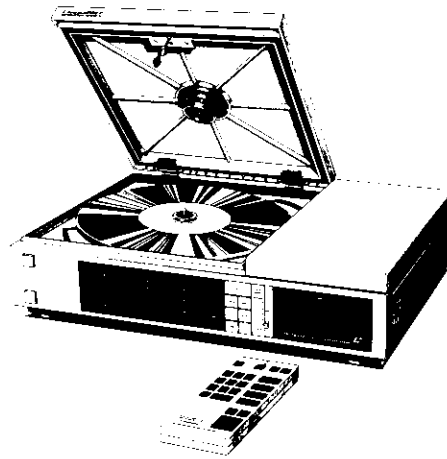


SUPPLEMENT 1

Service Manual



**ORDER NO.
VRT-004-0**

LASER DISC PLAYER

LD-1100

This service manual available for LD-1100 which has a serial no. beyond 3611501.
When other information should be needed, see original LD-1100 service manual.

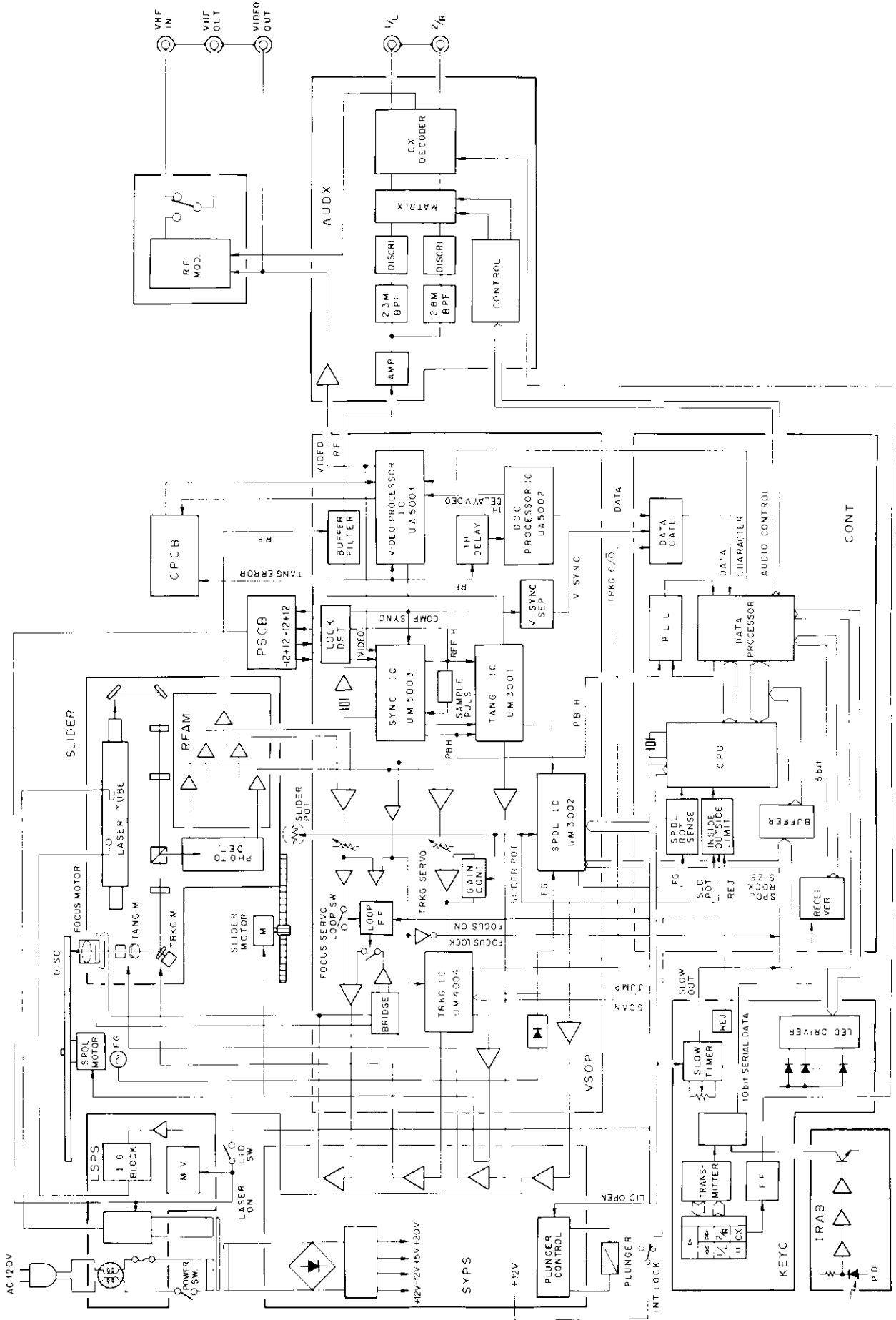
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PART # VRT-004
S/B LD-1100 ADD
EM
V-MARK

TOTE 89
INV: 015002912
MP: 260-23

1. BLOCKDIAGRAM



A

B

C

D

A

B

C

D

10

1

2

3

2. DISASSEMBLY

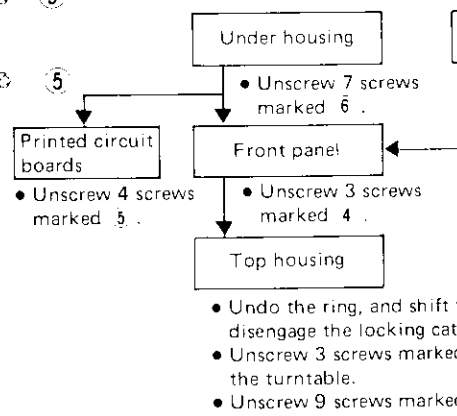
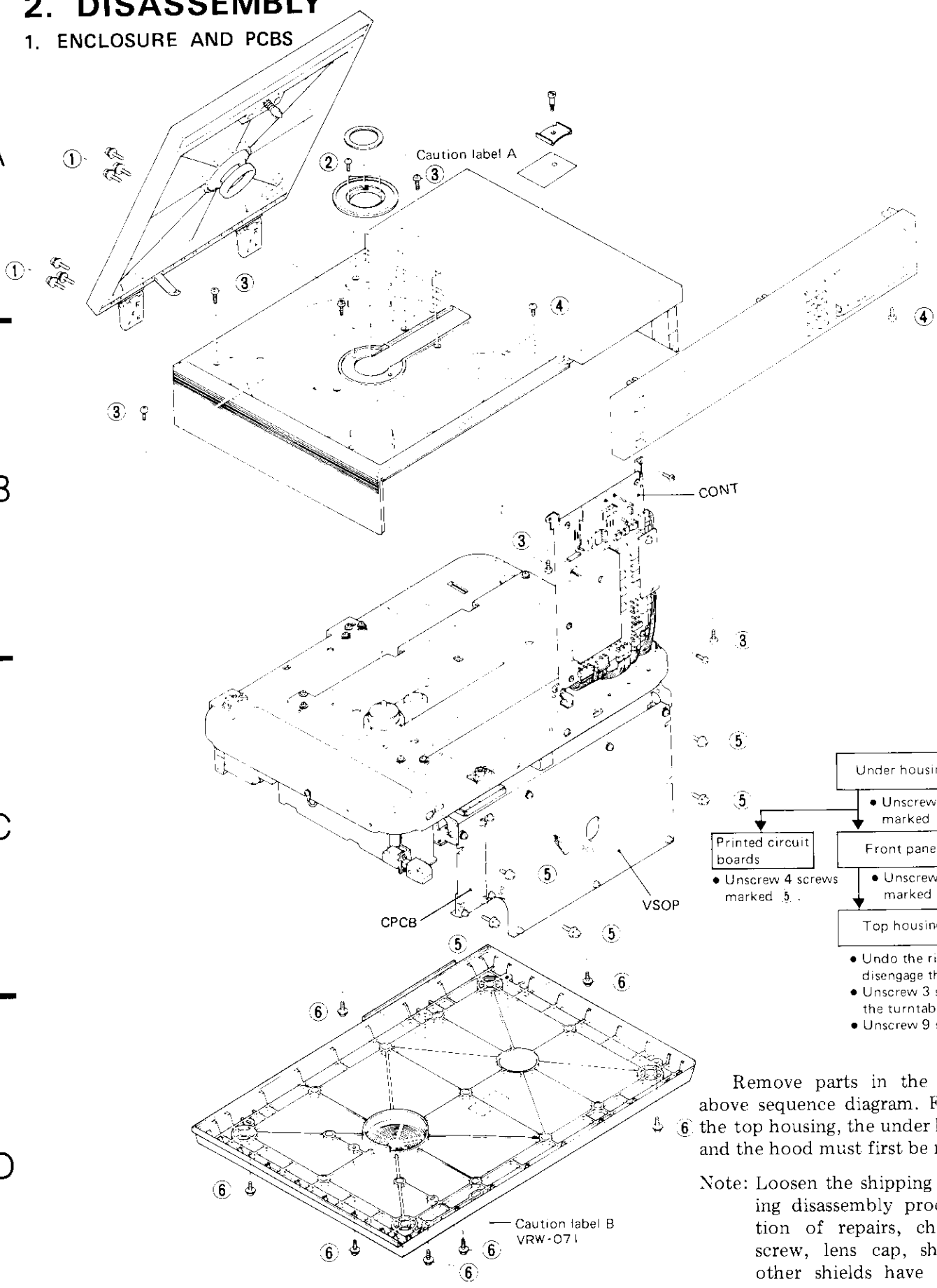
1. ENCLOSURE AND PCBS

A

B

C

D



Remove parts in the order indicated above sequence diagram. For example, to remove the top housing, the under housing, the front panel, and the hood must first be removed.

Note: Loosen the shipping screw before beginning disassembly procedures. Upon completion of repairs, check that the shipping screw, lens cap, shield case, and other shields have been fixed in their original positions.

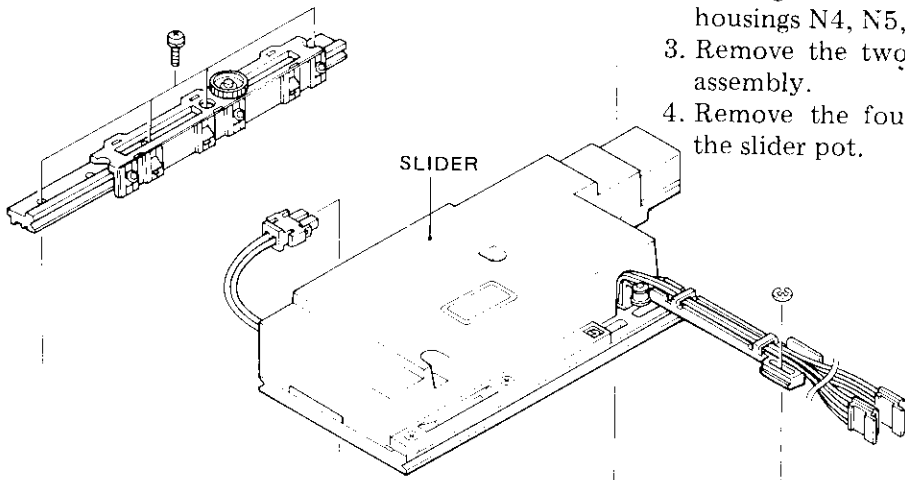
4

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6

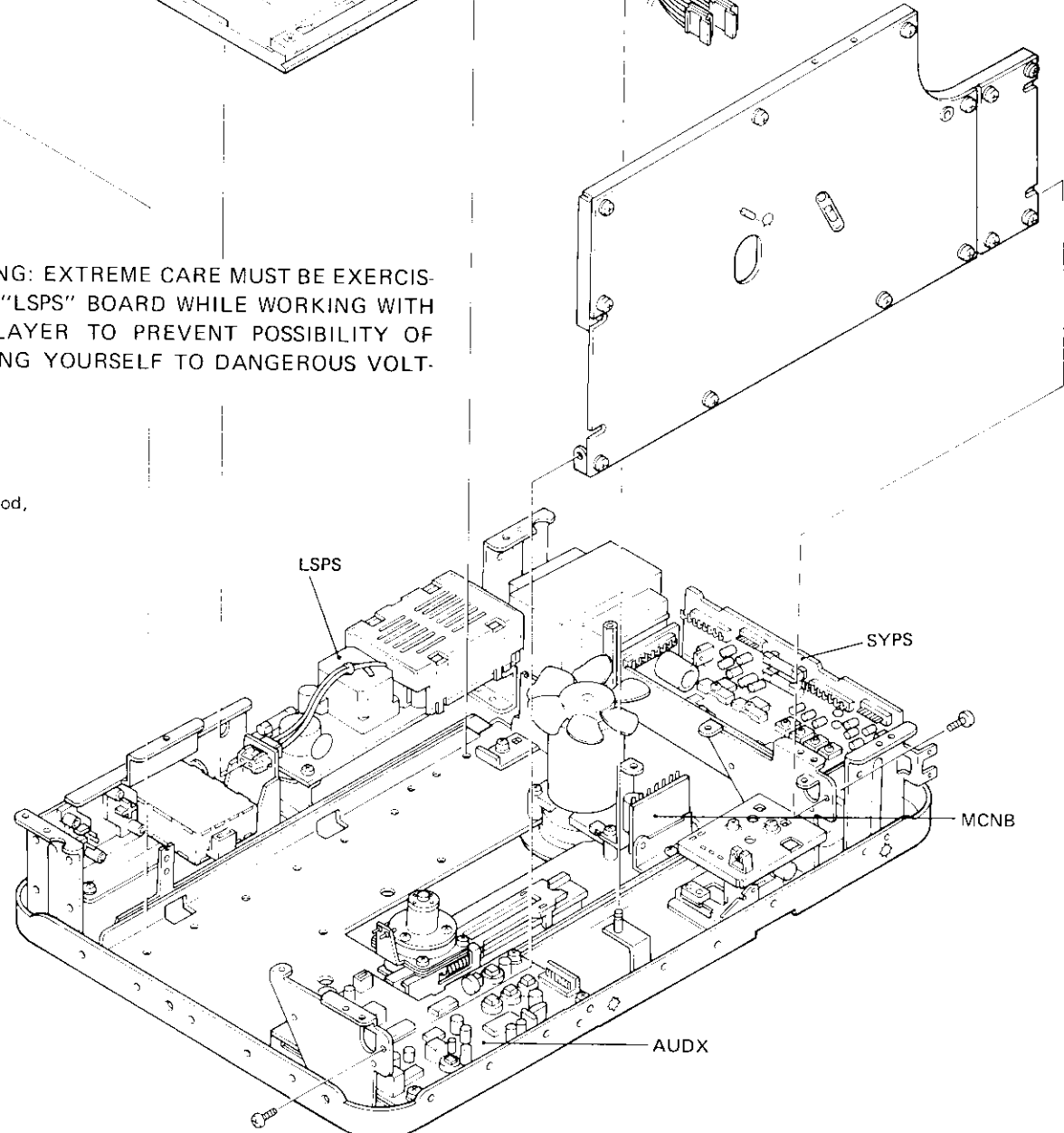
2. HOW TO REMOVE SLIDER FROM MECH-CHASSIS

1. Remove the four fixing screws on the VSOP board, and open the VSOP.
2. Put the slider harness out of the joint by removing the E washer, and disconnect the housings N4, N5, and high voltage cap.
3. Remove the two screws installed the slider-pot assembly.
4. Remove the four screws installed the rail near the slider pot.



WARNING: EXTREME CARE MUST BE EXERCISED TO "LSPS" BOARD WHILE WORKING WITH THE PLAYER TO PREVENT POSSIBILITY OF EXPOSING YOURSELF TO DANGEROUS VOLTAGES.

ing
 v 7 screws
 6 .
 el
 v 3 screws
 4 .
 ing
 ing, and shift to one side to
 the locking catches.
 screws marked 2 , and remove
 ble.
 screws marked 3 .



order indicated in the
 For example, to remove
 housing, the front panel
 removed.
 screw before commencing
 procedures. Upon completion,
 check that the shipping
 field case, barrier, and
 been fixed in suitable

A
 B
 C
 D

4

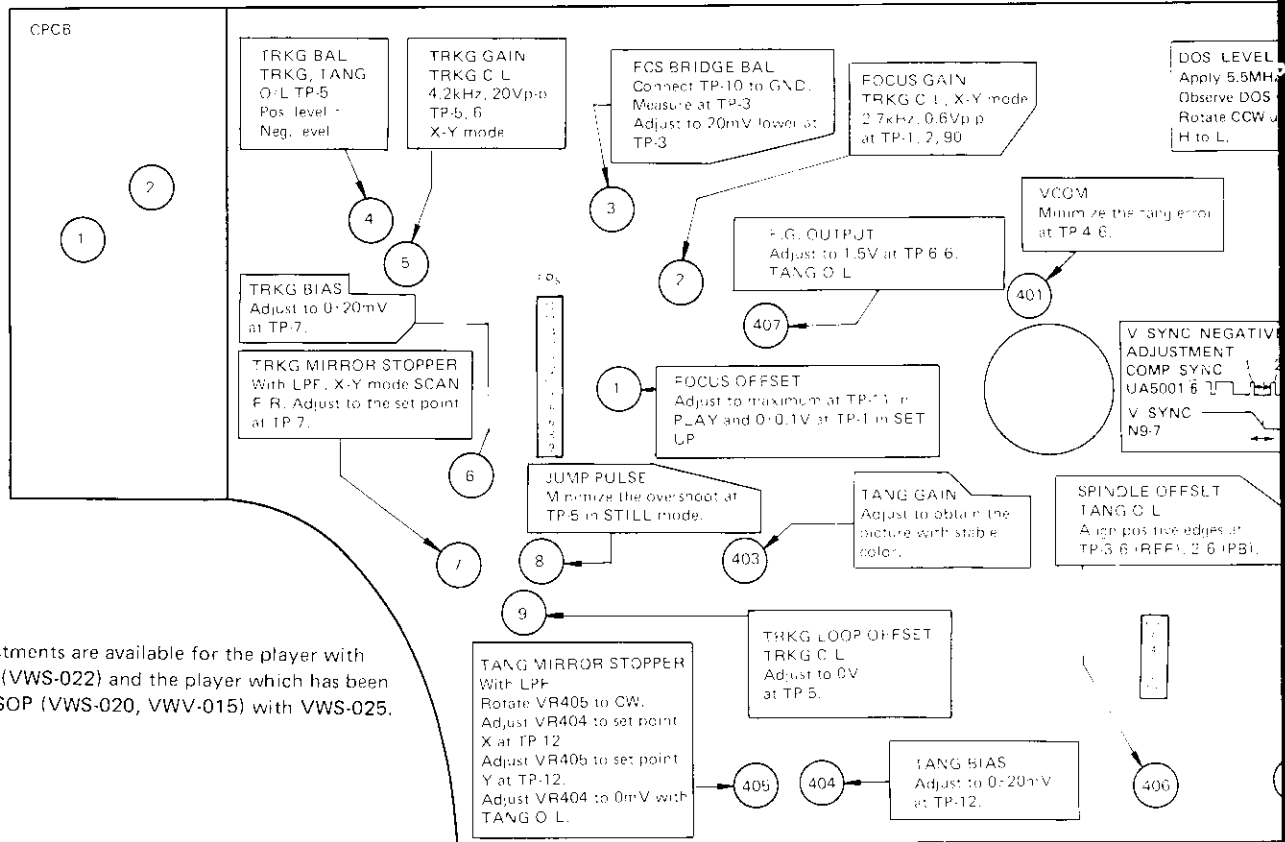
5

6

4

3. ELECTRICAL ADJUSTMENTS

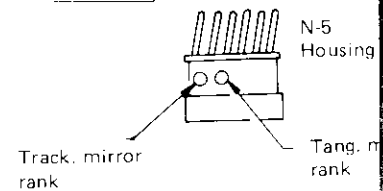
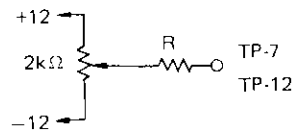
ADJUSTMENT LOCATION VSOP Board



These adjustments are available for the player with new VSOP (VWS-022) and the player which has been replaced VSOP (VWS-020, VVV-015) with VWS-025.

Beam Pass Check

| MIRROR RANK | RESISTOR FOR APPLYING MIRROR BIAS: R (Ω) |
|-------------|--|
| C1 | 316 |
| C2 | 300 |
| C3 | 273 |
| D | 240 |
| E | 218 |

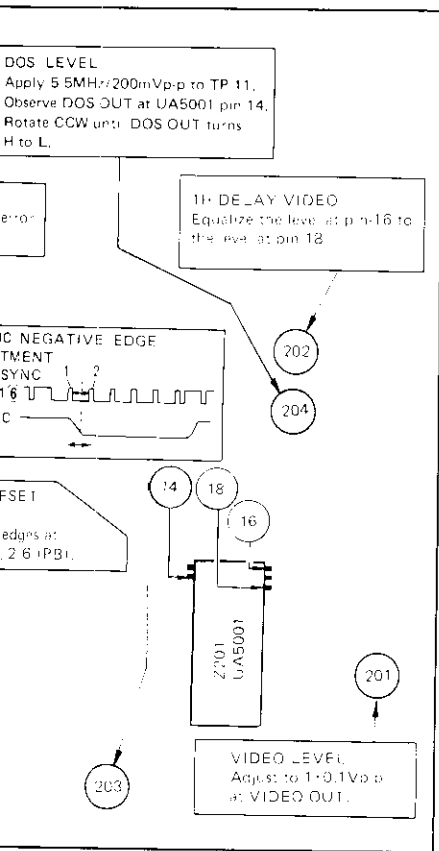


TRKG Mirror Stopper

| MIRROR RANK | SET POINT (V) | |
|-------------|---------------|---------------|
| CODE | COLOR | SET POINT (V) |
| C 1 | BLK | + 0.50 ± 0.05 |
| C 2 | RED | + 0.55 ± 0.05 |
| C 3 | YEW | + 0.60 ± 0.05 |
| D | BLU | + 0.70 ± 0.10 |
| E | GRN | + 0.90 ± 0.10 |

TANG Mirror Stopper

| MIRROR RANK | SET POINT X | |
|-------------|-------------|-------------|
| CODE | COLOR | SET POINT X |
| C1 | BLK | - 0.55 (V) |
| C2 | RED | - 0.60 |
| C3 | YEW | - 0.65 |
| D | BLU | - 0.70 |
| E | GRN | - 0.80 |



The following tools and equipments will be required to perform service adjustment on the player unit.

- Dual trace oscilloscope
- Monitor TV
- Test disc (A2-04)
- AF oscillator
- Frequency counter or NTSC signal generator
- Short post (GGV-050) 4-pcs
- Long post (GGV-051) 4-pcs
- 30° player stand (GGV-031)
- Extension cable (GGV-032)
- Short clip
- Disc clamp
- Low-pass filter (47-kilohms/0.01μF)

Prior to making general adjustments, prepare the unit in accordance with the items listed in the following:

- Remove the under housing for VSOP adjustment. Using the 30° player stand, tilt the front of the unit 30° from the horizontal. Remove the 4 fixing screws on the VSOP board, then connect the extension cable into the test points on the VSOP board.
- Install a test disc (A2-04) on the spindle, and clamp the disc.
- Connect the monitor TV to the VIDEO OUTPUT terminal.
- Turn on and hold the inter-lock and lid switch.
- Slider must be completely aligned (with exception of Grating).
- Verify correct power supply voltages.
- Plug the power cord into a 120V/60Hz outlet.

NOTE:

- 10:1 probes are used in these adjustment. Scope ranges are shown with the probe in use. However, it may be necessary with some scope to use a 1:1 probe in X-Y mode to obtain sufficient gain.

WARNING: EXTREME CARE MUST BE EXERCISED TO "LSPS" BOARD WHILE WORKING WITH THE PLAYER TO PREVENT POSSIBILITY OF EXPOSING YOURSELF TO DANGEROUS VOLTAGES.

VSOP board TPs list

| | | | |
|------|---|-----|-------------------------|
| TP-1 | Focus error | 1/6 | To make tangential loop |
| 2 | OSC (focus) input | | open, short to GND. |
| 3 | Bridge balance | 2 | PB H |
| 4 | GND | 3 | REF H |
| 5 | Tracking error | 4 | tangential error |
| 6 | OSC (tracking) input | 5 | N.C. |
| 7 | Tracking return | 6/6 | FG Output |
| 8 | To make tracking loop open, short to GND. | | |
| 9 | GND | | |
| 10 | Focus drive | | |
| 11 | RF signal | | |
| 12 | Tangential return | | |

N-5 Housing

Tang. mirror rank

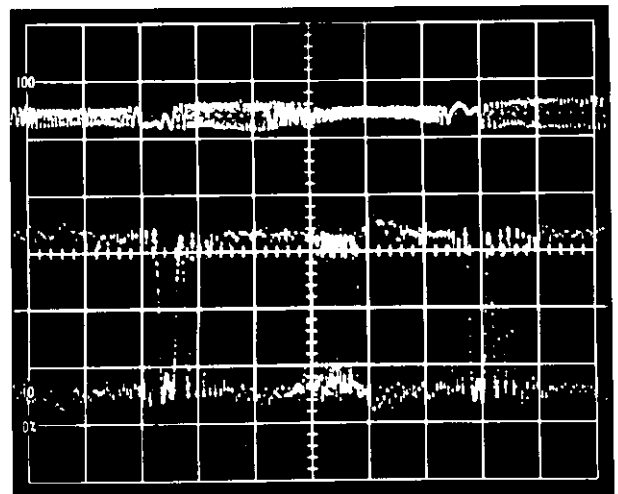
Mirror Stopper

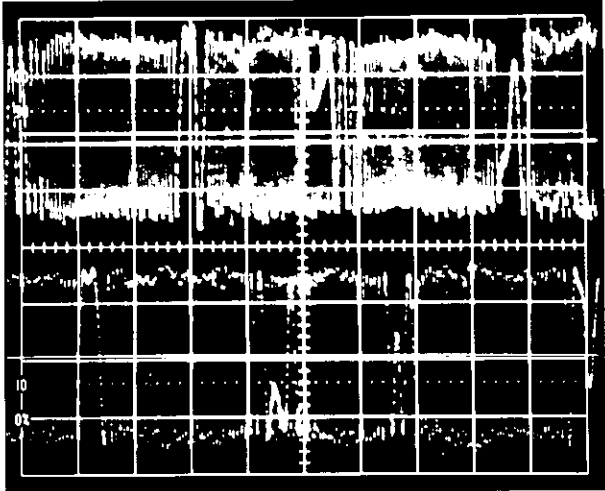
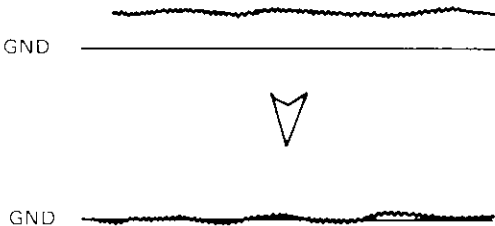
| TP-12 | |
|---------|-------------|
| POINT X | SET POINT Y |
| 55 (V) | - 0.40 (V) |
| 60 | - 0.45 |
| 65 | - 0.50 |
| 70 | - 0.55 |
| 80 | - 0.65 |

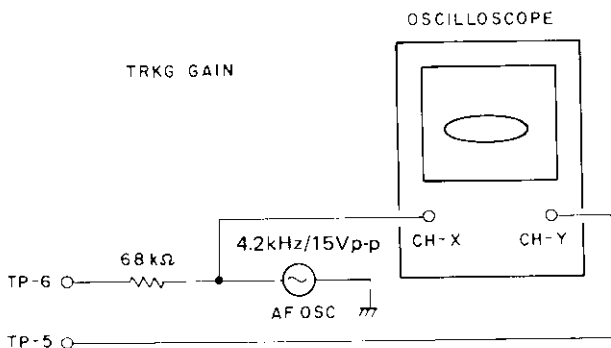
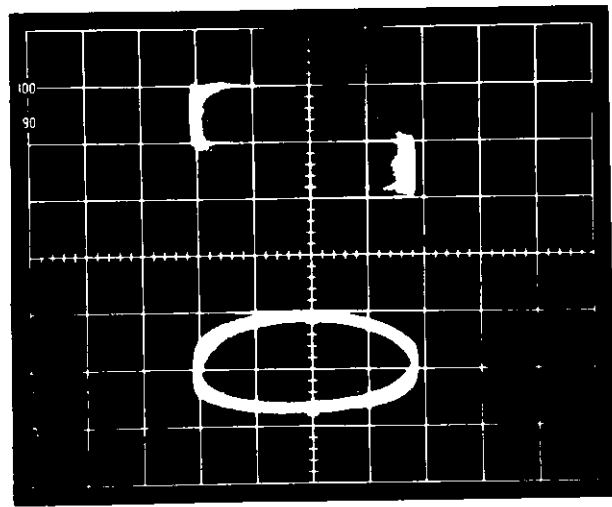
| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|--------|-------------|------------|----------------|------------|---|
| | | | | | | <p>PLAYER WITH NEW VSOP BOARD (VWS-022)</p> <p>Connect pin-1 (wrapping terminal) of PSCB board for the adjustments step 1 to 5; thereby the +12V and -12V lines on the VSOP board are activated.</p> |
| 1 | SET UP | 5mV/div | | TP-12 | VR404 | <p>TANGENTIAL MIRROR BIAS</p> <p>When VSOP board is replaced, this step is necessary to protect the tangential mirror. Verify the voltage on TP-12 is $0 \pm 20\text{mV}$; if not, adjust the VR404 to satisfy the above.</p> |
| 2 | SET UP | 5mV/div | | TP-7 | VR6 | <p>TRACKING MIRROR BIAS</p> <p>When VSOP board is replaced, this step is necessary to protect the tracking mirror. Verify the voltage on TP-7 lies within $0 \pm 20\text{mV}$. If not, adjust the VR6 to satisfy the above.</p> |
| 3 | SET UP | 5mV/div | | TP-10 TP-3 | VR3 | <p>FOCUS BRIDGE BALANCE</p> <p>Connect TP-10 to GND. Measure the voltage at TP-3, then disconnect TP-10 from GND. Adjust VR3 (bridge bal.) so that the voltage at TP-3 will be 20mV lower than that measured voltage. This adjustment must be finished within one minute after the POWER is turned on.</p> |
| 4 | SET UP | 5mV/div | | TP-1 | VR1 | <p>FOCUS OFFSET INITIAL SET</p> <p>Adjust to 0mV at TP-1.</p> |
| 5 | SET UP | 0.2V/div | | TP-3/6 | VC401 | <p>REF. H FREQUENCY</p> <p>Connect frequency counter to TP-3/6 and verify the ref. H. frequency is 15.734kHz; if not, adjust VC-401 to satisfy the above.</p> <p>If you have an NTSC signal generator, connect CH-1 of the scope to the REF H out of the NTSC generator, and also connect CH-2 to TP-3/6. With triggering by CH-1 input, adjust VC401 to stop the current of the waveform in CH-2.</p> |

| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|-------|---------------------|----------------------------|----------------|------------|---|
| 6 | PLAY | | TANG O/L TRKG O/L | TP-6/6 | VR407 | <p>SPINDLE LOCK CHECK</p> <p>Connect TP-1/6 to GND to make tangential servo loop open. Scan to middle of the disc, then player in PLAY mode; verify spindle servo loop has been locked. If not, F.G. output adjustment should be performed.</p> <p>Press REJECT key, then set VR407 (F.G.) to the mechanical center. Again, press PLAY key; after the spindle servo has been locked, adjust VR407 to 1.5V at TP-6/6.</p> |
| 7 | STILL | 0.1V/div 5ms/div | TANG O/L TRKG O/L | TP-5 | GRATING | <p>TRACKING ERROR CHECK, GRATING ADJUSTMENT</p> <p>With the tangential servo loop still opened, connect TP-8 to GND to make tracking loop open. Verify the tracking error level is more than 2Vp-p; if not, grating must be adjusted.</p> <p>Scan to the point where the slider's hole (for grating adjustment) comes on center of the mech. chassis opening, then player in STILL mode. Insert grating driver into the opening, then engage the cog of the grating and driver. While observing the tracking error, adjust the grating to find the smooth null point waveform; then rotate the grating driver CCW direction to find the first point where the maximum tracking error with smooth envelope is obtained.</p> <p>Remove the tracking driver while making sure the waveform gets no smaller.</p> |

#14,000



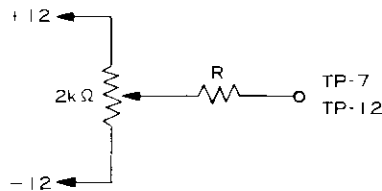
| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|-----------------|---------------------|----------------------------|----------------|------------|--|
| 8 | PLAY #20,000 | 0.1V/div 5ms/div | TANG O/L TRKG O/L | TP-5 | VR4 | <p>TRACKING BALANCE</p> <p>Push PLAY key and scan to middle of the disc. With the tracking and tangential servo loops still opened, adjust VR4 (tracking balance) to where the tracking error waveform is centered on 0V, and the positive and negative peak amplitudes are same level.</p>  |
| 8' | PLAY | 0.1V/div | TRKG C/L | TP-5 | VR9 | <p>TRKG LOOP OFFSET (VWS-025, VWS-022)</p> <p>Disconnect TP-8 from GND (TRKG C/L). Adjust VR9 to where the tracking error waveform is centered on 0V.</p>  |

| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|-----------------|--|----------------------------|------------------|------------|---|
| 9 | PLAY #20,000 | CH-X: 0.2V/div CH-Y: 50mV/div | TANG O/L TRKG C/L | TP-6 TP-5 | VR5 | <p>TRACKING LOOP GAIN</p> <p>Disconnect TP-8 from GND (to make tracking loop close), set the oscilloscope into X-Y mode and AF oscillator output to 4.2kHz, 15Vp-p. Scan to middle of the disc.</p> <p>Connect the oscillator output to CH-X of the scope and also to TP-6 through a 68-kilohms, 1/4W resistor. Connect CH-Y to TP-5. (refer to the connection diagram shown below)</p>  <p>Adjust VR5 (tracking gain) to make lissajous figure into horizontal ellipse. This means the phase shift between CH-X and CH-Y is 90-degrees. After this adjustment has been done, disconnect the oscillator and oscilloscope, and reset the oscilloscope mode to normal mode.</p>  |

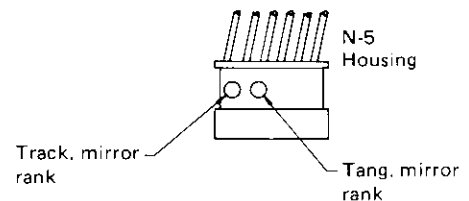
| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|-----------------|--|----------------------------|--------------------------|------------|--|
| 10 | PLAY #20,000 | CH-X: 10mV/div CH-Y: 20mV/div | TANG O/L TRKG C/L | TP-2 TP-1 | | <p data-bbox="906 310 1066 338">FOCUS GAIN</p> <p data-bbox="935 348 1481 436">Set the oscilloscope into X-Y mode and AF oscillator output to 2.7kHz, 0.6Vp-p. Push PLAY key and scan to the middle of the disc.</p> <p data-bbox="935 447 1481 569">Connect the oscillator output to CH-X of the scope and also to TP-2 through a 68-kilohms, 1/4W resistor. Connect CH-Y to TP-1. (refer to the connection diagram shown below)</p> <div data-bbox="887 600 1497 940"> <p>The diagram shows an oscilloscope with two channels, CH-X and CH-Y. An AF oscillator (2.7kHz/0.6Vp-p) is connected to CH-X. TP-2 is connected to the oscillator output through a 68kΩ resistor. TP-1 is connected to CH-Y. The oscilloscope screen shows a horizontal ellipse, labeled 'FOCUS GAIN'.</p> </div> <p data-bbox="791 1136 842 1163">VR2</p> <p data-bbox="906 1136 1481 1318">Adjust VR2 (focus gain) to make lissajous figure into horizontal ellipse. This means the phase shift between CH-X and CH-Y is 90-degrees. After this adjustment has been done, disconnect the oscillator and oscilloscope, and reset the oscilloscope mode to normal mode.</p> <div data-bbox="900 1339 1505 1833"> <p>The oscilloscope screen displays a horizontal ellipse on a grid. The vertical axis is labeled with 0 and 90 degrees. The ellipse is centered on the horizontal axis, indicating a 90-degree phase shift between the two channels.</p> </div> |

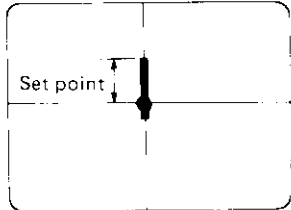
| Step No. | Mode, Frame No. | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|-----------------|-------------|----------------------|----------------|------------|---|
| 11 | PLAY #100 | 10mV/div | TANG C/L TRKG C/L | TP-11 | VR1 | <p>FOCUS OFFSET</p> <p>Player in PLAY mode. TANG, TRKG C/L. While observing RF signal at TP-11, adjust VR1 (focus offset) to obtain maximum RF signal. Next, while observing focus error at TP-1, adjust the scope V-position VR to center the focus error to a horizontal scale line of the scope. Push REJECT button, then read the offset level from that horizontal scale line. The reading should be lied within a range of $0 \pm 0.1V$; if not, adjust VR1 to the near limit of the range.</p> |
| | SET UP | | | TP-1 | | |
| 12 | PLAY #20,000 | | TANG O/L TRKG O/L | | | <p>BEAM PASS CHECK</p> <p>* This step has to be performed when the slider is replaced or the problem seems to relate with optics.</p> <p>Player in PLAY mode at middle of the disc, connect TP-8 and TP-1/6 to GND (tracking and tangential servo open). Release the tracking and tangential mirror stoppers. Tracking and tangential mirrors are classified into 5 ranks by their sensitivities as shown below and the mirror ranks are designated on the connector. Verify the mirror ranks.</p> |

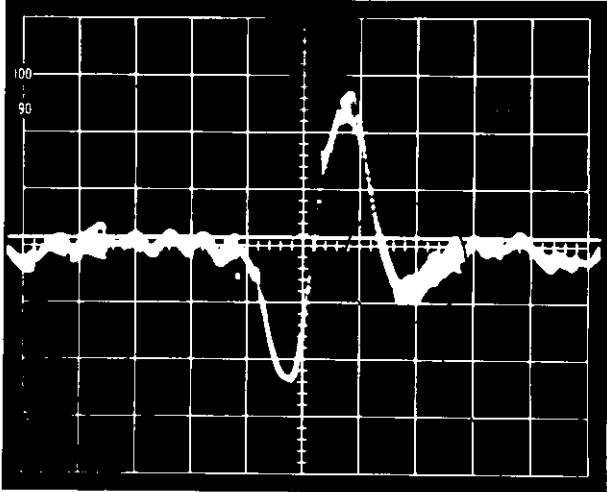
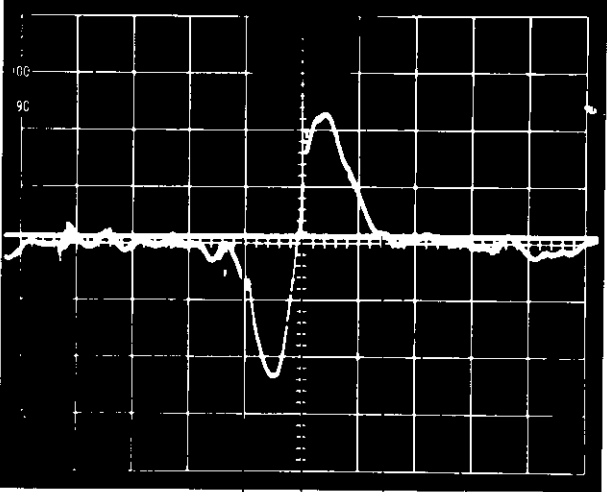
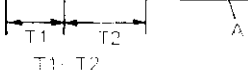
BEAM PASS CHECK JIG



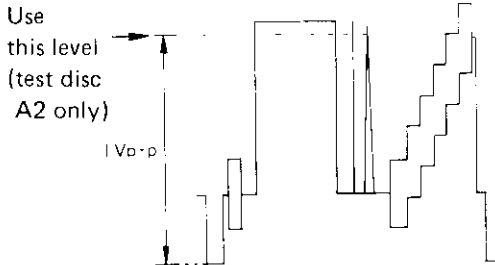
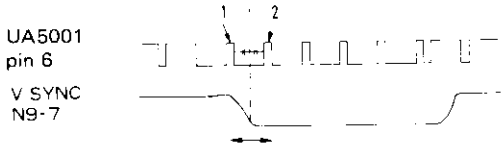
| MIRROR RANK | | RESISTOR FOR APPLYING MIRROR BIAS: R (Ω) |
|-------------|-------|---|
| CODE | COLOR | |
| C1 | BLK | 316 |
| C2 | RED | 300 |
| C3 | YEW | 273 |
| D | BLU | 240 |
| E | GRN | 218 |



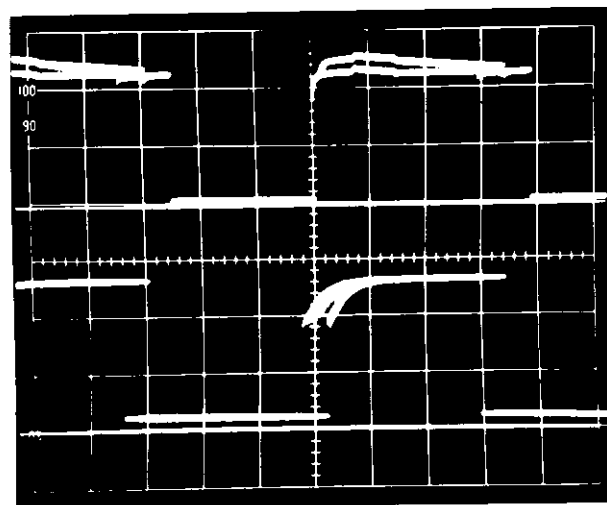
| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details | | | | | | | | | | | | | | | | | | | | |
|-------------|-------------|------------------|----------------------------|-----------------------------------|------------|---|-------------|--|---------------|------|-------|-----|-----|------------------|-----|-----|------------------|-----|-----|------------------|---|-----|------------------|---|-----|------------------|
| 12 | | | | TP-7 TP-5 TP-12 TP-5 | | <p>Connect each end of VR, jig to +12V line and -12V line of VSOP, and also center tap of the VR jig to TP-7 (TRKG return) through the resistor corresponding to the mirror rank.</p> <p>Connect the scope to TP-5 (TRKG error).</p> <p>Adjust the VR jig to obtain maximum tracking error, and note the peak-to-peak amplitude Eto.</p> <p>Rotate the VR jig so that maximum positive mirror bias is put to the tracking mirror, and measure the tracking error peak-to-peak amplitude Etp.</p> <p>Then rotate the VR jig so that maximum negative mirror bias is put to the mirror, and measure the tracking error peak-to-peak amplitude Etn.</p> <p>Likewise, put mirror bias to the tangential mirror at TP-12 (TANG return), and measure the tracking error peak-to-peak amplitudes Eto, Etp, and Etn at TP-5.</p> <p>Make sure the followings $Etp > 0.65Eto$, and $Etn > 0.65Eto$ If not, the slider needs realignment.</p> | | | | | | | | | | | | | | | | | | | | |
| 13 | SCAN FWD | | TANG C/L TRKG C/L | TP-7 | VR7 | <p>TRACKING MIRROR STOPPER</p> <p>Insert a low-pass filter (47-kilohms/0.01μF) between the probe (10:1) and scope input (CH-Y), set the oscilloscope into X-Y mode.</p> <p>Connect the probe to TP-7, and verify the ground level in CH-Y input. CH-X is not used. While scanning to forward direction, adjust VR7 to obtain a positive voltage depending on the mirror rank. Mirror ranks and set points are shown below. Disconnect the low-pass filter, and reset the oscilloscope to normal mode.</p> <table border="1" data-bbox="891 1381 1413 1684"> <thead> <tr> <th colspan="2">MIRROR RANK</th> <th rowspan="2">SET POINT (V)</th> </tr> <tr> <th>CODE</th> <th>COLOR</th> </tr> </thead> <tbody> <tr> <td>C 1</td> <td>BLK</td> <td>+0.50\pm0.05</td> </tr> <tr> <td>C 2</td> <td>RED</td> <td>+0.55\pm0.05</td> </tr> <tr> <td>C 3</td> <td>YEW</td> <td>+0.60\pm0.05</td> </tr> <tr> <td>D</td> <td>BLU</td> <td>+0.70\pm0.10</td> </tr> <tr> <td>E</td> <td>GRN</td> <td>+0.90\pm0.10</td> </tr> </tbody> </table>  | MIRROR RANK | | SET POINT (V) | CODE | COLOR | C 1 | BLK | +0.50 \pm 0.05 | C 2 | RED | +0.55 \pm 0.05 | C 3 | YEW | +0.60 \pm 0.05 | D | BLU | +0.70 \pm 0.10 | E | GRN | +0.90 \pm 0.10 |
| MIRROR RANK | | SET POINT (V) | | | | | | | | | | | | | | | | | | | | | | | | |
| CODE | COLOR | | | | | | | | | | | | | | | | | | | | | | | | | |
| C 1 | BLK | +0.50 \pm 0.05 | | | | | | | | | | | | | | | | | | | | | | | | |
| C 2 | RED | +0.55 \pm 0.05 | | | | | | | | | | | | | | | | | | | | | | | | |
| C 3 | YEW | +0.60 \pm 0.05 | | | | | | | | | | | | | | | | | | | | | | | | |
| D | BLU | +0.70 \pm 0.10 | | | | | | | | | | | | | | | | | | | | | | | | |
| E | GRN | +0.90 \pm 0.10 | | | | | | | | | | | | | | | | | | | | | | | | |

| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|-------|--|----------------------------|----------------|------------|---|
| 14 | STILL | 50mV/div H: A: 5ms/div B: delayed 0.1ms/div | TANG C/L TRKG C/L | TP-5 | VR8 | <p data-bbox="859 331 1194 359">JUMP PULSE ADJUSTMENT</p> <p data-bbox="890 369 1436 552">Scan to inside of the disc, and push the STILL key. Observe the tracking error at TP-5, then set the scope into "A inten." sweep mode. Catch the jump pulse by adjusting the delay time control of the scope, then set the scope into the delayed sweep mode.</p> <p data-bbox="890 562 1436 615">Adjust VR8 to minimize the negative over-shoot as shown below.</p> <p data-bbox="890 625 1310 653">Reset the scope to normal sweep mode.</p> <div data-bbox="843 678 1444 1167">  </div> <p data-bbox="1114 1188 1166 1245">↓</p> <div data-bbox="843 1283 1444 1772">  </div> <div data-bbox="1078 1772 1323 1850">  </div> |

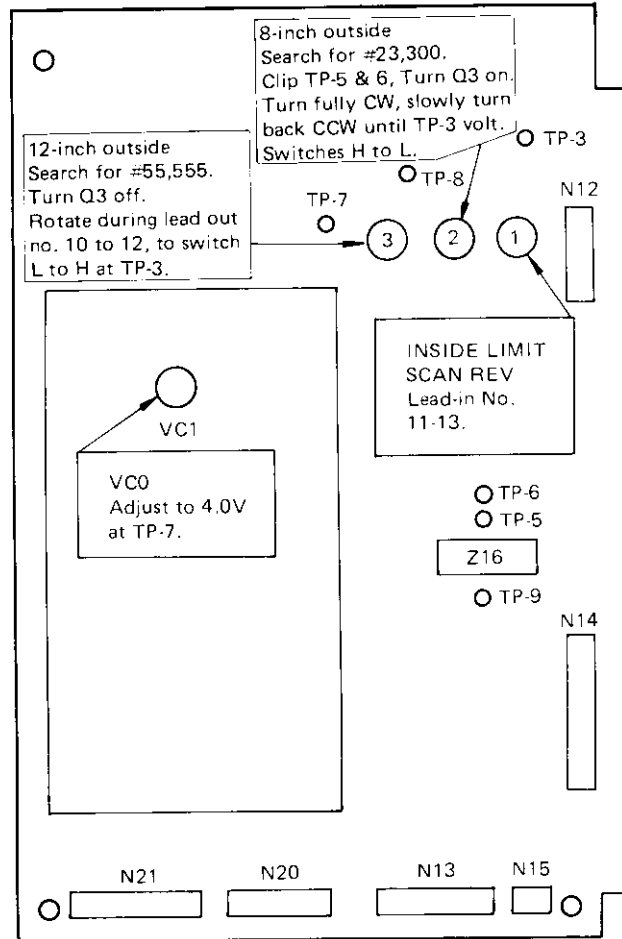
| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|-----------------|---|---|----------------|--|--|--|--------------|-----|-----|-----|---|---|-----|-----|-----|-----|-----|-------|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| 15 | PLAY #1,000 | 5mV/div A.C. coupled Trigger ext. on V-sync. | TANG C/L TRLG C/L | TP-4/6 | VR401 | <p>VCOM ADJUSTMENT</p> <p>Adjust VR401 (VCOM) to minimize the tangential error waveform in vertical blanking interval at TP-4/6.</p> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | PLAY #1,000 | 10mV/div | TANG C/L TRKG C/L TANG O/L | TP-12 | VR405 VR404 VR405 VR404 | <p>TANGENTIAL MIRROR STOPPER</p> <p>Insert the low-pass filter (47-kilohm/0.01μF) between the probe (10:1) and the scope input. Connect the probe to TP-12 (tang. return). First, rotate VR405 fully CW direction (to widen the mirror operating range); adjust VR404 (tang. offset) to obtain the set point X in relation to the tangential mirror sensitivity (mirror rank). (refer to the below table)</p> <p>Next, rotate VR405 slowly to CCW direction and adjust to the set point Y at TP-12.</p> <p>After this adjustment has been done, connect TP-1/6 to GND (to make tangential servo loop open), adjust VR404 (tangential offset) to 0mV at TP-12.</p> <p>Disconnect TP-1/6 from GND.</p> <table border="1" data-bbox="881 1444 1470 1642"> <thead> <tr> <th rowspan="2"></th> <th rowspan="2">Mirror Rank.</th> <th>C 1</th> <th>C 2</th> <th>C 3</th> <th>D</th> <th>E</th> </tr> <tr> <th>BLK</th> <th>RED</th> <th>YEW</th> <th>BLU</th> <th>GRN</th> </tr> </thead> <tbody> <tr> <td rowspan="2">TP-12</td> <td>SET POINT X (V)</td> <td>-0.55</td> <td>-0.60</td> <td>-0.65</td> <td>-0.70</td> <td>-0.80</td> </tr> <tr> <td>SET POINT Y (V)</td> <td>-0.40</td> <td>-0.45</td> <td>-0.50</td> <td>-0.55</td> <td>-0.65</td> </tr> </tbody> </table> | | Mirror Rank. | C 1 | C 2 | C 3 | D | E | BLK | RED | YEW | BLU | GRN | TP-12 | SET POINT X (V) | -0.55 | -0.60 | -0.65 | -0.70 | -0.80 | SET POINT Y (V) | -0.40 | -0.45 | -0.50 | -0.55 | -0.65 |
| | Mirror Rank. | C 1 | C 2 | C 3 | D | E | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | BLK | RED | YEW | BLU | GRN | | | | | | | | | | | | | | | | | | | | | | | | | |
| TP-12 | SET POINT X (V) | -0.55 | -0.60 | -0.65 | -0.70 | -0.80 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SET POINT Y (V) | -0.40 | -0.45 | -0.50 | -0.55 | -0.65 | | | | | | | | | | | | | | | | | | | | | | | | | |

| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|------------------|--------------------------|----------------------------|------------------------------------|------------|---|
| 17 | STILL #21,000 | 20mV/div | TANG C/L TRKG C/L | VIDEO OUT | VR201 | <p>VIDEO OUTPUT LEVEL</p> <p>Player in STILL mode in composite test pattern reproducing.</p> <p>With Video Output terminated into 75-ohms, verify the video level is $1 \pm 0.1V$ from sync. tip to white level. If not, adjust VR201 slowly to satisfy the above.</p>  |
| 18 | STILL #21,000 | 20mV/div A.C. coupled | TANG C/L TRKG C/L | Z201 UA5001 pin-16 pin-18 | VR202 | <p>1-H DELAYED VIDEO LEVEL</p> <p>Verify that the video level at pin-16 of UA 5001 is equal to the video level at pin-18 of UA5001; if not, adjust VR202 slowly to satisfy the above.</p> |
| 18' | SET UP | 0.2V/div | TANG C/L TRKG C/L | TP-11 UA5001 pin 14 | VR204 | <p>DOS LEVEL ADJUSTMENT (VWS-025, VWS-022)</p> <p>Apply a signal of 5.5 MHz/200 mvp-p to TP-11, and observe DOS OUT at UA5001 pin-14s.</p> <p>Rotate VR204 fully clockwise, then slowly back to counter-clockwise until the DOS OUT turns H to L.</p> |
| 19 | PLAY #20,000 | | TANG C/L TRKG C/L | N9-7 UA5001 pin-6 | VR203 | <p>V SYNC NEGATIVE EDGE ADJUSTMENT</p> <p>Play in the vicinity of #20,000, and observe COMP SYNC (UA5001 pin6) and V sync (N9-7).</p> <p>Check that the V SYNC negative edge is aligned with the center position between the 1st and 2nd equalization pulses after the start of the vertical synchronizing negative edge (see diagram below).</p> <p>If not, adjust with VR203.</p>  |

| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|------------------|---|----------------------------|---------------------------------------|------------|--|
| 20 | STILL #49,000 | 0.1V/div | TANG C/L TRKG C/L | Monitor | VR403 | <p>TANG GAIN, CPCB ADJUSTMENT</p> <p>Search for #49,000 and switch to STILL mode. Turn VR403 (TANG gain) fully clockwise, and check the presence of color distortion. Turn CPCB VR2 fully clockwise. Turn VR403 back counter clockwise until after the color distortion ceases altogether. Turn CPCB VR2 back counter clockwise until the red streaking in the picture become inconspicuous. Check for the presence of jump waves. If there is a large overshoot following a jump wave, readjust VR8 as described in step 14. Also check that there is no conspicuous disturbance in TRKG error which will cause red streaking.</p> |
| 21 | PLAY #20,000 | CH:1 0.2V/div CH:2 0.2V/div H: 10 μ s/div | TANG O/L TRKG C/L | TP-3/6 (REF H) TP-2/6 (PB H) | VR406 | <p>SPDL OFFSET</p> <p>Connect TP-1/6 to ground (TANG O/L) and switch to PLAY mode at about #20,000. Adjust VR406 to align the center of positive edge of PB H (TP-2/6, including jitter) with the positive edge of the REF H (TP-3/6). Check that the phase difference between PB H and REF H is less than $\pm 2\mu$s after 20 to 30 seconds. If the phase difference is greater, fine adjust the VR406. Disconnect TP-1/6 from ground (TANG C/L), and check that there is no red streaking or other color distortion in the monitor TV.</p> |



CONT Board



| Step No. | Mode | Scope Range | Servo Loop | Test Point No. | Adj. Point | Adjustment and Check Details |
|----------|------------------------------|-------------|------------|--------------------------------------|------------|--|
| 22 | SCAN REV Inner most track | | TRKG O/L | Monitor | CONT VR1 | CONT INSIDE LIMIT Following PLAY mode, proceed with SCAN FWD and SCAN REV modes, and adjust VR1 so that still mode is obtained between lead-in nos. 8 and 10 on the monitor. (no. 9 should be seen on the screen) |
| 23 | PLAY | 0.2V/div | C/L | TP-7 | VC1 | VCO ADJUSTMENT Turn trimmer VC1 inside the shield case to obtain a DC level at TP-7 of 4.0V. Also check that the frame number is steady. |
| 24 | STILL #23,300 ±150 | | | TP-5 TP-6 TP-8 TP-3 | VR2 | 8-INCH OUTSIDE LIMIT Search for #23,300. Clip TP-5 and TP-6 together with a shorting clip, and connect a 10 kΩ resistor between TP-5 and TP-8 (thereby turning Q3 on). After turning VR2 fully clockwise, slowly turn back counter clockwise until the position where the TP-3 voltage switches from H to L is reached. Disconnect the resistor between TP-5 and TP-8. |
| 25 | PLAY #55,555 | | | TP-5 TP-6 TP-3 | VR3 | 12-INCH DISC OUTSIDE LIMIT Search for #55,555 and switch to PLAY mode. Turn VR3 during playback of lead-out no. 10~12 to switch the TP-3 voltage from L to H. Continue in PLAY mode and check that the TP-3 voltage changes back to L from H between 8 and 15 seconds after no. 19 appears in the monitor. Readjust VR3 if necessary to satisfy this requirement. Switch to SCAN REV mode and return to around lead out no. 10. Remove the shorting clip between TP-5 and TP-6 and return to PLAY mode. Play no. 19 and check that the reject operation occurs from 8 to 15 seconds later. |

4. SCHEMATIC DIAGRAM P. C. B. PATTERNS AND PARTS LIST

1. OVERALL CONNECTION DIAGRAM

LD-1100 (Serial No. 3611501-)

| Part No. | Symbol & Description | Part No. | Symbol & Description |
|-------------|----------------------|----------|----------------------|
| SM1A-02 | D1 | VWG-052 | CONT |
| RD1/4PS271J | R1 | VWG-028 | IRAB |
| VCS-005 | VR1 | VWL-006 | RFMD |
| VCG-011 | C1 | VWM-001 | M CNB |
| | | VWR-019 | SYPS |
| CKDYF333Z50 | C6 | | |
| VSF-006 | SW2 | VWG-043 | PSCB |
| VSF-007 | SW3 | VWR-011 | LSPS |
| VTT-016 | T1 | VWS-022 | VSOP |
| VDG-003 | | VWV-010 | RFAM |
| VSA-003 | SW1 | VWV-019 | AUDX |
| VXP-005 | | VWV-023 | CPCB |
| VXM-013 | | VWV-025 | KEYC |
| (VXM-015) | | VWG-044 | GATB |
| VXM-010 | | | |
| VDA-013 | | | |
| | | | |
| | | | |
| VKP-062 | N1-SYPS | | |
| VKP-067 | N2-N6 | | |
| VKP-068 | N3-N8 | | |
| | | | |
| VKP-072 | N4-RFAM | | |
| VKP-073 | N5-Slider | | |
| VKP-077 | N7-N13 | | |
| VKP-078 | N9, N10-N14 | | |
| VKP-079 | N12-SYPS | | |
| | | | |
| VKP-080 | N15-N16 | | |
| VKP-081 | N20-N23 | | |
| VKP-083 | N22-IRAB | | |
| VKP-090 | N18-RFMD | | |
| VKP-091 | N11-AUDX | | |
| | | | |
| VKP-105 | N31-VSOP | | |
| VKP-108 | N34-VSOP | | |
| VKP-109 | N35-VSOP | | |
| VKP-126 | N36-CONT | | |

1

2

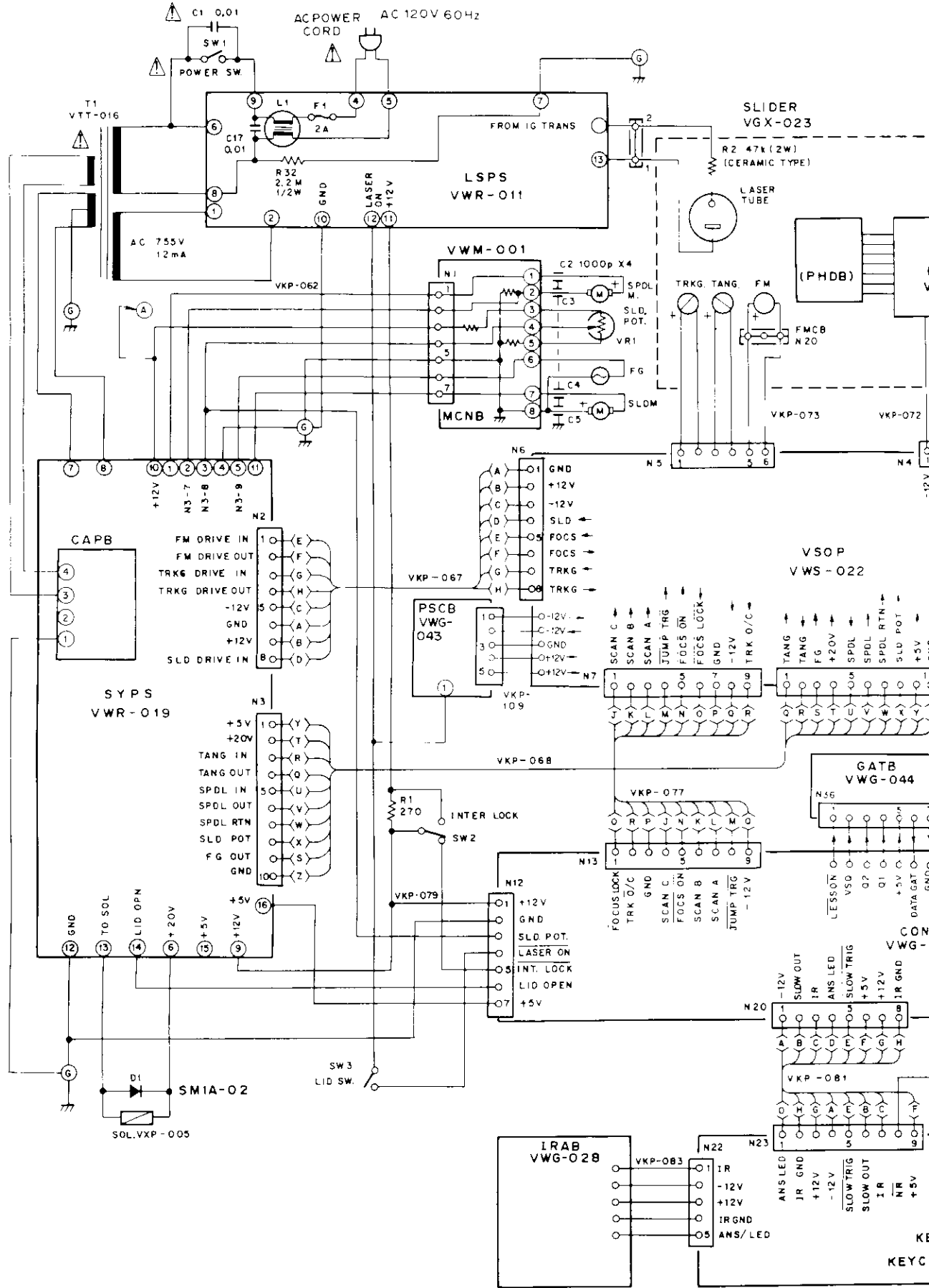
3

A

B

C

D

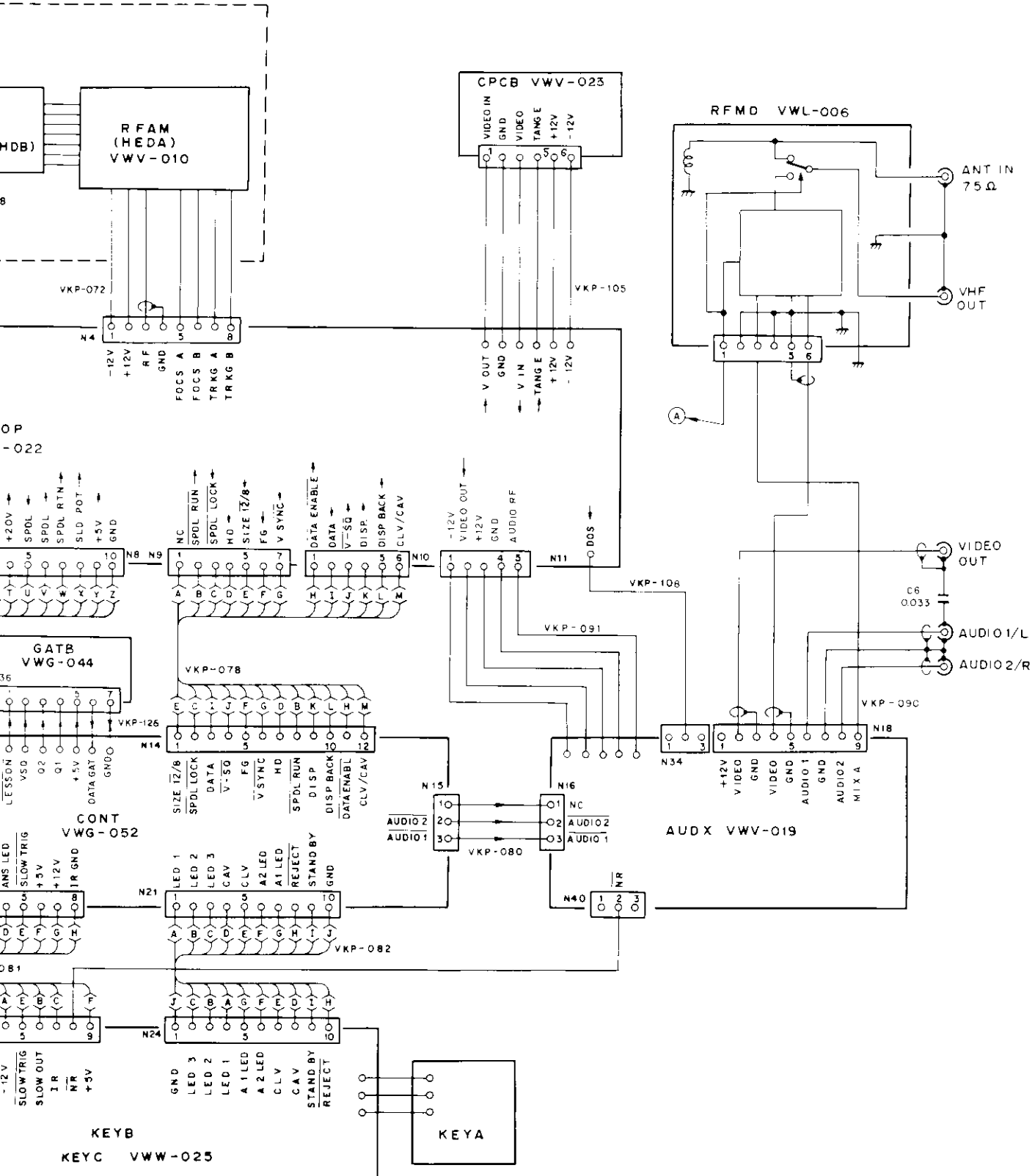


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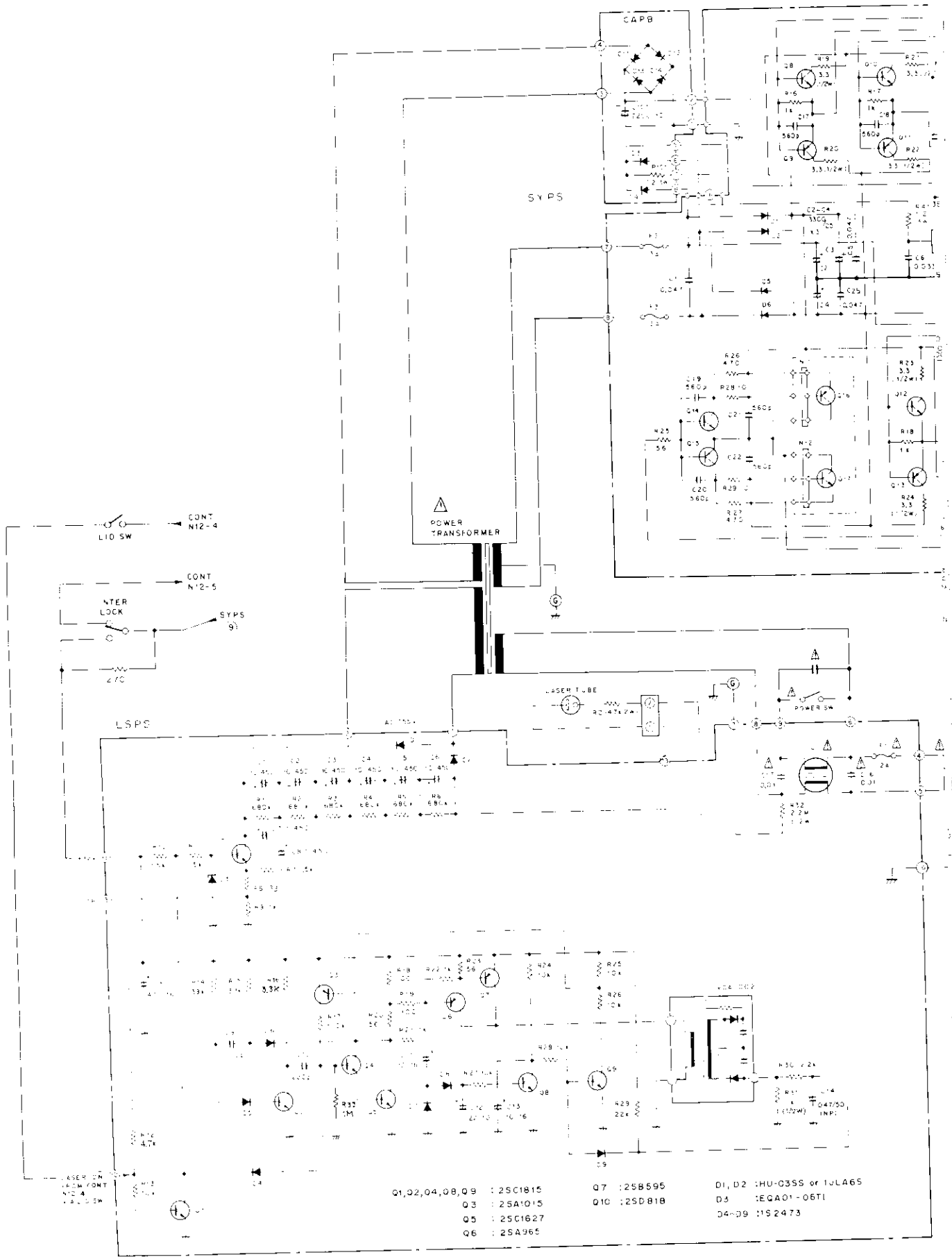
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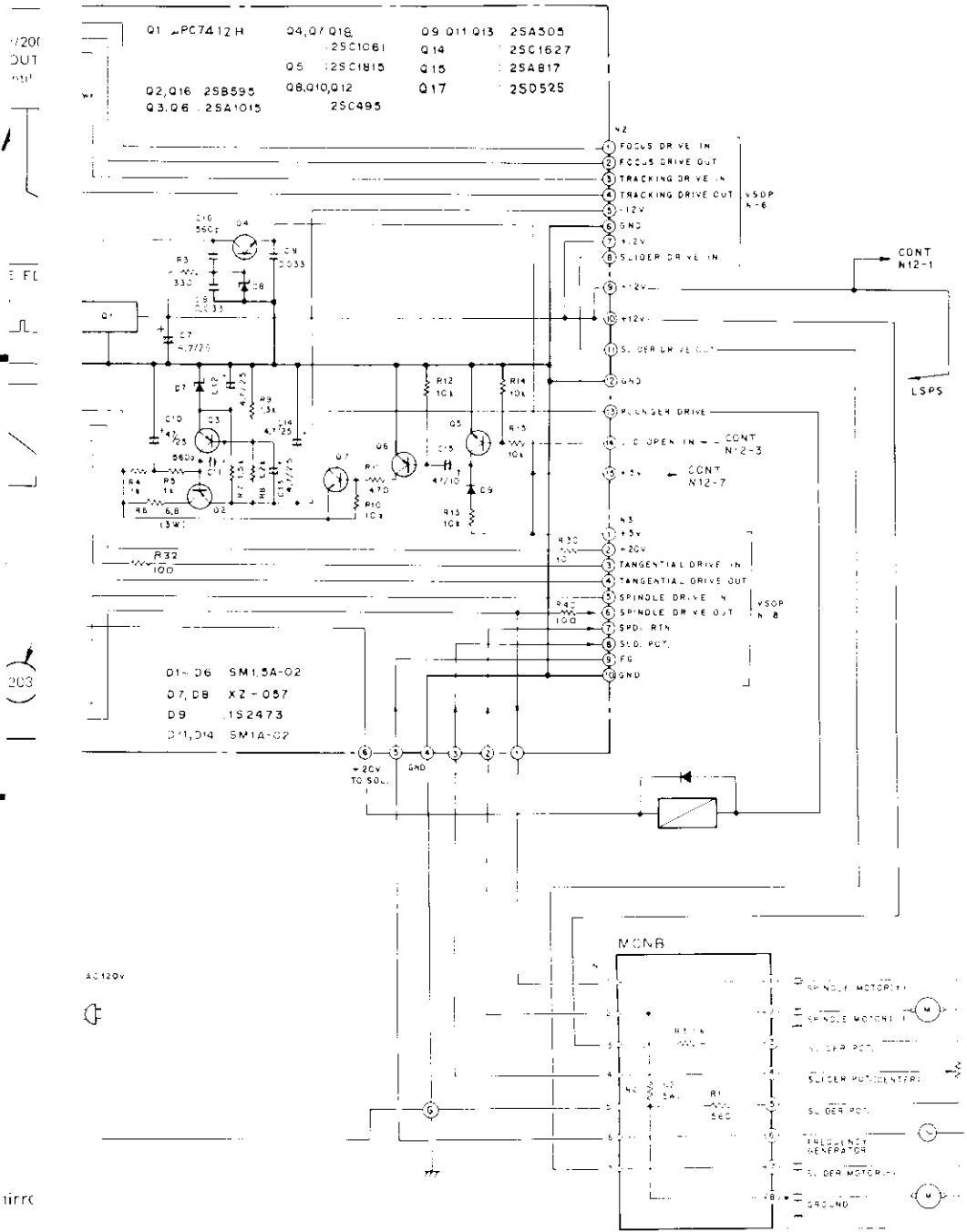
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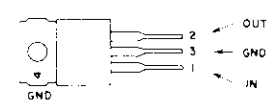
2. New SYPS, LSPS and MCNB



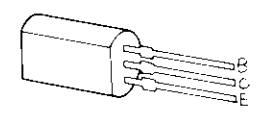
- | | | | | | |
|--------------------|-----------|-----|----------|--------|----------------------|
| Q1, Q2, Q4, Q8, Q9 | : 25C1815 | Q7 | : 25B595 | D1, D2 | : 1HU-C355 or 1JLA65 |
| Q3 | : 25A1015 | D10 | : 25D818 | D3 | : EGA01-06T1 |
| Q5 | : 25C1627 | | | D4-D9 | : 1S2473 |
| Q6 | : 25A965 | | | | |



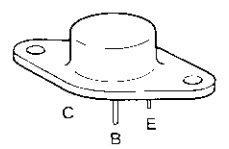
μ PC14312H
 μ PC7812H



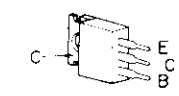
2SA965



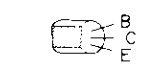
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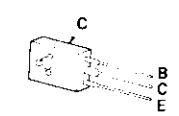
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2SC1061



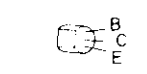
2SC1627
2SA817
2SC2320



2SA505
2SC495



2SA1015
2SC1815



WARNING: EXTREME CARE MUST BE EXERCISED TO "LSPS" BOARD WHILE WORKING WITH THE PLAYER TO PREVENT POSSIBILITY OF EXPOSING YOURSELF TO DANGEROUS VOLTAGES.

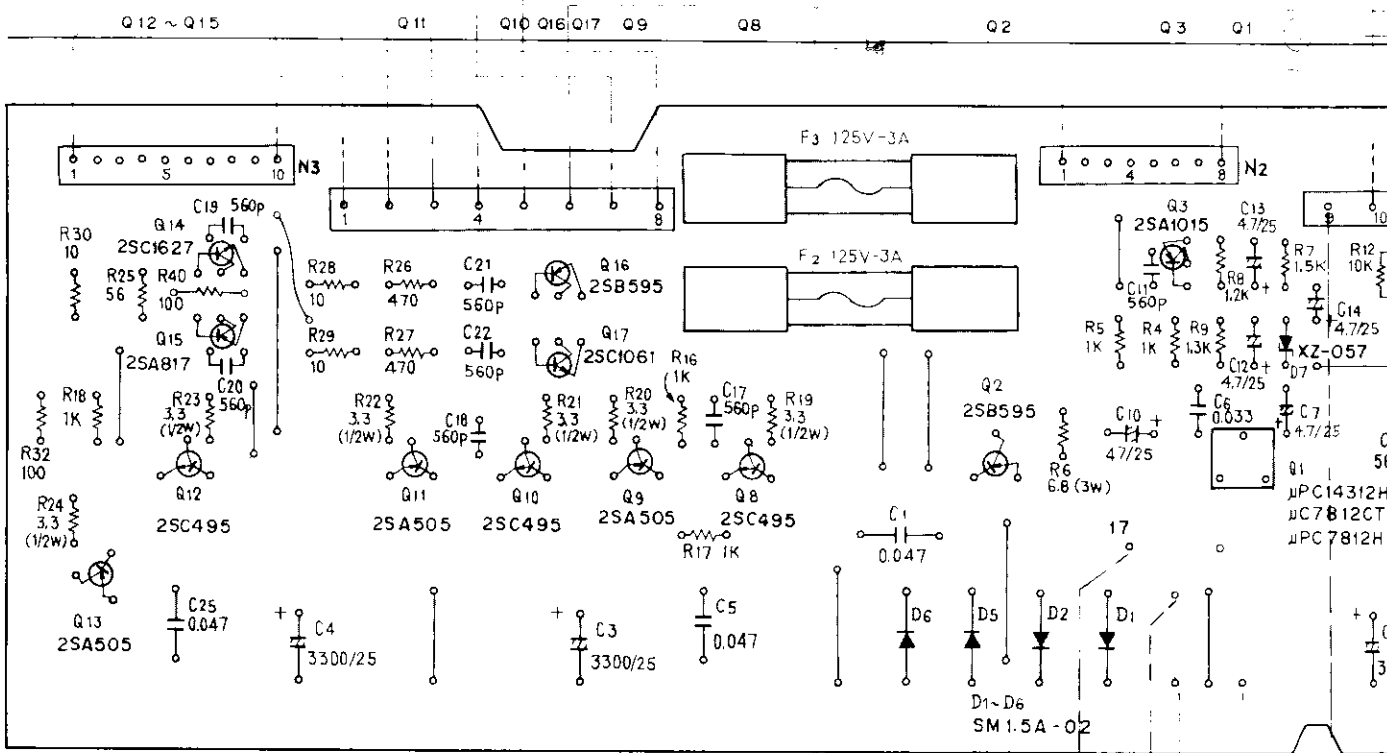
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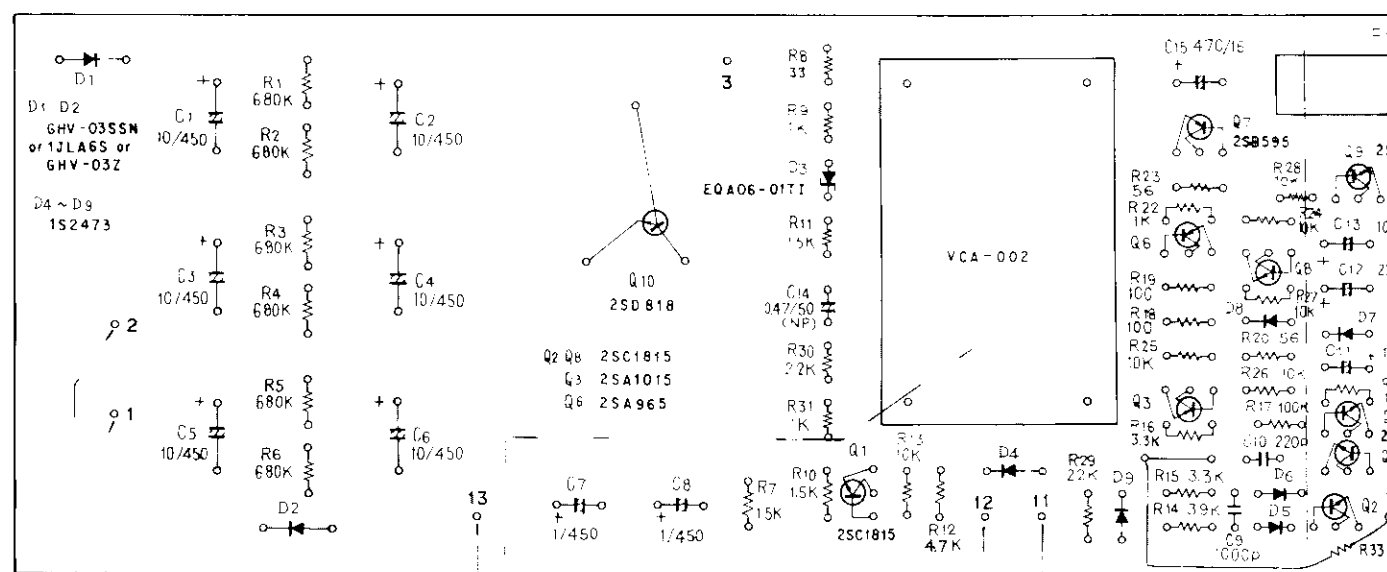
A

B



C

D



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2

3

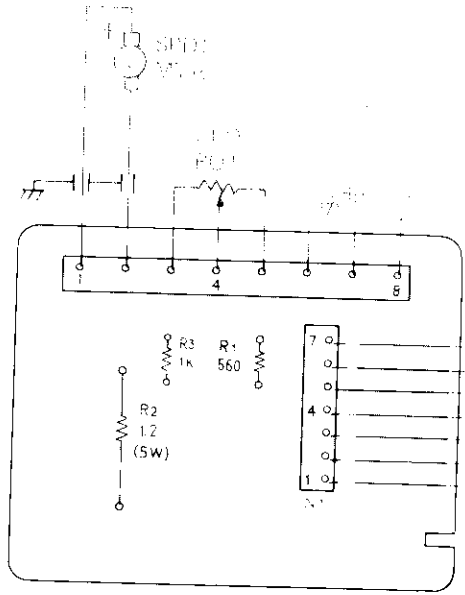
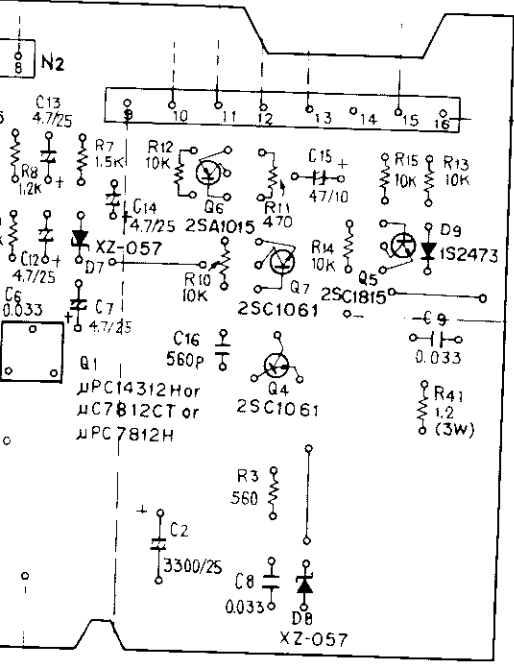
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SYP

SEM

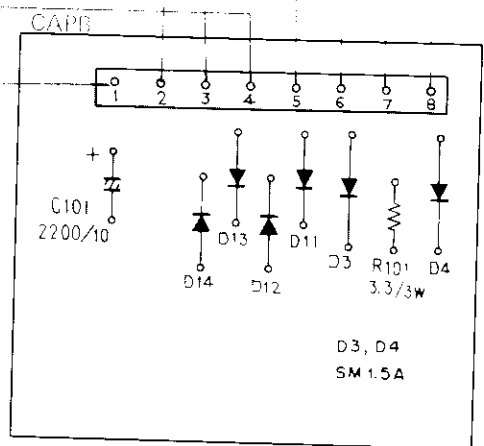
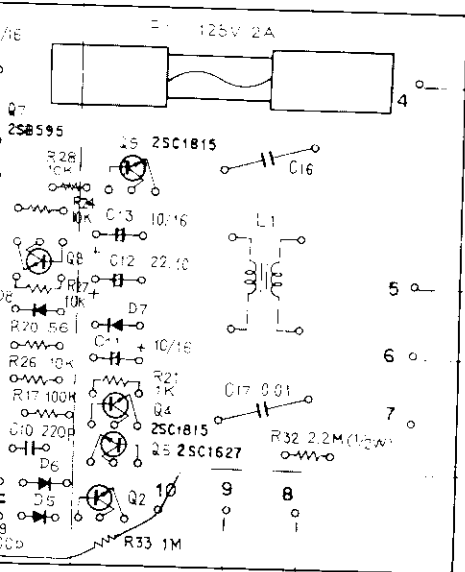
Mark

Q1 Q6 Q7 Q4 Q5



RESI

Mark



CAPA

Mark

OTHE

Mark

SYPS (VWR-019)

SEMICONDUCTORS

| Mark | Part No. | Symbol & Description |
|------|----------------|----------------------|
| | UPC7812H | Q1 |
| | 2SB595-O/Y | Q2, Q16 |
| | 2SA1015-O/Y/GR | Q3, Q6 |
| | 2SC1016-B/C | Q4, Q7 |
| | 2SC1815-O/Y/GR | Q5 |
| | 2SC495-O/Y | Q8, Q10, Q12 |
| | 2SA505-O/Y | Q9, Q11, Q13 |
| | 2SC1627-O/Y | Q14 |
| | 2SA817-O/Y | Q15 |
| | 2SD525-O/Y/GR | Q17 |
| | SM1.5A-02 | D1D6 |
| | XZ-057 | D7, D8 |
| | 1S2473 | D9 |
| | SM1A-02 | D11-D14 |

RESISTORS

| Mark | Part No. | Symbol & Description |
|------|--------------|--|
| | RD1/4VS□□□□J | R3-R5, R7-R18, R25-R29, R32, R40, R33 |
| | VCN-016 | R6 |
| | RD1/2VS□□□□J | R19-R24 |
| | VCN-004 | R30 |
| | VCN-009 | R41, R101 |

CAPACITORS

| Mark | Part No. | Symbol & Description |
|------|-------------|----------------------|
| | CKDYF473Z50 | C1, C5, C25 |
| | VCH-009 | C2-C4 |
| | CKDYF333Z50 | C6, C8, C9 |
| | CEA4R7M25 | C7, C12-C14 |
| | CEA470M25 | C10 |
| | CKDYB561K50 | C11, C16-C22 |
| | CEA470M10 | C15 |
| | CEA222M10 | C101 |

OTHERS

| Mark | Part No. | Symbol & Description |
|------|----------|----------------------------------|
| | VKP-060 | Q16 ... SYPS Housing assembly |
| | VKP-061 | Q17 ... SYPS Housing assembly |
| | VEC-028 | Holder |
| | VEC-002 | Mica insulator |
| | VEC-072 | Mica insulator |
| | VBA-003 | Screw |
| | VEK-006 | F1, F2 Fuse 3A |

LSPS (VWR-011)

SEMICONDUCTORS

| Part No. | Symbol & Description |
|---------------------------------|----------------------|
| 2SC1815-O/Y/GR (2SC2320-E/F) | Q1, Q2, Q4, Q8, Q9 |
| 2SA1015-O/Y/GR | Q3 |
| 2SC1627-O/Y | Q5 |
| 2SA965-O/Y | Q6 |
| 2SB595-O/Y | Q7 |
| 2SD818 | Q10 |
| 1JLA6S (GHV-03SSN) | D1, D2 |
| EQA01-06T1 | D3 |
| 1S2473 | D4-D9 |

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

| Part No. | Symbol & Description |
|------------|----------------------|
| RD¼VS□□□□J | R1-R8, R10-R30 |
| RN¼PR□□□□F | R9 |
| RD¼VS□□□□J | R31, R32 |

CAPACITORS

| Part No. | Symbol & Description |
|----------------|----------------------|
| VCH-003 | C1-C6 |
| VCH-010 | C7, C8 |
| CKDYB 102K 50 | C9 |
| CCDSL 221J 50 | C10 |
| CEA 100M 16 | C11, C13 |
| CEA R47M 50 NP | C14 |
| CEA 221M 16 | C15 |
| VCG-011 | C17 |

COILS

| Part No. | Symbol & Description |
|----------------------|----------------------|
| VTL-001 (VTL-002) | L1 Line filter |

OTHERS

| Part No. | Symbol & Description |
|----------------------|----------------------|
| VKR-001 | Fuse holder |
| VDA-005 | HV wire assembly |
| VKN-049 | HV cap |
| VCA-002 (VCA-004) | IG block |
| VEK-004 | F1 Fuse 2A |

MCNB (VWM-001)

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

| Part No. | Symbol & Description |
|------------|----------------------|
| RD¼VS□□□□J | R1, R3 |
| VCN-018 | R2 |

10

11

12

A

B

C

D

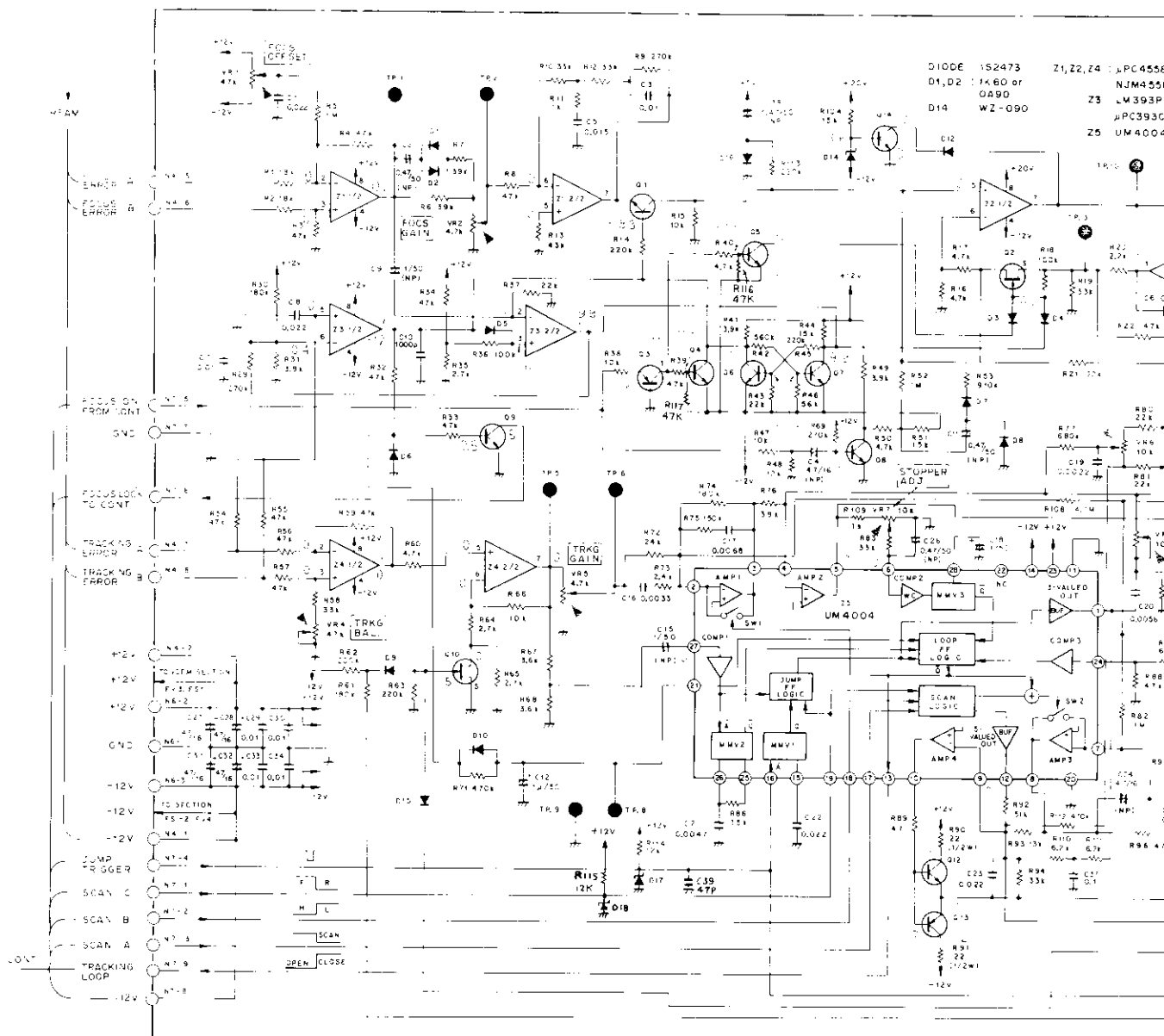
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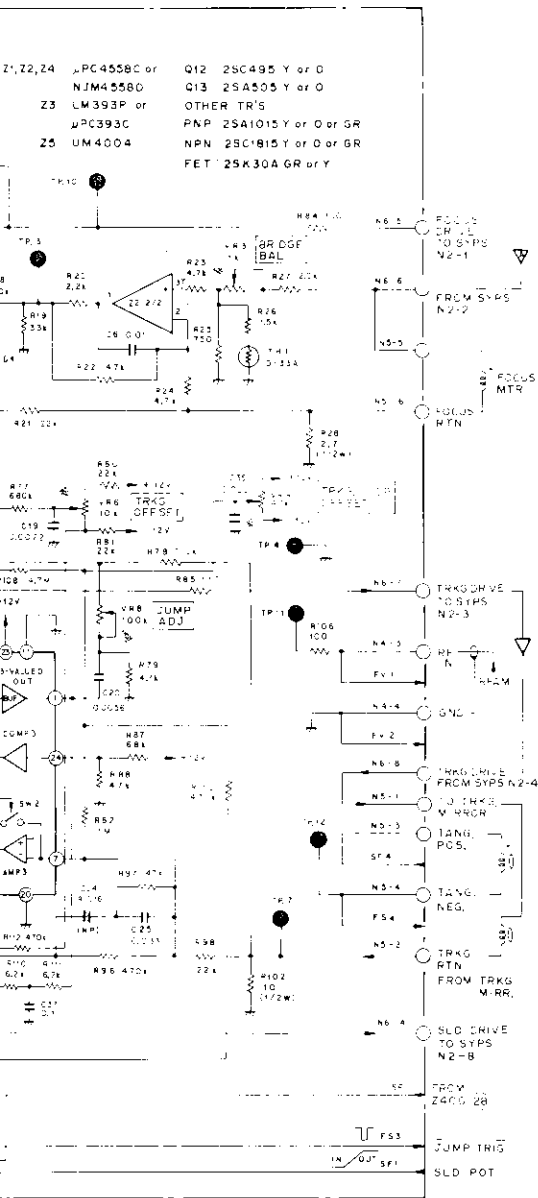
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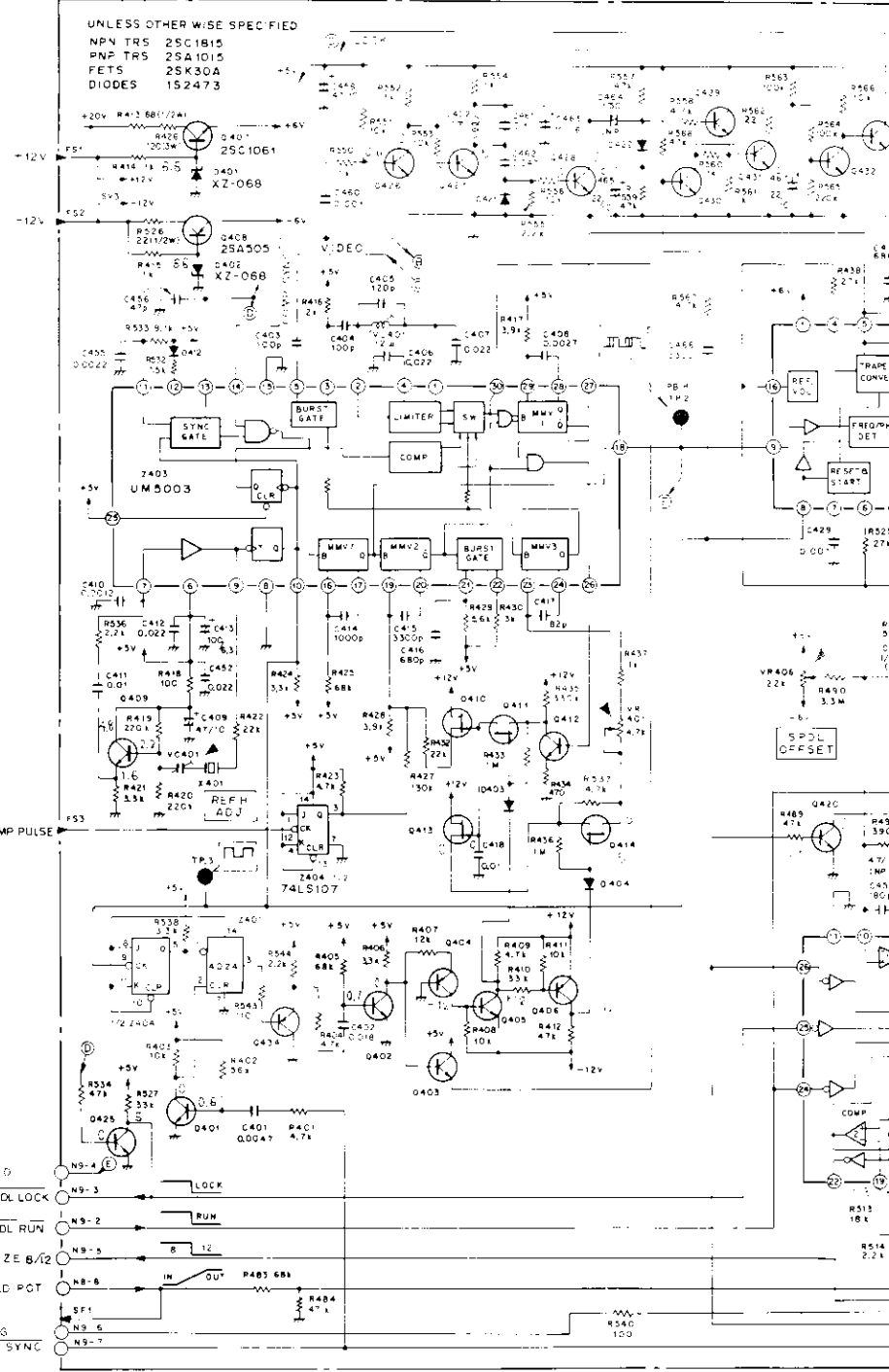
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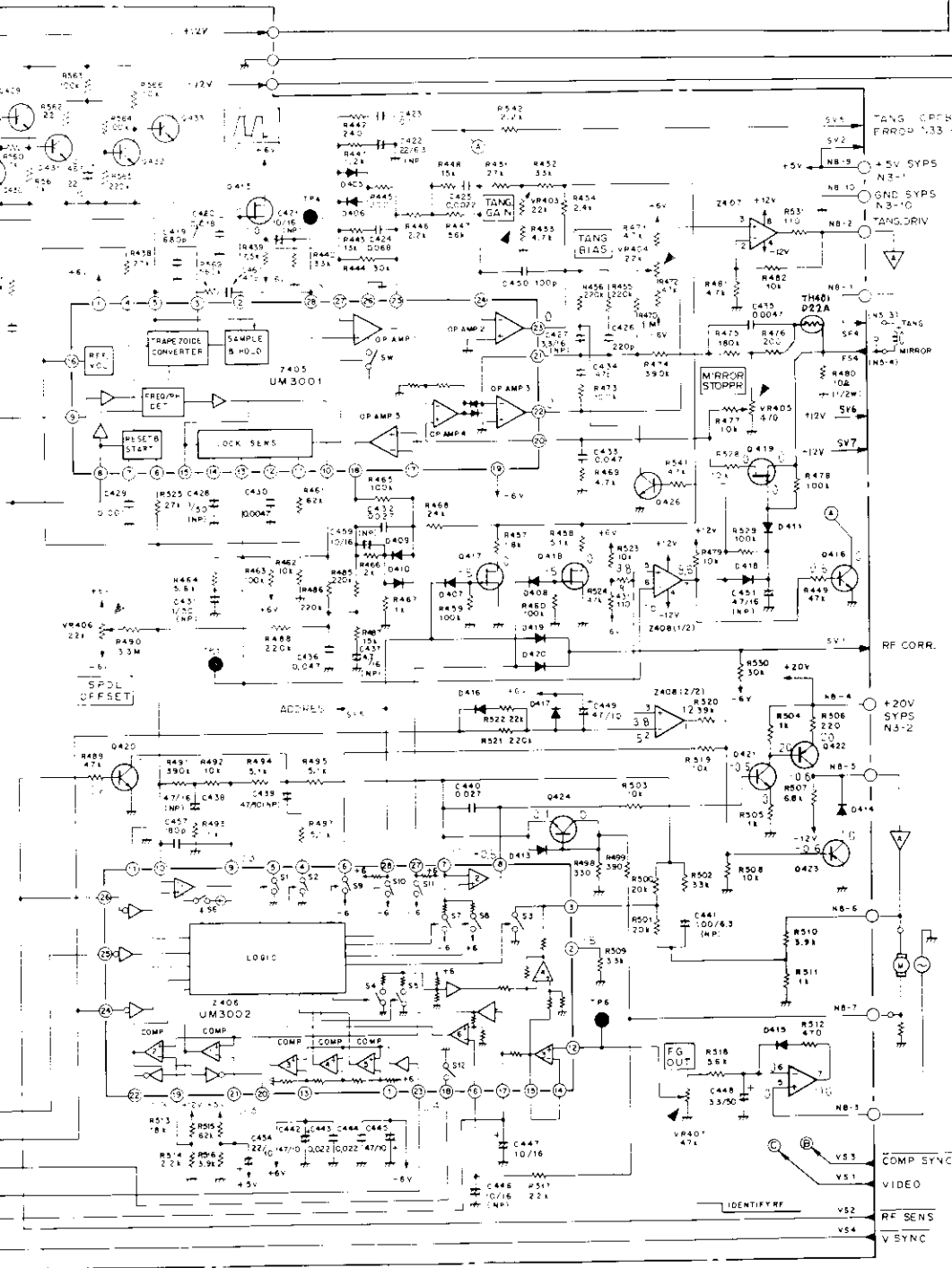
VSOP
(FTS section)



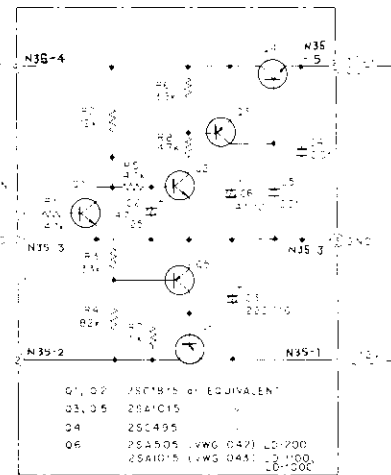


VSOP
(SPDL, TANG section)

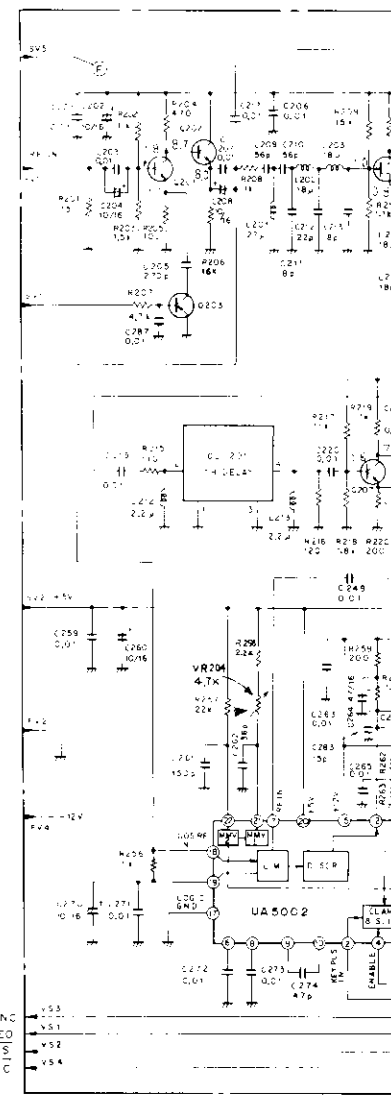




PSCB



VSOP (VDEM section)



CPCB



A

B

C

D

VSOP (VWS-022) (Serial No. 3611501 ~)

SEMICONDUCTORS

| Part No. | Symbol & Description |
|--|--|
| μ PC4558C (NJM4558D) | Z1, Z2, Z4, Z407 |
| μ PC393C (LM393P) | Z3, Z408 |
| UM4004 | Z5 |
| UA5001 | Z201 |
| UA5002 | Z202 |
| TC4024BP (MB84024BM) | Z401 |
| UM5003 | Z403 |
| HD74LS107P (SN74LS107N) | Z404 |
| UM3001 | Z405 |
| UM3002 | Z406 |
| 2SC1815-O/Y/GR | Q1, Q6, Q7, Q201, Q205, Q207, Q208, Q210, Q213, Q215, Q221, Q223, Q401, Q402, Q409, Q412, Q421, Q424 |
| 2SC1815-Y/GR | Q8 |
| 2SK30A-Y/GR | Q2, Q410, Q411, Q413-Q415, Q417-Q419 |
| 2SA1015-O/Y/GR | Q3, Q203, Q211, Q404, Q406, Q422, Q423, Q434 |
| 2SK30A-Y | Q10 |
| 2SC495-O/Y | Q12, Q407 |
| 2SA505-O/Y | Q13, Q408 |
| 2SK19TMY (2SK19-Y) | Q204 |
| 2SC1815-O/Y/GR (2SC2320-E/F) (2SC2603-E/F) (2SC1740-Q/R/S) (2SC2021-Q/R/S) | Q4, Q5, Q9, Q14, Q202, Q209, Q212, Q214, Q216, Q217, Q220, Q403, Q405, Q416, Q420, Q425-Q433, Q435 |
| 1K60 (OA90-R) | D1, D2 |
| 1S2473 | D3-D10, D12, D15, D201-D203, D205, D206, D403-D411, D413-D422, D16, D412 |
| WZ-090 | D14 |
| WZ-048 | D17, D18 |
| XZ-068 (EQA01-07R2) | D401, D402 |
| 1S2473 | D412 |

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

| Part No. | Symbol & Description |
|---------------------------|--|
| RD $\frac{1}{2}$ PS □□□J | R1-R27, R29-R40, R42-R48, R50-R69, R71-R89, R92-R94, R96-R98, R104, R106-R111, R201-R213, R215-R213, R215-R281, R401-R412, R414-R425, R428-R430, R433-R479, R481-R489, R491-R506, R508, R509, R511, R512, R515-R525, R527-R541, R543-R569, R114, R115 |
| RD $\frac{1}{2}$ VS □□□J | R28, R90, R91, R102, R413, R480, R526 |
| RD $\frac{1}{2}$ VS □□□J | R41, R112, R282, R427, R431, R432, R490, R507, R510, R542 |
| VCN-020 | R426 |
| RN $\frac{1}{4}$ PR □□□□F | R513, R514 |
| VCP-029 | VR1, VR4, (47k) VR9, VR407 |
| VCP-026 | VR2, VR5, (4.7k) VR204, VR401 |
| VCP-024 | VR3, VR201, (1k) VR202 |
| VCP-027 | VR6, VR7 (10k) |
| VCP-030 | VR8 (100k) |
| VCP-028 | VR203, VR403, (22k) VR404, VR406 |
| VCP-021 | VR405 |

COILS

| Part No. | Symbol & Description |
|----------------------|---------------------------------------|
| VTL-065 (VTL-028) | L201 (27 μ H) |
| VTL-064 (VTL-026) | L202-L205, (18 μ H) L210, L211 |
| VTL-066 (VTL-030) | L206 (39 μ H) |
| VTL-067 (VTL-051) | L207 (43 μ H) |
| VTL-062 (VTL-024) | L208, L401 (12 μ H) |
| VTL-063 (VTL-056) | L209 (16 μ H) |
| VTL-060 (VTL-015) | L212, L213 (2.2 μ H) |
| VTL-069 (VTL-043) | L214 (470 μ H) |
| VTL-040 (VTL-073) | L215 (270 μ H) |
| VTL-043 (VTL-070) | L402 (1mH) |

CAPACITORS

| Part No. | Symbol & Descriptions |
|----------------|--|
| CKDYF 223Z 50 | C1, C8, C19, C23, C35, C406, C407, C412, C443, C444, C452 |
| CEA R47M 50 NP | C2, C11, C26, C38 |
| CQMA 103J 50 | C3, C418 |
| CEA 4R7M 16 NP | C4, C24, C437, C438, C451 |
| CQMA 153J 50 | C5 |
| CKDYF 103Z 50 | C6, C7, C29, C30, C33, C34, C201, C203, C206, C207, C214, C217, C219–C229, C238, C239, C247, C249, C259, C263, C265, C271–C273, C287, C411 |
| CEA 010M 50 NP | C9, C15, C255, C258, C428, C431, C464 |
| CKDYB 102K 50 | C10, C286, C460 |
| CEA 010M 50 | C12 |
| CQMA 332J 50 | C16, C415 |
| CQMA 682J 50 | C17 |
| CEA 010M 50 | C18 |
| CQMA 562J 50 | C20 |
| CQMA 472J 50 | C21 |
| CQMA 223J 50 | C22 |
| CQMA 333J 50 | C25, C256, C275 |
| CEA 100M 16 | C27, C28, C31, C32, C202, C204, C208, C240, C246, C248, C250, C253, C260, C270, C277, C447, C463 |
| CQMA 104J 50 | C37, C423, C461 |
| CCDSL 271J 50 | C205, C216 |
| CCDCH 560J 50 | C209, C210 |
| CCDCH 080D 50 | C211, C213, C231, C233 |
| CCDCH 220J 50 | C212 |
| CCDSL 181J 50 | C215, C251, C457 |
| CEA 470M 16 | C218, C230, C264 |
| CCDCH 150J 50 | C232 |
| CCDCH 330J 50 | C234, C235 |
| CCDUJ 470J 50 | C236 |
| CEA 470M 10 | C237, C269, C409, C413, C442, C445, C449, C458 |
| CCDSL 510J 50 | C241, C282 |
| CCDSL 161J 50 | C242 |
| CCDSL 201J 50 | C243, C244 |
| CCDSL 151J 50 | C245 |
| CQMA 823J 50 | C252 |
| CCDSL 820J 50 | C254, C284, C417 |
| CQMA 563J 50 | C257 |
| CEA 470M 10 | C237, C269, C409, C413, C442, C445, C449, C458 |
| CCDCH 360J 50 | C262 |
| CEA 100M 16 | C266 |
| CCDSL 121J 50 | C267, C279, C405 |
| CCDCH 620J 50 | C268 |
| CCDCH 470J 50 | C274 |
| CCDSL 101J 50 | C278, C403, C404, C450 |

CAPACITORS

| Part No. | Symbol & Description |
|----------------------|----------------------|
| CCDSL 150J 50 | C283 |
| CCDSL 221J 50 | C285, C426 |
| CQMA 472J 50 | C401, C430, C435 |
| CQMA 183J 50 | C402, C420 |
| CQMA 272J 50 | C408 |
| CQMA 122J 50 | C410 |
| CQSH 102J 50 | C414 |
| CQSH 102J 50 | C416, C419 |
| CEA 100M 16 NP | C421, C446, C459 |
| CEA 220M 6 NP | C422 |
| CQMA 683J 50 | C424 |
| CQMA 222J 50 | C425, C455 |
| CEA 3R3M 16 NP | C427 |
| CQMA 102J 50 | C429 |
| CQMA 273J 50 | C432, C440 |
| CQMA 473J 50 | C433, C436, C462 |
| CCDSL 470J 50 | C434, C456 |
| CEA 470M 10 NP | C439 |
| CEA 101M 6 NP | C441 |
| CEA 3R3M 50 | C448 |
| CEA 220M 10 | C454, C465, C467 |
| CCDSL 331J 50 | C466 |
| CCDCH 470J 50 | C467 |
| VCM-004 (VCM-005) | VC401 |

OTHERS

| Part No. | Symbol & Description |
|--|--|
| VTF-012 (VTF-013) (VTF-030) (VTD-033) | DL201 |
| D33A VSS-005 | TH1 X401 |
| VKP-105 VKP-108 VKP-109 | N31–VSOP N34–VSOP N35–VSOP |
| | Housing assembly Housing assembly Housing assembly |

CPCB (VWV-023)
SEMICONDUCTORS

| Part No. | Symbol & Description |
|-----------------------------------|----------------------|
| 2SC1815-O/Y/GR (2SC1740-Q/R/S) | Q1, Q2, Q4-8 |
| 2SA1015-O/Y/GR | Q3 |
| SVC321SP-B1 (SVC321SP-D1) | VC1 |

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

| Part No. | Symbol & Description |
|-------------|----------------------|
| RD4VS 0000J | R1 -R32 |
| VCP-023 | VR1 (470) |
| VCP-026 | VR2 (4.7k) |

CAPACITORS

| Part No. | Symbol & Description |
|----------------|----------------------|
| CEA 4R7M 16 NP | C1 |
| CKDYB 222K 50 | C2 |
| CEA 470M 10 | C3, C6, C12, C13 |
| CEA 100M 16 | C4, C5, C15, C16 |
| CKDYB 102K 50 | C8 |
| CCDSL 101J 50 | C9, C14 |
| CKDYF 103Z 50 | C10, C17 |
| CCDSL 121J 50 | C11 |

COILS

| Part No. | Symbol & Description |
|----------------------|----------------------|
| VTL-023 (VTL-061) | L1 |
| VTF-032 | DL1 |

PSCB (VWG-043)
SEMICONDUCTORS

| Part No. | Symbol & Description |
|--|----------------------|
| 2SC1815-Y/GR (2SC2320-E/F) (2SC2603-E/F) (2SC1740-R/S) (2SC2021-R/S) | Q1, Q2 |
| 2SA1015-Y/GR | Q3, Q5, Q6 |
| 2SC495-O/Y | Q4 |

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

| Part No. | Symbol & Description |
|-------------|----------------------|
| RD4VS 0000J | R1-R8 |

CAPACITORS

| Part No. | Symbol & Description |
|---------------|----------------------|
| CEA 4R7M 25 | C2 |
| CEA 221M 16 | C3 |
| CKDYF 103Z 50 | C4, C5 |
| CEA 470M 10 | C6 |

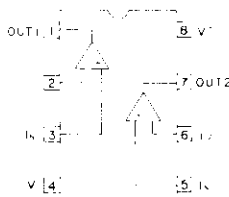
A

B

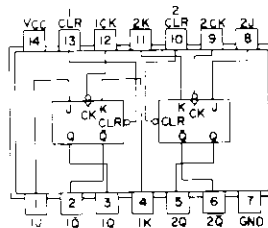
C

D

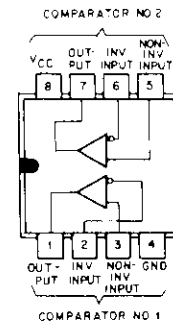
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NJM4558D



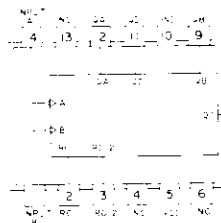
HD74LS107P
SN74LS107N



LM393C
μPC393P



HD74LS93P
SN74LS93N



2SK30A



2SA1015
2SC1815



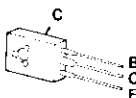
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2SC2320
2SC1740

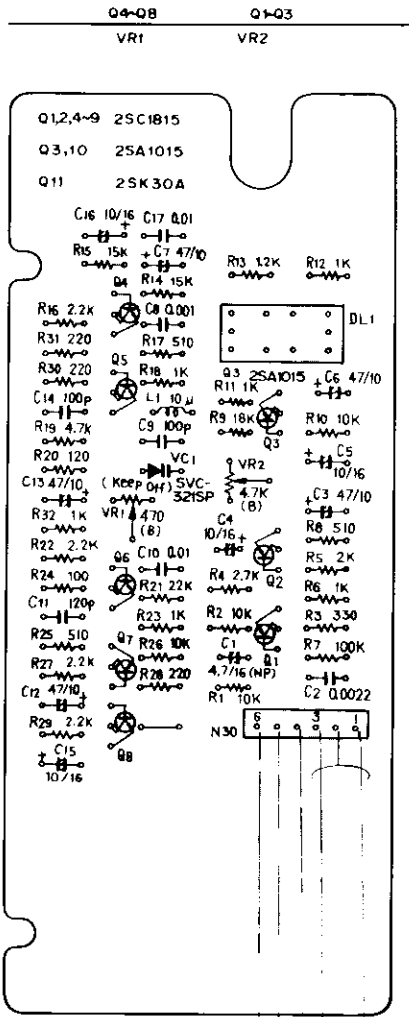


2SA505
2SC495

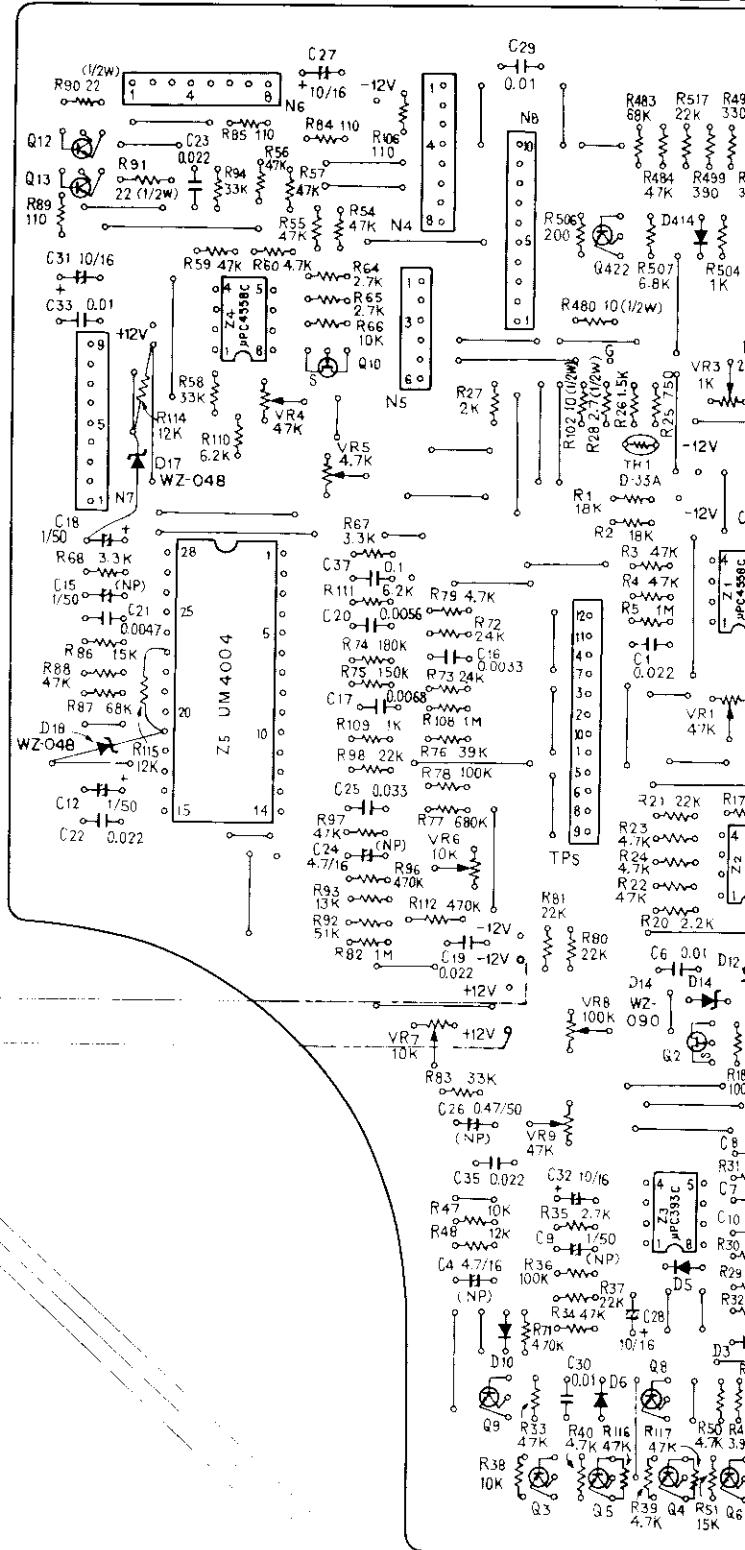


VSOP (VWS-022),
CPCB (VWV-023),
PSCB (VWG-043)

CPCB

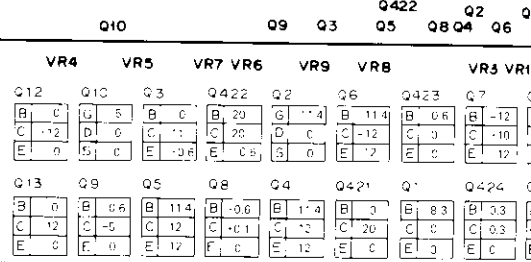


VSOP



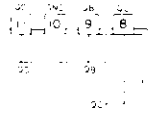
Z4
Z5

Z3
Z1
Z2



070

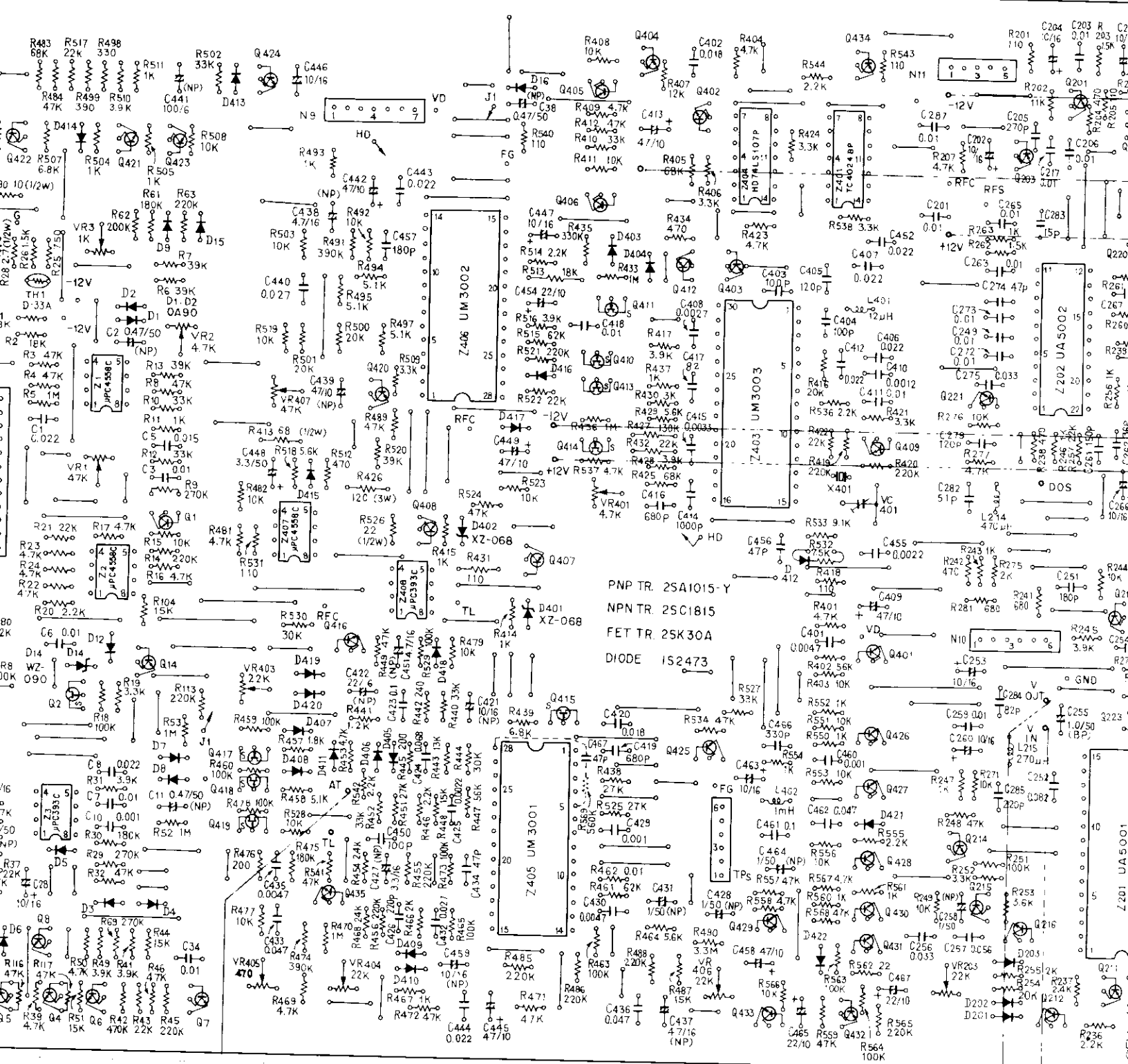
3P
3BN



05
05



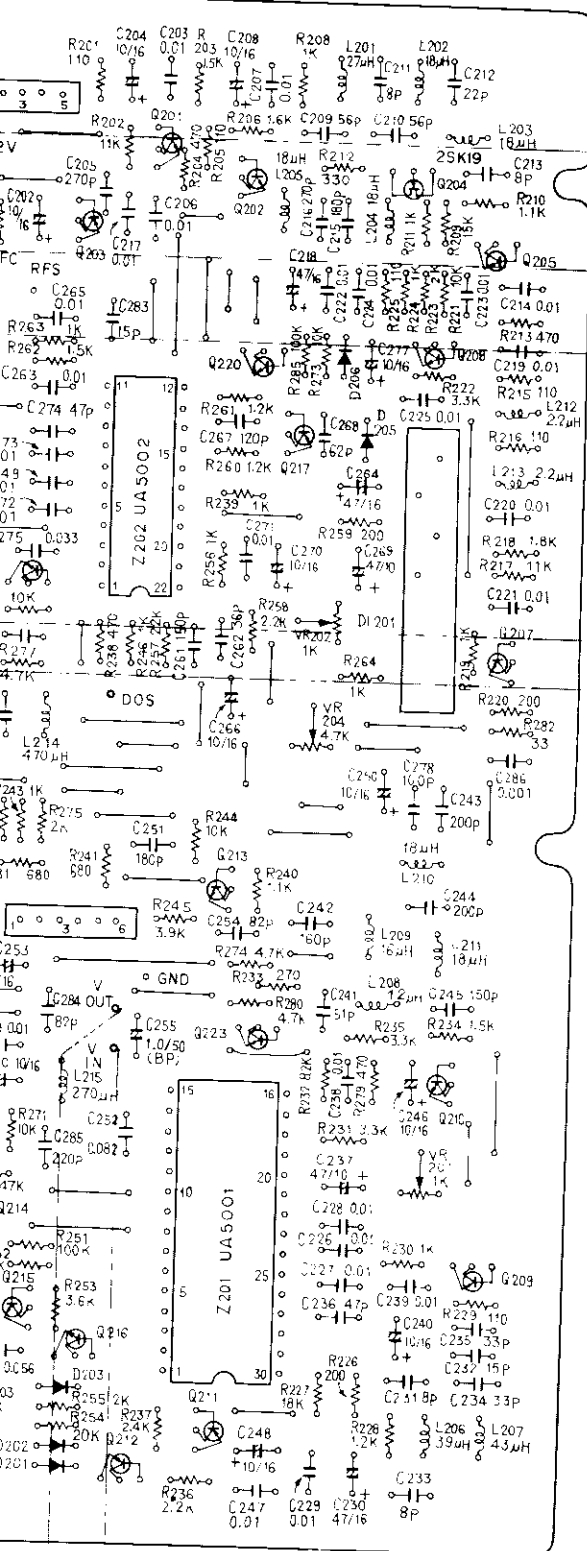
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|----|------|------|------|------|------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Z3 | Z1 | Z2 | Z407 | Z408 | Z406 | Z405 | Q405 | Z404 | Z403 | Z401 | Q409 | Z202 | | | | | | | | | | | | | | | |
| Q422 | Q2 | Q421 | Q423 | Q424 | Q416 | Q420 | Q406 | Q411 | Q404 | Q402 | Q403 | Q429 | Q432 | Q430 | Q431 | Q224 | Q215 | Q203 | Q201 | Q212 | | | | | | | |
| Q5 | Q8 | Q4 | Q6 | Q14 | Q1 | Q7 | Q417-Q419 | Q435 | Q408 | Q407 | Q415 | Q410 | Q413 | Q414 | Q404 | Q402 | Q403 | Q429 | Q433 | Q434 | Q430 | Q431 | Q224 | Q215 | Q203 | Q201 | Q212 |



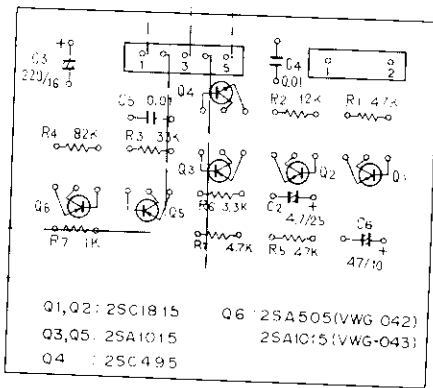
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- NPN TR. 2SC1815
- FET TR. 2SK30A
- DIODE 1S2473

Z202 Z201
 Q221 Q203 Q201 Q202 Q205
 Q224 Q215 Q216 Q212 Q213 Q220 Q217 Q204 Q208 Q210 Q209

| | | | | | | | | |
|-------|-------|-------|----------------|-------|-------|-------|--|--|
| 203 | | | VR202 VR204 | | | VR201 | | |
| Q202 | Q213 | Q211 | Q223 | Q208 | Q205 | Q209 | | |
| B 1 2 | B 1 3 | B 1 4 | B 1 5 | B 1 6 | B 1 7 | B 1 8 | | |
| C 1 1 | C 1 2 | C 1 3 | C 1 4 | C 1 5 | C 1 6 | C 1 7 | | |
| E 1 1 | E 1 2 | E 1 3 | E 1 4 | E 1 5 | E 1 6 | E 1 7 | | |
| Q206 | Q220 | Q217 | Q204 | Q210 | Q207 | | | |
| B 1 1 | H 1 1 | B 1 2 | D 1 1 | B 1 3 | B 1 4 | | | |
| C 1 1 | C 1 2 | C 1 3 | C 1 4 | C 1 5 | C 1 6 | | | |
| E 1 1 | E 1 2 | E 1 3 | E 1 4 | E 1 5 | E 1 6 | | | |



PSCB



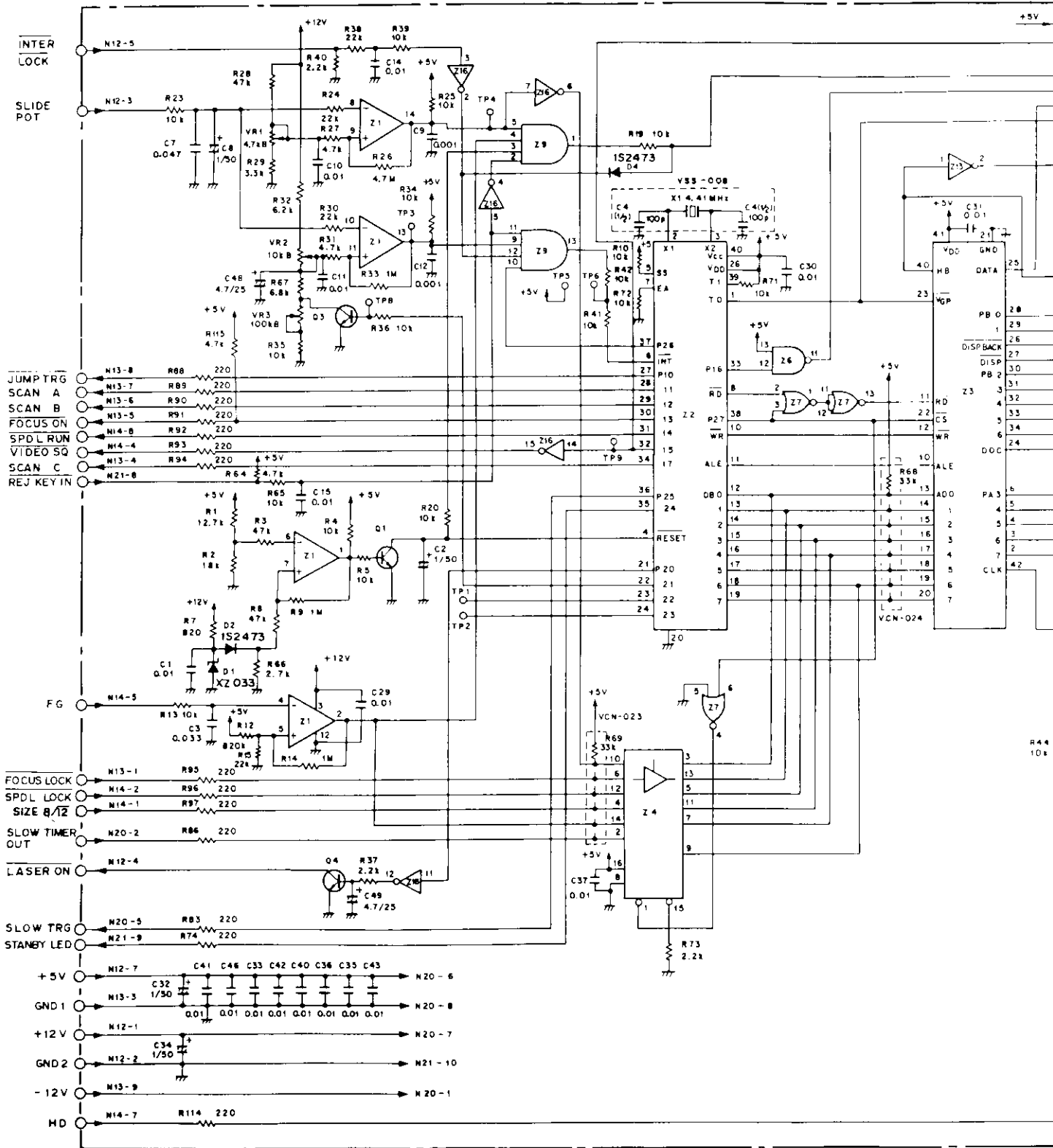
4. CONT and GATB

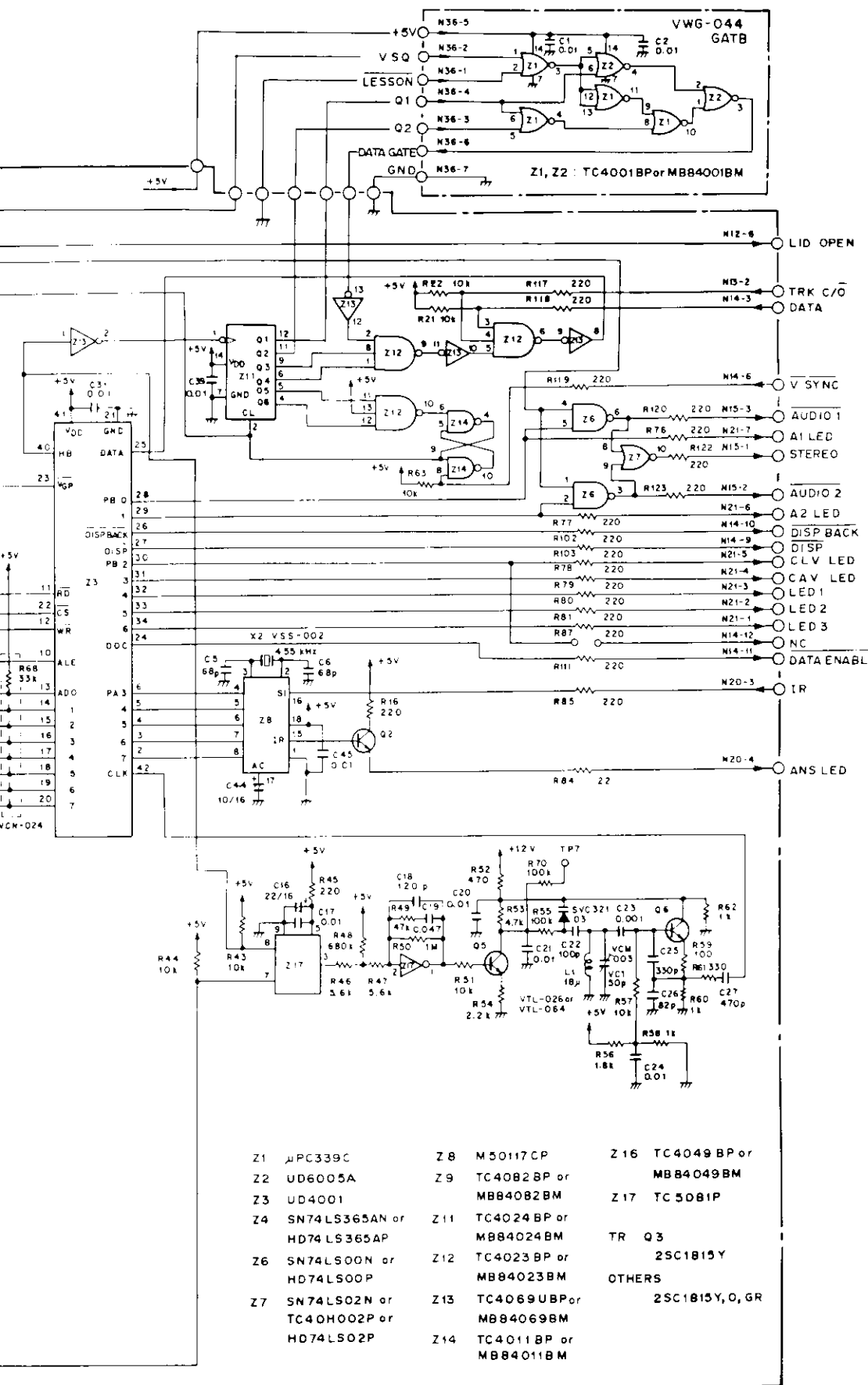
A

B

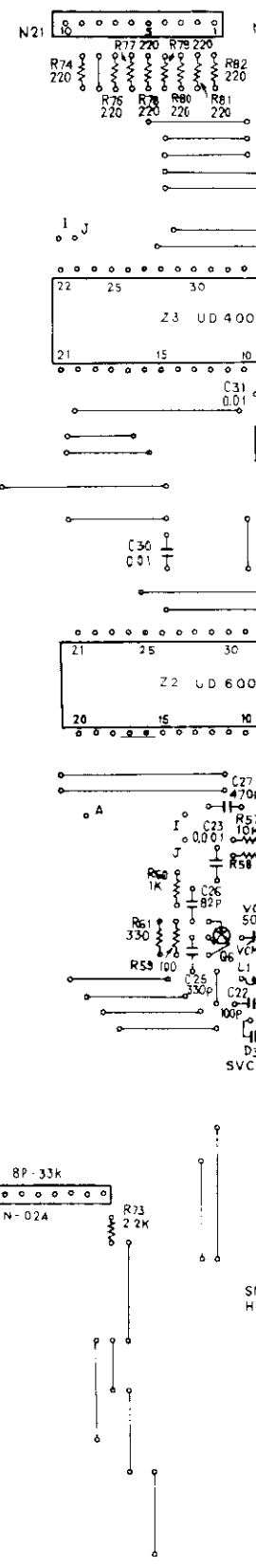
C

D

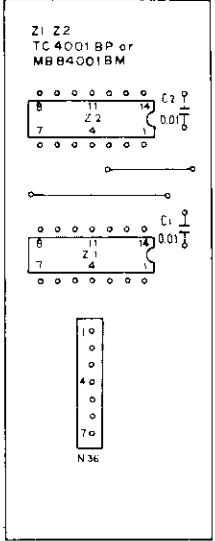
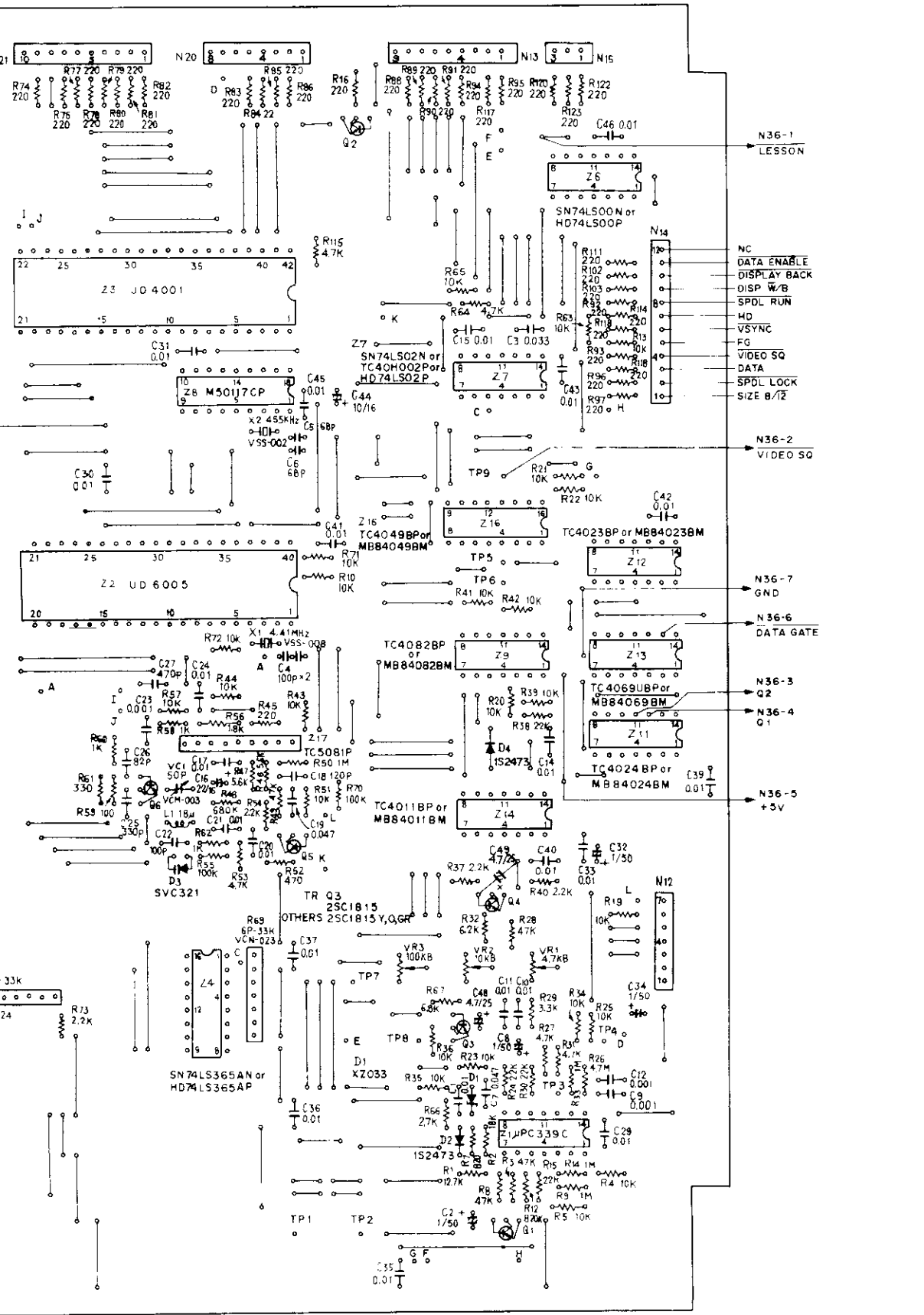




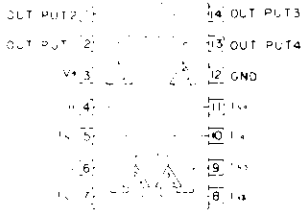
- | | | | | | |
|----|-------------------------------------|-----|------------------------|--------|-----------------------|
| Z1 | μPC339C | Z8 | M50117CP | Z16 | TC4049BP or MB84049BM |
| Z2 | UD6005A | Z9 | TC40828P or MB840828BM | Z17 | TC5081P |
| Z3 | UD4001 | Z11 | TC4024BP or MB84024BM | TR | Q3 |
| Z4 | SN74LS365AN or HD74LS365AP | Z12 | TC4023BP or MB84023BM | OTHERS | 25C1815Y |
| Z6 | SN74LS00N or HD74LS00P | Z13 | TC4069UBP or MB84069BM | | 25C1815Y, O, GR |
| Z7 | SN74LS02N or TC40H002P or HD74LS02P | Z14 | TC4011BP or MB84011BM | | |



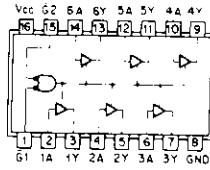
Z2 Z3 Z4 Z6 Z7 Z14 Z9 Z16 Z7 Z1 Z6 Z1-Z12
 Q6 Q5 Q2 VR3 VR2 VR1



μPC339C



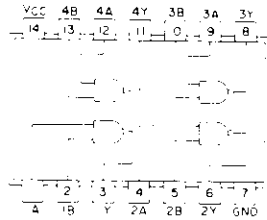
SN74LS365AN
HD74LS365AP



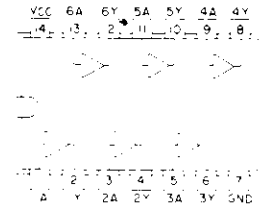
MB84023BM
TC4023BP



HD74LS00P
SN74LS00N



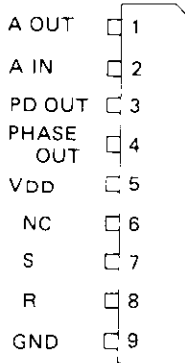
MB84069B
TC4069BP
MB84069BM
TC4069BP



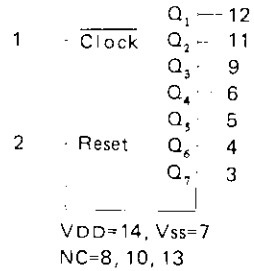
UD6005A

| | | | |
|-------|----|----|------------------|
| T0 | 1 | 40 | Vcc |
| XTAL1 | 2 | 39 | T1 |
| XTAL2 | 3 | 38 | P2 ₅ |
| RESET | 4 | 37 | P2 ₆ |
| SS | 5 | 36 | P2 ₇ |
| INT | 6 | 35 | P2 ₈ |
| EA | 7 | 34 | P1 ₁ |
| RD | 8 | 33 | P1 ₂ |
| PSEN | 9 | 32 | P1 ₃ |
| WR | 10 | 31 | P1 ₄ |
| ALE | 11 | 30 | P1 ₅ |
| DB0 | 12 | 29 | P1 ₆ |
| DB1 | 13 | 28 | P1 ₇ |
| DB2 | 14 | 27 | P1 ₈ |
| DB3 | 15 | 26 | VDD |
| DB4 | 16 | 25 | PROG |
| DB5 | 17 | 24 | P2 ₉ |
| DB6 | 18 | 23 | P2 ₁₀ |
| DB7 | 19 | 22 | P2 ₁₁ |
| Vss | 20 | 21 | P2 ₁₂ |

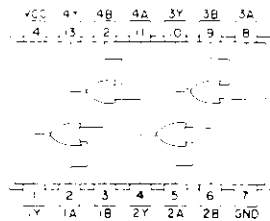
TC5081AP



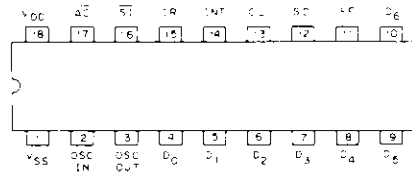
MB84024B
TC4024BP
DIP14P



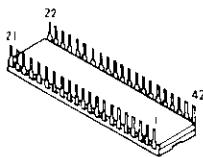
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SN74LS02N
TC40H002P



M50117CP



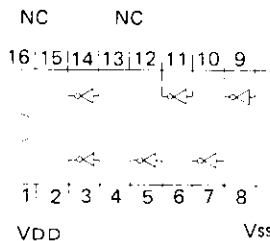
UD4001



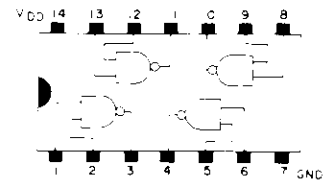
2SA1015
2SC1815



TC4049BP
MB84049BM



TC4011BP
MB84011BM



CONT (VWG-052)

SEMICONDUCTORS

| Part No. | Symbol & Description |
|------------------------------|----------------------|
| μPC339C | Z1 |
| UD6005A | Z2 |
| UD4001 | Z3 |
| SN74LS365AN (HD74LS365AP) | Z4 |
| SN74LS00N (HD74LS00P) | Z6 |
| SN74LS02N (TC40H002P) | Z7 |
| M50117CP | Z8 |
| TC4082BP (MB84082BM) | Z9 |
| TC4024BP (MB84024BN) | Z11 |
| TC4023BP (MB84023BM) | Z12 |
| TC4069UBP (MB84069BM) | Z13 |
| TC4011BP (MB84011BM) | Z14 |
| TC4049BP (MB84049BM) | Z16 |
| TC5081P (TC5081AP) | Z17 |
| 2SC1815-O/Y/GR | Q1, Q2, Q4-Q6 |
| 2SC1815-Y | Q3 |
| XZ-033 | D1 |
| 1S2473 | D2, D4 |
| SVC321-B1 or D1 | D3 |

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

| Part No. | Symbol & Description |
|--------------|---|
| RN¼PR □□□□ F | R1, R2 |
| RD¼VS □□□□ J | R3-R5, R7-R10, R12-R16, R20-R67, R70-R72, R74, R76-R86, R88-R97, R102, R103, R111, R114, R115, R117-R120, R122, R123 |
| VCN-024 | R68 |
| VCN-023 | R69 |
| VCP-026 | VR1 |
| VCP-027 | VR2 |
| VCP-030 | VR3 |

CAPACITORS

| Part No. | Symbol & Description |
|---------------|--|
| CKDYF 103Z 50 | C1, C10, C11, C14, C15, C17, C20, C21, C24, C29-C31, C33, C35-C37, C39-C43, C45, C46 |
| CEA 010M 50 | C2, C8, C32, C34 |
| CKDYF 333Z 50 | C3 |
| CCDSL 680J 50 | C5, C6 |
| CQMA 473K 50 | C7, C19 |
| CKDYB 102K 50 | C9, C12, C23 |
| CEA 220M 16 | C16 |
| CCDSL 121J 50 | C18 |
| CCDSL 101J 50 | C22 |
| CKDYB 331K 50 | C25 |
| CCDSL 820J 50 | C26 |
| CKDYB 471K 50 | C27 |
| CEA 100M 16 | C44 |
| CEA 4R7M 25 | C48 |
| VCM-003 | VC1 |

COILS

| Part No. | Symbol & Description |
|----------------------|----------------------|
| VTL-026 (VTL-064) | L1 |
| VSS-008 | X1 |
| VSS-002 | X2 |
| VKH-017 | IC socket (42P) |
| VKH-018 | IC socket (40P) |

GATB (VWG-044)

| Part No. | Symbol & Description |
|-------------------------|----------------------|
| TC4001BP (MB84001BM) | Z1, Z2 |
| Part No. | Symbol & Description |
| CKDYF103Z50 | C1, C2 |

1

2

3

5. EXPLODED VIEW AND PARTS LIST

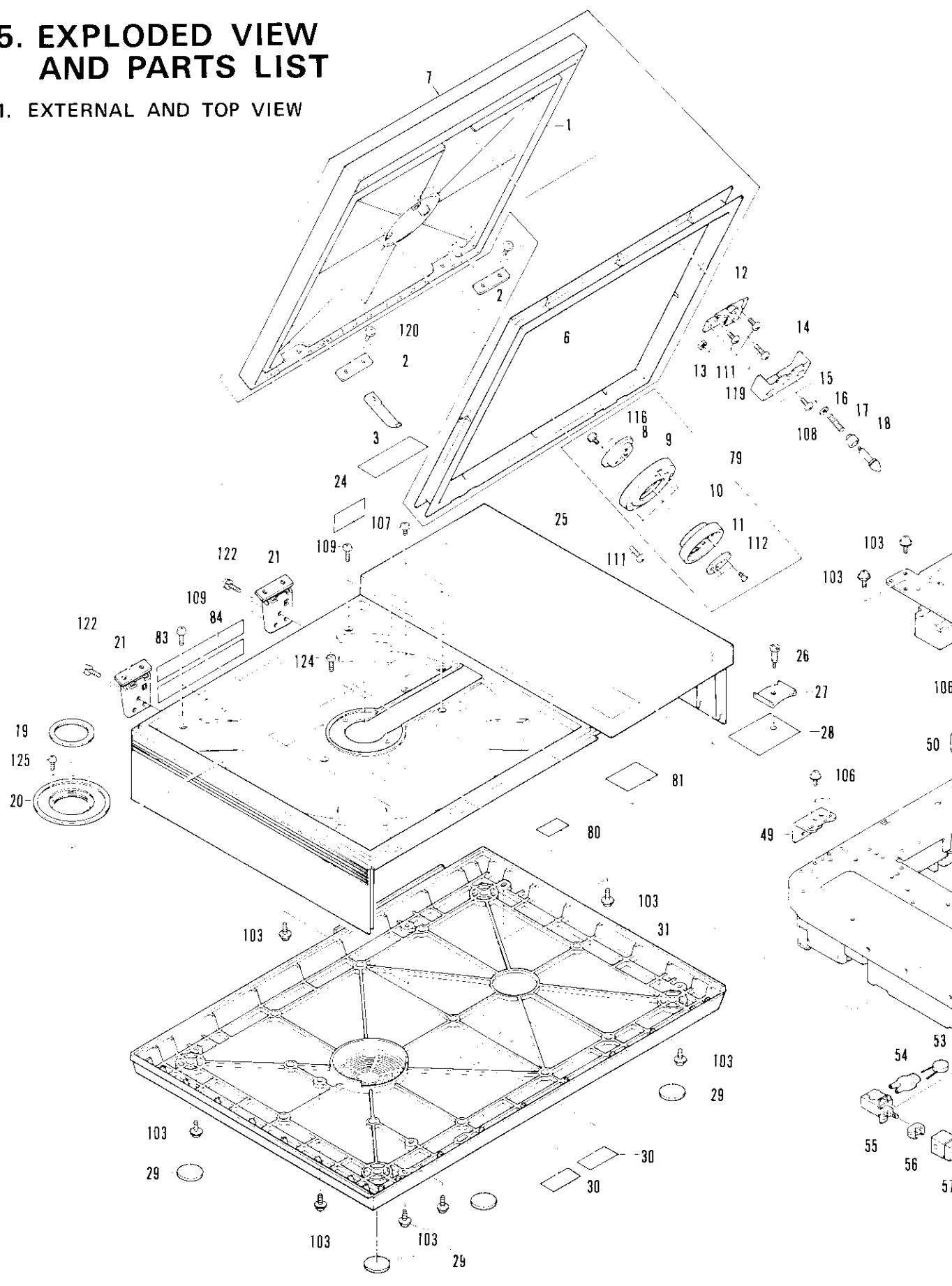
1. EXTERNAL AND TOP VIEW

A

B

C

D



1

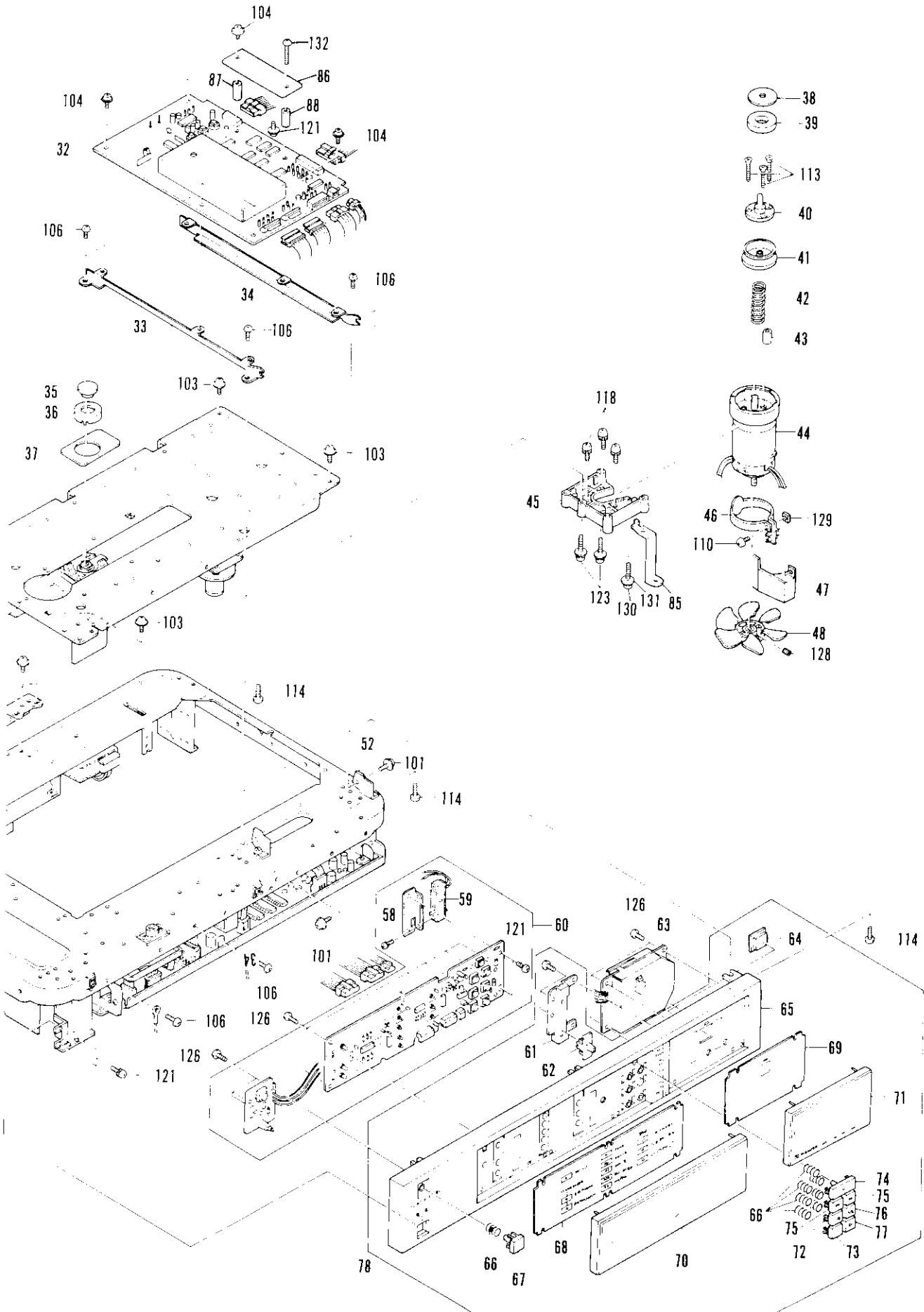
2

3

4

5

6



A

B

C

D

4

5

6

Parts List (Serial No. 3611501 ~

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description | Mark | No. |
|------|-----|-----------------|-------------------------------|------|-----|----------|----------------------|------|-----|
| | 1 | | Lid | | 51 | | Angle | | 1 |
| | 2 | VNE-244 | Plate | | 52 | | Angle | | 1 |
| | 3 | VNE-286 | Lid lever | | 53 | VCG-011 | Capacitor | | 1 |
| | 4 | | | | 54 | VEC-063 | Cover | | 1 |
| | 5 | | | | 55 | VSA-003 | Power switch | | 1 |
| | 6 | | Insulation rubber | | 56 | VEC-070 | Flexible ring | | 1 |
| | 7 | VXX-044 | Lid assembly | | 57 | VAC-068 | Power button | | 1 |
| | 8 | | Clamper holder | | 58 | | Holder | | 1 |
| | 9 | | Clamp cover | | 59 | VCS-006 | Slide volume | | 1 |
| | 10 | | Clamper | | 60 | VWW-025 | KEYC | | 1 |
| | 11 | | Plate | | 61 | VNL-075 | Volume plate | | 1 |
| | 12 | VNE-243 | Inter lock base | | 62 | VNL-074 | Slide knob | | 1 |
| | 13 | VLA-040 | Nut | | 63 | VWG-028 | IRAB | | 1 |
| | 14 | VNL-076 | Inter lock protector | | 64 | VAP-013 | IR filter | | 1 |
| | 15 | VLL-078 | Washer | | 65 | VNK-047 | Front panel | | 1 |
| | 16 | VBH-056 | Spring | | 66 | VBH-051 | Key spring | | 1 |
| | 17 | VNL-022 | Inter lock collar | | 67 | VAC-069 | REJECT/OPEN key | | 1 |
| | 18 | VLA-055 | Inter lock pin | | 68 | | Display board (L) | | 1 |
| | 19 | VNL-077 | Ring | | 69 | | Display board (R) | | 1 |
| | 20 | VNG-004 | Turn table | | 70 | VNK-042 | Window (L) | | 1 |
| | 21 | VXA-053 | Hinge | | 71 | VNK-044 | Window (R) | | 1 |
| | 22 | | Label | | 72 | VAC-052 | 1/L key | | 1 |
| | 23 | | | | 73 | VAC-062 | PAUSE key | | 1 |
| | 24 | VRW-017 | Caution label (A) | | 74 | VAC-061 | PLAY key | | 1 |
| | 25 | VNK-051 | Top housing | | 75 | VAC-060 | SCAN key | | 1 |
| | 26 | VLL-063 | Shipping screw | | 76 | VAC-053 | 2/R key | | 1 |
| | 27 | VNE-276 | Shipping plate | | 77 | VAC-070 | CX key | | 1 |
| | 28 | VRW-034 | Caution tag | | 78 | VXX-035 | Front panel assembly | | 1 |
| | 29 | VED-008 | Cushion | | 79 | VXX-041 | Clamper assembly | | 1 |
| | 30 | VRW-050 | UL caution label | | 80 | VRW-022 | Caution label (C) | | 1 |
| | 31 | VNK-036 | Under housing | | 81 | VRW-048 | Service call label | | 1 |
| | 32 | VWG-052 | CONT | | 82 | VRW-095 | Caution label | | 1 |
| | 33 | | Holder | | 83 | | Name plate B | | 1 |
| | 34 | | Holder | | 84 | | Name plate A | | 1 |
| | 35 | VHA-012 | Lens cap | | 85 | VNE-289 | Angle | | 1 |
| | 36 | VNH-016 | Stopper | | 86 | VWG-044 | GATB | | 1 |
| | 37 | | Cover | | 87 | VLL-081 | Post | | 1 |
| | 38 | VEC-062 | Yoke seal | | 88 | VLL-087 | Spacer | | 1 |
| | 39 | VMX-001 | Clamper magnet | | 89 | | | | 1 |
| | 40 | VXA-062 | Yoke assembly | | 90 | | | | 1 |
| | 41 | VNV-003 | Centering hub | | 91 | | | | 1 |
| | 42 | VBH-034 | Centering spring | | 92 | | | | 1 |
| | 43 | VLP-005 | Cup spacer ring | | 93 | | | | 1 |
| | 44 | VXM-013 or -015 | Spindle motor | | 94 | | | | 1 |
| | 45 | | Spindle motor holder assembly | | 95 | | | | 1 |
| | 46 | VCX-004 | Thru type capacitor assembly | | 96 | | | | 1 |
| | 47 | | Cover | | 97 | | | | 1 |
| | 48 | VNM-001 | Fan | | 98 | | | | 1 |
| | 49 | | Plate | | 99 | | | | 1 |
| | 50 | | Plate | | 100 | | | | 1 |

| Mark | No. | Part No. | Description |
|------|-----|----------------|-------------|
| | 101 | ACZ 30P060 FMC | |
| | 102 | AMZ 30P060 FMC | |
| | 103 | AMZ 30P080 FMC | |
| | 104 | ASZ 30P060 FMC | |
| | 105 | BBZ 30P080 FNI | |
| | 106 | BCZ 30P050 FMC | |
| | 107 | BMZ 30P040 FNI | |
| | 108 | BMZ 30P060 FZK | |
| | 109 | BMZ 30P080 FNI | |
| | 110 | BMZ 40P100 FMC | |
| | 111 | BPZ 30P080 FZK | |
| | 112 | CMZ 26P080 FZK | |
| | 113 | CMZ 26P180 BNI | |
| | 114 | IPZ 30P080 FMC | |
| | 115 | PMA 26P050 FMC | |
| | 116 | PMA 26P060 FMC | |
| | 117 | PMA 30P060 FMC | |
| | 118 | PMA 30P080 FMC | |
| | 119 | PMA 30P120 FZK | |
| | 120 | PMA 40P120 FZK | |
| | 121 | PMB 30P060 FMC | |
| | 122 | PMB 30P100 FZK | |
| | 123 | PMB 30P200 FMC | |
| | 124 | PMZ 26P050 FMC | |
| | 125 | PMZ 26P060 FMC | |
| | 126 | VPZ 30P060 FMC | |
| | 127 | VPZ 30P080 FMC | |
| | 128 | ZMD 30H040 FBT | |
| | 129 | NZ 40 FMC | |
| | 130 | PMA 30P220 FMC | |
| | 131 | WA 32F080 N100 | |
| | 132 | VCZ30P200FMC | |

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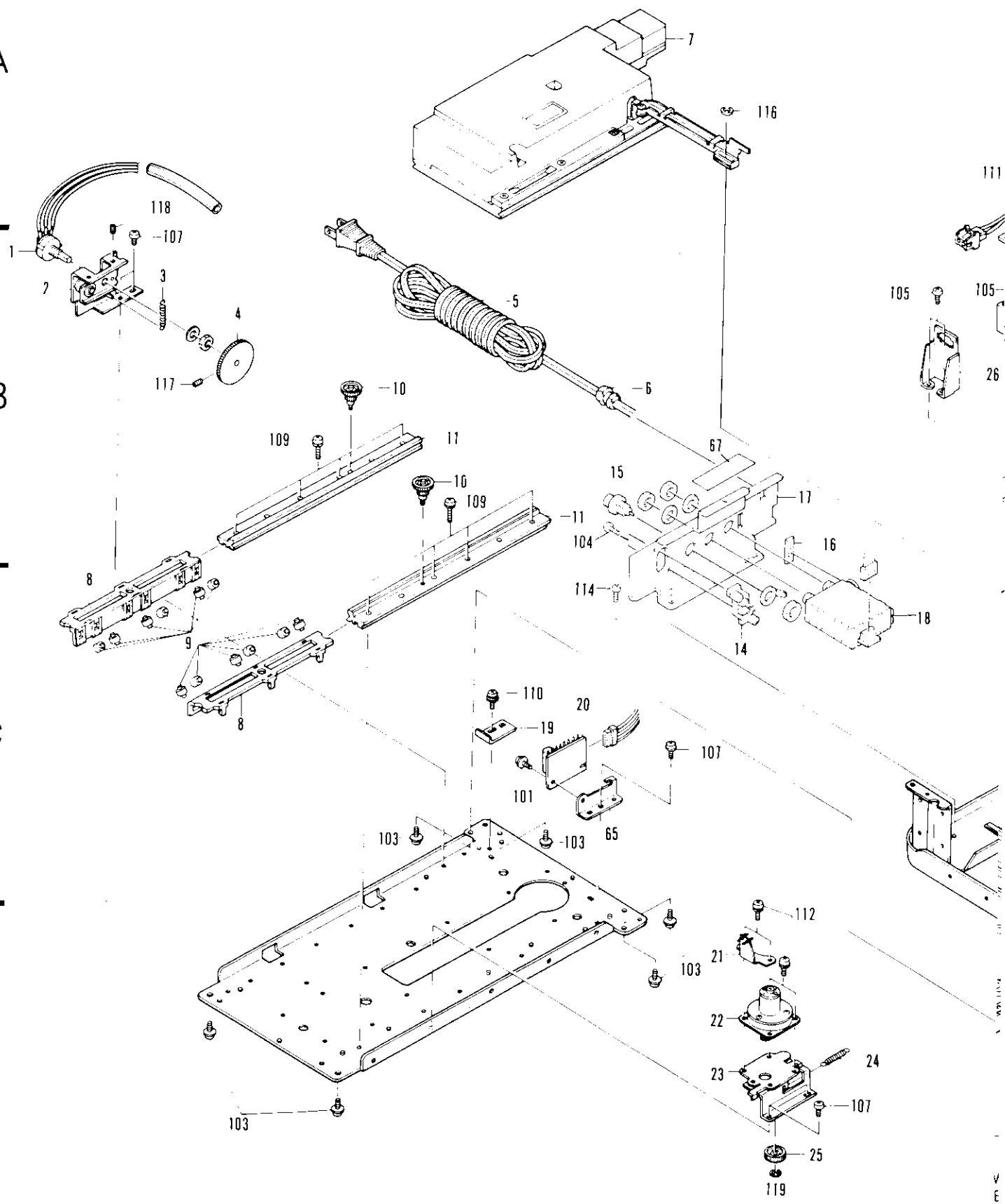
2. BOTTOM VIEW

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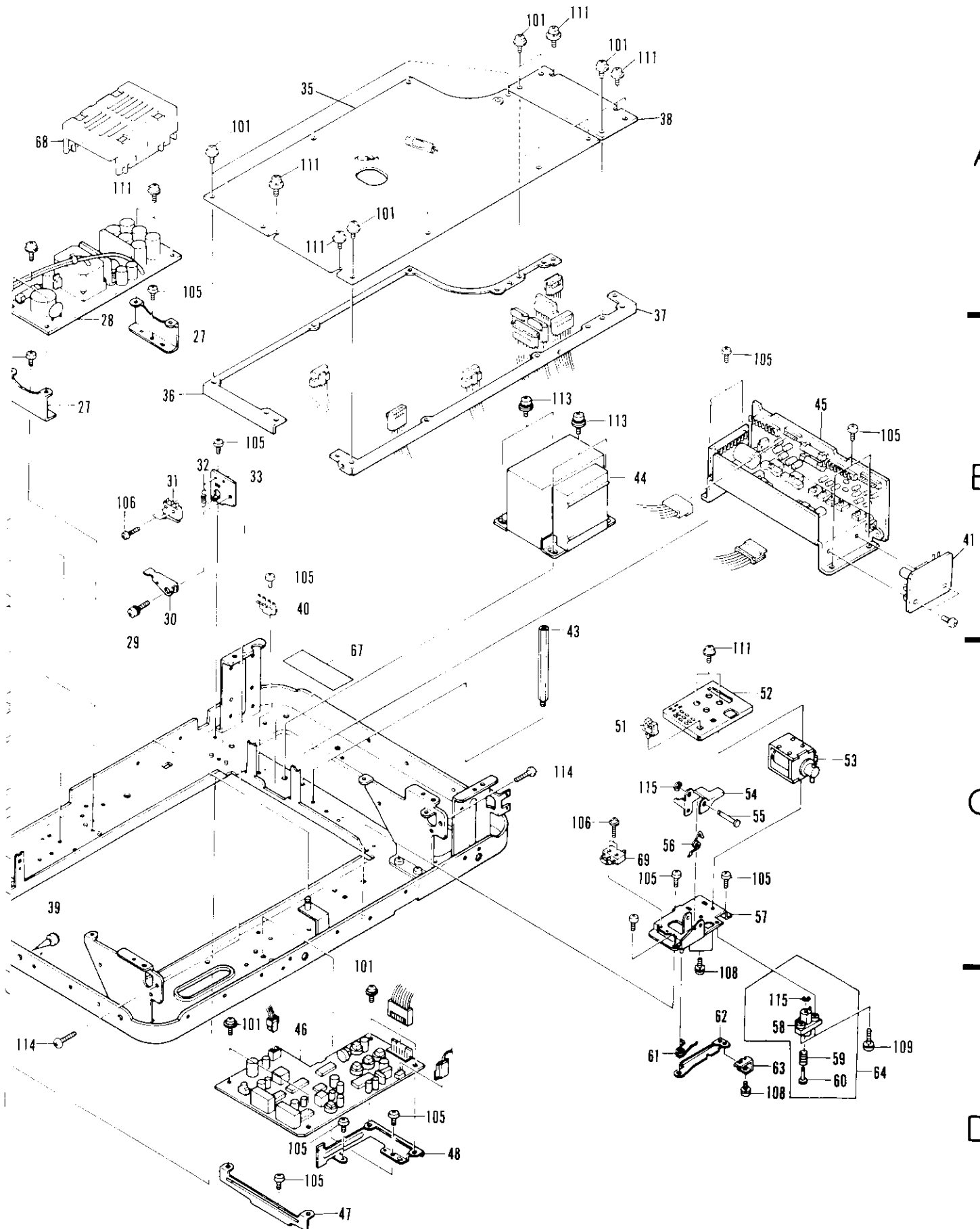
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Parts list (Serial No. 3611501 ~

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|------|-----|----------|------------------------------|------|-----|----------------|-------------------------------|
| | 1 | VCS-005 | Potentiometer | | 51 | | Wire clip |
| | 2 | VXA-059 | Gear assembly | | 52 | | Cover |
| | 3 | VBH-042 | Spring | | 53 | VXP-005 | Plunger |
| | 4 | VNL-045 | Pinion | | 54 | | Inter lock link |
| | 5 | VDG-003 | Power cord | | 55 | | Pin |
| | 6 | VEC-027 | Cord stopper | | 56 | VBH-045 | Spring |
| | 7 | VGX-023 | Slider assembly | | 57 | | Holder |
| | 8 | VNL-031 | Retainer (A) | | 58 | | Inter link pin guide |
| | 9 | VNL-034 | Roller | | 59 | | Spring |
| | 10 | VXX-006 | Retainer pinion assembly | | 60 | | Pin |
| | 11 | VNG-002 | Rail | | 61 | VBH-043 | Spring |
| | 12 | VLL-082 | Nut | | 62 | | Inter lock |
| | 13 | VNE-270 | Washer | | 63 | | Joint |
| | 14 | VKB-003 | 2P pin jack | | 64 | VXX-039 | Inter lock pin guide assembly |
| | 15 | VKN-070 | F type jack | | 65 | | Holder |
| | 16 | VEC-080 | Blind | | 66 | | |
| | 17 | VNE-269 | Rear terminal board | | 67 | VRW-021 | Caution label (B) |
| | 18 | VWL-006 | RFMD | | 68 | VXX-055 | High voltage cover |
| | 19 | | Stopper | | 69 | VSF-006 | Micro switch |
| | 20 | VWM-001 | MCNB | | 70 | | |
| | 21 | VCX-003 | Thru type capacitor assembly | | 71 | | |
| | 22 | VXM-010 | Slider motor | | 72 | | |
| | 23 | VXA-054 | Slider motor holder | | 73 | | |
| | 24 | VBH-041 | Spring | | 74 | | |
| | 25 | VNL-028 | Pinion B | | 75 | | |
| | 26 | | Connector holder | | 76 | | |
| | 27 | | Holder | | 77 | | |
| | 28 | VWR-011 | LSPS | | 78 | | |
| | 29 | | Screw | | 79 | | |
| | 30 | | Actuator | | 80 | | |
| | 31 | VSF-007 | Micro-switch | | 101 | ACZ 30P060 FMC | |
| | 32 | VBH-040 | Micro-switch spring | | 102 | AMZ 30P060 FMC | |
| | 33 | | Base | | 103 | AMZ 30P080 FMC | |
| | 34 | | | | 104 | BBZ 30P080 FZK | |
| | 35 | VWS-022 | VSOP | | 105 | BCZ 30P050 FMC | |
| | 36 | | Holder | | 106 | IMZ 20P100 FMC | |
| | 37 | | Holder | | 107 | PMA 30P050 FMC | |
| | 38 | VWV-023 | CPCB | | 108 | PMA 30P060 FMC | |
| | 39 | VEB-031 | Slider cushion | | 109 | PMA 30P120 FMC | |
| | 40 | VKC-005 | 4P terminal | | 110 | PMA 40P060 FMC | |
| | 41 | VWG-043 | PSCB | | 111 | PMB 30P060 FMC | |
| | 42 | | | | 112 | PMB 30P080 FMC | |
| | 43 | | Post | | 113 | PMB 40P080 FMC | |
| | 44 | VTT-016 | Power transformer | | 114 | VCZ 30P080 FMC | |
| | 45 | VWR-019 | SYPS | | 115 | YE 20 FUC | |
| | 46 | VWV-019 | AUDX | | 116 | YE 30 FUC | |
| | 47 | | Holder | | 117 | ZMD 30H060 FBT | |
| | 48 | | Holder | | 118 | ZMK 40H080 FBT | |
| | 49 | | | | 119 | | |
| | 50 | | | | | | |

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6. SAFETY CHECK

| | | |
|---|---|--------------|
| LaserDisc PIONEER LASER DISC PLAYER MODEL LD-1100 | AC 120V 60Hz 85W | VRW-097 |
| | PIONEER ELECTRONIC CORP. | |
| | NO. 4-1, MEGURO 1 CHOME, MEGURO-KU, TOKYO, 153, JAPAN. | |
| | MANUFACTURED BY UNIVERSAL PIONEER CORP TOKYO JAPAN | |
| | MANUFACTURED UNDER US PATENT 3,944,727 AND OTHER PATENTS PENDING. | |
| | MANUFACTURED | F SERIAL NO. |

A

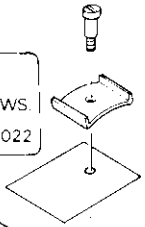
CERTIFICATION
THIS PRODUCT COMPLIES WITH
DHHS RULES 21 CFR
SUBCHAPTER J, PART 1040 AT
DATE OF MANUFACTURE.

SERVICING IS TO BE PERFORMED
ONLY WHILE THE APPLIANCE
IS DISCONNECTED FROM THE
BRANCH-CIRCUIT SUPPLY

FCC TYPE APPROVAL
NO. TV-720
VALID ONLY WHEN OPERATED
PURSUANT TO FCC RULES,
PART 15.

VRW 022

CAUTION
DO NOT REMOVE SCREWS.
SEE BOTTOM NOTICE
VRW 022

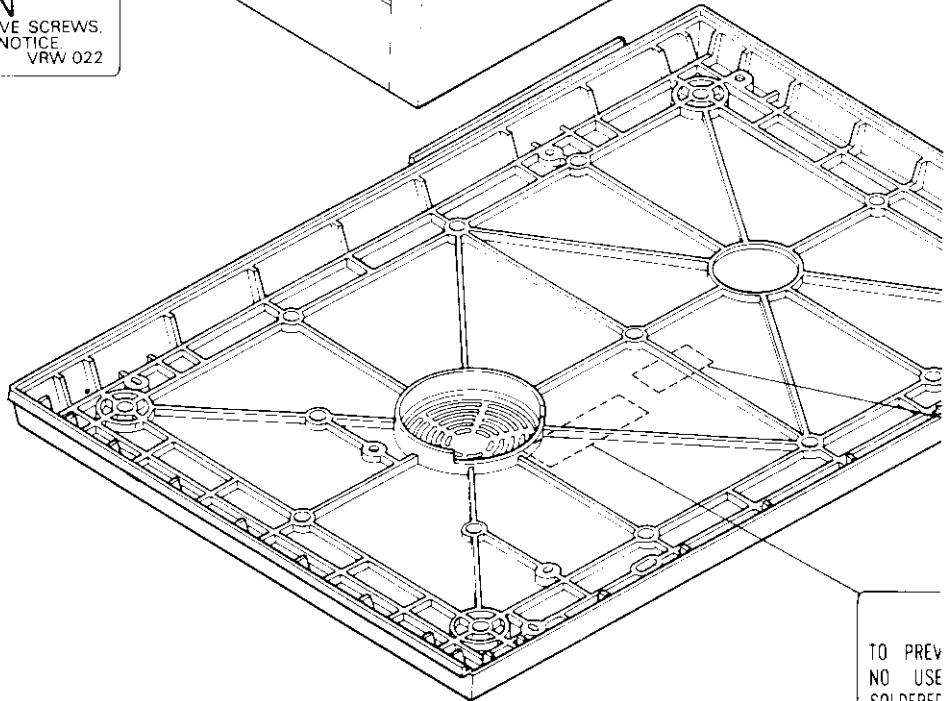


B

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CAUTION
DO NOT REMOVE SCREWS.
SEE BOTTOM NOTICE.
VRW 022

D



TO PREVENT
NO USE
SOLDERED
SERVICE

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pla
law



PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
UNIVERSAL PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER VIDEO, INC. 200 West Grand Avenue, Montvale, New Jersey 07645 U.S.A.
U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.

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