# JVC

# SERVICE MANUAL

## STEREO CASSETTE DECK

MODEL **KD-V400** A/B/C/E/ED/J/U/NA
NB/NC/NE/NJ/NED

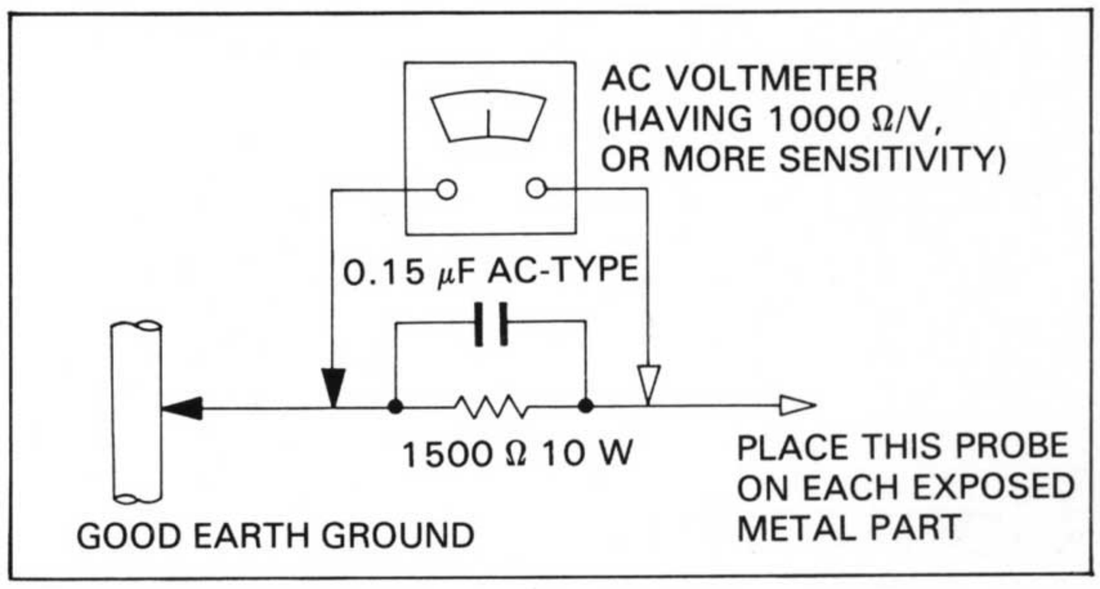
# Contents




No. 4238
July 1984

# Safety Precautions

1. The design of this product contains special hardware. Many circuits and components specially for safety purposes.
   For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by then necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by ( ⚠ ) on the schematics and parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and/or the like to be separated from live parts, high temperature part, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.
   When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after re-assembling.
5. Leakage current check
   (Safety for electrical shock hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a ''Leakage Current Tester'', measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5 mA AC (r.m.s.).
   - Alternate check method.
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500 Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.).
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s).
     This corresponds to 0.5 mA AC (r.m.s).



# Features

1. FLIP REVERSE SYSTEM
   - Fast-acting auto-reverse in both playback and recording.
2. DOLBY * B & C NR (Noise Reduction) circuits
   - MPX (multiplex) filter incorporated.
3. Two-motor full-logic mechanism
   - Exclusive motor to drive mechanism.
   - Silent mechanism.
4. Centralized display using multi-colored LCDs
   - Spectro Peak indicator.
   - Electronic counter and music scan tune number display.
   - 2-point memory for block repeat facility.
   - Reverse mode indicator.
   - NR indicators.
5. SA record/play head
6. Auto REC MUTE facility
7. Mechanism mode indicators group on cassette holder lid
8. Timer facility
9. Music scan mechanism skips up to 20 tunes in either direction.
   "Under license of Staar S.A., Brussels, Belgium."
10. Direct-coupled DC amplifier

Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
*"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

# Specifications

| | |
|---|---|
| Type | : Stereo cassette deck |
| Track system | : 4-track, 2-channel |
| Tape speed | : 1-7/8 inch/sec (4.8 cm/sec) |
| Frequency response | : (−20 dB recording)<br>Metal tape:<br>30−16,000 Hz (±3 dB)<br>20−18,000 Hz<br>$CrO_2$ tape:<br>30−16,000 Hz (±3 dB)<br>20−18,000 Hz<br>Normal tape:<br>30−15,000 Hz (±3 dB)<br>20−17,000 Hz<br>(0 dB recording)<br>Metal tape:<br>30−12,500 Hz (±3 dB)<br>$CrO_2$ tape:<br>30−8,000 Hz (±3 dB)<br>Normal tape:<br>30−8,000 Hz (±3 dB) |
| S/N ratio | : 58 dB (S= 1 kHz, K3 = 3%, N = A-weighted, Metal tape)<br>The S/N is improved by about 15 dB at 500 Hz, by max. 20 dB at 1 kHz ~ 10 kHz and 4 dB MOL at 10 kHz with DOLBY C NR on and improved by 5 dB at 1 kHz and by 10 dB at above 5 kHz with ANRS/DOLBY B NR on. |
| Wow and flutter | : 0.05% (WRMS)<br>0.16% (DIN 45 500)<br>(with MAXELL UD tape) |
| Crosstalk | : 55 dB (1 kHz) |
| Harmonic distortion | : K3; 0.5%, THD; 1.0%<br>(Metal tape, 1 kHz 0 VU) |
| Channel separation | : 40 dB (1 kHz) |
| Heads | : SA head for record/playback ×1<br>2-Gap ferrite head for erasing ×2 |
| Motor | : Electric governed DC motor for capstan and reel ×1<br>DC motor for FF/Rew ×1<br>DC motor for mechanical drive ×1 |
| Fast forward/ Rewind time | : Approx. 100 sec. with C-60 cassette |
| Input terminals | |
| Mic jack ×2 | : Max. sensitivity; 0.2 mV (−74 dBV)<br>Matching impedance; 600 Ω−10 kΩ |
| Input jack ×2 | : Min. input level; 80 mV<br>Input impedance; 50 kΩ |
| Output terminals | |
| Output jack × 2 | : Output level: 300 mV<br>Output impedance: 5 kΩ |
| Phones jack × 1 | : Output level; 0.3 mW/8Ω<br>Matching impedance; 8 Ω−1 kΩ |
| Power requirement | : AC 120 V, 60 Hz (KD-V400J/C)<br>AC 240/220/120 V, 50/60 Hz (KD-V400A)<br>AC 240/220/120/100 V, 50/60 Hz (KD-V400U) |
| Power consumption | : 17 W |
| Dimensions | : 17-1/8" (435 mm) W<br>4-5/16" (110 mm) H<br>11" (280 mm) D<br>(with feet, buttons, switches) |
| Weight | : Approx. 10.6 lbs (4.8 kg) |
| Accessories | : Pin cords .....2 |

Design and specifications subject to change without notice.

# Name of Controls and Their Function

Models KD-V400 and V400N have exactly the same functions and performance; the only difference is the external appearance.

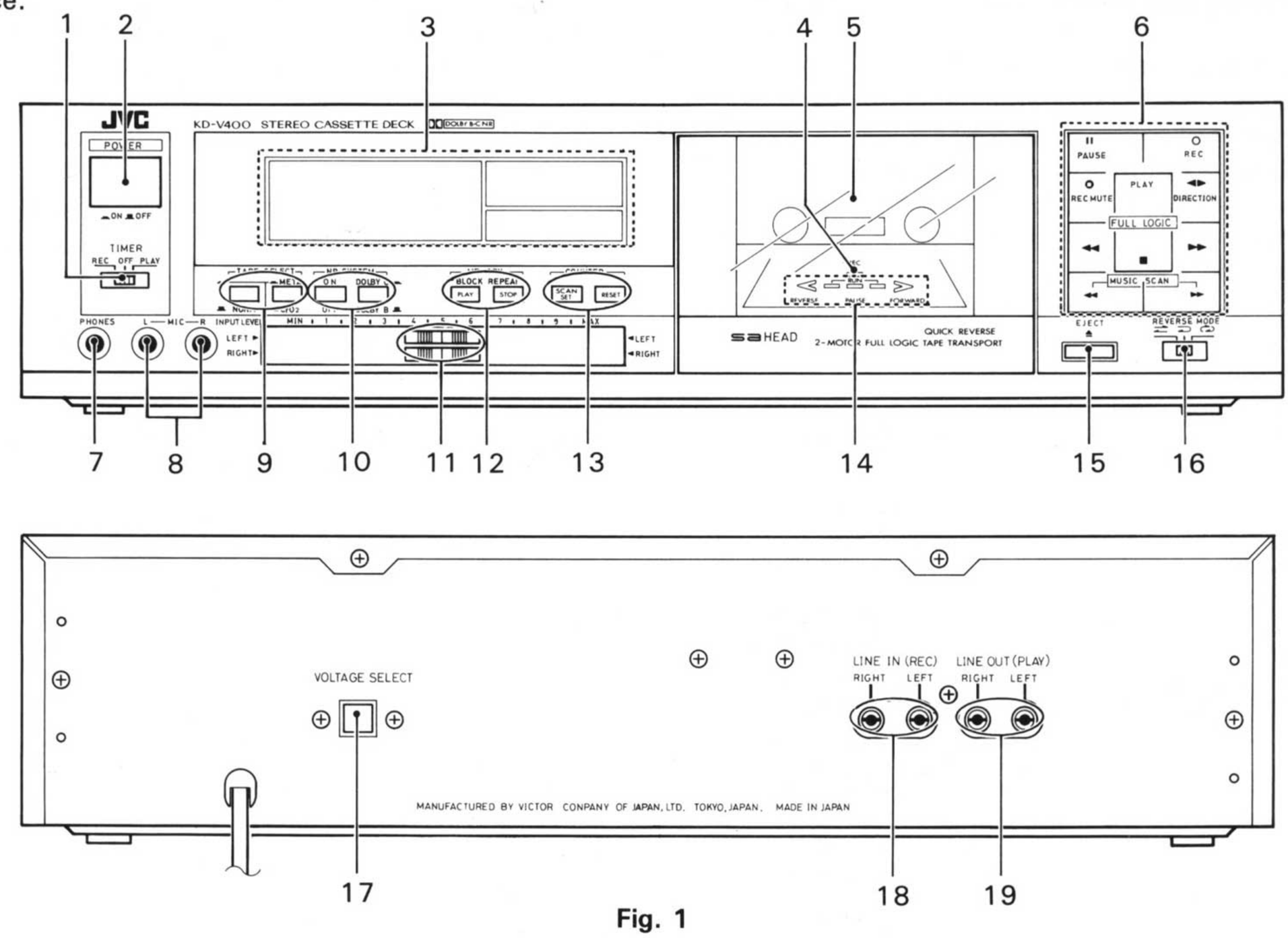



**Fig. 1**

### 1. TIMER switch

Set to the REC position to make a timer recording. Set to the PLAY position when using the deck as an alarm using a timer. Otherwise set to the OFF (center) position.

### 2. POWER switch

Press this switch to turn the power on.
Press this switch again to turn the power off.
When switching the power on, confirm that the TIMER switch is set to OFF.

### 3. MULTI FUNCTION DISPLAY

- **SPECTRO PEAK indicator**

  On recording or playback, the LCD lights successively according to the intensity of the input and output signal to indicate peak level.
  To obtain the optimum dynamic range for recording, check the SPECTRO PEAK and PEAK indicators.

- **DIGITAL COUNTER**

  Digitally shows the tape counter reading. When the SCAN SET button is pressed, the music scanning number is displayed. When the music scan is completed, this counter automatically displays the tape counter.

- **NR SYSTEM indicator**

  Lights to show that the corresponding NR circuit is operating. See item 10 NR SYSTEM buttons.

- **REVERSE MODE indicator**

  Lights to show the deck is in the mode corresponding to the position of the REVERSE MODE switch.

- **MEMORY indicators**

  When the memory button(s) is pressed, the corresponding indicator(s) lights according to its function.

### 4. REC indicator (red)

This indicator lights when the unit is in the record or record-pause mode. This indicator flashes when the O REC MUTE button is pressed.

### 5. Cassette holder

### 6. Cassette operation buttons

**◄► DIRECTION:**
Press to change the direction of tape travel.

**○ REC:**
Press ○ and PLAY buttons simultaneously for recording. Press the ○ and ▮▮ PAUSE buttons simultaneously for record pause.

**PAUSE:**
Press to stop the tape temporarily. Press the PLAY button to cancel the pause mode.

**PLAY:**
Press to start recording/playback.

**■ (stop):**
Press to stop the tape.

**O REC MUTE:**
Press to make about a 4 ~ 5-second, non-recorded section between tunes during recording.

**◄◄ (rewind):**
Press to fast wind the tape from right to left.

**►► (fast forward):**
Press to fast wind the tape from left to right.

**◄◄ MUSIC SCAN ►►**
Press to locate the start of the required tune.

### 7. PHONES jack

Connect headphones (with an impedance of 8 Ω — 1 kΩ).

8. **MIC jacks (L, R)**
   Connect microphones (with an impedance of 600 Ω to 10 kΩ) to these jacks.
   With microphones connected to these jacks, the input to the LINE IN (REC) terminals is cut off automatically.
9. **TAPE SELECT buttons**
   Select the button positions according to the tape to be used during recording and playback.
10. **NR SYSTEM buttons**
    The left button turns on and off the noise reduction circuits and the right button selects which noise reduction system (Dolby B NR or Dolby C NR) is to be used.
11. **INPUT LEVEL controls**
    Adjust the recording level with these controls. The upper knob adjusts left channel and the lower knob the right channel.
12. **MEMORY buttons**
    These buttons function to store specific counter readings in memory when they are pressed. The indicators above them will light when the buttons are pressed to show that a counter reading (a certain point on the tape) has been memorized.
    - **PLAY (MEMORY) buttons:**
      Press this button to designate a specific point on the tape for playback to begin automatically from the fast forward or rewind mode.
    - **STOP (MEMORY) button:**
      Press this button to designate a specific point for the tape to stop automatically from the fast forward, rewind or play mode.
      Press the MEMORY button(s) again to cancel its operation.
      Use both of these buttons to designate a section between two specific points on the tape to be played back repeatedly (block repeat).
13. **COUNTER buttons**
    - **SCAN SET button**
      For music scanning, press this button to set the number of tunes to be skipped. It is possible to skip up to 20 tones.
    - **RESET button**
      Press to reset the digital counter.
14. **Mechanism mode indicators**
    When the POWER switch is set to ON, the tape trasport indicator for the forward direction ( ⩤ ) or reverse direction ( ⩥ ) lights. When the DIRECTION button is pressed, the indicator that is lit goes out and the opposite one lights. When the tape starts running, the three LEDs between the dirdction indicators flash in sequence to show the directrion of tape movement and the mode of operation as follows:
    - **Recording/Playback**
      LEDs flash in sequence at an interval of about 1 second in the direction of tape travel.
    - **Fast Forward/Rewind**
      LEDs flash rapidly in sequence in the direction of tape travel.
    - **MUSIC SCAN**
      Each LED flashes twice in rapid sequence in the direction of tape travel.
    - **PAUSE**
      Only the center LED lights.
15. **EJECT button**
    Press after you have stopped the tape run.
16. **REVERSE MODE switch**
    Select a single or full record/playback mode, or continuous play mode.
    - : To play continuously sides A and B.
    - : To fully play or record sides A and B.
    - : For a single-side recording or playback.
17. **Voltage selector**
18. **Line in jacks**
19. **Line out jacks**

# Location of Main Parts

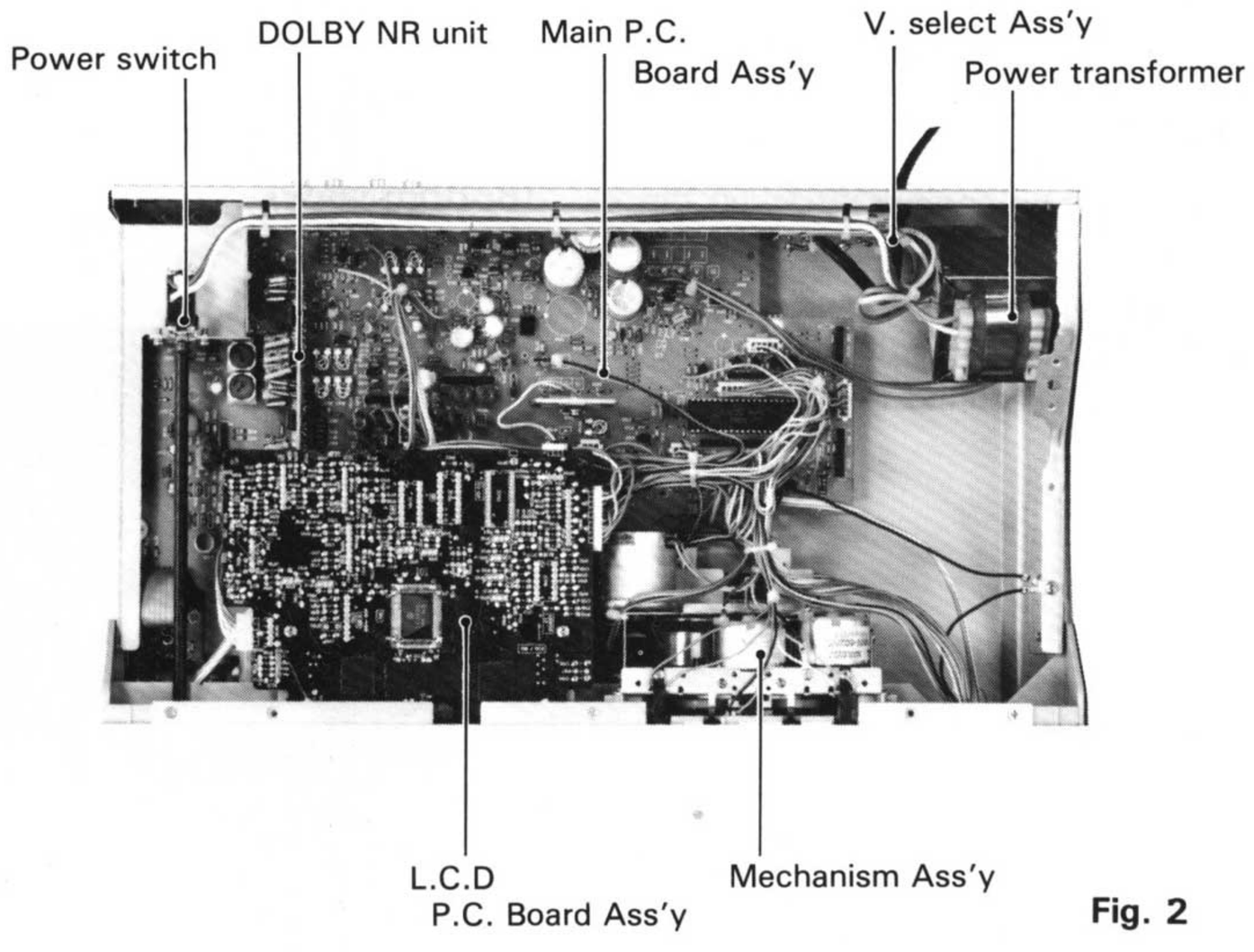



**Fig. 2**

# Removing the Main Parts

■ **Top cover**

Remove four screws ① on the left and right and two screws ② on the rear. (To remove the front plate, remove three screws ⑤ .)

■ **Bottom cover**

Unscrew screw ③ securing the center of the front panel, and four screws ④ fixing the four corners. (To disengage the front plate, remove two screws ⑥ .)

**(Bottom view)**

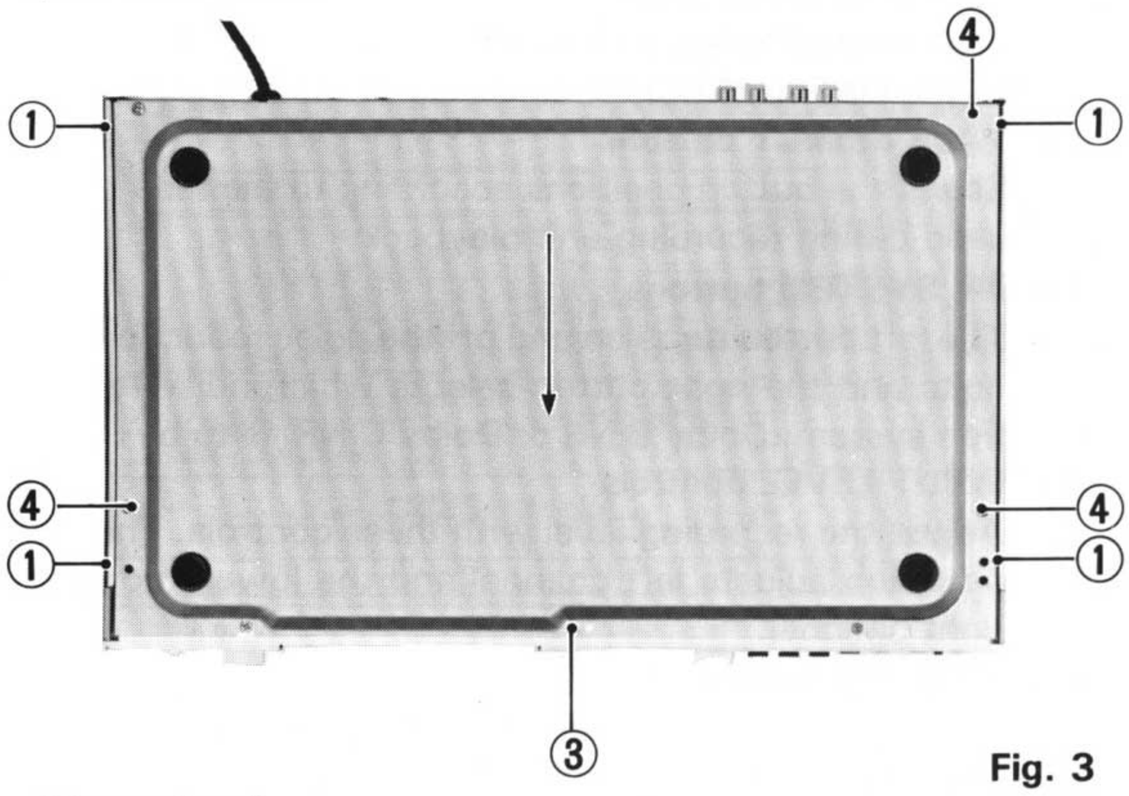



Fig. 3

**(Rear view)**

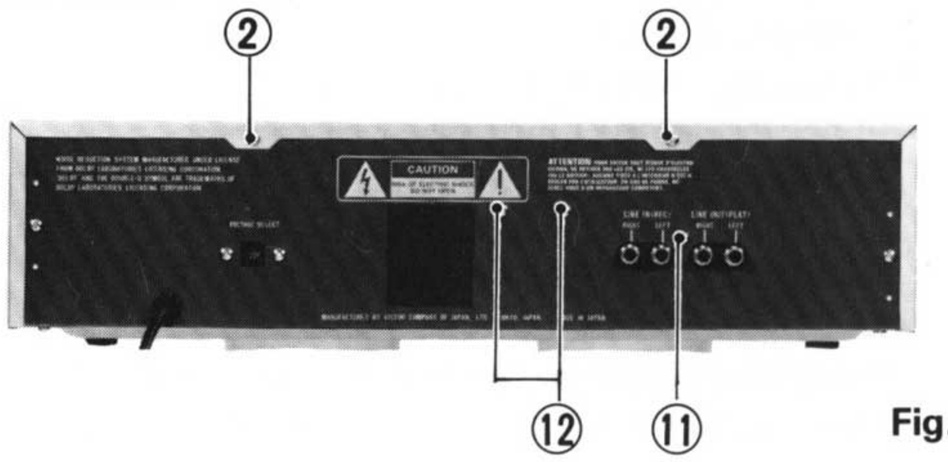



Fig. 4

■ **Front plate**

1) Remove ⑤ and ⑥ shown above.
2) Remove screw ⑦ securing the ground wire.
3) Disengage the MEMORY/COUNTER switch Ass'y from the front plate.
4) Cut the wire clamp, then disengage the mechanism control connector (CN703) from the main P.C. Board.

■ **L.C.D P.C. Board**

1) Unscrew two screws ⑧ securing the P.C. Board.
2) Disengage four pawls ⑨ fixing the L.C.D display section.

■ **Main P.C. Board**

1) Pull out the TAPE SELECT/NR switch knob and the remote bar, then remove two screws ⑩ on the left and right.
2) Remove screw ⑪ securing the pin jack from the rear and two screws ⑫ securing the heat sink.
3) Remove two screws ⑬ securing the P.C. Board from the bottom.

**(Top view)**

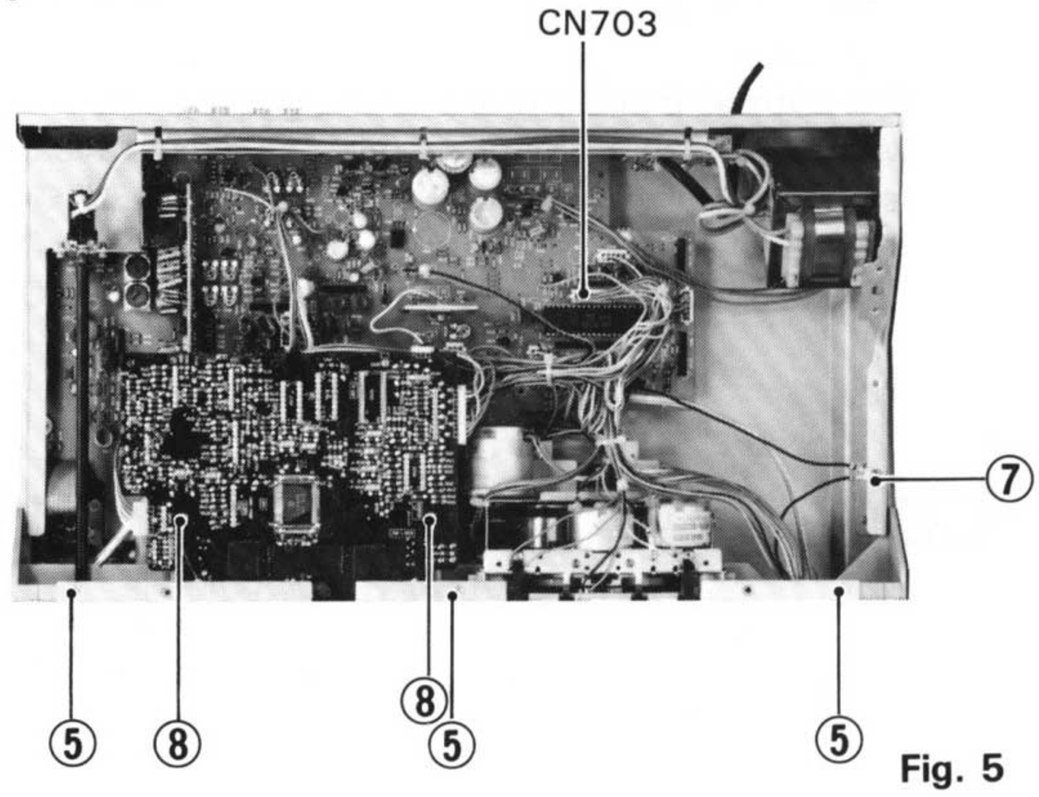



Fig. 5

**(Bottom view)**

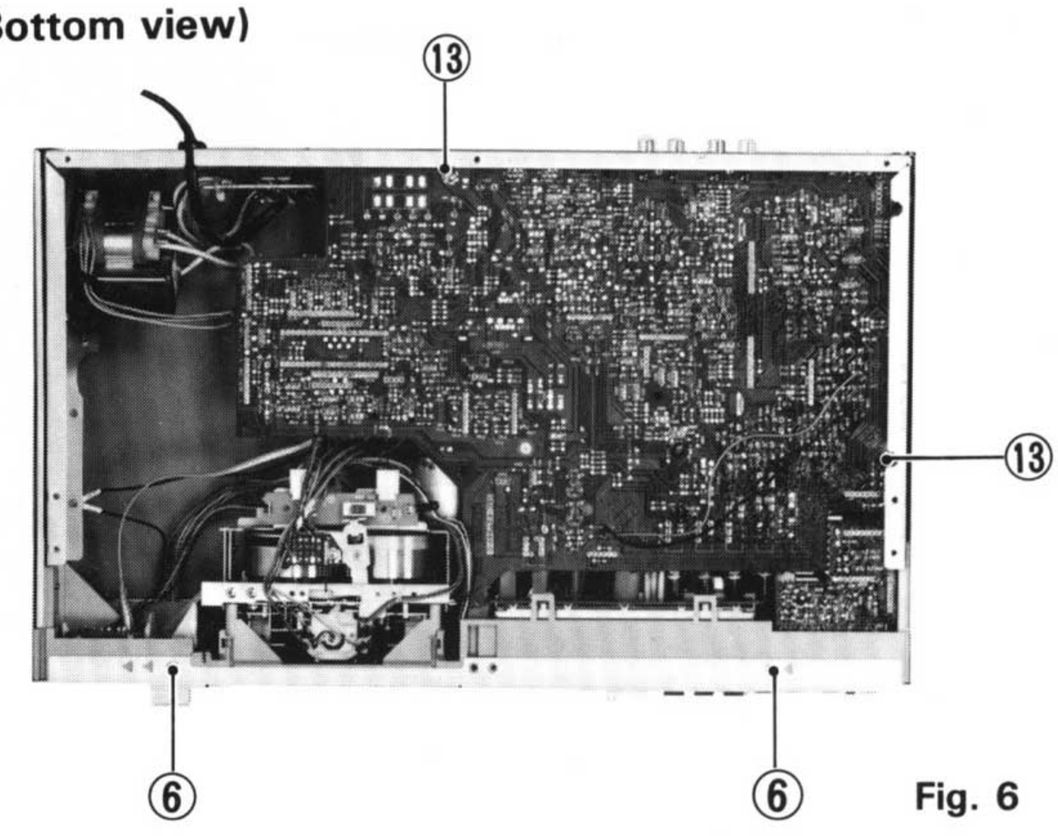



Fig. 6

■ **Damper holder Ass'y**

Remove screw ⑭.

**(Front view)**

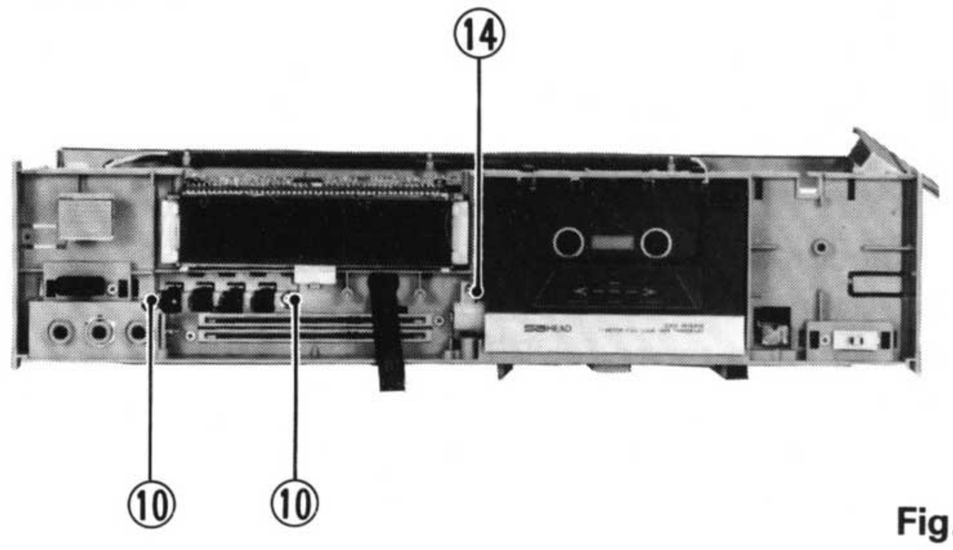



**Fig. 7**

■ **Mechanism Ass'y**

Remove four screws ⑮ securing the mechanism chassis to the front panel from the interior of the set. (The four screws are provided at the four corners of the chassis.)

**(Top view)**

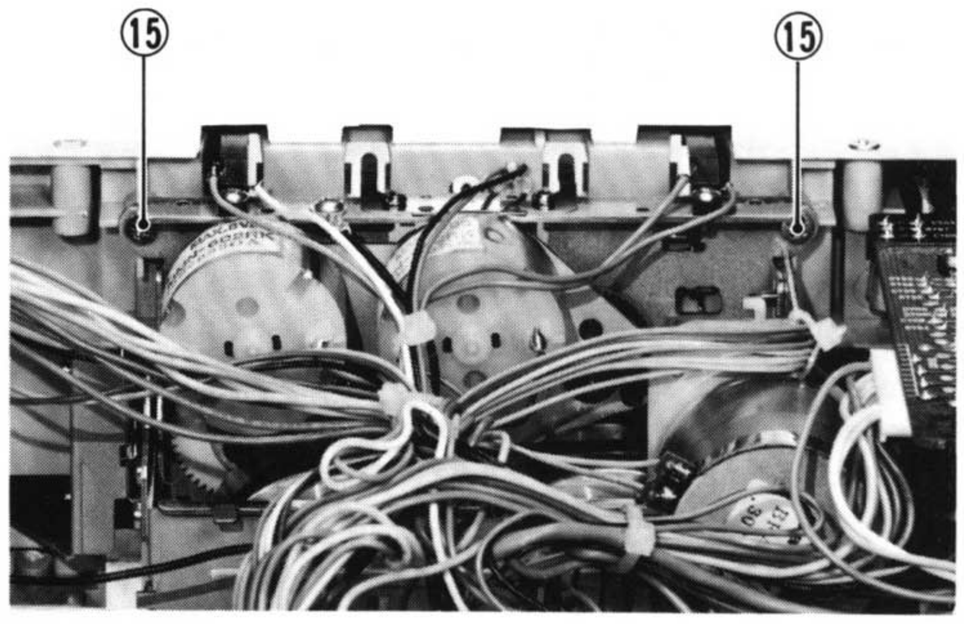



**Fig. 8**

**(Bottom view)**

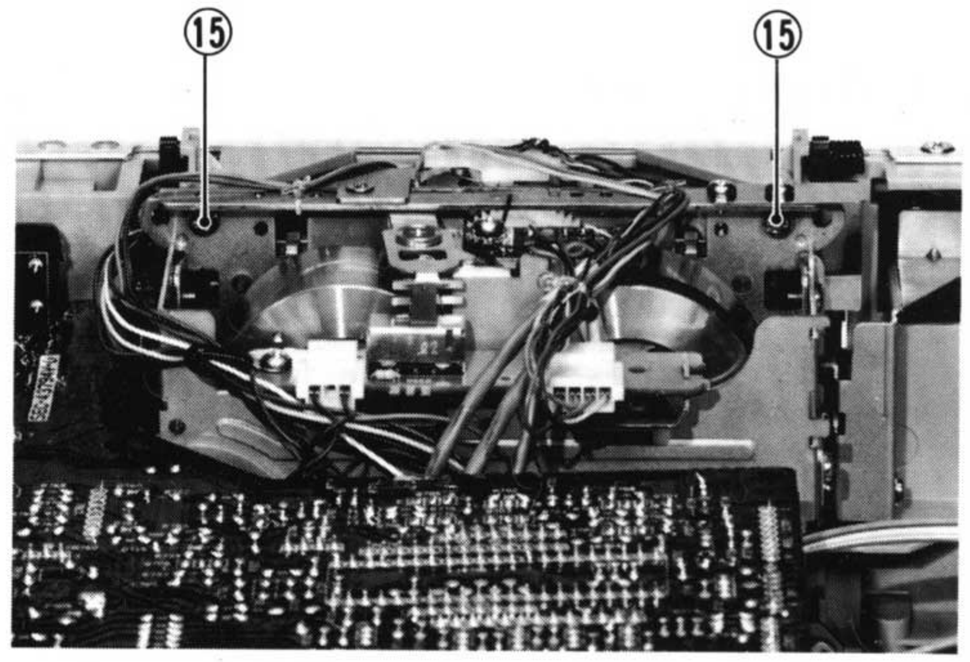



**Fig. 9**

■ **Mechanism parts**

As the mechanism section are the same as KD-V44, refer to page 11, in the KD-V44 service manual (No. 4219).

# Main Adjustments

## [I] Equipment and Measuring Instruments used for Adjustment

### 1. Electrical adjustment

1) Electronic voltmeter
2) Audio frequency oscillator
   (range : 50—20 kHz and output 0 dB with impedance 600 Ω)
3) Attenuator
4) Standard tapes for REC/PB
   Maxell UD — Normal tape (TS-5)
   TDK SA — Chrome tape (TS-6)
   JVC ME — Metal tape (TS-7)
   } or equivalent
5) Reference tapes for playback (JVC Test Tape)
   VTT703 or VTT658 (for head azimuth adj.)
   VTT714 or VTT656A (for motor speed, wow flutter adj.)
   VTT724 or VTT664 (for Reference Level 1 kHz)
   TTT739N (for playback frequency response)
   TMT6447 (for music scanning)
   TMT6448 (for music scanning)
6) Resistors
   600 Ω (for attenuator matching)

### 2. Mechanical adjustment

1) Torque testing cassette gauge
2) Blank tape (C-120) for tape running checker.

## [II] Mechanical Part of Adjustment and Replacement

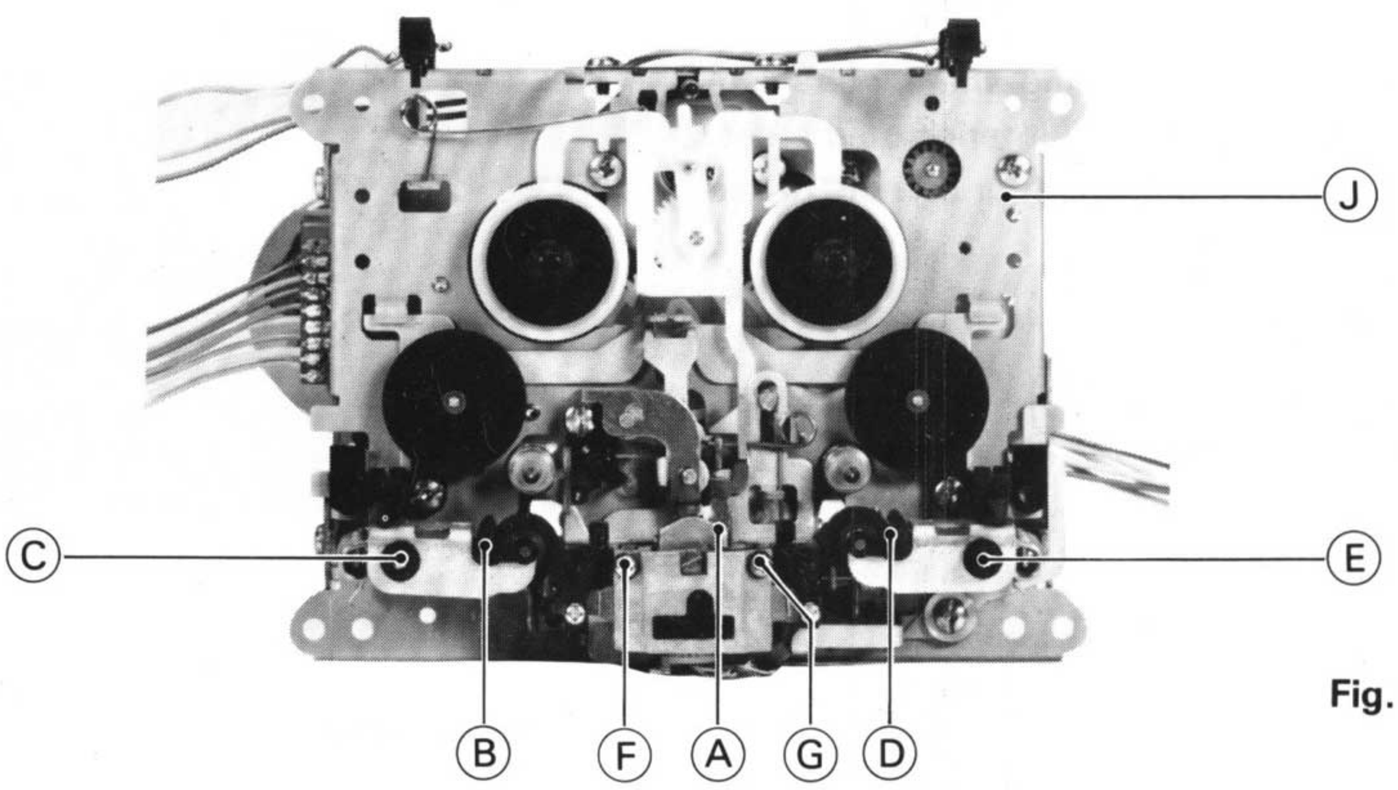
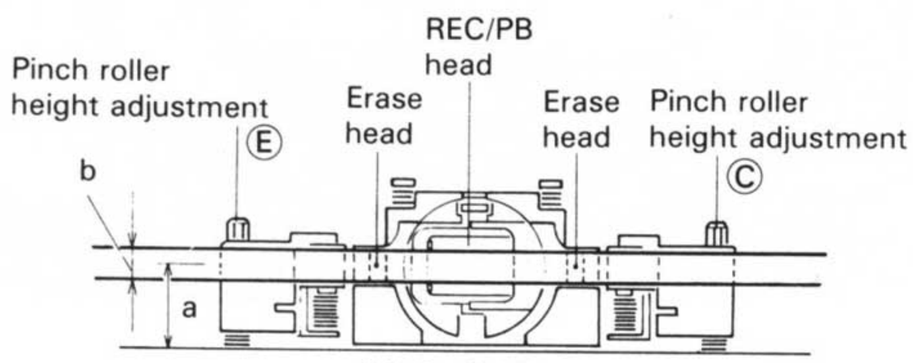



Fig. 10

### Tape run adjustment

1) Put the mechanism into the PAUSE mode, then adjust the height of right and left tape guides (B) and (D) to that of the REC/PB head tape guide with adjustment screws (C) and (E).




$a = 17.6 \pm 0.15$ mm
$b = 3.82 \pm \begin{smallmatrix}0.08\\0\end{smallmatrix}$ mm

Fig. 11

2) Check the erasing coefficient of TS-7 (metal tape) by listening in the forward and reverse modes.
   — **checking method** —
   Erase the tape on which a 400 Hz or 1 kHz input of 0 VU +20 dB is recorded, then check that to sound is heard.
3) After adjustment, protect screws (C) and (E) against loosening by painting screw locking compound.

### REC/PB head azimuth adjustment

1) Connect an electronic voltmeter to LINE OUT and a low frequency oscillator and an attenuator to LINE IN.
2) Forward play back VTT-658 with side A towards you, then adjust screw (F) so that the output is maximized.
3) Forward record 12.5 kHz input of −20 dB on TS-5 with side A towards you, rewind it and check the output level.
4) Set side B of TS-5 towards you, reverse play back the section recorded in 3), and adjust screw (G) so that the output is maximized.
5) After adjustment, protect screws (F) and (G) against loosening by painting screw locking compound.
   — **when replacing the head** —
   In the rotary head section for auto reverse, its tilt, azimuth, height, etc. are adjusted precisely. Therefore, when the REC/PB head alone has been repalced, they must be readjusted. In this place, replace the head block.

### Others

When assembling the mechanism once it has been disassembled, engage the gear sections so that the markings (holes) of the head base and pinch roller cams are aligned with each other.

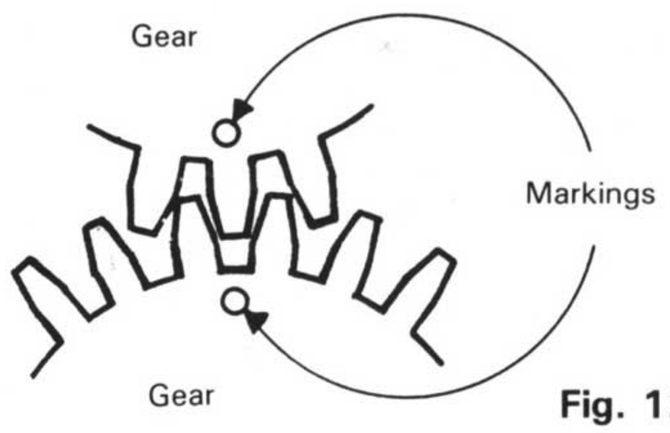



Fig. 12

## Mechanical Adjustment

| Item | Adjustment | Adjusting point | Standard value | Remarks |
|---|---|---|---|---|
| Adjusting motor speed | Connect a speed meter (an electronic counter) to the LINE OUT terminals.<br>Play back the VTT714 or VTT656A test tape.<br>Adjust the semi-fixed resistor in the motor until the reading of the speed meter is 3000 Hz. | Semi-fixed resistor in the motor | 3000 Hz | If the speed meter functions as a wow and flutter meter, also, connect the deck to the INPUT terminals of the meter. |
| Checking wow and flutter | Connect a wow and flutter meter to LINE OUT terminals.<br>Play back the VTT714 or VTT656A test tape.<br>Check to see if the reading of the meter is within 0.11% (WRMS). | | 0.11% (WRMS)<br>0.16% (DIN 45500) | If the reading becomes moving value even if conforming to the standard, a re-claim may be raised. Repairs are necessary. |
| Checking play-back torque | Employ a torque testing cassette tape for the checking, or remove the cassette cover and use a torque gauge. | | 40—70 gr-cm | If the standard torque is not obtained, replace the take-up disc assembly. |
| Checking fast forward torque | Measure the torque in the fast forward mode in the same manner as in the above. | | More than 80 gr-cm | If the standard torque is not obtained, perform the following.<br>1. Clean the capstan belt, the idler circumference, the motor pulley, the take-up reel disc circumference, the flywheel circumference, etc.<br>2. Replace the belt and idler. |
| Checking rewind torque | Measure the torque in the rewind mode in the same manner as in the above. | | More than 80 gr-cm | If the standard torque is not obtained, clean the capstan belt, idler, motor pulley, flywheel circumference, rewinding idler circumference, left reel disc circumference, etc. |
| Multi-music scan check | 1. Using a TMT-6447 with the counter display switch set to MMS. Push the FF SCAN or REW SCAN button to check scanning.<br>2. Using the TMT-6448, the music scan mechanism does not function. | | | |

## [III] Electrical Adjustments Location

### Main amp. P.W. Board assembly (Top view)

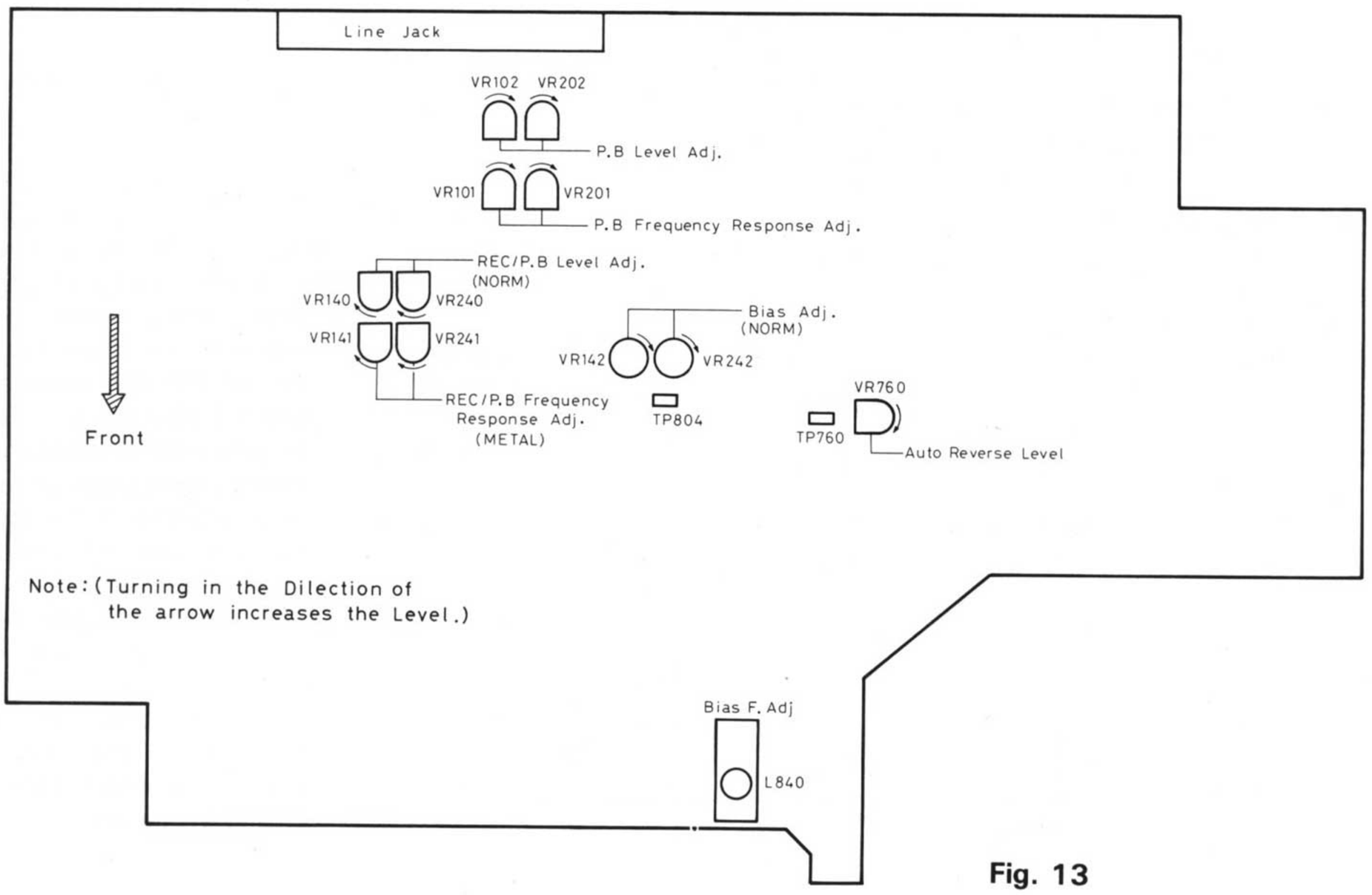


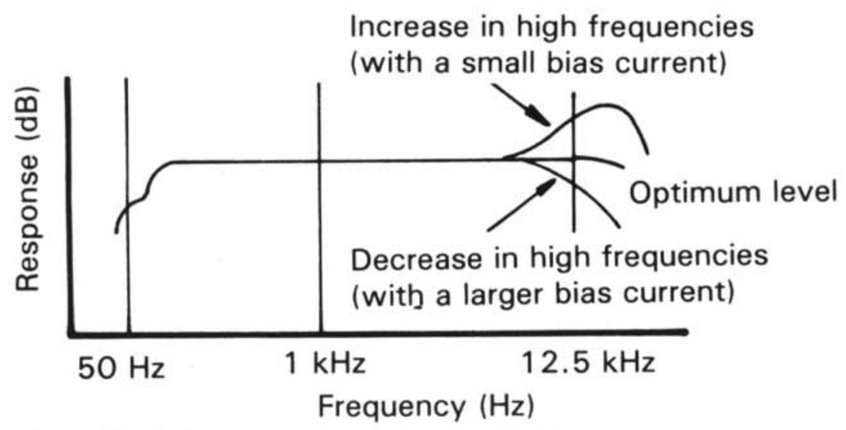

**Fig. 13**

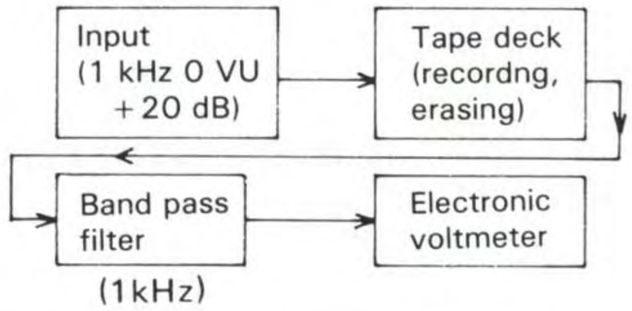
## [IV] Electrical Circuit Adjustment Procedure

In the steps marked by an asterisk (*), adjustment should be performed, however, only checking is sufficient with steps other than those.
Adjustment should be performed in the order of steps 1, 2, 3, .....
Perform this adjustment with the DOLBY switch set to OFF.

| Step | Item | | | Check and Adjustment | |
|---|---|---|---|---|---|
| 1 | Checking DOLBY circuit (Rec mode) | | | Frequency Level | Output raise value, deviation value |
| | | Signal input : LINE IN<br>Cal. Level : 400 Hz −6 dBs<br>Output terminal : TP102,202 | DOLBY B (Rec) | 1 kHz, Cal−40 dB | +5.7 dB ±2 dB |
| | | | | 5 kHz, Cal−20 dB | +3.5 dB ±1.5 dB |
| | | | | 1 kHz, Cal | 0 dB ±1 dB |
| | | | DOLBY C (Rec) | 1 kHz, Cal−40 dB | +16.2 dB $^{+3}_{-2}$ dB |
| | | | | 5 kHz, Cal−20 dB | +2.9 dB ±2.5 dB |
| | | | | 1 kHz, Cal | 0 dB ±1 dB |
| | | | | 0.2 kHz, Cal−40 dB | +8.1 dB ±2 dB |

| Step | Item | Adjustment | Adjusting point | Standard value | Remarks |
|---|---|---|---|---|---|
| 2* | Adjusting playback level | 1. Playback the VTT724 or VTT664 Reference tape (1 kHz) with the tape select switch set to the NORM position.<br>2. Adjust VR102 and VR202 until the LINE OUT becomes about −8 dBs. | VR102<br>202 | −8 dBs<br>(0.3 V) | This adjustment becomes necessry when a change in playback level results (for example, due to head replacement). |
| 3* | Playback frequency response | Playback test tape VTT739N (1 kHz, 10 kHz) for following adjustment.<br>Adjust VR101 and VR201 so that 10 kHz signal and 1 kHz signal gains become flat response. | VR101<br>201 | Reference frequency<br>1 kHz<br>+1±3 dB<br>at 63 Hz<br>0±3 dB<br>at 10 kHz | NR : OFF<br>TAPE SELECT : NORM |
| 4 | Checking LED level meter lighten | 1. Set the cassette deck to its recording mode.<br>2. Apply a 1 kHz, approx. −10 dB signal to the LINE IN terminals.<br>3. Adjust the recording level controls until the signal is avilable at −8 dBs at the LINE OUT terminals.<br>4. Checking the LED indicator lighten up to 0. | | | |
| 5* | Adjusting Bias frequency | 1 .Connect a F. counter to TP840<br>2 .Adjust L840 until the counter becomes 81 kHz ±3 kHz | L840 | 81 kHz<br>±3 kHz | |
| 6 | Checking record/ playback frequency response | Record 1 kHz, 50 Hz and 10 kHz signals at an input level of 0 indicator to −20 dB.<br>Playback the tape.<br>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.<br><br>Note NR switch : off | For NORM tape:<br>VR142<br>242<br><br>For Metal tape:<br>VR141<br>241 | Reference frequency;<br>1 kHz<br><br>0±3 dB<br>at 50 Hz<br>+0.5<br>±3 dB<br>at<br>12.5 Hz | This checking should be performed for normal, chrome and metal tapes and for both right and left channels.<br>1. Bias current adjustment for a cassette deck should generally be performed referring to the record/playback frequency response. This is because the frequency response of a cassette deck depends more greatly upon the bias current than does that of an open reel deck.<br>The current measuring method described below is an alternative one.<br>2. If the bias current is not properly adjusted, the record and playback characteristics become as shown below. |



| Step | Item | Adjustment | Adjusting point | Standard value | Remarks |
|---|---|---|---|---|---|
| 7 | Adjusting recording level | 1. Apply a 1 kHz, approx. −10 dB signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at −8 dBs at the LINE OUT terminals.<br>2. After checking to see if the LED indicator become up to 0, record the signal applied to both left and right channels using normal tape.<br>3. Play back the recording part. Perform the recording signal adjustment with VR140 and VR240 so that the LED indicator lighten up to 0. | VR140<br>240 | −8 dBs | The level difference between left and right channels for normal tape, chrome tape and metal tape should be less than 1 dB. Perform the adjustment using a normal tape, level difference between recording and playback for $CrO_2$ and metal tapes should be less than 1.5 dB, and that between left and right channels should also be less than 1 dB. |
| 8 | Checking record/ playback signal distortion | 1. Record a 1 kHz, −8 dBs signal to LINE IN terminals and perform recording with the LED indicator lighten up to 0.<br>2. Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value. | | NORM tape; Less than 2.0%<br>$CrO_2$ tape; Less than 3%<br>Metal tape; Less than 2% | Be sure to perform this adjustment following bias current and recording level adjustments. |
| 9 | Checking signal to noise ratio in recording/playback | 1. Record a 1 kHz, −8 dBs signal. Stop the input by disconnecting from the terminal to perform non-signal recording.<br>2. Play back the recorded part. Measure the 0 dB recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value. | | NORM, $CrO_2$ and Metal tapes; More than 42 dB | Reference input level<br>MIC −72 dB ± 3 dB<br>Line −20 dB ± 3 dB |
| 10 | Checking erasing coefficient | 1. Apply a 1 kHz signal to the LINE IN terminals. Adjust the recording level controls until the LED indicator lighten up to 0.<br>2. Perform recording with the signal enhanced by 20 dB.<br>3. Erase a part of the recording.<br>4. Measure the output difference between the erased part and nonerased part to compare with an electronic voltmeter. | | More than 60 dB | For the measuring, connect a band pass filter between the deck and the electronic voltmeter.<br>  |
| 11 | Checking | For adjustment of the clearance between the Hall IC and magnet, check that the tape does not automatically stop at the start of FF. (This clearance should be adjusted to within 1 ± 0.5 mm) | | | |
| 12 | Adjusting auto reverse | Adjust VR760 so that the voltage at TP-760 is 0.23 V for the transparent section of TS-5 leader tape in the stop mode. | | | |

# Block Diagram

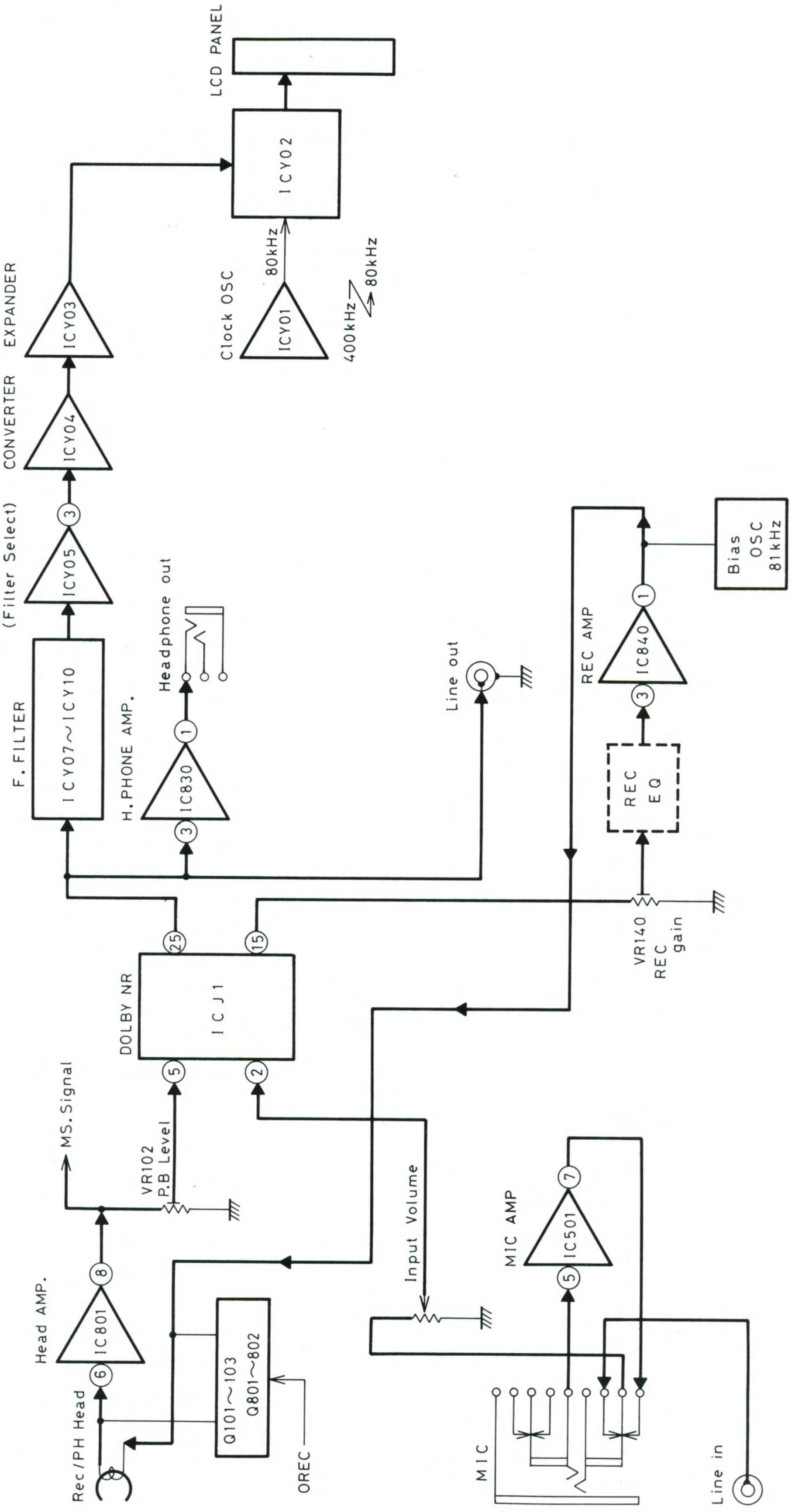
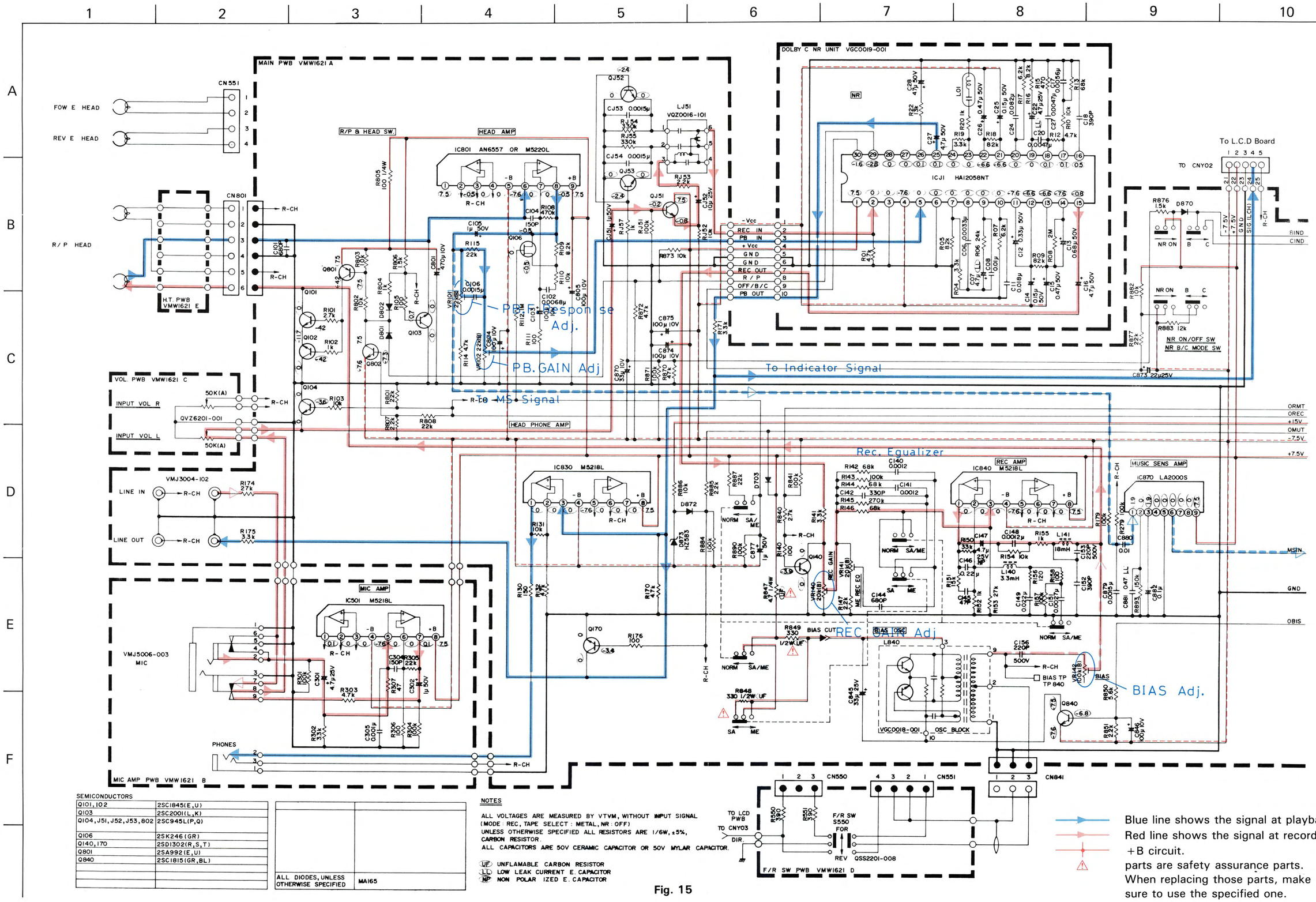



**Fig. 14**

# Standard Schematic Diagram of KD-V400 (Amplifier Circuit)




| SEMICONDUCTORS | |
|---|---|
| Q101, 102 | 2SC1845(E,U) |
| Q103 | 2SC2001(L,K) |
| Q104, J51, J52, J53, 802 | 2SC945L(P,Q) |
| Q106 | 2SK246(GR) |
| Q140, 170 | 2SD1302(R,S,T) |
| Q801 | 2SA992(E,U) |
| Q840 | 2SC1815(GR,BL) |

| | |
|---|---|
| ALL DIODES, UNLESS OTHERWISE SPECIFIED | MA165 |

NOTES

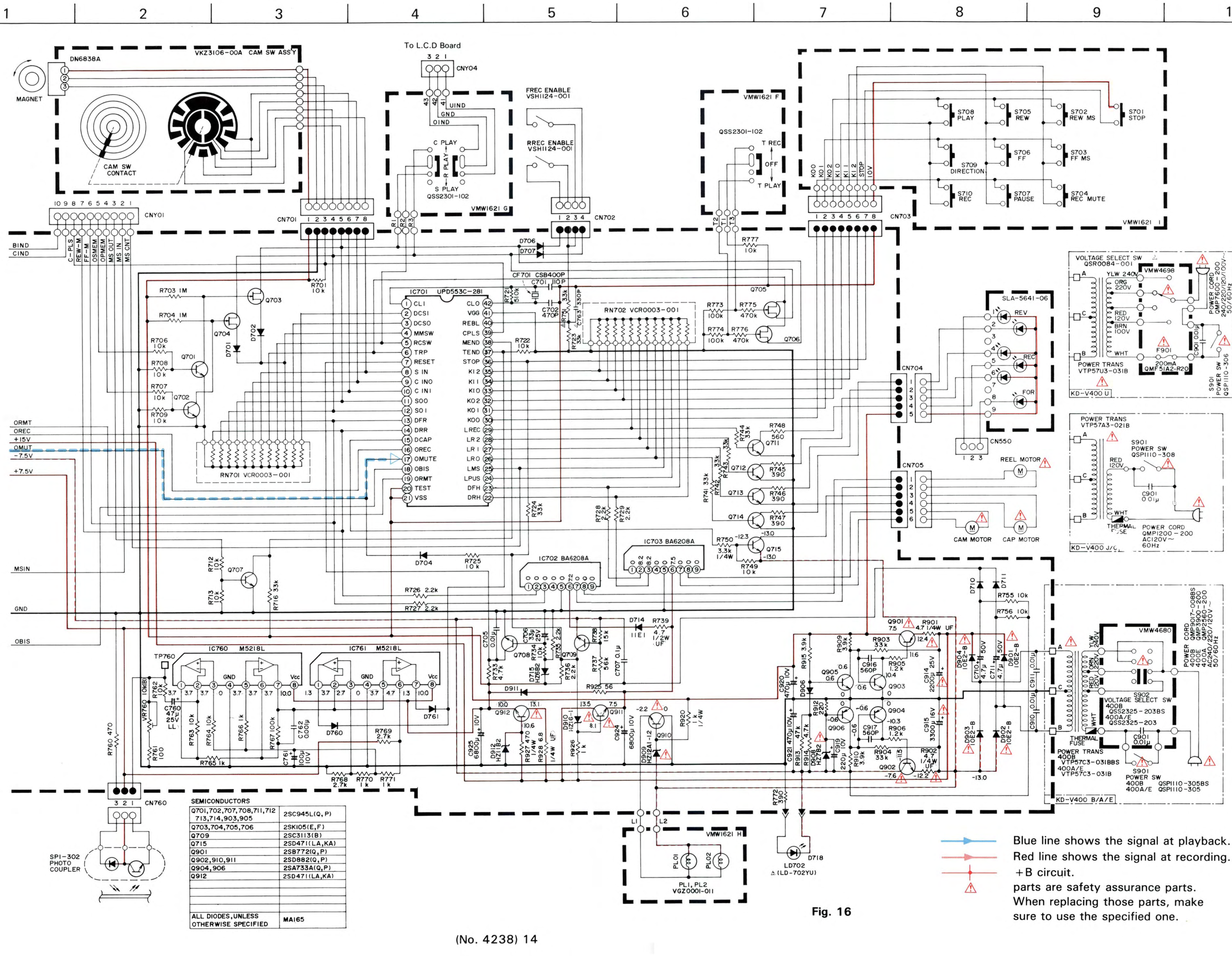
ALL VOLTAGES ARE MEASURED BY VTVM, WITHOUT INPUT SIGNAL (MODE: REC, TAPE SELECT: METAL, NR: OFF)
UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/6W, ±5%, CARBON RESISTOR.
ALL CAPACITORS ARE 50V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR.

(UF) UNFLAMABLE CARBON RESISTOR
(LL) LOW LEAK CURRENT E. CAPACITOR
(NP) NON POLAR IZED E. CAPACITOR

Fig. 15

Blue line shows the signal at playback.
Red line shows the signal at recording.
+B circuit.
⚠ parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

# Standard Schematic Diagram of KD-V400 (Mechanism Control Circuit)

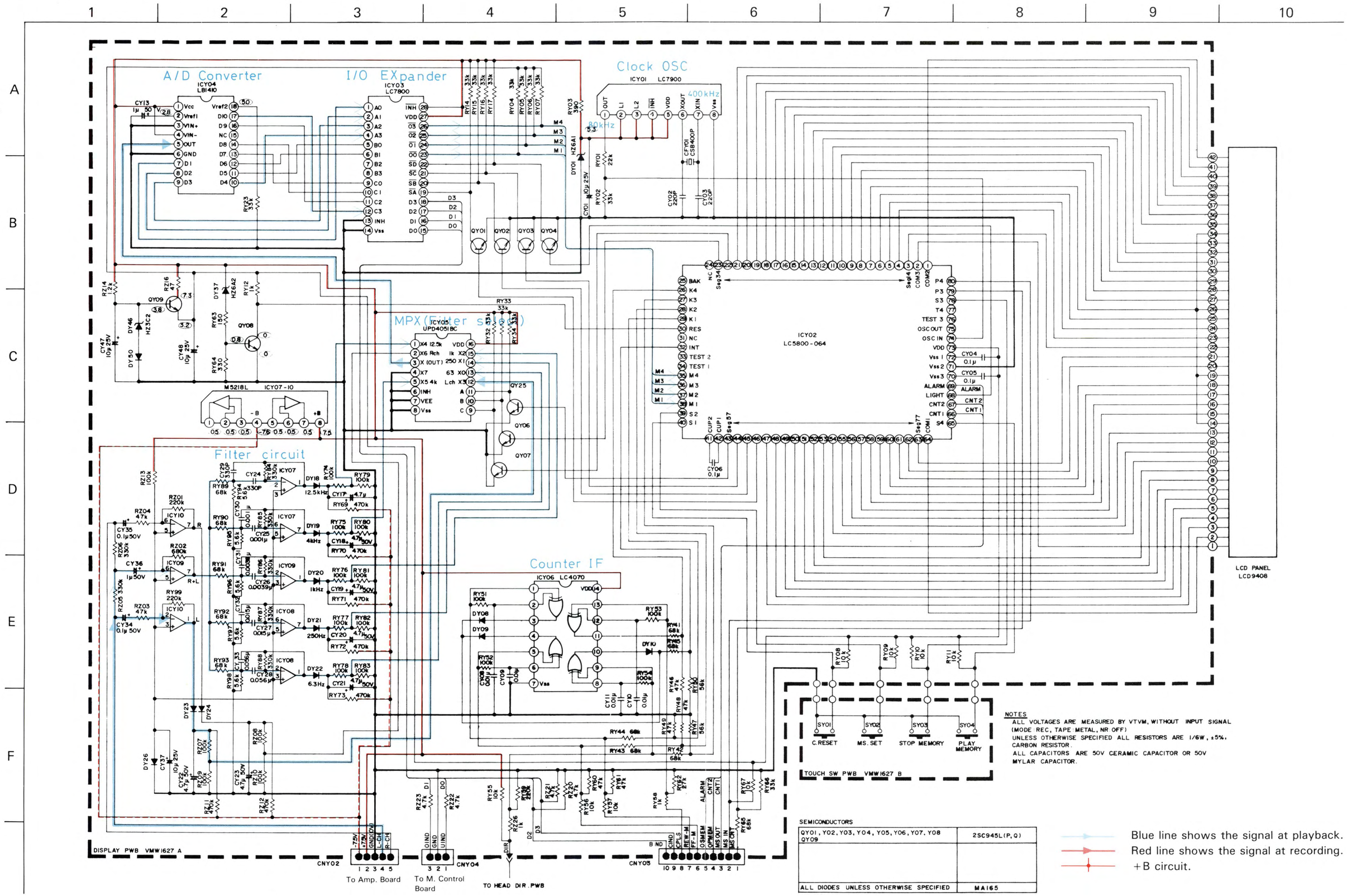



| SEMICONDUCTORS | |
|---|---|
| Q701,702,707,708,711,712 713,714,903,905 | 2SC945L(Q,P) |
| Q703,704,705,706 | 2SK105(E,F) |
| Q709 | 2SC3113(B) |
| Q715 | 2SD471(LA,KA) |
| Q901 | 2SB772(Q,P) |
| Q902,910,911 | 2SD882(Q,P) |
| Q904,906 | 2SA733A(Q,P) |
| Q912 | 2SD471(LA,KA) |
| | |
| | |
| | |
| ALL DIODES, UNLESS OTHERWISE SPECIFIED | MA165 |

Blue line shows the signal at playback.
Red line shows the signal at recording.
+B circuit.
parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Fig. 16

# Standard Schematic Diagram of KD-V400 (L.C.D Circuit)




NOTES
ALL VOLTAGES ARE MEASURED BY VTVM, WITHOUT INPUT SIGNAL (MODE: REC, TAPE: METAL, NR OFF)
UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/6W, ±5%, CARBON RESISTOR.
ALL CAPACITORS ARE 50V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR.

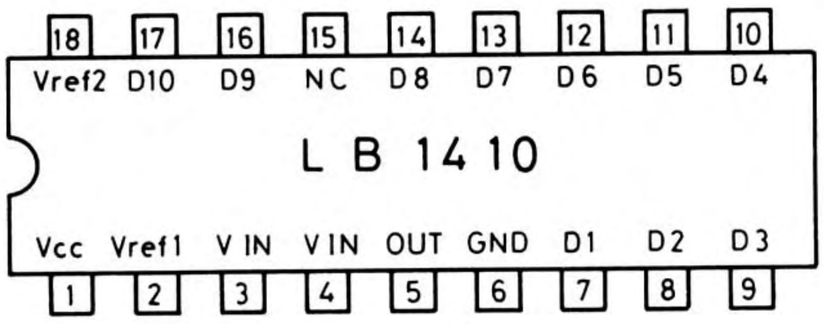
SEMICONDUCTORS

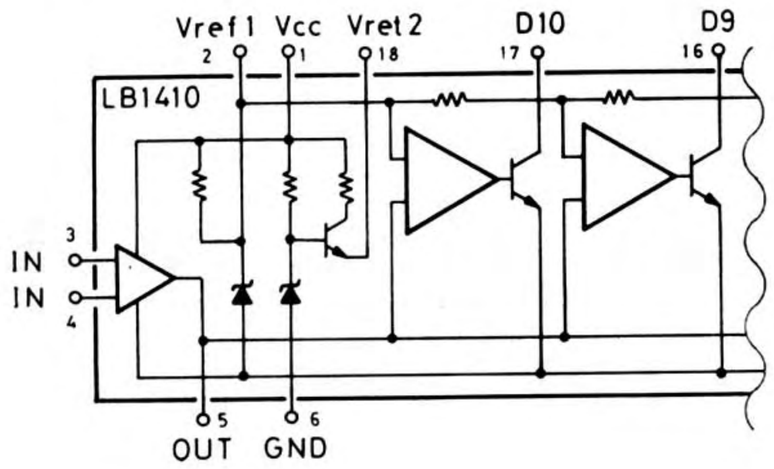
| | |
|---|---|
| QY01, Y02, Y03, Y04, Y05, Y06, Y07, Y08 QY09 | 2SC945L(P,Q) |
| | |
| ALL DIODES UNLESS OTHERWISE SPECIFIED | MA165 |

Blue line shows the signal at playback.
Red line shows the signal at recording.
+B circuit.

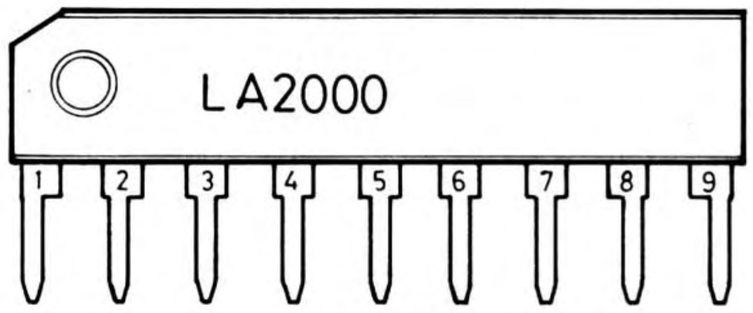
# Integrated Circuit

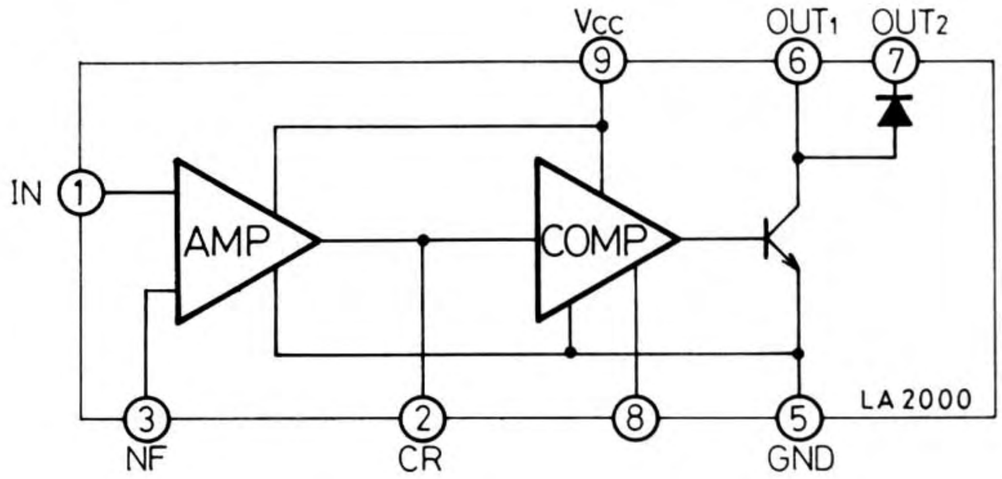
## LB1410



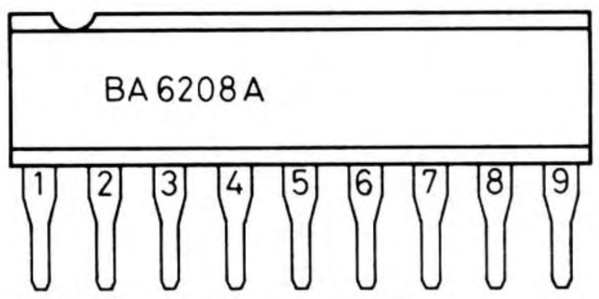




## LA2000

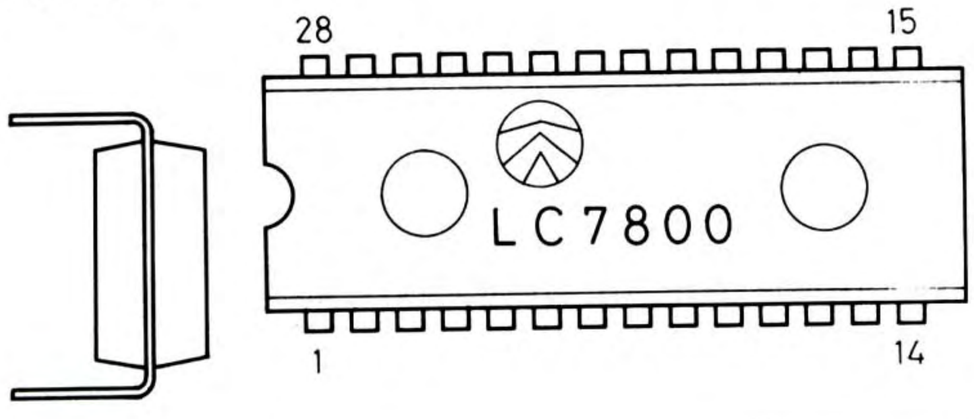


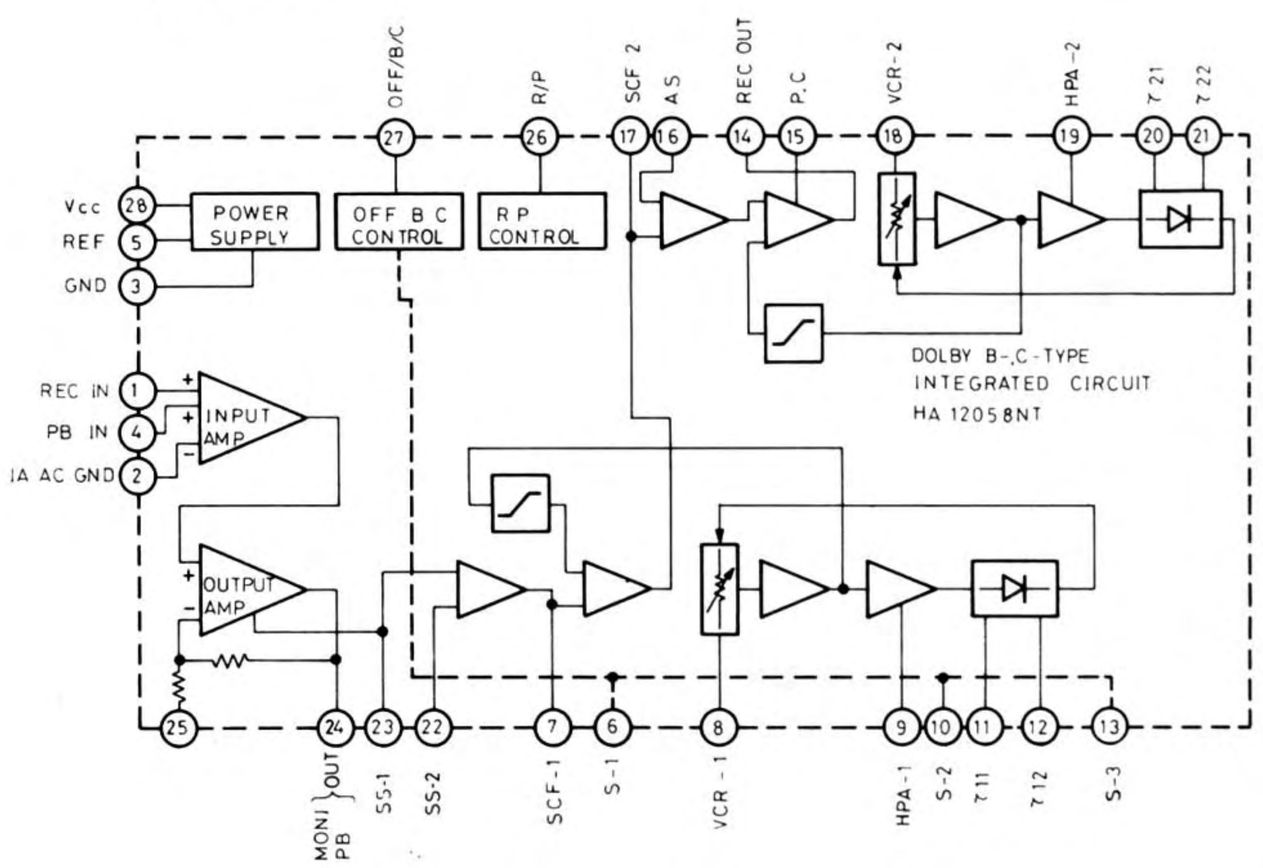

## BA6208A



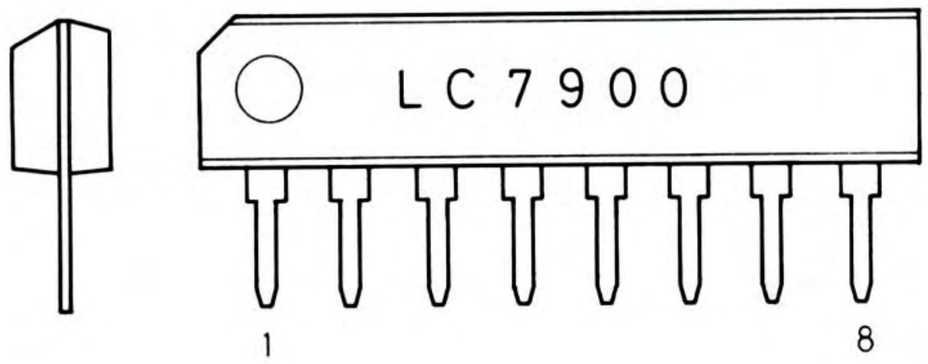

## LC7800




## HA12058NT




## LC7900




## UPD4051BC

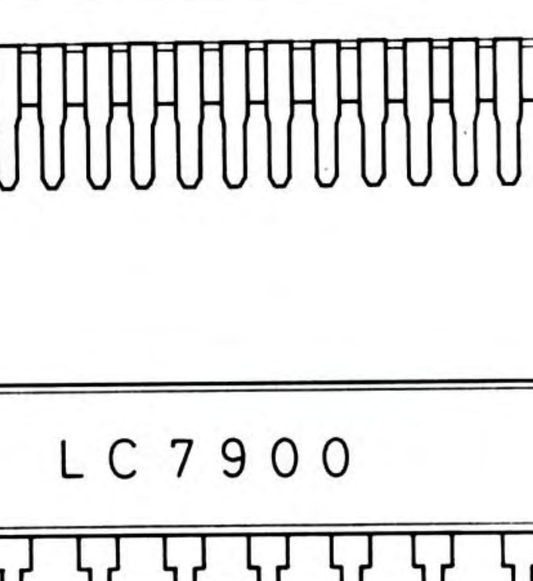
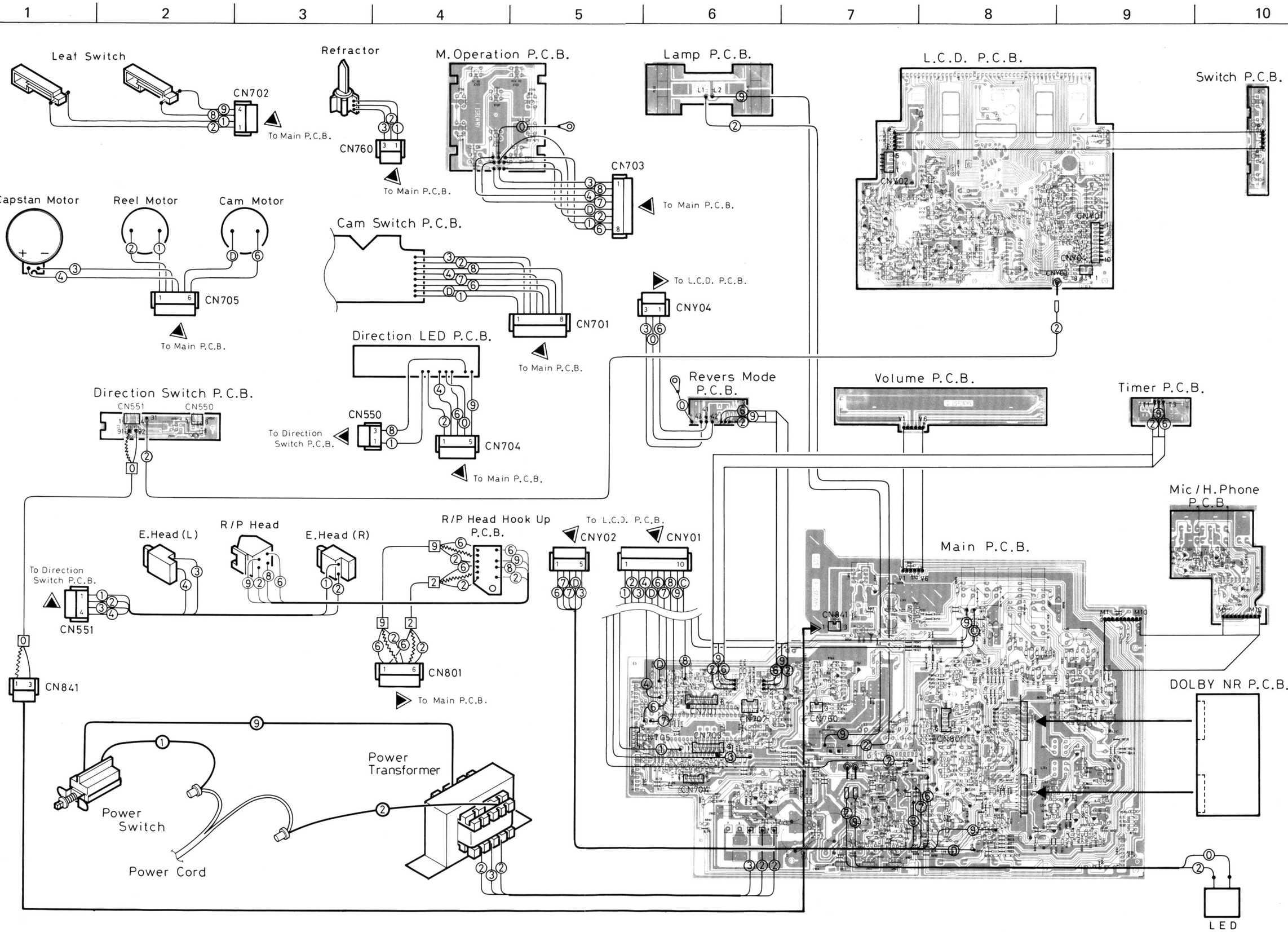
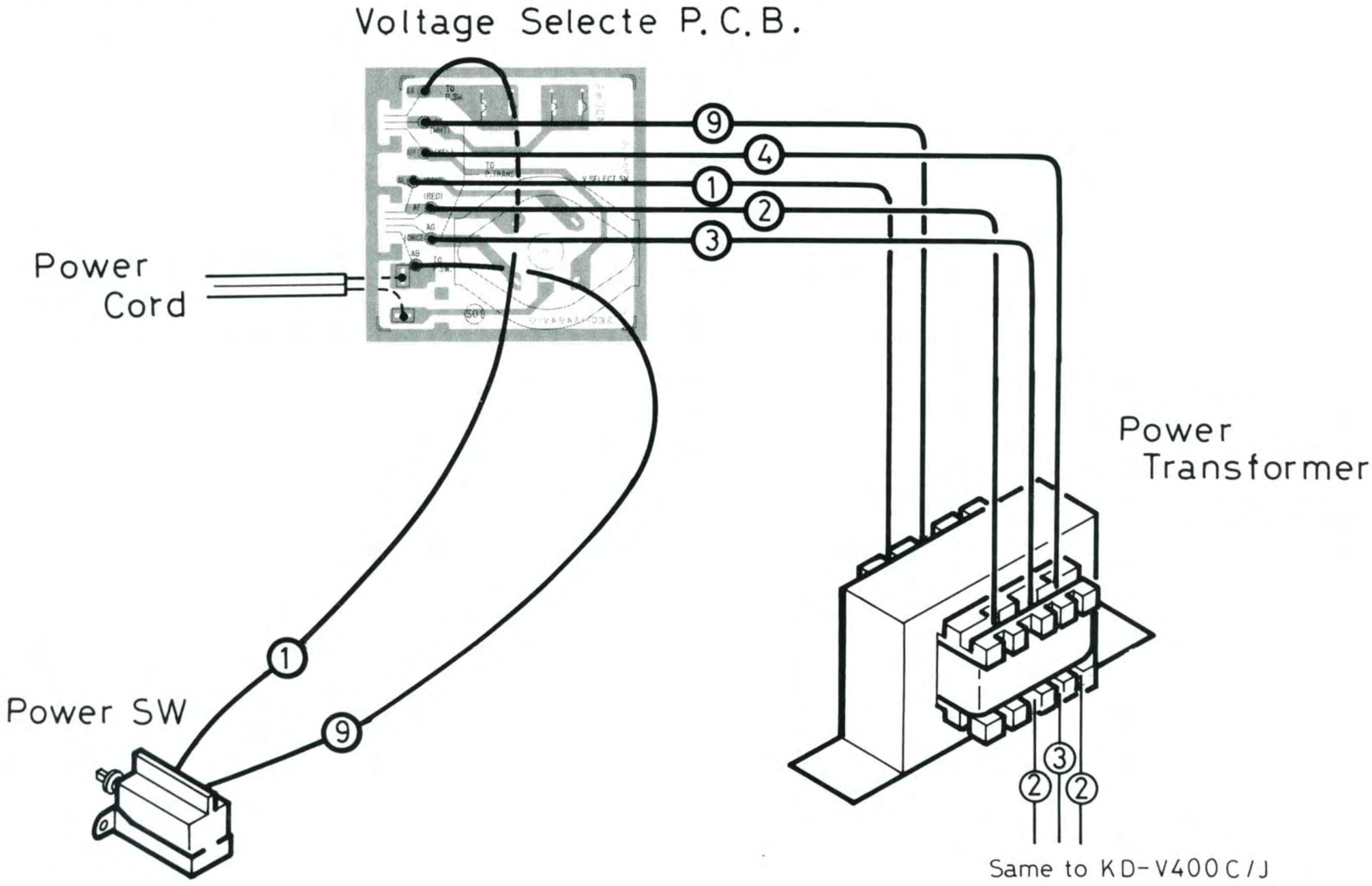



Fig. 18

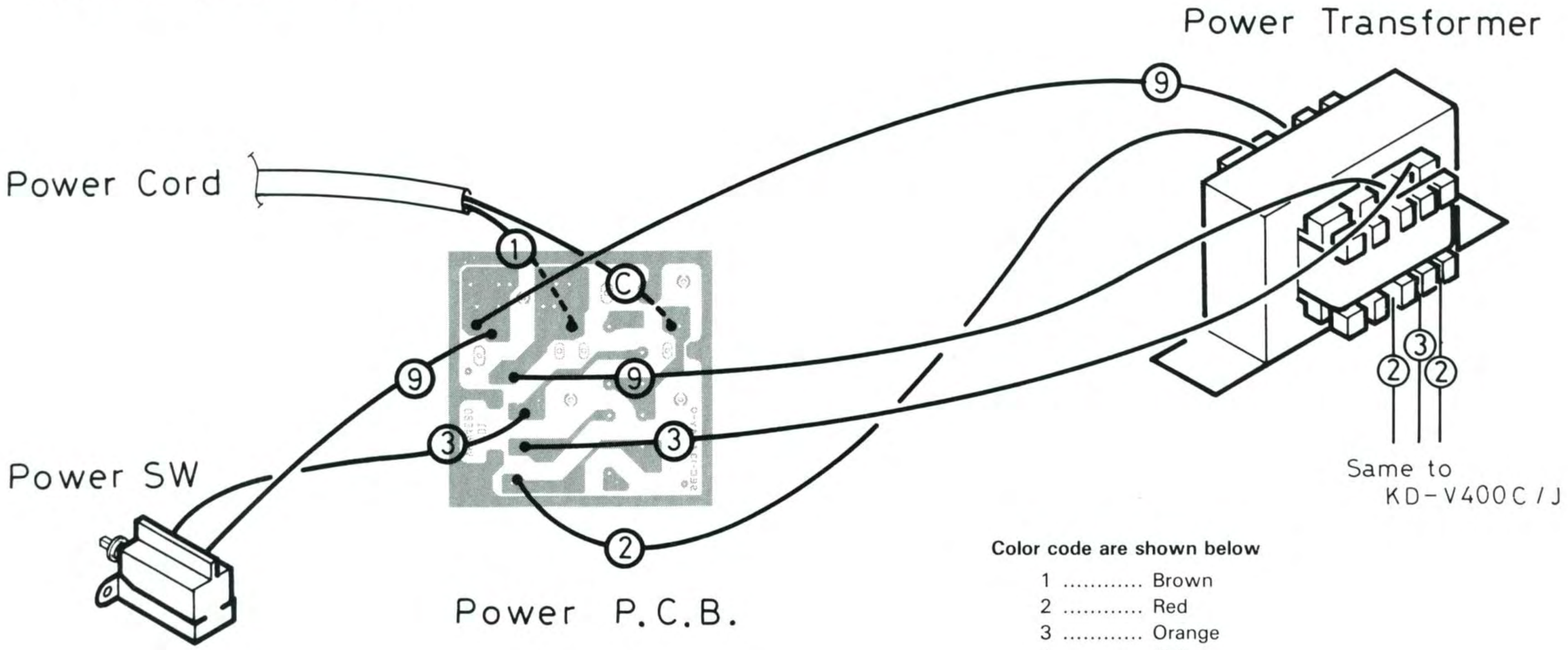
# Wiring Connections



**KD-V400 U Version**




**KD-V400 A/B/E/ED Version**




**Color code are shown below**

| | |
|---|---|
| 1 | Brown |
| 2 | Red |
| 3 | Orange |
| 4 | Yellow |
| 5 | Green |
| 6 | Blue |
| 7 | Violet |
| 8 | Grey |
| 9 | White |
| 0 | Black |
| D | Pink |
| C | Light Blue |

**Fig. 19**

# P.C. Board and Parts List

## L.C.D P.C. Board

(Pattern side)

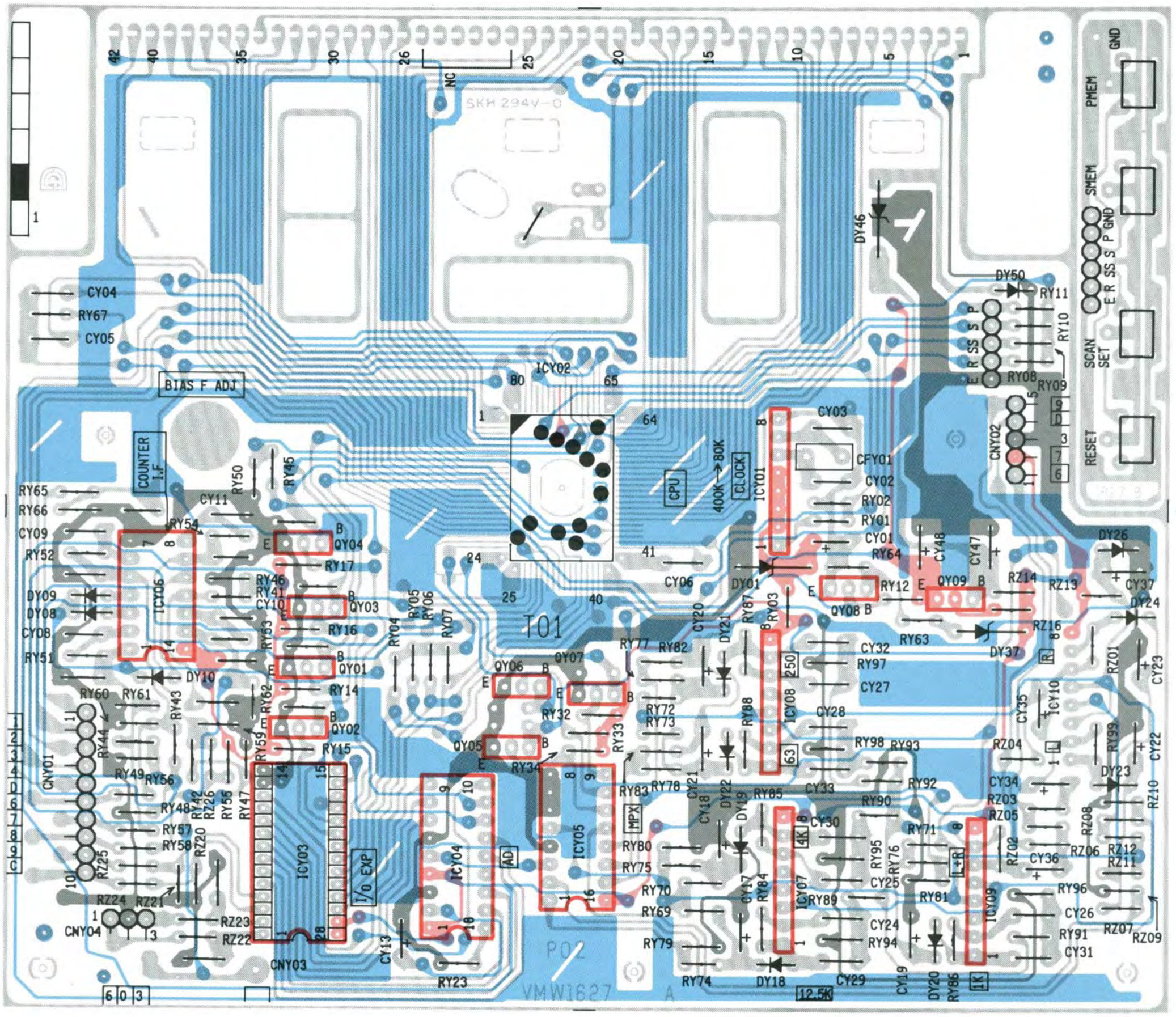



Fig. 20 Parts side pattern +B circuit Earth IC & Transistor

## DOLBY P.C. Board

(Pattern side)

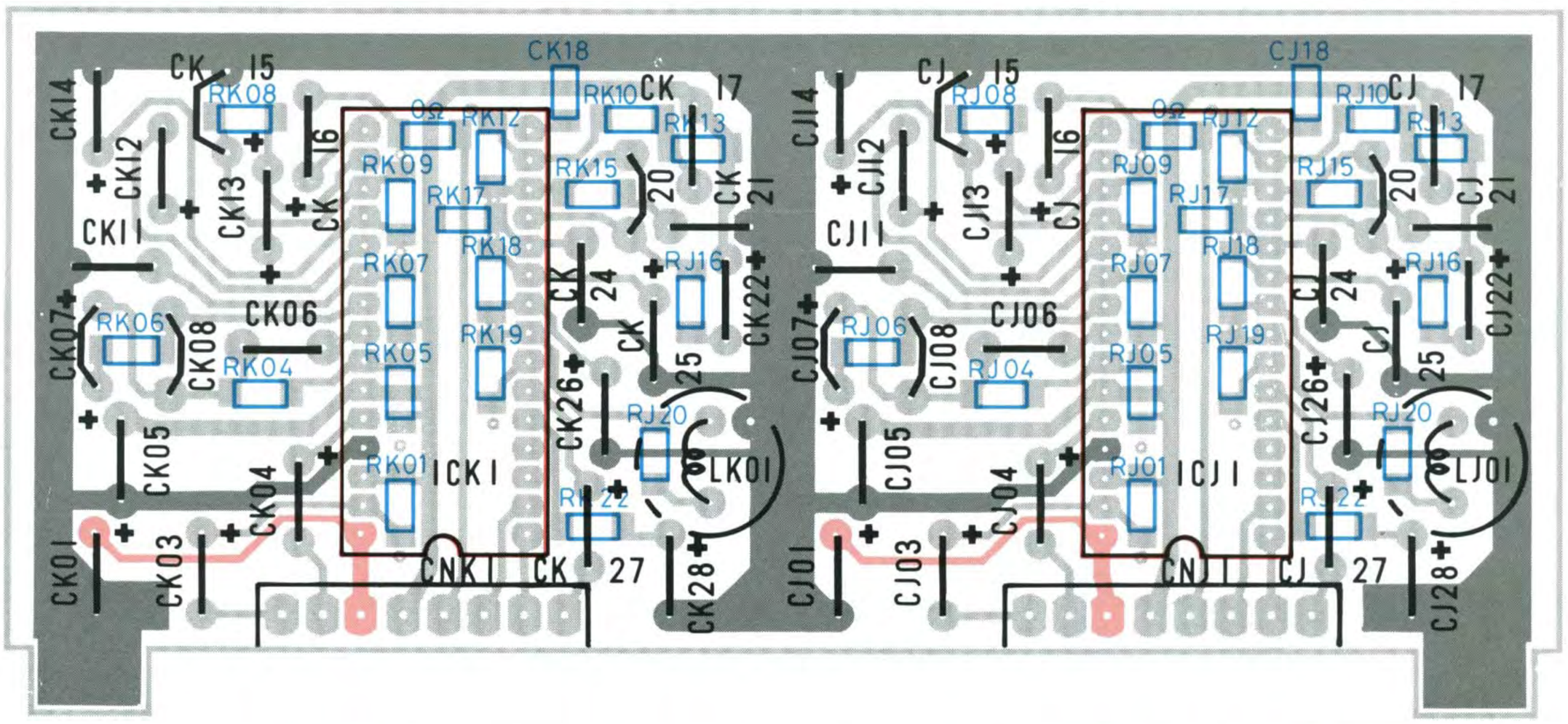



Fig. 21 +B circuit Earth pattern Chip parts IC & Transistor

## L.C.D P.C. 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 |
|---|---|---|---|---|---|
| | ICY04 | LB1410 | I.C. | Level Comparator | 1 |
| | ICY06 | LC4070 | 〃 | Counter I.F. | 1 |
| | ICY02 | LC5800-064 | 〃 | CPU | 1 |
| | ICY03 | LC7800 | 〃 | I/O Expander | 1 |
| | ICY01 | LC7900 | 〃 | Clock | 1 |
| | ICY07~10 | M5218L | 〃 | SPI. Filter | 4 |
| | ICY05 | UPD4051BC | 〃 | Filter Select | 1 |
| | QY01~09 | 2SC945L(P,Q) | Transistor | | 9 |
| | DY46 | HZ3C2 | Zener Diode | | 1 |
| | DY01 | HZ6A1 | Z Diode | | 1 |
| | DY37 | HZ6A2 | 〃 | | 1 |
| | DY08~10 18~24 26,50 | MA165 | Si. Diode | | 12 |
| | CNY04 | QMV5004-003 | Connector | | 1 |
| | CNY01 | QMV5004-005 | 〃 | | 1 |
| | CNY02 | 〃 -010 | 〃 | | 1 |
| | CNY03 | VMZ0015-001 | Pin | | 1 |
| | SY01~04 | QSP0301-002 | Push Switch | | 4 |
| | RY12,58 RZ26 | QRD161J-102 | Carbon Resistor | | 3 |
| | RY08~11 55~57 67 | 〃 -103 | 〃 | | 8 |
| | RY51~54 74~83 RZ07~10 13 | 〃 -104 | 〃 | | 19 |
| | RZ14 | 〃 -122 | 〃 | | 1 |
| | RY63 | 〃 -151 | 〃 | | 1 |
| | RY01 | 〃 -223 | 〃 | | 1 |
| | RY59,99 RZ01 | 〃 -224 | 〃 | | 3 |
| | RY62 | 〃 -273 | 〃 | | 1 |
| | RY64 | 〃 -331 | 〃 | | 1 |

| ⚠ | Ref. No. | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|---|
| | RY02,04 05~07 14~17 23,32,33 34,66 | QRD161J-333 | Carbon Resistor | | 14 |
| | RY84~88 RZ05,06 | 〃 -334 | 〃 | | 7 |
| | RY03 | 〃 -391 | 〃 | | 1 |
| | RZ16 | 〃 -470 | 〃 | | 1 |
| | RZ20~23 | 〃 -472 | 〃 | | 4 |
| | RY46,48,49 60,61 RZ03,04 | 〃 -473 | 〃 | | 7 |
| | RY69~73 RZ11,12 | 〃 -474 | 〃 | | 7 |
| | RY94~98 | 〃 -562 | 〃 | | 5 |
| | RY47,50 | 〃 -563 | 〃 | | 2 |
| | RY41~45 65,89 90~93 | 〃 -683 | 〃 | | 11 |
| | RZ02 | 〃 -684 | 〃 | | 1 |
| | RZ24,25 | QWY124-013 | Bus Wire | | 2 |
| | CFY01 | CSB400P | Lock | | 1 |
| | CY02,03 | QCS11HJ-221 | C. Capacitor | | 2 |
| | CY24,29 | 〃 -331 | 〃 | | 2 |
| | CY01,37 47,48 | QET41ER-106 | E. Capacitor | | 4 |
| | CY34,35 | QET41HR-104 | 〃 | | 2 |
| | CY13,36 | 〃 -105 | 〃 | | 2 |
| | CY17~23 | 〃 -475 | 〃 | | 7 |
| | CY25,30 | QFN41HJ-102 | M. Capacitor | | 2 |
| | CY08~11 | 〃 -103 | 〃 | | 4 |
| | CY26,31 | 〃 -392 | 〃 | | 2 |
| | CY04~06 | QFV41HJ-104 | F. Capacitor | | 3 |
| | CY27,32 | 〃 -153 | T.F. Capacitor | | 2 |
| | CY28,33 | 〃 -563 | 〃 | | 2 |

## DOLBY P.C. 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 |
|---|---|---|---|---|---|
| | ICK01 | HA12038NT | I.C. | | 2 |
| | ICJ01 | VQZ0013-001S | Skewing Coil | | 2 |
| | CJ22,CK07 CK22,07 | QEB41CR-106 | E. Capacitor | | 4 |
| | CK05,CJ05 | QET41AR-227 | 〃 | | 2 |
| | CK02 | QET41CR-107 | 〃 | | 2 |
| | CJ01,28 CK01,28 | QET41ER-106 | 〃 | | 4 |
| | CK10,23 CJ10,23 | QETR41HR-475 | 〃 | | 2 |
| | CJ03,27 CK03,27 | 〃 -335 | 〃 | | 4 |
| | CK04,CJ04 | 〃 -105 | 〃 | | 2 |
| | CK26,15 13,CJ26 CJ15,13 | 〃 -474 | 〃 | | 6 |

| ⚠ | Ref. No. | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|---|
| | CK25,14 12,CJ25 CK12,CJ25 CJ14,CJ12 | QET41SHR-154 | E. Capacitor | | 6 |
| | CK24,CJ24 | QNN41HJ-823F | M. Capacitor | | 2 |
| | CK11,CJ11 | 〃 -183 | 〃 | | 2 |
| | CJ06,09 CK06,09 | 〃 -153 | 〃 | | 4 |
| | CK08,CJ08 | 〃 -153 | 〃 | | 2 |
| | CK17,CJ17 | 〃 -562 | 〃 | | 2 |
| | CK21,CJ21 | 〃 -392 | 〃 | | 2 |
| | CK20,CJ20 | 〃 -332 | 〃 | | 2 |
| | CK19,CJ19 | QCS81HJ-102 | C. Capacitore | | 2 |
| | CK18,CJ18 | 〃 -330 | 〃 | | 2 |
| | — | QRD188J-□□□ | Chip Resistor | | 42 |

## Main P.C. Board

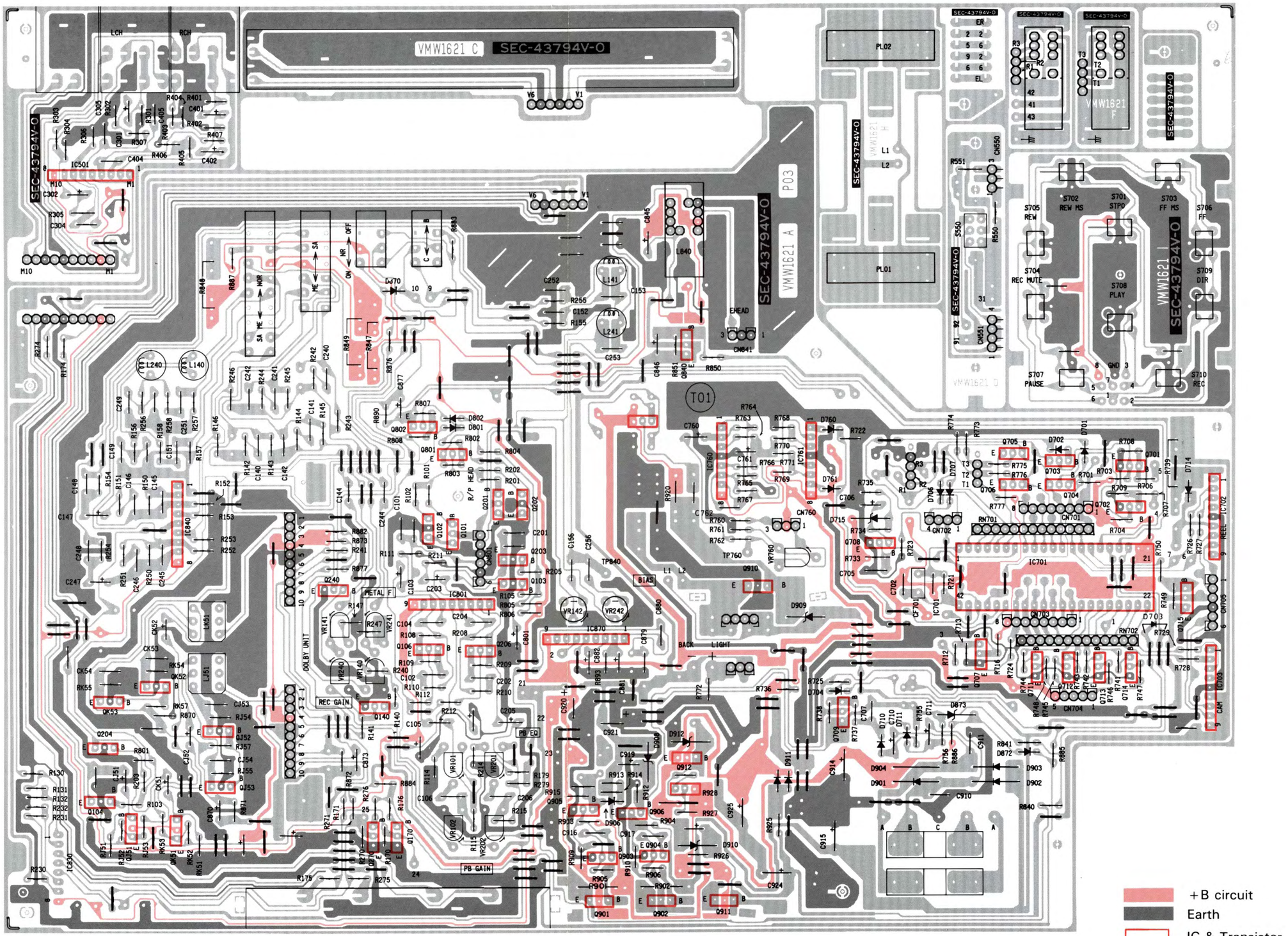



Fig. 22

# Main P.C. 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 |
|---|---|---|---|---|---|
| | IC702,703 | BA6208A | I.C. | Motor Cont. | 2 |
| | IC870 | LA2000S | 〃 | MS | 1 |
| | IC501,760 | M5218L | 〃 | | 5 |
| | 761,830 | | | | |
| | 840 | | | | |
| | IC801 | M5220L | 〃 | | 1 |
| | IC701 | UPD553C-281 | 〃 | Mecha. Cont. | 1 |
| | Q904,906 | 2SA733A(P,K) | Transistor | | 2 |
| | Q801 | 2SA992(E,U) | 〃 | | 1 |
| ⚠ | Q901 | 2SB772(Q,P) | 〃 | | 1 |
| | Q840 | 2SC1815(GRBL)E2 | | | |
| | Q101,102 | 2SC1845(E,U) | 〃 | | 4 |
| | 201,202 | | | | |
| | Q103,203 | 2SC200L(L,K) | 〃 | | 2 |
| | Q709 | 2SC3113(B)E4 | 〃 | | 1 |
| | QJ51~53 | 2SC945L(P,Q) | 〃 | | 19 |
| | QK51~53 | | | | |
| | Q104,204 | | | | |
| | 701,702 | | | | |
| | 707,708 | | | | |
| | 711~714 | | | | |
| | 802,903 | | | | |
| | 905 | | | | |
| | Q140,170 | 2SD1302(RST)TA | 〃 | | 4 |
| | 240,270 | | | | |
| ⚠ | Q715,912 | 2SD471(LA,KA) | 〃 | | 2 |
| ⚠ | Q910,911 | 2SD882(P,Q) | 〃 | | 2 |
| ⚠ | Q902 | 2SD882(Q,P) | 〃 | | 1 |
| | Q703~706 | 2SK105(E,F) | FET | | 4 |
| | Q106,206 | 2SK246(GR)E2 | 〃 | | 2 |
| ⚠ | D912 | HZ11B2 | Z. Diode | | 1 |
| ⚠ | D909 | HZ12A1 | 〃 | | 1 |
| ⚠ | D910 | HZ16-1 | 〃 | | 1 |
| | D873 | HZ5B3 | 〃 | | 1 |
| | D715 | HZ6B2 | 〃 | | 1 |
| ⚠ | D908 | HZ7B2 | 〃 | | 1 |
| | D701~704 | MA165 | Si. Diode | | 16 |
| | 706,707 | | | | |
| | 710,711 | | | | |
| | 760,761 | | | | |
| | 801,802 | | | | |
| | 870,872 | | | | |
| | 906,911 | | | | |
| ⚠ | D901~904 | 10E2-B | 〃 | | 4 |
| | D714 | 11E1-TB2 | 〃 | | 1 |
| | VR760 | QVZ1802-103 | V. Resistor | | 1 |
| | VR101,102 | QVZ1802-223 | 〃 | | 8 |
| | 140,141 | | | | |
| | 201,202 | | | | |
| | 240,241 | | | | |
| | VR142,242 | QVZ3501-104 | 〃 | | 2 |
| | CN550 | QMV5004-003 | Connector | | 1 |
| | CN551 | 〃 -004 | 〃 | | 1 |
| | CN760,841 | QMV5005-003 | 〃 | | 2 |
| | CN702 | 〃 -004 | 〃 | | 1 |
| | CN704 | 〃 -005 | 〃 | | 1 |
| | CN705,801 | 〃 -006 | 〃 | | 2 |
| | CN701,703 | 〃 -008 | 〃 | | 2 |
| | S550 | QSS2201-008 | Slide Switch | Direction | 1 |
| | L840 | VGC0018-001 | Coil | | 1 |
| | L141,241 | VQP0001-183 | Inductor | | 2 |
| | L140,240 | VQP0001-332 | 〃 | | 2 |
| | LJ51,LK51 | VQZ0016-101 | Filter | DOLBY NR | 2 |
| ⚠ | R848,849 | QRD121J-331 | Carbon Resistor | | 2 |
| | R739 | QRD121J-4R7 | 〃 | | 1 |
| | R805 | QRD141J-101 | 〃 | | 1 |
| ⚠ | R920 | 〃 -102 | 〃 | | 1 |
| | R750 | 〃 -332 | 〃 | | 1 |

| ⚠ | Ref. No. | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|---|
| ⚠ | R847,901 | QRD141J-4R7 | Carbon Resistor | | 3 |
| | 902 | | | | |
| | R927 | 〃 -471 | 〃 | | 1 |
| | R721 | 〃 -514 | 〃 | | 1 |
| | R928 | 〃 -6R8 | 〃 | | 1 |
| | R105,111 | QRD161J-101 | 〃 | | 13 |
| | 140,158 | | | | |
| | 176,205 | | | | |
| | 211,240 | | | | |
| | 258,276 | | | | |
| | 306,406 | | | | |
| | 761 | | | | |
| | RJ57,RK57 | 〃 -102 | 〃 | | 14 |
| | R102,152 | | | | |
| | 155,202 | | | | |
| | 252,255 | | | | |
| | 765,766 | | | | |
| | 770,771 | | | | |
| | 804,926 | | | | |
| | RJ52,RK52 | 〃 -103 | 〃 | | 32 |
| | R103,110 | | | | |
| | 131,154 | | | | |
| | 203,210 | | | | |
| | 231,254 | | | | |
| | 701,706 | | | | |
| | 707~709 | | | | |
| | 712,713 | | | | |
| | 722,725 | | | | |
| | 734,749 | | | | |
| | 755,756 | | | | |
| | 762~764 | | | | |
| | 777,802 | | | | |
| | 803,873 | | | | |
| | 882,886 | | | | |
| | RJ51,RK51 | 〃 -104 | 〃 | | 19 |
| | R143,157 | | | | |
| | 179,243 | | | | |
| | 257,279 | | | | |
| | 301,304 | | | | |
| | 401,404 | | | | |
| | 767,773 | | | | |
| | 774,841 | | | | |
| | 871,884 | | | | |
| | 890 | | | | |
| | R112,212 | 〃 -105 | 〃 | | 4 |
| | 703,704 | | | | |
| | R156,256 | 〃 -121 | 〃 | | 2 |
| | R905,906 | 〃 -122 | 〃 | | 2 |
| | R883 | 〃 -123 | 〃 | | 1 |
| | R130,230 | 〃 -151 | 〃 | | 2 |
| | R806,876 | 〃 -152 | 〃 | | 2 |
| | R151,251 | 〃 -153 | 〃 | | 3 |
| | 738 | | | | |
| | R893 | 〃 -154 | 〃 | | 1 |
| | R912 | 〃 -221 | 〃 | | 1 |
| | RJ53,RK53 | 〃 -222 | 〃 | | 13 |
| | R147,247 | | | | |
| | 726~729 | | | | |
| | 735,736 | | | | |
| | 807,851 | | | | |
| | 885 | | | | |
| | R115,215 | 〃 -223 | 〃 | | 8 |
| | 305,405 | | | | |
| | 801,808 | | | | |
| | 877,887 | | | | |
| | R101,201 | 〃 -272 | 〃 | | 5 |
| | 768,769 | | | | |
| | 840 | | | | |

| ⚠ | Ref. No. | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|---|
| | R153,174 | QRD161J-273 | Carbon Resistor | | 4 |
| | 253,274 | | | | |
| | R145,245 | 〃 -274 | 〃 | | 2 |
| | R141,171 | 〃 -332 | 〃 | | 9 |
| | R175,241 | | | | |
| | 271,275 | | | | |
| | 302,402 | | | | |
| | 751 | | | | |
| | R150,250 | 〃 -333 | 〃 | | 14 |
| | 716,723 | | | | |
| | 724,741 | | | | |
| | 742~744 | | | | |
| | 903,904 | | | | |
| | RJ54,55 | 〃 -334 | 〃 | | 4 |
| | RK54,55 | | | | |
| | R550,551 | 〃 -391 | 〃 | | 6 |
| | R745~747 | | | | |
| | 772 | | | | |
| | R909,910 | QRD161J-392 | 〃 | | 3 |
| | 915 | | | | |
| | R307,407 | 〃 -470 | 〃 | | 2 |
| | R760 | 〃 -471 | 〃 | | 1 |
| | R114,132 | 〃 -472 | 〃 | | 11 |
| | 170,214 | | | | |
| | 232,270 | | | | |
| | 303,403 | | | | |
| | 733,872 | | | | |
| | 914 | | | | |
| | R870,913 | 〃 -473 | 〃 | | 2 |
| | R108,208 | 〃 -474 | 〃 | | 4 |
| | 775,776 | | | | |
| | R925 | 〃 -560 | 〃 | | 1 |
| | R748 | 〃 -561 | 〃 | | 1 |
| | R850 | 〃 -562 | 〃 | | 1 |
| | R737 | 〃 -563 | 〃 | | 1 |
| | R142,144 | 〃 -683 | 〃 | | 6 |
| | 146,242 | | | | |
| | 244,246 | | | | |
| | R109,209 | 〃 -822 | 〃 | | 2 |
| | RN701,702 | VCR003-001 | C.R. Block | | 2 |
| | CF701 | CSB400P | C. Lock | | 1 |
| | C705,910 | QCF11HP-103 | C. Capacitor | | 3 |
| | 911 | | | | |
| | C701 | QCS11HJ-111 | 〃 | | 1 |
| | C104,204 | 〃 -151 | 〃 | | 4 |
| | 304,404 | | | | |
| | C142,242 | 〃 -331 | 〃 | | 3 |
| | 763 | | | | |
| | C152,252 | 〃 -391 | 〃 | | 2 |
| | C145,245 | 〃 -470 | 〃 | | 2 |
| | C702 | 〃 -471 | 〃 | | 1 |
| | C916,917 | 〃 -561 | 〃 | | 2 |
| | C101,144 | QCS11HJ-681 | 〃 | | 4 |
| | 201,244 | | | | |
| | C153,156 | QCS12HJ-221 | 〃 | | 4 |
| | 253,256 | | | | |
| | C305,405 | QCY41HK-102 | 〃 | | 3 |
| | 762 | | | | |
| | C760 | QEB41EM-476 | E. Capacitor | | 1 |
| | C881 | QEB41HM-474 | 〃 | | 1 |
| | C147,247 | QEN41EM-475 | 〃 | | 2 |
| | C103,203 | QET41AR-107 | 〃 | | 8 |
| | 761,804 | | | | |
| | 805,846 | | | | |
| | 874,875 | | | | |
| | C919 | QET41AR-227 | 〃 | | 1 |
| | C870 | QET41AR-336 | 〃 | | 1 |

| ⚠ | Ref. No. | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|---|
| | C801,920 | QET41AR-477 | E. Capacitor | | 3 |
| | 921 | | | | |
| | C924,925 | 〃 -688 | 〃 | | 2 |
| ⚠ | C915 | QET41CR-338 | 〃 | | 1 |
| | CJ52,CK52 | QET41ER-106 | 〃 | | 1 |
| | C873 | QET41ER-226 | 〃 | | 1 |
| ⚠ | C914 | 〃 -228 | 〃 | | 1 |
| | C706,845 | 〃 -336 | 〃 | | 2 |
| | C882 | QER41HR-104 | 〃 | | 1 |
| | CJ51,CK51 | QET41HR-105 | 〃 | | 7 |
| | C105,205 | | | | |
| | 302,402 | | | | |
| | 877 | | | | |
| | C301,401 | QET41HR-475 | 〃 | | 4 |
| | 710,711 | | | | |
| | C140,141 | QFN41HJ-122 | M. Capacitor | | 6 |
| | 148,240 | | | | |
| | 241,248 | | | | |
| | CJ53,54 | 〃 -152 | 〃 | | 6 |
| | CK53,54 | | | | |
| | C106,206 | | | | |
| | C879 | 〃 -222 | 〃 | | 1 |
| | C151,251 | 〃 -272 | 〃 | | 2 |
| | C102,202 | 〃 -682 | 〃 | | 2 |
| | C880 | QFV41HJ-103 | T.F. Capacitor | | 1 |
| | C707 | 〃 -104 | 〃 | | 1 |
| | C149,249 | 〃 -223 | F. Capacitor | | 2 |
| | C146,246 | 〃 -224 | 〃 | | 2 |
| | | VMH4006-001 | Heat Sink | Q901,902 | 1 |
| | | | | Q910 | |
| | | VKL5002-001 | 〃 | Q911 | 1 |
| | | VKL3143-001 | Board IN Tab | | 2 |
| | | VMJ3004-102 | Jack Ass'y | Pin Jack | 1 |
| | | VMZ0015-001 | Post Pin | for Back Light | 2 |
| | | QST7441-V03 | Push Switch | Tape/DOLBY | 1 |
| | | VMJ5006-003 | MIC/HP Jack | | 1 |
| | | QSS2301-102 | Slide Switch | Timer Switch | 1 |
| | | 〃 -102 | 〃 | Revers Mode | 1 |
| | | VMZ0043-002 | Fuse Clip | for Lamp | 4 |
| | | VKL5629-001 | Refrection Plate | | 1 |
| | | QSP0301-002 | Tact Switch | Play, Stop | 10 |

# Exploded View of Mechanism Assembly

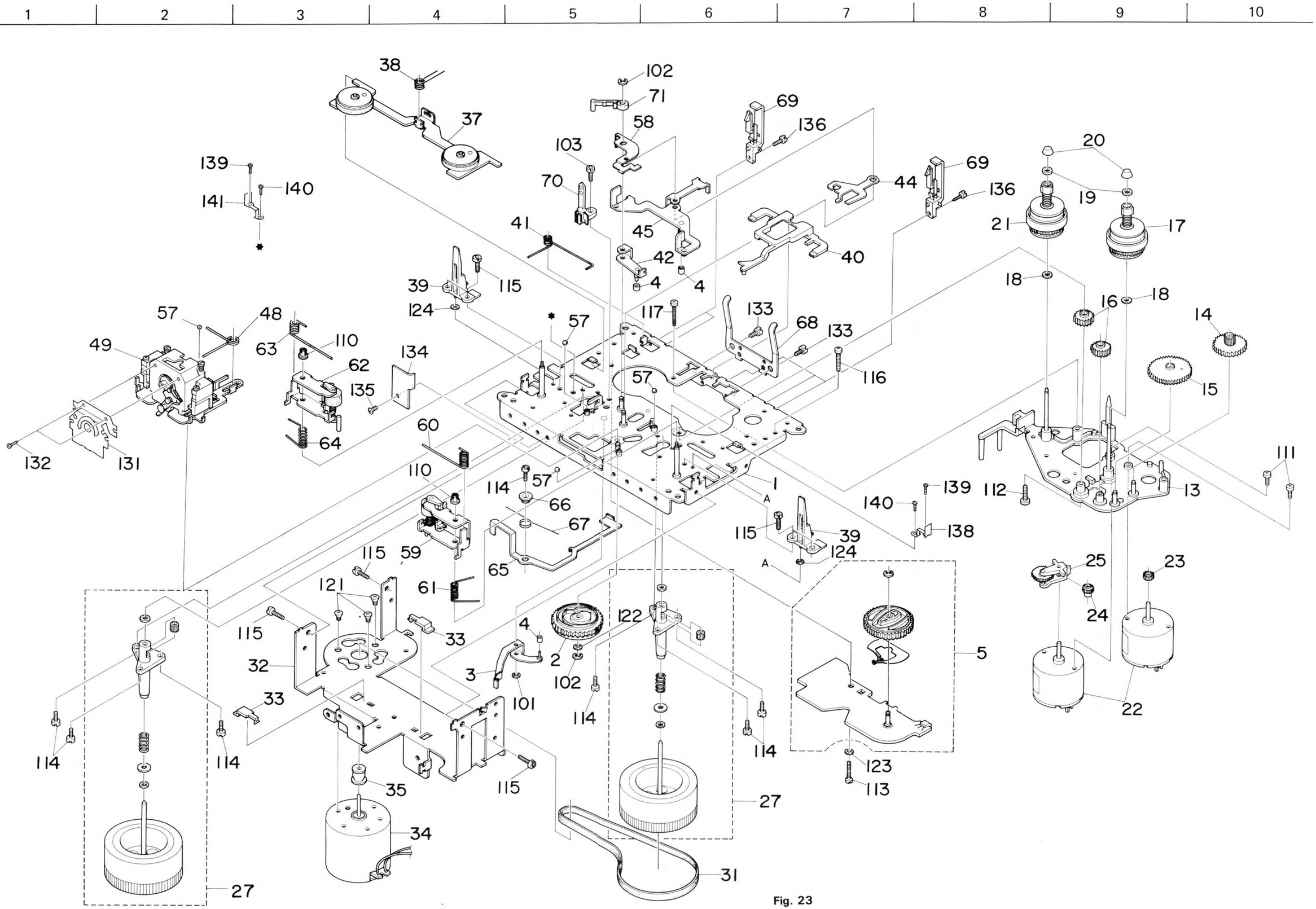



Fig. 23

## Mechanism Assembly 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 |
|---|---|---|---|---|---|
| | 1 | VKL2170-00C | Chassis Base | Ass'y | 1 |
| | 2 | VKS2122-001 | P. Roller Cam | | 1 |
| | 3 | VKL5333-00B | Head Lever | | 1 |
| | 4 | VKH3000-058 | Collar | | 1 |
| | 〃 | 〃 -058 | 〃 | | 1 |
| | 〃 | 〃 -058 | 〃 | | 1 |
| | 5 | VKZ3106-00A | Cam Switch | | 1 |
| | 13 | VKL2173-00A | Base | | 1 |
| | 14 | VKR3001-001 | Gear (2) | | 1 |
| | 15 | 〃 -002 | 〃 | | 1 |
| | 16 | VKR3000-001 | Gear (1) | | 2 |
| | 17 | VKR4312-00B | Reel Disk Ass'y | | 1 |
| | 18 | VKZ4003-010 | Spring | | 1 |
| | 〃 | 〃 -010 | 〃 | Back Tension | 1 |
| | 19 | VKR4170-001 | Ring | | 1 |
| | 〃 | VKR4170-001 | 〃 | | 1 |
| | 20 | VKS4131-001 | Reel Stopper | | 1 |
| | 〃 | 〃 -001 | 〃 | | 1 |
| | 21 | VKR4319-00A | Take Up Disk (4) | | 1 |
| ⚠ | 22 | MMN-6C2RK | DC Motor | Cam | 1 |
| ⚠ | 〃 | 〃 | 〃 | | 1 |
| | 23 | VKR4326-001 | Gear | Cam Motor | 1 |
| | 24 | VKR3000-003 | Gear (1) | | 1 |
| | 25 | VKS4503-00C | Arm | | 1 |
| | 27 | VKF3123-00B | Fly Wheel | | 2 |
| | 31 | VKB3001-017 | Capstan Belt | | 1 |
| | 32 | VKL3410-006 | F.M. Bracket | | 1 |
| | 33 | VKS4437-001 | Thrust Plate | | 2 |
| ⚠ | 34 | BFA2L74 | DC Motor | Capstan | 1 |
| | 35 | VKR4317-002 | Motor Pulley | | 1 |
| | 37 | VKL3411-00A | Take Up Idler | | 1 |
| | 38 | VKW3006-099 | Spring | Take-up | 1 |
| | 39 | VKS4505-003 | Cassette Guide | | 2 |
| | 40 | VKS3162-002 | Brake Bar | | 1 |
| | 41 | VKW4380-001 | Spring | Brake Bar | 1 |
| | 42 | VKL5316-00A | H. Base Arm | | 1 |
| | 44 | VKL5318-001 | Arm | | 1 |
| | 45 | VKL3413-00A | Lever | | 1 |
| | 48 | VKW4467-002 | Spring | For Head Base | 1 |
| | 49 | VDG2127-002MA1 | Head Base Mount Ass'y | | 1 |
| | 57 | T41615-004 | Steel Ball | Head Base | 4 |
| | 58 | VKY4278-001 | Spring Plate | 〃 | 1 |
| | 59 | VKP4126-00B | Pinch Roller(R) | | 1 |
| | 60 | VKW3006-056 | Spring | Pinch Roller | 1 |
| | 61 | VKW3006-057 | | Return | 1 |
| | 62 | VKP4129-00B | Pinch Roller (L) | | 1 |
| | 63 | VKW3006-059 | Spring | Pinch Roller | 1 |
| | 64 | VKW3006-060 | 〃 | Return | 1 |
| | 65 | VKL5320-002 | Door Safety (1) | | 1 |
| | 66 | VKH4418-001 | Flange Collar | For Door Safety | 1 |
| | 67 | VKW3006-061 | Spring | | 1 |
| | 68 | VKY4279-001 | 〃 | | 1 |
| | 69 | VSH1124-002 | Leaf Switch | | 1 |
| | 70 | SPI-302 | Reflector | | 1 |
| | 71 | VKS4534-001 | Pressure Arm | | 1 |
| | 101 | REE1500 | E. Ring | | 1 |
| | 102 | REE2000 | 〃 | | 1 |
| | 〃 | 〃 | 〃 | For Pressure Arm | 1 |
| | 103 | HDST2605Z | Screw | For Reflector | 1 |
| | 110 | VKS4513-001 | 〃 | Pinch Roller | 1 |
| | 〃 | 〃 -001 | 〃 | 〃 | 1 |

| ⚠ | Ref. No. | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|---|
| | 111 | DPSP2608Z | Screw | Reel Motor | 1 |
| | 〃 | 〃 | Cam Motor | | 1 |
| | 112 | HDST2608Z | 〃 | | 1 |
| | 113 | HPST2612Z | 〃 | | 1 |
| | 114 | HPST2605Z | 〃 | | 6 |
| | 〃 | HPST2605Z | 〃 | | 1 |
| | 115 | 〃 | 〃 | F.M. Bracket | 3 |
| | 116 | SPSP2615Z | 〃 | Cam Motor | 1 |
| | 117 | SPSP2613Z | 〃 | Reel Motor | 1 |
| | 121 | SSSP2604Z | 〃 | Capstan Motor | 3 |
| | 122 | Q03093-834 | Washer | | 1 |
| | 123 | WNS2600N | 〃 | | 1 |
| | 124 | Q03093-630 | 〃 | | 2 |
| | 131 | VKZ4242-001 | Head Wire Clamp | | 1 |
| | 132 | VKZ4204-001 | Screw | For H.W. Clamp | 2 |
| | 133 | HPST2604Z | 〃 | | 2 |
| | 134 | VKL5398-001 | Bracket | | 1 |
| | 135 | SSST2604Z | Screw | | 1 |
| | 136 | SDST2606Z | 〃 | | 2 |
| | 138 | VKL5627-003 | Gide Lever | | 1 |
| | 139 | VKZ4032-001 | Special Screw | | 2 |
| | 140 | SDST2004Z | Screw | | 2 |
| | 141 | VKL5627-004 | Gide Lever | | 1 |

# Exploded View of Enclosure Assembly

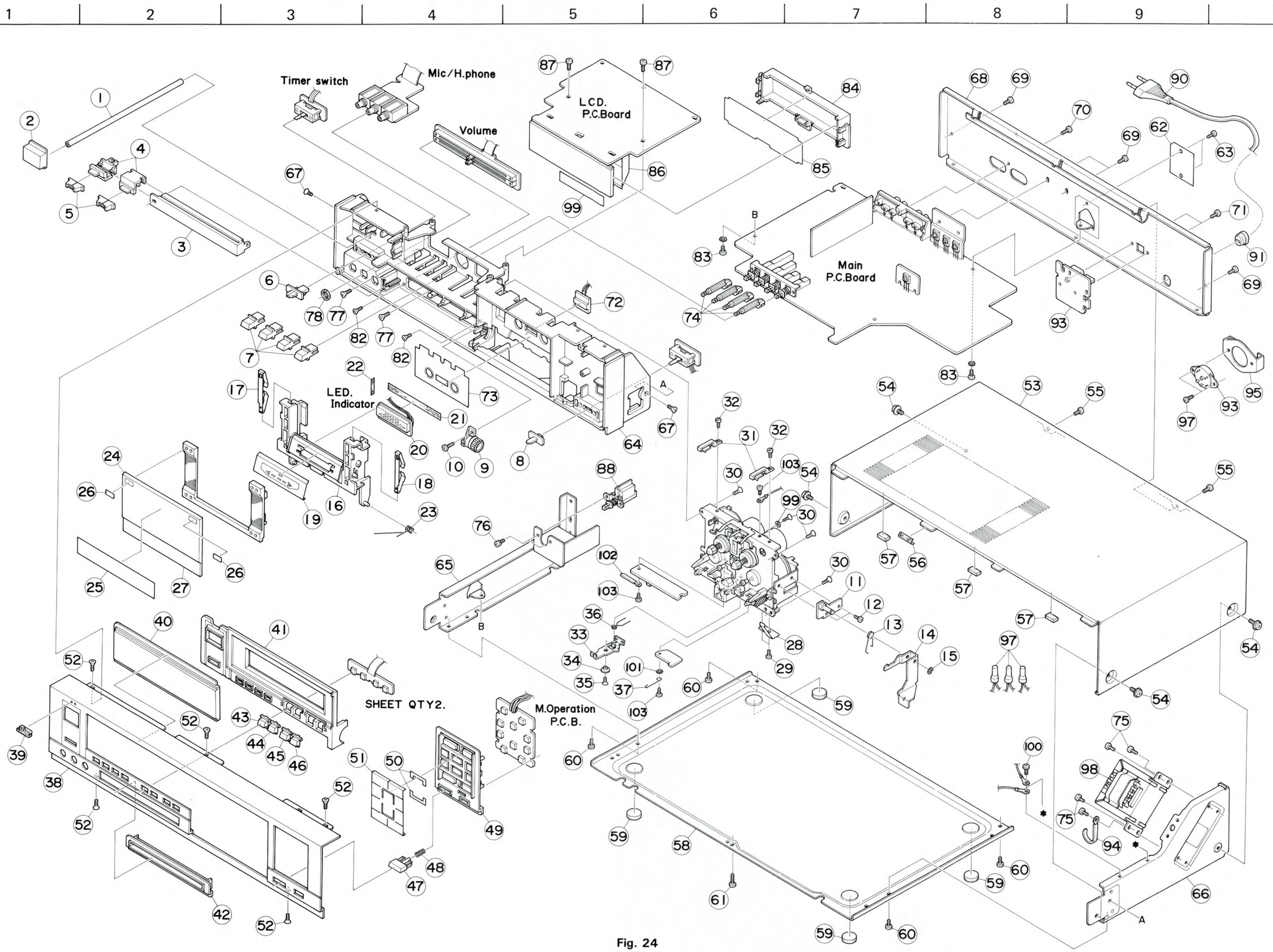



Fig. 24

## Enclosure Assembly 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 |
|---|---|---|---|---|---|
| | 1 | VKS4003-016 | Pipe | | 1 |
| | 2 | VXP3108-001 | Power Knob | (SLV) | 1 |
| | 〃 | 〃 -002 | 〃 | (BLK) | 1 |
| | 3 | VJD3339-003 | Blind | (SLV) | 1 |
| | 〃 | 〃 -002 | 〃 | (BLK) | 1 |
| | 4 | VKS3159-001 | Lever | | 2 |
| | 5 | VXS4072-004 | Slide Knob | (SLV) | 2 |
| | 〃 | 〃 -005 | 〃 | (BLK) | 1 |
| | 6 | VXS4041-005 | Slide Knob | Timer | 1 |
| | 7 | VXP4346-001 | Push Button | Tape Select | 4 |
| | 8 | VXS4042-002 | Slide Knob | (SLV) | 1 |
| | 〃 | 〃 -003 | 〃 | (BLK) | 1 |
| | 9 | VYH4054-00F | GEAR | | 1 |
| | 10 | SDSF3010Z | Screw | Damp | 1 |
| | 11 | VKL5324-00B | Eject BKT. Ass'y | | 1 |
| | 12 | SDST2604Z | Screw | Eject BKT | 2 |
| | 13 | VKW4396-002 | Spring | | 1 |
| | 14 | VKL3534-001 | Eject lever | | 1 |
| | 15 | REE2500 | E. Washer | | 1 |
| | 16 | VJT2077-004 | Cassette Holder | | 1 |
| | 17 | VKY4271-003 | Spring | | 1 |
| | 18 | 〃 -004 | 〃 | | 1 |
| | 19 | VJD4637-006 | Plate | | 1 |
| | 20 | SLA-5641-06 | L.E.D. | | 1 |
| | 21 | VYSA1R4-066 | Spacer | | 1 |
| | 22 | F00303-34 | Spacer | | 2 |
| | 23 | VKW3006-091 | Spring | | 1 |
| | 24 | VJT4085-00B | LID | (SLV) | 1 |
| | 〃 | 〃 -00A | 〃 | (BLK) | |
| | 26 | VJT4068-001 | Lid Plate | | 2 |
| | 27 | VJT4078-002 | 〃 | (SLV) | 1 |
| | 〃 | 〃 -003 | 〃 | (BLK) | 1 |
| | 28 | VKY4296-001 | Spring | | 1 |
| | 29 | SDST2603Z | Screw | | 2 |
| | 30 | SDSF3010Z | 〃 | Mecha | 4 |
| | 31 | VSH1124-002 | Leaf Switch | | 2 |
| | 32 | SDST2606Z | Screw | | 2 |
| | 33 | VKL5315-002 | SW Lever | | 1 |
| | 34 | VKH3013-017 | Flange Collar | | 1 |
| | 35 | SSST2605Z | Screw | | 1 |
| | 36 | VKW4379-001 | Spring | | 1 |
| | 37 | VKW4466-001 | Hold Wire | | 1 |
| | 38 | VJC1358-001 | Front Panel | (SLV) | 1 |
| | 〃 | 〃 -002 | 〃 | (BLK) | 1 |
| | 39 | E70913-002 | Mark | (SLV) | 1 |
| | 〃 | 〃 -001 | 〃 | (BLK) | 1 |
| | 40 | VJK3238-002 | Finder | (SLV) | 1 |
| | 〃 | 〃 -001 | 〃 | (BLK) | 1 |
| | 41 | VJD2231-001 | Meter Escutcheon | (SLV) | 1 |
| | 〃 | 〃 -002 | 〃 | (BLK) | 1 |
| | 42 | VJD4803-001 | Volume Escutcheon | (SLV) | 1 |
| | 〃 | 〃 -002 | 〃 | (BLK) | 1 |
| | 43 | VXP4347-003 | Push Button | Play | 1 |
| | 44 | 〃 -004 | 〃 | Stop | 1 |
| | 45 | 〃 -008 | 〃 | Scan Set | 1 |
| | 46 | 〃 -001 | 〃 | Reset | 1 |
| | 47 | VXP4349-00B | 〃 | Eject (SLV) | 1 |
| | 〃 | 〃 -00A | 〃 | Eject (BLK) | 1 |
| | 48 | VKW3001-063 | Spring | | 1 |
| | 49 | VJD3472-001 | Button Escutcheon | (SLV) | 1 |
| | 49 | VJD3472-002 | Button Escutcheon | (BLK) | 1 |
| | 50 | VYTT442-001 | Sheet | (SLV) | 1 |
| | 〃 | 〃 -002 | 〃 | (BKL) | 1 |

| ⚠ | Ref. No. | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|---|
| | 51 | VJD4804-001 | Button Plate | (SLV) | 1 |
| | 〃 | 〃 -002 | 〃 | (BLK) | 1 |
| | 52 | SSSF3008Z | Screw | Front Plate | 5 |
| | 53 | VJC2101-003 | Top Cover | (SLV) | 1 |
| | 〃 | 〃 -004 | 〃 | (BLK) | 1 |
| | 54 | VKZ3001-002 | Special Screw | (SLV) | 4 |
| | 〃 | 〃 -004 | 〃 | (BLK) | 1 |
| | 55 | SDST3006N | Screw | | 2 |
| | 56 | VYSA1R8-027 | Spacer | | 1 |
| | 57 | VYSR103-019 | 〃 | | 1 |
| | 58 | VJC1195-004 | Bottom Cover | | 1 |
| | 59 | VJF4003-002 | Foot | | 4 |
| | 60 | SDST3006Z | Screw | | 4 |
| | 61 | SBSF3008Z | | | 1 |
| | 62 | VYN2127-002KA | Name Plate | KD-V400 B (SLV) | 1 |
| | 〃 | VYN2134-002KA | 〃 | 〃 (BLK) | 1 |
| | 〃 | VYN2127-003KA | 〃 | KD-V400 A (SLV) | 1 |
| | 〃 | VYN2134-003KA | 〃 | 〃 (BLK) | 1 |
| | 〃 | VYN2127-004KA | 〃 | KD-V400 C (SLV) | 1 |
| | 〃 | VYN2134-004KA | 〃 | 〃 (BLK) | 1 |
| | 〃 | VYN2127-005KA | 〃 | KD-V400 E/ED (SLV) | 1 |
| | 〃 | VYN2134-005KA | 〃 | 〃 (BLK) | 1 |
| | 〃 | VYN2127-006KA | 〃 | KD-V400 J (SLV) | 1 |
| | 〃 | VYN2434-006KA | 〃 | 〃 (BLK) | 1 |
| | 〃 | VYN2127-007KA | 〃 | KD-V400 U (SLV) | 1 |
| | 〃 | VYN2134-007KA | 〃 | 〃 (BLK) | 1 |
| | 63 | E48729-002 | Rivet | | 2 |
| | 64 | VJC1355-003 | Front Panel | | 1 |
| | 65 | VKL2214-001 | AMP Chassis (L) | | 1 |
| | 66 | VKL3494-001 | 〃 (R) | | 1 |
| | 67 | SSST3006Z | Screw | | 2 |
| | 68 | VJC2127-007 | Rear Panel | KD-V400 C/J | 1 |
| | 〃 | VJC2127-008 | 〃 | KD-V400 A/B/E/U | 1 |
| | 69 | SDST3006N | Screw | | 4 |
| | 70 | SDSF3008N | 〃 | | 1 |
| | 71 | SDST3006N | 〃 | KD-V400 B/E/U | 2 |
| | 72 | LD-702 | L.E.D. | (SLV) | 1 |
| | 〃 | 〃 -702YU | | (BLK) | 1 |
| | 73 | VJD4811-001 | Sheal | | 1 |
| | 74 | VKS4634-001 | Remote Bar | | 4 |
| | 75 | SDST3006Z | Screw | P. Transformer | 4 |
| | 76 | LPSP3006Z | | Power Switch | 2 |
| | 77 | SDST3006Z | 〃 | Push Switch | 2 |
| | 78 | VKZ4150-001 | Special Nut | | 1 |
| | 82 | 〃 | 〃 | Slide Volume | 2 |
| | 83 | SDST3006Z | 〃 | P.C. Board | 2 |
| | 87 | SDSF3008Z | Screw | L.C.D P.C. Board | 2 |
| ⚠ | 88 | QSP1110-305 | Push Switch | Power (S901) KD-V400 A/E | 1 |
| ⚠ | 〃 | QSP1110-305BS | 〃 | Power (S901) KD-V400 B | 1 |
| ⚠ | 〃 | QSP1110-306 | 〃 | Power (S901) KD-V400 U | 1 |
| ⚠ | 〃 | QSP1110-308 | 〃 | Power (S901) KD-V400 C/J | 1 |
| | 89 | WAS3000 | Washer | | 2 |
| ⚠ | 90 | QMP1200-200 | Power Cord | KD-V400 C/J | 1 |
| ⚠ | 〃 | QMP2560-200 | 〃 | KD-V400 A | 1 |
| ⚠ | 〃 | QMP3900-200 | 〃 | KD-V400 E | 1 |
| ⚠ | 〃 | QMP7600-200 | Power Cord | KD-V400 U | 1 |
| ⚠ | 〃 | QMP9017-008BS | 〃 | KD-V400 B | 1 |
| ⚠ | 91 | QHS3876-162 | S.R. Bushing | KD-V400 C/E/J/U | 1 |
| ⚠ | 〃 | QHS3876-162BS | 〃 | KD-V400 B | 1 |
| ⚠ | 93 | QSR0084-001 | Rotary Switch | (902) KD-V400 U | 1 |
| ⚠ | | QSS2325-203 | Slide Switch | (S902) KD-V400 A/B/E | 1 |
| | 94 | VKZ4001-011 | Wire Holder | | 2 |
| | 95 | VKL4275-001 | Bracket | V. Selecter KD-V400 U | 1 |

| ⚠ | Ref. No. | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|---|
| | 96 | SDSP3006R | Screw | V. Selecter | 2 |
| | 97 | TAW000504-01 | Connector | KD-V400 C/J | 3 |
| | 〃 | TAW000504-01 | 〃 | KD-V400 U | 1 |
| ⚠ | 98 | VTP57A3-021B | Power Trans | KD-V400 C/J | 1 |
| ⚠ | 〃 | VTP57C3-031B | Power Transf. | KD-V400 A/E | 1 |
| ⚠ | | 〃 -031BBS | 〃 | KD-V400 B | 1 |
| ⚠ | 〃 | VTP57U3-031B | 〃 | KD-V400 U | 1 |
| | 99 | Q03093-814 | Washer | (SLV) | 1 |
| | 100 | SDST3006Z | Screw | Lug | 2 |
| | 101 | WBS2600N | Washer | | 2 |
| | 102 | VKZ4001-009 | Wire Holder | | 1 |
| | 103 | SDST2606Z | Screw | | 3 |

# Packing

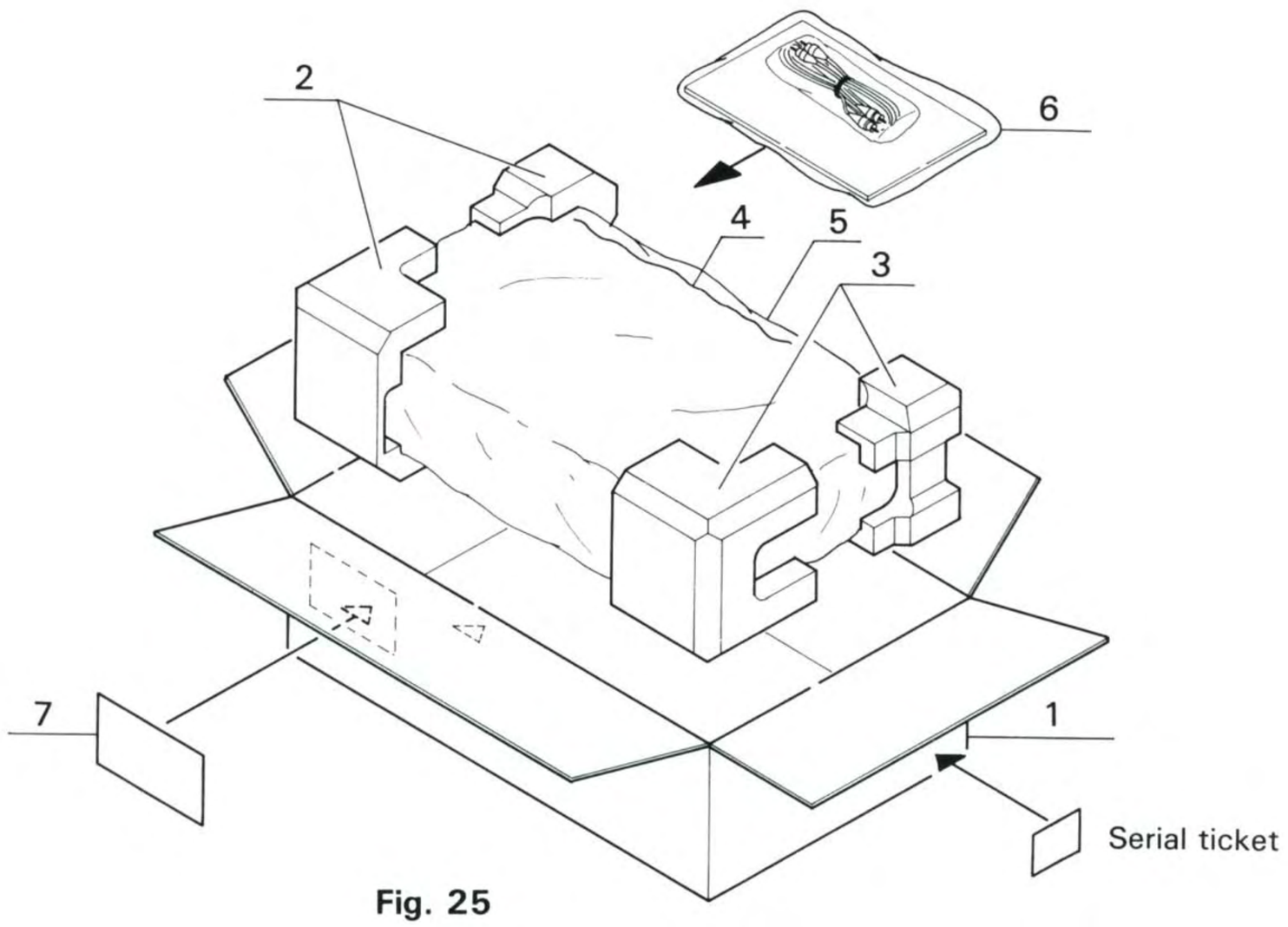



Fig. 25

## Packing 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 |
|---|---|---|---|---|---|
| | 1 | VDP2127-J02 | Carton | KD-V400 B | 1 |
| | | 〃 -J03 | 〃 | KD-V400 A | 1 |
| | | 〃 -J04 | 〃 | KD-V400 C | 1 |
| | | 〃 -J05 | 〃 | KD-V400 E | 1 |
| | | 〃 -J06 | 〃 | KD-V400 J | 1 |
| | | 〃 -J07 | 〃 | KD-V400 U | 1 |
| | | 〃 -J08 | 〃 | KD-V400 E (D) | 1 |
| | | VPC2134-002 | 〃 | KD-V400 NB | 1 |
| | | 〃 -003 | 〃 | KD-V400 NA | 1 |
| | | 〃 -004 | 〃 | KD-V400 NC | 1 |
| | | 〃 -005 | 〃 | KD-V400 NE | 1 |
| | | 〃 -006 | 〃 | KD-V400 NJ | 1 |
| | | 〃 -007 | 〃 | KD-V400 NU | 1 |
| | | 〃 -008 | 〃 | KD-V400 NE (D) | 1 |
| | 2 | VPH3125-001 | Cushion (L) | | 1 |
| | 3 | VPH3126-001 | 〃 (R) | | 1 |
| | 4 | VPK4002-006 | Sheet | | 1 |
| | 5 | VPE3004-026 | Poly Bag | KD-V400 for Unit | 1 |
| | 6 | 〃 -007 | 〃 | for Inst. Book | 1 |
| | 7 | E66416-003 | Envelope | KD-V400 J/U/NJ/NU for Warranty Cord | 1 |

# Accessories

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

| ⚠ | Parts No. | Parts Name | Remarks | Q'ty |
|---|---|---|---|---|
| | VNN0137-302 | Instruction Book | KD-V400 B/E/E(D)/NB/NE | 1 |
| | 〃 -903 | 〃 | KD-V400 A/C/J/U/NA /NC/NJ/NU | 1 |
| | VMP0039-00A | Pin Cord | | 1 |
| | VNC5004-001 | Mark Sticker | KD-V400 B/E/NB/NE | 1 |
| | VPZ4001-001 | Serial Ticket | | 1 |
| | QZL1002-003 | Warning Label | KD-V400 B/NB | 1 |
| | TJL000443-01 | Seal | KD-V400 B | 1 |
| | TJL000420-01 | 〃 | KD-V400 NB | 1 |
| | VND4113-001 | G. Caution | KD-V400 B/NB/J/NJ | 1 |
| | BT20060 | Warranty Card | KD-V400 B/NB | 1 |
| | BT20066 | 〃 | KD-V400 B/E(D)/NB | 1 |
| | BT20029C | 〃 | KD-V400 A/NA | 1 |
| | BT20025H | 〃 | KD-V400 C/NC | 1 |
| | BT20047A | 〃 | KD-V400 J/U/NJ/NU | 1 |
| | BT20064 | 〃 | KD-V400 E(D) | 1 |
| | VNC1200-002 | Copyright Law | KD-V400 C/NC | 1 |
| | T44362-001 | CSA Label | KD-V400 C/NC | 1 |
| | BT20071A | SVC Centre List | KD-V400 C/NC | 1 |
| | BT20046B | Special Reply Card | KD-V400 J/U/NJ/NU | 1 |
| | BT20044D | Safety Instruction | KD-V400 J/NJ | 1 |
| | VNC5311-201 | Caution Card | EES KD-V400 U/NU | 1 |
| | 〃 -202 | 〃 | PX KD-V400 U/NU | 1 |
| | VND4037-002 | F. Mark | KD-V400 E(D)/NE(D) | 1 |
| | V04062-001 | Siemens Plug | KD-V400 U/NU | 1 |

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