

## MODIFICATION INSTRUCTIONS

1. Replace the X-Y monitor with a modified monitor.
2. Do ECN 978 on the CPU board. See attached instructions.
3. Do ECN 991 on the X-Y timing board. See attached instructions.
4. Record the game and monitor serial numbers on the distributor record sheet.
5. Place the colored label on the top left corner of the kick plate.
6. Each team will have the number of games the distributor has purchased. There is a good possibility that number will not be in the distributor's location. Leave the correct number to make up the difference.
7. The removed monitors should be loaded on your truck and returned to Gremlin with you. There will be special cases when these instructions will change.
8. Provide the distributor with a copy of the Distributor Record Sheet, be sure to bring the original back with you.

EFFECT: X-Y TIMING BOARD

NUMBER: 007

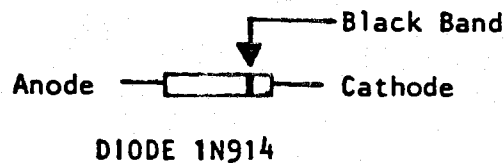
September 17, 1981

To ensure that the vertical and horizontal outputs of the G-80 X-Y Timing Board do not exceed a preset level, the addition of 2 diodes is recommended. The diodes, type 1N914, are installed as follows:

1. Remove the G-80 Timing Board from the card cage.
2. Solder the ANODE of one diode to Pin 1 of the Molex connector located on the front edge of the Timing Board. It is recommended that the diode be installed on the underside of the board.
3. Solder the CATHODE of the diode to a +5 volt pad on the back of the board.

This can be found at the +5 volt pin on the closest IC.

4. Install the CATHODE of the second diode to +5, in the same way. Then, solder the ANODE of this diode to Pin 4 of the Molex connector.



PART NUMBER 151-0031	QUANTITY	ORIGINATOR	DEPT. 50	DATE 8-21-81
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REASON FOR VARIANCE

151-0031 CERAMIC CAPACITOR .22UF 16V  
IS NOT AVAILABLE IN THE TIME FRAME REQUIRED

WILL VARIANCE BE ACCEPTED ON FUTURE LOTS  YES  NO

IS ECR REQUIRED  YES  NO

ECR WRITTEN BY \_\_\_\_\_ DATE \_\_\_\_\_

CHECK APPLICABLE DOCUMENTS AFFECTED BY VARIANCE

- ENGINEERING DRAWINGS
- MFG. PROCESS DETAIL
- PURCHASE ORDER
- SCHEMATICS
- RECEIVING REPORT
- BOM
- OTHER

AUTHORIZATION FOR SUBSTITUTE MATERIAL

PART NUMBER	DESCRIPTION	REQUESTOR	DEPT.	DATE
151-0031	CAPACITOR .22UF 16V CER DISC			

SUBSTITUTE MATERIAL USE GREMLIN P/N 152-0029 .33UF 250V  
CERAMIC CAPACITORS TO REPLACE 151-0031 ON C45 OF

QUANTITY OF END ITEM AFFECTED CPU BOARD ASSY 800-0107

AUTHORIZED BY T. Hansen DATE 8/21/81  
\_\_\_\_\_  
DATE \_\_\_\_\_

*Bob*

# GREMLING

## ENGINEERING CHANGE NOTICE

TE: 8-22-81

ECN # 978

SHEET: 1 OF 1

(REF ECR #370)

EFFECTIVE DATE <b>8-24-81</b>	ASSEMBLY <b>CPU BOARD</b>	PART NUMBER <b>800-0107</b>	DRAWING NUMBER <b>800-0107</b>	REV <b>E</b>
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**CHANGE: PARTS LIST:**

<u>ITEM</u>	<u>P/N</u>	<u>QTY</u>	<u>WAS</u>	<u>REF DES</u>
1	150-0088	153	WAS 4	15 C43C46.C62 WAS C43.C45.C46.C62

**ADD ITEM 58:**

P/N 151-0031 QTY (1) CAP CER .22UF 16V C45

**CHANGE SHEET 6 ZONE 7A:**



**REASON FOR CHANGE:**

REDUCE POWER ON DELAY FROM 1.5 SECS TO 20 MSECS TO ALLOW XV MONITOR OUTPUTS TO BE RESET IN 20 MSECS THEREBY REDUCING STRESS ON MONITOR OUTPUT CIRCUITS

**CLASS OF CHANGE - CHECK ONE ONLY**

- A** EMERGENCY. INCORPORATE IN PRODUCTION AT ONCE. ALL ASSEMBLIES, PARTS ISSUED TO ASSEMBLY AREAS AND PARTS IN STOCK AFFECTED.
- B** URGENT. AFFECTS PARTS FOR WHICH PRODUCTION ORDERS HAVE BEEN INITIATED BUT NOT COMPLETED, PURCHASE REQUISITIONS, FINISHED PARTS IN STOCK, PARTS ISSUED TO ASSEMBLY AREAS, AFFECTS SUB-ASSEMBLIES AND FINAL ASSEMBLIES.
- C** AFFECTS ALL FUTURE PARTS FOR WHICH PRODUCTION ORDERS HAVE NOT YET BEEN INITIATED, BUT CHANGE NEED NOT BE CARRIED OUT UNTIL STOCK IS BALANCED.
- D** AFFECTS NO PARTS OR ASSEMBLIES-FOR INFORMATION AND RECORDS ONLY.

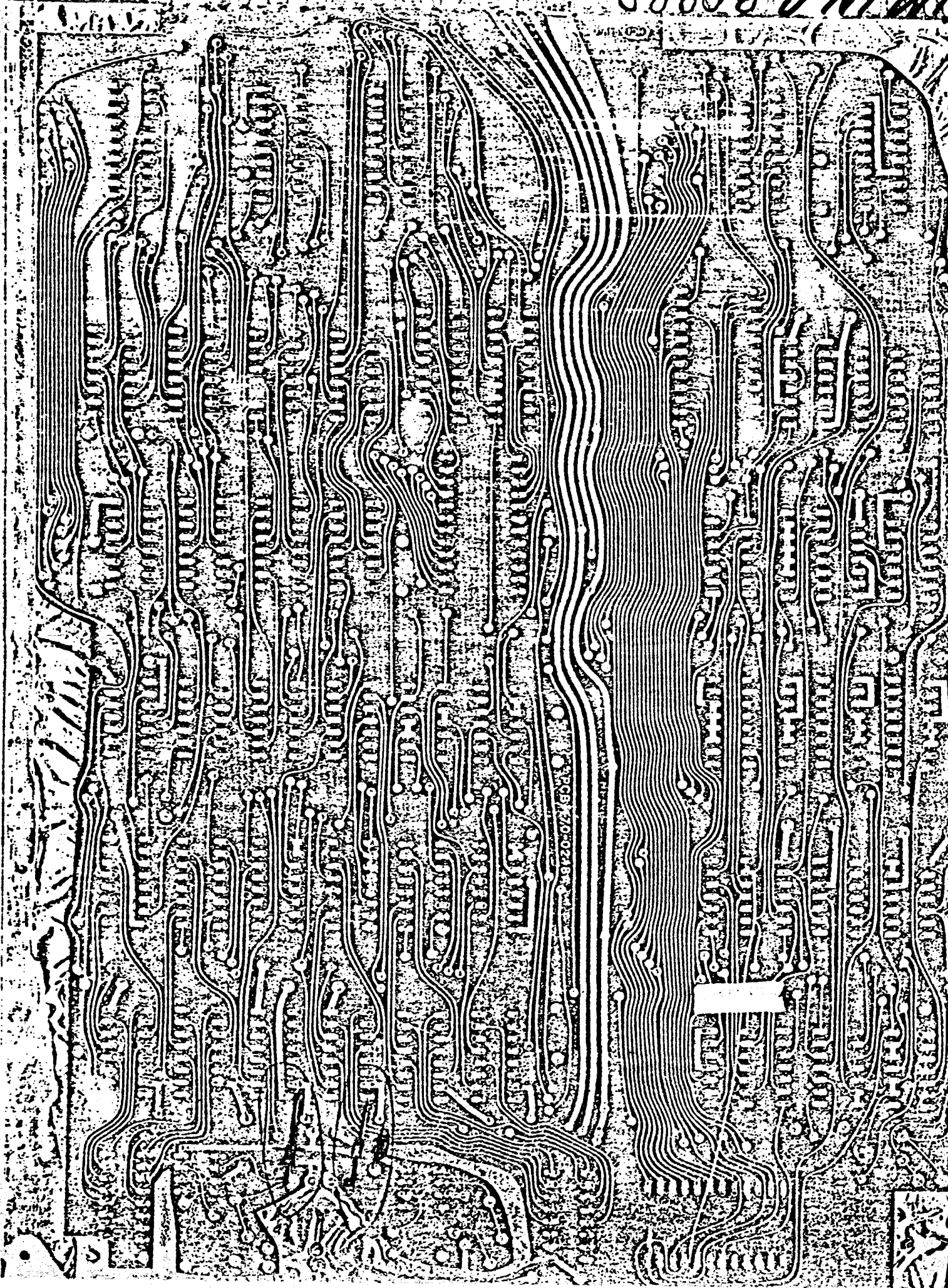
**DISTRIBUTION**

- MANUFACTURING
- DRAFTING
- TEST
- PURCHASING
- OUTSIDE VENDOR
- Q.C.
- C.S.

REQUESTED BY AND DATE:  
**G. HANSEN 8-22-81**

APPROVED BY AND DATE:  
*G. Hansen* **8-22-81**

IN N D A R S



PCB 70-0248

59-1

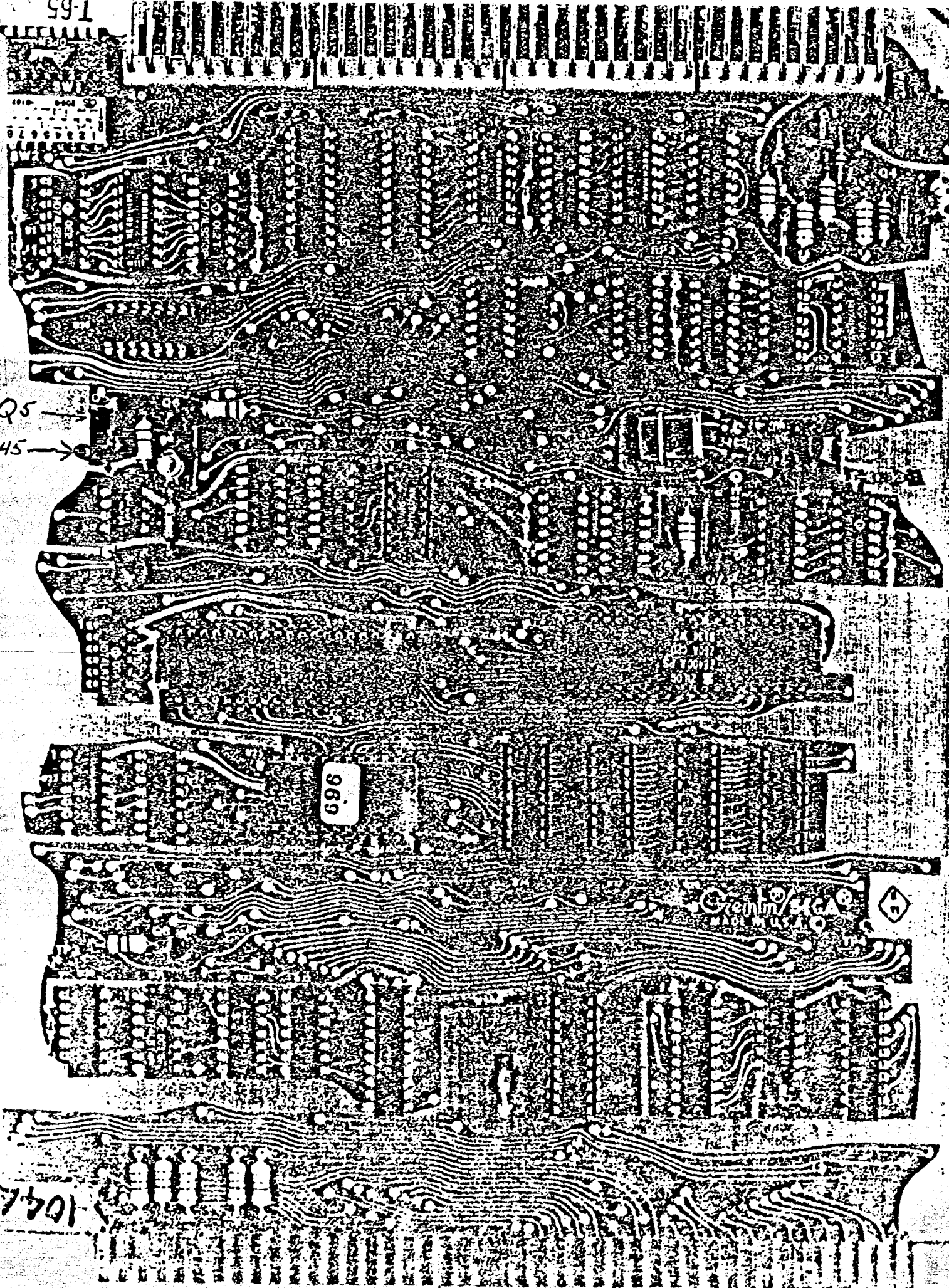
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Q5 →  
C45 →

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Crenshaw  
MADE IN U.S.A.

1047



## Monitor Removal

Release the fasteners on the control panel and swing it down. Directly under the the front plexiglass, you will notice a small frame support piece. Grab it by the hand slot in the middle and pull it from the game. The front plexiglass can now be removed easily by lifting it on the bottom slightly and pulling it outward. Next, remove the interior graphics. The graphics frame, located directly behind the interior graphics, can be removed by gripping two sides and carefully lifting it out. Now open the the rear panel on the cabinet and disconnect the power cable and video cable to the monitor. Now go back to the front and remove the four bolts in each corner of the monitor board. Now grasp the board by the hand holds provided at the top and bottom and pull the monitor from the cabinet. To replace follow the same procedure in reverse except you will notice on the rear of the new monitor there is an extra board added. Mount this board on the cabinet with the tie wraps provided and the connector coming from this board is plugged into the video cable. Reconnect the power cable as usual. Before closing up, ensure that the heat sinks on the driver transistors are not touching each other.