and CPU frame. (see Figure 3-110-A)
- 8 Attach 5 stay arms to CPU frame and put the arms in the rails on the CPU doors.
- 9 Align all doors and check that the doors can easily be opened and closed.
- 10 Adjust all fingerstocks at the doors and check that they make good contact to frame. A punch card can be inserted between spring and plate to check the proper adjustment. The card must be clamped by the spring. Figure 3-110-C shows the maximum number of fingerstocks. There are machines in the field which have less fingerstocks.
- Return to Installation Guide on page 0-080.

Step	Tray-pack
1	<input type="checkbox"/>
2	<input type="checkbox"/> 190-A
3	<input type="checkbox"/>
4	<input type="checkbox"/> 190-N
5	<input type="checkbox"/> 190-O
6	<input type="checkbox"/>
7	<input type="checkbox"/>
8	<input type="checkbox"/>
9	<input type="checkbox"/>
10	<input type="checkbox"/>



# Assemble CPU Box (Part 2 of 2)

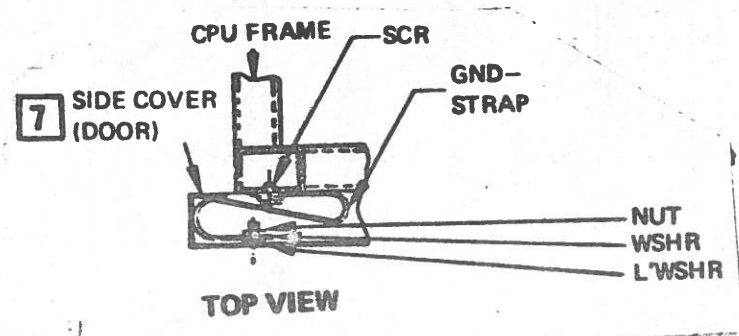


Figure 3-110-A

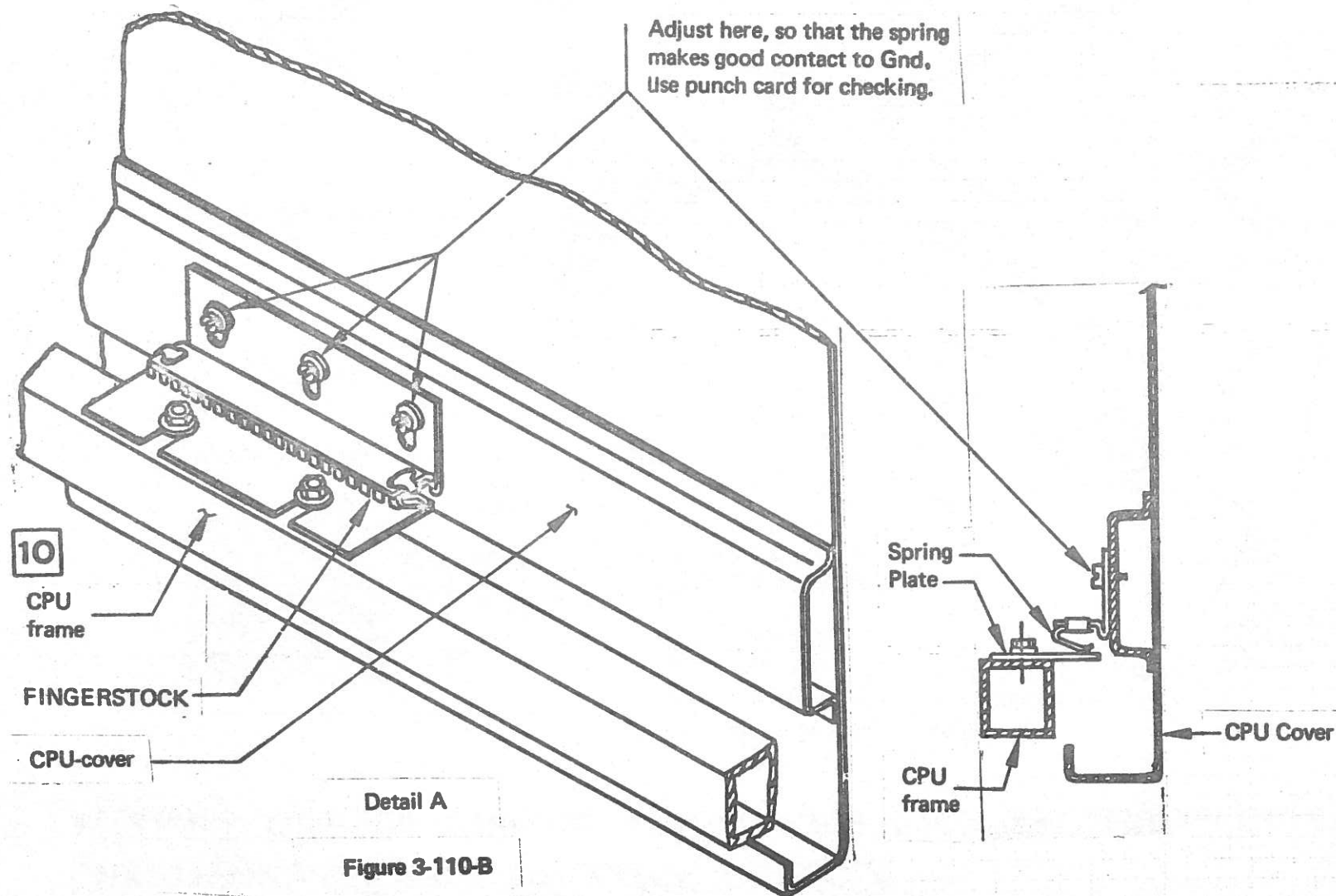
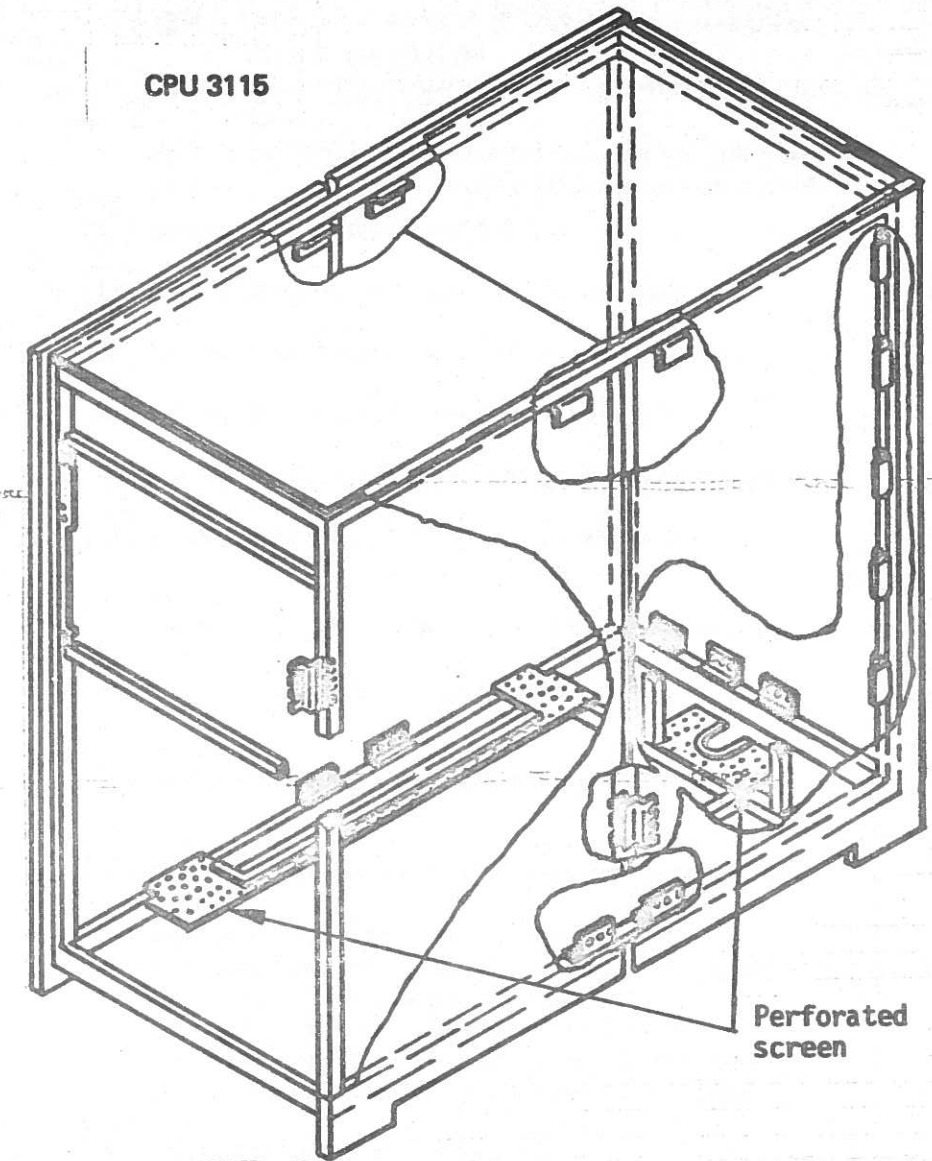


Figure 3-110-B



Locations of Fingerstocks

This figure shows the maximum number of fingerstocks. There are machines in the field which have less fingerstocks.

Figure 3-110-C

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P/N 1896 856 Page 2 of 2	Eng. Change	No. 362 663 Date Feb. 21, 1974	362 784 July 19, 1974	362 856 Sept. 30, 1974	3115 Inst. Man.
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### CHAPTER 4: ASSEMBLE OPERATOR CONSOLE

#### Assemble Operator Console without 3203/5203 and without 5425 (Part 1 of 1)

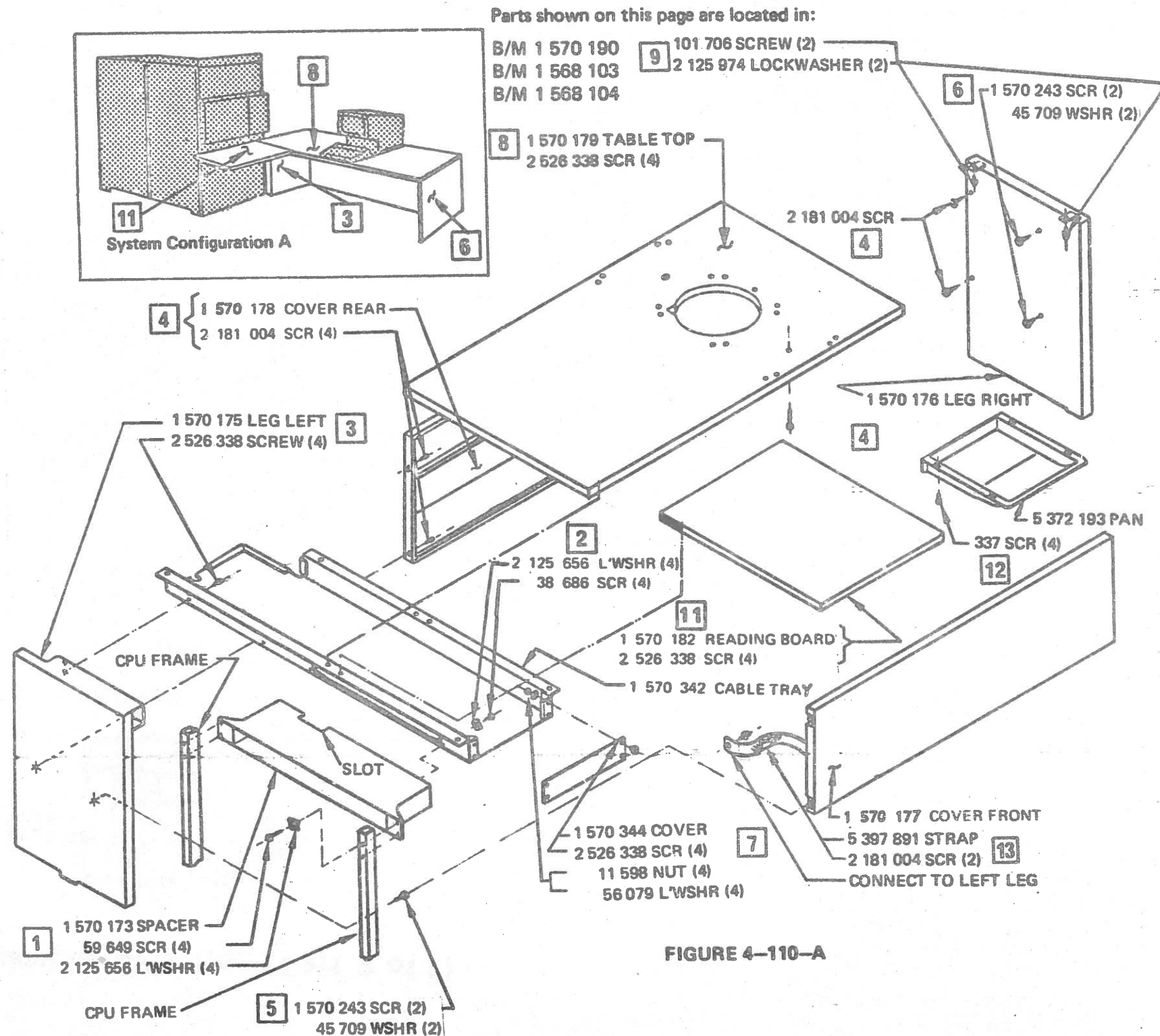


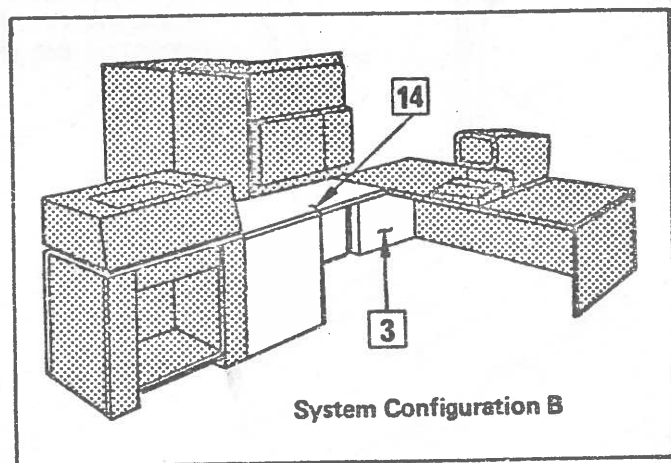
FIGURE 4-110-A

- 1 Attach spacer to CPU frame with four screws but do not tighten the screws. The screws should be tightened finally after the left leg is attached. ATTENTION: The slot must be in correct position. (see Figure 4-110-A).
  - 2 Attach cable tray to previously installed spacer by four screws. Do not tighten these screws at this time.
  - 3 Mount left leg to cable tray by four screws and tighten the screws installed in step 1 and 2, (see Note).
  - 4 Perform the following single steps:
    - 4.1 Insert two screws in left leg but do not tighten.
    - 4.2 Insert two screws in right leg but do not tighten.
    - 4.3 Take rear cover and attach it to right leg.
    - 4.4 Tighten two screws at the right leg.
    - 4.5 Take rear cover with right leg and attach it to left leg.
    - 4.6 Tighten two screws at the left leg.
  - 5 Insert and tighten two screws in left leg (used later for front cover).
  - 6 Insert and tighten two screws in right leg (used later for front cover).
  - 7 Attach cover to left end of cable tray.
  - 8 Fasten table top to cable tray at the left side with four screws.
  - 9 Fasten table top to right leg with two screws.
  - 10 Go to page 6-100, perform step 1, then continue here.
    - Return to Installation Guide on page 0-070.
  - 11 Fasten reading board with four screws on the cable tray.
  - 12 Mount pan with four screws below the table.
  - 13 Perform the following single steps:
    - 13.1 Connect ground strap with one screw to left leg.
    - 13.2 Fasten ground strap with one screw at the front cover
    - 13.3 Hook front cover on the two lower screws in the left and the right leg.
    - 13.4 Move front cover to its final position and hook front cover on the four screws in the right and left leg.
- Return to Installation Guide on page 0-070.
- Note: Necessary adjustments of CPU box during assembling of the operator console can be done by four bolts below the CPU. These bolts are used as leveler screws. Make sure that the left leg touches the floor.(see step 3).

Step	Tray-pack
<input type="checkbox"/>	190-B
<input type="checkbox"/>	190-C
<input type="checkbox"/>	190-D
<input type="checkbox"/>	104-A
<input type="checkbox"/>	104-B
<input type="checkbox"/>	104-B
<input type="checkbox"/>	103-A
<input type="checkbox"/>	104-C
<input type="checkbox"/>	104-D
<input type="checkbox"/>	103-A
<input type="checkbox"/>	190-L
<input type="checkbox"/>	190-M

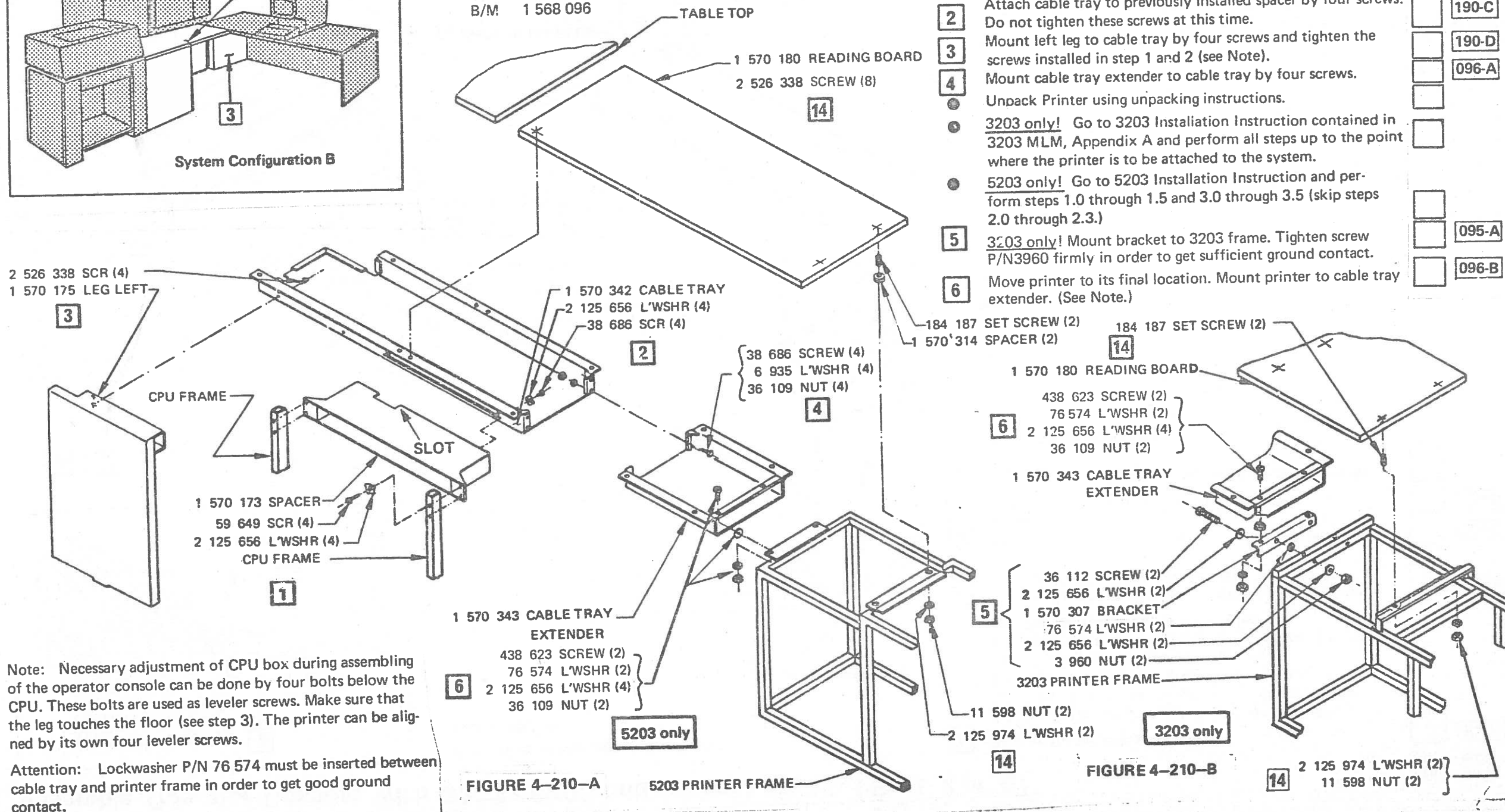


# Assemble Operator Console with 3203/5203 and without 5425(Part 1 of 4)



Parts shown on this page are located in

- B/M 1 570 190
- B/M 1 568 095
- B/M 1 568 096



Note: Necessary adjustment of CPU box during assembling of the operator console can be done by four bolts below the CPU. These bolts are used as leveler screws. Make sure that the leg touches the floor (see step 3). The printer can be aligned by its own four leveler screws.

Attention: Lockwasher P/N 76 574 must be inserted between cable tray and printer frame in order to get good ground contact.

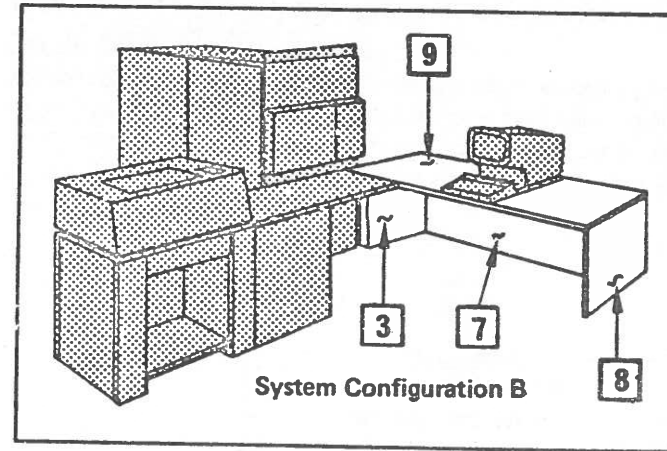
- 1** Attach spacer to CPU frame with four screws, but do not tighten the screws. The screws should be tightened finally after the left leg is attached. Attention: The slot must be in the correct position (see Fig. 4-210-A).
- 2** Attach cable tray to previously installed spacer by four screws. Do not tighten these screws at this time.
- 3** Mount left leg to cable tray by four screws and tighten the screws installed in step 1 and 2 (see Note).
- 4** Mount cable tray extender to cable tray by four screws. Unpack Printer using unpacking instructions.
  - **3203 only!** Go to 3203 Installation Instruction contained in 3203 MLM, Appendix A and perform all steps up to the point where the printer is to be attached to the system.
  - **5203 only!** Go to 5203 Installation Instruction and perform steps 1.0 through 1.5 and 3.0 through 3.5 (skip steps 2.0 through 2.3.)
- 5** **3203 only!** Mount bracket to 3203 frame. Tighten screw P/N3960 firmly in order to get sufficient ground contact.
- 6** Move printer to its final location. Mount printer to cable tray extender. (See Note.)

Step	Tray-pack
<input type="checkbox"/>	190-B
<input type="checkbox"/>	190-C
<input type="checkbox"/>	190-D
<input type="checkbox"/>	096-A
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	095-A
<input type="checkbox"/>	096-B

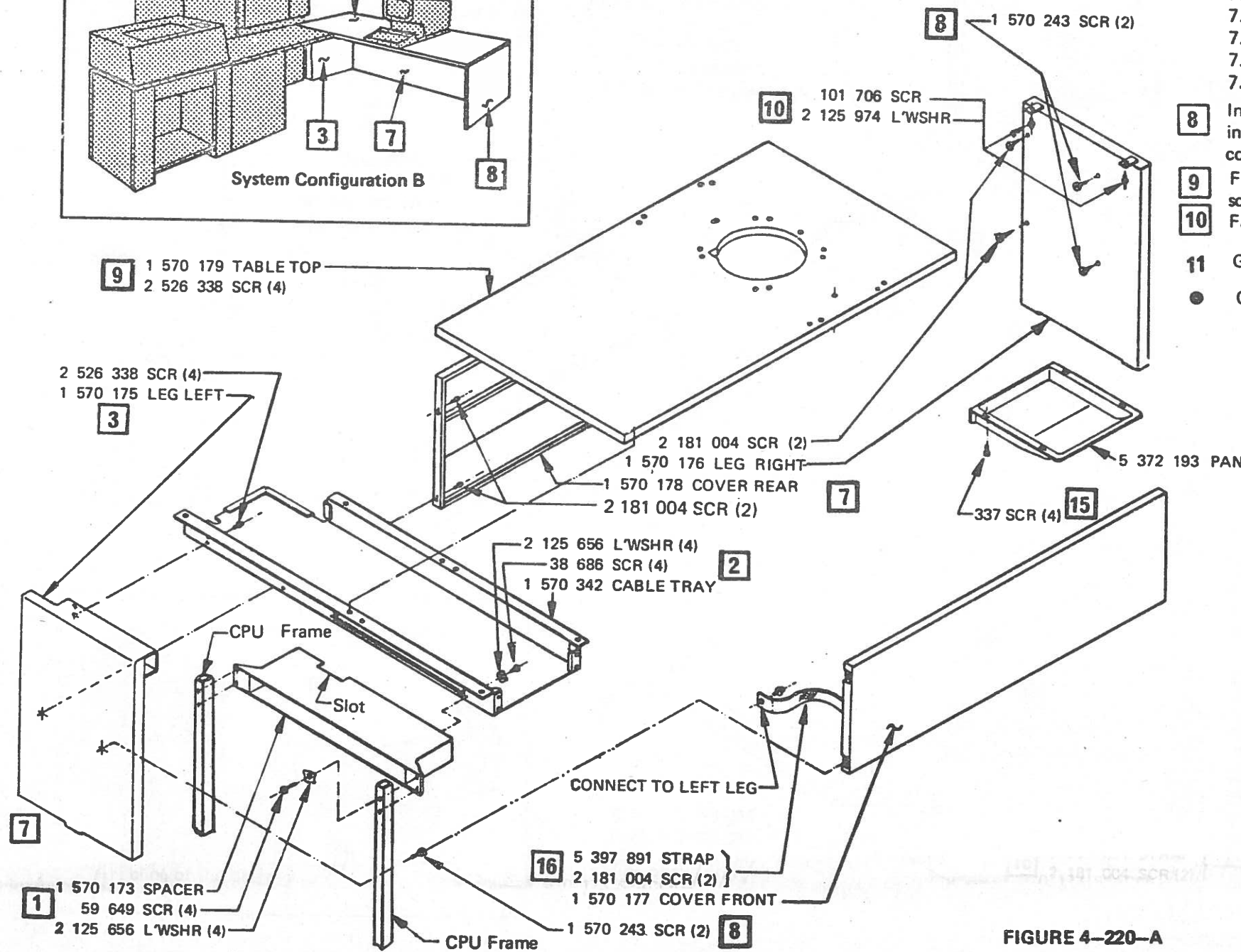
P/N 1 896 857	Eng. Change	No. 362 873	362931				
Page 1 of 2		Date Feb. 20, 1975	June 28, 1976				

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### Assemble Operator Console with 3203/5203 and without 5425 (Part 2 of 4)



Parts shown on this page are located in:  
B/M 1 568 104



- 7** Perform the following single steps:
- 7.1 Insert two screws in left leg but do not tighten.
  - 7.2 Insert two screws in right leg but do not tighten.
  - 7.3 Take rear cover and attach it to right leg.
  - 7.4 Tighten two screws at the right leg.
  - 7.5 Take rear cover with right leg and attach it to left leg.
  - 7.6 Tighten two screws at the left leg.
- 8** Insert and tighten two screws in left leg and two screws in right leg. The screws are used later for the front cover.
- 9** Fasten table top to cable tray at the left side with four screws.
- 10** Fasten table top to right leg with two screws.
- 11** Go to page 6-100 and perform step 1 (Ground-Check)
- Continue on page 4-230.

Step Cpltd	Tray-pack
<input type="checkbox"/>	104-A
<input type="checkbox"/>	104-B
<input type="checkbox"/>	104-C
<input type="checkbox"/>	104-D
<input type="checkbox"/>	

Note: Necessary adjustments of CPU box during assembling of the operator console can be done by four bolts below the CPU. These bolts are used as lever screws.

FIGURE 4-220-A



# Assemble Operator Console with 3203/5203 and without 5425 (Part 3 of 4)

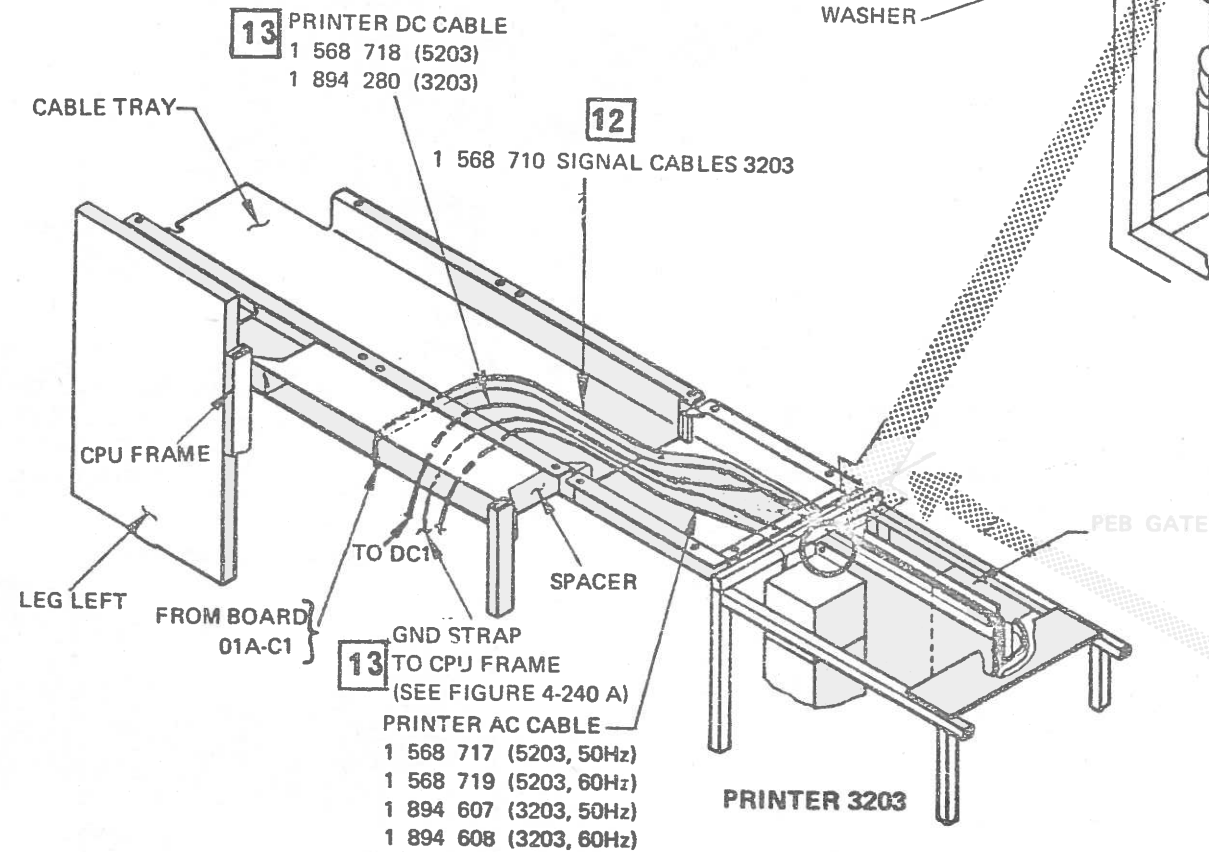
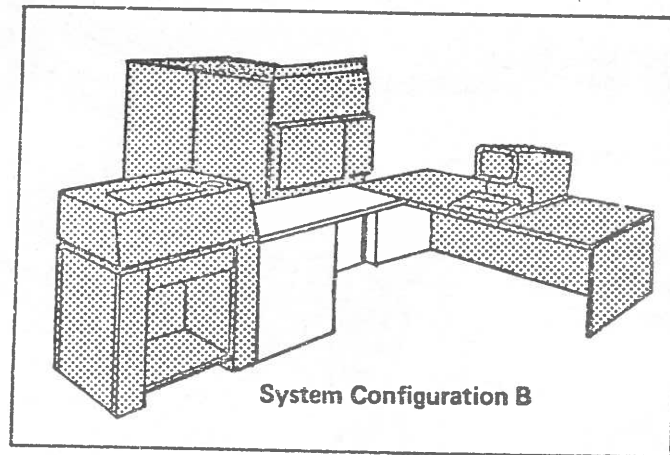


FIGURE 4-230-A

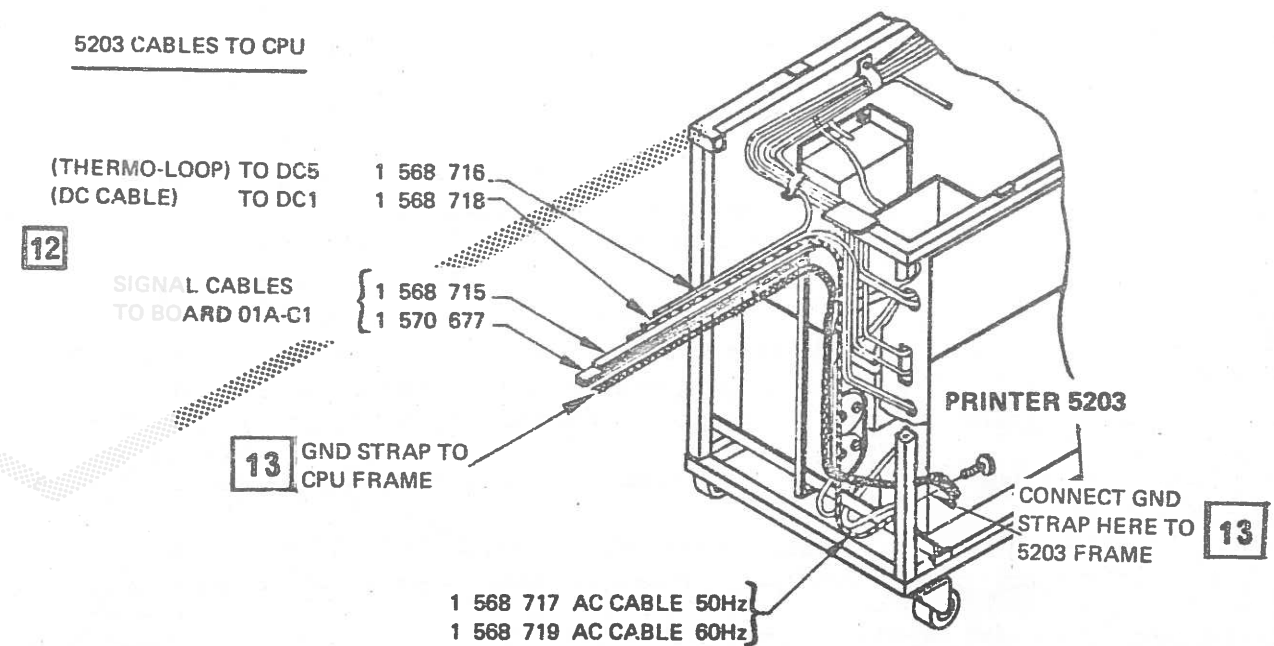
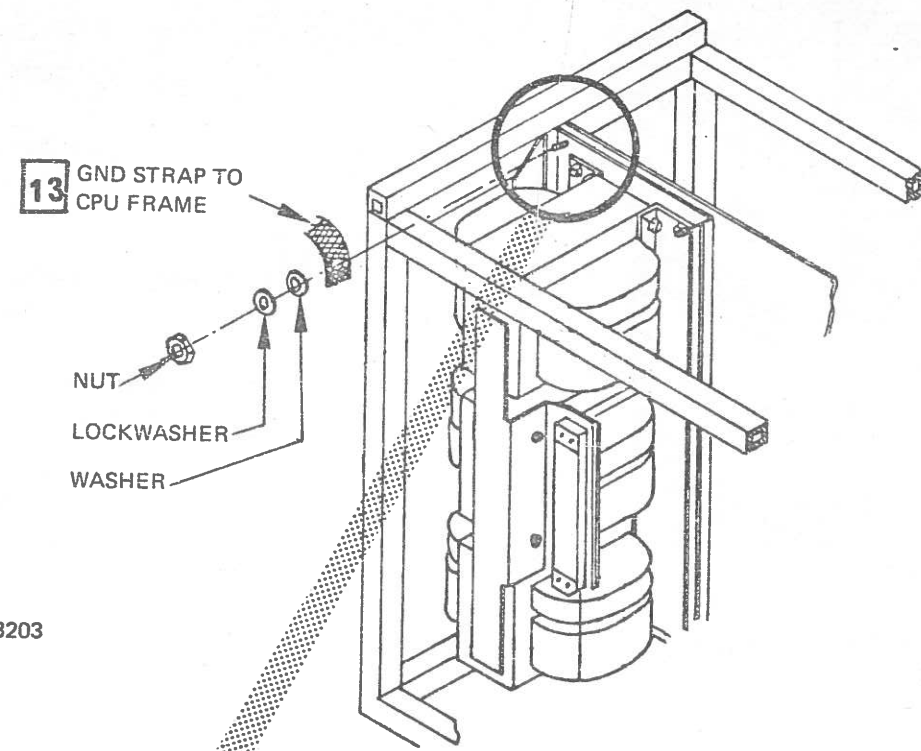


FIGURE 4-230-B

**12** 5203 only! Route signal cables from 5203 to CPU and insert paddle cards into correct positions as indicated on the labels at the end of the cables. (See Figure 4-240-B)

Step Cpltd

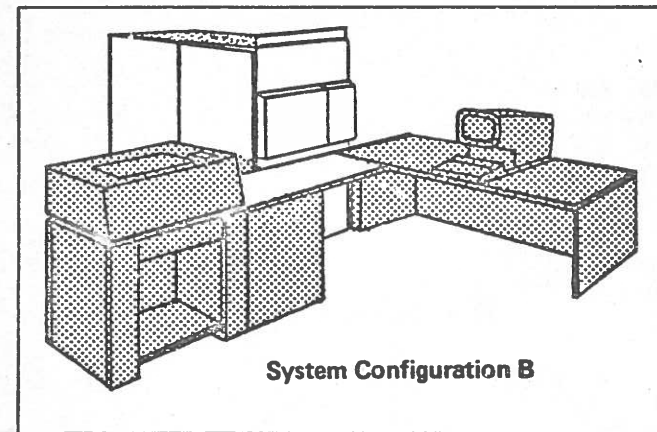
3203 only! Route signal cables from CPU to 3203 PEB. Go to 3203 Installation Instruction and perform all remaining steps up to point "Cable Installation" (included).

**13** Route ac and dc cables of the printer to their ac and dc connectors and connect Gnd strap from CPU frame (see Figure 4-240-A) to printer frame. At 3203 printer the upper left mounting point of the power supply is used for Gnd strap connection. In Figure 4-240-A the cable routing for the 5203 or 3203 printer is shown.

● Return to Installation Guide on page 0-070.

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### Assemble Operator Console with 3203/5203 and without 5425 (Part 4 of 4)



- 1 598 21 RT CABLE (3115-2)
- 1 568 64 CRT CABLE (3115-0)
- 1 568 697 KEYBOARD CABLE
- 1 568 688 CONSOLE CABLE TO KC1

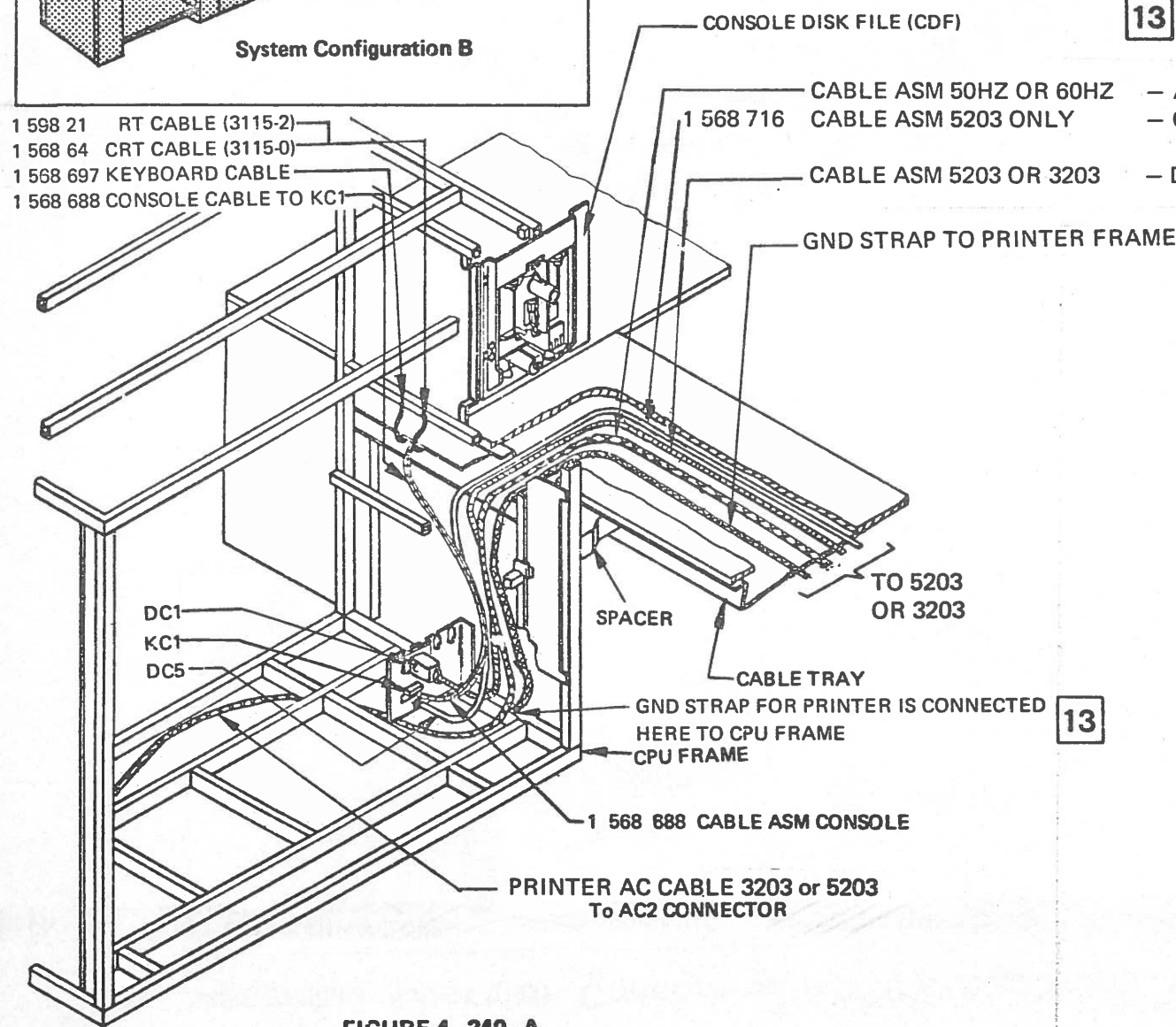


FIGURE 4-240-A

**14** 3203 only: Mount reading board as shown in Fig. 4-210-B  
5203 only: Mount reading board as shown in Fig. 4-210-A

Step Cpltd.	Tray-pack
<input type="checkbox"/>	096-C

**15** Mount pan below the table top with 4 screws (see Fig. 4-220-A).

<input type="checkbox"/>	190-L
--------------------------	-------

**16** Perform the following single steps (see Fig. 4-220-A)

<input type="checkbox"/>	190-M
--------------------------	-------

16.1 Connect ground-strap with one screw to left leg.

16.2 Fasten ground-strap with one screw at the front cover.

16.3 Hook front cover on the 2 lower screws in the left and in the right leg.

16.4 Move front cover to its final position and hook front cover on the 4 screws in the right and left leg.

Return to Installation Guide on page 0-070.

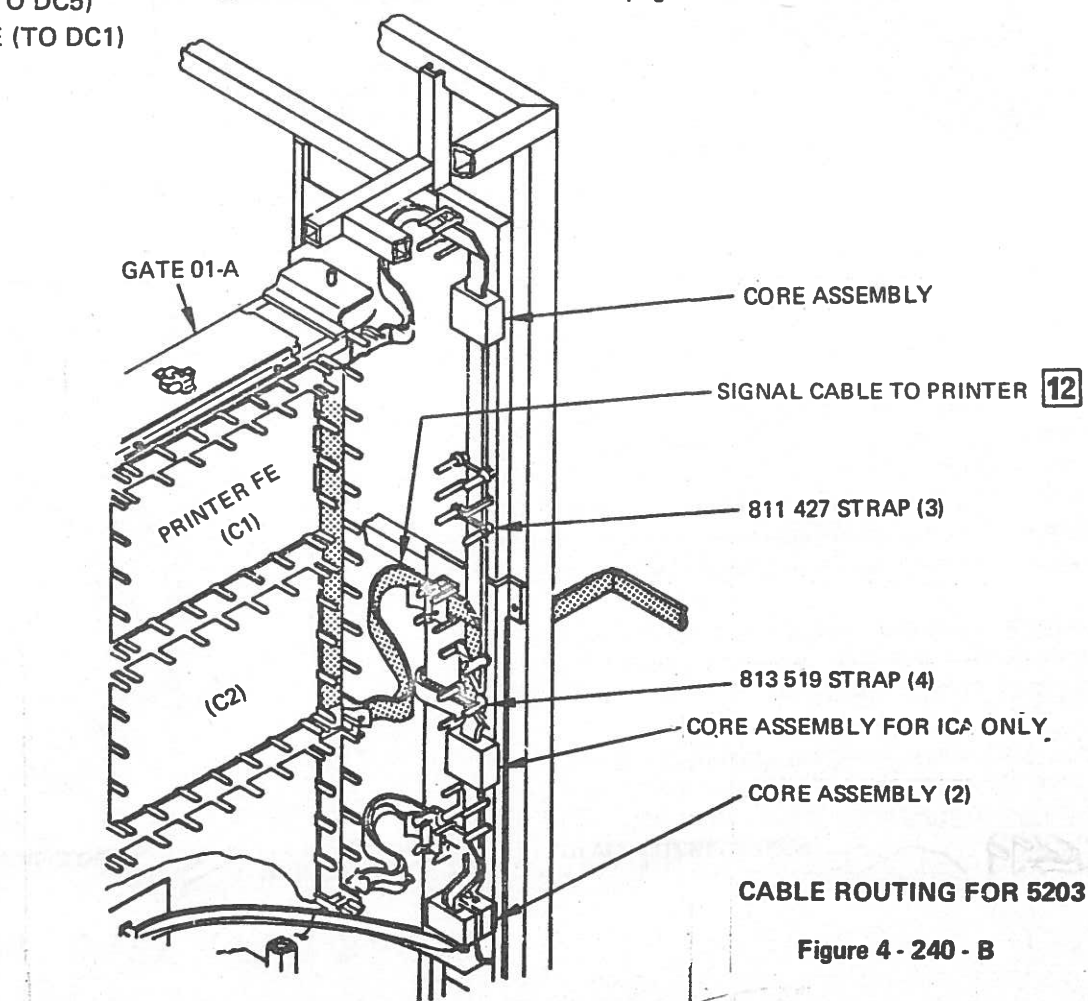
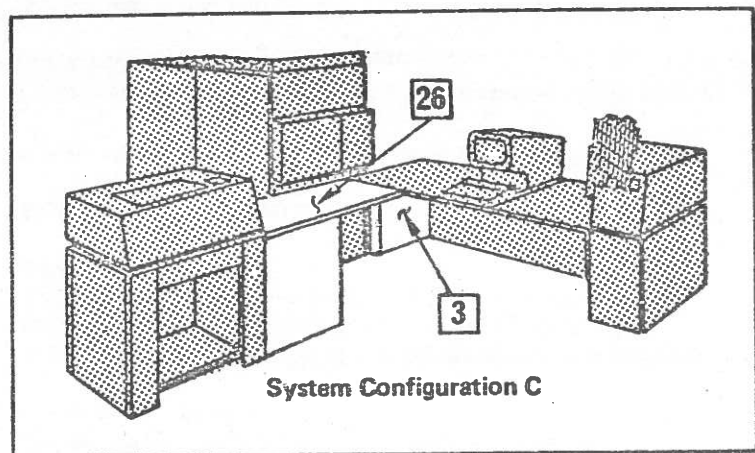


Figure 4 - 240 - B



# Assemble Operator Console with 5425 and with 3203/5203 (Part 1 of 5)



Parts shown on this page are located in

- B/M 1 570 190
- B/M 1 568 095
- B/M 1 568 096

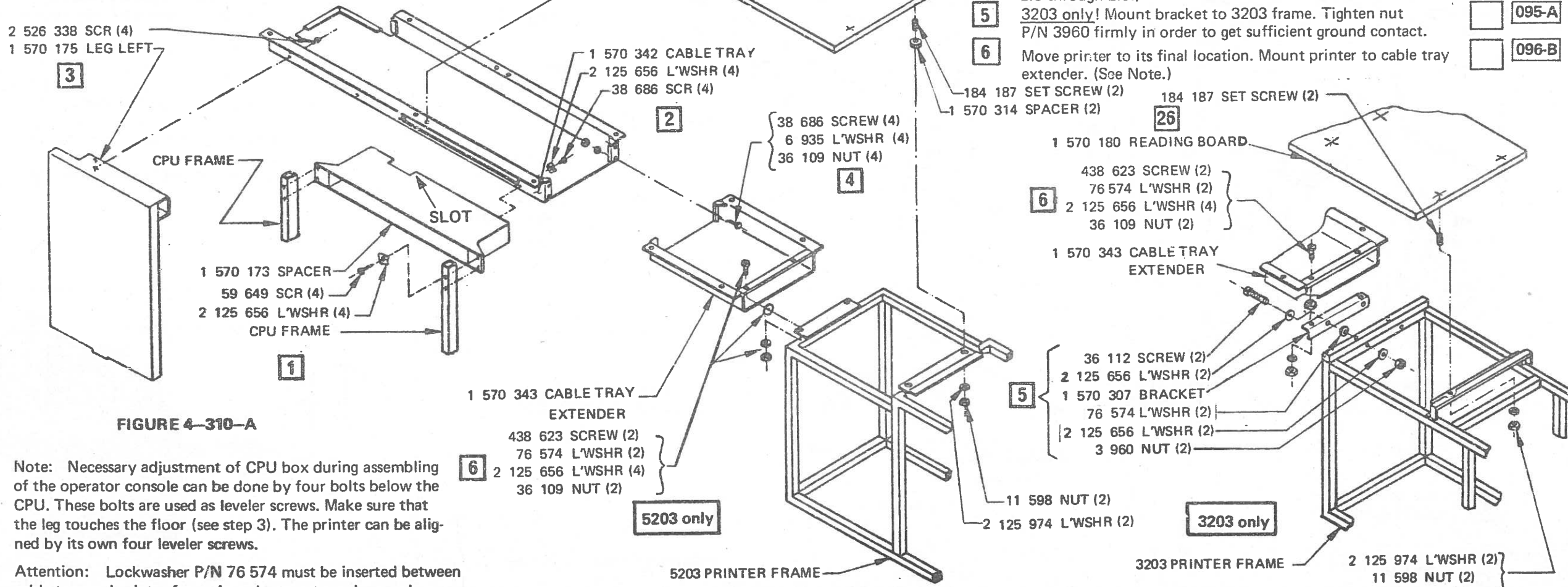


FIGURE 4-310-A

Note: Necessary adjustment of CPU box during assembling of the operator console can be done by four bolts below the CPU. These bolts are used as leveler screws. Make sure that the leg touches the floor (see step 3). The printer can be aligned by its own four leveler screws.

Attention: Lockwasher P/N 76 574 must be inserted between cable tray and printer frame in order to get good ground contact.

- 1** Attach spacer to CPU frame with four screws, but do not tighten the screws. The screws should be tightened finally after the left leg is attached. ATTENTION: The slot must be in the correct position (see Fig. 4-310-A).
- 2** Attach cable tray to previously installed spacer by four screws. Do not tighten these screws at this time.
- 3** Mount left leg to cable tray by four screws and tighten the screws installed in step 1 and 2 (see Note).
- 4** Mount cable tray extender to cable tray by four screws. Unpack Printer using unpacking instructions.
  - **3203 only!** Go to 3203 Installation Instruction contained in 3203 MLM, Appendix A and perform all steps up to the point where the printer is to be attached to the system.
  - **5203 only!** Go to 5203 Installation Instruction and perform steps 1.0 through 1.5 and 3.0 through 3.5 (skip steps 2.0 through 2.3.)
- 5** **3203 only!** Mount bracket to 3203 frame. Tighten nut P/N 3960 firmly in order to get sufficient ground contact.
- 6** Move printer to its final location. Mount printer to cable tray extender. (See Note.)

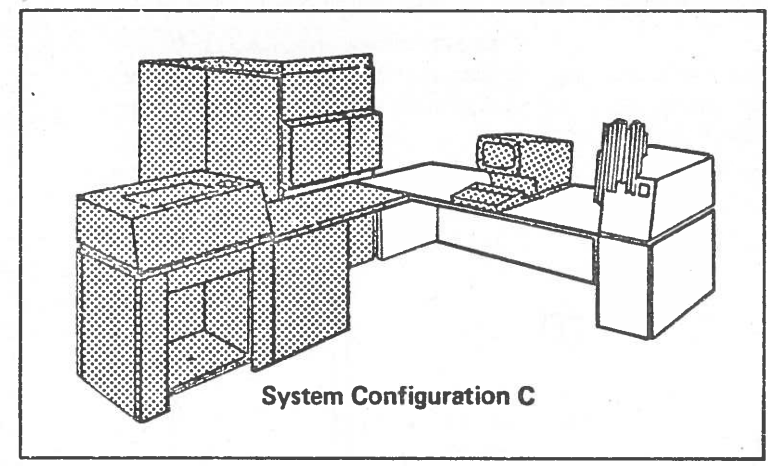
Step	Tray-pack
<input type="checkbox"/>	190-B
<input type="checkbox"/>	190-C
<input type="checkbox"/>	190-D
<input type="checkbox"/>	J96-A
<input type="checkbox"/>	
<input type="checkbox"/>	095-A
<input type="checkbox"/>	096-B

FIGURE 4-310-B

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### Assemble Operator Console with 5425 and with 3203/5203 (Part 2 of 5)



Parts shown on this page are located in :  
 B/M 1 568 102  
 B/M 1 570 190

- 7** Insert and fasten two screws into left leg.
- 8** Insert and fasten two studs into left leg.
- Go to Installation Instruction of MFCU (5425) and perform all steps up to step 2.2.
- 9** Attach bracket by two screws to MFCU.
- 10** Attach clamp backplate to bracket by two screws, two lockwashers and two nuts.
- 11** Mount bracket with previous attached backplate to MFCU-frame by two screws.
- 12** Mount two brackets to MFCU using the screws and brackets supplied in the 5425 shipping group. The bracket P/N 1 570 336 must be placed between 5425 bracket and 5425-frame.
- 13** Move MFCU to its final location.
- 14** Fasten three raceways at rear cover as shown in Fig. 4-320-A.
- 15** Install rear cover and fasten it by two screws at the bracket at the MFCU side.
- Go to page 6-100 and perform step 1 (Ground Check). If step 1 is completed, continue with next step on page 4-330.

- |                          |              |  |
|--------------------------|--------------|--|
| Step                     | Tray-        |  |
| cpltd                    | pack         |  |
| <input type="checkbox"/> | <b>102-A</b> |  |
| <input type="checkbox"/> | <b>102-A</b> |  |
| <input type="checkbox"/> | <b>102-B</b> |  |
| <input type="checkbox"/> | <b>102-C</b> |  |
| <input type="checkbox"/> | <b>102-D</b> |  |
| <input type="checkbox"/> | <b>102-E</b> |  |
| <input type="checkbox"/> | <b>102-B</b> |  |
| <input type="checkbox"/> | <b>102-F</b> |  |
| <input type="checkbox"/> |              |  |

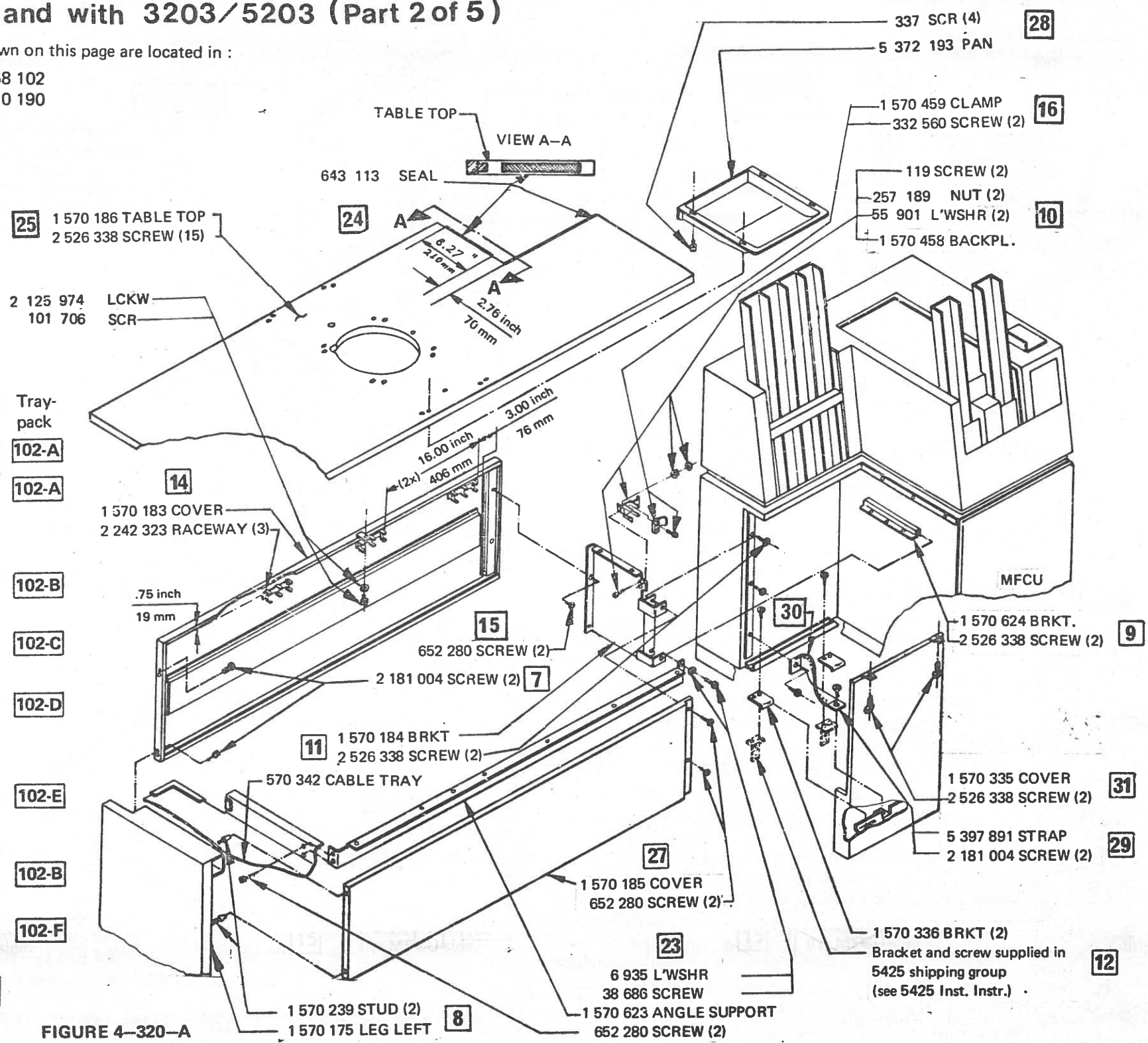
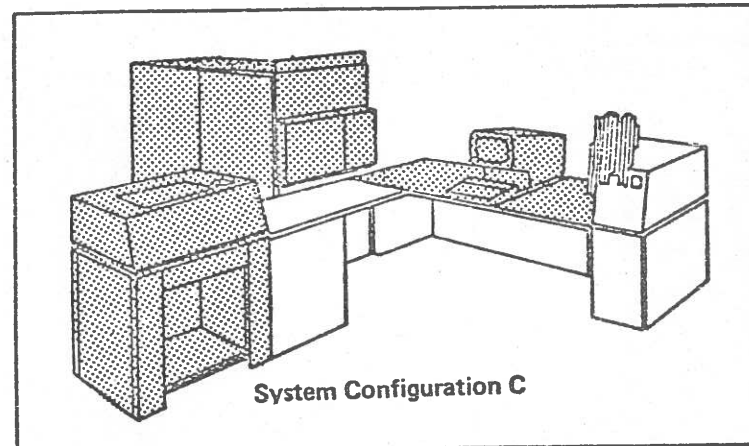


FIGURE 4-320-A



## Assemble Operator Console with 5425 and with 3203/5203 (Part 3 of 5)



Refer to Figure 4-340-A

- 16** Route signal cables from CPU to MFCU and fasten signal cables with clamp to the back plate which was attached in step 10. Insert the paddle cards into correct MFCU positions as indicated on the labels at the end of the cables (see Note on page 4-340).
- 17** Route dc cable from CPU Connector DC2 to TB3 and TB4 of MFCU and fasten signal cables and dc cable together with straps at the raceways.
- 18** Connect dc cable to TB3 and TB4 of MFCU as shown in Figure 4-340-A and table.
- 19** Route ac cable from MFCU to AC3 connector of CPU (see also Figure 4-340-A).
- 20** Fasten ac cable with six clamps and six screws.
- 21** 5203 only! Route signal cables from 5203 to CPU and insert paddle cards into correct positions as indicated on the labels at the end of the cables. (See Figure 4-350-B.)  
3203 only! Route signal cables from CPU to 3203 PEB. Go to 3203 Installation Instruction and perform all remaining steps up to chapter "Cable Installation" (included).

Step cpltd	Tray- pack
<input type="checkbox"/>	<b>102-C</b>
<input type="checkbox"/>	<b>102-F</b>
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	<b>102-G</b>
<input type="checkbox"/>	

- 22** Route ac and dc cables of the printer to their ac and dc connectors and connect Gnd strap from CPU frame (see Figure 4-350-A) to printer frame. At 3203 printer the upper left mounting point of the power supply is used for Gnd strap connection. (See Figure 4-230-A and 4-230-B for both printers.)

Step  
cpltd

Tray-  
pack

- 23** Mount Angle Support with 2 screws to cable tray and with 1 screw to MFCU bracket (see Figure 4-320-A).

**102-H**

- 24** Attach seal to table top (see Figure 4-320-A). Align the table top with the cover P/N 1 570 183 and the leg P/N 1 570 175 by moving the MFCU.

**102-I**

- 25** Fasten table top with 16 screws and lockwashers (see Figure 4-320-A) Align table top with cover P/N 1 570 183 and leg P/N 1 570 175 by moving the MFCU.

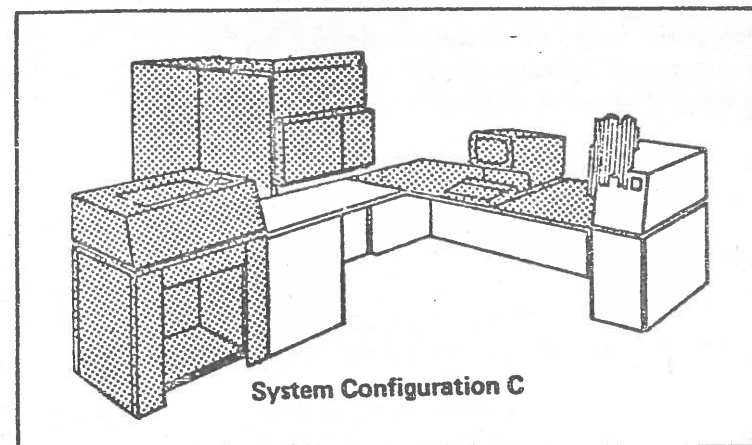
**102-J**

- Return to Installation Guide on Page 0-070

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### Assemble Operator Console with 5425 and with 3203/5203 (Part 4 of 5)



Parts shown on this page are located in:  
B/M 1 568 102  
B/M 1 570 190

**CABLE P/N 1 568 714 WIRE DESIGNATIONS**

WIRE NO	AWG NO	COLOR	CONTACT FROM	CONTACT TO	USE
1	12	WHITE	A1	TB4-16	+24V RLY CONT.
2	12	YEL/BK	A2	TB3-4	+6V
3	12	RED/BK	A3	TB3-1	-4V
4	12	RED/NAT	A4	TB4-4	+60V
5	12	YEL/RED	B1	TB4-7	60V GND
6	12	RED/BN	B2	TB4-1	+24V FROM I/O
7	12	RED/YEL	B4	TB3-8	LOGIC GND
SHIELD	14	BLACK	B3	-	NOISE SUPP.

**Note:**  
In addition to the shown signal cables, four white signal cables from CPU to MFCU are available.  
The cable group number is: 1 570 676  
The sequence numbers are: 4 310, 4 315, 4 320, 4 325

- 1 568 711
- 1 568 712
- 1 568 720
- 1 568 721
- 1 568 722
- 1 568 723
- 1 568 724

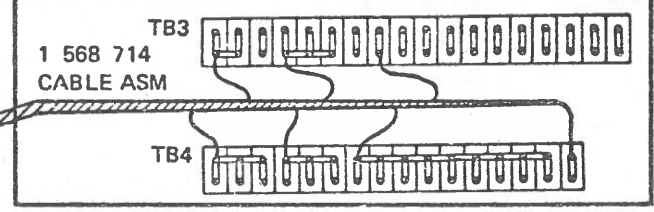
813 519 STRAP (6) **17**

Signal cables must be connected here

**16**  
MFCU SIGNAL CABLES (FLAT CABLES)  
see Note

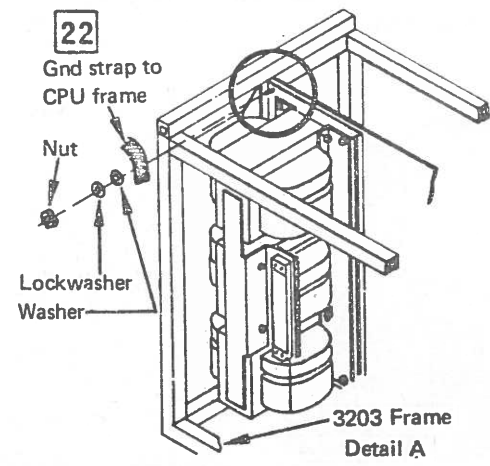
**20**  
32 042 SCREW (6)  
534 768 CLAMP (6)

**19**  
2 593 262 CABLE ASM  
MFCU-AC-CABLE  
**21**  
1 568 710 CABLE ASM  
3 SIGNAL CABLES FOR 3203  
see Detail A



**5203 CABLES TO CPU**  
1 568 716 TO DC5  
1 568 718 TO DC1

**SIGNAL CABLES TO BOARD 01A-C1**  
1 568 715  
1 568 677



- 22**
- CPU FRAME**
- PRINTER AC-CABLE**
- 1 568 717 (5203, 50Hz)
  - 1 568 719 (5203, 60Hz)
  - 1 894 607 (3203, 50Hz)
  - 1 894 608 (3203, 60Hz)

- 22**
- PRINTER DC-CABLE**
- 1 568 718 (5203)
  - 1 894 280 (3203)

**22**  
GND STRAP TO CPU FRAME  
**22**  
AC CABLE 50 Hz 1 568 717  
AC CABLE 60 Hz 1 568 719

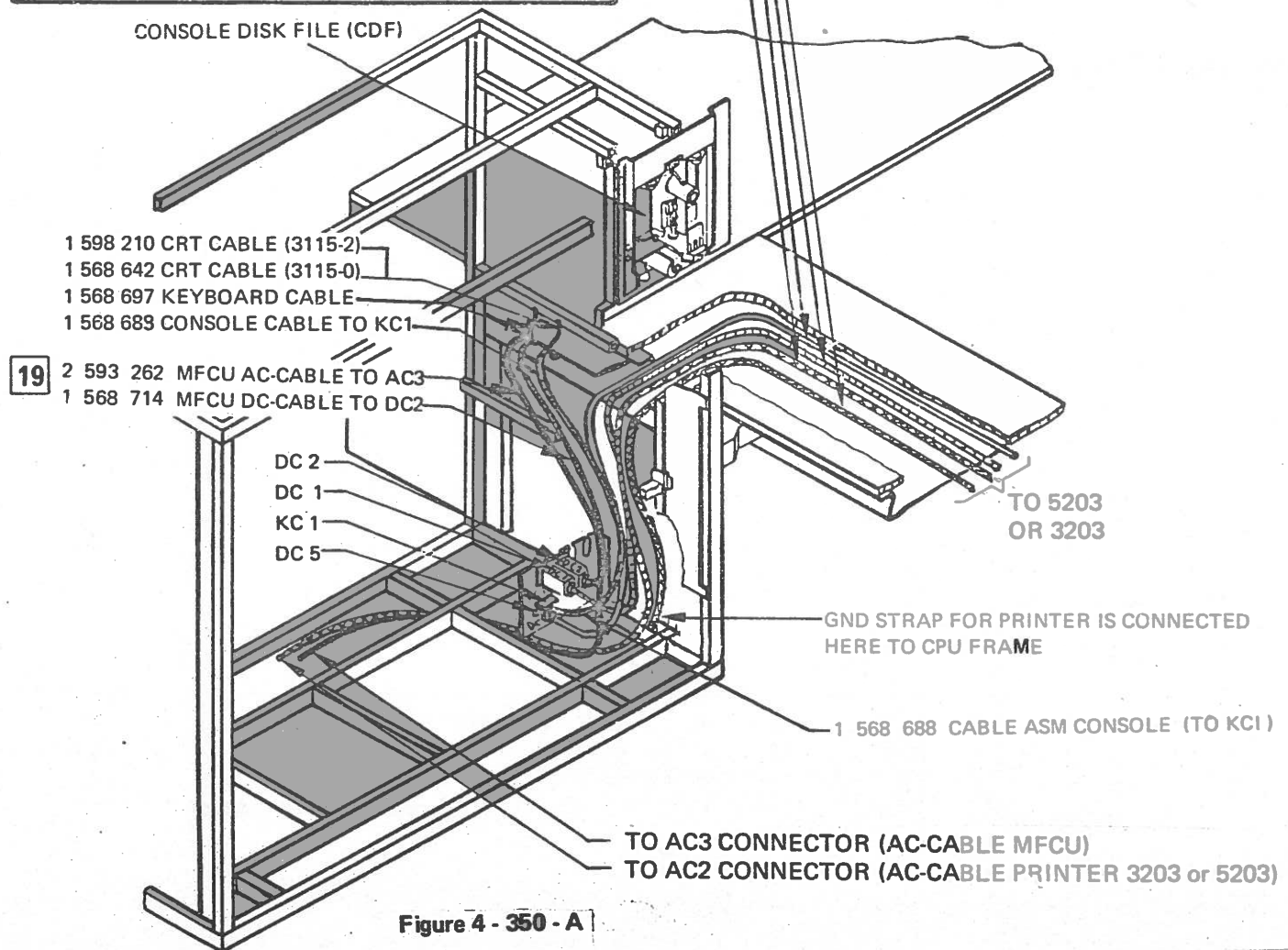
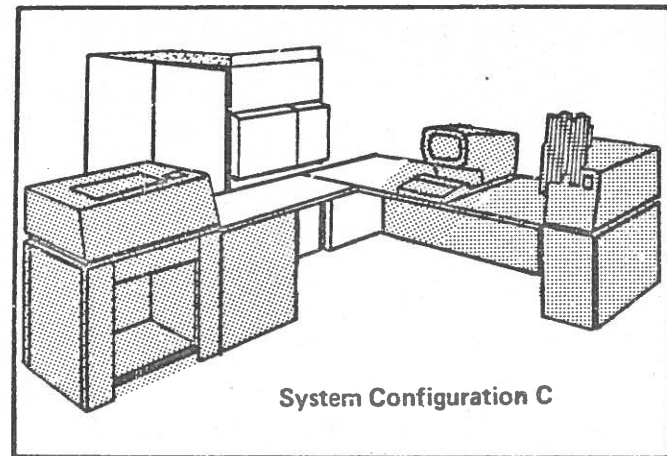
**22**  
CONNECT GND STRAP HERE TO 5203 FRAME

Figure 4 - 340 - A

Figure 4 - 340 - B

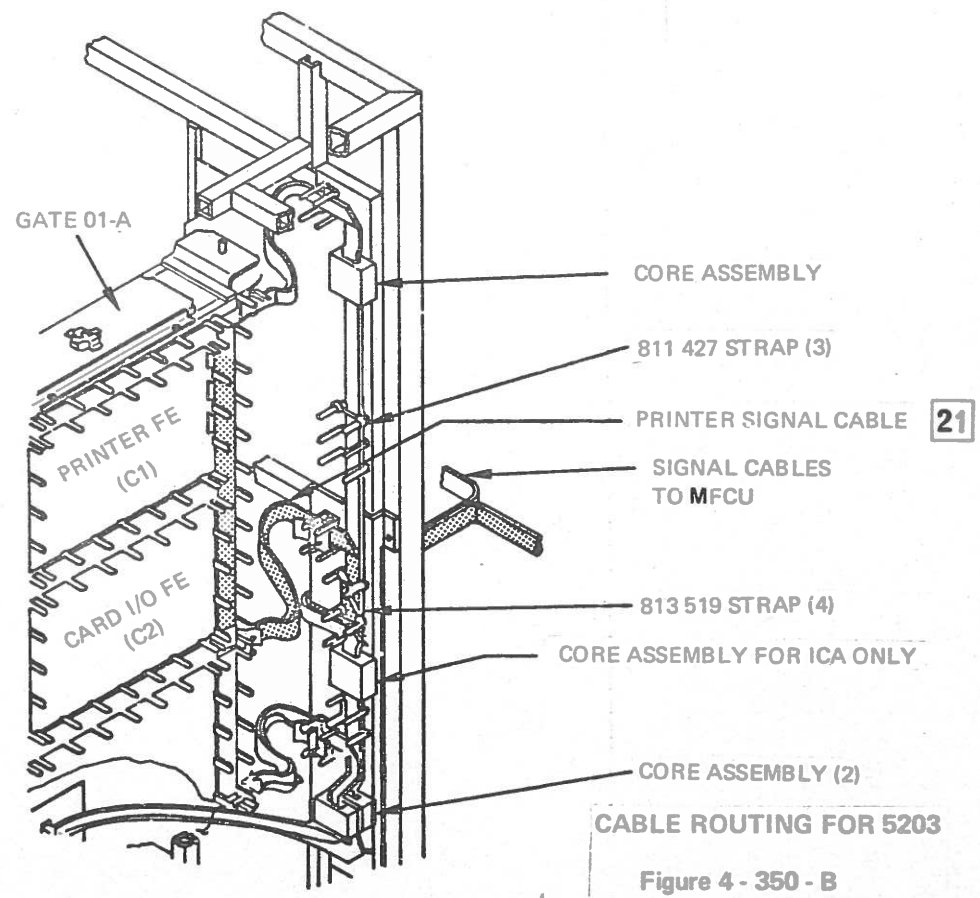


# Assemble Operator Console with 5425 and with 3203/5203 (Part 5 of 5)



- 26** 3203 only: Mount reading board as shown in Fig. 4-310-B  
5203 only: Mount reading board as shown in Fig. 4-310-A
  - 27** Attach front cover and fasten it with two screws (see Fig. 4-320-A).
  - 28** Mount pan below the table with four screws (see Fig. 4-320-A).
  - 29** Attach ground strap to cover for MFCU (Fig. 4-320-A)
  - 30** Fasten ground strap at MFCU frame.
  - 31** Bring cover at MFCU in correct position and fasten it with two screws at the table top (see Fig. 4-320-A).
- Return to Installation Guide.

Step cpltd	Tray- pack
<input type="checkbox"/>	096-C
<input type="checkbox"/>	102-K
<input type="checkbox"/>	190-L
<input type="checkbox"/>	190-M
<input type="checkbox"/>	190-M
<input type="checkbox"/>	102-L



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4-360

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# CHAPTER 5: INSTALLATION OF OPERATOR UNIT

## Mount Keyboard and Cathode Ray Tube on Operator Console (Part 1 of 5)

(valid for all System Configurations) Parts shown on this page are located in:

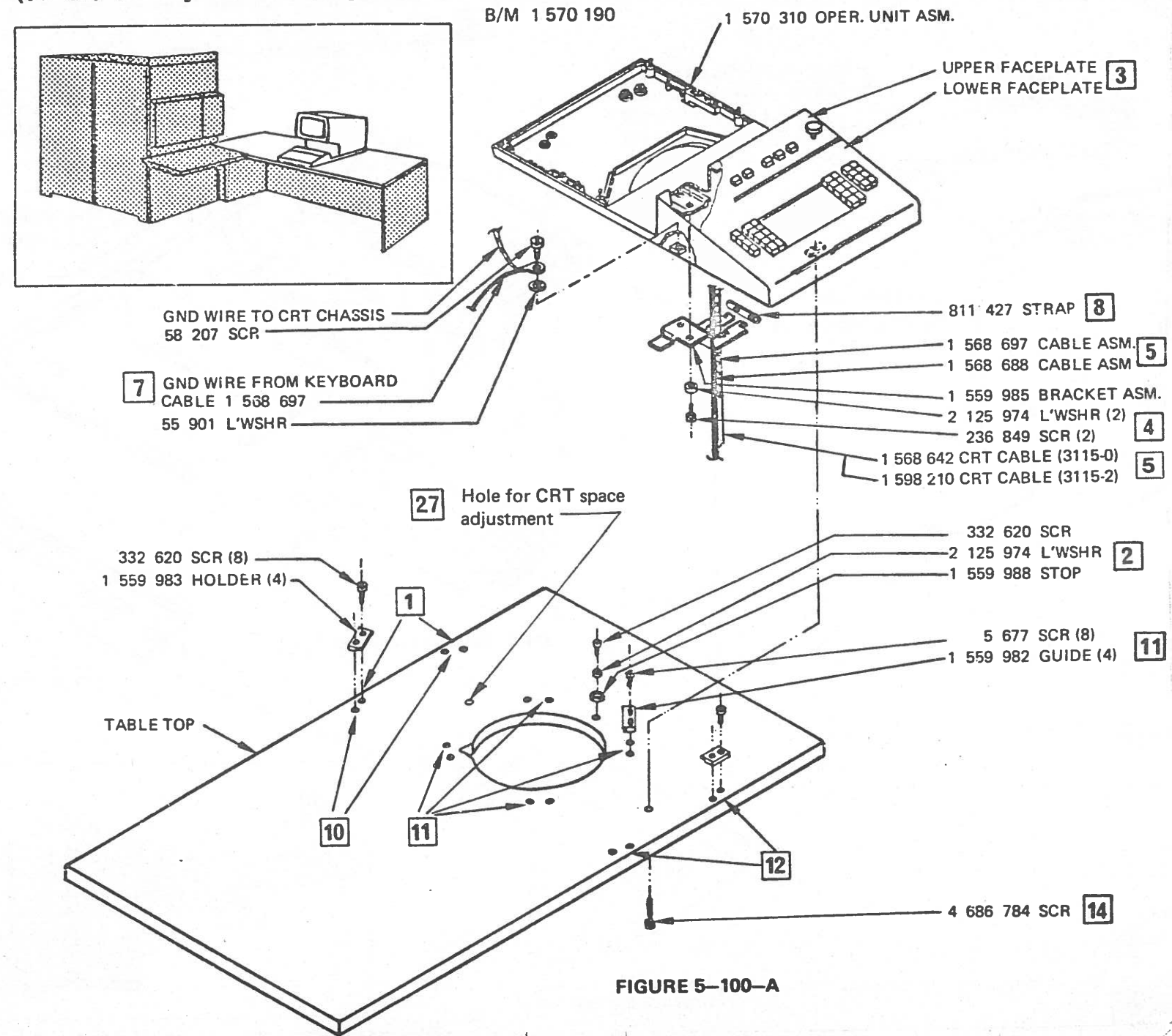


FIGURE 5-100-A

- 1 Mount two of four holders each with two screws to the back side of the table top.
- 2 Mount screw, lockwasher and stop to the table top.
- 3 Remove lower and upper faceplate of the keyboard. Make a visual inspection for damage. (See also Figure 5-110-A.)
- 4 Mount bracket assembly to keyboard with two screws and two lockwashers.
- 5 Route cables for CRT console and keyboard through the bracket and through the big hole in the table (see also Figures 5-110-B and 5-140-A)
- 6 Connect keyboard cable to keyboard (see Fig. 5-110-A), and secure connector with O-ring if present (see Fig. 5-100-B).
- 7 Fasten ground wire of keyboard cable at operator unit (see Figure 5-110-A and 5-120-A)
- 8 Install retaining strap to bracket.
- 9 Fasten keyboard and console cable with three tyminatures to the backside of the operator unit (see Fig.5-110-A).

Step	Tray-pack
1	190-E
2	190-F
3	
4	190-G
5	
6	190-P
7	
8	190-G
9	190-H

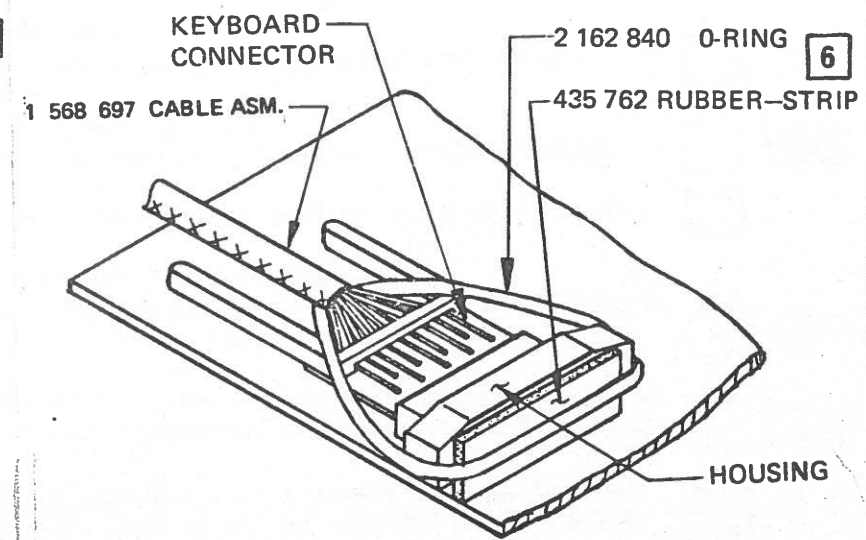


FIGURE 5-100-B

P/N 1 896 861	Eng. Change	No.	362 883	362931		
Page 1 of 2		Date	May 16, 1975	June 28, 1976		

3115  
Inst. Man.

### Mount Keyboard and Cathode Ray Tube on Operator Console (Part 2 of 5) (valid for all System Configurations)

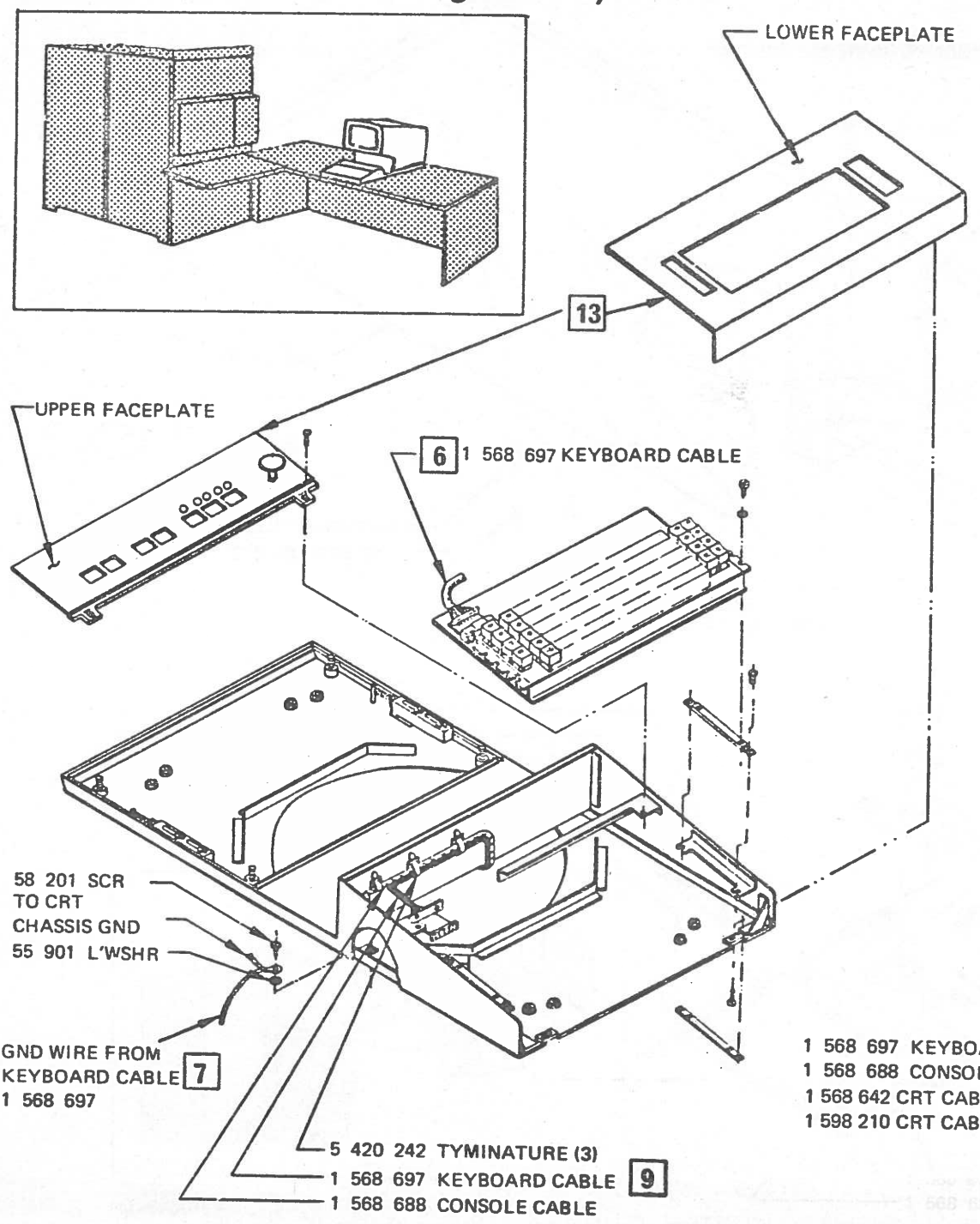


FIGURE 5-110-A

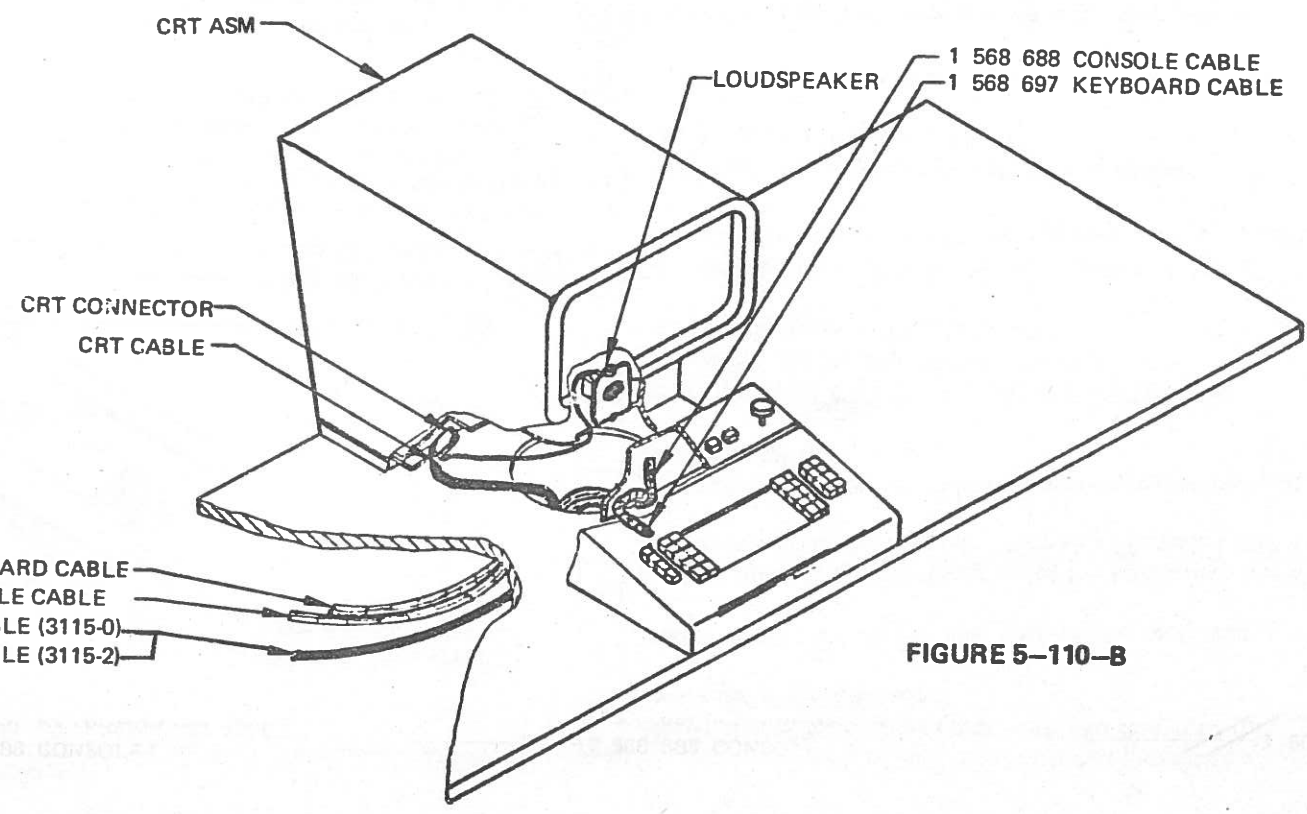


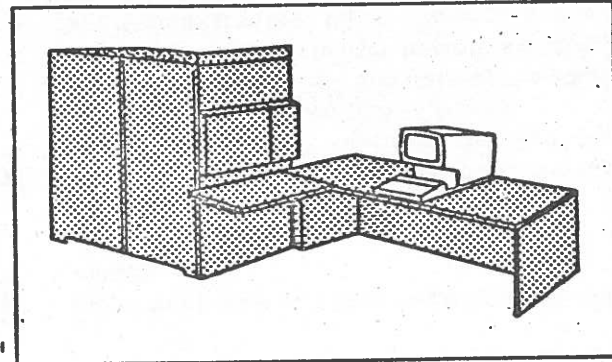
FIGURE 5-110-B

- |   | Step cpltd               | Tray-pack |
|---|--------------------------|-----------|
| 10 Place the keyboard into the previously mounted holders on the backside of the table top (see Fig. 5-100-A.)  | <input type="checkbox"/> |           |
| 11 Mount four guides with eight screws to the table top. It must be possible to rotate the keyboard easily. (See Fig. 5-100-A).                           | <input type="checkbox"/> | 190-I     |
| 12 Rotate the keyboard so that you can mount the last two of the four holders each with two screws to the front side of the table top (see Fig. 5-100-A). | <input type="checkbox"/> | 190-I     |
| 13 Mount upper and lower faceplate to the operator unit.  | <input type="checkbox"/> |           |
| 14 Secure operator unit with one screw to prevent pivoting (see Fig. 5-100-A).  | <input type="checkbox"/> | 190-J     |
| 15 Check for no binding of the keyboard and operator console keys.  | <input type="checkbox"/> |           |



# Mount Keyboard and Cathode Ray Tube on Operator Console ( Part 3 of 5 )

(valid for all System - Configurations)



### DANGER

The CRT installation requires care (imploding of the cathode ray tube). Use gloves, apron, face shield, and cape whenever the covers of the CRT are off.

- 16 Unpack CRT per unpacking instruction on box.
- 17 Remove left CRT cover, right cover and front cover.
- 18 Mount speaker on the plate with screw and clamp. (if not already installed)
- 19 Mount speaker plate with lower screw to the CRT frame. (if not already installed)
- 20 Remove nuts and washers from adjustment screws (if installed) and set adjustment screws to their approximate final position. Remove four plastic feet from CRT (if present), put the CRT unit on the keyboard chassis and attach nuts and washers. Do not tighten the nuts at this time to make later space adjustment possible.

Note: Part appear in B/M 1 879 463 Mech. Parts Group Model 002.

7 Gnd wire from Keyboard Cable  
1 568 697

Console Cable  
Part 1 568 688  
(to KC1)

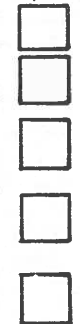
Keyboard Cable  
Part 1 568 697  
(from SVP)

CRT Cable  
1 568 642 (3115-0)  
1 598 219 (3115-2)

24 screw 32 042 or 32 032  
Gnd-wire from keyboard cable 1 568 697  
lockwshr 56 079  
Gnd-jumper 1 896 832  
nut 11 598  
17/21 4 Nuts 11 598  
4 Washers 45 690

17/28 Cover Left

Step  
cpltd



Lock  
Unlock

24 56 079 LCKW  
11 598 NUT  
NOTE  
22 CRT Cable with Connector  
1 568 642 (3115-0)  
1 598 210 (3115-2)  
(from SVP)

26 Mask Bezel  
2 565 203

Cover Right 17/28

18 Clamp 4 686 673  
Speaker 1 132 683  
Plate 4 686 674  
Screw 55 726  
Screw 5 319 854

17/26 Front Cover

25 1 598 210 CRT Cable (3115-2)

25 cable tray screw  
1 570 342  
2 536 338

2 Screws 236 849  
2 Lockwashers 2 125 974

25 1 896 832 GND JUMPER

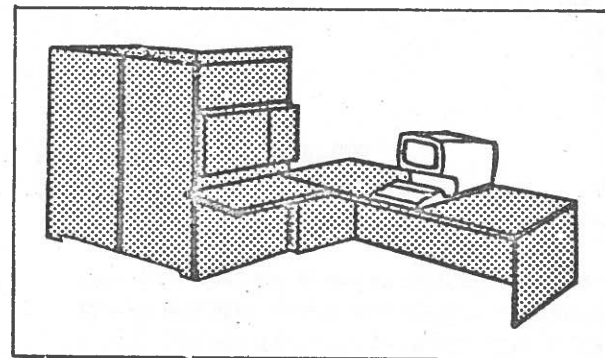
FIGURE 5-120-A

P/N 1 896 862 Page 1 of 2	Eng. Change	No.	362 663 Date Jan. 20, 1974	362 784 Date July 19, 1974	362 856 Date Sept. 30, 1974	362931 Date June 28, 1976	3115 Inst. Man.
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P/N 1 896 862 Page 2 of 2	Eng. Change	No. 362 663 Date Feb. 21, 1974	362 784 July 19, 1974	362 856 Sept. 30, 1974	362931 June 28, 1976
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3115  
Inst. Man.

## Mount Keyboard and Cathode Ray Tube on Operator Console (Part 4 of 5) (valid for all System Configurations)



### DANGER

The CRT installation requires care (imploding of the cathode ray tube).  
Use gloves, apron, face shield, and cape whenever the covers of the CRT are off.

For points 22 to 26 see Figure 5-120-A.

- 22** Plug the CRT cable into connector and secure it with pivot bar. (See also Figure 5-110-B). On 3115-2 connect shield to GND stud.
- 23** Connect the two speaker wires to the speaker.
- 24** Fasten ground wire of keyboard cable and Gnd-jumper (if EC 362840 is installed) with screw, washer and nut to the CRT frame below the tube.
- 25** This step is only valid if your machine has EC 362840 installed. Fasten Gnd-jumper to cable tray with table mounting screw. (This screw is already installed).
- 26** Install front cover and Mask-Bezel (if not already installed).
- 27** Adjust the four adjustment screws so that the space between the bottom of the CRT chassis and the top of the keyboard chassis is .020 - .040 inch (0,5 - 1,0 mm). On machines with EC 362 806 installed the adjustment screws are accessible through a hole from beneath the table. The keyboard must be rotated so that the screwdriver which is inserted into the hole in the tabletop can reach the adjustment screw. (see Figure 5-100-A).
- 28** Install both side covers.

step  
cpltd

Tray-  
pack

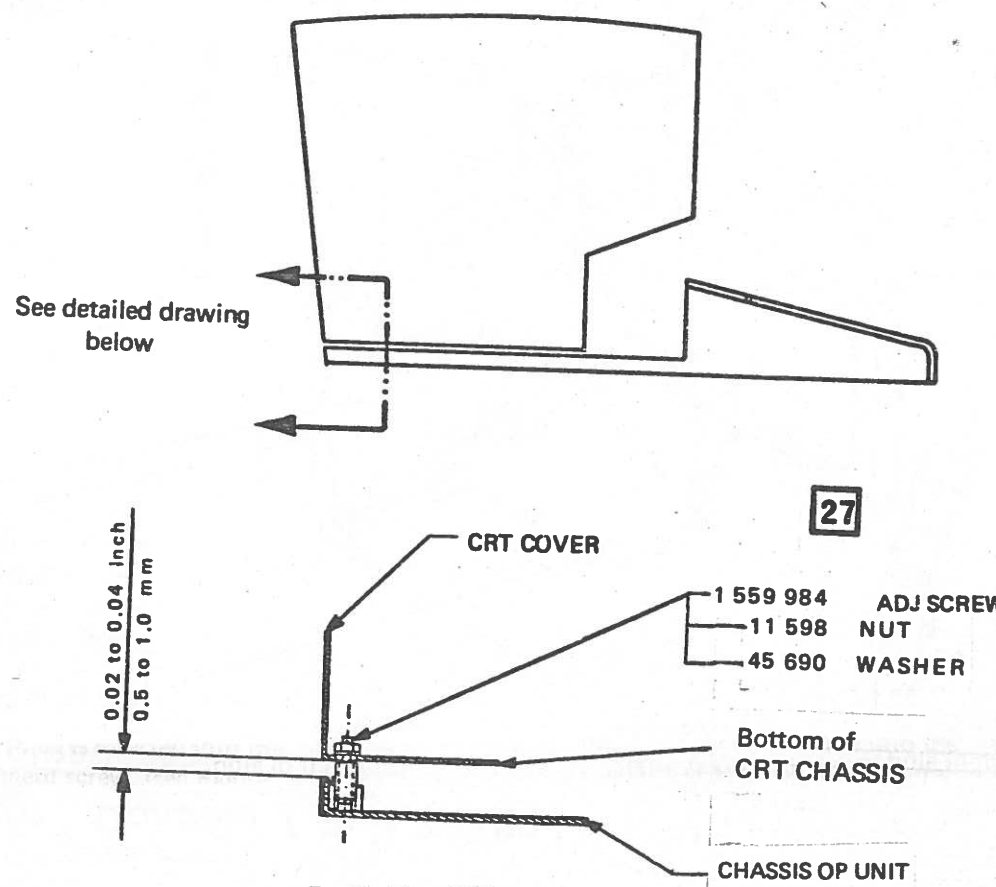
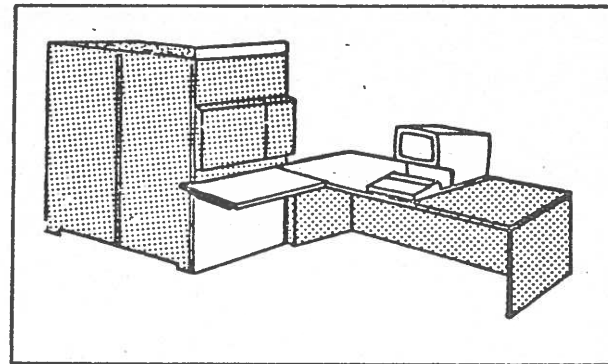


FIGURE 5-130-A



# Mount Keyboard and CRT on Operator Console (Part 5 of 5)

Step  
cpltd



**29** Route console cable to KC1 connector and plug the connector into the socket.



● Return to Installation Guide on page 0-070.

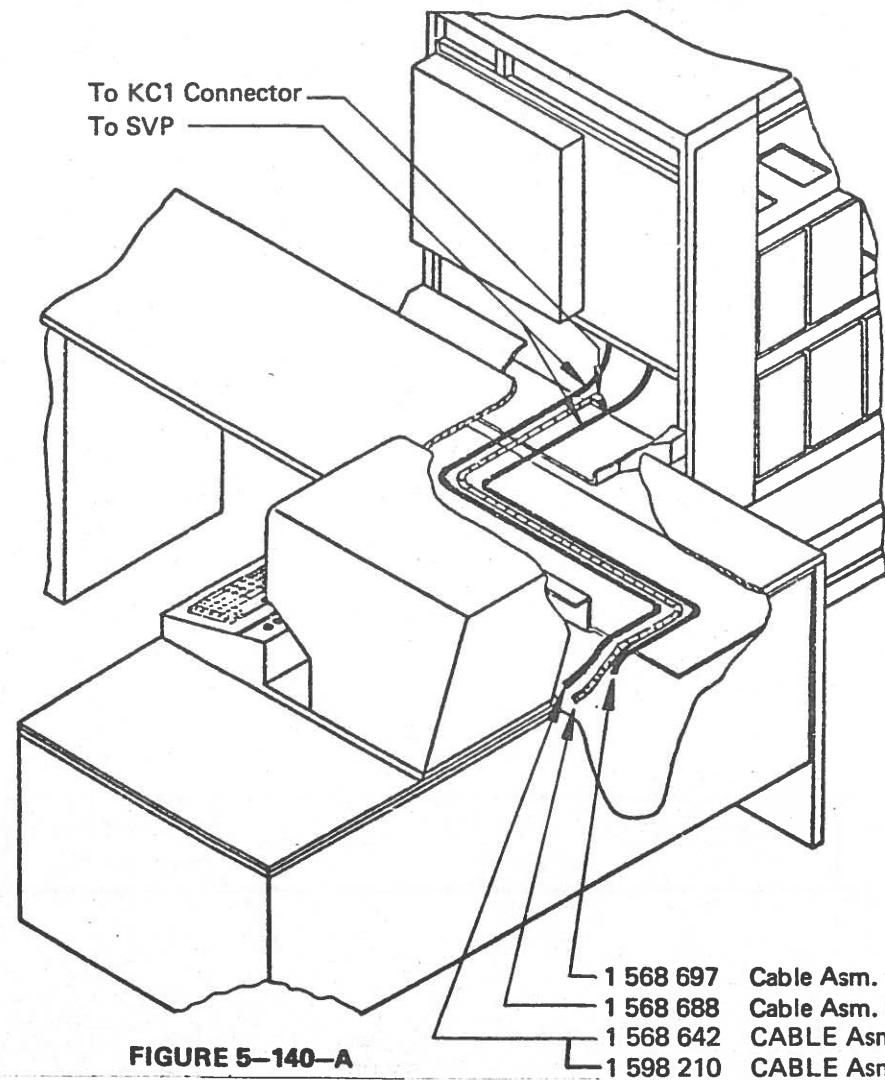


FIGURE 5-140-A

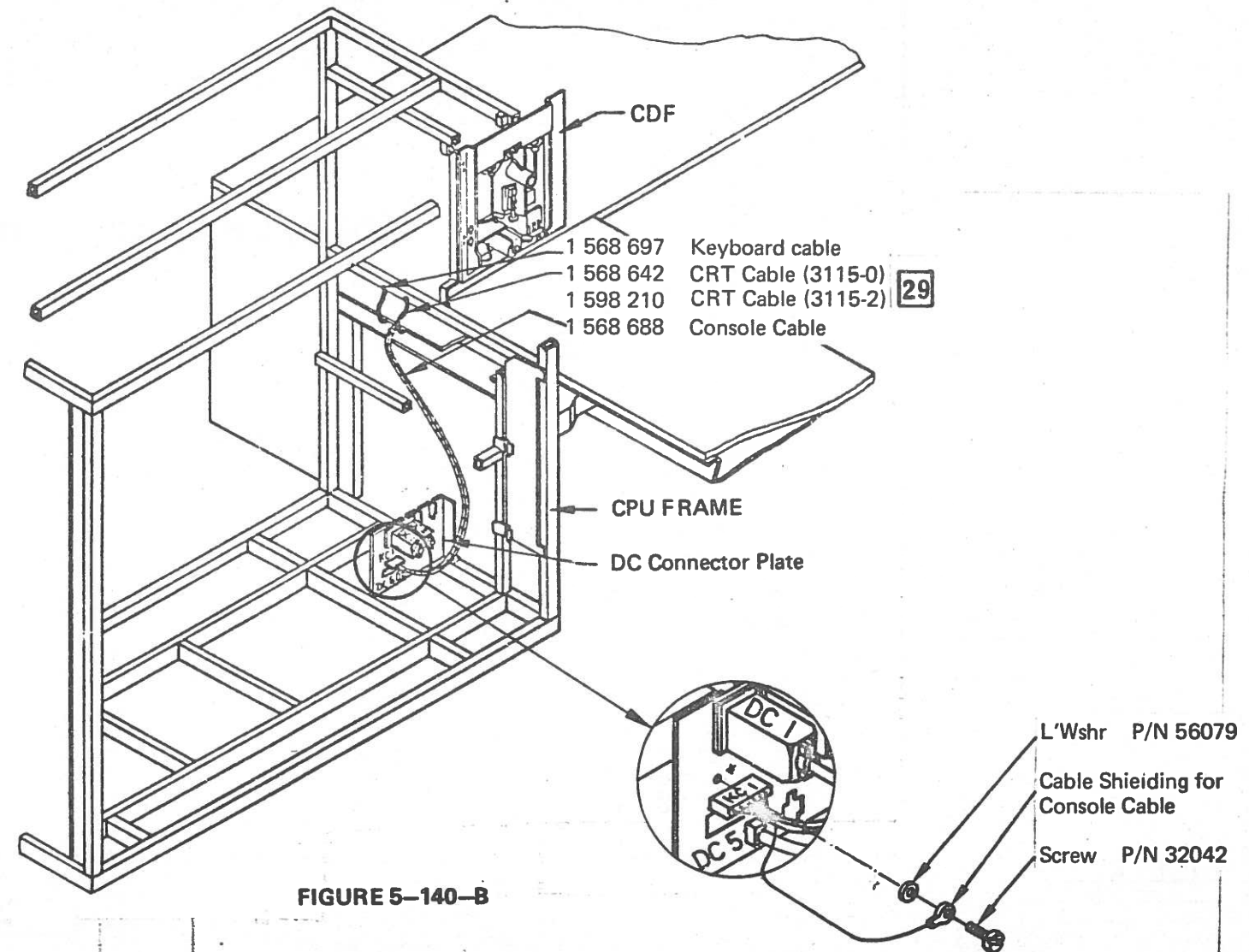


FIGURE 5-140-B

P/N 1 896 863 Page 1 of 2	Eng. Change	No. Date	362 663 Feb. 21, 1974	362 784 July 19, 1974	362 840 Nov. 29, 1974	362931 June 28, 1976
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3115  
Inst. Man.



P/N 1 896 863	Eng. Change	No.	362 633	362 784	362 840	362931
Page 2 of 2		Date	Feb. 21, 1974	July 19, 1974	Nov. 29, 1974	June 28, 1976

3115  
*Inst. Man.*

5 - 150

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# CHAPTER 6: GROUND CHECKING

## Check DC Grounding

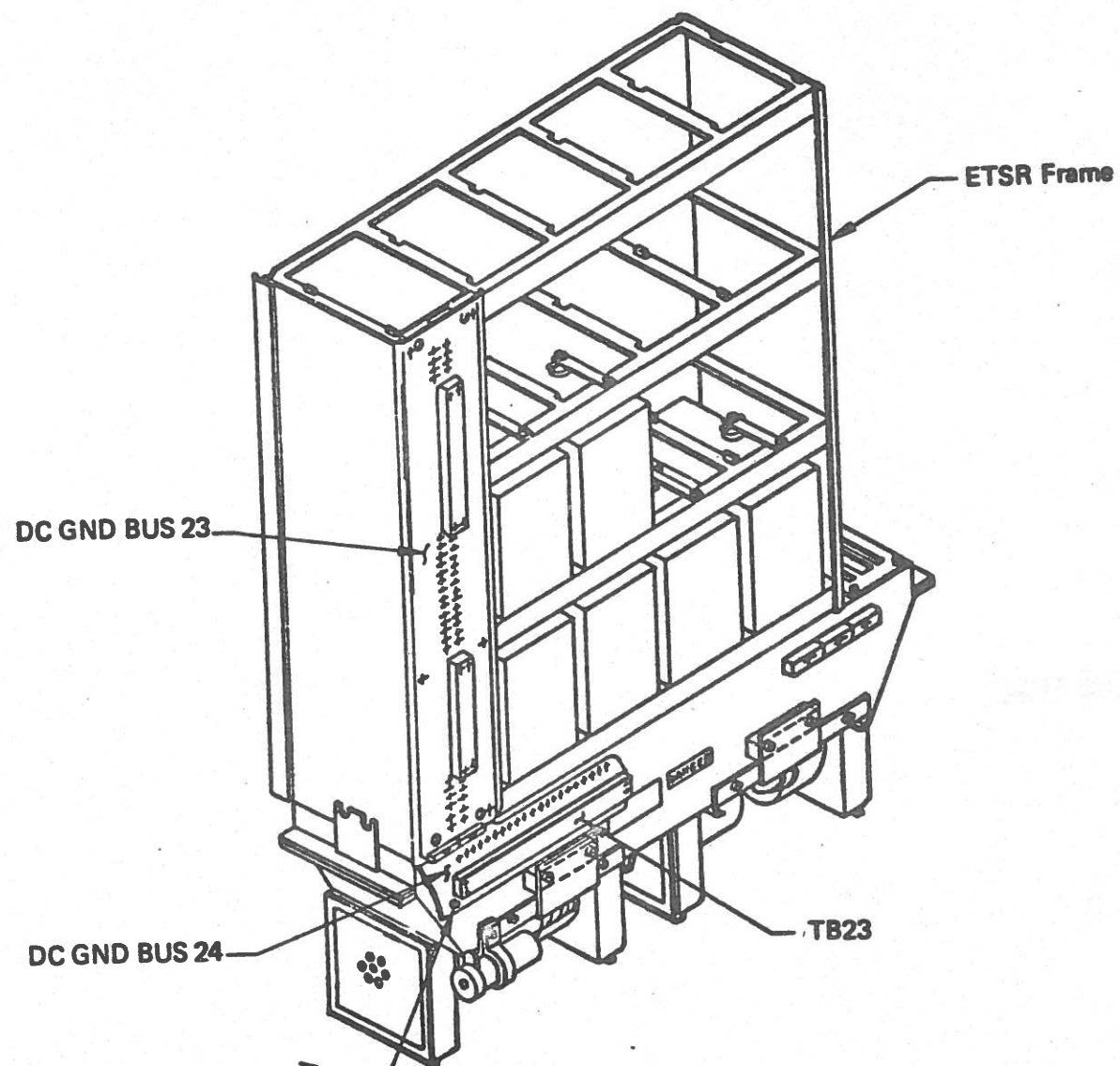


FIGURE 6-100-A

1 The ground strap to the CPU frame is connected here to GB24-23

Note: If tape, disk or channel cables are connected to CPU the resistance between GB24 and frame ground will be zero ohm because there is a ground connection in the respective I/O unit. Refer to Installation Manual for those units.

TB XX = TERMINAL BLOCK XX  
GB XX = DC GND BUS XX

DC ground is connected to frame ground by a ground strap between GB24 and CPU frame. During installation of the system, a ground check must be performed as described here:

1

Perform the following single steps:

- 1.1. Disconnect ground strap from ground bus GB 24-23 and make sure that no ground strap touches the ground bus.
- 1.2. Refer to Note 1 on ALD page YD553.
- 1.3. Check that all I/O cables are disconnected. For the internal signal cables to I/O, for 3411, 3340 and MPX, lift plated blocks (if installed) clear of holders and insulate to insure no ground connection to frame.
- 1.4. Connect ohmmeter between GB24 and disconnected ground strap.
- 1.5. Check that the resistance is not less than 100 k  $\Omega$ .

Return to the page from which you have entered this page (4-110, 4-220, or 4-320).

2

Perform the following single steps:

- 2.1. After I/O cable routing is complete, check again that the resistance between ground wire and GB24 is not less than 100 k $\Omega$ . Refer to Note on this page. If CRT table is already connected the resistance will be approximately 7 k $\Omega$ .
- 2.2. Eliminate grounding faults as soon as they are detected. All faults must be eliminated before power is switched on.
- 2.3. After routing of last cable between CPU and operator console and 5425 and 3203/5203 (if attached), disconnect ohmmeter and reconnect ground strap to GB24 (disconnected in step 1.1.). Replace plated I/O connectors for 3411, 3340 and MPX if isolated in step 1.3. above.
- 2.4. Connect all ac, dc, and signal cables of operator console keyboard, 3203 or 5203 and 5425 (if attached) to their plugging positions (see Chapter 4 for your system configuration).

Return to installation guide on page 0-080.

Step  
cpltd









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3115  
Inst. Man.

P/N 1896 864  
Page 2 of 2

Eng. Change

No.  
Date

362 663  
Feb. 21, 1974

362 784  
July 19, 1974

362 856  
Sept. 30, 1974

3115  
Inst. Man.

6-110

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# CHAPTER 7: CABLES FROM CPU TO I/O UNITS

## Connect Cables between I/O Units and CPU (Part 1 of 7)

The cables between all available external I/O units and the CPU are listed in this section. Details of cable routing are shown on the next pages.

The cable routing between CPU and MFCU as well as the cable routing between CPU and 3203/5203 is described separately in the Chapter 4.

Route all cables from the different I/O units to the CPU as shown in this section and connect the cables to their correct positions as shown in the tables. Fasten the cables at the strain reliefs as shown in this section.

### ICA only ▼

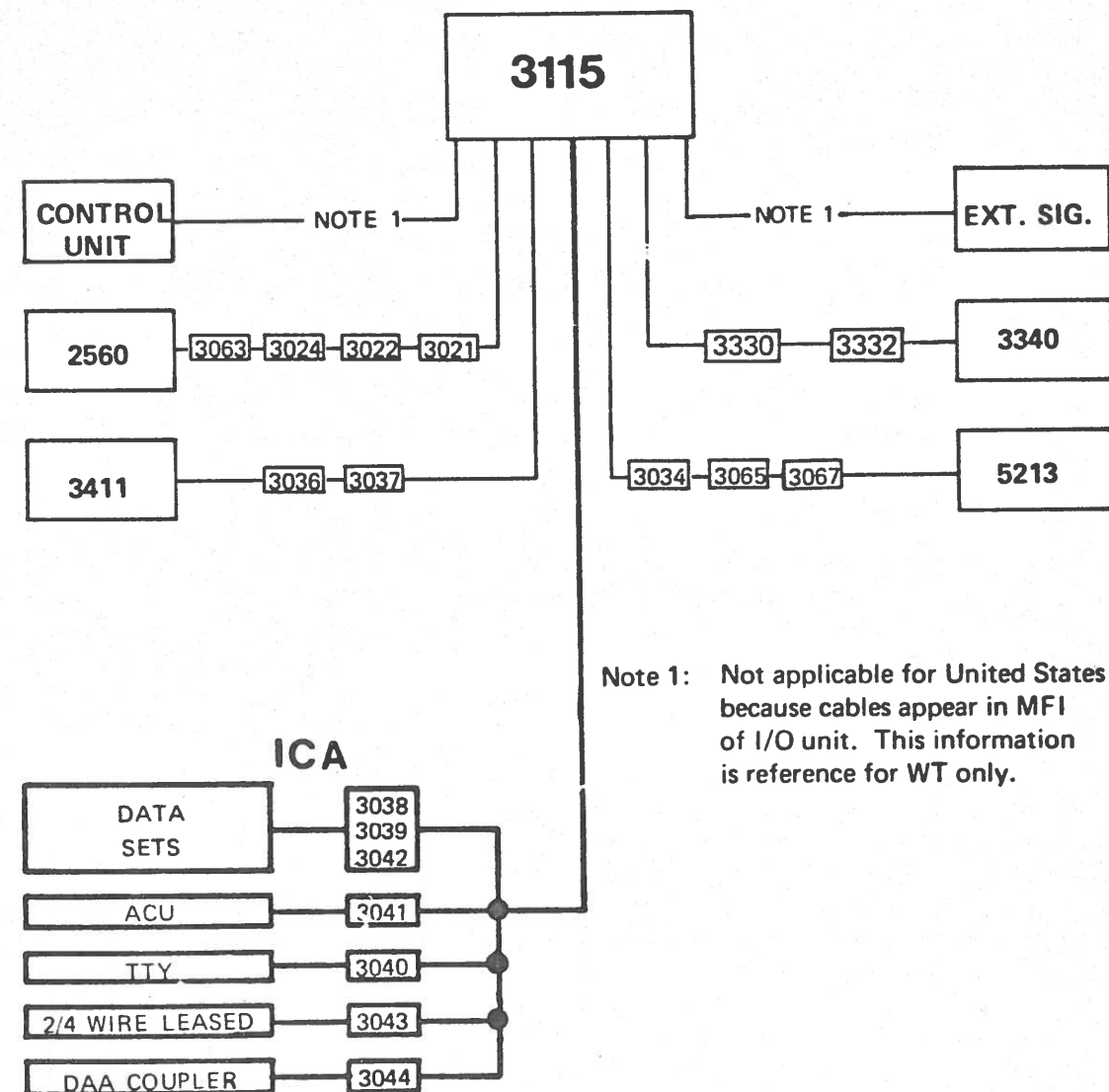
- Refer to the ICA MLM for external cable drawing and connection to telephone equipment.
- Check Tie-Down List for feature wiring used only with IBM Modem providing test lead to Data Terminal Equipment (DTE) for wrap test. Refer to Vol. A01, Add-Card Code List, pages A5210-A5211 and to the Tie-Down List on page A6202.
- Line adapters are factory-strapped for four wires, 25-ms clear to send delay, 0-ms echo clamp delay, and -33 db receiver sensitivity. Line adapters with auto-call or auto-answer are strapped for two wires; 200-ms clear to send delay, 130-ms echo clamp delay, and 43 db receiver sensitivity. If customer requirements differ, the CE must change the strapping. Refer to ICA MLM page 8-039, and Vol. A01 Add-Card Code Lists, pages A5225-A5228 (LAB 2) or A5215-A5222 (LAB 3), and Tie-Down Lists pages A6210-A6211 (LAB 2) or A6205-A6209 (LAB 3).

Note: For details of ICA cable installation refer to ICA MLM pages:  
4-091 through 4-096  
7-030, 7-032

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3115  
Inst. Man.

CHART OF CABLE GROUP NUMBERS FOR CABLES BETWEEN I/O UNITS AND CPU



Note 1: Not applicable for United States because cables appear in MFI of I/O unit. This information is reference for WT only.

FIGURE 7-100-A

### Connect Cables between I/O Units and CPU (Part 2 of 7)

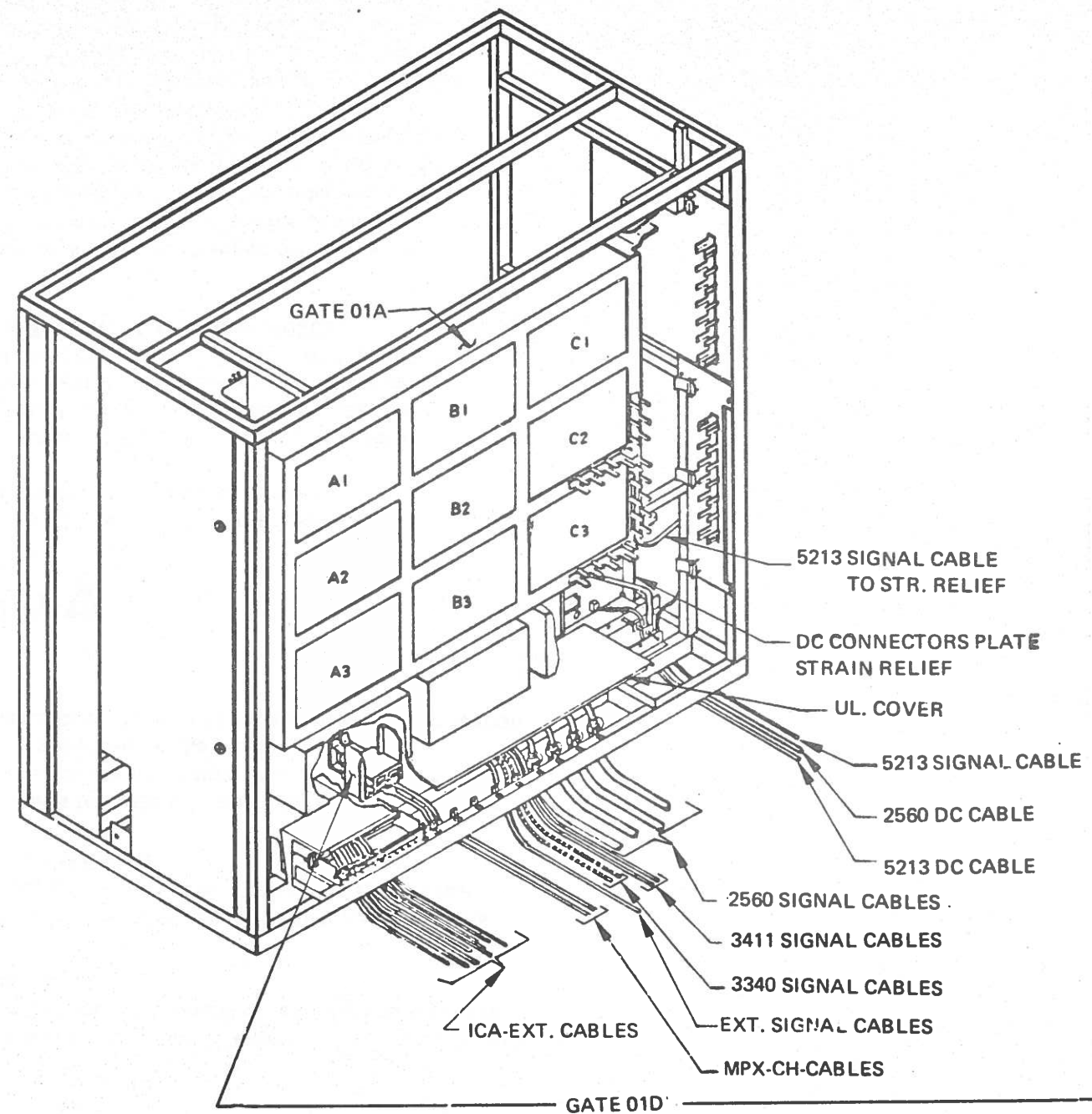
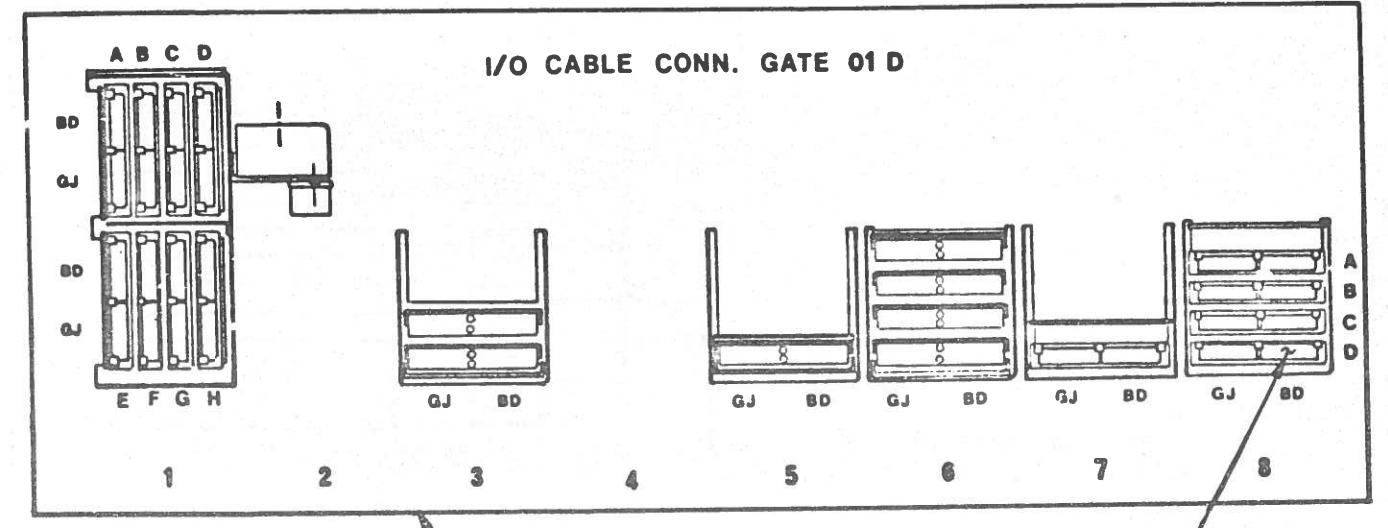


FIGURE 7-110-A



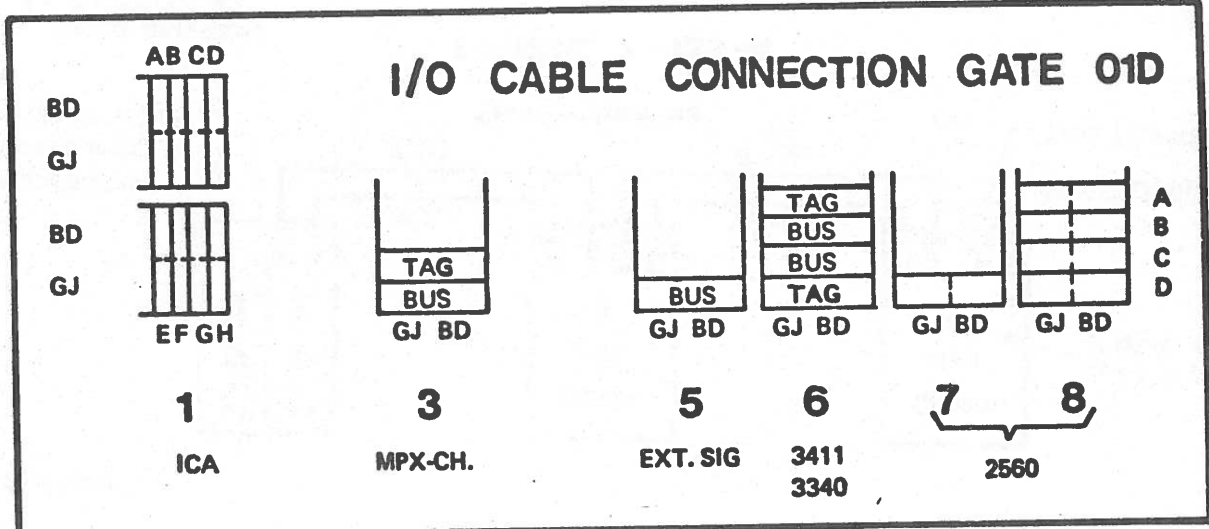
Connector location example:  
01D-D8-BD

FIGURE 7-110-B

Note: For ac and dc cable routing refer to Fig. 7-160-A and Fig. 7-160-B.



# Connect Cables between I/O Units and CPU (Part 3 of 7)



MPX channel requires  
 Bus Terminator P/N 5 440 649  
 Tag Terminator P/N 5 440 650  
 installed.  
 \* Complete B/M number 1 878 102.

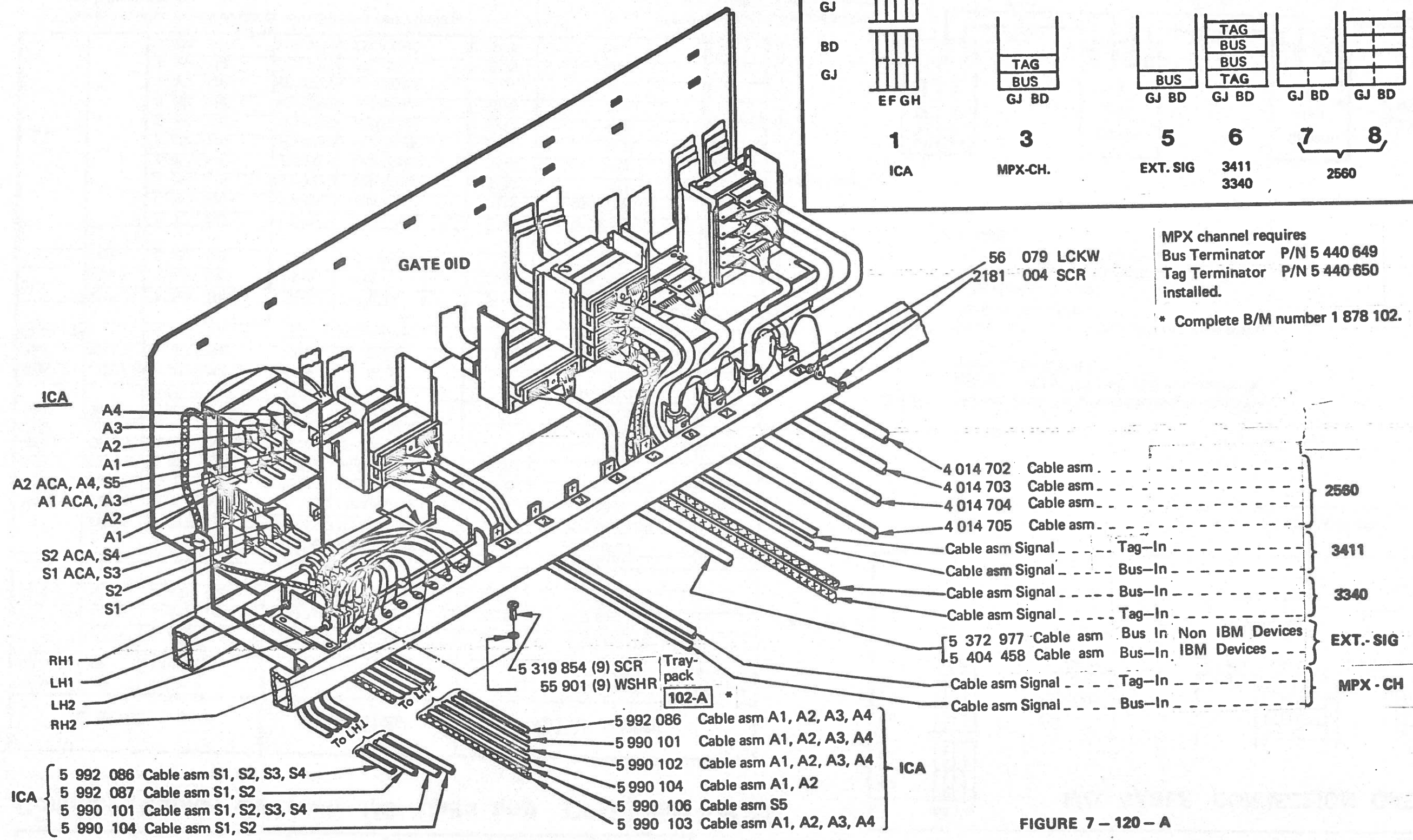


FIGURE 7 - 120 - A

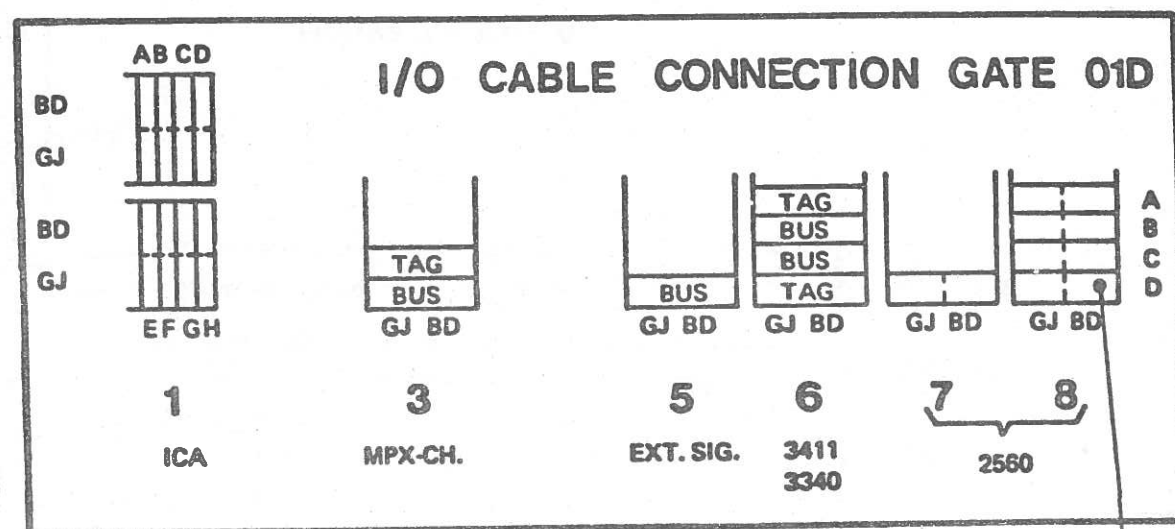
P/N1 896 866 Page 1 of 2	Eng. Change	No. Date	362 663 Feb. 21, 1974	362 784 July 19, 1974	362 856 Sept. 30, 1974
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3115  
Inst. Man.



### Connect Cables between I/O Units and CPU (Part 4 of 7)

Cable			I/O side		CPU side		STRAIN RELIEF
CABLE GROUP	KEY NO	PART NUMBER	UNIT	CONNECTOR LOCATIONS	UNIT	CONNECTOR LOCATIONS	
3036	3036 T	5 353 920 *	3411	TAG-IN	3115	01D-A6-GJ,BD	See Note 1
	3036 B	5 353 920 *	3411	BUS-IN	3115	01D-B6-GJ,BD	
3037	3037 A	5 351 178	3411	EPO-CONN. J7	3115	PCT-CONN.	
3050	3050 A	5 372 977	EXT.SIG.	BUS-IN (NON IBM)	3115	01D-G5-GJ	
		5 404 458	EXT.SIG.	BUS-IN (IBM-DEV)	3115	01D-G5-GJ	
3021	3021 A	4 014 702	2560	S-CABLE CONN.	3115	01D-D8-GJ,BD	9
	3021 B	4 014 703	2560	A1A3,A1A6,A1A7**	3115	01D-C8-GJ,BD,B8-BD	8
	3021 C	4 014 704	2560	A1A4,A1A5	3115	01D-D7-GJ,BD	7
3022	3022 A	4 014 706	2560	AC-CONN.	3115	AC3	
3063	3063 A	1 568 706	2560	DC-CONN.	3115	DC3	
3024	3024 A	4 014 705	2560	B1N4,B1N5,B1N6	3115	01D-A8-GJ,BD,B8-GJ	6
3065	3065 A	1 568 442 60HZ	5213	PRT.BOARD F1, F2	3115	01A-C3-U2-V2	
		1 568 707 50HZ	5213	PRT.BOARD F1,F2	3115	01A-C3-U2-V2	
3034	3034 A	4 014 742	5213	AC-13	3115	AC5	
3067	3067 A	1 568 709	5213	DC-13	3115	DC6	
GND-STRAP		1 570 526	5213	5213 FRAME	3115	CPU-FRAME	
3330	3330 B	5 466 456 *	3340	BUS-IN **	3115	01D-C6-GJ,BD	See Note 1
	3330 T	5 466 456 *	3340	TAG-IN **	3115	01D-D6-GJ,BD	
3332	3332	5 351 178	3340	EPO-J 101	3115	PCD-CONN.	
See Note 2		5 353 920 *	MPX-CH	TAG-IN	3115	01D-C3-GJ,BD	See Note 1
		5 353 920 *	MPX-CH	BUS-IN	3115	01D-D3-GJ,BD	
		5 251 178	MPX-1EPO	EPO-CONN.	3115	PC1	
		5 351 178	MPX-2EPO	EPO-CONN.	3115	PC2	
		5 351 178	MPX-3EPO	EPO-CONN.	3115	PC3	
		5 351 178	MPX-4EPO	EPO-CONN.	3115	PC4	
		5 351 178	MPX-5EPO	EPO-CONN.	3115	PC5	
		5 351 178	MPX-6EPO	EPO-CONN.	3115	PC6	
	5 351 178	MPX-7EPO	EPO-CONN.	3115	PC7		
	5 351 178	MPX-8EPO	EPO-CONN.	3115	PC8		



Connector location example:  
01D-D8-BD

Note 1: Not applicable for United States because cables appear in MF1 of I/O unit. This information is reference for WT only.

Note 2: Depending on the control unit, different group numbers may apply.  
MPX channel requires  
Bus Terminator P/N 5440649  
Tag Terminator P/N 5440650  
installed.

\* Some machines may have cables with different part numbers see following table:

cable used for	cable P/N
3340 (Disk)	2 281 630
3411 (Tape)	5 700 306
MPX	5 700 306

The cables called out in the table on the left have an additional shielding. The Gnd-wire of these cables must be connected to CPU-frame in the same way as the Gnd wire of 2560-cables (see Figure 7-120-A).

\*\* 2 terminators for bus and tag P/N 2 282 675 must be installed similar to control unit B in Figure 7-130-A.

\*\* If OMR-Feature is installed, plug cable into positions D1 A3, D1 A6, D1 A7.

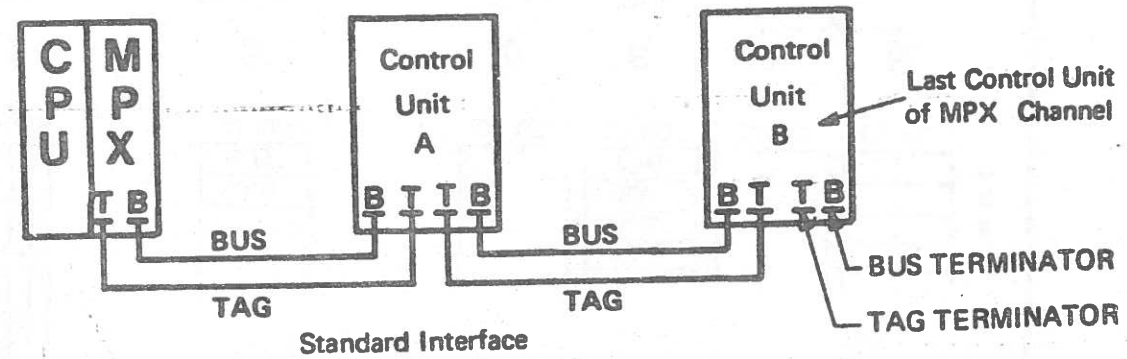
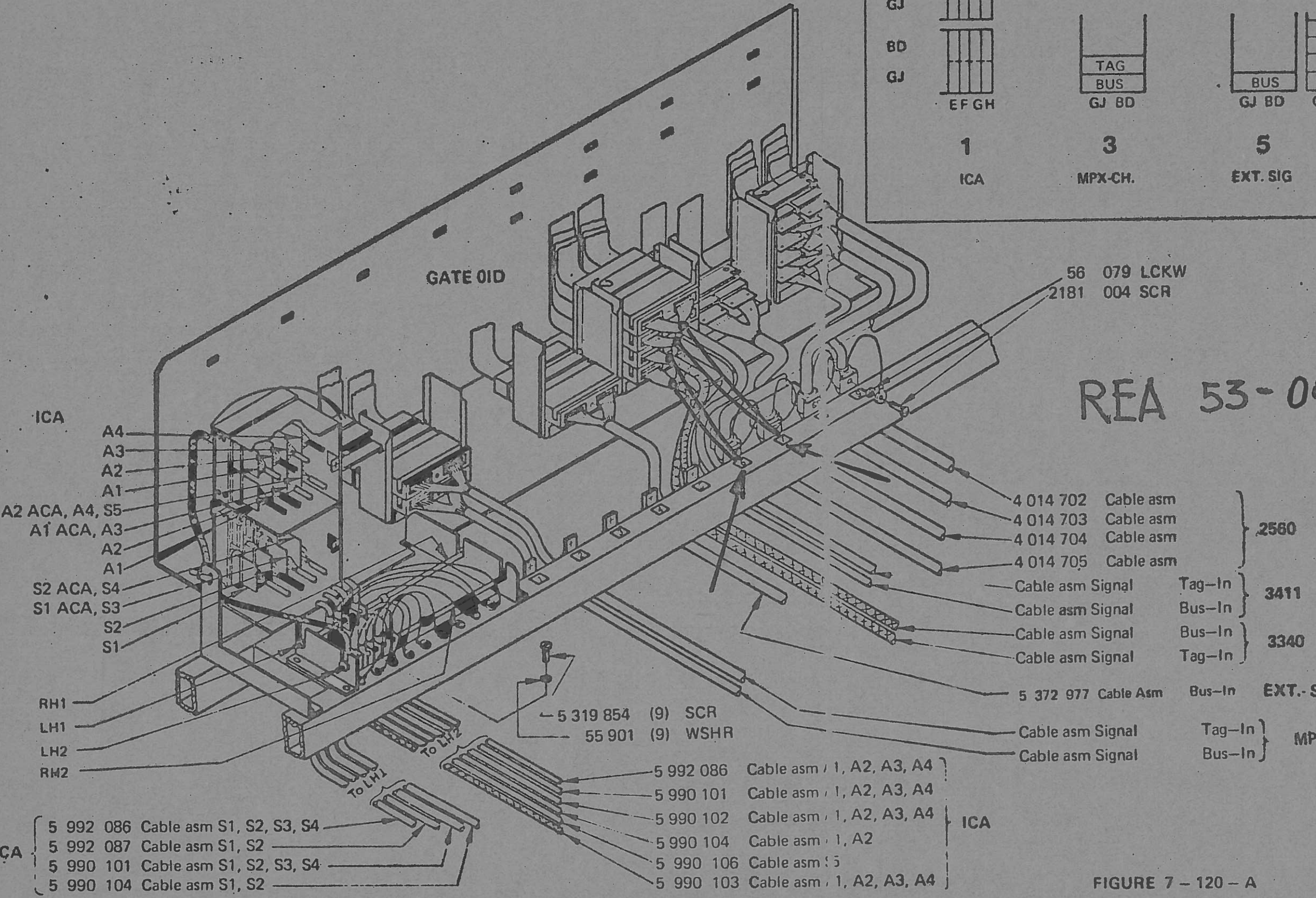
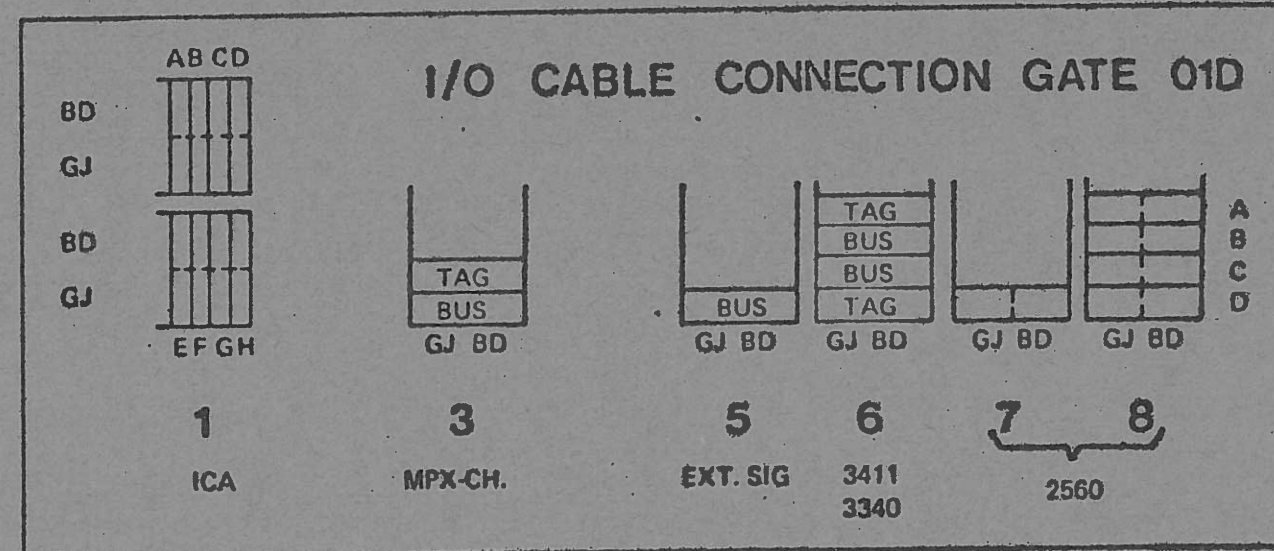


FIGURE 7-130-A



# Connect Cables between I/O Units and CPU (Part 3 of 7)



REA 53-09250

MPX channel requires  
Bus Terminator P/N 5440649  
Tag Terminator P/N 5440650  
installed.

FIGURE 7-120-A

P/N 1 896 866	Eng. Change	No.	362663	3115
Page 1 of 2		Date	Feb 21, 1974	Inst. Man.

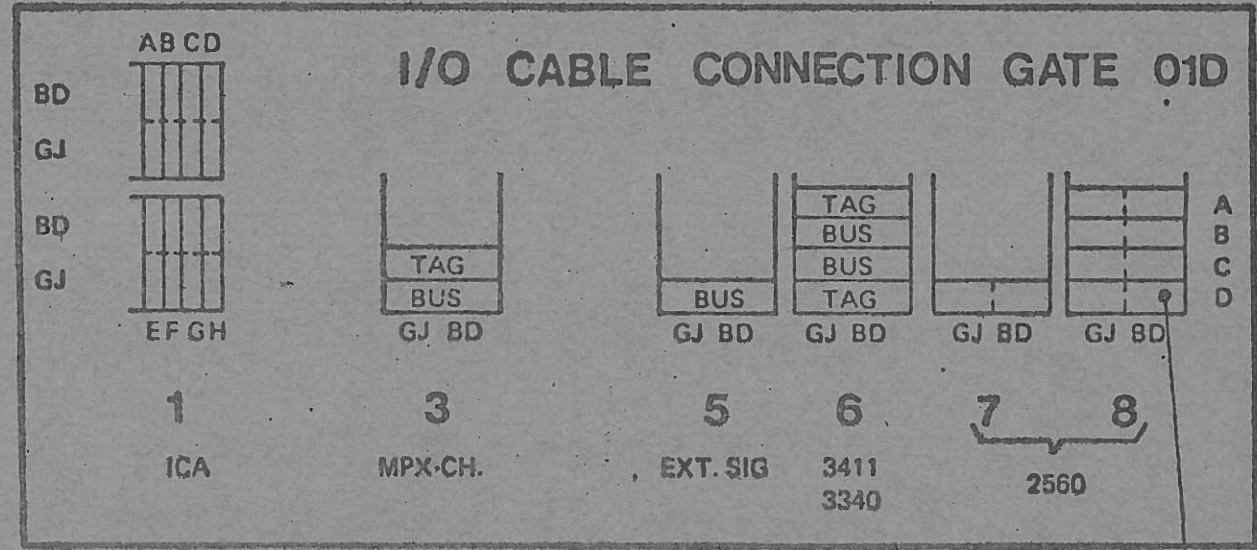


### Connect Cables between I/O Units and CPU (Part 4 of 7)

Cable			I/O side		CPU side		
CABLE GROUP	KEY NO	PART NUMBER	UNIT	CONNECTOR LOCATIONS	UNIT	CONNECTOR LOCATIONS	STRAIN RELIEF
3036	3036 T	5700603	3411	TAG-IN	3115	01D-A6-GJ,BD	
	3036 B	5700603	3411	BUS-IN	3115	01D-B6-GJ,BD	
3037	3037 A	5 351 178	3411	EPO-CONN. J7	3115	PCT-CONN.	
3050	3050 A	5 372 977	EXT.SIG.	BUS-IN	3115	01D-G5-GJ	
3021	3021 A	4 014 702	2560	S-CABLE CONN.	3115	01D-D8-GJ,BD	9
	3021 B	4 014 703	2560	A1A3,A1A6,A1A7	3115	01D-C8-GJ,BD,B8-BD	8
	3021 C	4 014 704	2560	A1A4,A1A5	3115	01D-D7-GJ,BD	7
3022	3022 A	4 014 706	2560	AC-CONN.	3115	AC3	
3063	3063 A	1 568 706	2560	DC-CONN.	3115	DC3	
3024	3024 A	4 014 705	2560	B1N4,B1N5,B1N6	3115	01D-A8-GJ,BD,B8-GJ	6
3065	3065 A	1 568 707	5213	PRT.BOARD F1,F2	3115	01A-C3-U2,V2	
3034	3034 A	4 014 742	5213	AC-13	3115	AC5	
3067	3067 A	1 568 709	5213	DC-13	3115	DC6	
GND-STRAP		1 570 526	5213	5213 FRAME	3115	CPU-FRAME	
3330	3330 B	2281630	3340	BUS-IN	3115	01D-C6-GJ,BD	
	3330 T	2281630	3340	TAG-IN	3115	01D-D6-GJ,BD	
3332	3332	5 351 178	3340	EPO-J 101	3115	PCD-CONN.	
See Note 2		5700306	MPX-CH	TAG-IN	3115	01D-C3-GJ,BD	
		5700306	MPX-CH	BUS-IN	3115	01D-D3-GJ,BD	
		5 251 178	MPX-1EPO	EPO-CONN.	3115	PC1	
		5 351 178	MPX-2EPO	EPO-CONN.	3115	PC2	
		5 351 178	MPX-3EPO	EPO-CONN.	3115	PC3	
		5 351 178	MPX-4EPO	EPO-CONN.	3115	PC4	
		5 351 178	MPX-5EPO	EPO-CONN.	3115	PC5	
		5 351 178	MPX-6EPO	EPO-CONN.	3115	PC6	
		5 351 178	MPX-7EPO	EPO-CONN.	3115	PC7	
	5 351 178	MPX-8EPO	EPO-CONN.	3115	PC8		

See Note 1

See Note 1

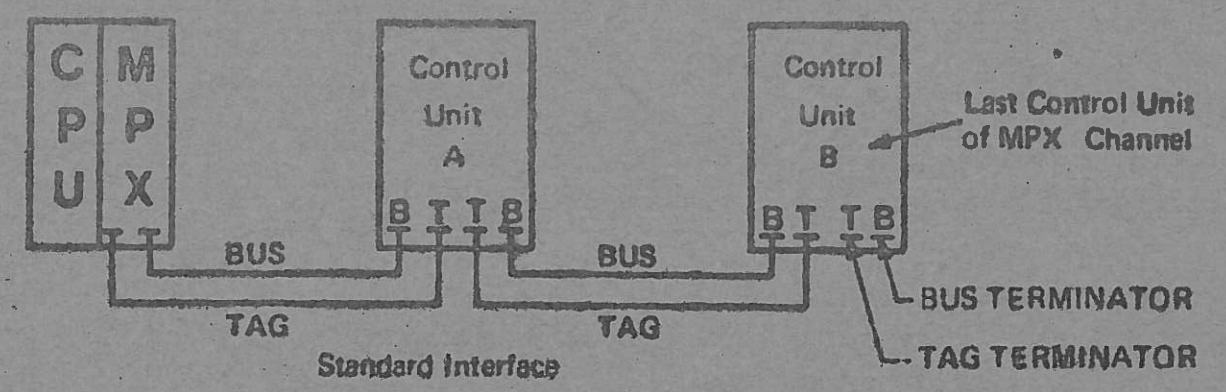


Connector location example:  
01D-D8-BD

Note 1: Not applicable for United States because cables appear in MFI of I/O unit. This information is reference for WT only.

Note 2: Depending on the control unit, different group numbers may apply.  
MPX channel requires  
Bus Terminator P/N 5440649  
Tag Terminator P/N 5440650  
installed.

REA 53-09250

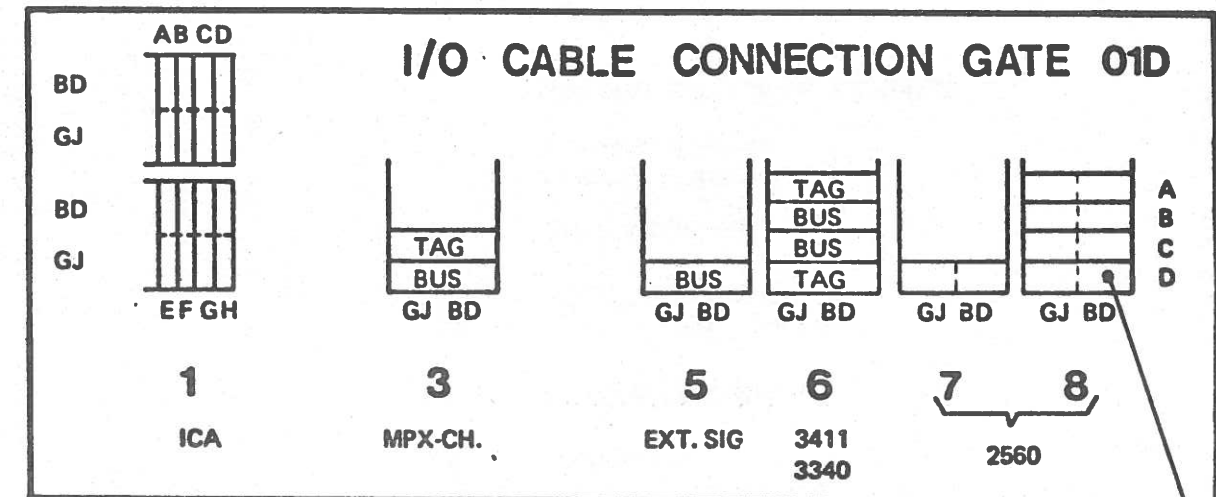




# Connect Cables between I/O Units and CPU (Part 5 of 7) (ICA only ▼)

Cable			I/O side		CPU side		
CABLE GROUP	KEY NO	PART NUMBER	UNIT	CONNECTOR LOCATIONS	UNIT	CONNECTOR LOCATIONS	STRAIN RELIEF
3038	3038 A	5 990 101	S1	LN30	3115	01D-E1-GJ	L.H.1.
	3038 A	5 990 101	S2	LN31	3115	01D-F1-GJ	L.H.1.
	3038 A	5 990 101	S3	LN32	3115	01D-G1-GJ	L.H.1.
	3038 A	5 990 101	S4	LN33	3115	01D-H1-GJ	L.H.1.
	3038 A	5 990 101	A1	LN20	3115	01D-A1-GJ	L.H.2.
	3038 A	5 990 101	A2	LN22	3115	01D-B1-GJ	L.H.2.
	3038 A	5 990 101	A3	LN24	3115	01D-C1-GJ	L.H.2.
	3038 A	5 990 101	A4	LN26	3115	01D-D1-GJ	L.H.2.
3039	3039 A	5 990 102	A1	LNP28/29	3115	01D-A1-GJ	L.H.2.
	3039 A	5 990 102	A2	LNP2A/2B	3115	01D-B1-GJ	L.H.2.
	3039 A	5 990 102	A3	LNP2C/2D	3115	01D-C1-GJ	L.H.2.
	3039 A	5 990 102	A4	LNP2E/2F	3115	01D-D1-GJ	L.H.2.
3040 Note	3040 A	5 990 103	A1	TLP28/29	3115	01D-A1-BD	L.H.2.
	3040 A	5 990 103	A2	TLP2A/2B	3115	01D-B1-BD	L.H.2.
	3040 A	5 990 103	A3	TLP2C/2D	3115	01D-C1-BD	L.H.2.
	3040 A	5 990 103	A4	TLP2E/2F	3115	01D-D1-BD	L.H.2.

Note: Cable must be plugged from backside.  
See Figure 7 - 120 - A



Connector location example:  
01D-D8-BD

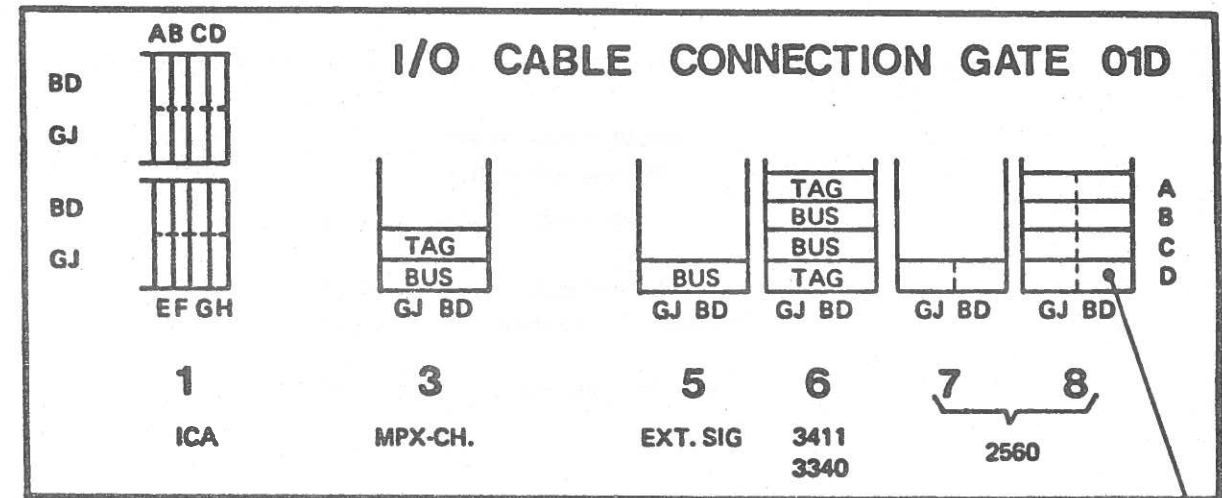
### ICA NOMENCLATURE

- AA AUTO ANSWER
  - ACA AUTO CALL ADAPTER
  - ACØ AUTO CALL ORIGINATE
  - AX ASYNCHRONOUS LINE
  - DAA DATA ACCESS ARRANGEMENT
  - LA LINE ADAPTER
  - LNØ LINE WITH LINE ADDRESS
  - LNP LINE PAIR
  - SX SYNCHRONOUS LINE
  - TLP TELEGRAPH LINE PAIR
  - TTY TELETYPEWRITER
  - X LINE ADDRESS
- in the table the real line address is shown

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### Connect Cables between I/O Units and CPU (Part 6 of 7) (ICA and LAB only ▼)

Cable			I/O side		CPU side		STRAIN RELIEF
CABLE GROUP	KEY NO	PART NUMBER	UNIT	CONNECTOR LOCATIONS	UNIT	CONNECTOR LOCATIONS	
3041	3041 A	5 990 104	S1	ACA FOR LN 30	3115	01D-G1-GJ	L.H.1.
	3041 A	5 990 104	S2	ACA FOR LN 31	3115	01D-H1-GJ	L.H.1.
	3041 A	5 990 104	A1	ACA FOR LN 20	3115	01D-C1-GJ	L.H.2.
	3041 A	5 990 104	A2	ACA FOR LN 22	3115	01D-D1-GJ	L.H.2.
3042	3042 A	5 990 106	S5	LN34	3115	01D-D1-GJ	L.H.2.
3043	3043 A	5 992 086	A1	LN20 WITH LA	3115	01D-A1-GJ	L.H.2.
	3043 A	5 992 086	A2	LN22 WITH LA	3115	01D-B1-GJ	L.H.2.
	3043 A	5 992 086	A3	LN24 WITH LA	3115	01D-C1-GJ	L.H.2.
	3043 A	5 992 086	A4	LN26 WITH LA	3115	01D-D1-GJ	L.H.2.
	3043 A	5 992 086	A1	LN28 WITH LA	3115	01D-A1-GJ	L.H.2.
	3043 A	5 992 086	A1	LN29 WITH LA	3115	01D-A1-BD	L.H.2.
	3043 A	5 992 086	A2	LN2A WITH LA	3115	01D-B1-GJ	L.H.2.
	3043 A	5 992 086	A2	LN2B WITH LA	3115	01D-B1-BD	L.H.2.
	3043 A	5 992 086	A3	LN2C WITH LA	3115	01D-C1-GJ	L.H.2.
	3043 A	5 992 086	A3	LN2D WITH LA	3115	01D-C1-BD	L.H.2.
	3043 A	5 992 086	A4	LN2E WITH LA	3115	01D-D1-GJ	L.H.2.
	3043 A	5 992 086	A4	LN2F WITH LA	3115	01D-D1-BD	L.H.2.
	3043 A	5 992 086	S1	LN30 WITH LA	3115	01D-E1-GJ	L.H.1.
	3043 A	5 992 086	S2	LN31 WITH LA	3115	01D-F1-GJ	L.H.1.
3043 A	5 992 086	S3	LN32 WITH LA	3115	01D-G1-GJ	L.H.1.	
3043 A	5 992 086	S4	LN33 WITH LA	3115	01D-H1-GJ	L.H.1.	
3044	3044 A	5 992 087	S1	LN30 W.AA+ACO	3115	01D-E1-GJ	L.H.1.
	3044 A	5 992 087	S2	LN31 W.AA+ACO	3115	01D-F1-GJ	L.H.1.



Connector location example:  
01D-D8-BD

#### ICA NOMENCLATURE

- AA AUTO ANSWER
  - ACA AUTO CALL ADAPTER
  - ACO AUTO CALL ORIGINATE
  - AX ASYNCHRONOUS LINE
  - DAA DATA ACCESS ARRANGEMENT
  - LA LINE ADAPTER
  - LNX LINE WITH LINE ADDRESS
  - LNP LINE PAIR
  - SX SYNCHRONOUS LINE
  - TLP TELEGRAPH LINE PAIR
  - TTY TELETYPEWRITER
  - X LINE ADDRESS
- in the table the real line address is shown
- \* Complete B/M number 1 878 099.

Tray-pack

099-A \*

# Connect Cables between I/O Units and CPU (Part 7 of 7)

## AC CABLE ROUTING

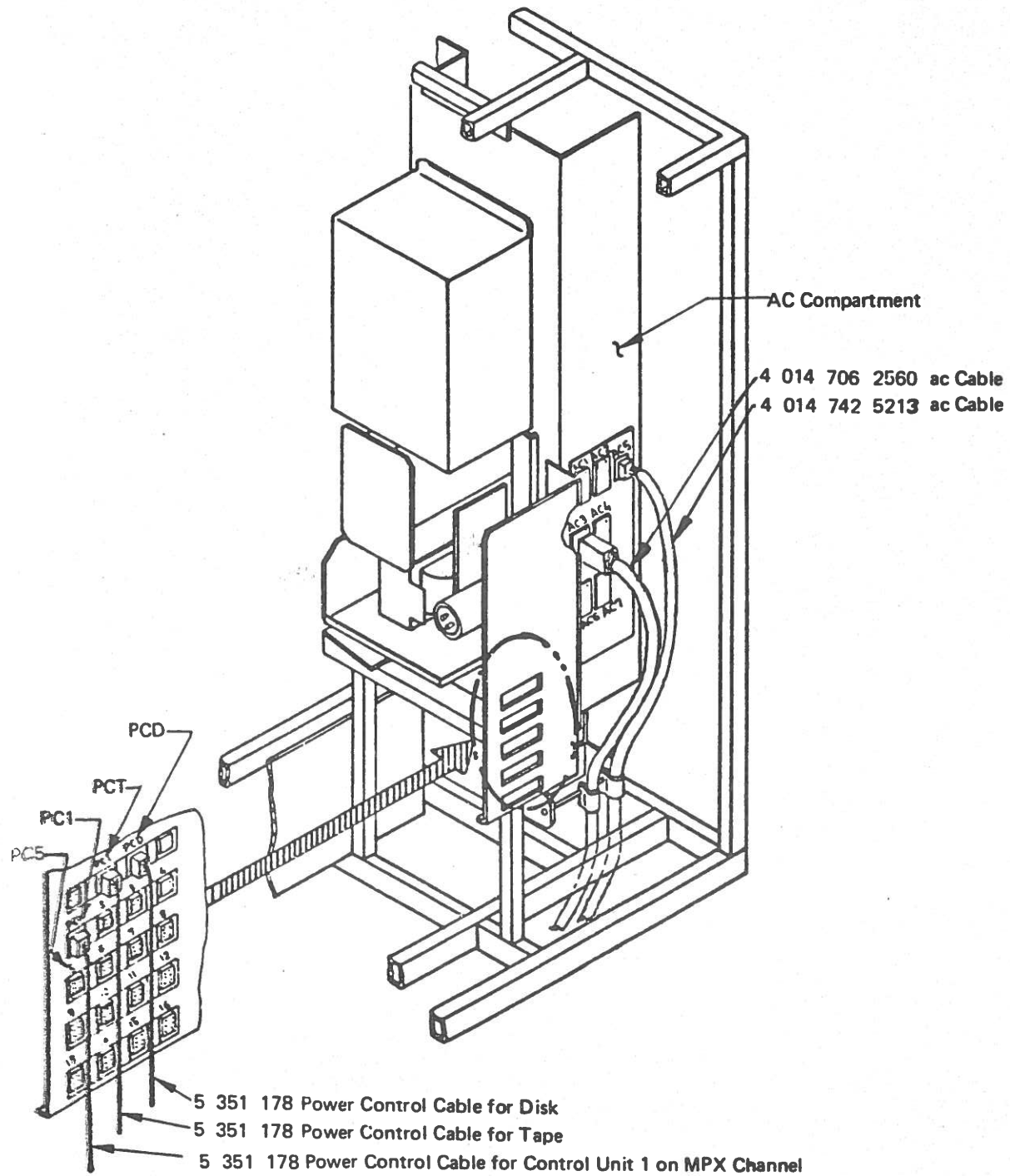


FIGURE 7-160-A

## DC CABLE ROUTING

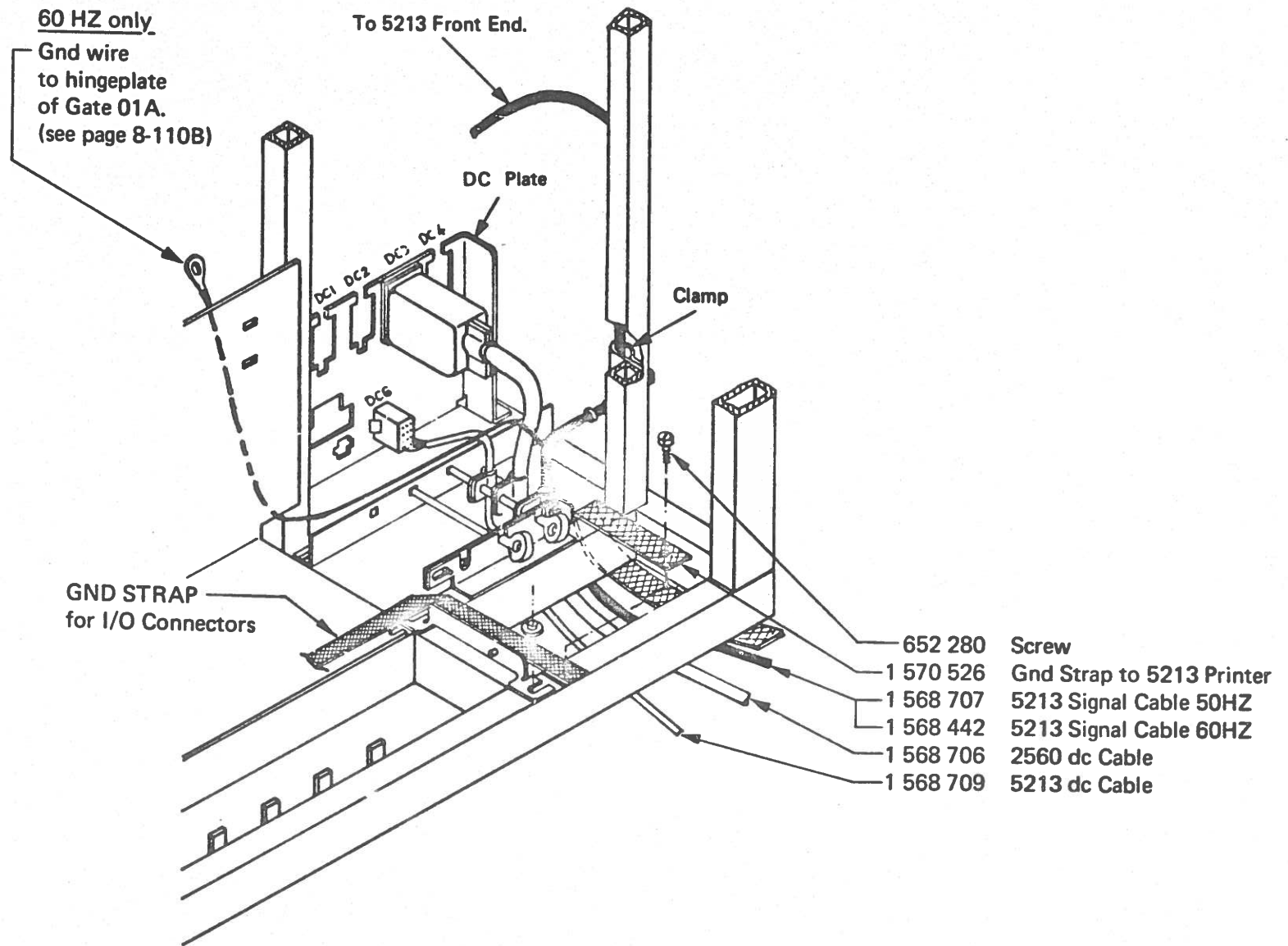


FIGURE 7-160-B

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# CHAPTER 8: 5213 INSTALLATION (Part 1 of 2)

Parts shown on this page are located in B/M 1 568 098 (60HZ) B/M 1 568 093 (50HZ)

- 1 Locate 5213 base assembly P/N 1570474 according to customer requirements. Remove front cover. Screw down four leveler screws so that the gap between the frame and the floor is approximately 0.5 inch (12.7 mm).
- 2 Unpack 5213 using 5213 unpacking instructions — open cover, remove platen, remove screws on both sides of inside of cover, lift cover off.
- 3 Remove four shipping spacers and screws (two in front, two in rear). Keep shipping hardware in base assembly. Make visual inspection for loose cables, connectors, terminals and other damage.
- 4 Locate black UL fire cover P/N 2 642 435 (for USA only). Set in place and route cables through holes. Set unit on stand and secure using three screws.
- 5 Plug cables into board 05A-A1 in base of 5213 (see table in item 6).
- 6 Route three I/O cables and ground strap (P/N 1 570 526) under floor as required (above floor route under console). For cable routing at CPU side, see Chapter 7.

- Step cpltd
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- 4 36 844 SCR (3)
- 2 125 656 LCKW (3)
- 3 960 NUT (3)
- 1 1 570 474 FRAME
- 5 BOARD 05A - A1
- 11 GND STRAP TO COVER

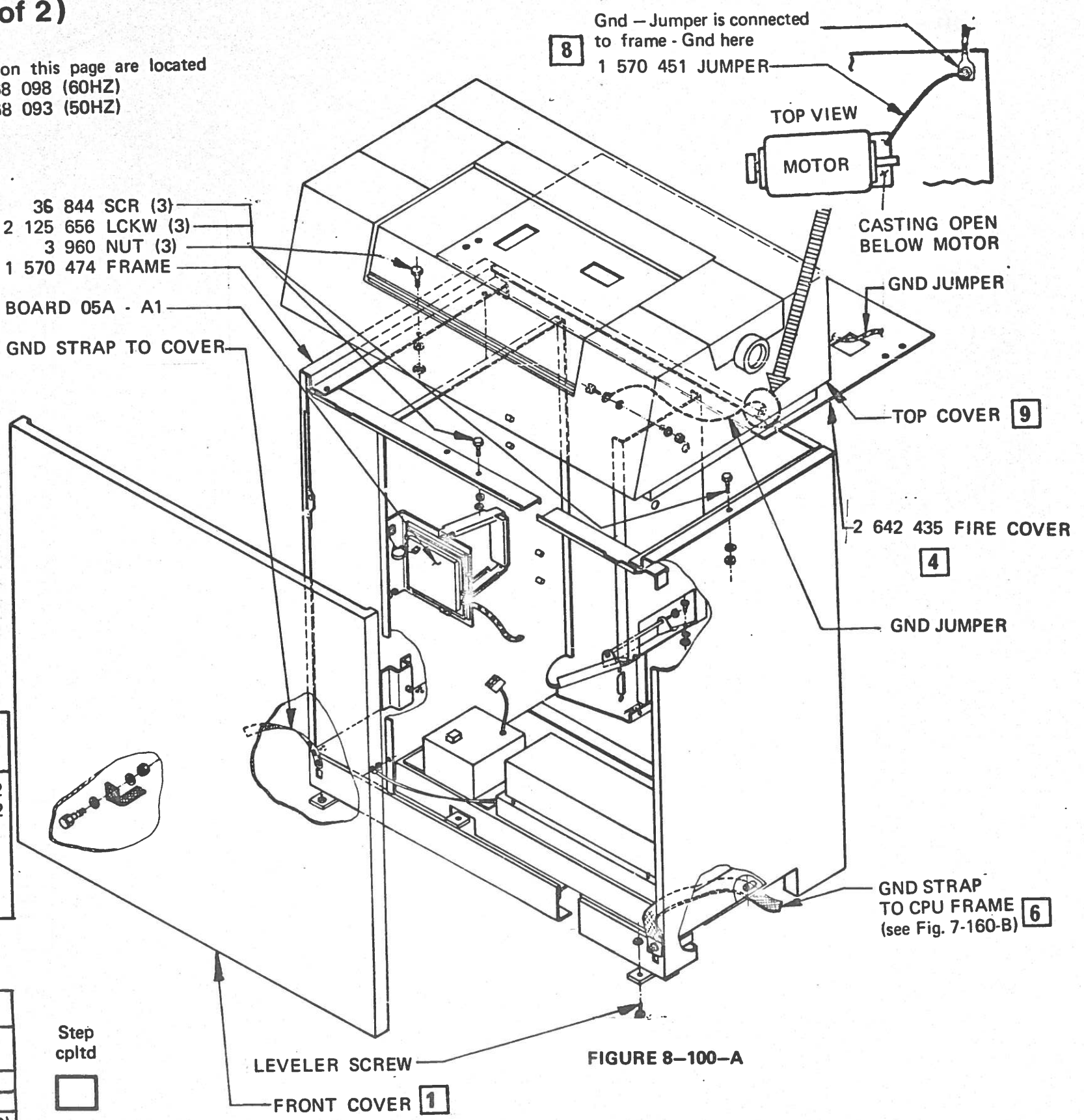
Cable P/N	Cable Key	From 5213	Type of Cable	To
1 568 707 (50 HZ)	3065A	05A-A1 Pos. F1, F2	Signal	CPU,01A-C3-U2,V2
1 568 442*(60 HZ)	3065A	05A-A1 Pos. F1, F2	Signal	CPU,01A-C3-U2,V2
4 014 742	3034A	AC-Connector	AC	CPU, AC5
1 568 709	3067A	DC-Connector	DC	CPU, DC6
1 570 526		and 05A-A1 Pos. E1 5213 Frame	Gnd. Strap	CPU Frame

\*For grounding shields see Figure 8 - 110 - A and 8 - 110 - B.

7 Connect the following cables between 5213 and base assembly:

Cable from 5213	Cable from Base Assembly
2 525 915	4 014 748
2 495 788	1 568 625
2 495 787	1 568 624
2 495 745	05A-A1,A1,A2 (yellow wired paddle card goes into Pos. A2)

- Step cpltd
- 



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Page 1 of 2		Date	Jan. 20, 1974	July 19, 1974	





## CHAPTER 9: PRE-POWER-ON-CHECKS (Part 1 of 2)

### Check Air Conditioning

Check with the customer that the temperature and relative humidity within the computer room are correct for the operating environment.

Step  
cpltd.

Machine Environment	Temperature		Relative Humidity(%)	Max Wet Bulb Temp.	
	°F	°C		°F	°C
Nonoperating	+50 to +110	+10 to +43	8 to 80	80	26,7
Operating	+50 to +90	+10 to +32,2	8 to 80	73	22,8
Shipping	-40 to +140	-40 to +60	5 to 100	85	29,4
Storage	+33 to +140	+0,6 to +60	5 to 80	85	29,4

### Check CPU and Operator Console

- 1 Check that the CPU is undamaged internally and that all cards and cable connections are tight.
- 2 Check that the air ducts (baffles) in the TSR compartment are in correct positions to achieve optimum air flow.
- 3 Check that all terminal board screws (TB screws) are tight.
- 4 Check that all cables are unfrayed and adequately clamped.
- 5 Check that installation of I/O machines is completed.
- 6 Check ICA feature wiring (if installed). See system Tie Down List in ALD Volume A01. For line adapter and strapping see ICA MLM pages Cross References and hints are shown on page 7-100.

Step  
cpltd.







### Tie Down Checking

Check tie down jumpering according to the system configuration. Use Tie Down Lists in the ALD.

Step  
cpltd.

### Check Ground Connections

- 1 Make sure that all ground connections, including line cord ground wires in the filter boxes, have been firmly connected. The filter locations are shown on next page. For 50Hz the line filter is mounted outside of the ac compartment. For 60Hz the line filter is located in the ac compartment near the mainline CB (CB8).
  - 2 Check that all ground straps in the system are firmly connected according to following list:  
Braided ground straps:  
One strap at lower pivot of gate 01A in 3115  
two straps at each cover of 3115  
one strap at front top cover of 5425  
two straps at back top cover of 5425  
one strap at each rear cover of 5425  
one strap from CPU frame to printer frame
  - 3 On 3115-2 only: Check that shielding of CRT cable is firmly connected to CRT frame and to cable tray (see step 25 on page 5-130 and Figure 5-120A)
  - 4 Ensure that the lockwashers between printer frame and cable tray extender are correctly installed.
  - 5 If shielded connectors for multiplex channel, tape or disk are installed, check for good ground contact between plated connector and metal holder.
  - 6 Check proper adjustment of fingerstocks in CPU (see page 3-110)
  - 7 Check correct positioning of ferrite cores in CPU (see Figures 4-240-B or 4-350-B).
  - 8 Check that perforated screens over bottom opening of CPU are replaced (see Figure 3-110-C).
  - 9 If possible separate I/O cables from each other to prevent coupling of noise.
  - 10 For USA only: Verify that grounding and phasing at the wall outlets have been checked. See page 2-100.
- Return to Installation guide on page 0-080.

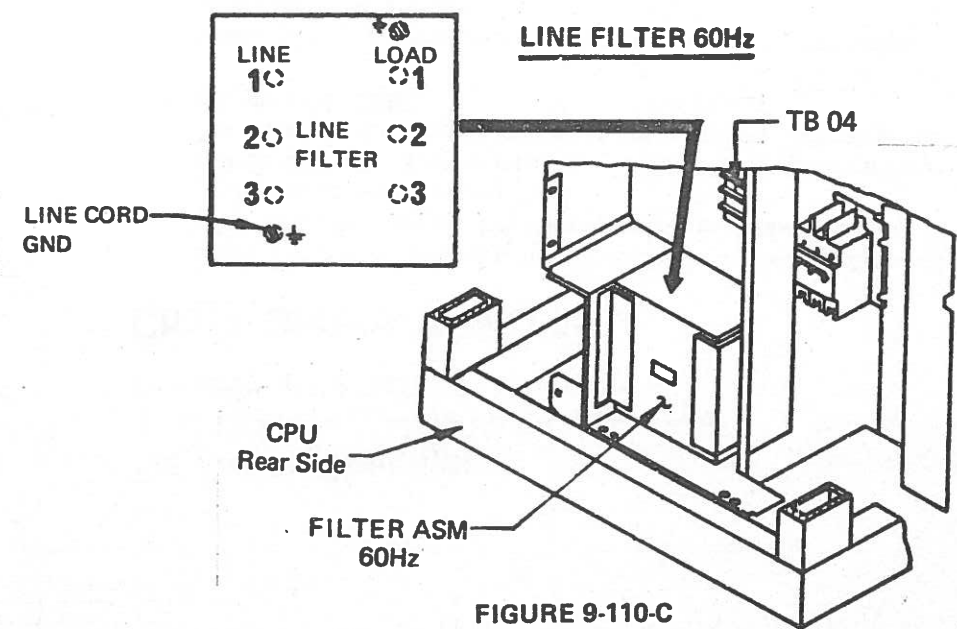
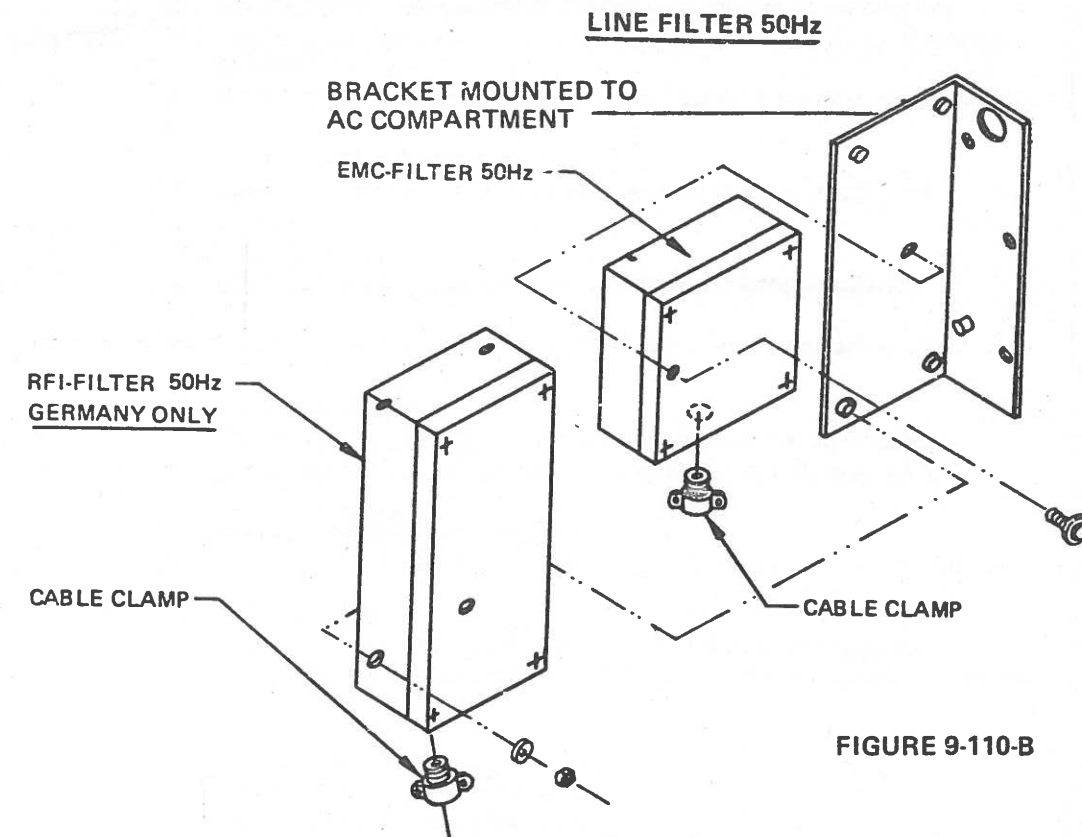
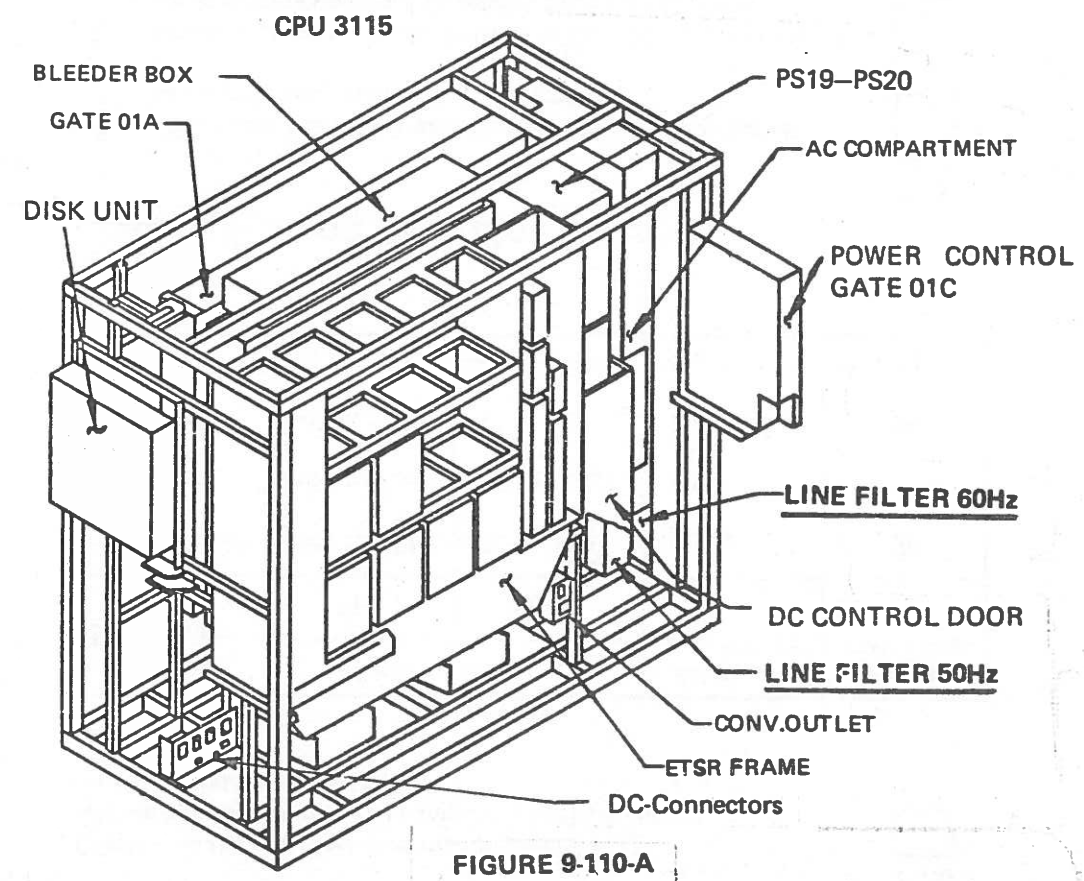
P/N 1 896 870	Eng. Change	No. 362 883	362931		
Page 2 of 2		Date May 16, 1975	June 28, 1976		

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## PRE-POWER-ON-CHECKS (Part 2 of 2)

### Line Filter Locations





# CHAPTER 10: POWER ON CHECKS

## Test Lamps, Power-On, Power-Off and EPO (Part 1 of 3)

### DANGER

Always observe the safety procedure given at the front of this manual. One other person, who is familiar with the proper method of switching off all electrical power, must be present during checks.

For WT only: Ensure that the line cord will be connected to the line voltage by an electrician.

For USA only: Plug power cord into wall outlet.

### Test Lamps (Power=OFF)

- 1 Switch all wall outlet circuit breakers and CB 8 to ON.
- 2 Press lamp test switch on CE indicator panel in the CPU at Gate 01C and check that all lamps on the CE indicator panel are lit. Replace faulty light emitting diode cards.

### Check Power-On

**Important:** If your machine has EC 362 720 installed (only one single phase Blower Motor installed below the ETSR frame) the phase sequence has to be checked according to instructions on page 10-120. If EC 362 720 is installed, go to page 10-120 and perform all steps in paragraph Check CPU Phasing.

- 1 Check that the console file does not contain a disk.
- 2 Press power-on key at system control panel. The power-on key must show red. The lamp in the power-on key should change to white after approximately 7 seconds when the power on sequence has been completed. If lamp remains red, the sequence is faulty; eliminate faults as described in the manual MLM 'Power Supplies' SY 33-1075 Vol M01.
- 3 Check that all fans blow upwards in the CPU and in the operator console. Locations of fans are shown in figure 10-110-A. Check also the direction of printer chain rotation.

**Important:** If your machine has EC 362 720 not installed, the direction of the blowers below the ETSR frame must be checked visually by removing the filters. See figure 10-100-A. If direction of rotation is wrong, switch off the machine and perform the following:

**For WT only:** Two of the three phases of the line voltage must be exchanged by an electrician at the wall outlet.

**For USA only:** If phasing at wall outlet has been checked and is correct (see page 2-100) the wiring of the CPU or the line cord must be wrong. Remove all power by disconnecting the CPU from the wall outlet and check CPU wiring using the ALD.

- 4 Check that all fans of the attached I/O machines are operating.
- 5 Check all system voltages by using the installed CE voltmeter. If necessary adjust them. (See Power Supplies MLM, Diagram 6-211.)

Step  
cpltd







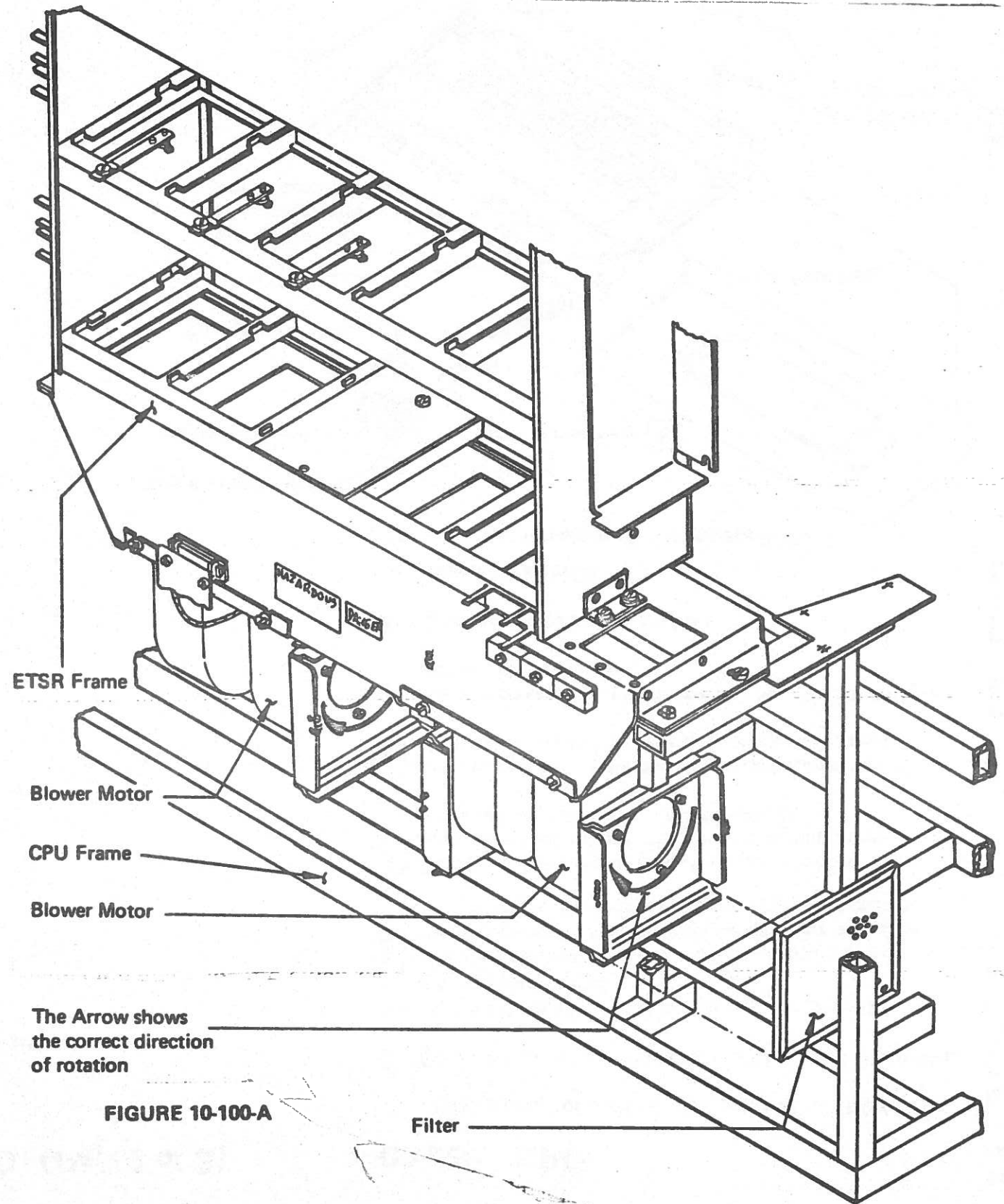



FIGURE 10-100-A

P/N 1 896 871	Eng. Change	No.	362 663	362 784	362 720	362 856	3115 Inst. Man.
Page 1 of 2		Date	Feb. 21, 1974	July 19, 1974	July 29, 1974	Sept. 30, 1974	



### Test Lamps, Power - On, Power - Off and EPO (Part 2 of 3)

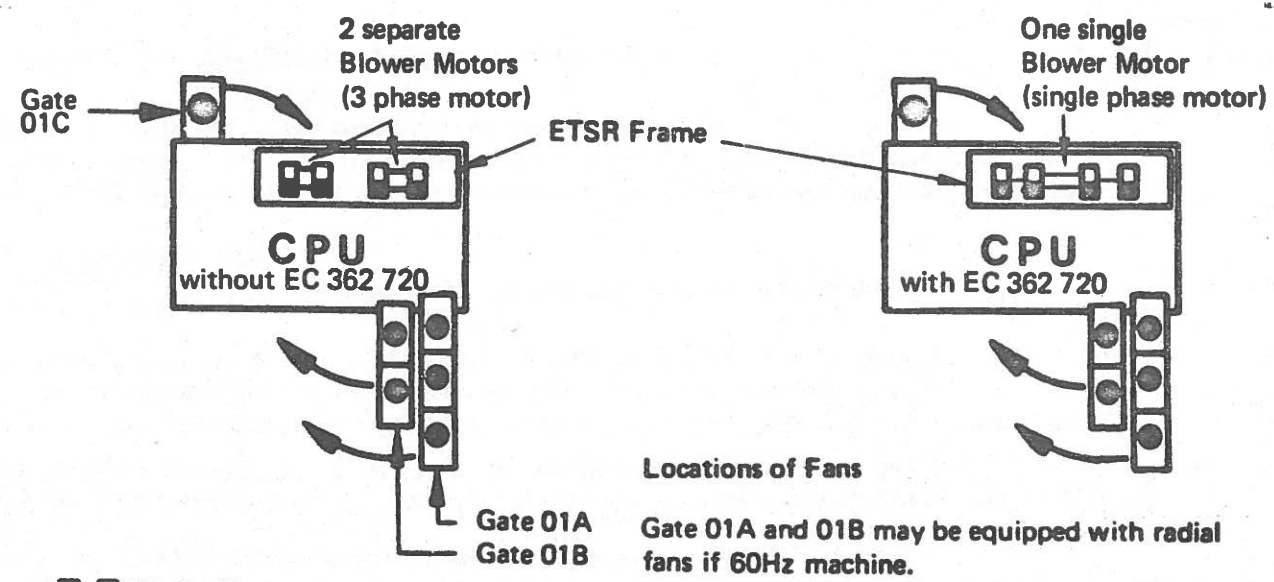


FIGURE 10-110-A

#### Test Lamps (Power=ON)

- Press lamp test switch at system control panel on the operator console. Check the following lamps and replace all faulty lamps.
  - Lamps on operator console
  - Lamps on I/O s
    - MFCM
    - MFCU
    - Printer
  - LEDs in SVP gate on SVP cards

All other I/O units (except tape and disk) have individual lamp test switches. Check the lamps by using the individual lamp test switch of the I/O units.

Step	Step
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<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

#### Check Power - Off

- Press POWER-OFF. The power-on lamp should change from white to red and the fans should stop. The power-on lamp should be switched off when the power-off sequence is completed.

Step
cpltd.
<input type="checkbox"/>

#### Check EPO

- Bring up power on the CPU, then pull EMERGENCY PULL.
- Check that power is removed from CPU and all I/O machines.
- Switch off main CB (CB8) to remove power from the system control panel.
- Unscrew the retaining screw and turn keyboard so that the two screws holding the lower faceplate are accessible from beneath. Remove both screws and lower faceplate.
- Remove two mounting screws for upper faceplate (operator panel) and lift operator panel up so that a screwdriver can be inserted into the EPO switch.
- Turn screwdriver so that the leaf spring becomes free of the locking ring and the emergency knob can be reset.
- Remove screwdriver. Mount operator panel and lower faceplate to the keyboard.
- Check for no binding of the keys.
- Switch on main CB
- Return to Installation Guide on page 0-080.

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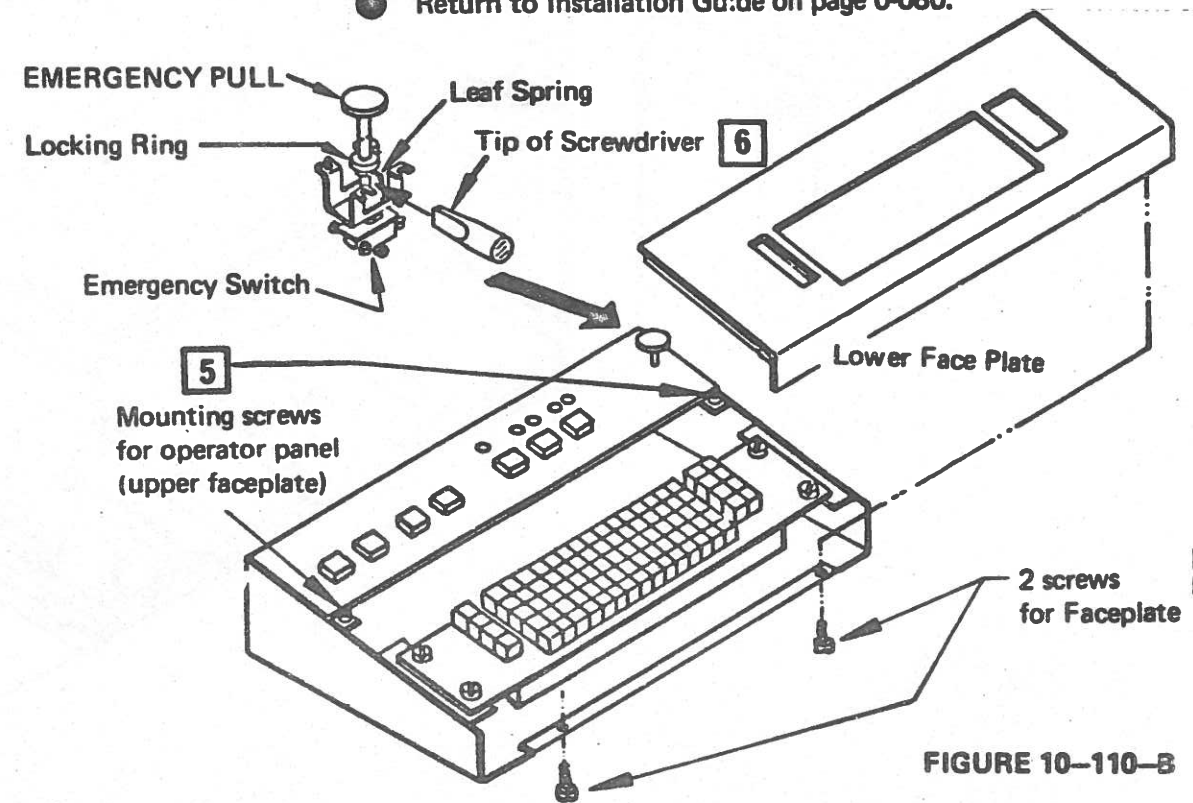


FIGURE 10-110-B

# Test Lamps, Power-On, Power-Off and EPO (Part 3 of 3)

## Check CPU Phasing

(Valid for machines with EC 362 720 installed)

### DANGER

Check that all wall outlet circuit breakers are off before connecting or disconnecting a test instrument to line voltage.

- |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|
| <ol style="list-style-type: none"> <li>1 Switch wall outlet circuit breaker to OFF.</li> <li>2 Connect the line cord to the customer's supply. For 50 Hz systems an electrician is required.</li> <li>3 Open rear CPU cover.</li> <li>4 Switch CB 8 to OFF.</li> <li>5 Remove cover from CB 8.</li> <li>6 Connect oscilloscope ground to CPU frame ground.</li> <li>7 Connect scope input channel 1 to LH and channel 2 input to C. Use probes 10x.</li> <li>8 Set the horizontal "mode switch" to "chop", use internal triggering—channel 1 only and set both "Volts/div." switches to 10V/div.</li> <li>9 Switch wall outlet circuit breaker and system CB 8 to ON.</li> <li>10 Display with channel 1 one complete voltage cycle. The voltage measured by channel 2 should occur 120 degrees after the voltage measured by channel 1. (See figure 10-120-B.)</li> </ol> | <p>Step<br/>cpltd</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td></tr> </table> |  |  |  |  |  |  |  |  |  |  |
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If phasing is incorrect, it must be corrected:

For WT only: Two of the three phases of the line voltage must be exchanged by an electrician at the wall outlet.

For USA only: 1. Ensure that phasing at the wall outlet has been checked correctly. 2. Remove all power by disconnecting the CPU from the wall outlet and check line cord wiring and wiring from line filter to CB8.

### DANGER

Switch all wall outlet circuit breakers to OFF before proceeding to the next step.

- |  |  |  |
|--|--|--|
| <ol style="list-style-type: none"> <li>11 Remove the oscilloscope, replace cover, close cover of the CPU.</li> </ol> <p>● Return to page 10-100.</p> | <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table> |  |
|  |  |  |

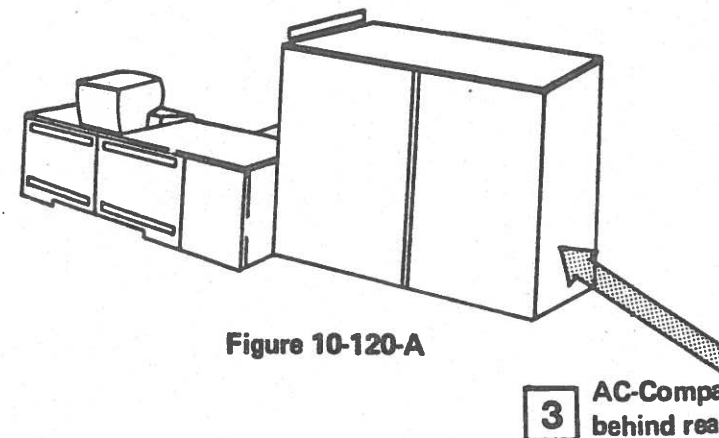


Figure 10-120-A

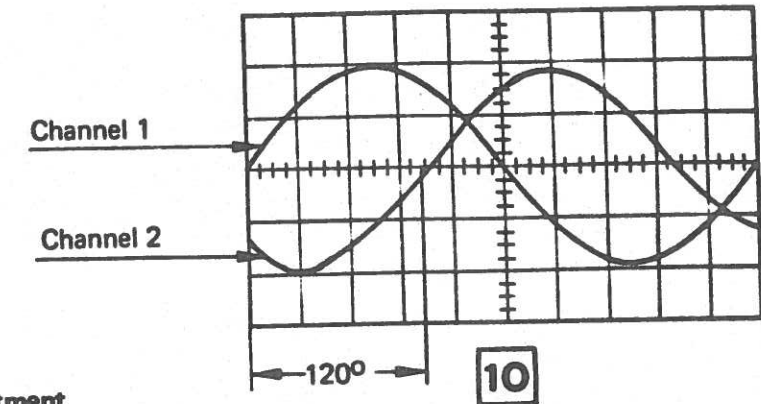


Figure 10-120-B

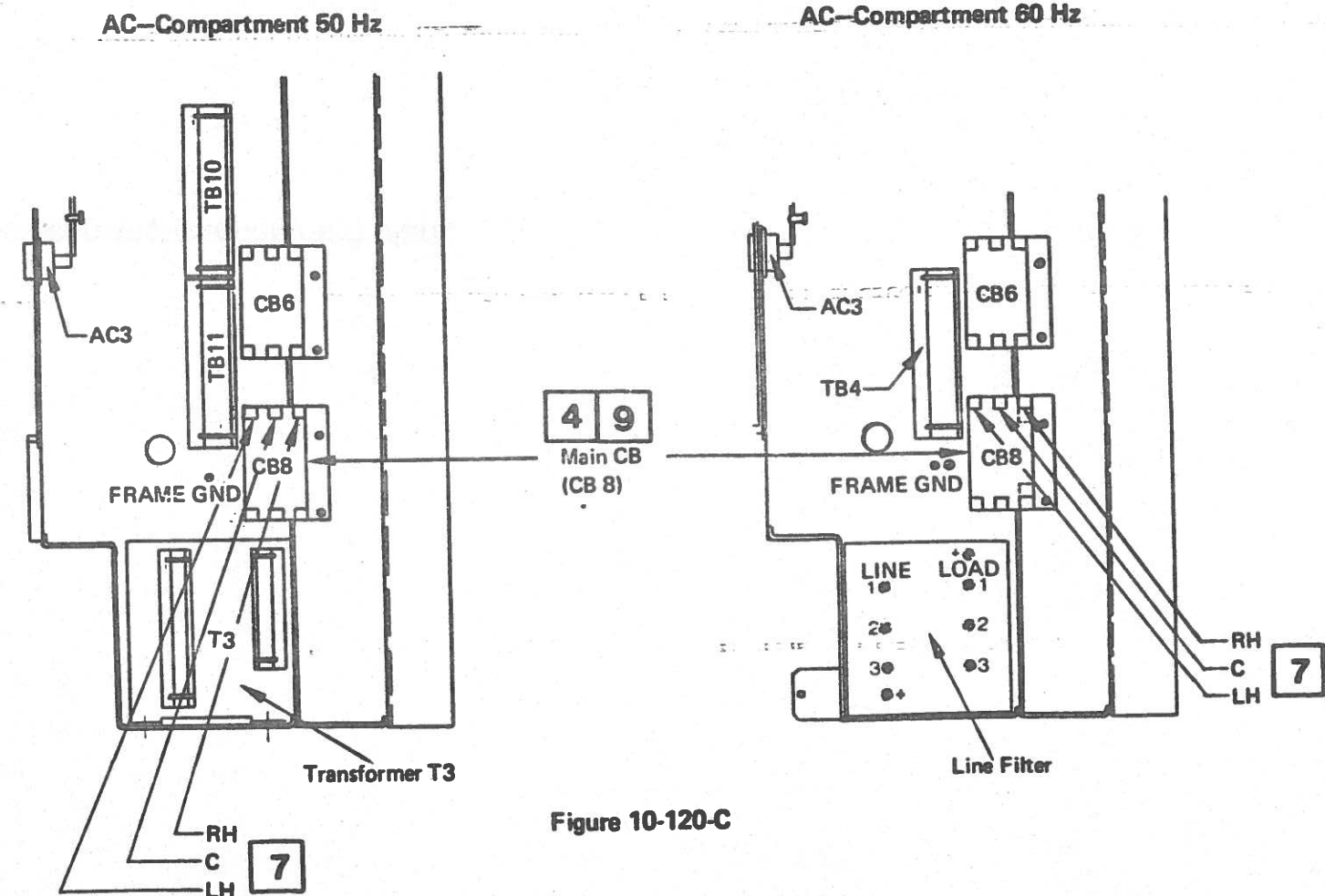


Figure 10-120-C

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# CHAPTER 11: SYSTEM TESTING

● IF ANY ERROR OCCURS, CHECK THAT CARDS AND CONNECTORS IN THE RESPECTIVE BOARD ARE SEATED PROPERLY.

After completion of installation and correct power sequence, run the following tests in the sequence listed on this page. Repair each fault as soon as it occurs and then proceed to the next test step.

For all test procedures refer to the Central Test Manual (CTM).

● If testing is finished return to Installation Guide on page 0-080.

Test sequence	Test's	If Test OK mark here	References to CTM sections	Tested functions and remarks
1	SVP - KB - CRT test		6	Console System operations except the 5213 Printer
2	IMPL System test		6	SVP Bus by applying the IMPL process
3	MS - MSC test		5	CPU except the MSC Interface Bus System
4	MIP/IOP—test on MIP and all IOPs installed.		3	MIP and all IOPs but not the individual attachment functions
5	Card I/O tests for all I/O's natively attached (2560, 5425)		10,13	See Note 1
6	Printer Attachment test		15/16	
7	Printer tests for 3203/5203 Printer		15/16	
8	DDA Attachment test		17	The individual attachment functions and the I/O's natively attached.
9	All Inline tests on 3340		17	If errors occur check first for proper cable installation
10	MPX tests if MPX is installed		4	MPX-channel addresses Hex '040' - '0FF' (see Note 2)
11	ICA tests if ICA is installed		ICA MLM	(See Note 3)
12	ICA Inline tests if ICA is installed		ICA MLM	(See Note 3)
13	5213 tests if 5213 is installed		6	5213 Console Printer
14	Run ASCP and test the CPU and those I/O's only which are tested in the previous test steps		23	CPU and natively attached I/O's emphasizing the first time the CONTROL MICRO PROGRAM stored in the WRITABLE CONTROL STORAGE and the MSC Interface Bus system
15	OLT's for I/O units attached to the MPX		Unit MLM	Those I/O units which are not natively attached. If errors occur check first for proper cable installation
16	OLT's for I/O units attached to the ICA		Unit MLM	
17	OLT's for 3410/3411 units		Unit MLM	
18	OLT's for 3340 units		Unit MLM	
19	Run ASCP for the whole System		23	The whole System. If errors occur go to the General System MAP Chart 1 and 2 in CTM section 1 for further guidance to the specific CTM sections

Note 1: For 5425 refer also to MFCU Installation Instruction, Section 4.

Note 2: If no Control Unit is attached the Terminators for Bus and Tag must be removed for MPX-Testing.

Note 3: If ICA is installed: Run the Front End Logic Test and Wrap Test for all lines installed. For test procedures refer to ICA MLM page 2-020. When line adapters are installed, adjust the transmit level and check the strapping options described on pages 8-039 and 8-063 of the ICA MLM. For checkout procedures follow the CE Problem Determination Chart in ICA MLM page 8-037.

USA only: If installation is complete establish a figure of merit level by zapping with EMC simulator type 1 according to instructions on page 13-110.

● Run Use Meter Test and record all use meter readings in Incident Report and System Log. Refer to CTM section 24, page 0000, 0010 for test information for CPU- and CE meter test. The test is on the ASCP-disk.

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## CHAPTER 12: FINAL INSTALLATION

### Hand over Machine to Customer

- 1 Check the internal and external label and correct loading of the diskettes. Compare with ITC-Binder.
- 2 Clean the system if necessary.
- 3 Hand over the system to the customer and verify with him the initial Use Meter readings.

Step  
cpltd

**ATTENTION:**

If ICA is installed and DOS/VS Release 28 (or higher) is used by the customer, the line mode setting must also be in DVCGEN macroinstruction. See DOS/VS System Generation Release 28 (GC 33-5377). The line mode settings and default settings are discussed in System /370 Model 115 Functional Characteristics, (GA 33-1510), ICA section "Set line mode" command.

### Post-Installation Procedures

- 1 Fill out and mail all applicable forms associated with this installation.
- 2 Start a System Log Book.
- 3 Record all problems encountered during this installation, and report the problems and the completion of installation to your Branch Office, according to local procedures.

Step  
cpltd

# CHAPTER 13: PREPARE SYSTEM FOR RESHIPMENT

## General

Make sure that all cables, components, applicable manuals, and paperwork are shipped. Use envelopes for small items such as screws, nuts, and washers. Ensure that all parts have their part numbers attached so that they can be identified on subsequent reassembly.

## Disconnect Cables

- |   |  |  |
|---|--|--|
| 1 | Disconnect line cord.  | Step<br>cptd<br><input type="checkbox"/> |
| 2 | Verify that all I/O cables are legibly labeled.                | <input type="checkbox"/>                 |
| 3 | Disconnect I/O cables and fit protective covers to connectors. | <input type="checkbox"/>                 |
| 4 | Coil line cord into CPU.                                       | <input type="checkbox"/>                 |

## Disassemble I/O Units

- Disconnect all cables from I/O units. Prepare machines for reshipment as described in the instructions supplied with them.

## Disassemble Operator Console

- |   |  |  |
|---|--|--|
| 1 | Remove covers from operator console.   | Step<br>cptd<br><input type="checkbox"/> |
| 2 | Remove keyboard and cathode ray tube from operator console in reversed sequence as described in Chapter 5.                               | <input type="checkbox"/>                 |
| 3 | Disassemble the operator console in reversed sequence as described in the respective chapter (4) depending on your system configuration. | <input type="checkbox"/>                 |

## Disassemble CPU

- The CPU should be disassembled in reversed sequence as described in Chapter 3. To remove the side covers (doors) next to the front of CPU it is necessary to remove the nameplate with cover B first (see Fig. 3-100-A). Front cover A (see Fig. 3-100-A) must also be removed to prevent damage of this cover because there is only a small gap between cover and floor.

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3115  
Inst. Man.

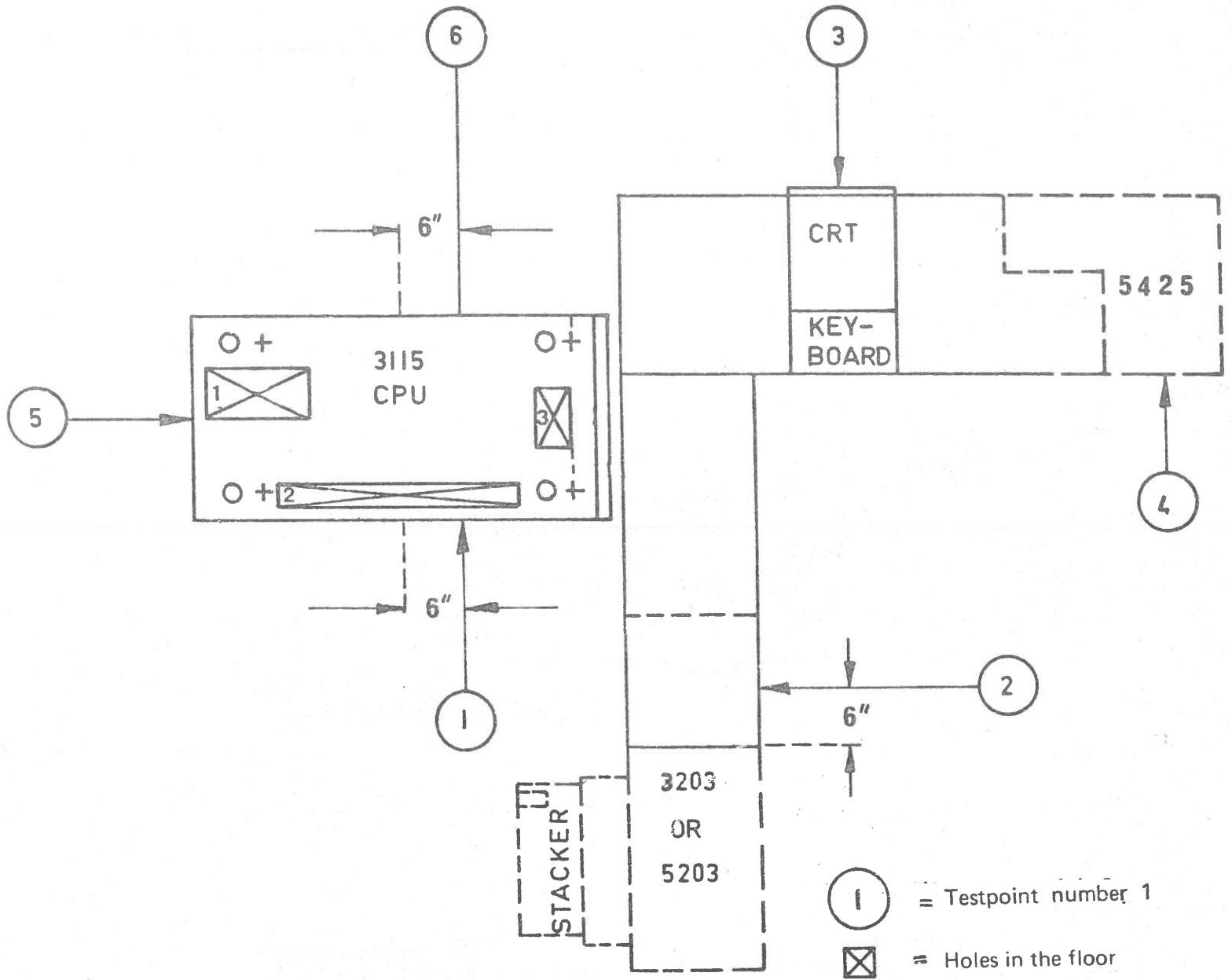


## APPENDIX ZAP-Procedure (For USA only)

After System Installation is complete a figure of merit level should be established by zapping with EMC simulator type I. In the manual (Form No. SY 27-0109) available with the simulator you will find on Fig. 2-8 a proper oscilloscope pattern to monitor ZAP. Failure level must be obtained and a run level is defined as a three minute error free test. The ASCP-Program should be used for testing. Integrated I/O units and one I/O unit on multiplex channel should be zapped to determine exposure. Before starting the ZAP-Procedure the following points should be checked for good contact to frame ground:

- |   |  |
|---|--|
| 1 Fingerstocks (see page 3-110)   | <input type="checkbox"/>   |
| 2 Braided ground straps:<br>One strap at lower pivot of gate 01A in 3115<br>two straps at each cover of 3115<br>one strap at front top cover of 5425<br>two straps at back top cover of 5425<br>one strap at each rear cover of 5425<br>one strap from CPU frame to printer frame | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> |
| 3 At 3203 gate cover the right top latching screw is tinned and must be tight.  | <input type="checkbox"/>   |
| 4 The shielded connectors for multiplex, tape and disk.   | <input type="checkbox"/>   |
| Important: Tailgate 3 and 6 aluminized plating on connector must make good contact to metal holder.   | <input type="checkbox"/>   |
| Additional check that the perforated screens over bottom opening of CPU are replaced.   | <input type="checkbox"/>   |
| If possible separate I/O cables from each other to prevent coupling of noise.   | <input type="checkbox"/>   |
| Also all ferrite cores located in the CPU (see Figure 4-240-B or 4-350-B) must be installed correctly.  | <input type="checkbox"/>   |

Step  
cptld



Test points 1, 2, 5, 6 are 22 inches above the floor.  
Test point 4 is on top front cover center of 5425.  
Test point 3 is just above table height at CRT cover.

Figure of Merit - Installation		
Testpoint	Run Level	Date
1		
2		
3		
4		
5		
6		

"ZAP" Procedure:

Start at 300V for about 30 seconds. If no failure occurs, increase by 100V increments until a failure occurs. Then lower by 50V until a 3 minute run is successful. This will be the run level. Carefully observe console display. When program stops running, quickly reduce ZAP level. This will provide an easy restart of the program.

# CHAPTER 13: PREPARE SYSTEM FOR RESHIPMENT

## General

Make sure that all cables, components, applicable manuals, and paperwork are shipped. Use envelopes for small items such as screws, nuts, and washers. Ensure that all parts have their part numbers attached so that they can be identified on subsequent reassembly.

## Disconnect Cables

- 1 Disconnect line cord.
- 2 Verify that all I/O cables are legibly labeled.
- 3 Disconnect I/O cables and fit protective covers to connectors.
- 4 Coil line cord into CPU.

Step  
cptd





## Disassemble I/O Units

- Disconnect all cables from I/O units. Prepare machines for reshipment as described in the instructions supplied with them.

## Disassemble Operator Console

- 1 Remove covers from operator console.
- 2 Remove keyboard and cathode ray tube from operator console in reversed sequence as described in Chapter 5.
- 3 Disassemble the operator console in reversed sequence as described in the respective chapter (4) depending on your system configuration.

Step  
cptd




## Disassemble CPU

- The CPU should be disassembled in reversed sequence as described in Chapter 3. To remove the side covers (doors) next to the front of CPU it is necessary to remove the nameplate with cover B first (see Fig. 3-100-A). Front cover A (see Fig. 3-100-A) must also be removed to prevent damage of this cover because there is only a small gap between cover and floor.

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		Date	Feb. 21, 1974	July 19, 1974	May 16, 1975	June 28, 1976	

## APPENDIX ZAP-Procedure (For USA only)

After System Installation is complete a figure of merit level should be established by zapping with EMC simulator type 1. In the manual (Form No. SY 27-0109) available with the simulator you will find on Fig. 2-8 a proper oscilloscope pattern to monitor ZAP. Failure level must be obtained and a run level is defined as a three minute error free test.

The ASCP-Program should be used for testing.

Integrated I/O units and one I/O unit on multiplex channel should be zapped to determine exposure.

Before starting the ZAP-Procedure the following points should be checked for good contact to frame ground:

- |   |   |  |
|---|---|--|
| 1 | Fingerstocks (see page 3-110)   | <input type="checkbox"/>   |
| 2 | Braided ground straps:<br>One strap at lower pivot of gate 01A in 3115<br>two straps at each cover of 3115<br>one strap at front top cover of 5425<br>two straps at back top cover of 5425<br>one strap at each rear cover of 5425<br>one strap from CPU frame to printer frame | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> |
| 3 | On 3115-2 only: Check that shielding of CRT cable is firmly connected to CRT frame and to cable tray (see step 25 on page 5-130 and Figure 5-120A)  | <input type="checkbox"/>   |
| 4 | A* 3203 gate cover the right top latching screw is tinned and must be tight.  | <input type="checkbox"/>   |
| 5 | The shielded connectors for multiplex, tape and disk.   | <input type="checkbox"/>   |
- Important: Tailgate 3 and 6 aluminized plating on connector must make good contact to metal holder.

Additional check that the perforated screens over bottom opening of CPU are replaced.

If possible separate I/O cables from each other to prevent coupling of noise.

Also all ferrite cores located in the CPU (see Figure 4-240-B or 4-350-B) must be installed correctly.

### "ZAP" Procedure:

Start at 300V for about 30 seconds. If no failure occurs, increase by 100V increments until a failure occurs. Then lower by 50V until a 3 minute run is successful. This will be the run level. Carefully observe console display. When program stops running, quickly reduce ZAP level. This will provide an easy restart of the program.

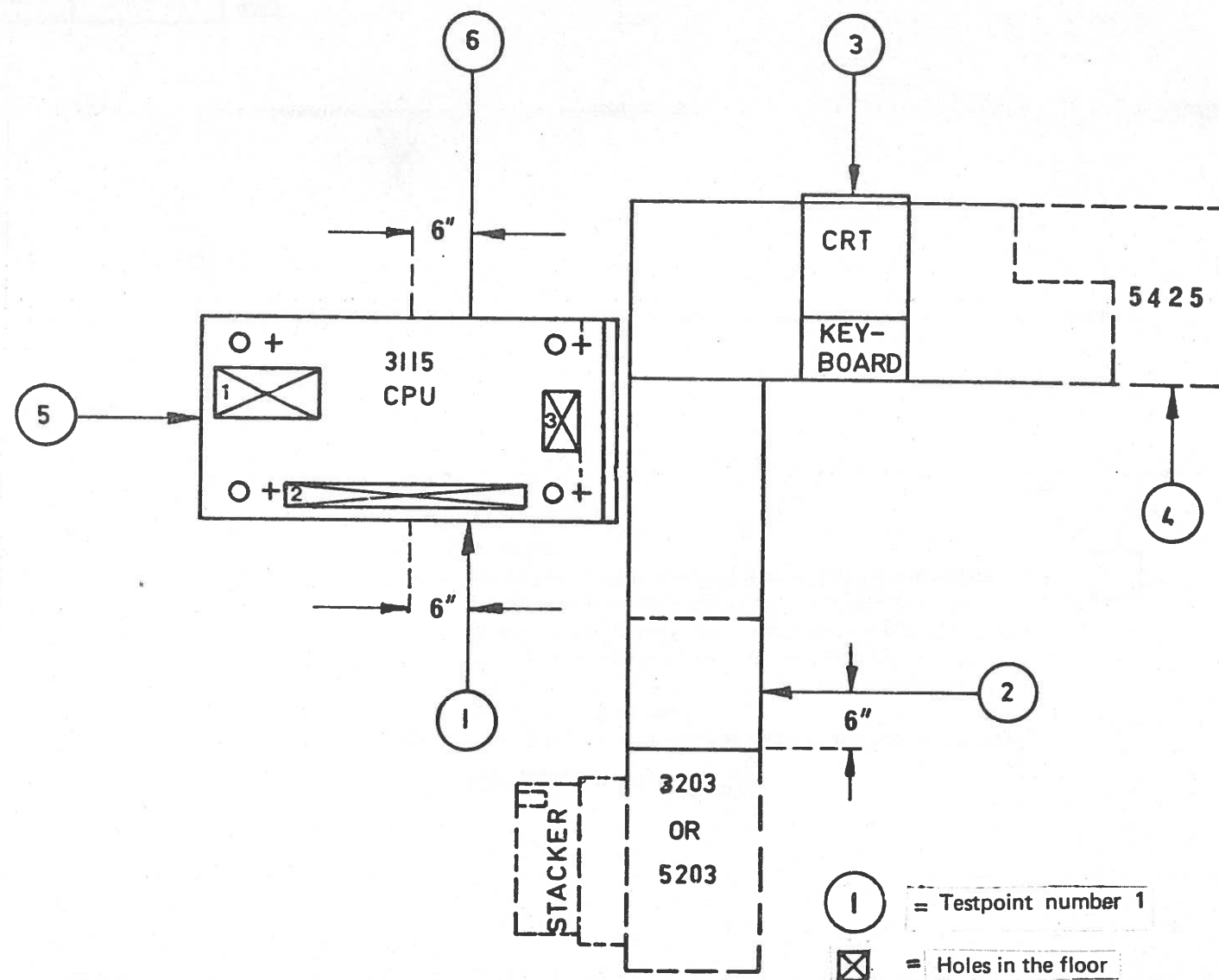
Step  
cpltd









Test points 1, 2, 5, 6 are 22 inches above the floor.  
Test point 4 is on top front cover center of 5425.  
Test point 3 is just above table height at CRT cover.

Figure of Merit - Installation		
Testpoint	Run Level	Date
1		
2		
3		
4		
5		
6		