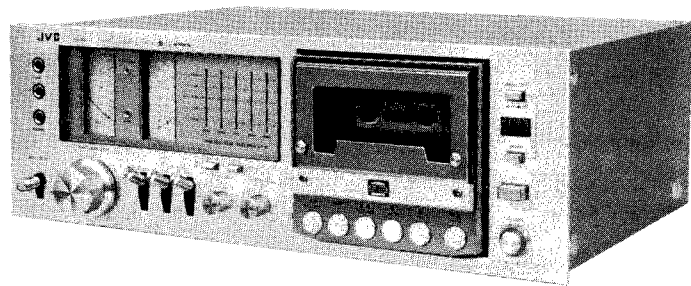


# JVC

# SERVICE MANUAL

MODEL  
**KD-85A/B/C/E/J/U**  
STEREO CASSETTE DECK



No. 4165  
February 1978

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# Specifications

|                                    |                                      |  |                                       |
|------------------------------------|--------------------------------------|--|---------------------------------------|
| Type                               | : Stereo cassette deck               | Rewind time                                  | : 85 sec. with C-60 cassette          |
| Track system                       | : 4-track, 2-channel                 | Playback equalizer time constant;            |                                       |
| Cassettes                          | : C-30, C-60, C-90                   | Normal/SF                                    | 3180 $\mu$ s/120 $\mu$ s              |
| Frequency response                 |                                      | SA/CrO <sub>2</sub> & Fe-Cr                  | 3180 $\mu$ s/70 $\mu$ s               |
| Chrome *1                          | : 20–18,000 Hz (Nominal)             | Semiconductors                               | : 18 ICs, 65 transistors, 94 diodes   |
|                                    | 30–16,000 Hz (Typical)               | (including 30 LEDs), 5 zener                 |                                       |
| SF *2                              | : 20–17,000 Hz (Nominal)             | diodes and 1 hall element                    |                                       |
|                                    | 30–16,000 Hz (Typical)               | Input terminals                              | : MIC jack x 2                        |
| Surpasses DIN 45 500               |                                      | Max. sensitivity; 0.2 mV                     |                                       |
| *1 ..... TDK-SA or Equivalent      |                                      | Matching impedance; 600 $\Omega$ –10k        |                                       |
| *2 ..... MAXELL-UD or Equivalent   |                                      | Input jack x 2                               |                                       |
| Signal-to-Noise ratio              | : 56 dB (from peak level, weighted)  | Min. input level; 80 mV                      |                                       |
|                                    | The S/N is improved by 5 dB at       | Input impedance; 10 k $\Omega$               |                                       |
|                                    | 1 kHz and by 10 dB above 5 kHz       | Output terminals                             | : Output jack x 2                     |
|                                    | with ANRS on.                        | Output level; 0–0.5 V                        |                                       |
| Effect of Super ANRS (normal tape) |                                      | Output impedance; 3.3 k $\Omega$             |                                       |
| Improvement of S/N:                | the same as with ANRS                | Matching load impedance;                     |                                       |
| Improvement of fre-                |                                      | 50 k $\Omega$ or more                        |                                       |
| quency response                    | : 0 VU recording; 6 dB at 10 kHz     | Headphone jack x 1                           |                                       |
|                                    | +5 VU recording; 12 dB at 10 kHz     | Output level; 0–0.5 mW                       |                                       |
| Improvement of                     |                                      | Matching impedance; 8 $\Omega$ –1 k $\Omega$ |                                       |
| distortion                         | : 0 VU recording; 3% less at 10 kHz  | DIN socket                                   | : Min. input level; 0.1 mV/k $\Omega$ |
| Wow and flutter                    | : 0.05% (WRMS)                       | Input impedance; 10 k $\Omega$               |                                       |
|                                    | 0.18% (DIN 45 500)                   | Output level; 0–0.5 V                        |                                       |
| Crosstalk                          | : 65 dB                              | Output impedance; 3.3 k $\Omega$             |                                       |
| Harmonic distortion                | : 1.2%                               | Matching load impedance;                     |                                       |
| Bias                               | : AC bias (95 kHz)                   | 50 k $\Omega$ or more                        |                                       |
| Erase                              | : AC erase (95 kHz)                  | Power requirement                            | : AC 120 V, 60 Hz (KD-85C/J)          |
| Heads                              | : Recording/playback; Sen-Alloy head | AC 120 V, 220 V, 240 V, 50/60 Hz             |                                       |
|                                    | Erase; Double gap, Ferrite head      | (KD-85A/B/E)                                 |                                       |
| Motors                             | : FG servo DC motor x 1              | AC 100 V, 120 V, 220 V, 50/60 Hz             |                                       |
|                                    | DC motor x 1                         | (KD-85U)                                     |                                       |
| Tape speed                         | : 4.8 cm/sec.                        | Power consumption                            | : 30 W                                |
| Recording time                     | : 2 x 30 minutes with C-60 cassette  | Dimensions                                   | : Width; 17-3/4" (450 mm)             |
| Fast forward time                  | : 85 sec. with C-60 cassette         | Height; 7-1/8" (158 mm)                      |                                       |
|                                    |                                      | Depth; 12-7/8" (327 mm)                      |                                       |
|                                    |                                      | Weight                                       | : 9.9 lbs (21.8 kg)                   |

Design and specifications are subject to change without notice.

## Features

- Full-logic 2-motor independent drive (ID) mechanism, with wow and flutter of 0.05 % (WRMS)
- Spectro-Peak Level Indicator (Utility Model pending), with its on-off switch
- Dual-ball cassette holder for stable tape transport
- SEN-ALLOY head for record/playback and two-gap ferrite head for erase
- ANRS and Super ANRS circuits in the IC form
- Geared and oil-damped cassette holder
- Recording equalizer switch for compensation of high frequency response
- Standby mechanism for repeated timer recording and playback
- Independent 3-step switchable bias and equalization tape select SWs.
- Memory counter
- Input selection for MIC/DIN or LINE
- Tape amount check light
- Direct recording from the playback mode. (During playback, the mode can be changed directly into the recording mode without stopping the tape.)
- Output level control possible.
- Rack handle mountable

## Controls and Connections

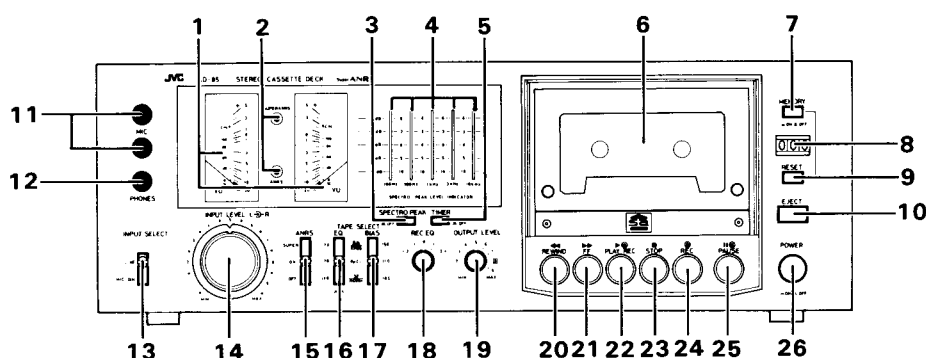


Fig. 1

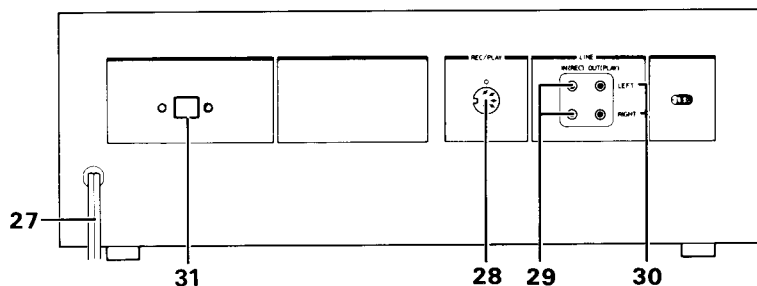


Fig. 2

- |  |  |
|--|--|
| 1. Level meters  | 15. ANRS switch                          |
| 2. ANRS indicator<br>Super ANRS indicator  | 16. Equalizer switch (EQ)                |
| 3. SPECTRO-PEAK switch   | 17. BIAS switch                          |
| 4. SPECTRO-PEAK LEVEL INDICATOR  | 18. Recording equalizer switch (REC EQ)  |
| 5. TIMER switch  | 19. OUTPUT LEVEL control                 |
| 6. Cassette door   | 20. Rewind button (◀◀ REWIND)            |
| 7. MEMORY switch   | 21. Fast forward button (▶▶ FF)          |
| 8. Tape counter  | 22. Playback button (▶ PLAY/REC)         |
| 9. Counter RESET button  | 23. Stop button (■ STOP)                 |
| 10. EJECT button   | 24. Recording button (REC)               |
| 11. Microphone jacks (MIC) L = Left channel<br>R = Right channel                 | 25. Pause button (   PAUSE)              |
| 12. Headphone jack (PHONES)  | 26. POWER switch                         |
| 13. INPUT SELECT switch  | 27. Power cord                           |
| 14. INPUT LEVEL controls inner knob = Left channel<br>outer ring = Right channel | 28. DIN socket (REC/PLAY)                |
|  | 29. LINE IN (REC) terminals              |
|  | 30. LINE OUT (PLAY) terminals            |
|  | 31. Voltage select switch (KD-85A/B/E/U) |

# Main Parts Location

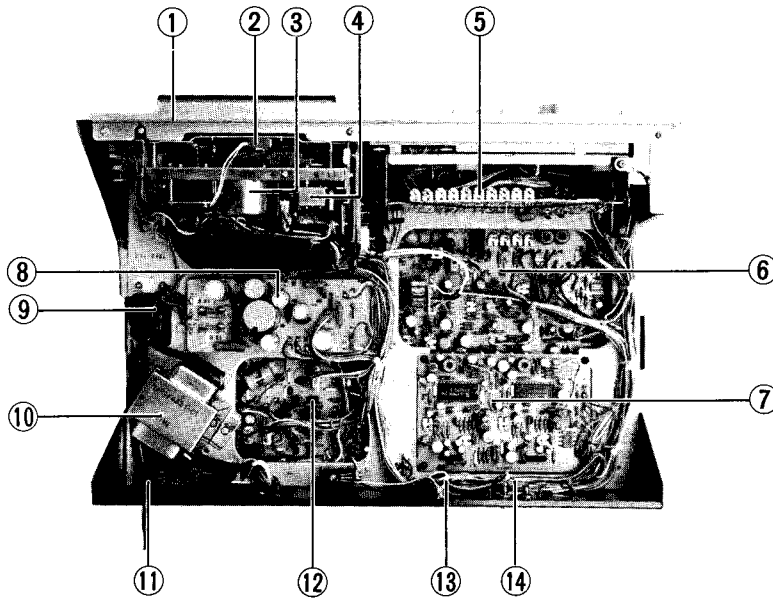


Fig. 3

1. Front panel ass'y
2. Pilot lamp and lamp cover
3. Reel motor
4. Solenoid ass'y for playback
5. Spectro-peak level P.W. board
6. Main amp. P.W. board
7. Super ANRS P.W. board
8. Power supply P.W. board
9. Power switch
10. Power transformer
11. Power cord
12. Control P.W. board
13. DIN socket
14. Pin jack ass'y
15. Select knob ass'y
16. Volume knob ass'y (Right channel)
17. Volume knob ass'y (Left channel)
18. Select knob ass'y knob ass'y
19. knob ass'y
20. Capstan motor
21. Socket ass'y

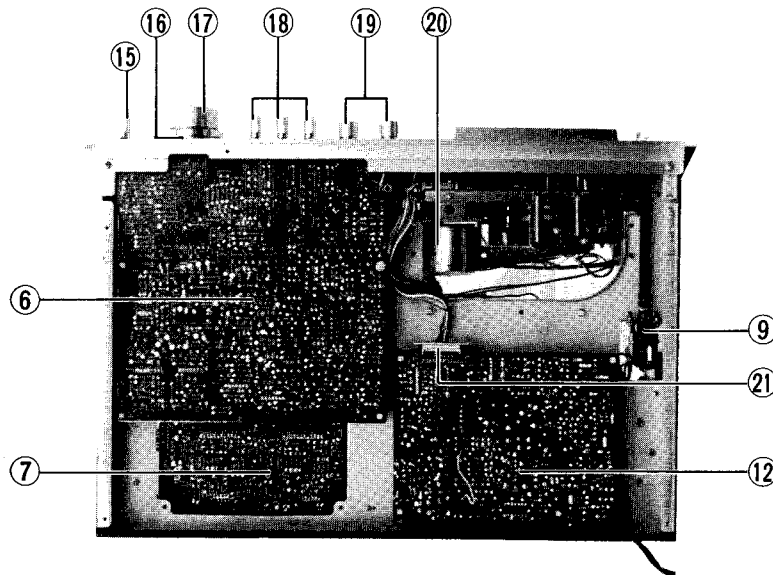


Fig. 4

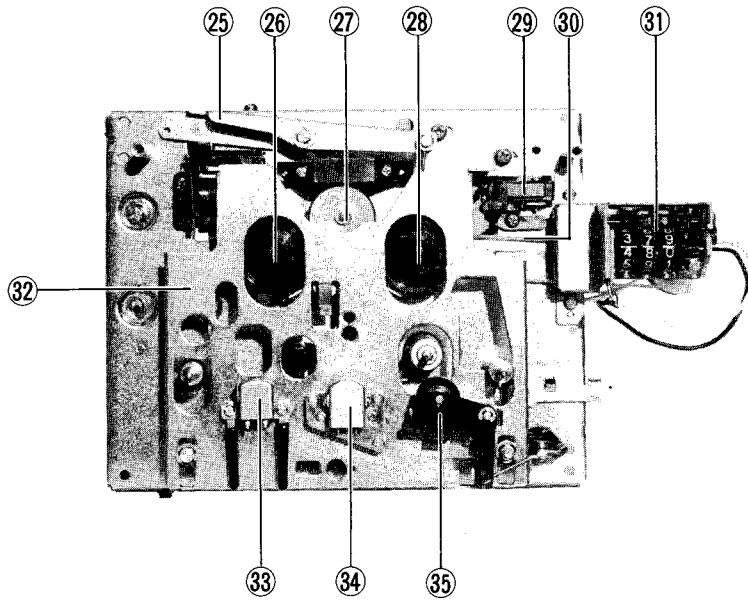


Fig. 5

- 25. Arm ass'y
- 26. Reel disk ass'y (Supply)
- 27. Idler ass'y
- 28. Reel disk ass'y (Take-up)
- 29. Microswitch
- 30. Counter belt
- 31. Counter ass'y
- 32. Slide base ass'y
- 33. Erase head
- 34. REC/PB head ass'y
- 35. Pinch roller bracket ass'y
- 36. Brake solenoid
- 37. Microswitch
- 38. Thrust holder
- 39. Flywheel ass'y
- 40. Solenoid (for Pause)
- 41. Motor P.W. board
- 42. Capstan belt

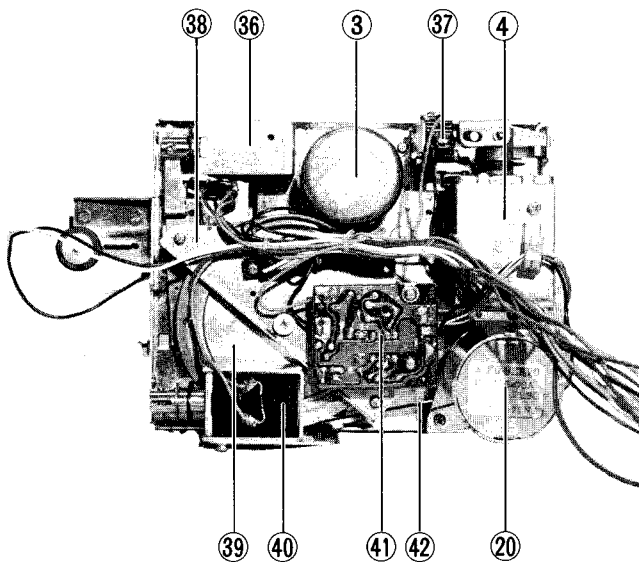


Fig. 6

# Information Regarding New Technical Developments

## 1. SPECTRO-PEAK LEVEL INDICATOR

### General description

In further developing our well-acclaimed Multi-point Peak Level Indicators, we completed the new Spectro-Peak Level Indicator which can indicate the distribution of frequency components of the input signal. The input signal is split into five frequency bands, to each of which a set of Multi-point Peak Level Indicators belong and flash according to the peak level of that particular frequency range.

This Spectro-Peak Level Indicator provides the following advantages:

- 1) It permits an "at-a-glance" visual check of the levels and frequencies of audio signals.
- 2) In combination with the VU meters, it permits low-distortion recordings throughout the entire frequency range, making full use of the tape's dynamic range. Especially with cassette tapes checking of the signal levels at high frequencies is essential due to their limited dynamic range at high frequencies. The usual way of level control using the VU meters or previous peak level indicators is not sufficient. The Spectro-Peak Level Indicator, having five separate rows of LED's corresponding to five frequency bands, allows checking the signal level in the particular high frequency range, helping adjust the recording level for optimum recording of high frequency sounds with no feeling of distortion.
- 3) The Spectro-Peak Level Indicator permits enjoying the sound not only with the ears, but also with the eyes, by visualizing the sound signals.

### Principle

Fig. 7 shows a block diagram of the Spectro-Peak Level Indicator. The input signal for each channel enters the emitter-follower and then, after being reduced in impedance, enters the five filters. These filters are composed of a low-pass filter ( $f_c = 1/2\pi C_1 R_1$ ), emitter-follower and high-pass filter ( $f_c = 1/2\pi C_2 R_2$ ) as shown in Fig. 8. The signal passes through the low-pass filter, emitter-follower and the high-pass filter in this order, and the emitter-follower functions in separating both filters. The frequency ranges and center frequencies of the five bands are as follows:

| Band   | Frequency Range | Center Frequency |
|--------|-----------------|------------------|
| Band 1 | 50–200 Hz       | 100 Hz           |
| Band 2 | 160–600 Hz      | 300 Hz           |
| Band 3 | 500–2 kHz       | 1 kHz            |
| Band 4 | 1.6–6 kHz       | 3 kHz            |
| Band 5 | Above 5 kHz     | 10 kHz           |

For simplification of the circuit, only a high-pass filter is employed for band 5. The outputs of these five filters are applied to the Multi-point Peak Level Indicator circuits, the same as those on other JVC models, which cause the LED's to light at five levels of +6, +3, 0, -5 and -10 dB.

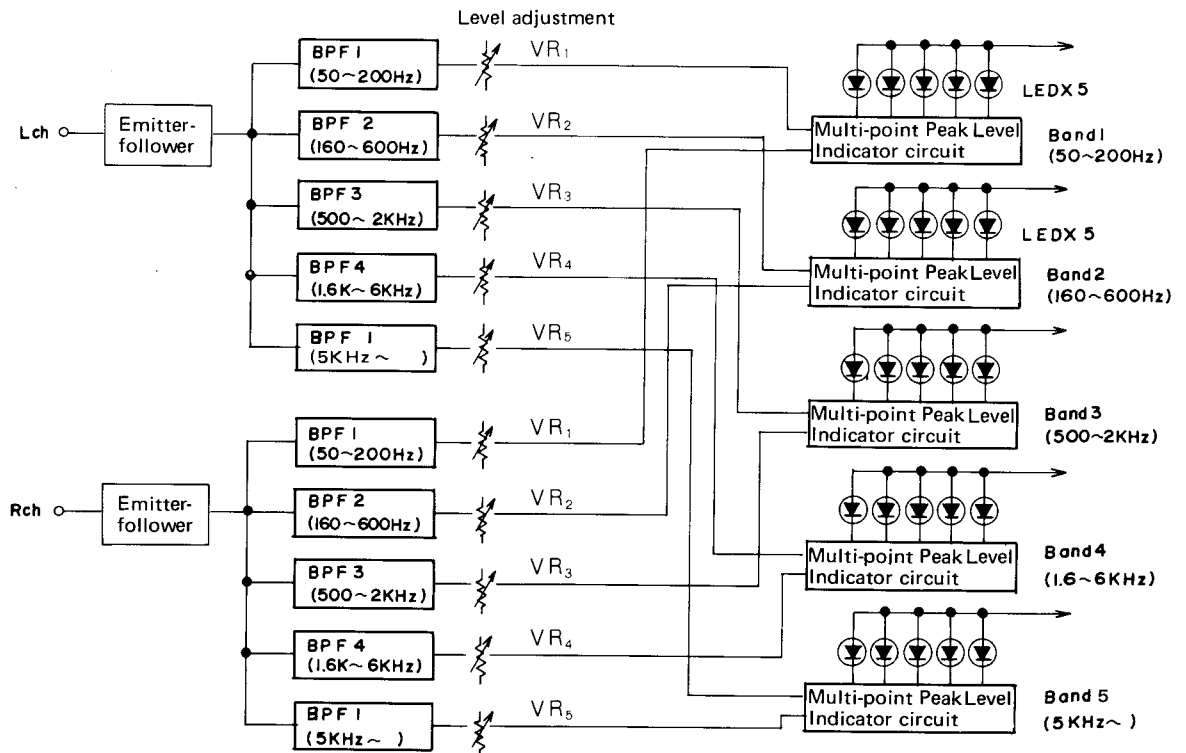


Fig. 7

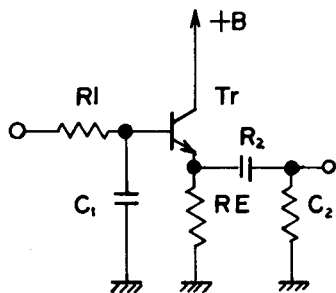


Fig. 8

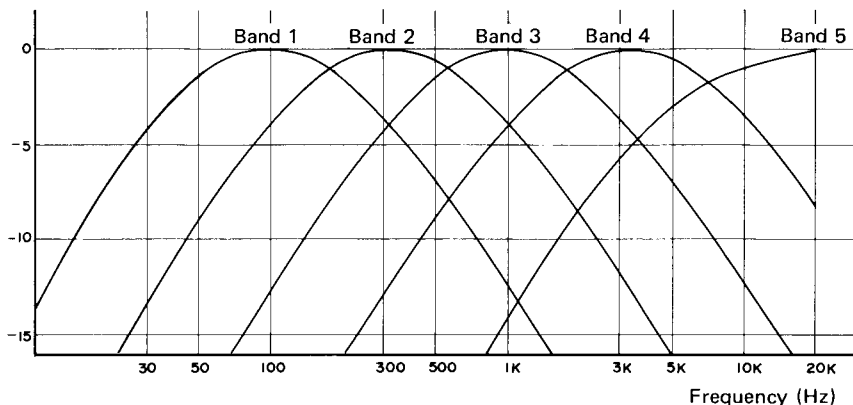


Fig. 9

2. CONTROL IC (M54410P)

1) Terminal connection diagram

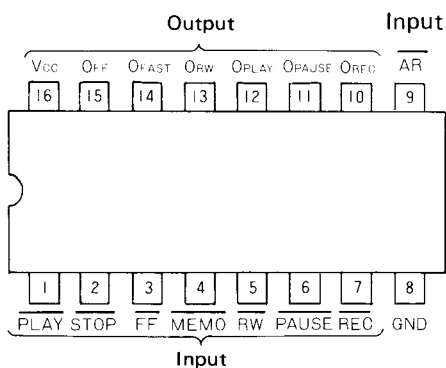


Fig. 10

2) Description of terminals

|                           | Terminal Name             | Terminal's Function                               |
|---------------------------|---------------------------|---|
| Operation input terminals | $\overline{\text{STOP}}$  | To command stopping of operation                  |
|                           | $\overline{\text{FF}}$    | To command fast-forwarding                        |
|                           | $\overline{\text{RW}}$    | To command rewinding                              |
|                           | $\overline{\text{REC}}$   | To command recording                              |
|                           | $\overline{\text{PAUSE}}$ | To command pause stopping                         |
|                           | $\overline{\text{PLAY}}$  | To command playback                               |
| Control input terminals   | $\overline{\text{MEMO}}$  | Memory input terminal                             |
|                           | $\overline{\text{AR}}$    | To command prevention of recording                |
| Output terminals          | OFAST                     | Produces "H"-signal during FF and RW.             |
|                           | OFF                       | Produces "H"-signal during FF.                    |
|                           | ORW                       | Produces "H"-signal during RW.                    |
|                           | OREC                      | Produces "H"-signal during REC/PLAY or REC/PAUSE. |
|                           | OPAUSE                    | Produces "H"-signal during PAUSE.                 |
|                           | OPLAY                     | Produces "H"-signal during PLAY.                  |

**3) Equivalent circuit**

This IC is constructed of 5 flip-flops and various gates connecting them in different ways.

In the flip-flop, S represents "Set" and R represents "Reset", while the output is 1 when S = 0 and it is 0 when R = 0.

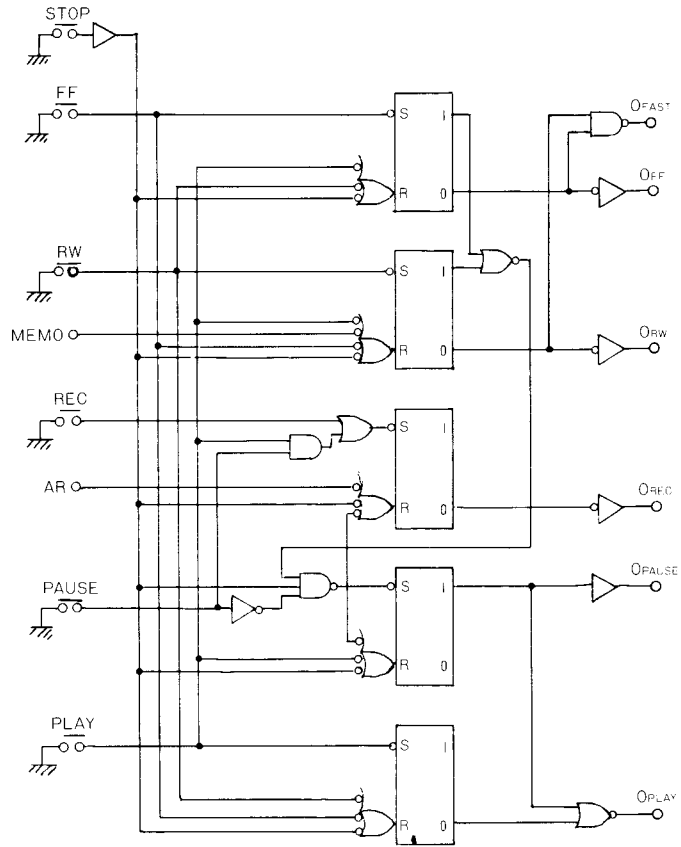



Fig. 11

**4) Relationship between inputs and outputs**

| Input                         | Output |     |     |      |        |       | Output mode    |
|-------------------------------|--------|-----|-----|------|--------|-------|----------------|
|                               | OFAST  | OFF | ORE | OREC | OPAUSE | OPLAY |                |
| $\overline{\text{STOP}}$      | L      | L   | L   | L    | L      | L     | STOP mode      |
| $\overline{\text{FF}}$        | H      | H   | L   | L    | L      | L     | FF mode        |
| $\overline{\text{RW}}$        | H      | L   | H   | L    | L      | L     | RW mode        |
| $\overline{\text{PLAY}}$      | L      | L   | L   | L    | L      | H     | PLAY mode      |
| $\overline{\text{PAUSE}}$     | L      | L   | L   | L    | H      | L     | PAUSE mode     |
| $\overline{\text{REC/PLAY}}$  | L      | L   | L   | H    | L      | H     | REC/PLAY mode  |
| $\overline{\text{REC/PAUSE}}$ | L      | L   | L   | H    | H      | L     | REC/PAUSE mode |

**Notes:**

- The input signal shows a fall in the form of .
- The output is maintained unchanged until the next input is applied.
- $\overline{\text{REC/PLAY}}$  mode is obtained by making both  $\overline{\text{REC}}$  and  $\overline{\text{PLAY}}$  outputs "L" simultaneously.
- $\overline{\text{REC/PAUSE}}$  mode is obtained by making both  $\overline{\text{REC}}$  and  $\overline{\text{PAUSE}}$  outputs "L" simultaneously.
- $\overline{\text{MEMO}}$  and  $\overline{\text{AR}}$  are the input terminals for control purposes. The  $\overline{\text{ORW}}$  output becomes "L" when  $\overline{\text{MEMO}} = \text{"L"}$ . When the  $\overline{\text{ORW}}$  output is "H", it becomes "L" with the signal of  $\overline{\text{MEMO}} = \text{"L"}$ . The  $\overline{\text{OREC}}$  output is "L" when  $\overline{\text{AR}} = \text{"L"}$ . When the  $\overline{\text{OREC}}$  output is "H", it becomes "L" with the signal of  $\overline{\text{AR}} = \text{"L"}$ .



### 3. TIMER RECORDING CIRCUIT

The KD-85 employs a timer recording circuit composed of NAND IC's. When the power is turned on, Vcc in this circuit is activated, causing a voltage (as shown by ② in Fig. 13) to be applied to terminal ②.

This voltage takes the form of ③ at the output of IC503-1,

which is converted in sequence into the voltage of ⑥; the output voltage of this circuit. The REC or PLAY mode is entered by this voltage, allowing unattended automatic recording. The duration of recording or playback is determined by R<sub>1</sub>, C<sub>1</sub> and R<sub>2</sub>.

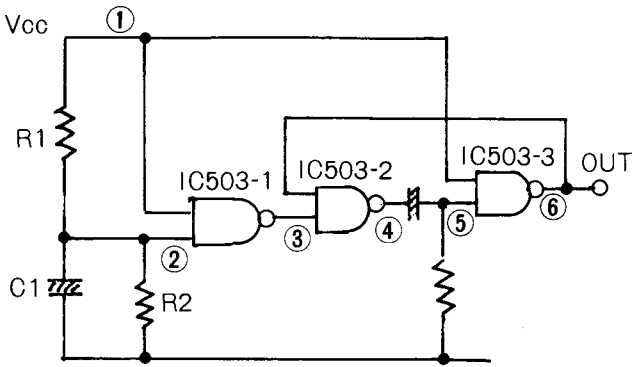


Fig. 12

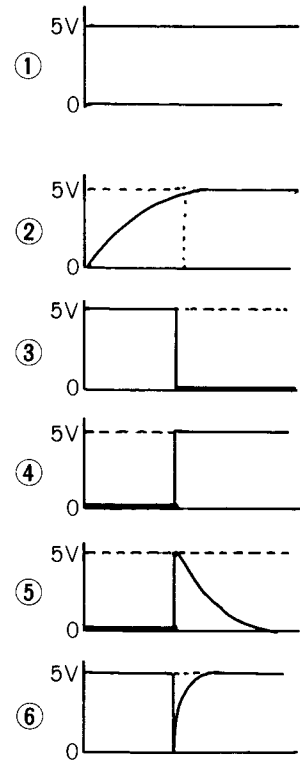
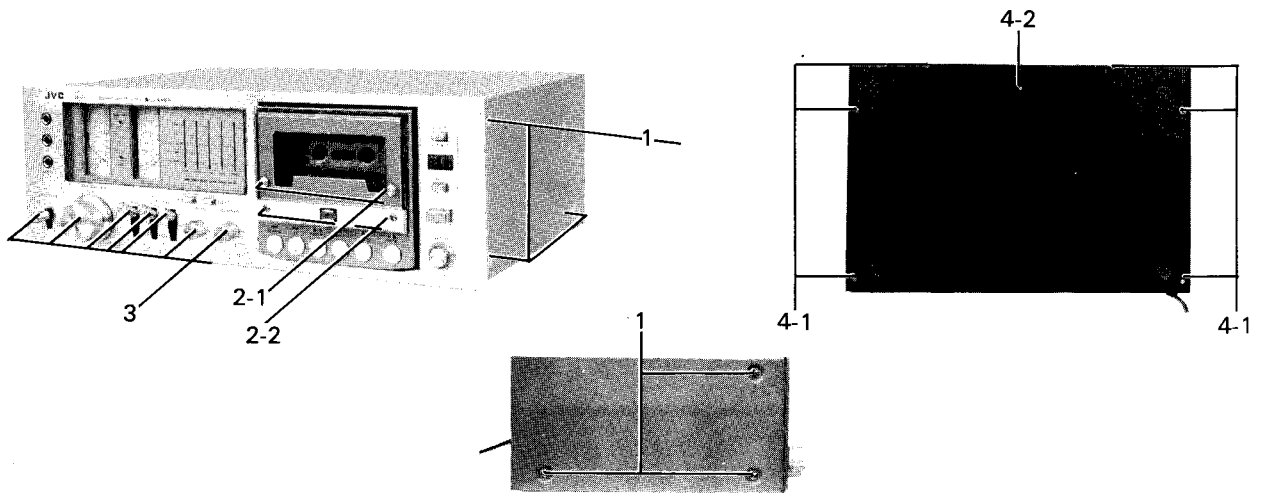


Fig. 13

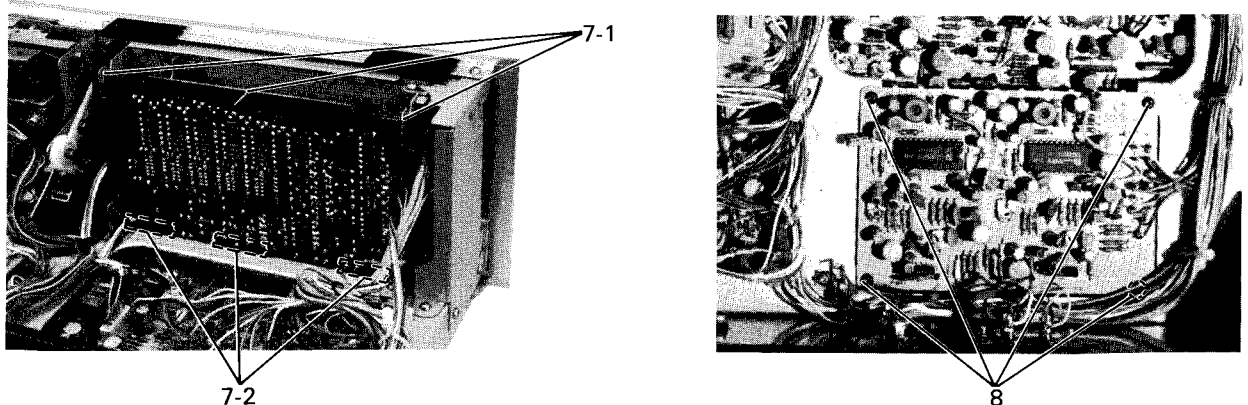
# Removal of the Main Parts

Observe care in handling the parts since the parts are small in size and the distance between them is short due to the

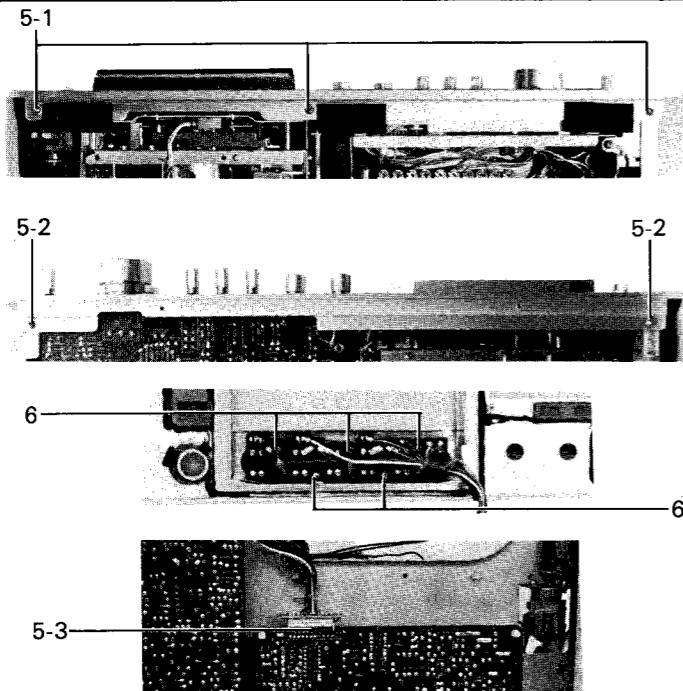
deck design aimed mainly at compactness and high performance.



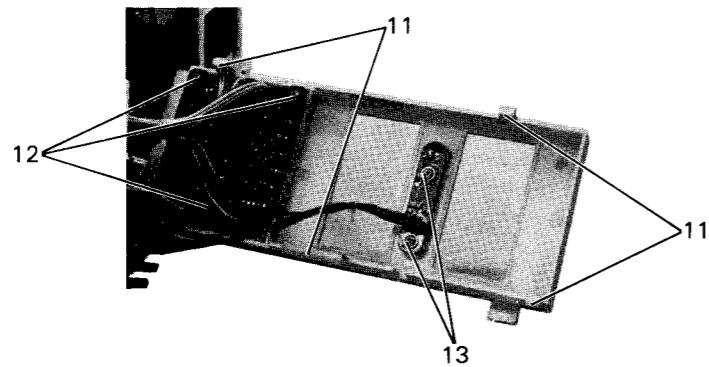
1. To remove the top cover, remove the 6 screws (3 each on the left and right sides).
2. (2-1) To remove the lid cover, remove the 2 screws.  
(2-2) To remove the head cover, remove hexagonal screw with a hexagonal wrench.
3. To remove the knobs, pull them forwards.  
[INPUT SELECT, INPUT LEVEL (L-R), ANRS, TAPE SELECT (EQ/BIAS, REC EQ, OUTPUT LEVEL)]
4. To remove the bottom plate,  
(4-1) remove the 6 tapping screws.  
(4-2) remove the screw (center front).



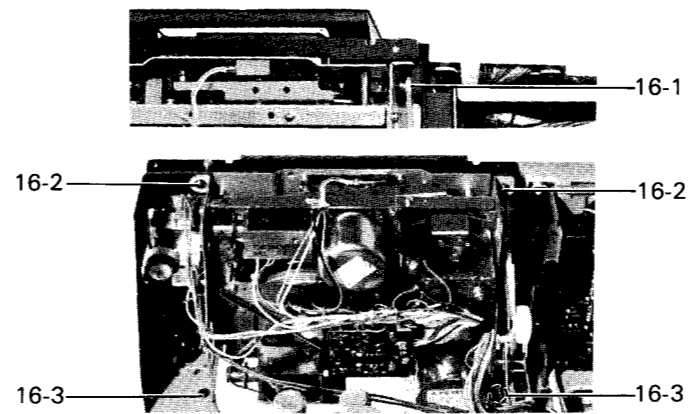
7. To removal the Spectro-Peak Level circuit board,  
(7-1) remove the securing wire (spring bar) on the upper part of the circuit board.  
Remove the wire center from the circuit board tabs.  
Remove the wire ends from the left and right brackets.  
(7-2) Pull the lower part of the circuit board from the 3 chassis holes.
8. To remove the ANRS circuit board, remove the 4 tapping screws.
9. To remove the power supply circuit board, ]-remove the circuit board supporter from the circuit board.
10. To remove the control circuit board,



5. To remove the front plate,
  - (5-1) remove the 3 screws securing the front plate at its upper part.
  - (5-2) remove the 3 screws securing the front plate at its lower part.
  - (5-3) pull out the operation circuit board socket assembly from the control circuit board.
6. To remove the operation circuit board, remove the 5 screws securing the front plate.



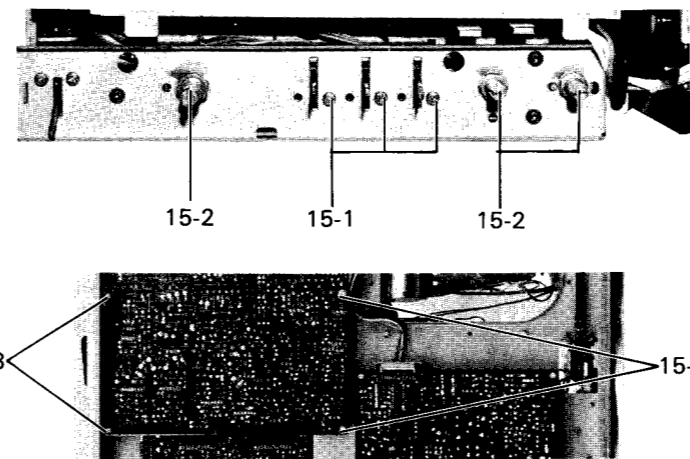
11. To remove the Spectro-Peak Level escutcheon, remove the pawls of the Spectro-Peak Level escutcheon from the meter bracket.
  - Upper part - 2
  - Lower part - 2
 Note: Be sure not to break the pawls in this removal.
12. To remove the Spectro-Peak Level circuit board and the holder, remove the 3 screws.
13. To remove the ANRS indicator circuit board, remove the 2 screws.
14. To remove the microphone jack assembly, remove the 2 screws.



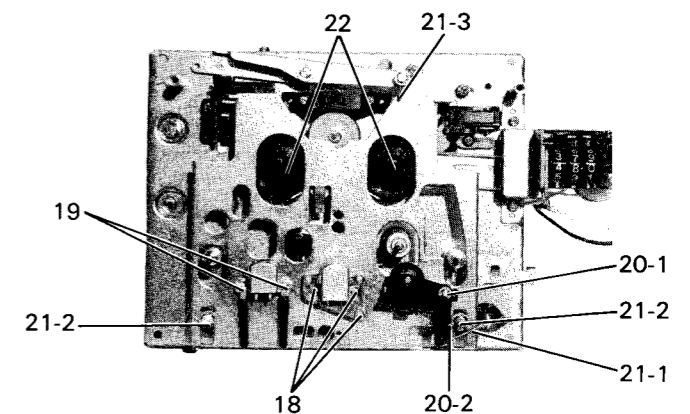
16. Removal of the mechanical assembly.
  - (16-1) remove the rack plate from the damper lever.
  - (16-2) remove the 4 screws (2 each on the left and right sides) securing the chassis to the front bracket.
  - (16-3) remove the 2 tapping screws (1 each on the left and on the right) securing the mechanical assembly to the base frame.
 Then, pull the mechanical assembly backwards.  
 Note: Exercise care with the memory switch wire as it may block the removal.



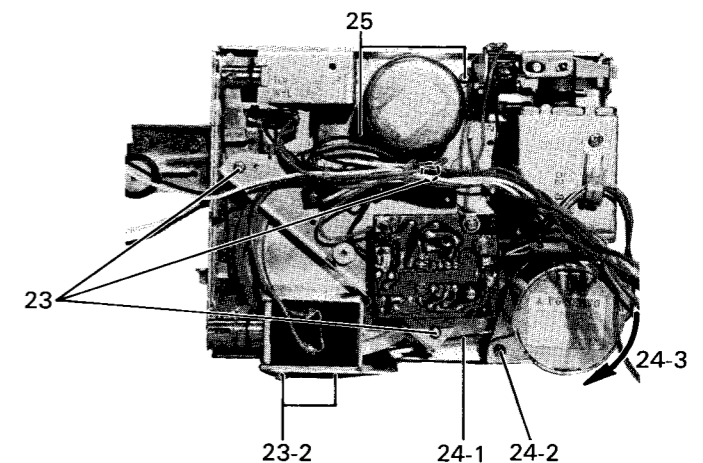
17. To remove the holder plate, remove the 2 screws. The holder plate is removed together with those parts related to the dual ball cassette holder mechanism, panel plate and those parts related to the indicators attached to it.



15. To remove the main amplifier circuit board,
  - (15-1) remove the 3 screws securing the switches.
  - (15-2) remove the 3 nuts and washers of the controls.
  - (15-3) remove the 4 circuit board supporters with a plier.



18. To remove the record/playback head, remove the 3 screws. (the 3 screws are removed at the same time.)
19. To remove the eraser head, remove the 2 screws. (the 2 wire clamps, 1 spring and 1 collar are removed at the same time.)
20. To remove the pinch roller assembly,
  - (20-1) remove the E-ring.
  - (20-2) remove the wire (for the pause mechanism).
21. To remove the slide base,
  - (21-1) remove the wire (for the pause mechanism).
  - (21-2) remove the left and right E-rings.
  - (21-3) remove the wire (for the sliding base).
22. To remove the reel disc assembly, remove the reel stopper. Note: Remove the reel stopper by inserting a piece of sheet metal between the reel disc and the stopper.

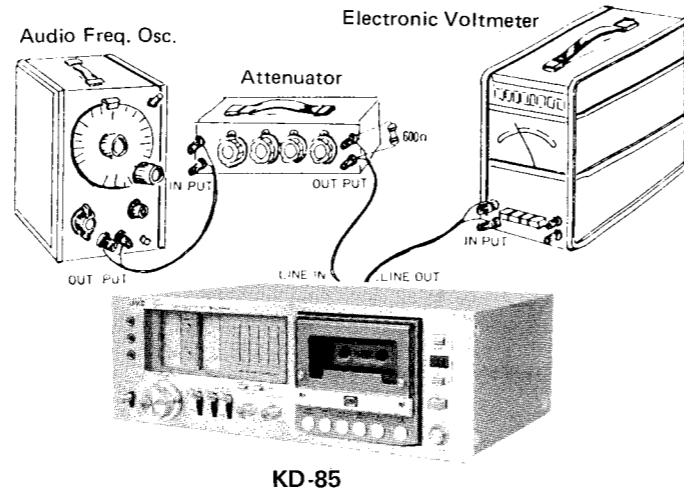


23. To remove the flywheel,
  - (23-1) remove the 3 screws securing the flywheel brackets.
  - (23-2) remove the 2 screws (for the pause solenoid).
 Then, pull out the flywheel.  
 Note: When replacing the flywheel, be sure to employ washers and springs.
24. To remove the capstan motor,
  - (24-1) remove the capstan belt.
  - (24-2) remove the stopper by removing the screw.
  - (24-3) turn the motor clockwise and pull it for removal.
25. To remove the reel motor, remove the 2 screws.

# Main Adjustment

## [I] Equipment and measuring instruments used for adjustment

1. Electrical adjustment
  - 1) Electronic voltmeter
  - 2) Audio frequency oscillator (range; 50 Hz – 20 kHz and output 0 dB with impedance 600 Ω)
  - 3) Attenuator
  - 4) Reference tapes for REC/PB
    - BASF QP-12 – normal tape
    - Maxell UD – SF tape
    - TDK SA – chrome tape
 } or equivalent
  - 5) Reference tapes for playback (JVC Test Tapes)
    - VTT-658 (for head azimuth adj.)
    - VTT-656 (for motor speed, wow flutter adj.)
    - VTT-664 (for Reference level 1 kHz)
    - VTT-675N (for playback frequency response)
  - 6) Resistors
    - 100 Ω (for measurement of the bias current)
    - 600 Ω (for attenuator matching)
2. Mechanical adjustment
  - 1) Gauge for checking the head position
  - 2) Torque gauge
  - 3) Blank tape (C-120) for tape running checker



## [II] Electrical circuit adjustment procedure

In all the steps (marked by an asterisk \* ) except the "Adjusting bias current", the adjustment is important. Be sure to perform it.

Adjustment should be performed in the sequential numerical order of the following:

**Playback system** – Set the output level control at maximum. –

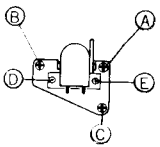
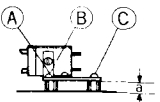
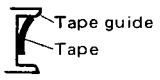
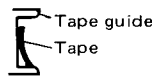
| Step | Item                                    | Adjustment  | Adjusting point                            | Standard value   | Remarks   |
|------|---|---|--|--|---|
| 1*   | Adjusting the VU meter deflection angle | 1. Set the cassette deck to its recording mode.<br>2. Apply a 1 kHz, approx. –10 dBs signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at –4 dBs at the LINE OUT terminals.<br>3. Adjust VR102 and VR202 until the VU meters deflect to 0.                                       | Main amplifier circuit board<br>VR102, 202 | –4 dBs 0 VU  | Perform this adjustment when the parts are replaced.  |
| 2*   | Adjusting Spectro-Peak level indicator  | 1. Apply a 1 kHz signal separately to the left and right channels of the LINE IN terminals. Adjust the recording level controls until the signal is available at –4 dBs at the LINE OUT terminals.<br>2. Adjust the following semi-fixed resistors until the "0 dB" indicators extinguish with the input level reduced by 0.3 dB. | Spectro-Peak circuit board                 | For left channel<br>100 Hz VRE05<br>300 Hz VRE04<br>1 kHz VRE03<br>3 kHz VRE02<br>10 kHz VRE01 | For right channel<br>VRF05<br>VRF04<br>VRF03<br>VRF02<br>VRF01  |
| 3*   | Adjusting playback level                | Set the tape selector to the normal position. Play back the VTT-664 test tape. Adjust VR-101 and VR201 until the output at LINE OUT terminals is available at –4 dB.  | Main amplifier circuit board<br>VR101, 201 | –4 dBs   | This adjustment becomes necessary when a change in playback results (for example, due to head replacement). Perform this adjustment with the recording level control; set to maximum. |

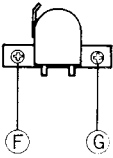
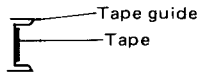
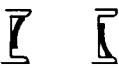
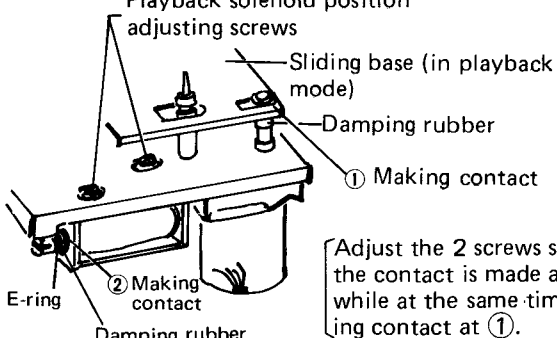
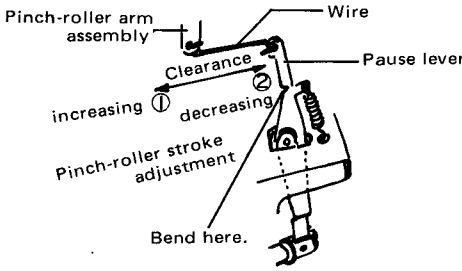
**Recording system** – Use MAXELL UD at SF mode, TDK SA at chroma mode and BASF QP-12 at normal mode.


| Step | Item  | Adjustment  | Adjusting point  | Standard value   | Remarks   |
|------|---|---|--|--|---|
| 4*   | Checking record/playback frequency response | Set the ANRS switch to the OFF position. Record 1 kHz, 50 Hz and 10 kHz signals at an input level of 0 VU –20 dB. Play back the tape. Check to see that the 50 Hz and 10 kHz signal output deviations fall within the standard range, using the 1 kHz signal output as a reference. (It is generally desirable that the 1 kHz, 50 Hz and 10 kHz signal outputs are the same.)   | For normal tape;<br>VR105, 205<br>For CrO <sub>2</sub> tape;<br>VR106, 206                         | Reference frequency;<br>1 kHz<br>0 ± 3 dB at 50 Hz<br>0 ± 3 dB at 10 kHz | The input level of 0 VU –20 dB is one reduced by 20 dB from the 0 VU level by the attenuator. Perform the adjustment for normal and CrO <sub>2</sub> tapes as well as both for left and right channels.   |
| 5    | Checking recording bias current             | 1. Set the cassette deck to its recording mode.<br>2. Connect 100 Ω resistor to the grounding terminal and the lead wire of the record/playback head as shown below. Adjust the voltage at both ends of the resistor so as to conform the standard value.<br>3. Remove the resistor from the head and connect its lead wire as before. Measure the record/playback frequency response of 10 kHz, referring to that of 1 kHz, with a recording/playback standard tape. Fine-adjust the semi-fixed resistors until the 10 kHz frequency response becomes ± 0 dB, varying by ± 10% to the standard level. Repeat the recording and playback until a correct frequency response is obtained.<br>If the level is raised with 10 kHz,<br>→ the bias current is small.<br>If the level is lowered with 10 kHz,<br>→ the bias current is large. | For CrO <sub>2</sub> tape;<br>VR106, 206<br>For normal tape;<br>VR105, 205                         | For CrO <sub>2</sub> tape;<br>46.5 mV<br>For normal tape;<br>31 mV       | In order to distinguish the – terminal of the head from its + terminal, touch the terminals with a finger while the deck is in the playback mode. The VU meters deflect when the – terminal during recording is touched. (For a record/playback head, the polarity is reversed according to whether recording or playback.)<br><br>If the bias current is not properly adjusted, the record and playback characteristics become as shown below. |
|      |   |   |  |  |   |
| 6*   | Adjusting recording current level           | 1. Set the deck to its recording mode.<br>2. Apply a 1 kHz signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at –4 dBs at LINE OUT terminals.<br>3. Play back the recorded tape. Adjust the semi-fixed resistors shown on the right until the signal is available at –4 dB at the LINE OUT terminals. (Repeat the adjustment until you obtain the value.)  | Main amplifier circuit board<br>Normal tape;<br>VR103, 203<br>CrO <sub>2</sub> tape;<br>VR104, 204 | LINE OUT<br>–4 dBs   | The adjustment becomes necessary when the head is replaced. The adjustment should be performed after the adjustment steps 1–5 are finished. Set the EQ and BIAS switch according to the tape used. The level difference between the right and left channels for normal, SF and chrome tapes should be within 1 dB (1 VU).   |
| 7*   | Checking Super ANRS circuit                 | 1. Unsolder the BIAS CUT printing position on the main amplifier circuit board to stop the bias oscillation.<br>2. Set the deck to its recording mode.<br>3. Apply a 1 kHz, 0 dBs signal to the LINE IN terminals. Adjust the LINE IN level control until the signal is available at –1 dBs at the LINE OUT terminals.  | Super ANRS circuit board<br>TAA344208  | –1 dBs   | Refer to the Super ANRS circuit board. The adjustment in steps 5 and 6 should be performed repeatedly. VU meter deflection should be to the position marked CAL.  |

| Step | Item                        | Adjustment   | Adjusting point                     | Standard value  | Remarks |
|------|-----------------------------|--|-------------------------------------|---|---------|
| 7*   | Checking Super ANRS circuit | <p>4. Connect an electronic voltmeter to the pins ④ and ⑤ of the ANRS circuit.</p> <p>5. Reduce the input level by 40 dB. Adjust the VRA01 and B01 until the outputs at the pins ④ and ⑤, with the ANRS switch set to ON, are larger by 5.5 dB than those with the ANRS switch set to OFF.</p> <p>6. Apply an input signal of 5 kHz, -20 dB (with the ATT being increased by 20 dB compared with step 5). Adjust the VRA02 and B02 until the outputs at the pins ④ and ⑤ with the ANRS switch set to ON are larger by 3.5 dB than those with the ANRS switch set to OFF.</p> <p>7. Apply an input signal of 1 kHz and adjust the output from LINE OUT to -1 dBs. Check to see that the level difference between the states with the ANRS switch ON and OFF is nil (within ± 5 dB).</p> <p>8. Apply an input signal of 10 kHz. Check to see that the output at the pins with the ANRS switch set to OFF is decreased by 6 dB with the Super ANRS switch set to ON.</p> <p>9. Play back the VTT-664 test tape. Check to see that the output difference at the pins with the ANRS switch set to ON and then set to OFF is within ± 1 dB.</p> <p>10. Solder the BIAS CUT printing position (+B) to the bias circuit board.</p> | <p>VRA01, B01</p> <p>VRA02, B02</p> | <p>+5.5 dB</p> <p>3.5 dB</p> <p>-1 dBs</p> <p>± 0.5 dB</p> <p>-6 dB</p> |         |

[III] Mechanical adjustment

| Item   | Adjustment  | Adjusting point                         | Standard value      | Remarks   |
|--|---|---|---------------------|---|
| <p>Adjusting record/playback head height</p>   | <p>1. Adjust the screws ①, ② and ③ until the distance "a" becomes approx. 5 mm. Collars are employed in the spring of the screws ① and ③, and designed so that the 5 mm distance can be obtained by loosening the screws which have been fully tightened up to the collar height, by a half turn.</p> <p>2. Employ a special cassette (C-120) from which parts of the casing, where the erase head, record/playback head and capstan engage, has been cut away. Perform tape transport with the cassette. Check to see if the tape runs in the center of the tape head guide. If not, adjust in the following method:</p> <p>1) If the tape runs, making contact with the upper guide. Loosen screw ①.</p>  <p>2) If the tape runs, making contact with the lower guide. Tighten screw ①.</p>  <p>3. Connect an electronic voltmeter to the LINE OUT or REC/PB terminals.</p> | <p>Screw ①, ② and ③.</p> <p>Screw ①</p> | <p>Approx. 5 mm</p> | <p>Head adjustment can be performed if the head cover is removed. (To remove the head cover, loosen the 2 hexagonal screws with a hexagonal wrench.)</p> <p>Head replacement: If the head is worn, disconnected or exceedingly magnetized so as not to provide the necessary characteristics, replace it with a new one. To replace the head, remove the 2 screws ④ and ⑤. After replacing the head, reset the screw with bond. When employing bond to the screw, be careful not to apply it within the groove of the screw head. After the head replacement, the head position adjustment, as well as the playback level adjustment, the bias current adjustment and the recording current level adjustment are all necessary.</p> |

| Item   | Adjustment   | Adjusting point            | Standard value                            | Remarks   |
|--|--|----------------------------|---|---|
| Adjusting record/playback head height  | 4. If the outputs for the left and right channels are different, adjust the head angle with screw (C).<br>1) If the output for the right channel is smaller, loosen screw (C).<br>2) If the output for the left channel is smaller, tighten screw (C).<br>5. Play back the VTT-658 test tape (10 kHz, for azimuth adjustment). Adjust screw (B) until the reading on the electronic voltmeter becomes maximum.<br>6. After adjustment, apply bond to screws (A), (B) and (C) to prevent their loosening. | Screw (C)<br><br>Screw (B) | Maximum                                   |   |
| Adjusting erase head height<br><br> | Employ a special cassette (C-120) from which parts of the casing (where the erase head, record/playback head and capstan engage) has been cut away. Perform tape transport with the cassette tape. Adjust screw (F) until the tape runs centered within the erase head tape guide.<br><br>Normal<br> Improper<br>                      | Screw F                    |   | Be sure to perform this adjustment after replacing the erase head.  |
| Adjusting playback solenoid position   | 1. Loosen the 2 screws of the playback solenoid.<br>2. Retain the sliding base in the playback position.<br>3. With the sliding base retained in the playback position, secure the 2 screws for playback solenoid position adjusting, with their damping rubbers (attached on the movable iron core of the playback solenoid) making contact with the playback solenoid.   |                            |   | After adjusting the playback solenoid position, be sure to adjust the pause solenoid position. (See "Pause Solenoid" section.)<br>Playback solenoid position adjusting screws<br> Sliding base (in playback mode)<br>Damping rubber<br>① Making contact<br>② Making contact<br>E-ring<br>Damping rubber<br>[Adjust the 2 screws so that the contact is made at ② while at the same time making contact at ①.] |
| Adjusting brake solenoid position  | Loosen the 2 screws securing the brake solenoid for adjusting the solenoid position.   |                            |   |   |
| Adjusting pause solenoid position  | Adjust the position by bending the pause lever in the direction shown in the figure.<br><br>Pinch-roller stroke adjustment<br>Bending the pause lever in the direction ① increases the clearance between the pause capstan shaft and the pinch-roller.<br>Bending the pause lever in the direction ② decreases the clearance.<br>The clearance should be approx. 0.5 mm.   |                            |   |  Pinch-roller arm assembly<br>Wire<br>Clearance<br>Pause lever<br>increasing ① decreasing ②<br>Pinch-roller stroke adjustment<br>Bend here.   |
| Adjusting motor speed  | Play back the VTT-656 test tape. Connect a speedometer to the LINE OUT terminals of the deck. Adjust the semi-fixed resistor on the motor circuit board until the reading on the speedometer becomes 3000 Hz $\pm$ 1.5%.   |                            | 3000 Hz $\pm$ 1.5%<br>(2955 Hz - 3045 Hz) | If the speedometer is included in a wow and flutter meter, connect the deck to the INPUT terminals of the meter.  |

| Item                         | Adjustment   | Adjusting point | Standard value     | Remarks  |
|------------------------------|--|-----------------|--------------------|--|
| Checking playback torque     | Employ a torque testing cassette tape for the checking. Or employ a torque gauge.  |                 | 40–70 gr-cm        | If the standard torque is not obtained,<br>1) clean the reel motor pulley, idler circumference, right reel and disc circumference.<br>2) replace the take-up idler arm, spring, etc.       |
| Checking fast-forward torque | Measure the torque in the fast forward mode in the same manner as in the above.  |                 | More than 70 gr-cm | If the standard torque is not obtained,<br>1) clean the idler circumference, motor pulley, take-up reel disc circumference, etc.<br>2) replace the idler, take-up reel disc assembly, etc. |
| Checking rewind torque       | Measure the torque in the rewind mode in the same manner as in the above.  |                 | More than 70 gr-cm | If the standard torque is not obtained,<br>1) clean the idler, motor pulley, supply reel disc circumference, etc.<br>2) replace the idler, supply reel disc, etc.                          |
| Damping oil                  | Oil employed – Torque grease specified by JVC (KANTO KASEI, GP-608)<br>Applying method – Apply within both concaved sections as shown in the figure. |                 |                    |    |

#### [IV] Repair of Wow and Flutter

If wow and flutter increase, check the following points.  
If there is defect in revolving parts, the wow and flutter generated will increase in proportion to the number of

revolutions.

Play a 3000 Hz test tape, and defective part can be detected from the sound.

| Section              | Trouble   | Repair  |
|----------------------|---|---|
| Capstan and flywheel | Capstan shaft has excessive run-out.<br>Flywheel turns heavily.<br>(shaft seizure, thrust play, etc.)   | Replace flywheel.<br>Clean the capstan shaft and the groove in the flywheel.<br>Apply oil to the metal position.<br>Replace the capstan assembly.   |
| Pinch roller         | Rough rotation (Deformation scratches, or dust.)<br>The angular position of the pinch roller is not correct.<br>The pinch roller pressure is not correct. | Replace pinch roller, or pinch roller spring.<br>Clean the pinch roller or apply oil to the rotary shaft.<br>Adjust the pinch roller so that it is parallel with the capstan shaft.<br>Replace the pinch roller spring. |
| Belt                 | Belt has undue run-out.<br>Belt is dirty or slippery.   | Clean the belt.<br>Replace the belt.  |
| Back tension         | Back tension is irregular, or back tension is too strong.   | Replace back tension spring (under supply disc).  |
| Motor                | Motor shaft has undue run-out.<br>Motor pulley is oily and dusty.   | Replace motor.<br>Clean motor pulley.   |
| Take-up idler arm    | Pulley has deflection.<br>Pulley is stuck.  | Replace take-up idler arm.  |

# Block Diagram

## Recording System

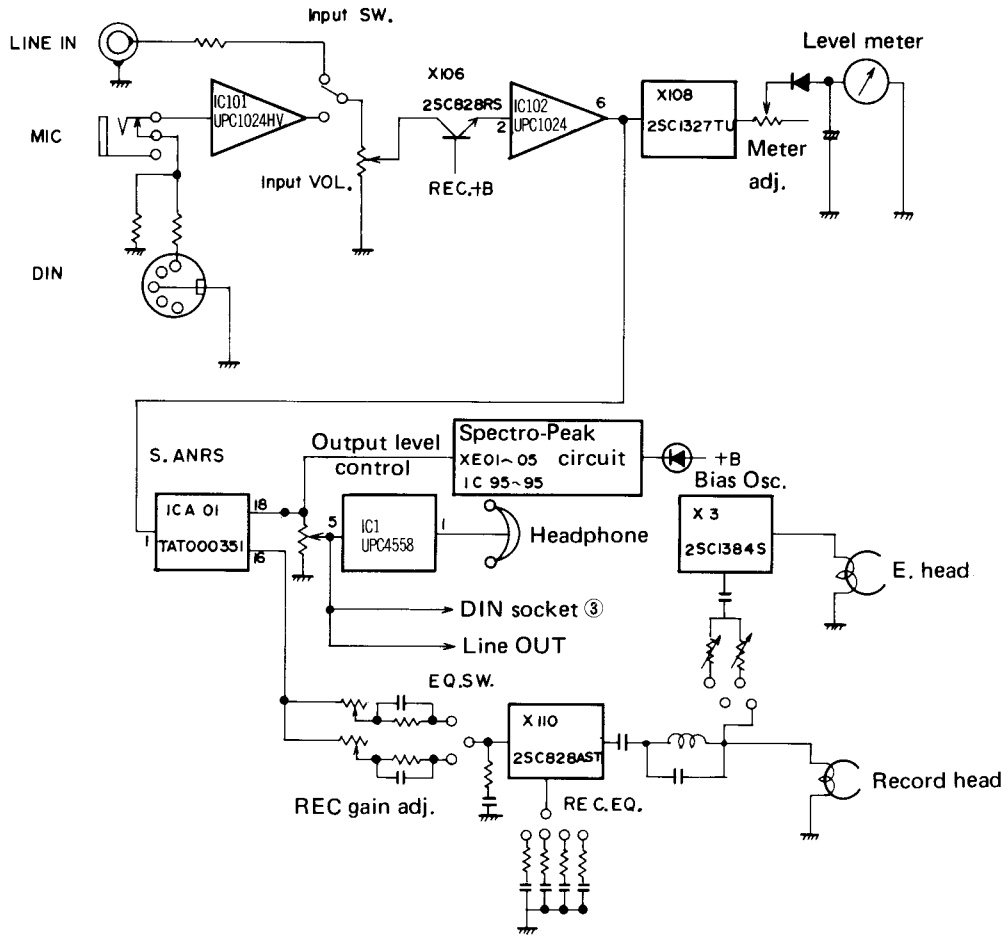


Fig. 14

## Playback System

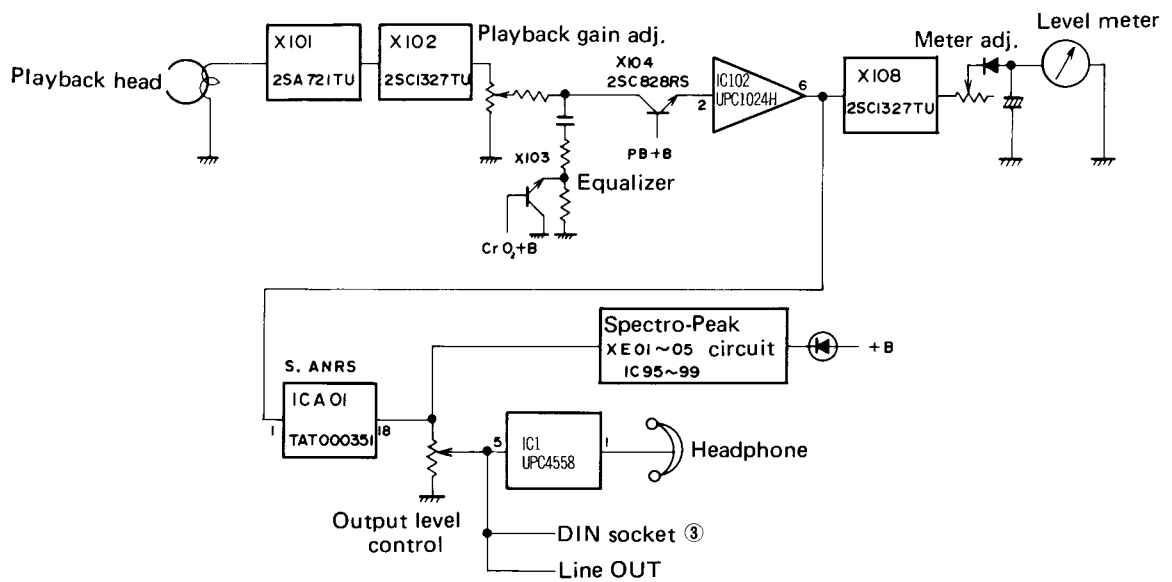


Fig. 15



### Mechanical Control System

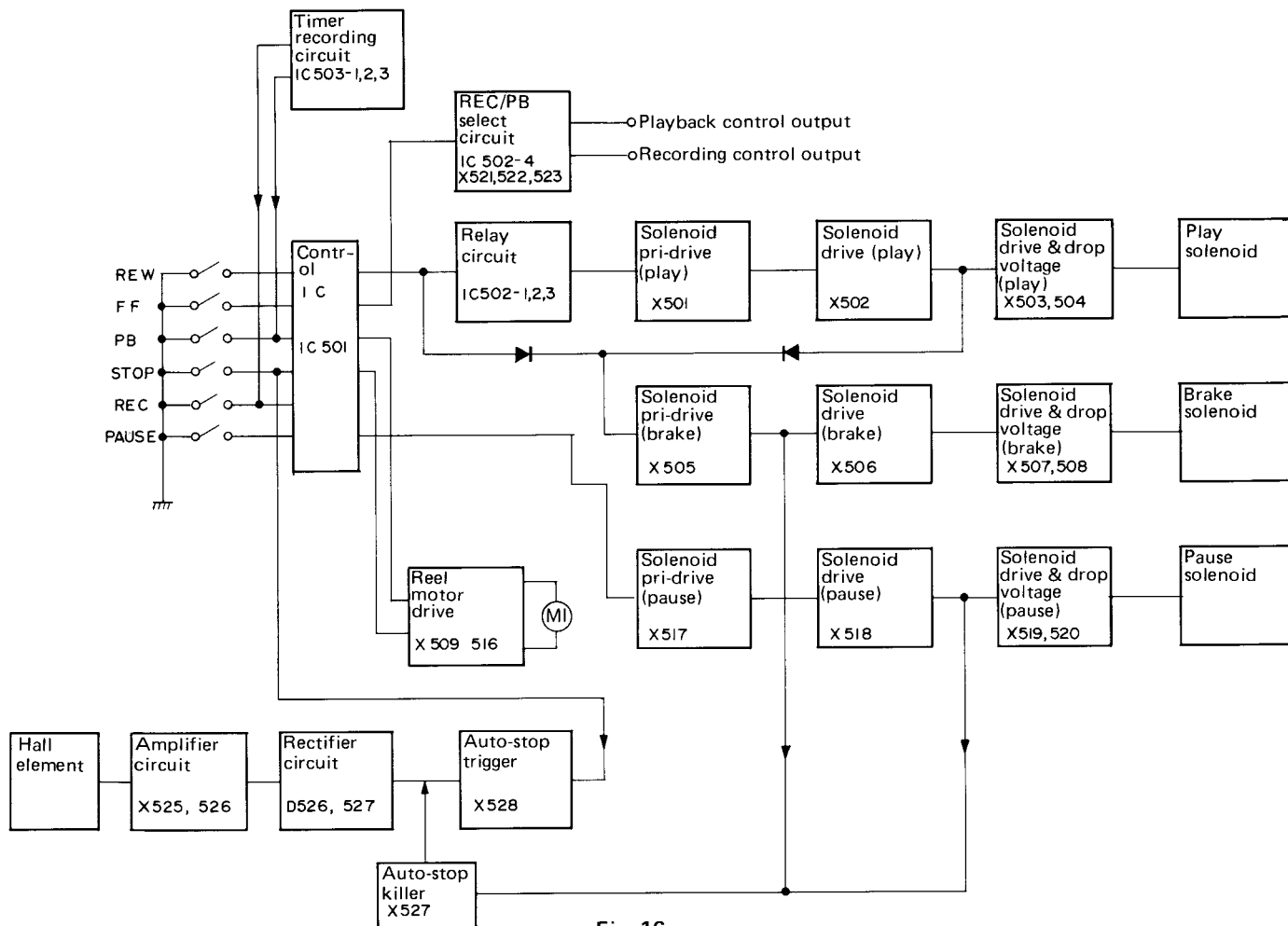


Fig. 16

**[Variable resistors]**

|            |             |   |                                 |
|------------|-------------|---|---------------------------------|
| VRA01, B01 | QVP8A0B-023 | DC bias adj.                            | } Super ANRS<br>P.W. board      |
| VRA02, B02 | QVP8A0B-024 | Control amp. gain adj.                  |                                 |
| VRE01-05   | QVP6A0B-024 | L-channel Spectro-Peak level adj.       | } Spectro-Peak level P.W. board |
| VRF01-05   | QVP6A0B-024 | R-channel Spectro-Peak level adj.       |                                 |
|            |             | L-channel                               | R-channel                       |
|            | 100 Hz      | VRE05                                   | VRF05                           |
|            | 300 Hz      | VRE04                                   | VRF04                           |
|            | 1 kHz       | VRE03                                   | VRF03                           |
|            | 3 kHz       | VRE02                                   | VRF02                           |
|            | 10 kHz      | VRE01                                   | VRF01                           |
| VR101, 201 | QVP8A0B-024 | Playback level adj.                     |                                 |
| VR102, 202 | " -023      | Meter gain adj.                         |                                 |
| VR103, 203 | " -024      | REC/PB level adj. (normal)              |                                 |
| VR104, 204 | " -024      | " " (chrome)                            |                                 |
| VR105, 205 | QVP4A0B-104 | REC/PB frequency response adj. (normal) |                                 |

|            |              |   |
|------------|--------------|---|
| VR106, 206 | QVP4A0B-104  | REC/PB frequency response adj. (chrome) |
|            | QVE5A3A-054V | Input level                             |
|            | QVD2A2A-024V | Output level                            |

**[Switches]**

|      |              |                               |                           |
|------|--------------|-------------------------------|---------------------------|
| S01  | QSP1110-221  | Power SW at OFF               | } Switch<br>P.W. board    |
| S02  | VKC6101-001T | Counter SW at OFF (on at 999) |                           |
| S03  | QSP2210-045  | Memory SW at OFF              |                           |
| S04  | QSM1V11-103  | REC Proof SW at REC start     |                           |
| S05  | QSM1S01-015  | Tape safety SW at OFF         |                           |
| S501 | QSP0022-001  | REW SW at OFF                 | } Main amp.<br>P.W. board |
| S502 | " -001       | FF SW at OFF                  |                           |
| S503 | " -001       | Playback SW at OFF            |                           |
| S504 | " -001       | Stop SW at OFF                |                           |
| S505 | " -001       | REC SW at OFF                 |                           |
|      | QSR4645-200  | REC Equalizer SW              |                           |
|      | QSL2312-002  | ANRS SW                       |                           |
|      | QSL4312-002  | Bias SW                       |                           |
|      | QSL8312-003  | Equalizer SW                  |                           |
|      | QSL2212-007  | Input Select SW               |                           |
|      | QSP0229-008  | Spectro-Peak level & Timer SW |                           |

[Transistors]

|   |             |                |                               |                    |
|---|-------------|----------------|-------------------------------|--------------------|
| XE01-E05  | 2SC828RS    | Si. Transistor | Spectro-Peak level P.W. board |                    |
| XF01-F05  | "           | "              |                               |                    |
| X101, 201   | 2SA721TU    | Si. Transistor | Main amp. P.W. board          |                    |
| X102, 202   | 2SC1327TU   | "              |                               |                    |
| X103,203,104, 204,105,205, 106,206,107, 207,109,209, 111,211, 2           | 2SC828RS    | "              |                               |                    |
| X108, 208   | 2SC1327U    | "              |                               |                    |
| X110, 210   | 2SC828AST   | "              |                               |                    |
| X1  | 2SC1383RS   | "              |                               |                    |
| X3  | 2SC1384S    | "              |                               |                    |
| X501,502,505, 506,509,510, 515,516,517, 518,521,522, 524,525,526, 527,528 | 2SC828RS    | "              |                               | Control P.W. board |
| X503  | 2SC1847R    | "              |                               |                    |
| X504,508,520  | 2SC1383S    | "              |                               |                    |
| X507,519  | 2SC1384S    | "              |                               |                    |
| X511,512,513, 514   | 2SC1383RS   | "              |                               |                    |
| X523,529  | 2SA564RS    | "              | Power supply P.W. board       |                    |
| X601  | 2SC1162WTBC | "              |                               |                    |

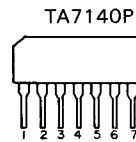
[Diodes]

|  |                   |             |   |
|--|-------------------|-------------|---|
| DA01, B01  | 1S188FM           | Ge. diode   | Super ANRS P.W. board                     |
| A02, B02   | 1S2076A           | Si. diode   |   |
| DA03, B03  | 1S2076A           | Si. diode   | Spectro-Peak level P.W. board             |
| DE01-05  | 1S2075K-23        | Si. diode   |   |
| F01-05   | "                 | "           | Main amp. P.W. board                      |
| DE95-99  | "                 | "           |   |
| D101,201, 102,202  | 0A90              | Ge. diode   |   |
| D5   | T30155-001        | Si. diode   | Control P.W. board                        |
| D1-3   | 1S2076A           | "           |   |
| D503,504,505, 506,509,512, 513,514,517, 520,522,523, 528,521,534 | 1S2076A           | "           | Power supply P.W. board                   |
| D501,526,527, 529,530,531, 532,535,536                           | 1S188FM           | Ge. diode   |   |
| D507,510,524   | T30155-001 (10E1) | Si. diode   |   |
| D508   | RD4.3EC           | Zener diode |   |
| D516,519   | RD10E             | "           |   |
| D601-604   | T30155-001        | Si. diode   | Power supply P.W. board                   |
| D605   | RD24E(1)          | Zener diode |   |
| D606   | RD5.1FB           | "           |   |
|  | T30155-001        | Si. diode   | (for playback, brake and pause solenoids) |

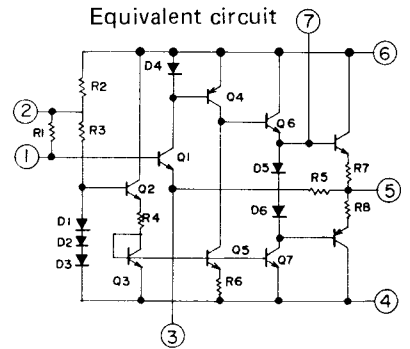
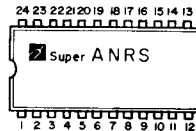
No. 4165

[ICs]

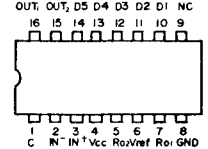
|            |              |                               |
|------------|--------------|-------------------------------|
| ICA02, B02 | TA7140P-BC   | Super ANRS P.W. board         |
| ICA01, B01 | TAT000351-01 |                               |
| ICE95-99   | LB1415S      | Spectro-Peak level P.W. board |
| IC101, 201 | UPC1024HV    | Main amp. P.W. board          |
| IC102, 202 | UPC1024H     |                               |
| IC1        | UPC4558C     | Control P.W. board            |
| IC501      | U54410P      |                               |
| IC502, 503 | TD3400AP     |                               |



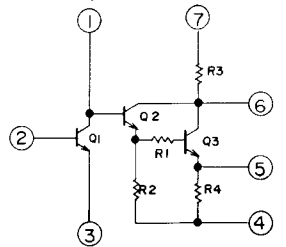
TAT000351-01 (Top view)



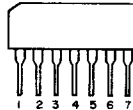
LB1415



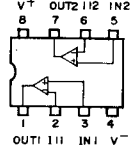
Equivalent circuit



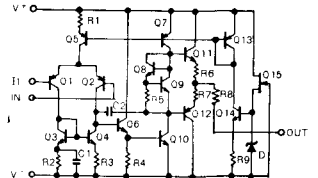
UPC1024H



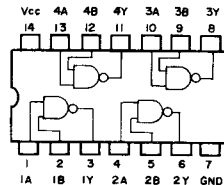
UPC4558C



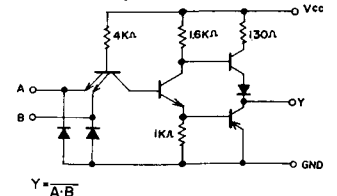
Equivalent circuit (1/2)



TD3400AP



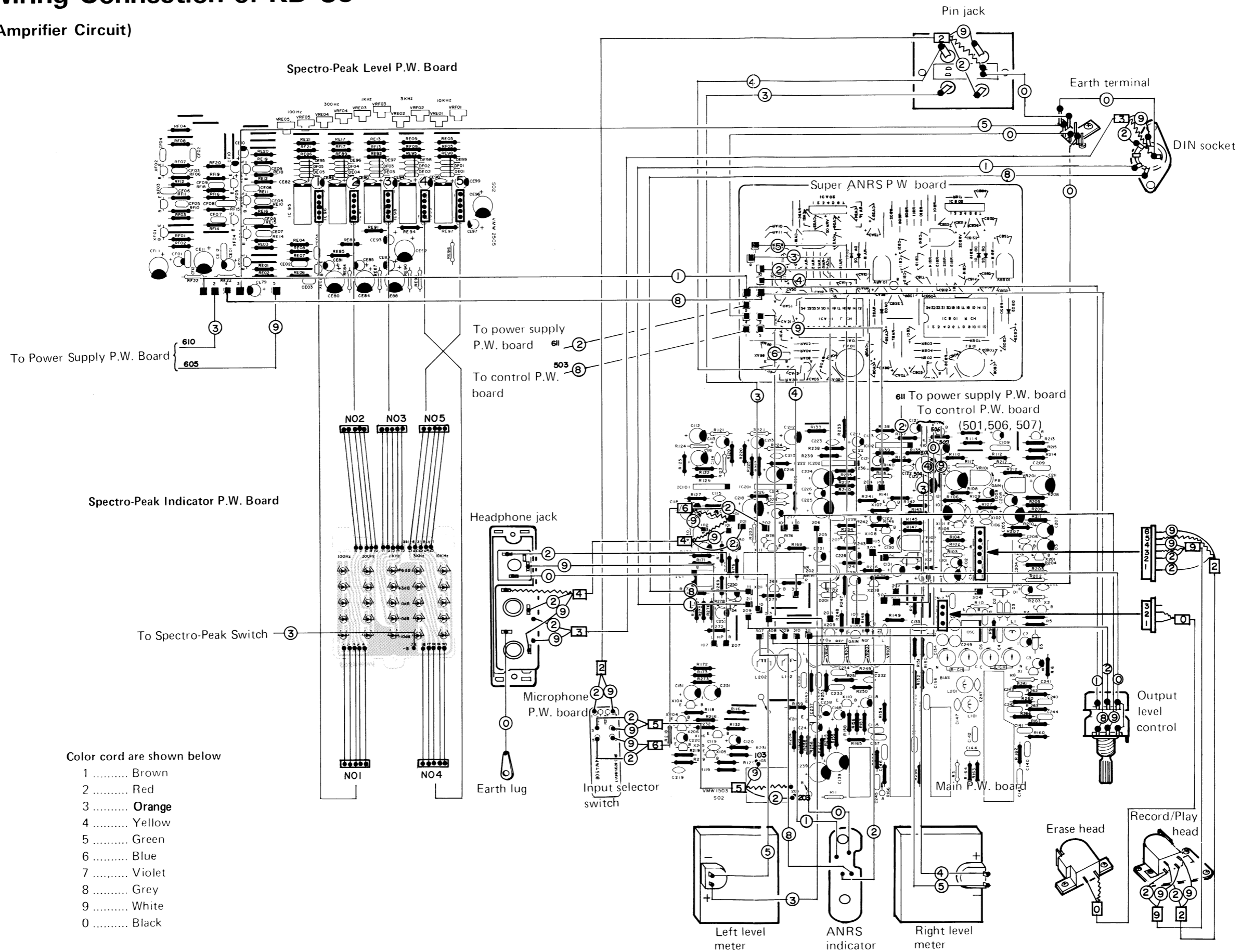
Equivalent circuit



IC501 M54410P is instructed in the "Information regarding new technical developments". (See page 7.)

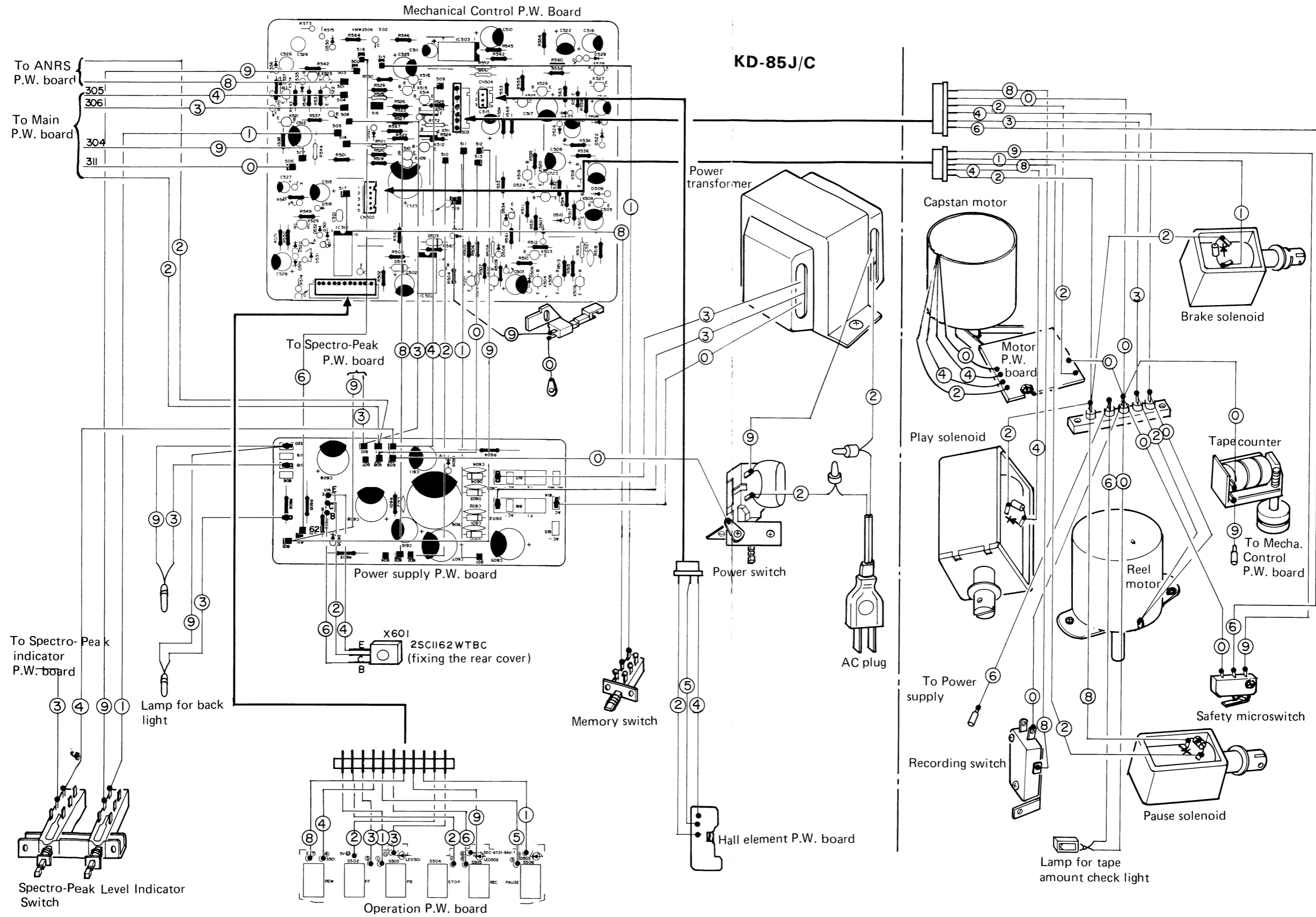
# Wiring Connection of KD-85

(Amprifier Circuit)



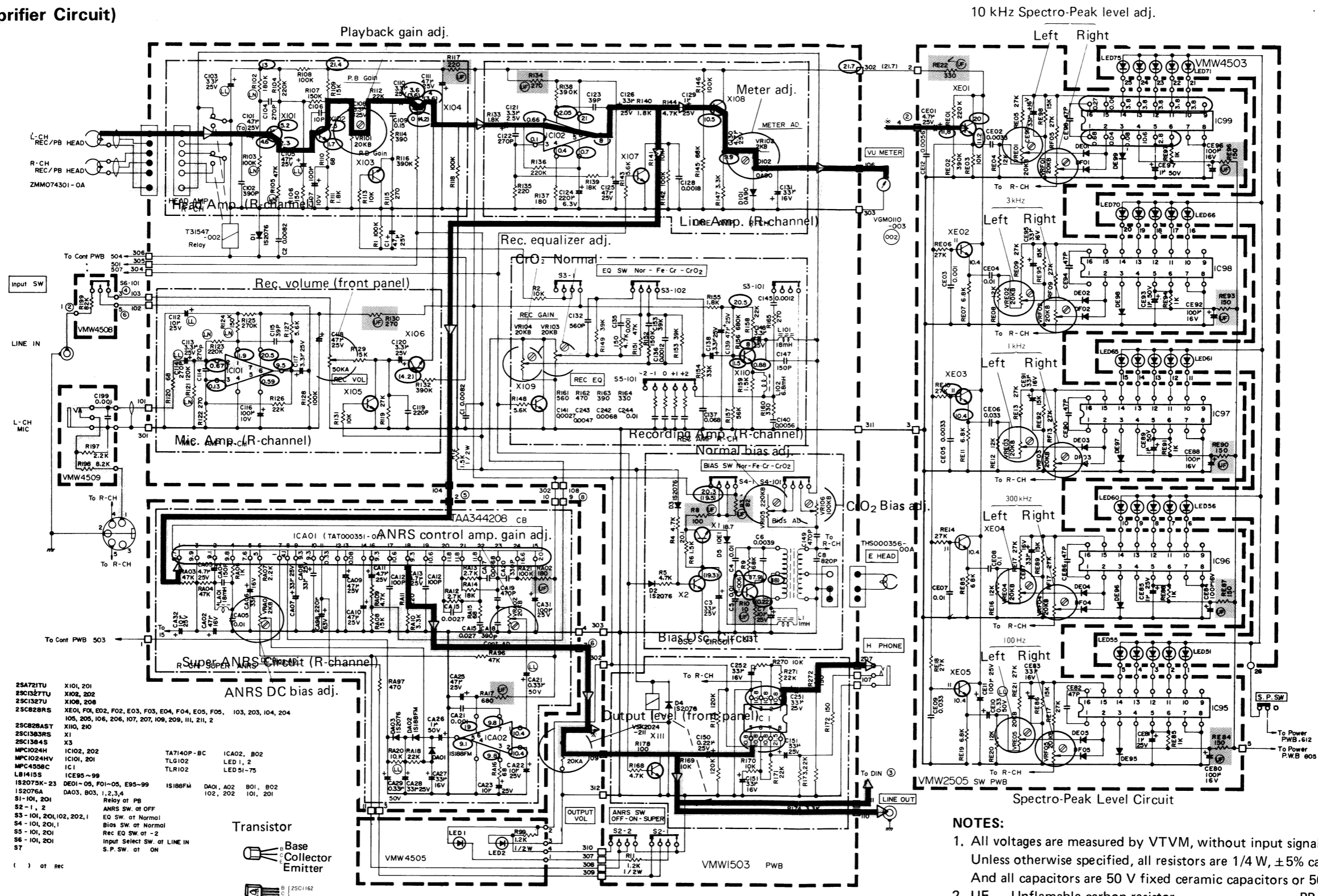
# Wiring Connection of KD-85

(Mecha. Control Circuit)

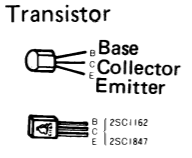


# Standard Schematic Diagram of KD-85

(Amprifier Circuit)



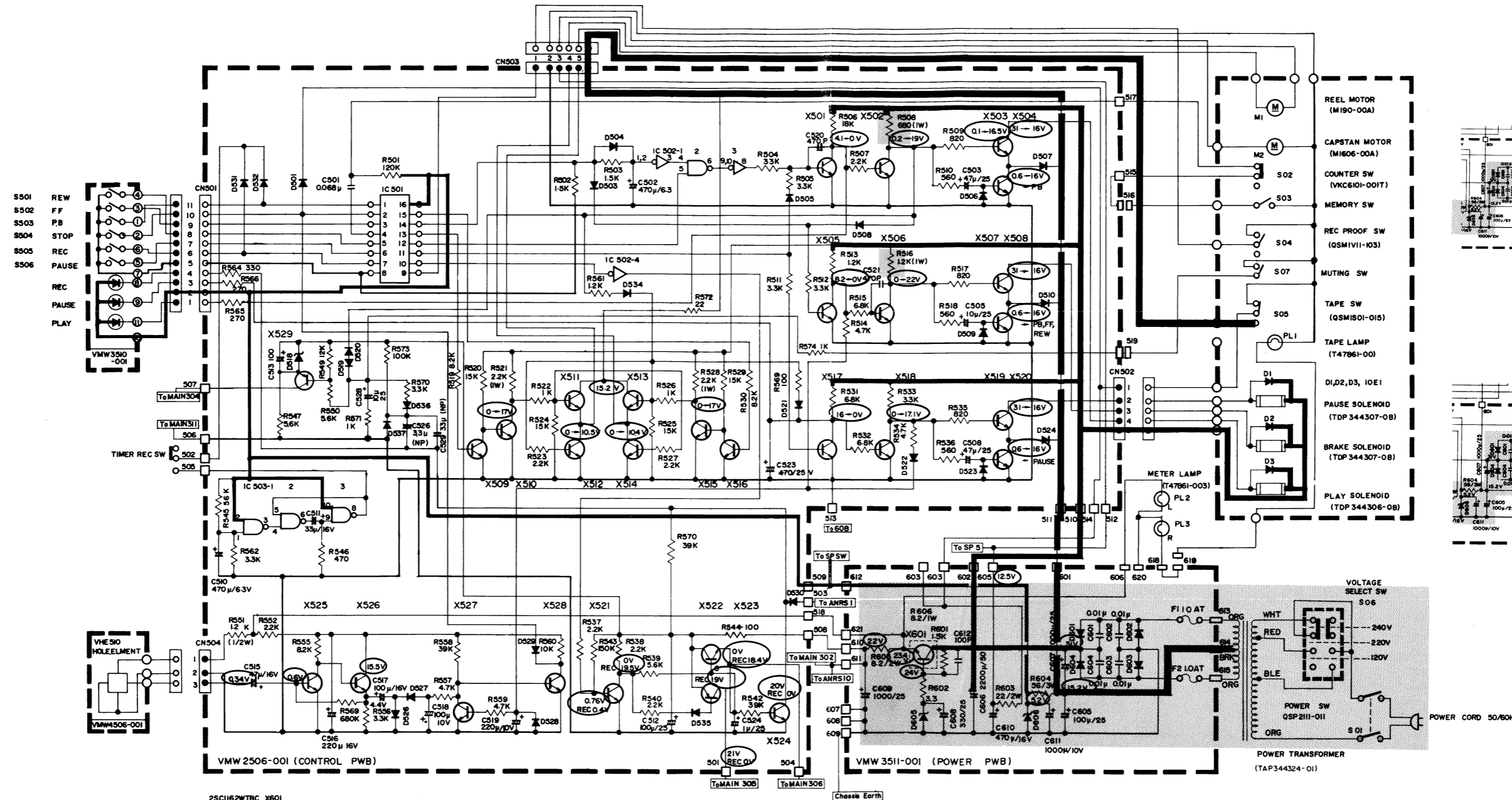
- 25A721TU X101, 201
- 25C1327TU X102, 202
- 25C1327U X106, 206
- 25C828RS XE01, F01, E02, F02, E03, F03, E04, F04, E05, F05, 103, 203, 104, 204
- 25C828AST X105, 205, 106, 206, 107, 207, 109, 209, 111, 211, 2
- X110, 210
- 25C1363RS X3
- MPC1024H IC102, 202
- MPC1024HV IC101, 201
- MPC4598C IC1
- LB1415S ICES95-99
- IS2075K-23 DE01-05, F01-05, E95-99
- IS2076A DA03, B03, 1, 2, 3, 4
- S1-101, 201 Relay at PB
- S2-1, 2 ANRS SW. at OFF
- S3-101, 201, 102, 202, 1 EQ SW. at Normal
- S4-101, 201, 1 Res. EQ SW. at -2
- S6-101, 201 Input Select SW. at LINE IN
- S7 S.P. SW. at ON



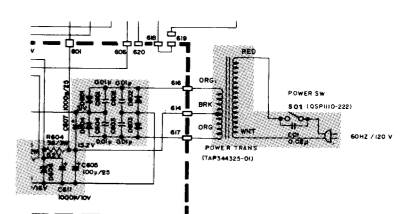
- NOTES:**
- All voltages are measured by VTVM, without input signal at REC mode. Unless otherwise specified, all resistors are 1/4 W, ±5% carbon resistors. And all capacitors are 50 V fixed ceramic capacitors or 50 V mylar capacitors.
    - UF – Unflamable carbon resistor
    - MF – Metal film resistor
    - OMF – Oxidized metal film resistor
    - Ta – Tantalum solid electrolytic capacitor
    - LL – +20% low leak current electrolytic capacitor
    - PP – Polypropylene capacitor
    - PS – Polystyrene capacitor
    - MM – Metallized mylar capacitor
    - NP – Non-polarized electrolytic capacitor
  - Blue line shows the signal at recording. Red line shows the signal at playback.
  - Parts with a shaded background are safety assurance parts. When replacing those parts, make sure to use the specified one.

# Standard Schematic Diagram of KD-85

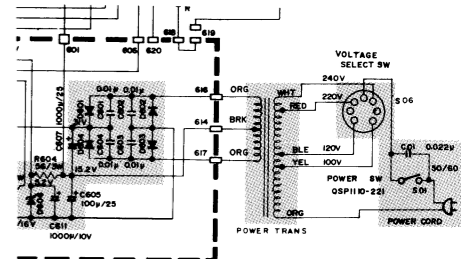
(Mecha. Control Circuit)



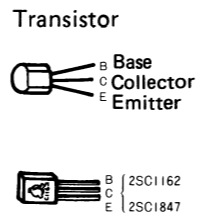
## KD-85J/C



## KD-85U



|                   |  |      |                               |
|-------------------|--|------|-------------------------------|
| 2SC162WTC         | X601   | S01  | POWER SW AT OFF               |
| 2SA564RS          | X523, X529   | S02  | COUNTER SW AT OFF (ON AT 999) |
| 2SC828RS          | X501, X502, X505, X506, X509, X510, X515, X516, X517, X518, X521, X522, X524, X525, X526, X527, X528   | S03  | MEMORY SW AT OFF              |
| 2SC1383S          | X504, X508, X520   | S04  | REC PROOF SW AT REC STATE     |
| 2SC1847QR         | X511, X513   | S05  | TAPE SW AT OFF                |
| 2SC1384S          | X507, X512, X514, X519   | S501 | REW SW AT OFF                 |
| 2SC1847R          | X503   | S502 | FF SW AT OFF                  |
| MS4410P           | IC 501   | S503 | P.B SW AT OFF                 |
| TD3400AP          | IC 502, 503  | S504 | STOP SW AT OFF                |
| 1S2076A           | D503, D504, D505, D506, D508, D509, D512, D513, D514, D517, D520, D522, D523, D526, D521, D534, D537, D531, D526, D527, D529, D530, D531, D532, D535, D536 | S505 | REC SW AT OFF                 |
| 1S188FM           | D501, D526, D527, D529, D530, D531, D532, D535, D536   | S506 | PAUSE SW AT OFF               |
| T30155-001 (IOE1) | D507, D510, D524, D601, D602, D603, D604   | S 07 | MUTING SW AT OFF              |
| RD43EC            | D518   |      |                               |
| RD10E             | D519   |      |                               |
| RD5, 1FB          | D606   |      |                               |
| RD24E             | D605   |      |                               |



### NOTES:

- All voltages are measured by VTVM, without input signal at REC mode. Unless otherwise specified, all resistors are 1/4 W, ±5% carbon resistors. And all capacitors are 50 V fixed ceramic capacitors or 50 V mylar capacitors.
- UF – Unflamable carbon resistor  
MF – Metal film resistor  
OMF – Oxidized metal film resistor  
Ta – Tantalum solid electrolytic capacitor  
LL – +20% low leak current electrolytic capacitor
- Red lines show +B circuits.
- Parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

# Maintenance

To get long, trouble-free service, maintenance is important. Do not forget cleaning and demagnetizing.

## Cleaning

After long use, the heads and tape part — capstan, pinch roller, etc. — will become dirty with dust or magnetic particles. Dirty heads cause imperfect erasing or high frequency drop-off. A dirty capstan and pinch roller will cause unstable tape speed, leading to increased wow and flutter. Always keep them clean by following the procedure below.

### 1. Cleaning the heads

- 1) Remove the front transparent cover.

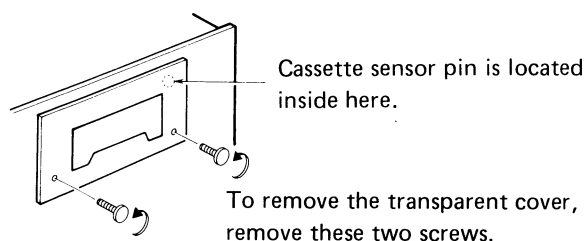


Fig. 17

- 2) Press the EJECT button to open the inner frame.
- 3) Wipe the record/play and erase heads with the supplied cleaning stick with its cotton tip dipped in alcohol.

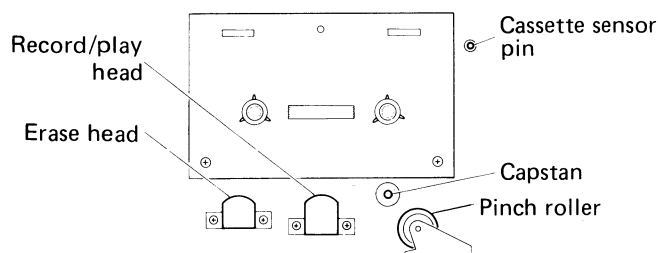


Fig. 18

### 2. Cleaning the pinch roller and capstan

- 4) Switch on the power.
- 5) While holding the cassette sensor pin, press the REC/PLAY button.
- 6) Apply the cotton tip to the rotating pinch roller and capstan. (Wipe from the right side of the capstan to prevent the cotton from being entangled.)

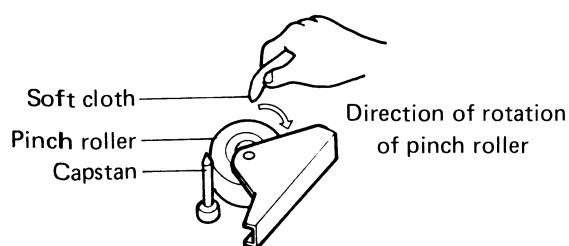


Fig. 19

- 7) After completion of the cleaning, close the inner frame and replace the transparent cover.

**Notes:** ○ Do not insert a cassette until the cleaned parts completely dry of alcohol.  
○ Do not use thinner or benzine to clean the heads.

### 3. Demagnetizing the record/play head

— POWER switch OFF —

After a long period of use, hissing noise may have increased or, in extreme cases, high frequencies may be erased due to the record/play head being magnetized. Demagnetize the metallic part of the head which comes in contact with the tape periodically (every 20 or 30 hours of use) using a head demagnetizer. For details refer to the instruction manual for the head demagnetizer.

### 4. Cleaning the cabinet and panel

Wipe the cabinet and panel clean with a soft cloth dipped in a neutral cleaner. Do not use thinner, benzine, alcohol or other strong solvents, as these will cause damage to the surface finish of the cabinet and panel.

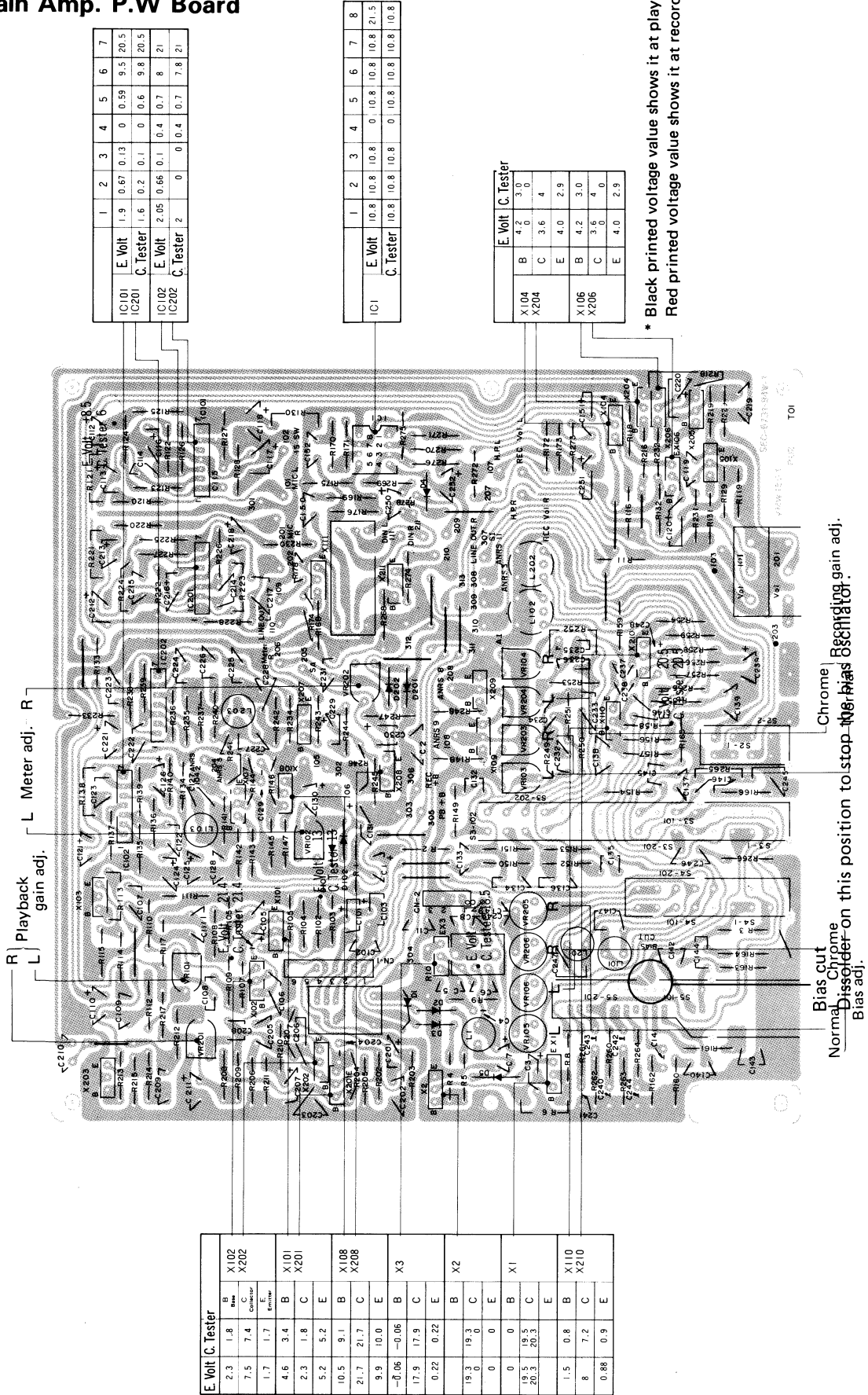
### Oiling

Feed one or two drops of machine oil to the rewind roller shaft, pinch roller shaft and magnet pulley shaft once or twice a year under normal conditions of use.

Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

# Printed Wiring Board Parts

## Main Amp. P.W Board



|       | 1         | 2    | 3    | 4    | 5   | 6    | 7   |      |
|-------|-----------|------|------|------|-----|------|-----|------|
| IC101 | E Volt    | 1.9  | 0.67 | 0.13 | 0   | 0.59 | 9.5 | 20.5 |
| IC201 | C. Tester | 1.6  | 0.2  | 0.1  | 0   | 0.6  | 9.8 | 20.5 |
| IC102 | E Volt    | 2.05 | 0.66 | 0.1  | 0.4 | 0.7  | 8   | 21   |
| IC202 | C. Tester | 2    | 0    | 0.4  | 0.7 | 7.8  | 21  |      |

|     | 1         | 2    | 3    | 4    | 5 | 6    | 7    | 8    |      |
|-----|-----------|------|------|------|---|------|------|------|------|
| IC1 | E Volt    | 10.8 | 10.8 | 10.8 | 0 | 10.8 | 10.8 | 10.8 | 10.8 |
|     | C. Tester | 10.8 | 10.8 | 10.8 | 0 | 10.8 | 10.8 | 10.8 | 10.8 |

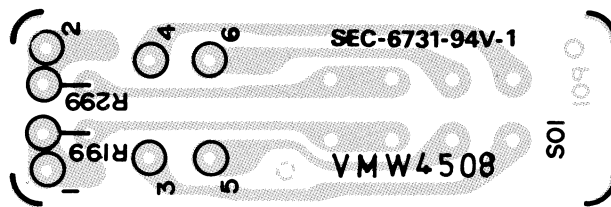
|      | E Volt | C. Tester |     |
|------|--------|-----------|-----|
| X104 | B      | 4.2       | 3.0 |
| X204 | C      | 3.6       | 4   |
|      | E      | 4.0       | 2.9 |
| X106 | B      | 4.2       | 3.0 |
| X206 | C      | 3.6       | 4   |
|      | E      | 4.0       | 2.9 |

\* Black printed voltage value shows it at playback.  
Red printed voltage value shows it at recording.

| E Volt | C. Tester |        |
|--------|-----------|--------|
| 2.3    | 1.8       | B X102 |
| 7.5    | 7.4       | C X202 |
| 1.7    | 1.7       | E      |
| 4.6    | 3.4       | B X101 |
| 2.3    | 1.8       | C X201 |
| 5.2    | 5.2       | E      |
| 10.5   | 9.1       | B X108 |
| 21.7   | 21.7      | C X208 |
| 9.9    | 10.0      | E      |
| -0.06  | -0.06     | B X3   |
| 17.9   | 17.9      | C      |
| 0.22   | 0.22      | E      |
| 19.3   | 19.3      | B X2   |
| 0      | 0         | C      |
| 0      | 0         | E      |
| 0      | 0         | B X1   |
| 19.5   | 19.5      | C      |
| 20.3   | 20.3      | E      |
| 1.5    | 0.8       | B X110 |
| 8      | 7.2       | C X210 |
| 0.88   | 0.9       | E      |

Bias cut  
Chrome  
Disorder on this position to stop R88m1g10f.  
Normal Bias adj.  
Bias adj.





## Main Amp. P.W. Board Parts List

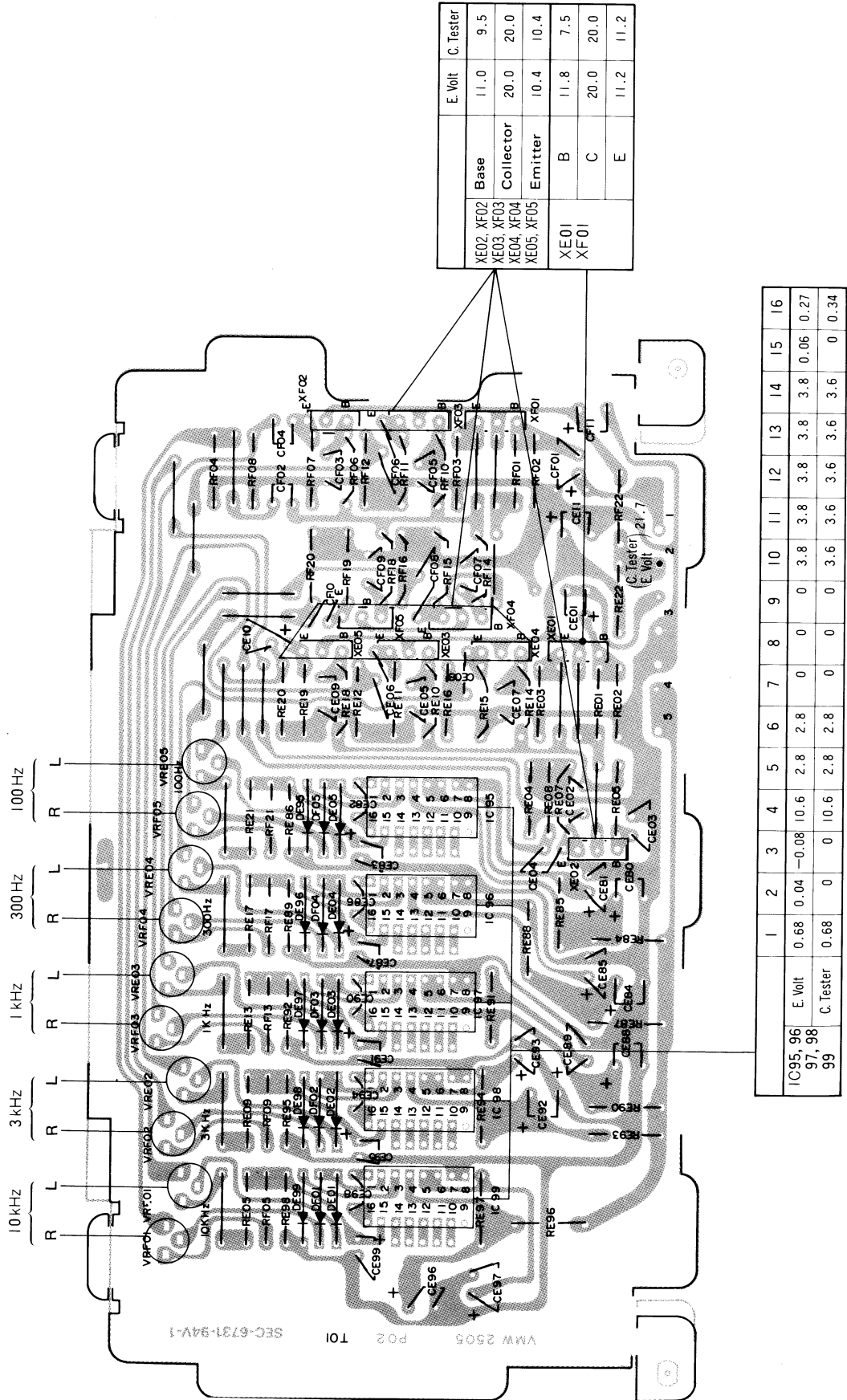
△ parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

| Ref. No.  | Parts No.   | Parts Name  | Remarks                  | Q'ty |
|---|-------------|-------------|--------------------------|------|
|   | VMW1503-002 | P.W. Board  | No supply as parts ass'y |      |
| R104, 204, 136, 236                             | QRD141K-224 | C. Resistor | 220 kΩ ¼ W               | 4    |
| R106, 206, 172, 272                             | " -151      | "           | 150 Ω "                  | 4    |
| R107, 207                                       | " -154      | "           | 150 kΩ "                 | 2    |
| R108,208,118,218,128,228,<br>142,242,146,246, 1 | " -104      | "           | 100 kΩ "                 | 11   |
| R109, 209, 129, 229                             | " -153      | "           | 15 kΩ "                  | 4    |
| R110, 210, 120, 220                             | " -680      | "           | 68 Ω "                   | 4    |
| R111,211,133,233,140,240                        | " -182      | "           | 1.8 kΩ "                 | 6    |
| R112,212,126,226,158,258,<br>173,273            | " -223      | "           | 22 kΩ "                  | 8    |
| R113,213,131,231,141,241,<br>169,269,170,270, 2 | " -103      | "           | 10 kΩ "                  | 11   |
| R114,214,160,260,163,263                        | " -391      | "           | 390 Ω "                  | 6    |
| R115,215,122,222,165,265                        | " -271      | "           | 270 Ω "                  | 6    |
| R116,216,132,232,138,238                        | " -394      | "           | 390 kΩ "                 | 6    |
| R119, 219                                       | " -273      | "           | 27 kΩ "                  | 2    |
| R125, 225                                       | " -274      | "           | 270 kΩ "                 | 2    |
| R127,227,143,243,148,248                        | " -562      | "           | 5.6 kΩ "                 | 6    |
| R135, 235                                       | " -221      | "           | 220 Ω "                  | 2    |
| R137, 237                                       | " -181      | "           | 180 Ω "                  | 2    |
| R139, 239                                       | " -183      | "           | 18 kΩ "                  | 2    |
| R144,244,150,250,168,268,<br>4, 5               | " -472      | "           | 4.7 kΩ "                 | 8    |
| R145, 245, 9                                    | " -683      | "           | 68 kΩ "                  | 3    |
| R147, 247, 274                                  | " -332      | "           | 3.3 kΩ "                 | 3    |
| R149,249,153,253                                | " -393      | "           | 39 kΩ "                  | 4    |
| R151, 251                                       | " -473      | "           | 47 kΩ "                  | 2    |
| R152, 252                                       | " -154      | "           | 150 kΩ "                 | 2    |
| R154, 254                                       | " -333      | "           | 33 kΩ "                  | 2    |
| R156, 256                                       | " -684      | "           | 680 kΩ "                 | 2    |
| R157, 257                                       | " -563      | "           | 56 kΩ "                  | 2    |
| R159, 259, 6                                    | " -152      | "           | 1.5 kΩ "                 | 3    |
| R164, 264                                       | " -331      | "           | 330 Ω "                  | 2    |
| R176, 276, 175, 275                             | " -124      | "           | 120 kΩ "                 | 4    |
| R155, 255                                       | " -182      | "           | 1.8 kΩ "                 | 2    |
|   | QWY123-022  | Bus Wire    |                          | 14   |
| R161, 261                                       | QRD142K-561 | C. Resistor | 560 Ω ¼ W                | 2    |
| R162, 262                                       | " -471      | "           | 470 Ω "                  | 2    |
| R174  | QRD143K-332 | "           | 3.3 kΩ "                 | 1    |
| R178, 278                                       | " -101      | "           | 100 Ω "                  | 2    |
| R3  | QRD146K-820 | "           | 82 Ω "                   | 1    |
| R8  | " -101      | "           | 100 Ω "                  | 1    |
| R10   | " -100      | "           | 10 Ω "                   | 1    |

| Ref. No.  | Parts No.    | Parts Name            | Remarks                    | Q'ty |
|---|--------------|-----------------------|----------------------------|------|
| R117, 217   | " -221       | "                     | 220 $\Omega$ " $\triangle$ | 2    |
| R130, 230, 134, 234   | " -271       | "                     | 270 $\Omega$ " $\triangle$ | 4    |
| R11   | QRD121K-122  | "                     | 1.2 k $\Omega$ ½ W         | 1    |
| R102, 202   | QRZ0019-184  | "                     | 180 k $\Omega$             | 2    |
| R103, 203   | " -104       | "                     | 100 k $\Omega$             | 2    |
| R105, 205   | " -473       | "                     | 47 k $\Omega$              | 2    |
| R121, 221   | " -124       | "                     | 120 k $\Omega$             | 2    |
| R123, 223   | " -224       | "                     | 220 k $\Omega$             | 2    |
| R124, 224   | " -154       | "                     | 150 k $\Omega$             | 2    |
| C107,207,116,216  | QEW41AA-107  | E. Capacitor          | 100 $\mu$ F 10 V           | 4    |
| C108,208,117,217,120,220,<br>126,226,138,238,148,248,<br>148,248, 7 | QEW41EA-335  | "                     | 3.3 $\mu$ F 25 V           | 13   |
| C129, 229   | QEW41EA-105  | E. Capacitor          | 1 $\mu$ F 25 V             | 2    |
| C130, 230   | " -475       | "                     | 4.7 $\mu$ F "              | 2    |
| C131, 231   | QEW41CA-476  | "                     | 47 $\mu$ F 16 V            | 2    |
| C150, 250   | QEC81HM-224  | "                     | 0.22 $\mu$ F 50 V          | 2    |
| C157, 251, 3  | QEW41EA-336  | "                     | 33 $\mu$ F 25 V            | 3    |
| C152, 252   | QEW41CA-336  | "                     | 33 $\mu$ F 16 V            | 2    |
| C102, 202   | QCS11HK-391  | Fixed C. Capacitor    | 390 pF 50 V                | 2    |
| C104, 204, 122, 222   | " -271       | "                     | 270 pF "                   | 4    |
| C106, 206   | " -100       | "                     | 10 pF "                    | 2    |
| C114, 214   | " -271       | "                     | 270 pF "                   | 2    |
| C115, 215, 123, 223   | " -391       | "                     | 390 pF "                   | 4    |
| C132, 232   | " -561       | "                     | 560 pF "                   | 2    |
| C147, 247   | " -151       | "                     | 150 pF "                   | 2    |
| C2  | QFM41HK-182  | Mylar Capacitor       | 0.0018 $\mu$ F "           | 1    |
| C133, 233, 141, 241   | " -272       | "                     | 0.0027 $\mu$ F "           | 4    |
| C135, 235   | " -102       | "                     | 0.001 $\mu$ F "            | 2    |
| C136, 236, 145, 245   | " -122       | "                     | 0.0012 $\mu$ F "           | 4    |
| C137, 237, 11   | " -683       | "                     | 0.068 $\mu$ F "            | 3    |
| C140, 240   | " -562       | "                     | 0.0056 $\mu$ F "           | 2    |
| C142, 242   | " -682       | "                     | 0.0068 $\mu$ F "           | 2    |
| C143, 243   | " -472       | "                     | 0.0047 $\mu$ F "           | 2    |
| C144, 244   | " -822       | "                     | 0.0082 $\mu$ F "           | 2    |
| C4, 5   | " -103       | "                     | 0.01 $\mu$ F "             | 2    |
| C111,211,125,225,139,<br>239,118,218                                | QEW41EA-476  | E. Capacitor          | 47 $\mu$ F 25 V            | 8    |
| C124, 224   | QEW40JA-227  | "                     | 220 $\mu$ F 6.3 V          | 2    |
| C101, 201   | QEE41EM-475  | Tantal E. Capacitor   | 4.7 $\mu$ F 25 V           | 2    |
| C103, 203   | QEB41EM-336  | Low Leak E. Capacitor | 33 $\mu$ F "               | 2    |
| C105, 205   | " -476       | "                     | 47 $\mu$ F "               | 2    |
| C112, 212   | " -106       | "                     | 10 $\mu$ F "               | 2    |
| C113,213,121,221,110,210  | " -335       | "                     | 3.3 $\mu$ F "              | 6    |
| C109, 209   | QFM41HJ-154  | Mylar Capacitor       | 0.15 $\mu$ F 50 V          | 2    |
| C149, 249   | QFS42BK-471  | Poly. Capacitor       | 470 pF                     | 2    |
| C8  | " -821       | "                     | 820 pF                     | 1    |
| C6  | QFZ0001-392  | "                     | 0.0039 $\mu$ F             | 1    |
| VR101,201,103,203,104,<br>204                                       | QVP8A0B-024  | S.F. Resistor         | 20 k $\Omega$              | 6    |
| VR102, 202  | " -023       | "                     | 2 k $\Omega$               | 2    |
| VR105, 205  | QVP4A0B-224  | "                     | 220 k $\Omega$             | 2    |
| VR106, 206  | " -104       | "                     | 100 k $\Omega$             | 2    |
| L101, 201   | TAC000324-01 | Inductor              | 18 mH                      | 2    |
| L1  | " -03        | "                     | 1 mH                       | 1    |

| Ref. No.  | Parts No.    | Parts Name       | Remarks           | Q'ty |
|---|--------------|------------------|-------------------|------|
| L102, 202   | TAC000320-02 | "                | 6.8 mH            | 2    |
| X101, 201   | 2SA721(TU)   | Si. Transistor   |                   | 2    |
| X102,202,108,208  | 2SC1327(TU)  | "                |                   | 4    |
| X103,203,104,204,105,205,<br>106,206,107,207,109,209,<br>111,211, 2 | 2SC828(RS)   | "                |                   | 15   |
| X1  | 2SC1383(RS)  | "                |                   | 1    |
| X3  | 2SC1384(S)   | "                |                   | 1    |
| IC101, 201  | UPC1024HV    | I.C.             |                   | 2    |
| IC102, 202  | UPC1024H     | "                |                   | 2    |
| IC1   | UPC4558C     | "                |                   | 1    |
|   | TAB345518-01 | O.S.C. Coil      |                   | 1    |
|   | T31547-002   | Relay            |                   | 1    |
|   | *VSK2D24-211 | Reed Relay       |                   | 1    |
| D101, 201, 102, 202   | 0A90         | Ge. Diode        |                   | 4    |
| D1-4  | 1S2076A      | Si. Diode        |                   | 4    |
| D5  | 10E1         | "                |                   | 1    |
|   | QVE5A3A-054V | V. Resistor      | Rec. Vol.         | 1    |
|   | QSR4645-200  | Rotary S. Switch | Rec. EQ.          | 1    |
|   | QSL2312-002  | Lever Switch     | ANRS              | 1    |
|   | QSL4312-002  | "                | Bias              | 1    |
|   | QSL8312-003  | "                | E.Q.              | 1    |
|   | QMV5005-006  | Plug Ass'y       |                   | 1    |
|   | QMV5005-003  | "                |                   | 1    |
|   | E43727-002   | Tab              |                   | 35   |
|   | VKL3125-001  | Control Bracket  |                   | 1    |
|   | QVD2A2A-024V | V. Resistor      | Output Level      | 1    |
|   | QSL2212-007  | Lever Switch     | Input Select SW   | 1    |
|   | VMW4508-001  | P.W. Board       |                   | 1    |
| R199, 299   | QRD143K-823  | C. Resistor      | 83 k $\Omega$ ¼ W | 2    |
|   | LPSP3006ZS   | Screw            | for Switch        | 2    |

Spectro-peak Level P.W Board



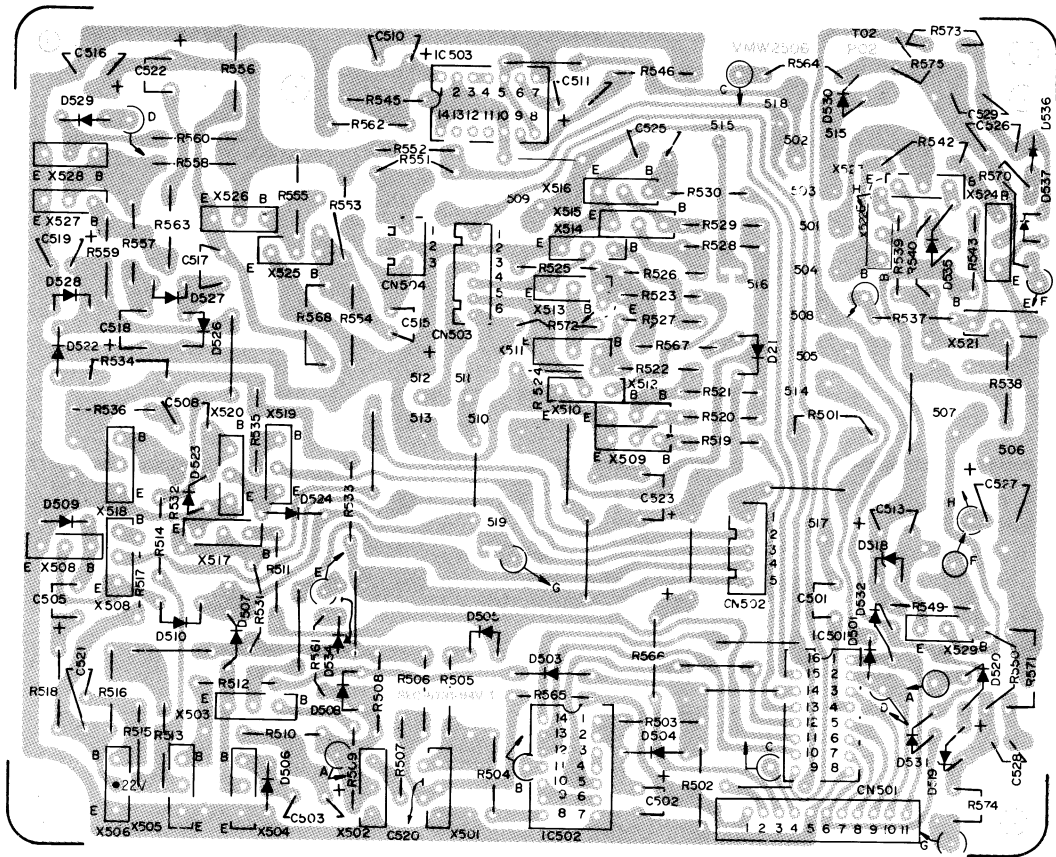
## Spectro-Peak Level P.W. Board Parts List

△ parts are safety assurance parts.

When replacing those parts, make sure to use the specified one.










| Ref. No.   | Parts No.    | Parts Name         | Remarks                  | Q'ty |
|--|--------------|--------------------|--------------------------|------|
|  | VMW2505-002  | P.W. Board         | No supply as parts ass'y |      |
| RE01, F01  | QRD141K-224  | C. Resistor        | 220 kΩ ¼ W               | 2    |
| RE02, F02  | " -394       | "                  | 390 kΩ "                 | 2    |
| RE03, F03  | " -103       | "                  | 10 kΩ "                  | 2    |
| RE04, F04, E08, F08, E12,<br>F12, E16, F16, E20, F20   | " -123       | "                  | 12 kΩ "                  | 10   |
| RE05, F05, E06, F06, E09,<br>F09, E10, F10, E13, F13,<br>E14, F14, E17, F17, E18,<br>F18, E21, F21 | " -273       | "                  | 27 kΩ "                  | 18   |
| RE07, F07, E11, F11, E15,<br>F15, E19, F19   | " -682       | "                  | 6.8 kΩ "                 | 8    |
| RE86, E89, E95, E92, E98   | " -153       | "                  | 15 kΩ "                  | 5    |
| RE85, E88, E91, E94, E97   | " -102       | "                  | 1 kΩ "                   | 5    |
|  | QWY123-022   | Bus Wire           |                          | 20   |
| RE22, F22  | QRD146K-331  | C. Resistor        | 330 Ω ¼ W △              | 2    |
| RE84, E87, E90, E93, E96   | " -151       | "                  | 150 Ω " △                | 5    |
| CE01, F01  | QEW41EA-475  | E. Capacitor       | 4.7 μF 25 V              | 2    |
| CE11, F11  | " -107       | "                  | 100 μF "                 | 2    |
| CE83, E87, E91, E95, E99   | QEW41CA-336  | "                  | 33 μF 16 V               | 5    |
| CE81, E85, E89, E93, E97   | QEW41EA-105  | "                  | 1 μF 25 V                | 5    |
| CE80, E84, E88, E92, E96   | QEW41CA-107  | "                  | 100 μF 16 V              | 5    |
| CE79   | QEW41EA-106  | "                  | 10 μF 25 V               | 1    |
| CE10, F10  | QEB41HM-334M | L.L.C.E. Capacitor | 0.33 μF 50 V             | 2    |
| CE02, F02  | QFM41HK-332  | Mylar Capacitor    | 0.0033 μF "              | 2    |
| CE03, F03  | " -102       | "                  | 0.001 μF "               | 2    |
| CE04, F04, E07, F07  | " -103       | "                  | 0.01 μF "                | 4    |
| CE05, F05  | " -332       | "                  | 0.0033 μF "              | 2    |
| CE06, F06, E09, F09  | " -333       | "                  | 0.033 μF "               | 4    |
| CE08, F08  | " -104       | "                  | 0.1 μF "                 | 2    |
| CE12, F12  | " -562       | "                  | 0.0056 μF "              | 2    |
| CE82, E86, E90, E94, E98   | QCS11HK-470  | Fixed C. Capacitor | 47 pF "                  | 5    |
| VRE01-05, F01-05   | QVP6A0B-024  | S.F. Resistor      | 20 kΩ                    | 10   |
| DE01-05, F01-05,<br>F95-99   | 1S2075K-23   | Si. Diode          |                          | 15   |
| XE01-05, F01-05  | 2SC828(RS)   | Si. Transistor     |                          | 10   |
| ICE95-99   | LB1415S      | I.C.               |                          | 5    |
|  | E43727-002   | Tab                |                          | 5    |
|  | QMV5005-005  | Plug Ass'y         |                          | 5    |
|  | TAH000459-01 | Mark (1)           | IC95 CN-1                | 2    |
|  | " -02        | " (2)              | IC96 CN-2                | 2    |
|  | " -09        | " (3)              | IC97 CN-3                | 2    |
|  | " -10        | " (4)              | IC98 CN-4                | 2    |
|  | " -11        | " (5)              | IC99 CN-5                | 2    |

Control P.W Board




|      |   | STOP  | REWIND | FF    | PLAY | PAUSE | REC  | REC-PAUSE |
|------|---|-------|--------|-------|------|-------|------|-----------|
| X501 | B | 0.085 | 0.085  | 0.085 | 0.78 | 0.76  | 0.76 | 0.76      |
|      | C | 4.1   | 4.1    | 4.1   | 0.1  | 0.13  | 0.1  | 0.13      |
|      | E | 0     | 0      | 0     | 0    | 0     | 0    | 0         |
| X502 | B | 0.82  | 0.82   | 0.82  | 0.1  | 0.13  | 0.1  | 0.13      |
|      | C | 0.15  | 0.15   | 0.15  | 19.5 | 18.5  | 19.5 | 18.5      |
|      | E | 0     | 0      | 0     | 0    | 0     | 0    | 0         |
| X503 | B | 0.15  | 0.15   | 0.15  | 16.5 | 16.5  | 16.5 | 16.5      |
|      | C | 31    | 31     | 31    | 16   | 16    | 16   | 16        |
|      | E | 0.05  | 0.05   | 0.05  | 16   | 16    | 16   | 16        |
| X504 | B | 0     | 0      | 0     | 0    | 0     | 0    | 0         |
|      | C | 0     | 0      | 0     | 16   | 16    | 16   | 16        |
|      | E | 0     | 0      | 0     | 0    | 0     | 0    | 0         |
| X505 | B | 0.8   | 0.1    | 0.1   | 0    | 0     | 0    | 0         |
|      | C | 8.2   | 0.1    | 0.1   | 0.04 | 0.04  | 0.04 | 0.04      |
|      | E | 0     | 0      | 0     | 0    | 0     | 0    | 0         |
| X506 | B | 0.8   | 0      | 0     | 0    | 0     | 0    | 0         |
|      | C | 0.1   | 22     | 22    | 22   | 22    | 22   | 22        |
|      | E | 0     | 0      | 0     | 0    | 0     | 0    | 0         |
| X507 | B | 0.12  | 16.5   | 16.5  | 16.5 | 16.5  | 16.5 | 16.5      |
|      | C | 31    | 16     | 16    | 16   | 16    | 16   | 16        |
|      | E | 0     | 16     | 16    | 16   | 16    | 16   | 16        |
| X508 | B | 0     | 0      | 0     | 0    | 0     | 0    | 0         |
|      | C | 0     | 16     | 16    | 16   | 16    | 16   | 16        |
|      | E | 0     | 0      | 0     | 0    | 0     | 0    | 0         |
| X509 | B | 0.15  | 00.7   | 0.14  | 0.14 | 0.14  | 0.14 | 0.14      |
|      | C | 0.77  | 0      | 0.77  | 0.77 | 0.77  | 0.77 | 0.77      |
|      | E | 0     | 0      | 0     | 0    | 0     | 0    | 0         |

|      |   | STOP | REWIND | FF   | PLAY | PAUSE | REC  | REC-PAUSE |
|------|---|------|--------|------|------|-------|------|-----------|
| X510 | B | 0.77 | 0      | 0.77 | 0.77 | 0.77  | 0.77 | 0.77      |
|      | C | 0    | 17     | 0    | 0    | 0     | 0    | 0         |
|      | E | 0    | 0      | 0    | 0    | 0     | 0    | 0         |
| X511 | B | 0    | 10.8   | 0    | 0    | 0     | 0    | 0         |
|      | C | 15   | 15     | 15   | 15   | 15    | 15   | 15        |
|      | E | 0    | 10.5   | 0    | 0    | 0     | 0    | 0         |
| X512 | B | 0    | 0      | 0.74 | 0.72 | 0.68  | 0.64 | 0.58      |
|      | C | 0    | 10.5   | 0    | 0    | 0     | 0    | 0         |
|      | E | 0    | 0      | 0    | 0    | 0     | 0    | 0         |
| X513 | B | 0    | 0      | 11   | 6.2  | 1.9   | 6.4  | 1.9       |
|      | C | 15   | 15     | 15   | 15   | 15    | 15   | 15        |
|      | E | 0    | 0      | 10.4 | 5.8  | 1.3   | 5.8  | 1.3       |
| X514 | B | 0    | 0.75   | 0    | 0    | 0     | 0    | 0         |
|      | C | 0    | 0      | 10.4 | 5.8  | 1.3   | 5.8  | 1.3       |
|      | E | 0    | 0      | 0    | 0    | 0     | 0    | 0         |
| X515 | B | 0.77 | 0.77   | 0    | 0.78 | 0.78  | 0.78 | 0.78      |
|      | C | 0    | 0      | 17   | 0.08 | 0.08  | 0.08 | 0.08      |
|      | E | 0    | 0      | 0    | 0    | 0     | 0    | 0         |
| X516 | B | 0.14 | 0.14   | 0.7  | 0.14 | 0.14  | 0.14 | 0.14      |
|      | C | 0.77 | 0.77   | 0    | 0.78 | 0.78  | 0.78 | 0.78      |
|      | E | 0    | 0      | 0    | 0    | 0     | 0    | 0         |
| X517 | B | 0.15 | 0.15   | 0.15 | 0.15 | 0.78  | 0.15 | 0.78      |
|      | C | 16   | 16     | 16   | 16   | 0.13  | 16   | 0.13      |
|      | E | 0    | 0      | 0    | 0    | 0     | 0    | 0         |
| X518 | B | 0.78 | 0.78   | 0.78 | 0.78 | 0.13  | 0.78 | 0.13      |
|      | C | 0    | 0      | 0    | 0    | 17.6  | 0    | 17.6      |
|      | E | 0    | 0      | 0    | 0    | 0     | 0    | 0         |

|       |   | STOP  | REWIND  | FF  | PLAY   | PAUSE   | REC   | REC-PAUSE   |
|-------|---|---|---|---|--|---|---|---|
| X519  | B | 0   | 0   | 0   | 0  | 16.5  | 0   | 16.5  |
|       | C | 31  | 31  | 31  | 31   | 16  | 31  | 16  |
|       | E | 0   | 0   | 0   | 0  | 16  | 0   | 16  |
| X520  | B |   |    |   |  |   |   |   |
|       | C | 0   | 0   | 0   | 0  | 16  | 0   | 16  |
|       | E | 0   | 0   | 0   | 0  | 0   | 0   | 0   |
| X521  | B |   |   |   | 0.76   |   | 0.38  |   |
|       | C |   |   |   | 0  |   | 19.5  |   |
|       | E |   |   |   | 0  |   | 0   |   |
| X522  | B |   |   |   | 0  |   | 19  |   |
|       | C |   |   |   | 20   |   | 19.6  |   |
|       | E |   |   |   | 0  |   | 18.4  |   |
| X523  | B |   |   |   | 19.3   |   |   |   |
|       | C |   |   |   | 20   |   |   |   |
|       | E |   |   |   | 20   |   |   |   |
| X524  | B |   |   |   | 0  |   | 0.76  |   |
|       | C |   |   |   | 3.8  |   | 0   |   |
|       | E |   |   |   | 0  |   | 0   |   |
| X525  | B |   |   |   | 0.65   |   |   |   |
|       | C |   |   |   | 5  |   |   |   |
|       | E |   |   |   | 0  |   |   |   |
| X526  | B |   |   |   | 5  |   |   |   |
|       | C |   |   |   | 15.5   |   |   |   |
|       | E |   |   |   | 4.4  |   |   |   |
| X529  | B |   |   |   | 16.5   |   |   |   |
|       | C |   |   |   | 17.2   |   |   |   |
|       | E |   |   |   | 17.2   |   |   |   |
| IC501 | 1 | 5.2   | 5.2   | 5.2   |  | 5.2   | 5.2   | 5.2   |
|       | 2 |  | 5.2   | 5.2   | 5.2  | 5.2   | 5.2   | 5.2   |
|       | 3 | 5.2   | 5.2   |  | 5.2  | 5.2   | 5.2   | 5.2   |
|       | 4 | 5.2   | 5.2   | 5.2   | 5.2  | 5.2   | 5.2   | 5.2   |
|       | 5 | 5.2   |  | 5.2   | 5.2  | 5.2   | 5.2   | 5.2   |
|       | 6 | 5.2   | 5.2   | 5.2   | 5.2  |  | 5.2   |  |
|       | 7 | 5.2   | 5.2   | 5.2   | 5.2  | 5.2   |  |    |
|       | 8 | 0   | 0   | 0   | 0  | 0   | 0   | 0   |
|       | 9 | 5.2   | 5.2   | 5.2   | 5.2  | 5.2   | 5.2   | 5.2   |

|       |     | STOP | REWIND | FF   | PLAY | PAUSE | REC  | REC-PAUSE |
|-------|-----|------|--------|------|------|-------|------|-----------|
|       | 10  | 0.14 | 0.14   | 0.14 | 0.14 | 0.14  | 5.2  | 5.2       |
|       | 11  | 0.14 |        |      |      |       | 3.2  | 3.2       |
|       | 12  | 0.14 |        |      | 5.2  |       |      |           |
|       | 13  | 0.84 | 4.4    |      |      |       |      |           |
|       | 14  | 0.15 | 2.35   | 2.35 |      |       |      |           |
|       | 15  | 0.14 |        | 4.5  |      |       |      |           |
| IC502 | 16  | 5.2  | 5.2    | 5.2  | 5.2  | 5.2   | 5.2  | 5.2       |
|       | 1   | 1.05 | 2.35   | 2.35 | 1.05 | 1.05  | 1.05 | 1.05      |
|       | 2   | 1.05 | 2.35   | 2.35 | 1.05 | 1.05  | 1.05 | 1.05      |
|       | 3   | 3.5  | 2.09   | 0.09 | 3.5  | 3.5   | 3.5  | 3.5       |
|       | 4   | 3.5  | 2.09   | 0.09 | 3.5  | 3.5   | 3.5  | 3.5       |
|       | 5   | 0.14 | 0.14   | 0.14 | 5.2  | 0.14  | 0.14 | 0.14      |
|       | 6   | 4    | 4      | 4    | 0.1  | 4     | 0.1  | 4         |
|       | 7   | 0    | 0      | 0    | 0    | 0     | 0    | 0         |
|       | 8   | 0.09 | 0.09   | 0.09 | 3.7  | 0.1   | 3.7  | 0.1       |
|       | 9   | 4    | 4      | 4    | 0.1  | 4     | 0.1  | 4         |
|       | 10  | 4    | 4      | 4    | 0.1  | 4     | 0.1  | 4         |
|       | 11  | 3.7  | 3.7    | 3.7  | 3.7  | 3.7   | 0.1  | 0.1       |
|       | 12  | 0.14 | 0.14   | 0.14 | 0.14 | 0.14  | 0.52 | 0.52      |
|       | 13  | 0.14 | 0.14   | 0.14 | 0.14 | 0.14  | 0.52 | 0.52      |
| 14    | 5.2 | 5.2  | 5.2    | 5.2  | 5.2  | 5.2   | 5.2  |           |
| IC503 | 1   |      |        |      | 1.5  |       |      |           |
|       | 2   |      |        |      | 5.2  |       |      |           |
|       | 3   |      |        |      | 0.1  |       |      |           |
|       | 4   |      |        |      | 0.1  |       |      |           |
|       | 5   |      |        |      | 5.2  |       |      |           |
|       | 6   |      |        |      | 4.4  |       |      |           |
|       | 7   |      |        |      | 0    |       |      |           |
|       | 8   |      |        |      | 5.2  |       |      |           |
|       | 9   |      |        |      | 0.4  |       |      |           |
|       | 10  |      |        |      | 5.2  |       |      |           |
|       | 11  |      |        |      |      |       |      |           |
|       | 12  |      |        |      |      |       |      |           |
|       | 13  |      |        |      |      |       |      |           |
|       | 14  |      |        |      | 5.2  |       |      |           |

Control P.W. Board Parts List

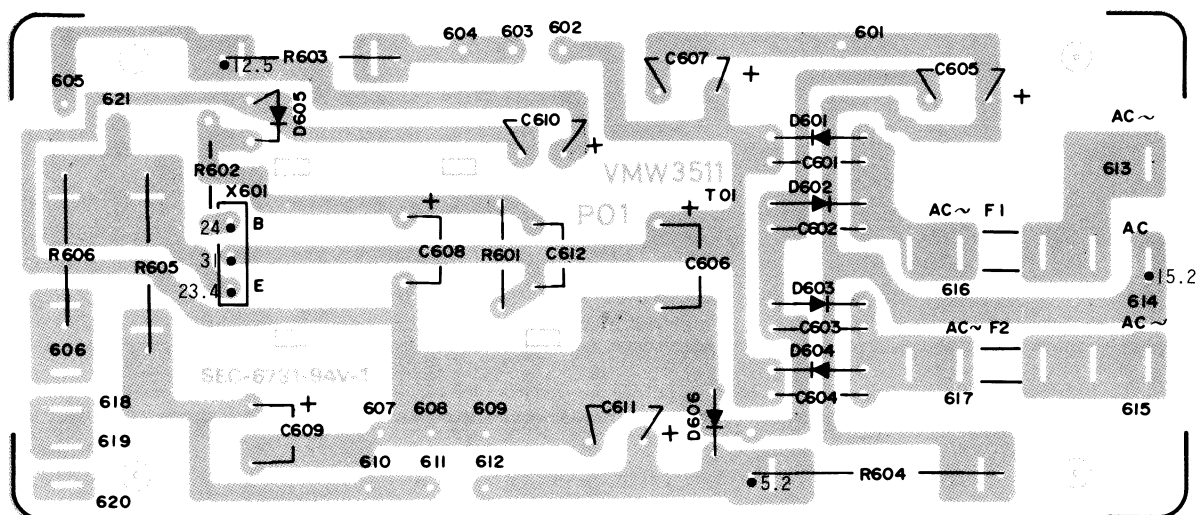
 parts are safety assurance parts.  
When replacing those parts, make sure to use the specified one.

| Ref. No.                 | Parts No.   | Parts Name  | Remarks                  | Q'ty |
|--------------------------|-------------|-------------|--------------------------|------|
| R501                     | VMW2506-002 | P.W. Board  | No supply as parts ass'y |      |
| R502, 503                | QRD141K-124 | C. Resistor | 120 kΩ ¼ W               | 1    |
| R504,505,511,533,556,570 | " -152      | "           | 1.5 kΩ "                 | 1    |
| R506                     | " -332      | "           | 3.3 kΩ "                 | 6    |
| R507,523,527,537,538     | " -183      | "           | 18 kΩ "                  | 1    |
| R509,517,535             | " -222      | "           | 2.2 kΩ "                 | 5    |
| R510, 518, 536           | " -821      | "           | 820 Ω "                  | 3    |
| R512                     | " -561      | "           | 560 Ω "                  | 3    |
| R513                     | " -333      | "           | 33 kΩ "                  | 1    |
| R514, 534, 557, 559      | " -123      | "           | 12 kΩ "                  | 1    |
| R515, 531, 532, 562      | " -472      | "           | 4.7 kΩ "                 | 4    |
| R579, 530                | " -682      | "           | 6.8 kΩ "                 | 4    |
| R520, 524, 525, 529      | " -822      | "           | 8.2 kΩ "                 | 2    |
| R522, 526, 571           | " -153      | "           | 15 kΩ "                  | 4    |
| R539, 547, 550           | " -102      | "           | 1 kΩ "                   | 3    |
| R540                     | " -562      | "           | 5.6 kΩ "                 | 3    |
| R542, 558                | " -223      | "           | 22 kΩ "                  | 1    |
| R543                     | " -393      | "           | 39 kΩ "                  | 2    |
| R545, 555                | " -154      | "           | 150 kΩ "                 | 1    |
|                          | " -563      | "           | 56 kΩ "                  | 2    |

| Ref. No.   | Parts No.    | Parts Name         | Remarks  | Q'ty |
|--|--------------|--------------------|----------|------|
| R546   | " -471       | "                  | 470 Ω    | 1    |
| R549   | " -123       | "                  | 12 kΩ    | 1    |
| R560   | " -103       | "                  | 10 kΩ    | 1    |
| R561   | " -122       | "                  | 1.2 kΩ   | 1    |
| R564   | " -331       | "                  | 330 Ω    | 1    |
| R565, 566  | " -271       | "                  | 270 Ω    | 2    |
| R567   | " -101       | "                  | 100 Ω    | 1    |
| R568   | " -684       | "                  | 680 kΩ   | 1    |
|  | QWY123-022   | Bus Wire           |          | 16   |
| R516   | QRG016J-122  | O.M.F. Resistor    | 1.2 kΩ   | 1    |
| R521, 528  | QRG019J-222  | "                  | 2.2 kΩ   | 2    |
| R508   | QRG016J-681  | "                  | 680 Ω    | 1    |
| R551   | QRD121K-122  | C. Resistor        | 1.2 kΩ   | 1    |
| R552   | QRD146K-222  | "                  | 2.2 kΩ   | 1    |
| R544   | " -101       | "                  | 100 Ω    | 1    |
| R572   | QRD146K-220  | "                  | 22 Ω     | 1    |
| R574   | QRD143K-102  | "                  | 1 kΩ     | 1    |
| R575   | QRD143K-393  | "                  | 39 kΩ    | 1    |
| R573   | " -104       | "                  | 100 kΩ   | 1    |
| C502, 510  | QEW40JA-477  | E. Capacitor       | 470 μF   | 2    |
| C503, 508  | QEW41EA-476  | "                  | 47 μF    | 2    |
| C505   | " -106       | "                  | 10 μF    | 1    |
| C511   | QEW41AA-336N | "                  | 33 μF    | 1    |
| C512   | QEW41EA-107  | "                  | 100 μF   | 1    |
| C513, 518  | QEW41AA-107  | "                  | 100 μF   | 2    |
| C515   | QEW41CA-476  | "                  | 47 μF    | 1    |
| C516, 519  | " -227       | "                  | 220 μF   | 2    |
| C517   | " -107       | "                  | 100 μF   | 1    |
| C523   | QEW41EA-477  | "                  | 470 μF   | 1    |
| C526, 529  | QEN41EA-335N | "                  | 3.3 μF   | 2    |
| C527   | QEW41HA-105N | "                  | 1 μF     | 1    |
| C528   | QEW41EA-106  | "                  | 10 μF    | 1    |
| C501   | QFM41HK-683  | Mylar Capacitor    | 0.068 μF | 1    |
| C520, 521  | QCS11HK-471  | Fixed C. Capacitor | 470 pF   | 2    |
| IC501  | M54410P      | I.C.               |          | 1    |
| IC502, 503   | TD3400AP     | "                  |          | 2    |
| X501,502,505,506,509,510,<br>515,516,517,518,521,522,<br>524-528 | 2SC828(RS)   | Si. Transistor     |          | 17   |
| X503   | 2SC1847(R)   | "                  |          | 1    |
| X504, 508, 520   | 2SC1383(S)   | "                  |          | 3    |
| X507, 512, 514, 519  | 2SC1384(S)   | "                  |          | 4    |
| X511, 513  | 2SC1847(QR)  | "                  |          | 2    |
| X523, 529  | 2SA564(RS)   | "                  |          | 2    |
| D503-506, 508,509, 520-<br>523, 528, 534, 537                    | 1S2076A      | Si. Diode          |          | 13   |
| D501,526,527,529-532,<br>535, 536                                | 1S188FM      | Ge. Diode          |          | 9    |
| D507, 510, 524   | 10E1         | Si. Diode          |          | 3    |
| D518   | RD4.3EC      | Zener Diode        |          | 1    |
| D519   | RD10E        | "                  |          | 1    |
|  | QMV5005-006  | Plug Ass'y         |          | 1    |
|  | QMV5005-005  | "                  |          | 1    |
|  | QMV5005-003  | "                  |          | 1    |
|  | QMV5004-011  | "                  |          | 1    |
|  | FG9010-001   | Tab                |          | 2    |
|  | E43727-002   | "                  |          | 17   |



Power Supply P.W Board



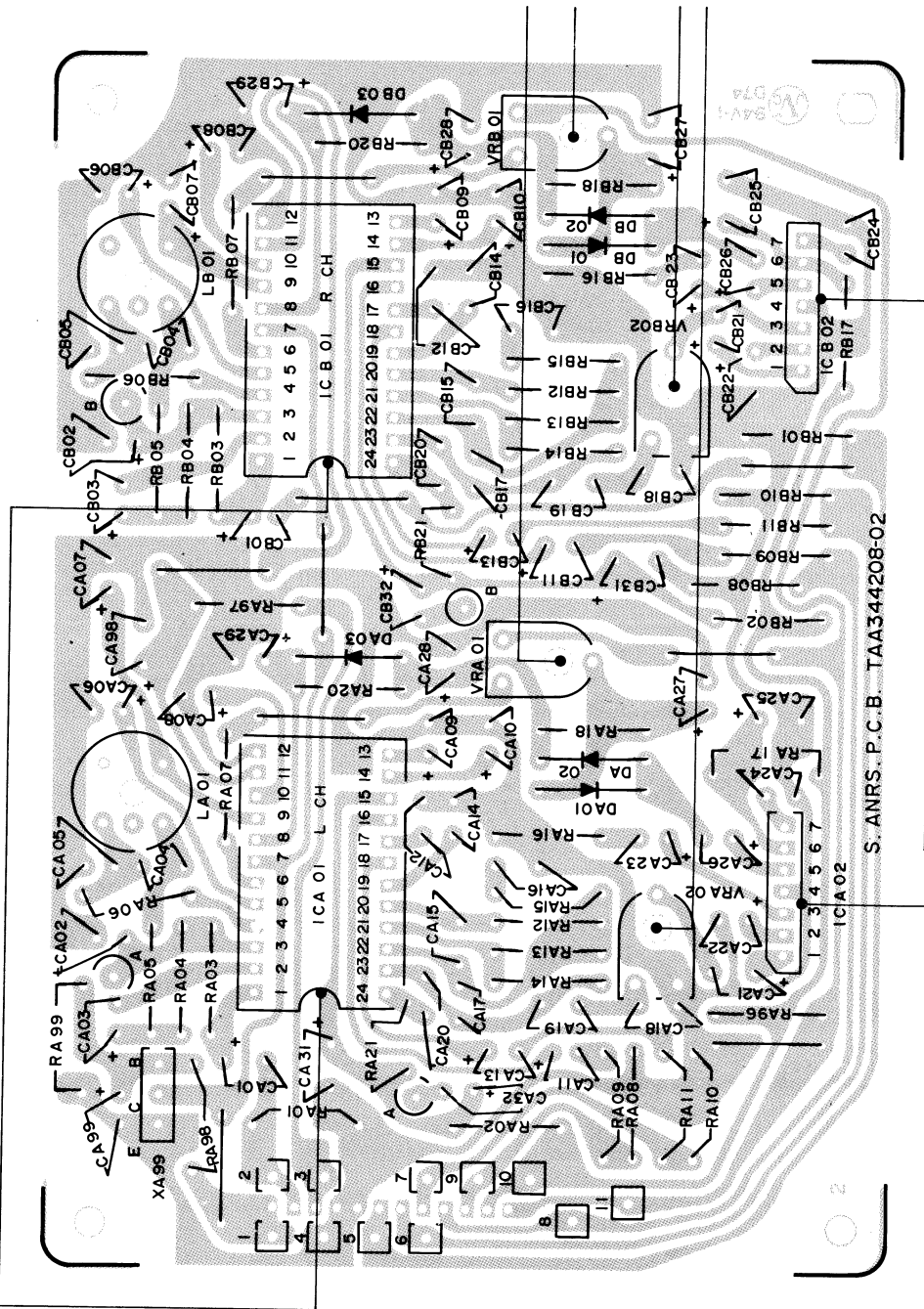
Power Supply P.W. Board Parts List

△ parts are safety assurance parts.  
When replacing those parts, make sure to use the specified one.

| Ref. No.       | Parts No.      | Parts Name         | Remarks                    | Q'ty |
|----------------|----------------|--------------------|----------------------------|------|
|                | VMW3511-001    | P.W. Board         | No supply as parts ass'y △ | 1    |
| C605, 607, 609 | QEW41EA-108    | E. Capacitor       | 1000 μF 25 V △             | 3    |
| C606           | QEW71HH-228M   | "                  | 2200 μF 50 V △             | 1    |
| C608           | QEW41EA-337    | "                  | 330 μF 25 V △              | 1    |
| C610           | QEW41CA-477    | "                  | 470 μF 16 V △              | 1    |
| C611           | QEW41AA-108    | "                  | 1000 μF 10 V △             | 1    |
| C601-604       | QCF12HP-103    | Fixed C. Capacitor | 0.01 μF 50 V △             | 4    |
| C612           | QCS11HK-101    | "                  | 100 pF △                   | 1    |
| R601           | QRD146K-102    | C. Resistor        | 1 kΩ ¼ W △                 | 1    |
| R602           | " -3R3         | "                  | 3.3 Ω △                    | 1    |
| R603           | QRX026J-220    | O.M.F. Resistor    | 22 Ω △                     | 1    |
| R604           | QRG036J-560    | "                  | 56 Ω △                     | 1    |
| R605           | QRX026J-8R2    | "                  | 8.2 Ω △                    | 1    |
|                | TAZ000509-02   | Fuse Seal          | 1 AT                       | 2    |
|                | TAZ001331-02BS | Fuse Holder        | KD-85B △                   | 4    |
|                | TAZ001331-02   | "                  | KD-85A/E △                 | 4    |
|                | QMF51A2-1ROLBS | Fuse               | 1 AT - KD-85B △            | 2    |
|                | QMF51A2-1R0    | "                  | 1 AT - KD-85A/E △          | 2    |
|                | E40130-001     | Tab                |                            | 6    |
|                | E43727-002     | "                  |                            | 10   |
|                | A43596-001     | "                  |                            | 8    |
|                | FG9010-001     | "                  | △                          | 1    |
| X601           | 2SC1162WT(BC)  | Si. Transistor     | △                          | 1    |
| D601-604       | 10E1           | Si. Diode          | △                          | 4    |
| D605           | RD24E(1)       | Zener Diode        | △                          | 1    |
| D606           | RD5.1FB        | "                  |                            | 1    |
|                | VMW4514-001    | P.W. Board         | for X601                   | 1    |
|                | VKL4264-001    | Radiation Plate    | "                          | 1    |
|                | LPSP3008ZS     | Screw              | "                          | 1    |
|                | LPSP2606Z      | "                  | "                          | 1    |

Super ANRS P.W Board

|           |     |     |     |     |     |     |     |     |     |     |      |    |      |      |      |     |      |     |      |      |      |      |      |      |      |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----|------|------|------|-----|------|-----|------|------|------|------|------|------|------|
|           | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11   | 12 | 13   | 14   | 15   | 16  | 17   | 18  | 19   | 20   | 21   | 22   | 23   | 24   |      |
| ICA01     |     |     |     |     |     |     |     |     |     |     |      |    |      |      |      |     |      |     |      |      |      |      |      |      |      |
| ICB01     |     |     |     |     |     |     |     |     |     |     |      |    |      |      |      |     |      |     |      |      |      |      |      |      |      |
| E. Volt   | 9.7 | 9.1 | 9.9 | 9.8 | 7.6 | 5.0 | 1.0 | 4.1 | 9.3 | 9.3 | 0.33 | 0  | 0.08 | 0.68 | 20.0 | 9.3 | 10.6 | 9.3 | 10.6 | 11.8 | 11.8 | 11.8 | 11.8 | 11.8 | 16.6 |
| C. Tester | 7.8 | 9.2 | 9.9 | 7.7 | 7.6 | 5.0 | 1.0 | 4.1 | 9.3 | 9.3 | 0.33 | 0  | 0.08 | 0.68 | 20.0 | 9.3 | 10.6 | 9.3 | 10.6 | 11.8 | 11.8 | 11.8 | 11.8 | 11.8 | 16.6 |



|           |      |      |     |   |     |    |     |
|-----------|------|------|-----|---|-----|----|-----|
|           | 1    | 2    | 3   | 4 | 5   | 6  | 7   |
| ICA02     |      |      |     |   |     |    |     |
| ICB02     |      |      |     |   |     |    |     |
| E. Volt   | 10.4 | 10.4 | 9.8 | 0 | 9.1 | 19 | 9.8 |
| C. Tester | 9.0  | 10.4 | 9.8 | 0 | 9.1 | 19 | 9.8 |

## Super ANRS P.W. Board Parts List

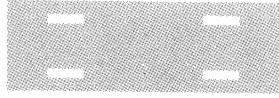
⚠ parts are safety assurance parts.

When replacing those parts, make sure to use the specified one.

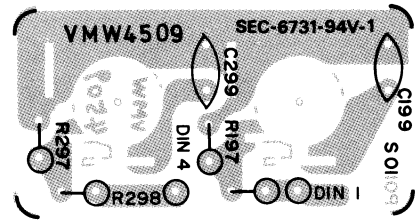
| Ref. No.                             | Parts No.    | Parts Name         | Remarks                  | Q'ty |
|--------------------------------------|--------------|--------------------|--------------------------|------|
|                                      | TAA344208-02 | P.W. Board         | No supply as parts ass'y | 1    |
| RA03,B03,A04,B04,A96                 | QRD141K-473  | C. Resistor        | 47 kΩ ¼ W                | 5    |
| RA05, B05                            | " -562       | "                  | 5.6 kΩ "                 | 2    |
| RA06, B06                            | " -102       | "                  | 1 kΩ "                   | 2    |
| RA07, B07                            | " -222       | "                  | 2.2 kΩ "                 | 2    |
| RA08, B08                            | " -153       | "                  | 15 kΩ "                  | 2    |
| RA09, B09                            | " -472       | "                  | 4.7 kΩ "                 | 2    |
| RA10, B10                            | " -333       | "                  | 33 kΩ "                  | 2    |
| RA11, B11                            | " -221       | "                  | 220 Ω "                  | 2    |
| RA12, B12, A13, B13                  | " -272       | "                  | 2.7 kΩ "                 | 4    |
| RA14, B14                            | " -183       | "                  | 18 kΩ "                  | 2    |
| RA15, B15, A16, B16                  | " -680       | "                  | 68 Ω "                   | 4    |
| RA18, B18                            | " -223       | "                  | 22 kΩ "                  | 2    |
| RA20, B20                            | " -103       | "                  | 10 kΩ "                  | 2    |
| RA97                                 | " -471       | "                  | 470 Ω "                  | 1    |
|                                      | QWY123-022   | Bus Wire           |                          | 8    |
| RA21, B21                            | QRD143K-104  | C. Resistor        | 100 kΩ ¼ W               | 2    |
| RA02, B02                            | QRD146K-101  | "                  | 100 Ω "                  | 2    |
| RA17, B17                            | " -681       | "                  | 680 Ω "                  | 2    |
| CA01,B01, A26,B26                    | QEW41EA-105  | E. Capacitor       | 1 μF 25 V                | 4    |
| CA02,B02, A07,B07,<br>A08,B08        | QEW41CA-476  | "                  | 47 μF 16 V               | 6    |
| CA03,B03,A11,B11,A13,<br>B13         | QEW41EA-475  | "                  | 4.7 μF 25 V              | 6    |
| CA06,B06,A09,B09,A10,<br>B10,A27,B27 | QEW41CA-336  | "                  | 33 μF 16 V               | 8    |
| CA22,B22,A23,B23,A32,<br>B32         | QEW41EA-106  | "                  | 10 μF 25 V               | 6    |
| CA25, B25                            | " -476       | "                  | 47 μF "                  | 2    |
| CA28, B28                            | QEW41EA-335  | "                  | 3.3 μF "                 | 2    |
| CA31, B31                            | " -107       | "                  | 100 μF "                 | 2    |
| CA98                                 | QEW40JA-227  | "                  | 220 μF 6.3 V             | 1    |
| CA21,B21,A29,B29                     | QEB41HM-334M | L.L.E. Capacitor   | 0.33 μF 50 V             | 4    |
| CA04, B04                            | QCS11HK-151  | Fixed C. Capacitor | 150 pF "                 | 2    |
| CA05, B05                            | QCY41HK-102  | "                  | 0.001 μF "               | 2    |
| CA12, B12, A14, B14                  | QCS11HK-101  | "                  | 100 pF "                 | 4    |
| CA18, B18                            | QCS11HK-391  | "                  | 390 pF "                 | 2    |
| CA19, B19                            | " -471       | "                  | 470 pF "                 | 2    |
| CA20, B20                            | " -331       | "                  | 330 pF "                 | 2    |
| CA15, B15                            | QFM41HJ-272  | Mylar Capacitor    | 0.0027 μF "              | 2    |
| CA16, B16                            | " -273       | "                  | 0.027 μF "               | 2    |
| CA24, B24                            | QFM41HK-102  | "                  | 0.001 μF "               | 2    |
| CA17, B17                            | " -682       | "                  | 0.0068 μF "              | 2    |
| VRA01, B01                           | QVP8A0B-023  | S.F. Resistor      | 2 kΩ "                   | 2    |
| VRA02, B02                           | " -024       | "                  | 20 kΩ "                  | 2    |
| LA01, B01                            | TAC000320-01 | V. Inductor        |                          | 2    |
| DA01, B01, A02, B02                  | 1S188FM      | Ge. Diode          |                          | 4    |
| DA03, B03                            | 1S2076A      | Si. Diode          |                          | 2    |
| ICA02, B02                           | TA7140P-BC   | I.C.               |                          | 2    |
| ICA01, B01                           | TAT000351-01 | "                  |                          | 2    |
|                                      | E43727-002   | Tab                |                          | 11   |

Other P.W. Board

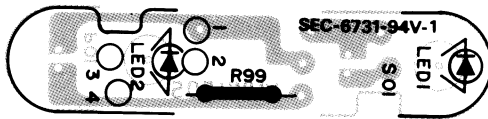
Pin Jack



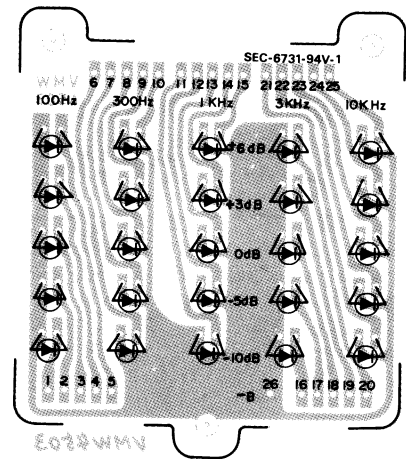
Mic Jack



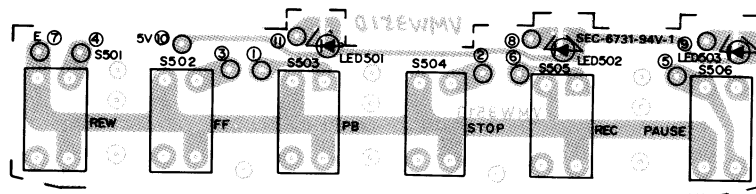
ANRS Indicator



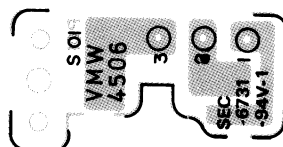
Spectro-Peak Indicator



Switches



Hall Element



## Other P.W. Board Parts List

| Ref. No.                        | Parts No.    | Parts Name          | Remarks                 | Q'ty |
|---------------------------------|--------------|---------------------|-------------------------|------|
| (PIN jacks)                     | TAA345532-01 | Circuit Board       | for PIN jacks           | 1    |
| (MIC jacks)                     | VMW4509-001  | P.W. Board          | for MIC jacks           | 1    |
| R199, 299                       | QRD183K-222  | C. Resistor         | 2.2 k $\Omega$          | 2    |
| R198, 298                       | " -822       | "                   | 8.2 k $\Omega$          | 2    |
| C198, 298                       | QCY41HK-681  | Fixed C. Capacitor  | 680 pF                  | 2    |
| (ANRS Indicators)               | VMJ5003-001  | Jack Board Ass'y    |                         | 1    |
|                                 | VMW4505-001  | P.W. Board          |                         | 1    |
| LED1, 2                         | TLG102       | L.E.D.              |                         | 2    |
| R99                             | QRD121K-122  | C. Resistor         | 2.2 k $\Omega$ ½ W      | 1    |
|                                 | Y40215-001   | Spacer              | for L.E.D.              | 2    |
| (Spectro-Peak Level Indicators) | VMW4503-001  | P.W. Board          |                         | 1    |
| H6                              | Y40215-001   | Spacer              | for L.E.D.              | 25   |
|                                 | TLR102       | L.E.D.              |                         | 25   |
| (Switches)                      | VMW3510-001  | P.W. Board          |                         | 1    |
|                                 | QCF11HP-473  | Fixed C. Capacitor  | 0.047 $\mu$ F      50 V | 3    |
|                                 | QSP0022-001  | Touch Switch        |                         | 6    |
|                                 | TLR102       | L.E.D.              |                         | 1    |
|                                 | TLG102       | "                   |                         | 2    |
| H9                              | VKZ4101-001  | Spacer              |                         | 3    |
|                                 | VYH4213-001  | Insulator           | for Spectro-Peak Holder | 1    |
|                                 | VJD4147-001  | Spectro-Peak Holder |                         | 1    |
| (Hall Element)                  | VMW4506-001  | P.W. Board          |                         | 1    |
|                                 | VHE510       | Hall Element        |                         | 1    |

## Mechanical Component Parts List

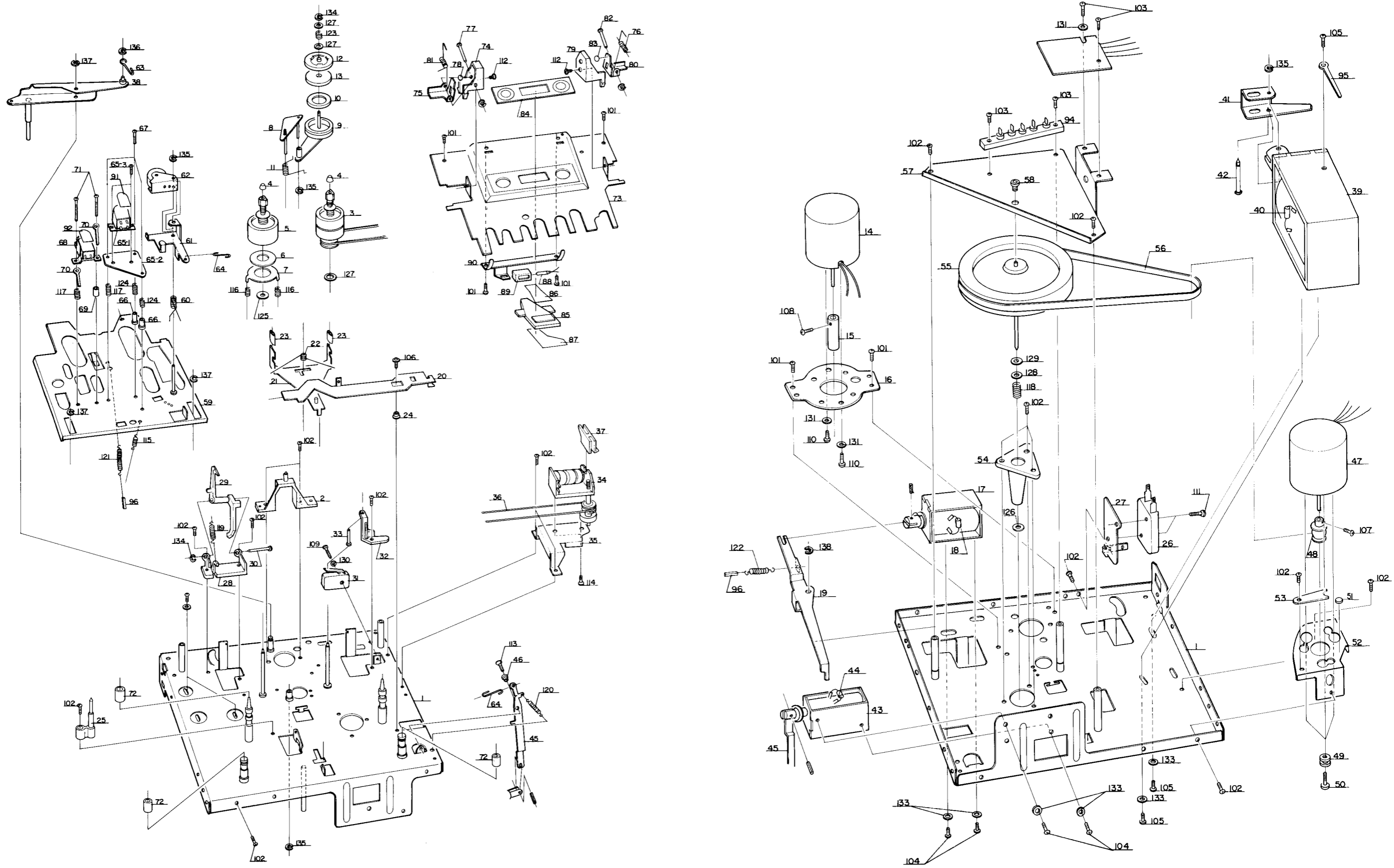
| Ref. No. | Parts No.    | Parts Name        | Remarks        | Q'ty |
|----------|--------------|-------------------|----------------|------|
| 1        | VKL2110-00A  | Chassis Ass'y     |                | 1    |
| 2        | VKS4114-001  | Point Bracket     |                | 1    |
| 3        | TGP344418-0B | Reel Disk Ass'y   |                | 1    |
| 4        | TEP357437-01 | Reel Stopper      |                | 2    |
| 5        | TGP344420-0B | Reel Disk Ass'y   |                | 1    |
| 6        | T45803-001   | Felt              |                | 1    |
| 7        | T47361-001   | Back-Tension Base |                | 1    |
| 8        | VKL4260-00A  | Idler Lever Ass'y |                | 1    |
| 9        | VKL4262-00A  | Idler Arm Ass'y   |                | 1    |
| 10       | T47372-002   | Clutch Felt       |                | 1    |
| 11       | TFW344527-01 | Idler Spring      |                | 1    |
| 12       | VKR4106-00A  | Idler Ass'y       |                | 1    |
| 13       | VKZ4105-001  | Sheet             |                | 1    |
| 14       | m190-00A     | DC Motor          | for Reel Disk  | 1    |
| 15       | T47374-004   | Reel Motor Pulley |                | 1    |
| 16       | VKL4201-001  | Motor Base        |                | 1    |
| 17       | TDP344307-0B | DC Solenoid Ass'y | for Brake      | 1    |
| 18       | T30155-001   | Si. Diode         |                | 1    |
| 19       | VKL4202-001  | Brake Lever       |                | 1    |
| 20       | VKL4203-001  | Brake Bar         |                | 1    |
| 21       | VKL4205-00A  | Contact Bar Ass'y |                | 1    |
| 22       | VKW4113-001  | Brake Spring      |                | 1    |
| 23       | T44341-001   | Rubber Tire       |                | 2    |
| 24       | T43909-001   | Metal             |                | 1    |
| 25       | TEP344424-01 | Cassette Guide    |                | 1    |
| 26       | QSM1V11-104  | Microswitch       |                | 1    |
| 27       | VKL4206-001  | Switch Bracket    |                | 1    |
| 28       | VKS4115-001  | REC Bracket       |                | 1    |
| 29       | VKS4116-001  | REC Safety Lever  |                | 1    |
| 30       | VKH4144-001  | Shaft             | for REC        | 1    |
| 31       | QSM1S01-015  | Microswitch       |                | 1    |
| 32       | VKS4117-001  | SW Holder         |                | 1    |
| 33       | VKS4118-001  | SW Shaft          |                | 1    |
| 34       | VKC6101-001T | Counter Ass'y     |                | 1    |
| 35       | VKL4207-001  | Counter Bracket   |                | 1    |
| 36       | VKB3000-004H | Counter Belt      |                | 1    |
| 37       | VKS4122-001  | Reset Slide       |                | 1    |
| 38       | VKL4209-00A  | Arm Ass'y         | for Slide Base | 1    |
| 39       | TDP344306-0B | DC Solenoid Ass'y | for Slide Base | 1    |
| 40       | T30155-001   | Si. Diode         |                | 1    |
| 41       | VKL4210-001  | Connect Arm       |                | 1    |
| 42       | VKH4147-001  | Solenoid Pin      |                | 1    |
| 43       | TDF344307-0B | DC Solenoid Ass'y | for Pause      | 1    |
| 44       | T30155-001   | Si. Diode         |                | 1    |
| 45       | VKL4211-001  | Pause Lever       |                | 1    |
| 46       | VKH4138-001  | Pause Collar      |                | 1    |
| 47       | m1606-00A    | DC Motor          | for Capstan    | 1    |
| 48       | TFH344448-01 | Motor Pulley      |                | 1    |
| 49       | TER357465-03 | Cushion Rubber    |                | 3    |
| 50       | VKZ4109-001  | Motor Screw       |                | 3    |
| 51       | TER313570-01 | Motor Cushion     |                | 1    |
| 52       | VKL3126-001  | Motor Bracket     |                | 1    |
| 53       | TFB344419-01 | Rubber Stopper    |                | 1    |
| 54       | VKF3103-00A  | Capstan Metal     |                | 1    |
| 55       | TEW344304-0A | Flywheel Ass'y    |                | 1    |

| Ref. No. | Parts No.    | Parts Name                 | Remarks  | Q'ty |
|----------|--------------|----------------------------|--|------|
| 56       | VKB3001-004H | Capstan Belt               |  | 1    |
| 57       | VKL3128-001  | Thrust Holder              |  | 1    |
| 58       | TEP357456-01 | Thrust Screw               |  | 1    |
| 59       | TGB344309-0B | Slide Base Ass'y           |  | 1    |
| 60       | TFW344458-01 | Pinch Roller Spring        |  | 1    |
| 61       | TFB344459-01 | Push Arm                   |  | 1    |
| 62       | TGB344463-0A | Pinch Roller Bracket Ass'y |  | 1    |
| 63       | VKW4115-001  | Wire (1)                   | for Slide Base   | 1    |
| 64       | VKW4116-001  | Wire (2)                   | for Pause  | 1    |
| 65       | ZMM074301-0A | REC/PB Head Ass'y          |  | 1    |
| 66       | VKH3001-001  | Flange Collar              | for R/P Head   | 2    |
| 67       | SHSP2008N    | Screw                      |  | 3    |
| 68       | THS000356-0A | Erase Head                 | D. Gape  | 1    |
| 69       | VKH3000-010  | Collar                     |  | 1    |
| 70       | VKZ4001-009  | Wire Clamp                 |  | 2    |
| 71       | SPSX2008N    | Screw                      |  | 2    |
| 72       | TER344523-01 | Rubber Cushion             |  | 3    |
| 73       | VKL3127-001  | Holder Plate               |  | 1    |
| 74       | VKS3105-001  | Ball Holder (L)            |  | 1    |
| 75       | VKL4212-001  | Ball Actuator (L)          |  | 1    |
| 76       | VKW4114-003  | Actuator Spring (L)        |  | 1    |
| 77       | VKH4148-001  | Actuator Pin               |  | 1    |
| 78       | T41615-007   | Steel Ball                 |  | 1    |
| 79       | VKS3105-002  | Ball Holder (R)            |  | 1    |
| 80       | VKL4212-002  | Ball Actuator (R)          |  | 1    |
| 81       | VKW4114-004  | Actuator Spring (R)        |  | 1    |
| 82       | VKH4148-001  | Actuator Pin               |  | 1    |
| 83       | T41615-007   | Steel Ball                 |  | 1    |
| 84       | VKL4213-001  | Panel Plate                |  | 1    |
| 85       | VKS4119-001  | Indicator                  |  | 1    |
| 86       | VKZ4106-001  | Cement Sheet               |  | 1    |
| 87       | VKZ4107-001  | Sheet                      | for Lamp   | 1    |
| 88       | T47861-001   | Pilot Lamp                 |  | 1    |
| 89       | TER344470-01 | Lamp Rubber                |  | 1    |
| 90       | VKY4117-001  | Spring Plate               |  | 1    |
| 91       | THC037417-02 | Head Plate                 | (SA)   | 1    |
| 92       | THS000489-2  | Head Label                 | (2GAP)   | 1    |
| 94       | T41479-00B   | Terminal Board             |  | 1    |
| 95       | VKZ4001-010  | Wire Holder                |  | 1    |
| 96       | TJN265559-04 | Silencer                   | Brake Lever Spring   | 1    |
| 101      | LPSP2604Z    | Screw                      | Spring Plate x 4, Motor Base x 2   | 6    |
| 102      | LPSP2605Z    | "                          | Point Bracket x 2, Cassette Guide x 1, REC<br>Bracket x 3, Switch Holder x 1, Counter x 2,<br>Motor Bracket Rubber Stopper x 1, Capstan<br>Metal x 3, Slide Base Ass'y x 4 | 17   |
| 103      | LPSP2608Z    | "                          | Terminal Board   | 2    |
| 104      | LPSP3004ZS   | "                          | Brake Solenoid   | 4    |
| 105      | LPSP3006ZS   | "                          | Slide Base Solenoid  | 3    |
| 106      | DPSP2606Z    | "                          | Metal  | 1    |
| 107      | SPSP2003Z    | "                          | Capstan Motor Pulley   | 1    |

| Ref. No. | Parts No.   | Parts Name | Remarks  | Q'ty |
|----------|-------------|------------|--|------|
| 108      | SPSP2004Z   | Screw      | Reel Motor Pulley  | 1    |
| 109      | SPSP2010N   | "          | Microswitch  | 1    |
| 110      | SPSP2603Z   | "          | Motor Base   | 2    |
| 111      | SPSP3012ZS  | "          |  | 2    |
| 112      | SSSP2604N   | "          | Ball Holder (L, R)   | 2    |
| 113      | SSSP2606Z   | "          | Pause Lever  | 1    |
| 114      | SSSP3006ZS  | "          | Counter Bracket  | 2    |
| 115      | T30300-103  | Spring     |  | 1    |
| 116      | 30301-135   | "          | Back-tension Spring  | 2    |
| 117      | " -138      | "          | REC/PB Head, E. Head                                       | 2    |
| 118      | " -137      | "          | Capstan Metal  | 1    |
| 119      | VKW3000-005 | "          | REC  | 1    |
| 120      | " -006      | "          | Pause  | 1    |
| 121      | " -007      | "          | Slide Base   | 1    |
| 122      | " -016      | "          | Brake Lever  | 1    |
| 123      | VKW3001-004 | "          | Idler  | 1    |
| 124      | " -005      | "          | REC/PB Head  | 2    |
| 125      | Q03093-301  | Washer     | Supply Disk  | 1    |
| 126      | " -522      | "          | Flywheel   | 1    |
| 127      | " -609      | "          | Take-up Disk Idler   | 3    |
| 128      | " -621      | "          | Flywheel   | 1    |
| 129      | " -827      | "          | "  | 1    |
| 130      | WSB2000N    | "          | Microswitch  | 1    |
| 131      | WSB2600N    | "          | Motor Base, Motor P.W. Board                               | 3    |
| 133      | WNS3000N    | "          | DC Solenoid (Pause Slide Base, Base & Brake)               | 4    |
| 134      | REE1500     | "E"-washer | Idler Shaft (VKH4144-001)                                  | 4    |
| 135      | REE2000     | "          | Idler Spring x 2, DC Solenoid Pin x 1, Pinch Roller<br>x 1 | 4    |
| 136      | REE2500     | "          | Slide Base   | 1    |
| 137      | REE3000     | "          | Arm Ass'y, Slide Base                                      | 3    |
| 138      | REE4000     | "          | Brake Lever  | 1    |

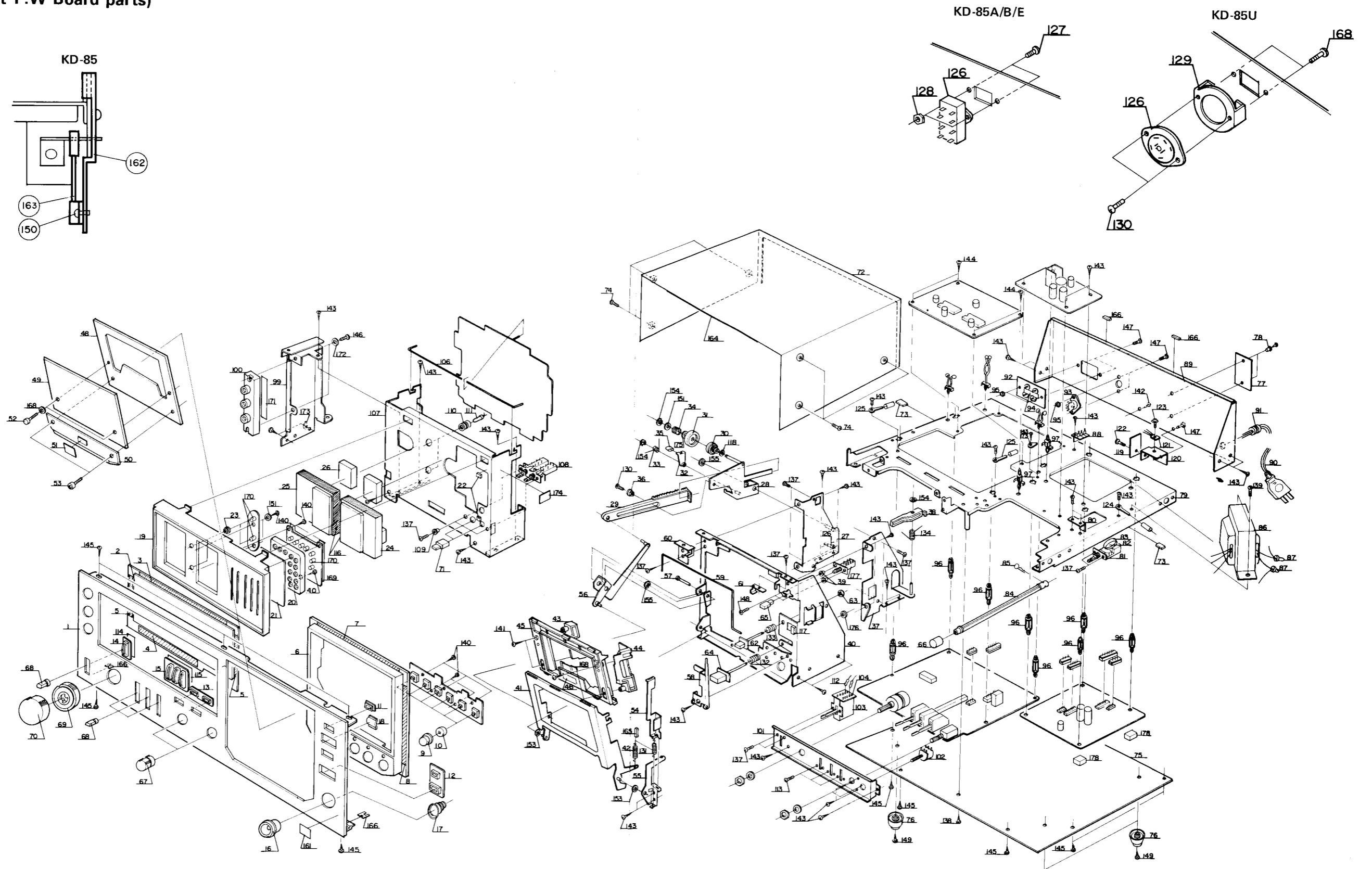


# Mechanical Component Parts



# Enclosure Assembly and Electrical Parts

(Except P.W Board parts)



Enclosure Assembly and Electrical Parts List (Except P.W. Board Parts) △ parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

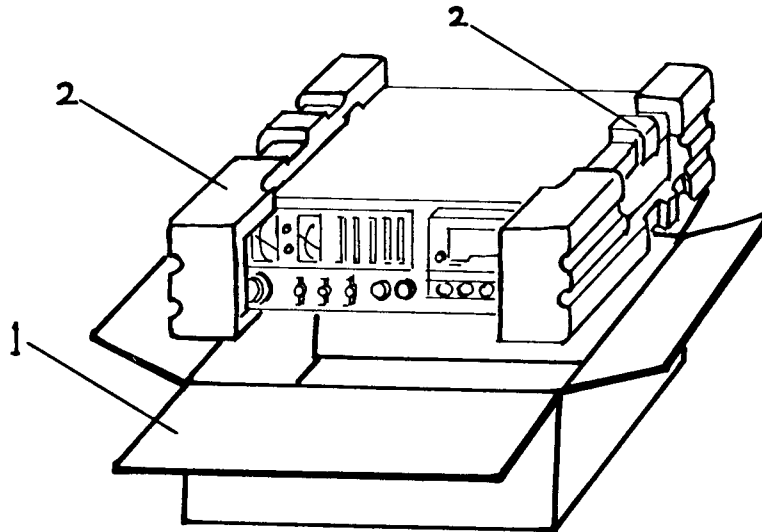
| Ref. No.                   | Parts No.    | Parts Name                   | Remarks               | Q'ty  |
|----------------------------|--------------|------------------------------|-----------------------|-------|
| 1-5,<br>11-18,<br>114, 115 | ZCKD85Y-CBF  | Front Panel Ass'y            |                       | 1 set |
| 1                          | *VJC1021-002 | Front Plate                  |                       | 1     |
| 2                          | VJD3110-001  | Escutcheon Lens              | for Meter             | 1     |
| 3                          | T43595-017   | Double Face                  | for E.L. (9 x 120)    | 1     |
| 4                          | " -012       | "                            | " (3.5 x 190)         | 1     |
| 5                          | " -015       | "                            | " (3.5 x 70)          | 2     |
| 6                          | VJD2114-001  | Escutcheon                   | for Mecha.            | 1     |
| 7                          | T43595-014   | Double Face                  | for Mecha. (10 x 135) | 2     |
| 8                          | " -015       | "                            | " (3.5 x 70)          | 2     |
| 9                          | VXP4005-00A  | Push Button Ass'y            | for Counter           | 6     |
| 10                         | VKZ4104-001  | Button Spacer                | "                     | 6     |
| 11                         | VJD4142-001  | Button Holder (1)            | for Memory            | 1     |
| 12                         | VJD4143-001  | " (2)                        | for Counter           | 1     |
| 13                         | VJD4136-001  | " (3)                        | for Timer             | 1     |
| 14                         | VJD4144-001  | Switch Holder (1)            | for Input             | 1     |
| 15                         | VJD4145-001  | " (2)                        | for Tape Selector     | 1     |
| 16                         | VJD4146-002  | " (3)                        | for Power             | 1     |
| 17                         | VKW4126-002  | Compression Spring           | "                     | 1     |
| 18                         | TJE344474-01 | Counter Lens                 |                       | 1     |
| 19-23                      | ZCKD85Y-SPIA | Spectro-Peak Indicator Ass'y |                       | 1 set |
| 19                         | VJD2115-002  | Spectro-Peak Escutcheon      |                       | 1     |
| 20                         | VJD4147-001  | Spectro-Peak Holder          |                       | 1     |
| 21                         | VJD4148-001  | Spectro-Peak Lens            | for Spectro-Peak      | 1     |
| 22                         | QSP2210-045  | Switch                       | for Memory            | 1     |
| 23                         | VJD4150-001  | Ring                         | for Spectro-Peak      | 2     |
| 24                         | VGM0110-002  | Meter (R)                    |                       | 1     |
| 25                         | VGM0110-003  | " (L)                        |                       | 1     |
| 26                         | TJN000354-34 | Cushion                      | for Meter             | 2     |
| 27                         | VKL3120-00A  | Side Bracket Ass'y (L)       | for Mecha.            | 1     |
| 28                         | VKL4195-00A  | Gear Frame Ass'y             |                       | 1     |
| 29                         | VKS3102-001  | Rack Plate                   |                       | 1     |
| 30                         | VKS4108-003  | Spur Gear                    |                       | 1     |
| 31                         | VKS4109-004  | Brake Drum                   |                       | 1     |
| 32                         | VKS4110-002  | Brake Arm                    |                       | 1     |
| 33                         | VKW4106-002  | Torsion Spring               |                       | 1     |
| 34                         | VKW3001-006  | Compression Spring           |                       | 1     |
| 35                         | VKZ4111-001  | Rubber Tire                  |                       | 1     |
| 36                         | VKH4123-001  | Collar                       |                       | 1     |
| 37                         | VKL3108-00B  | Side Bracket Ass'y (R)       |                       | 1     |
| 38                         | VKS4121-001  | Button Lock                  |                       | 1     |
| 39                         | VKH3001-006  | Collar                       | for Memory SW         | 2     |
| 40                         | VKL2104-002  | Front Bracket                |                       | 1     |
| 41, 43-<br>47, 167         | ZCKD85Y-CCA  | Cassette Holder Ass'y        |                       | 1 set |
| 41                         | VKL3121-00B  | Holder Bracket Ass'y         |                       | 1     |
| 42                         | VKW3000-008  | Tension Spring               | for Holder Bracket    | 1     |
| 43                         | VKS3103-001  | Cassette Holder (L)          |                       | 1     |
| 44                         | VKS3104-001  | " (R)                        |                       | 1     |
| 45                         | VKS2101-001  | Holder Cover                 |                       | 1     |
| 46                         | T43595-017   | Double Face                  | (9 x 120)             | 1     |
| 47                         | T43595-016   | "                            | (12 x 56)             | 2     |
| 48                         | VJT4004-001  | Lid Cover                    |                       | 1     |
| 49                         | VJT4005-001  | Lid Plate                    |                       | 1     |

| Ref. No. | Parts No.      | Parts Name            | Remarks                          | Q'ty |
|----------|----------------|-----------------------|----------------------------------|------|
| 50       | VJT4006-002    | Head Cover            |                                  | 1    |
| 51       | TJL271485-001  | S.A. Mark             |                                  | 1    |
| 52       | VJD4141-001    | Screw                 |                                  | 2    |
| 53       | BYS3010RS      | Screw Bolt            |                                  | 2    |
| 54       | VKL4191-00A    | Lock Plate Ass'y      |                                  | 1    |
| 55       | VKL4193-001    | Bracket               |                                  | 1    |
| 56       | VKL4197-00B    | Damper Lever Ass'y    |                                  | 1    |
| 57       | VKH4134-001    | Pin                   | for Damper Lever Ass'y           | 1    |
| 58       | VKL4229-00A    | Square Plate Ass'y    |                                  | 1    |
| 59       | VKW4122-001    | Eject Rod             |                                  | 1    |
| 60       | VKL4226-001    | Rod Bracket (L)       |                                  | 1    |
| 61       | VKL4227-001    | Rod Bracket (R)       |                                  | 1    |
| 62       | VXP4006-00A    | Button Ass'y          | for Reset                        | 1    |
| 63       | VKH4167-001    | Collar                |                                  | 1    |
| 64       | VXP4007-00A    | Eject Button Ass'y    |                                  | 1    |
| 65       | VXP4008-00A    | Button Ass'y          | for Memory                       | 1    |
| 66       | VXP4009-00A    | Button Ass'y          | for Power                        | 1    |
| 67       | VXP4010-00A    | Knob Ass'y            | for REC, EQ Output Level Control | 2    |
| 68       | VXP4011-00A    | Select Knob Ass'y     |                                  | 4    |
| 69       | VXP4012-00A    | Volume Knob Ass'y (L) |                                  | 1    |
| 70       | VXP4013-00A    | Volume Knob Ass'y (R) |                                  | 1    |
| 71       | VXP4014-00A    | Knob Ass'y            | for Timer, Spectro-Peak          | 2    |
| 72       | VJC1022-001    | Top Cover             |                                  | 1    |
| 73       | TJN000354-06   | Cushion               |                                  | 2    |
| 74       | E61660-001     | Special Screw         |                                  | 6    |
| 75       | VJC2007-001    | Bottom Cover          |                                  | 1    |
| 76       | VJF3001-001    | Foot                  |                                  | 4    |
| 77       | VYN2018-002GA  | Name Plate            | KD-85B                           | 1    |
|          | " -003GA       | "                     | KD-85A                           | 1    |
|          | " -004GA       | "                     | KD-85C                           | 1    |
|          | " -005GA       | "                     | KD-85E                           | 1    |
|          | " -006GA       | "                     | KD-85J                           | 1    |
|          | " -007GA       | "                     | KD-85U                           | 1    |
| 78       | E48729-002     | Plastic Rivet         | for Name Plate                   | 2    |
| 79       | VKL1106-00B    | Amp. Chassis Ass'y    |                                  | 1    |
| 80       | VKL4194-001    | Switch Bracket        | for Power SW                     | 1    |
| 81       | QSP2111-011    | Push Switch           | KD-85A/E for Power               | 1    |
|          | QSP2111-011BS  | "                     | KD-85B "                         | 1    |
|          | QSP1110-222    | "                     | KD-85C/J "                       | 1    |
|          | QSP1110-221    | "                     | KD-85U "                         | 1    |
| 82       | QFA72BM-223    | M.P. Capacitor        | KD-85C 0.022 μF                  | 1    |
|          | QFH72BM-223    | M.M. Capacitor        | KD-85J "                         | 1    |
|          | QFH53AM-223    | "                     | KD-85U "                         | 1    |
| 83       | T47047-001     | Capacitor Boot        | KD-85J/U                         | 1    |
| 84       | VKS4113-001    | Remote Bar            | for Power SW                     | 1    |
| 85       | E48981-001     | Stopper Pin           | for Remote Bar                   | 1    |
| 86       | TAP344324-01BS | Power Transformer     | KD-85B                           | 1    |
|          | TAA344324-01   | "                     | KD-85A/E                         | 1    |
|          | TAP344325-01   | "                     | KD-85C/J                         | 1    |
|          | "              | "                     | KD-85U                           | 1    |
| 87       | TAW000504-01   | Wire Connector        | KD-85C/J/U                       | 2    |
| 88       | E46651-001     | Wrapping Terminal     | for Earth                        | 1    |
| 89       | *VKL1108-002   | Rear Panel            | KD-85A/B                         | 1    |
|          | " -003         | "                     | KD-85C/J                         | 1    |
|          | " -004         | "                     | KD-85U                           | 1    |

| Ref. No. | Parts No.     | Parts Name            | Remarks  | Q'ty |
|----------|---------------|-----------------------|--|------|
| 90       | QMP2500-200   | Power Cord            | KD-85A   | 1    |
|          | QMP9017-007BS | "                     | KD-85B   | 1    |
|          | QMP1200-244   | "                     | KD-85C/J   | 1    |
|          | QMP3900-183   | "                     | KD-85E   | 1    |
|          | QMP7600-244   | "                     | KD-85U   | 1    |
| 91       | QHS3876-162BS | Strain R. Bushing     | KD-85B   | 1    |
|          | QHS3876-162   | "                     | KD-85A/C/E/J/U                                       | 1    |
| 92       | TAJ331301-03  | PIN Jack Ass'y        |  | 1    |
| 93       | QMC0589-003   | DIN Jack Ass'y        |  | 1    |
| 94       | TAA345532-01  | Circuit Board         | for PIN Jacks  | 1    |
| 95       | NTB3000S      | Nut                   | for PIN Jacks  | 4    |
| 96       | VYH4005-001   | P.C. Support (2)      |  | 8    |
| 97       | TEP344517-01  | P.C. Support (1)      |  | 2    |
| 98       | QHW2115-001   | Nylon Tie             |  | 4    |
| 99       | VKL3123-00B   | Left Bracket Ass'y    |  | 1    |
| 100      | VMJ5003-001   | Jack Board Ass'y      | (MIC & H.P.)   | 1    |
| 101      | VKL3125-001   | Control Bracket       |  | 1    |
| 102      | QVD2A2A-024V  | V. Resistor           | for Output Level Control                             | 1    |
| 103      | QSL2212-007   | Lever Switch          | for Input Select SW                                  | 1    |
| 104      | VMW4508-001   | P.W. Board            |  | 1    |
| 105      | 51739-2       | Lug                   | for Mic and Power                                    | 2    |
| 106      | VKW4121-001   | Support Wire          | for Spectro-Peak                                     | 1    |
| 107      | VKL2108-001   | Meter Bracket         |  | 1    |
| 108      | QSP0229-008   | Push Switch Ass'y     |  | 1    |
| 109      | VKH3001-007   | Collar                |  | 2    |
| 110      | F6041-001     | Bushing               | for Meter  | 2    |
| 111      | T47861-003    | Pilot Lamp            | "  | 2    |
| 112      | QRD143K-823   | C. Resistor           | R 199, 299 82 kΩ ¼ W                                 | 2    |
| 113      | LPSP3006ZS    | Screw                 | for Switch   | 2    |
| 114      | VYTA411-001   | Blind (1)             | for Input Select SW                                  | 1    |
| 115      | VYTA412-001   | Blind (2)             | for Tape Select SW                                   | 1    |
| 116      | VYTT401-002   | Film                  | for Meter  | 2    |
| 117      | VYSH108-011   | Spacer                |  | 1    |
| 118      | Q03093-401    | Washer                |  | 1    |
| 119      | VMW4514-001   | P.W. Board            | for X601   | 1    |
| 120      | VKL4264-001   | Radiation Plate       | "  | 1    |
| 121      | 2SC1162WTBC   | Si. Transistor        | "  | 1    |
| 122      | LPSP2606Z     | Screw                 |  | 1    |
| 123      | LPSP3008ZS    | "                     |  | 1    |
| 124      | VKZ4001-011   | Wire Holder           |  | 1    |
| 125      | VKZ4001-007   | "                     |  | 1    |
| 126      | QSS2325-006BS | Slide Switch          | KD-85B for Voltage Select                            | 1    |
|          | QSS2325-006   | "                     | KD-85A/E   | 1    |
|          | QSR0084-001   | Voltage Select Switch | KD-85U   | 1    |
| 127      | SDBP3008RS    | Screw                 | KD-85A/B/E for Slide Switch                          | 2    |
| 128      | NTB300S       | Nut                   | "  | 2    |
| 129      |               | Bracket               | KD-85U for V. select SW                              | 1    |
| 130      |               | Screw                 | "  | 2    |
| 131      | VKW3000-009   | Tension Spring        | Lock Plate Ass'y                                     | 1    |
| 132      | VKW3001-007   | Compression Spring    |  | 1    |
| 133      | " -008        | "                     | Reset  | 1    |
| 134      | VKW4114-001   | Torsion Spring        | Button Lock  | 1    |
| 135      | LPSP2604Z     | Screw                 |  | 1    |
| 136      | LPSP2608Z     | "                     | Brake Arm  | 1    |
| 137      | LPSP3006ZS    | "                     | Mecha. x 2, L Bracket x 1, Power SW x 2, Push SW x 2 | 7    |

| Ref. No. | Parts No.    | Parts Name      | Remarks  | Q'ty |
|----------|--------------|-----------------|--|------|
| 138      | LPSP3008ZS   | Screw           | Bottom Cover x 1, Mecha. x 2   | 3    |
| 139      | LPSP4012ZS   | "               | Power Transformer  | 2    |
| 140      | SBSB2606Z    | "               | Spectro-Peak L Escutcheon x 3  | 5    |
|          |              |                 | Spectro-Peak L x 2   |      |
| 141      | SBSB2608Z    | "               | Holder Cover x 4, Control x 5  | 9    |
| 142      | SBSB3005R    | "               | Center   | 1    |
| 143      | SBSB3006Z    | "               | L & R x 8, Bracket (VKL4193) x 2, SC Plate x 1, Lod Bracket (R) x 1, Switch Bracket x 2, Wrapping Terminal x 1, Rear Panel x 4, Left Bracket Ass'y x 3, Meter Bracket x 4, Control Bracket x 3 | 29   |
|          |              |                 | Bracket x 3, Super ANRS P.W. Board x 4   |      |
| 144      | SBSB3006V    | "               | Bottom Cover x 6, Front Plate x 5  | 7    |
| 145      | SBSB3008Z    | "               | Radiation Plate of X601 x 1  | 11   |
| 146      | SBSB4010Z    | "               | PIN Jacks and DIN Jacks x 4  | 2    |
| 147      | SDBP3008RS   | "               | Memory Switch  | 4    |
| 148      | SPSP2005Z    | "               | Foot   | 2    |
| 149      | SPST3008Z    | "               | Leaf Switch  | 4    |
| 150      | DPSP3006ZS   | "               | ANRS P.W. Board x 2, Brake x 1   | 1    |
| 151      | WNS2600N     | Washer          | Push Switch Ass'y  | 3    |
| 152      | WNS3000N     | "               | t 0.4  | 2    |
| 153      | Q0093-127    | "               | Brake x 2, Button Lock x 1   | 2    |
| 154      | REE2000      | E-ring          | Brake x 1, Pin x 1   | 3    |
| 155      | REE3000      | "               | for Mic Jack   | 2    |
| 156      | WNS4000N     | Washer          |  | 2    |
| 161      | VND4006-002  | Caution Label   |  | 1    |
| 162      | VKL4272-001  | Switch Bracket  |  | 1    |
| 163      | VSH1103-001  | Leaf Switch     |  | 1    |
| 164      | VYSH106-028  | Spacer          | for Top Cover  | 1    |
| 165      | TJN265559-03 | Silencer        |  | 1    |
| 166      | TJS344534-01 | Spacer          | Rear Cover   | 1    |
| 167      | VKY4129-001  | Cassette Spring | for Holder Cover   | 1    |
| 168      | Q03093-607   | Washer          | for Lid Plate  | 1    |
| 169      | VYH4213-001  | Insulator       | for Spectro-peak   | 2    |
| 170      | Y40215-001   | Spacer          | for ANRS LED x 2, for Spectro-peak LED x 25  | 1    |
| 171      | VMW4509-001  | P.W. Board      | for Jack   | 27   |
| 172      | WNS4000N     | Washer          |  | 1    |
| 173      | 51739-2      | Lug             | for Left Bracket Ass'y   | 2    |
| 174      | VYSP101-014  | Spacer          |  | 1    |
| 175      | T47372-002   | Clutch Felt     | for Gear Frame Ass'y   | 1    |
| 176      | VKH4167-001  | Collar          | for Eject Button   | 1    |
| 177      | QSP2210-045  | Switch          | for Memory   | 1    |
| 178      | TJN000354-01 | Cushion         |  | 1    |
| 179      | VKZ4001-010  | Wire Holder     | for Voltage Select Switch  | 3    |
|          |              |                 |  | 1    |

# Packing



## Packing Material Parts List

| Ref. No. | Parts No.     | Parts Name         | Remarks                  | Q'ty  |
|----------|---------------|--------------------|--------------------------|-------|
| 1-3      | *VPA3009-00E  | Packing Case Ass'y | KD-85A/B/E/J/U           | 1 set |
|          | *VPA3009-001  | "                  | KD-85C                   | "     |
| 1        | *VPA3009-008  | Case               | KD-85A/B/E/J/U           | 1     |
|          | *VPA3009-012  | "                  | KD-85C                   | 1     |
| 2        | VPH1131-001   | Cushion            |                          | 2     |
|          | TKS000501-01  | Sheet              |                          | 1     |
|          | TLE000333-03  | Envelope           | for Deck                 | 1     |
|          | AP4056A-036   | "                  | for PIN Cord, Power Cord | 2     |
|          | QPGB024-03404 | "                  | for Instruction Book     | 1     |

# Accessories

## Accessories

| Parts No.      | Parts Name            | Remarks                | Q'ty |
|----------------|-----------------------|------------------------|------|
| VMP0002-00A    | PIN Cord Ass'y        | KD-85A/C/J/U           | 2    |
| CN-201         | DIN Cord              | KD-85B/E               | 1    |
| T47796-00B     | Head Cleaning Stick   |                        | 2    |
| TLT000429-01   | Caution Card          |                        | 1    |
| AP4056-024     | Envelope              | for H.C. Stick         | 1    |
| T46965-002     | Demo. Tape            |                        | 1    |
| TLJ000477-02   | Super ANRS Seal       |                        | 1    |
| TLJ000476-02   | ANRS Seal             |                        | 1    |
| VNN0014-301    | Instruction Book      |                        | 1    |
| TLT052401-01   | Warranty Label        | KD-85A/E Disconnect    | 1    |
| TLT052401-01BS | "                     | KD-85B "               | 1    |
| TJL000443-01   | Seal                  | Made in Japan KD-85B   | 1    |
| QZL1002-003BS  | Warning Label         | KD-85B P. Cord         | 1    |
| T46328-001     | Caution Label         | KD-85U                 | 1    |
| T46328-003     | "                     | KD-85B                 | 1    |
| T46328-004     | "                     | KD-85E                 | 1    |
| BT20013B       | Guarantee Certificate | KD-85B                 | 1    |
| BT20032        | Warranty Card         | KD-85J/U               | 1    |
| BT20023        | Service Procedure     | KD-85J/U               | 1    |
| BT20024B       | Special Reply Card    | KD-85J                 | 1    |
| BT20025B       | Warranty Card         | KD-85C                 | 1    |
| BT20029        | "                     | KD-85A                 | 1    |
| TLT000505-01   | UL/CSA Caution Label  | KD-85C/J (Side Bottom) | 2    |
| TLT279401-01   | Caution Card          | KD-85E                 | 1    |
| E7795-1        | E. P. Mark            | KD-85U for PX          | 1    |
| E04056-001     | Conti. Plug           | KD-85U for Sansei      | 1    |
| T44362-001     | CSA Marker            | KD-85C                 | 1    |