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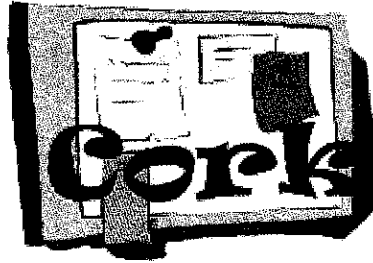
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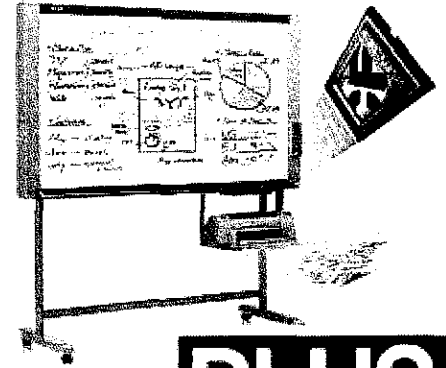
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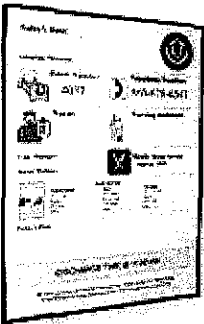
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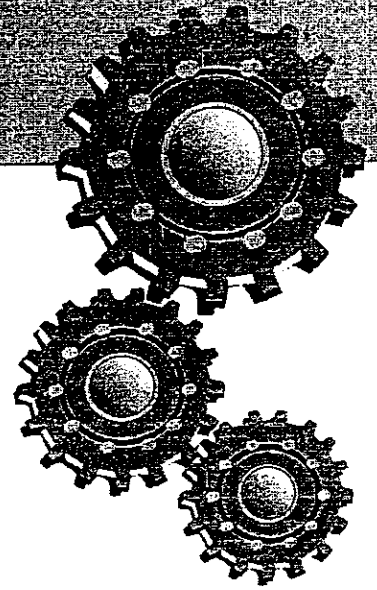
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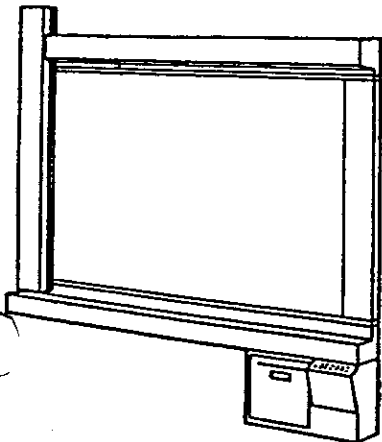


model 3000

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NATIONAL SERVICE TECHNICAL AND PARTS MANUAL FOR ELECTRONIC COPYBOARDS

Word check on top.

QUARTET OVONICS

MODELS 3000/3200 AND 3100

INSTALLATION INSTRUCTIONS FOR LIMIT SWITCH

Included:
Two Limit Switches

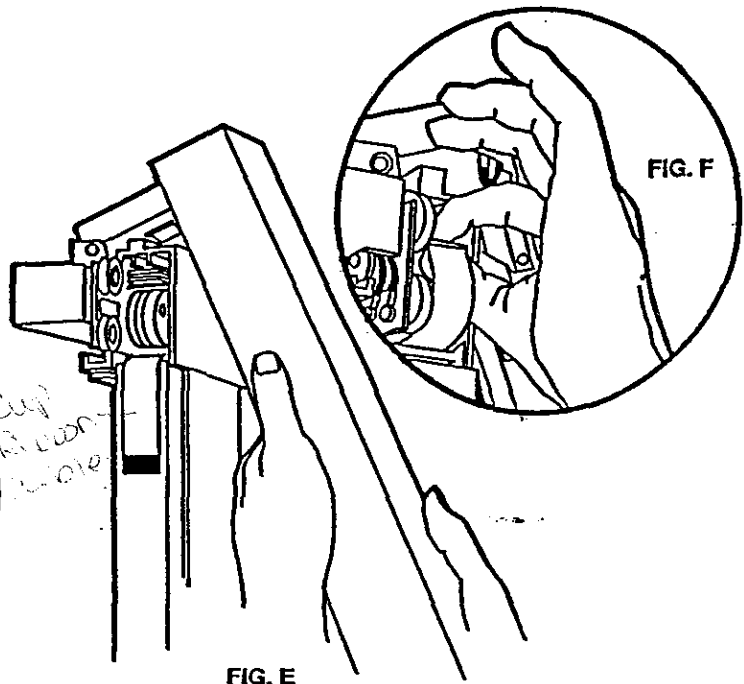
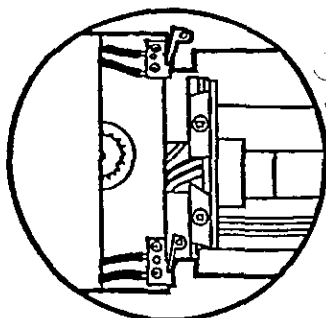
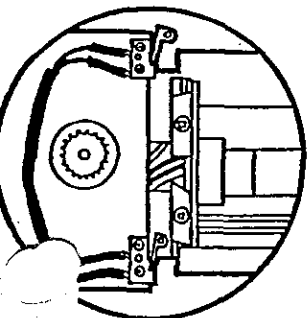
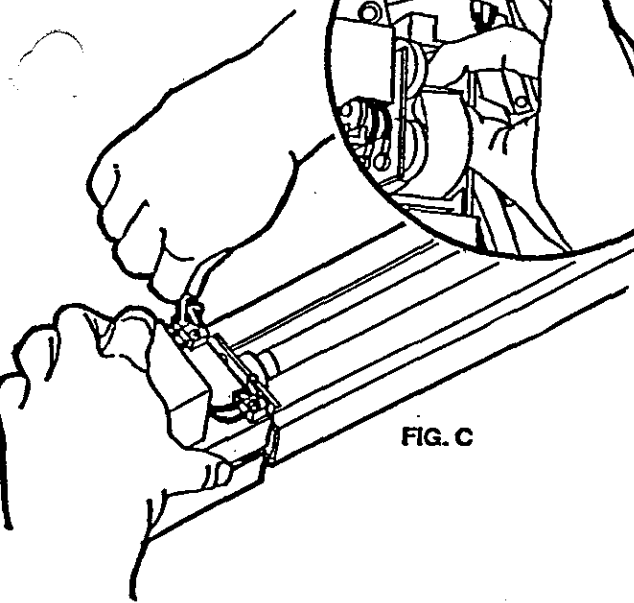
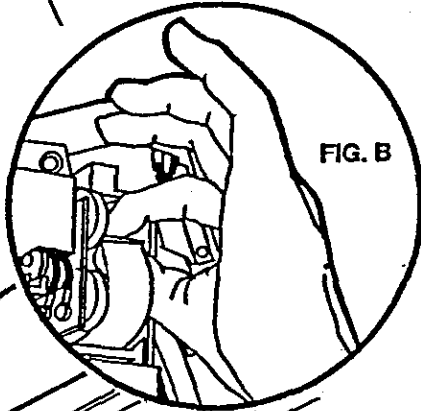
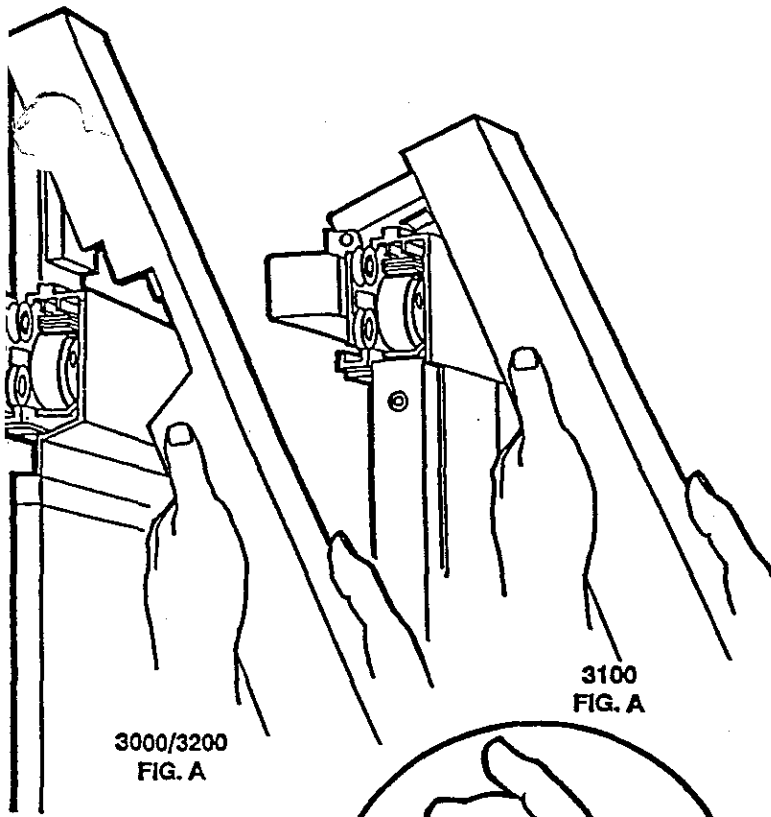
Tools needed:
Phillips screwdriver

To remove scanner arm from the board

1. Remove the upper left end cap from the board.
2. Lift scanner arm away from board at about 45 degrees and carefully slide trolley mechanism about 1/3 of the way out of scanner arm track (FIG. A).
3. Disconnect ribbon cable from scanner arm trolley mechanism (FIG. B.) and remove scanner arm from board.
4. Lay scanner arm on a flat surface and remove 2 screws from defective Limit Switch (FIG. C).
5. Disconnect cables from defective Limit Switch terminals and reattach cables to new switch.
6. Install new replacement Limit Switch. NOTE: Position new switch in proper orientation (FIG. D).
7. If second switch needs replacing, repeat steps 4-6.

To replace scanner arm on board

1. Make sure ribbon cable has not become twisted and is lying flat.
2. Pivot the trolley mechanism away from the arm at about 45 degree angle.
3. Carefully slide trolley mechanism onto scanner arm track about 2/3 of the way (FIG. E.). Reconnect ribbon cable making sure the release clip is on the bottom. Be sure that the connector is firmly attached (FIG. F.).
4. Slide trolley mechanism completely onto track and replace end cap.





Quartet Ovonics

Electronic Copyboard User Guide

Indoff

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1-800-233-6793 Service Hotline

All specification and details published are subject to change with out notice.

SPECIFICATIONS

Style	OO 3000 Wall Mounted	OO 3100 Reversible Porcelain-on-Steel	OO 3200 Wall Mounted
Board Surface	Yes	Yes	Yes
Non-Replicable Grid	Yes	Yes	Yes
Writing Surface Area	44 5/16" x 55 1/2"	33 5/16" x 66 5/8"	33 5/16" x 66 5/8"
# Copies	or 20.65F 1-99	or 15.55F/side 1-99	or 15.55F 1
Copy Size	8 5/16" x 8 5/16" x 13 5/8"	8 5/16" x 8 5/16" x 13 5/8"	8 5/16" x 8 5/16" x 13 5/8"
Partial Copies	Yes	Yes	Yes
# Copies/330 Roll	290-360	290-360	290-360
Print Method	Silent thermal printer		
Memory Recall Feature	Yes	Yes	No
Initial Supplies Included	4 color dry erase markers (red, blue, black, green), Erasettes, 4 magnets		
Electrical	1 Standard 3 plug outlet - 115v AC; 60Hz; 250 watts max.		
Approx. Weight (lbs.)	135	155	120
Scanning Method	Proprietary scanning system (US and Foreign Patents issued and pending)		

ORDERING SUPPLIES

Quartet Ovonic's offers a full line of products specifically designed and manufactured for optimum results on your Copyboard. These items are available through your Quartet Ovonic's dealer. Use the appropriate catalog numbers when ordering.

- OO 100 Quartet Ovonic's Copyboard Starter Kit: A convenient assortment of supplies including 2 rolls of Copyboard Paper, Markers and Erasettes.
- OO 3500P Quartet Ovonic's Copyboard Paper: Makes crisp, sharp, clear copies. Specially manufactured for use in Quartet Ovonic's Electronic Copyboards.
- OO 5030 Quartet Ovonic's Re-Mark-Able Markers: Set of 4 Colorful Markers - red, blue, black, green. Specially designed for best copying.
- OO 552 Quartet Erasettes: Moist, disposable towlettes erase dry-erase markers while cleaning the white board surface. Just wipe clean and toss.
- OO 550 Quartet Marker Board Cleaner: Works instantly. Sprays on, wipes off, cleans all porcelain on steel boards. Specially formulated to remove dry-erase ink, residue, dirt, grease, washable markers, some permanent markers.
- OO 170 Quartet Ovonic's Eraser: Durable, flexible. Will not scratch or mar surface.

ON/OFF

This main power switch energizes the entire Copyboard. A green light above the switch indicates that power is on.

PAPER OUT

A red light shows that the roll of thermal paper needs to be replaced.

COPY

Push this button to start making copies.

SIZE SELECTION

Push this button to change the size of the copy. A green light adjacent to the words "LETTER" or "FULL" indicate which size will be made.

QUANTITY SELECTION

Push these buttons to select the number of copies to be produced.

COPY COUNTER

The green numerals indicate the number of copies selected.

STOP/CLR

Push this button to stop the scanner arm. It will also clear the copy counter and reset it to "01". To re-start, the "COPY" button must be pushed.

MR (MEMORY RECALL)

Push this button to obtain additional copies of the last copy produced (without rescanning).

SCANNER POSITIONING

Each of these buttons moves the scanner arm in the direction of the arrows on that button without copying the board. This feature allows you to copy only a selected portion of the board.

When the paper supply is low, a red stripe will appear on the edge of your copies. When the paper supply is empty, the red "PAPER OUT" light will appear.

To insert a new roll of Quartet Ovonics Copyboard Paper (#QQ 3500P), follow these steps:

1. Remove old paper core by compressing the "B" side core holder. (SAVE BOTH CORE HOLDERS). Then insert paper core holders into the new roll as shown (Figure 1).
2. First insert the "B" core holder end into the printer at location shown in Figure 2. Then insert the "A" side core holder.
3. Lift RED lever to let the cartridge drop down.
4. Feed the paper up between the GREEN colored bar of the cartridge and the roll of paper. The paper must rest on top of the cartridge as shown in Figure 4.
5. Position the ORANGE cutter wheel until the black roller drops into the slot (Figure 4).
6. To feed paper through cutter, insert paper in the slot behind the BLUE colored bar (see Figure 5). If orange cutter wheel is not aligned, paper might not flow through.
7. Lift cartridge until it snaps back in place.
8. Make certain ORANGE cutter wheel is still in position. If not, repeat Step 5
9. If there is excess paper, feed it through the slot in the door and close the door; otherwise simply close the door.
10. If flashing "51" or "53" appears, either the door is not closed properly, or the orange cutter wheel is not in position.

NOTE: We strongly recommend the use of Quartet Ovonics Copyboard Paper #QQ 3550P to insure the highest copy quality and smooth movement through the machine. Other papers may significantly affect other aspects of Copyboard operation.

Figure 1



Figure 2

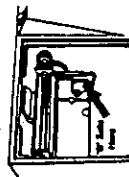


Figure 3

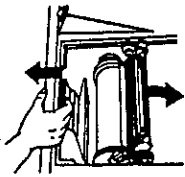


Figure 4



Figure 5



1. Turn on the Power
 - Connect the power cord to a standard 120v AC, 60Hz outlet.
 - Press the "ON" switch on the control panel.
 - The green lamp above the "ON" switch will light.
 - The scanner arm will move to the side of the board if it is not already there.
 - The "FULL" size indicator will light.
 - The copy counter will indicate "01".
2. Use the Surface
 - Write with Quartet Ovonics Re-Mark-Able Markers.
 - Use grid lines as guides if desired.
 - Attach materials with tape or magnets if desired.
3. Select Paper Size
 - Press the "SIZE" button on the control panel to change between "FULL" and "LETTER".
 - The appropriate indicator lamp to the left of the "SIZE" button will light.
4. Select Number of Copies (Models 3000 & 3100)
 - Press the buttons below the copy counter display until the desired number appears.
5. Produce Copies
 - Press the "COPY" button.
 - The lamp in the scanner arm will turn on.
 - The scanner arm will move across the board.
 - Copies will appear.

NOTE: For multiple copies the scanner arm will scan the board only once. (Models 3000 & 3100)
6. Turn Off Power
 - Press the "OFF" switch on the control panel when finished with your session.

NOTE: The scanner lamp is only on when scanning. It is not necessary to turn off the power after each usage, but is recommended after your meeting or session is completed.

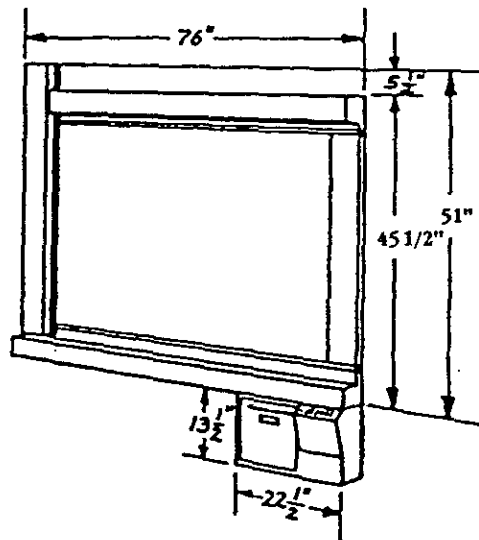
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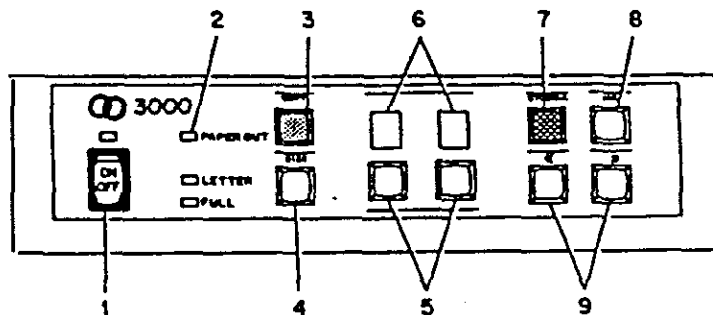
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SPECIFICATIONS

BOARD SURFACE:	Porcelain on Steel Non-Reproducible Grid
WRITING AREA:	44.5" X 66.5" (20.6 square feet)
# COPIES:	1 - 99
#COPIESPERROLL:	290 - 360
COPY SIZE:	8.5" X 11" and 8.5" X 13.5"
PRINT METHOD:	Silent Thermal Printer
SCANNING METHOD:	Proprietary scanning system (US and foreign patents issued and pending)
ELECTRICAL:	115 VAC; 60 Hz; 250 watts max. (uses 1 standard 3 plug outlet)
WEIGHT:	135 pounds
ENVIRONMENTAL:	30 - 110°F 90% Relative Humidity
OTHER FEATURES:	<ul style="list-style-type: none">• Memory Recall• 4 color dry-erase markers included with board• 1 eraser included with board (Purple, Blue, Black, Green)• 4 magnets included with board



OPERATION



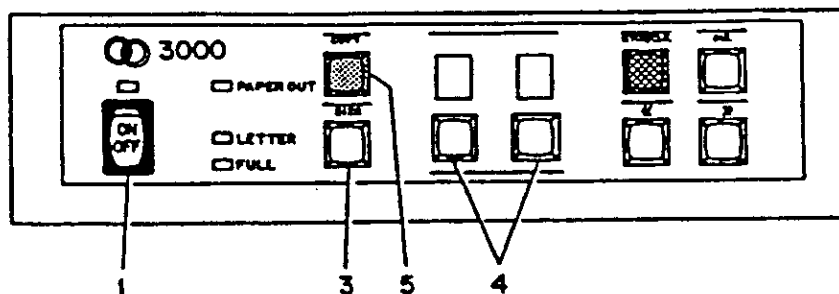
- | | | |
|---|----------------|--|
| 1 | ON/OFF | This main power switch energizes the entire copyboard. A green light above the switch indicates that the power is ON. |
| 2 | PAPER OUT | A red light shows that a roll of thermal paper is needed. |
| 3 | COPY | Push this button to start making copies. |
| 4 | SIZE SELECTION | Push this button to change the size of the copy. A green light adjacent to the words LETTER or FULL indicates which size will be made. |
| 5 | QUANTITY | These buttons enable the selection of the number of copies to be produced. |
| 6 | COPY COUNTER | The green numerals indicate the number of copies selected. |

NOTE: *This display is also used to communicate error messages. When a flashing number appears, refer to the Error Code Section of this guide for instructions (Page 15).*

- | | | |
|---|---------------------|--|
| 7 | STOP/CLR | This button will stop the scanner arm. It will also clear the copy counter and reset it to "01". To restart, the COPY button must be pushed. |
| 8 | MR | MEMORY RECALL - Push this button to obtain additional copies of the LAST copy produced without rescanning. |
| 9 | SCANNER POSITIONING | Each of these buttons moves the scanner arm in the direction of the arrows on that button without copying the board. This feature allows you to copy only a selected portion of the board. |

OPERATION

HOW TO MAKE A COPY



1. With the power switch OFF:
 - Plug in the power cord to a standard 120V AC, 60 Hz outlet.
 - Press the ON switch on the control panel
 - The green lamp above the ON switch will light;
 - The scanner arm will move to the left side of the board if it is not already at either side.;
 - The FULL size indicator will light;
 - The copy counter will indicate "01".
2. Use the surface
 - Write with Quartet Re-Mark-Able Markers.
 - Use grid lines as guides if desired.
 - Attach materials with tape or magnets if desired.
3. Select Paper Size
 - Press the SIZE button on the control panel to change between FULL and LETTER.
 - The appropriate indicator lamp to the left of the SIZE button will light.
4. Select the Number of Copies desired
 - Press the buttons below the copy counter display until the desired number appears.
5. Produce Copies
 - Press the COPY button
 - The lamp in the scanner arm will turn ON.
 - The scanner arm will move across the board.
 - Copies will appear.

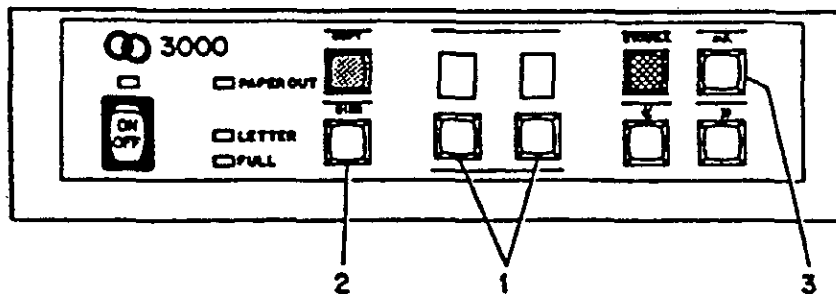
NOTE: For multiple copies the scanner arm will scan the board only once.

6. Turn OFF the Power
 - Press the OFF switch on the control panel when finished with your session.

NOTE: The scanner lamp is only on when scanning. It is not necessary to turn off the power after each usage, but is recommended after the meeting or session is completed.

OPERATION

USING MEMORY RECALL



The Quartet Ovonics Electronic Copyboard has the capability of providing additional copies of the last copy made without rescanning. This feature is helpful when additional copies are needed at a later point in time, for instance, when additional people enter a meeting already in progress. Memory recall will only work if the main power has remained on since the last copy was made.

1. Select the number of copies.
2. Select the paper size. This can be different from the size originally selected.
3. Produce the copies.
 - Press the MR button. The scanner arm will not move but the copies will appear.

NOTE: Printing must be completed before the board can be copied again.

CHANGE PAPER - NEW STYLE PRINTER

HOW TO CHANGE THE PAPER IN A NEW STYLE PRINTER (continued)

7. Feed the paper up between the GREEN bar of the cartridge and roll of the paper. Paper must rest on top of the cartridge as illustrated in figure 4.
8. Position the ORANGE cutter wheel until the black roller drops into the slot on orange cutter wheel.
9. To feed paper through the cutter, insert into slot between BLUE colored plates (figure 5). If orange cutter wheel is not aligned paper might not flow through properly.
10. Lift the cartridge until it snaps back into place.
11. Repeat Step 8 to make sure the ORANGE cutter wheel is in position.
12. If there is excess paper, feed through the slot on the door and close the door; otherwise simply close the door.
13. If the control panel is flashing "51" or "53", check to make sure the door is closed properly and the Orange cutter wheel is in the correct position.

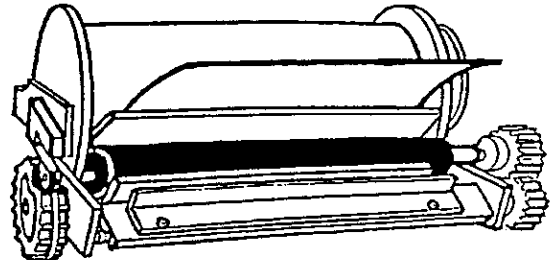


Figure 4

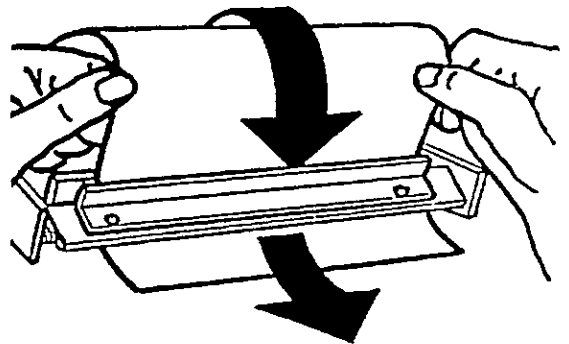


Figure 5

Thermal Doc up to 100°C

ERROR CODES

01 = Board re. repair to go
ERROR CODES

If problems should occur, check the control panel for a flashing green number. By following the procedures below associated with this flashing number, your Copyboard should be operable once again.

<u>INDICATOR LIGHT</u>	<u>CAUSE</u>	<u>CORRECTIVE PROCEDURE</u>
51 (New style printer)	Door Open, Cutter Bar Misaligned <i>check magnet</i>	<ul style="list-style-type: none"> • Close door • Follow paper cutting procedures along with cutting alignment procedures.
52/53	Printer Error	<ul style="list-style-type: none"> • Turn Power OFF and open printer cover • Align arrow between paper guide and black plastic wheel (upper left corner). Turn wheel as necessary to align arrows • Close cover and press STOP/CLR button
54	Paper Jam in Printer	<ul style="list-style-type: none"> • Turn power OFF and open printer cover • Remove paper guide by unscrewing the two black knurled nuts • Remove jammed paper and replace paper guide NOTE: Hold the guide as low as possible while tightening thumb screws. • Align arrow between paper guide and black plastic wheel (upper left corner). Turn wheel as necessary to align arrows. • Close cover and press STOP/CLR button
58	Paper Out	<ul style="list-style-type: none"> • Insert a new roll of paper
59	Printer Head Overheated	<ul style="list-style-type: none"> • Turn off unit and open printer cover. Wait 10 minutes.
60/61 <i>MR - after roll in. OK in main body on track. Roll - limit - or micro switch. Beut or Kromer</i>	Arm Interference	<ul style="list-style-type: none"> • Check for large objects in tray, upper rail or other possible interferences. • Press the STOP/CLR button
70	MR Button Pressed with nothing in Memory	<ul style="list-style-type: none"> • Press the STOP/CLR button • Press the COPY button to scan the surface
82 <i>Structure with left side - full time</i>	Transition Cable/Ribbon Cable Not Plugged In	<ul style="list-style-type: none"> • Connect ribbon cable
Other Numbers		<ul style="list-style-type: none"> • Call for Technical Assistance.

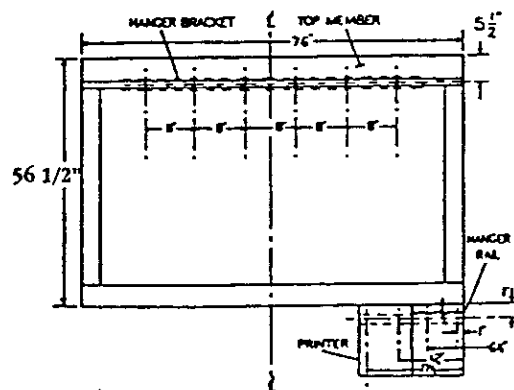
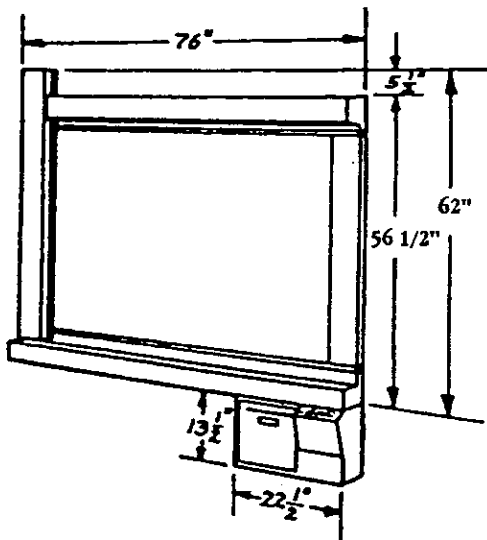
INSTALLATION PROCEDURES

NOTES FOR INSTALLATION

This unit attaches to the wall with two brackets, one to hold the board and one to support the printer box. It is the customers responsibility to hang the board bracket and our responsibility to hang the printer box bracket, install, and check out the board. The bracket for the board is 48" long and is packaged with the board. The printer bracket is 18" long and is attached to the board.

Before making the service call to do the installation, you should contact the customer to be sure the board bracket is installed in the correct location and will support the weight of the board (approximately 100 pounds). The bracket MUST BE AT LEAST 12-1/2" down from the ceiling. If it is closer, you will not be able to install the arm. To support the weight of the board, we highly recommend that the bracket be attached to the studs in the wall. In a masonry wall, lead or plastic anchors would be effective. Check to be sure there is electricity available within 7 feet of the bottom right corner of the board. Find out exactly what kind of wall construction is at the bottom of the copyboard so you will know if you need to get special anchors or drill bits.

Now you are ready to install the board. Start with the Tech Rep Installation Instructions on page 18.



INSTALLATION PROCEDURES

TECHNICAL REPRESENTATIVE INSTALLATION PROCEDURE

ATTACH COPYBOARD TO MOUNTING BRACKET

1. Prepare the board.
 - Locate the horizontal slot near the top REAR of the board (identified by the large arrows on the reverse side of the board).
 - Remove the ribbon cable from the clip that is attached to the right rear side and lay it in the tray to prevent damage. This will attach to the printer later.
2. Hang the board.
 - With 2 people, lift the board and position it against the wall so that the attached mounting bracket slips into the mounting slot. Be absolutely sure that the board is properly seated in the slot.
3. Adjust positioning.
 - Slide the board (left or right) on the bracket for minor horizontal positioning adjustments if necessary.

ATTACH PRINTER TO WALL (see Diagram on Page 17)

Note: The unit is designed to fit neatly below the lower right corner of your board. Be aware that the electrical power source cord for the Copyboard attaches to the bottom of the printer unit.

1. The printer hanger rail is 18" long with holes every 5 1/2".
2. Determine the position of the printer hanger rail.
 - Rail holes should be 1" from the bottom edge of the accessory tray of the previously hung board.
 - Measure down 1" and draw a line parallel with the bottom of the tray.
 - Measure 1" in from the RH side of the board.
 - Position the printer rail so the horizontal line is exactly centered on the holes and the RH edge of the rail is 1" from the board edge. Mark the hole position on the wall.
3. Attach rail to wall.
 - Most walls will be plasterboard. Q5S1008 includes 4 drywall fasteners which should be used. If the wall is cement block, brick, etc. you will need lead or plastic Q5S1007 anchors along with the appropriate carbide bit. Whatever method you use, the screws MUST BE FLUSH with the rail or you will not be able to slide the printer on the rail.
 - Do not attach the rail over the ribbon cable.
 - Tape a piece of paper on the wall just to the left of the rail so you will not scratch the wall as you slide the printer on the rail. Pull the bottom of the board out from the wall and position cable behind the board and printer box.
4. Attach the ribbon cable securely to the receptacle on the bottom of the printer.

INSTALLATION PROCEDURES

ATTACH ELECTRICAL SOURCE

Attach cord (power cord is shipped inside the paper compartment door).

- With the power switch off, attach the power cord to the bottom of the printer unit.
- Plug the cord into a standard 3 prong, 115 VAC, 60 HZ outlet.

Note: If an extension cord is necessary, use a suitable cord with a three prong receptacle. Make sure to arrange the cord so it will not be tripped over.

LOAD PAPER

Refer to Page 12 - 14.

ATTACH PAPER TRAY

Slide the support arms of the paper tray onto the mounting rails on the bottom left side of the printer unit.

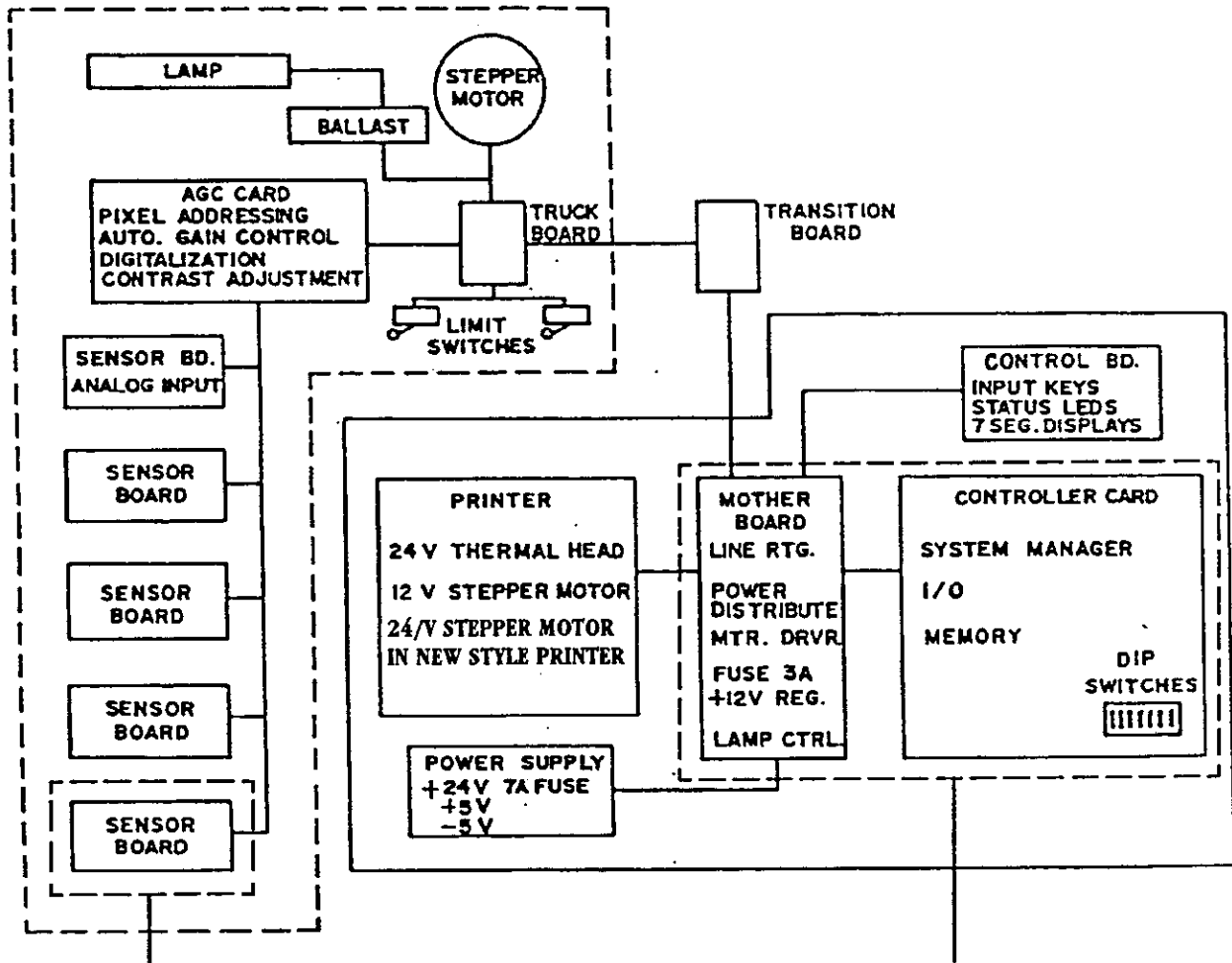
CHECK OUT OPERATION OF BOARD

Check out the operation of the board by going through the test routines covered elsewhere in this manual.

ELECTRIC COPYBOARD IS NOW READY FOR USE!

Briefly review the Operator Instruction Manual with your customer and ask them to complete and mail in the Warranty Registration Card.

SYSTEM DESCRIPTION



NOTE: SEE NOTE PREVIOUS PAGE

AS REQUIRED

COPYBOARD SYSTEM BLOCK DIAGRAM

FIGURE 1

PRINTER OPERATION

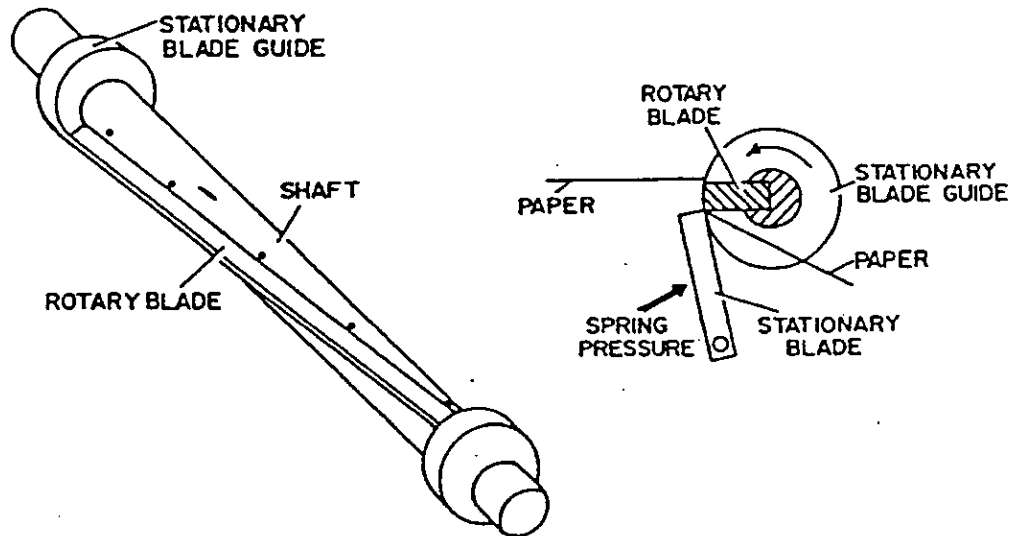
The printer used in the Quartet Ovonics Electronic Copyboard is a thermal printer.

The printer stepper motor drives the paper feed and cutter shafts.

The paper roll shaft is driven by a lug on the gear hub and a pin in the shaft so that the shaft will be idle for approximately 270 degrees whenever the gear is reversed.

The rotary cutter shaft is driven by a one-way clutch so that it is driven only when the stepper motor is running Counter-Clockwise).

The paper is cut by the rotary cutter blade.



After the cut is completed, the drive lug on the gear hub contacts the opposite side of the drive pin and begins to "pull back" the paper until the paper cutter switch is in the home position. This is monitored by the controller to identify paper jams.

When the paper has been "pulled back" a small amount, the stepper motor is reversed again until the drive lug is against the drive pin and stopped, ready for the next print cycle.

POWER DISTRIBUTION

NEW STYLE CONTROLLER BOARD AND POWER SUPPLY

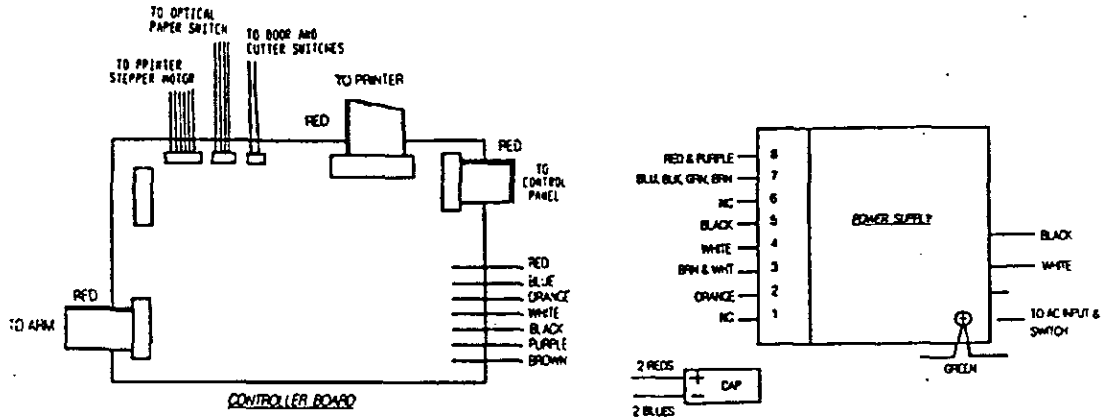


FIGURE 4

QUARTET COPYBOARD BLOCK DIAGRAM

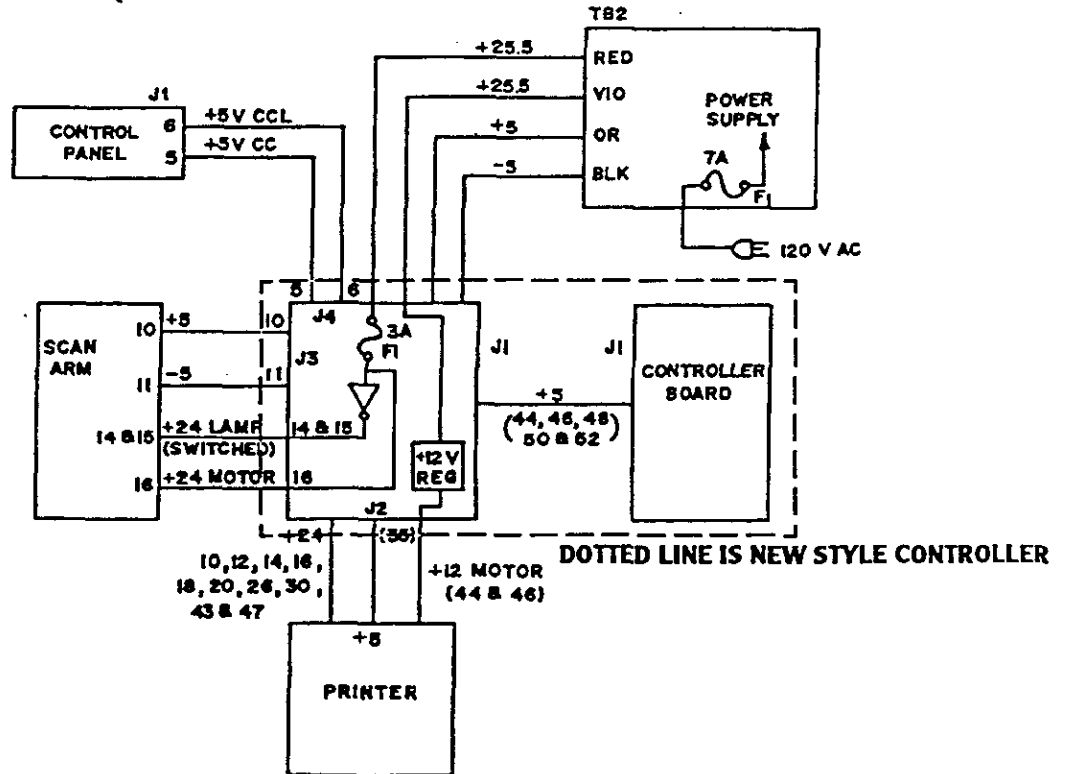


FIGURE 5

POWER DISTRIBUTION

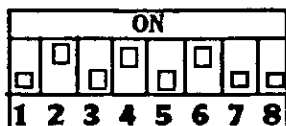
QO MODEL 3000/3200

DIP SWITCH CHART

OLD STYLE BOX

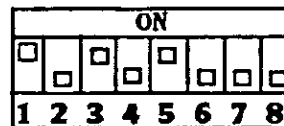
WITH

OLD STYLE ARM



2, 4 AND 6 ARE "ON"
ALL ELSE "OFF" OR OPEN

NEW STYLE ARM



1, 3 AND 5 ARE "ON"
ALL ELSE "OFF" OR OPEN

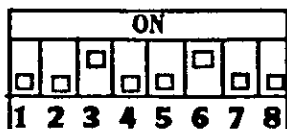
NOTE: THIS UNIT HAS A 3200 SMALLER BOARD, BUT THE UNIT HAS IMAGE STORAGE MEMORY AND MEMORY ACCESS SWITCHES ON THE CONTROL PANEL FOR USE IN PRODUCING MULTIPLE IMAGES OF A GIVEN SCAN.

NOTE: EPROM MUST BE 9053 OR HIGHER.
NEW STYLE ARMS ARE IDENTIFIED BY A SERIAL NUMBER GREATER THAN 90000000 OR 0000000 AND A RED DOT ON THE SERIAL NUMBER PLATE

NEW STYLE BOX

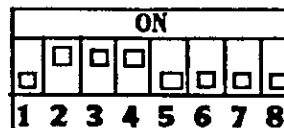
WITH

OLD STYLE ARM



3 AND 6 ARE "ON"
ALL ELSE "OFF" OR OPEN

NEW STYLE ARM



2, 3 AND 4 ARE "ON"
ALL ELSE "OFF" OR OPEN

NOTE: EPROM MUST BE AC0173 OR HIGHER ("AC" SIGNIFIES NEW STYLE)

TEST ROUTINES

TEST ROUTINES

The following self-test routines are very helpful in troubleshooting, but must be interpreted using your knowledge of the copyboard. Use them in conjunction with the troubleshooting charts to pinpoint the defective component.

These test routines can be run with the printer box on the machine or on the bench, with or without the arm being plugged in.

1. Lay the printer box on the bench on its back and remove the cover.
2. Remove the main switch and control panel from the cover.
3. Connect the main switch to the harness and tape all three terminals.

CAUTION: The bare unused terminal of the switch is hot when the switch is off.

4. Plug the control panel cable into the proper location on controller board or motherboard.

TEST MODE

HOW TO GET INTO TEST MODE

At the same time you turn the system on, press on both "COPY" and "SIZE" keys. The display will then show "00" and the system is in the test mode.

HOW TO SELECT A TEST ROUTINE

The user selects the test routine by its number (00 to 08) by pressing the "UNITS" key located under the right display. If the user keeps that key depressed for a sufficient time, the display will increase automatically. To select the chosen number, either release the key when that number is reached or depress the key repetitively, incrementing the display every time the key is depressed.

HOW TO EXECUTE AND STOP A TEST ROUTINE

Once the desired test routine number is displayed, to start the test, depress the "COPY" (green) key.

To exit the test routine at any time, depress the "CLEAR" (red) key. The display will then show the number of the test routine you had selected. From there you can either select another test by incrementing the display with the proper key or go back to "00" by depressing the "CLEAR" key or run the same test again. To select a test that has a lower number than the present one, just keep on incrementing the display until it comes back to "00" and starts again.

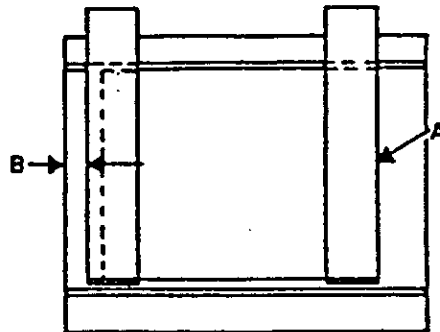
HOW TO EXIT THE TEST MODE

To exit the test mode, the user must first stop the test that may be running by depressing the "CLEAR" key. Press the "CLEAR" key again to zero out the display. Then depress the "COPY" key. If the arm is not on either side of the board, it will first reset to the left and then the display will show "01". The system is now in the normal mode.

TEST ROUTINES

APPROXIMATE LIMIT SWITCH OPERATING POINTS WITH RESPECT TO THE BOARD WRITING SURFACE

There are approximate measurements of the position of the arm, with respect to the actual writing surface of the board, when the switch ramps are properly placed and the switches are operating properly. They are to be used as a guideline. The measurements are taken at the point where Test #4 indicates that the switch has been actuated.



RIGHT SIDE - The right hand side of the board should be even with the edge of the writing surface.

LEFT SIDE - Measurement is taken from the left-hand edge of the writing surface to the left-hand edge of the arm.

All Models: 1 5/8" to 1 7/8"

TEST 5: ARM MOVEMENT TEST

This test enables the user to move the arm back and forth by means of the "<<" and ">>" keys. During this test, the display will remain blank.

TEST 6: PRINTER SWITCHES

The printer switches are the paper out switch and the clutch home switch. The display shows the status of the paper switch on the left digit and that of the clutch switch on the right digit. Operate the switches manually to test the switches.

TEST 7: PRINTER TEST PATTERN

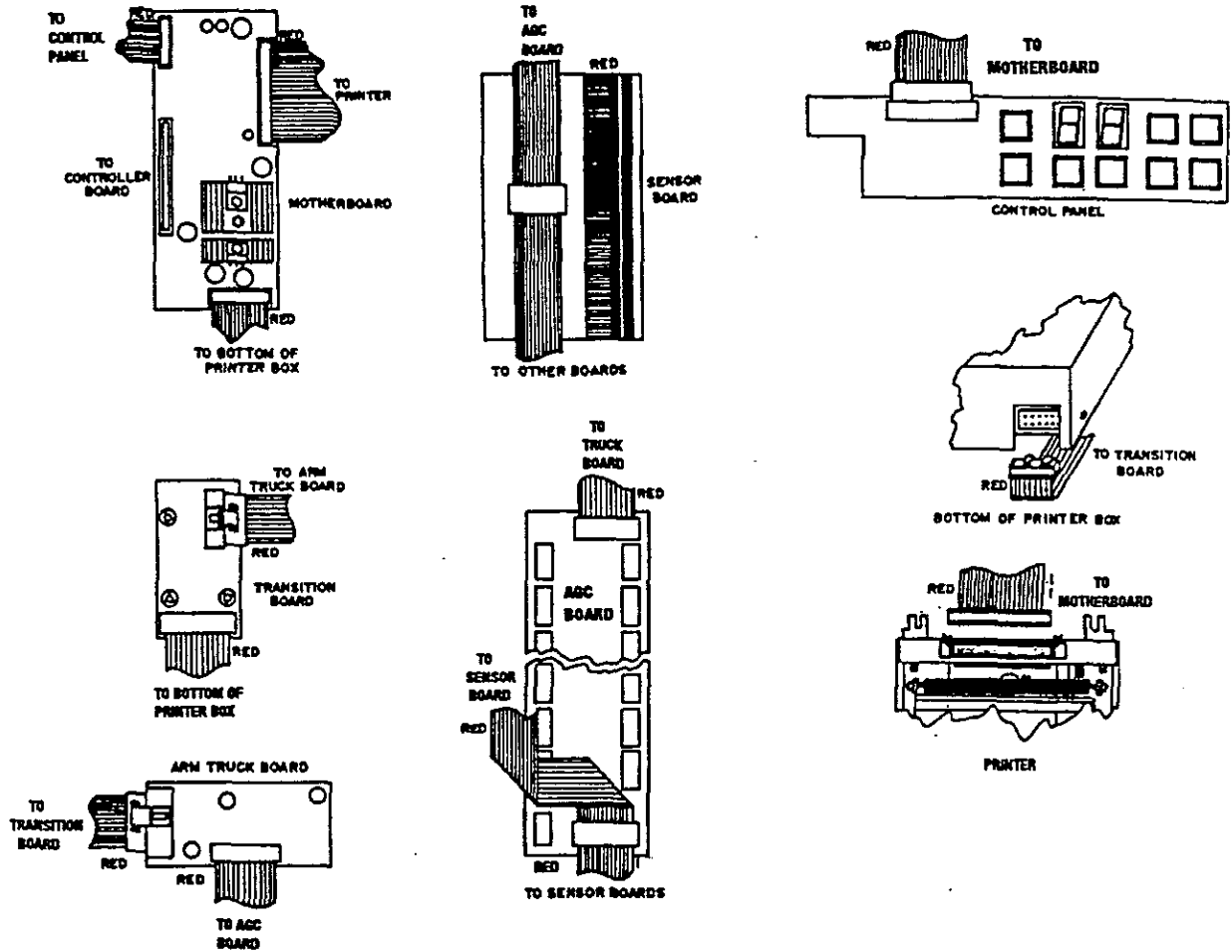
This test will print a page filled with short diagonal lines that enable the user to examine the state of the thermal printhead, as shown below. If this pattern is not printed evenly across the page, the printer is defective.

TEST 8: LAMP TEST

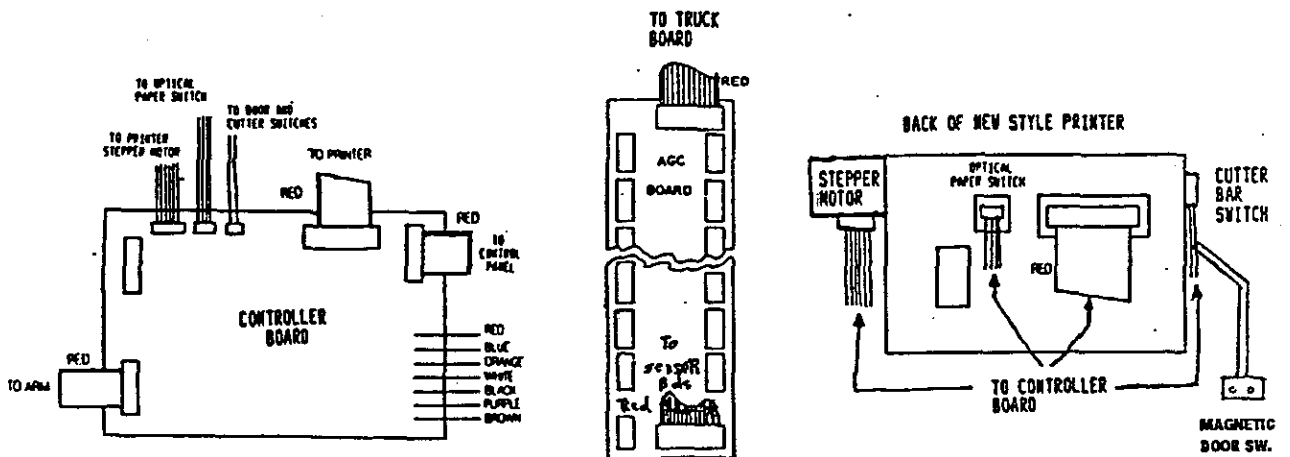
This test will turn the scan lamp on for five seconds and then turn it off. During this test, the display will be blank.

CONNECTOR ORIENTATION

ORIGINAL QUARTET BOARDS AND WIRING



NEW QUARTET BOARDS AND NEW WIRING



TROUBLESHOOTING CHARTS

PROBLEMS	REASON FOR PROBLEM	ACTION
1. Black or white horizontal lines in print.	<ul style="list-style-type: none"> A. Defective printer. B. Defective arm. 	<ul style="list-style-type: none"> A. Run printer test. If test fails, replace box. B. Run copy from center of board. If bad, replace arm. If good, adjust switch ramp placement.
2. "80, 81, 82, 83 or 84" error	<ul style="list-style-type: none"> A. Arm cable not connected properly. B. AGC board is not working. C. Controller board. 	<ul style="list-style-type: none"> A. Check arm cables. Replace if necessary. B. Replace the arm. C. Replace the box.
3. Paper does not cut properly.	<ul style="list-style-type: none"> A. Cutter bar spring has been over-stressed. 	<ul style="list-style-type: none"> A. Replace printer.
4. No power light or display.	<ul style="list-style-type: none"> A. Power cord not plugged in properly. B. Fuse blown on power supply. C. Control panel connector not plugged in. 	<ul style="list-style-type: none"> A. Check power cord. Check line voltage. B. Check power supply fuse. C. Check mother board to control panel and main switch cables. D. Replace the box.
5. No display with power light.	<ul style="list-style-type: none"> A. Mother board to control board cable not plugged in properly. B. Seven segment display burnt out. C. Display driver blown. D. DIP switch settings. E. Defective controller board. 	<ul style="list-style-type: none"> A. Check cable. B. Run test routine #1 to check display. C. Replace the box D. Check DIP switch settings. E. Replace the box.
6. Arm does not move at all.	<ul style="list-style-type: none"> A. Gear B. Transition cable not making proper connection. C. Fuse blown on mother board. D. Stepper mother driver chip blown. E. Defective controller board. 	<ul style="list-style-type: none"> A. Check Gear. B. Change transition board assembly and cables.. C. Check fuse on mother board. Test #8 (lamp) verifies fuse. If comes on, see #6. D. Replace the box. E. Replace the box.
7. Arm moves but motor does not stop until time out error. "60" or "61"	<ul style="list-style-type: none"> A. Arm cable not properly plugged in. B. Defective limit switch. Switch ramp missing or misaligned. C. DIP switches set incorrectly. 	<ul style="list-style-type: none"> A. Check arm cable. B. Test #4 limits switches. Replace switch. C. Set the DIP switches.

TROUBLESHOOTING CHARTS

PROBLEMS	REASON FOR PROBLEM	ACTION
14. Lamp does not come on.	<ul style="list-style-type: none"> A. Lamp burnt out. B. Defective ballast. C. Defective mother board. D. Defective controller board. 	<ul style="list-style-type: none"> A. Check ballast and lamp connections. Test #8 . Replace the lamp. B. Replace the arm. C. Replace the box. D. Replace the box.
15. Arm does not move freely by hand.	<ul style="list-style-type: none"> A. Something blocking arm movement. B. Wheels not moving freely. 	<ul style="list-style-type: none"> A. Check wheels on track to see if they are moving freely. Check gear rack for obstruction. B. Replace the arm.
16. Does not cut paper at the end of scan.	<ul style="list-style-type: none"> A. Misaligned cutter bar. B. Cutter gear out of mesh. C. Refer to #7 (clutch problems). 	<ul style="list-style-type: none"> A. Align cutter bar. B. Adjust gear mesh. C. Replace the printer or printer mechanicsm.
17. Unable to get memory copy.	<ul style="list-style-type: none"> A. DIP switch settings. B. Defective controller board. 	<ul style="list-style-type: none"> A. Check DIP switches. B. Replace the box.
18. Unable to get good memory copy.	<ul style="list-style-type: none"> A. Defective controller board. 	<ul style="list-style-type: none"> A. Replace the box.
19. Light copy.	<ul style="list-style-type: none"> A. Contrast not set properly. B. Weak image on board. C. Defective printer. D. Defective arm. 	<ul style="list-style-type: none"> A. Adjust contrast. B. Instruct operator. C. Run test routine #7 on printer. If test fails, replae the box. D. Replace arm.
20. Size LEDs do not toggle.	<ul style="list-style-type: none"> A. Size button not functioning. B. Control panel cable not connected properly. C. Defective control panel. D. Defective controller board. 	<ul style="list-style-type: none"> A. Run test routine for panel switches. B. Run test routine for panel LEDs. If defective, replace the box. C. Check control panel cable. D. Replace the box.
21. One or more control panel switches not operating correctly.	<ul style="list-style-type: none"> A. Button stuck in depressed position. B. Control panel button switch not being recognized 	<ul style="list-style-type: none"> A. Adjust control panel position. B. Run panel switch test #3. If test fails, replace the box.

DISASSEMBLY - NEW STYLE PRINTER

PRINTER DISASSEMBLY PROCEDURE (NEW STYLE PRINTER)

NOTE: BEFORE TOUCHING PC BOARDS IN THE SYSTEM, YOU MUST DISCHARGE YOURSELF OR A CIRCUIT BOARD COULD BE DAMAGED BY A STATIC DISCHARGE.

Disconnect the power cord and arm ribbon cable and remove the printer box. Place the printer box on a flat surface with the printer door facing up.

1. **PRINTER DOOR**

To remove printer door, open door one inch (1"), then pull door upwards off the side pins in printer cover.

2. **PRINTER COVER**

Remove the six (6) screws (Figure 4, Item A, three on each side) and gently lift the cover (Figure 4, Item B). Before the cover can be completely removed, the control panel ribbon connector (Figure 4, Item C) must be disconnected from the controller board (Figure 4, Item D) and the leads to the power switch (Figure 4, Item E) must be pulled off.

3. **PRINTER**

New Style Printer Removal

Remove 4 screws holding printer mechanism in place. Remove cables, printer head, optical switch, stepper motor and cutter switch. (See Figure 4)

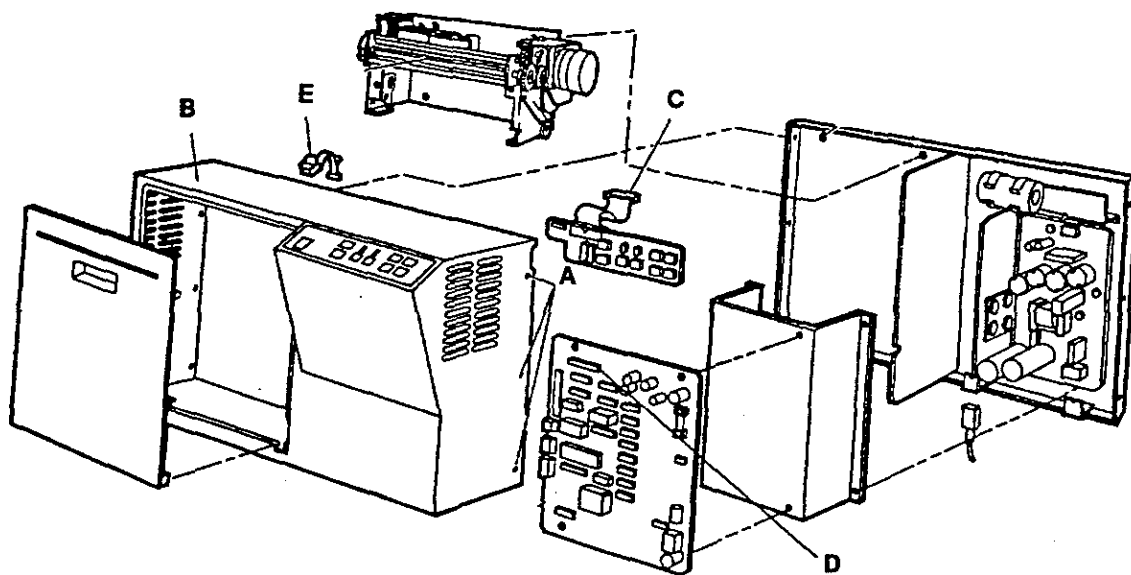


FIGURE 4