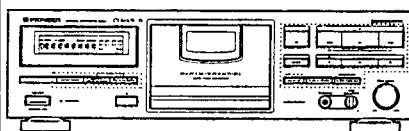


# Service Manual



**ORDER NO.  
RRV1123**

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## STEREO CASSETTE DECK

# CT-S430S

**THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).**

| Type   | Model    | Power Requirement           | The voltage can be converted by the following method. |
|--------|----------|-----------------------------|-------------------------------------------------------|
|        | CT-S430S |                             |                                                       |
| HBXJ   | ○        | AC230 – 240V                | AC220 – 230V, *                                       |
| HB     | ○        | AC230 – 240V                | AC220 – 230V, *                                       |
| HEM    | ○        | AC220 – 230V                | AC230 – 240V, *                                       |
| HEMXJ  | ○        | AC220 – 230V                | AC230 – 240V, *                                       |
| HEWM   | ○        | AC220 – 230V                | AC230 – 240V, *                                       |
| HEWMXJ | ○        | AC220 – 230V                | AC230 – 240V, *                                       |
| HL     | ○        | AC220 – 230V                | AC230 – 240V, *                                       |
| HLXJ   | ○        | AC220 – 230V                | AC230 – 240V, *                                       |
| SD     | ○        | AC110V/120 – 127V/220V/240V | With the voltage selector                             |
| SDXJ   | ○        | AC110V/120 – 127V/220V/240V | With the voltage selector                             |

\* : Alter the wiring of the Power-supply block at the primary winding of power transformer referring to the "Line Voltage Selection" described in Service Manual.

### NOTE:

The introduction of CT-S430/HBXJ, HEMXJ, HEWMXJ, HLXJ, and SDXJ was postponed in April, 1994.

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CHAPTER 1

1.1 SPECIFICATIONS

|                                                |                                                                            |
|------------------------------------------------|----------------------------------------------------------------------------|
| System                                         | 4 track, 2-channel stereo                                                  |
| Heads                                          | "Hard Permalloy" recording/playback head × 1<br>"Ferrite" erasing head × 1 |
| Motor                                          | DC servo motor × 1                                                         |
| Wow and Flutter                                | 0.070% (WRMS, JIS)<br>±0.18% (DIN)                                         |
| Fast Winding Time                              | Approx. 100 seconds (C-60 tape)                                            |
| Frequency Response (at -20 dB recording level) |                                                                            |
| TYPE IV (Metal) tape                           | 25 to 18,000 Hz (±6 dB)                                                    |
| TYPE II (High/CrO <sub>2</sub> ) Tape          | 25 to 17,000 Hz (±6 dB)                                                    |
| TYPE I (Normal) Tape                           | 25 to 17,000 Hz (±6 dB)                                                    |
| Signal-to-Noise Ratio (Dolby NR OFF)           |                                                                            |
| Dolby NR off                                   | More than 57 dB                                                            |
| Noise Reduction Effect                         |                                                                            |
| Dolby B-type NR ON                             | More than 10 dB (at 5 kHz)                                                 |
| Dolby C-type NR ON                             | More than 19 dB (at 5 kHz)                                                 |
| Dolby S-type NR ON                             | More than 22 dB (at 5 kHz)<br>(CT-S430S only)                              |
| Harmonic Distortion                            | No more than 1.0%<br>(at -4 dB: 160 nwb/m)                                 |
| Input (Sensitivity)                            |                                                                            |
| LINE (INPUT)                                   | 100 mV (Input impedance 67 kΩ)                                             |
| Output (Reference level)                       |                                                                            |
| LINE (OUTPUT)                                  | 0.5 V (Output impedance 2.2 kΩ)                                            |
| Headphone (PHONES)                             | 1.33 mW (Load Impedance 32 Ω)                                              |

Miscellaneous

|                                 |                             |
|---------------------------------|-----------------------------|
| Power requirements              |                             |
| U.K., model                     | AC 230—240 Volts~, 50/60 Hz |
| Australian model                | AC 240V, 50/60 Hz           |
| Power consumption               | 16 W                        |
| Dimensions                      | 420 (W)×125 (H)×280 (D) mm  |
| Weight (without package)        |                             |
| U.K. model and Australian model | 3.8 kg                      |

Subfunctions

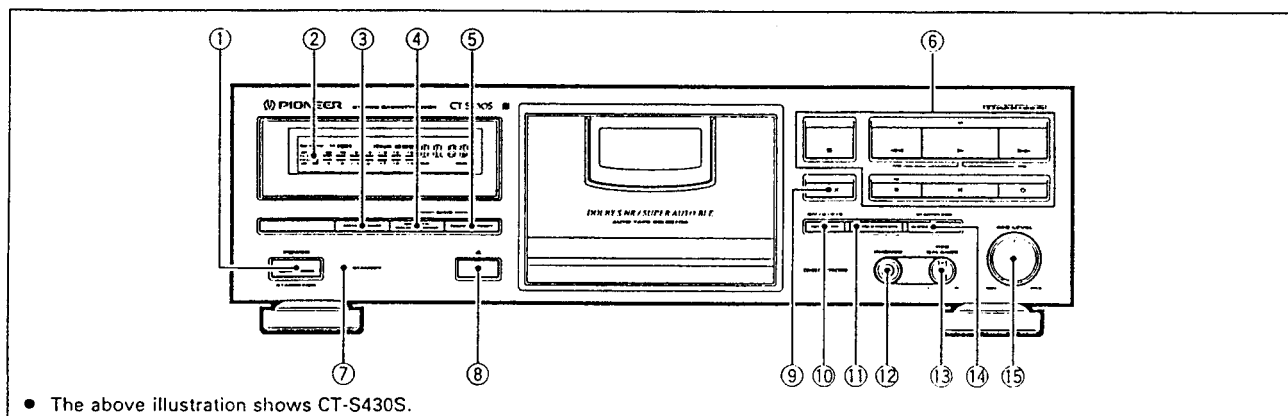
- Dolby B-type, C-type and S-type NR systems (CT-S430S)
- Dolby B-type and C-type NR Systems (CT-S330)
- DOLBY HX PRO system
- Auto tape selector (TYPE I, II, IV)
- Headphones jack
- 4-digit electronic tape/time counter
- Music search up to ±15 selections
- Automatic space recording mute
- SUPER AUTO BLE tuning system
- FL level meter 7 + 1 segments (with peak hold)
-  System remote control available
- CD · DECK SYNCHRO function
- FLEX system
- Display off
- Last memory
- Timer play

Accessories

|                                                                                                         |   |
|---------------------------------------------------------------------------------------------------------|---|
| Operating instructions                                                                                  | 1 |
| Connection cord with pin plugs                                                                          | 2 |
|  Remote control cord | 1 |
| CD · DECK SYNCHRO control cord                                                                          | 1 |

NOTE:  
Specifications and design subject to possible modifications without notice, due to improvements.

## 1.2 PANEL FACILITIES



### ① POWER STANDBY/ON switch

The POWER switch activates the secondary transformer only. Even when the switch is in the STANDBY position, there will be a power flow to the deck's circuits as long as the power cord is connected to a power outlet.

### ② Function display

### ③ Level meter range selector button (METER RANGE)

Press to select wide or expanded range on the level meter.

### ④ Display off/Tape counter mode button (DISP OFF/COUNTER MODE)

Press to select the tape counter mode, the time counter mode, or to turn the function display off. Press the button to choose between the modes or to turn the display off.

Display off → Display on → Display on  
(Tape counter) (Tape counter) (Time counter)

### ⑤ Tape counter reset button (COUNTER RESET)

### ⑥ Operation buttons

- ◀/MS : Rewind/music search
- : Stop
- ▶ : Playback
- ▶▶/MS : Fast forward/music search
- : Recording
- ⏸ : Pause
- : Recording mute

### ⑦ STANDBY indicator

### ⑧ Eject button (△)

- If the tape is moving (recording, playback, tape winding, etc.), press the stop (■) button before pressing this button.

### ⑨ FLEX button

### ⑩ Dolby\* NR button (OFF/B/C/S) (CT-S430S)

### Dolby\* NR button (OFF/B/C) (CT-S330)

For the CT-S430S

OFF → B → C → S

For the CT-S330

OFF → B → C

\*

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- "DOLBY", the double-D symbol and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

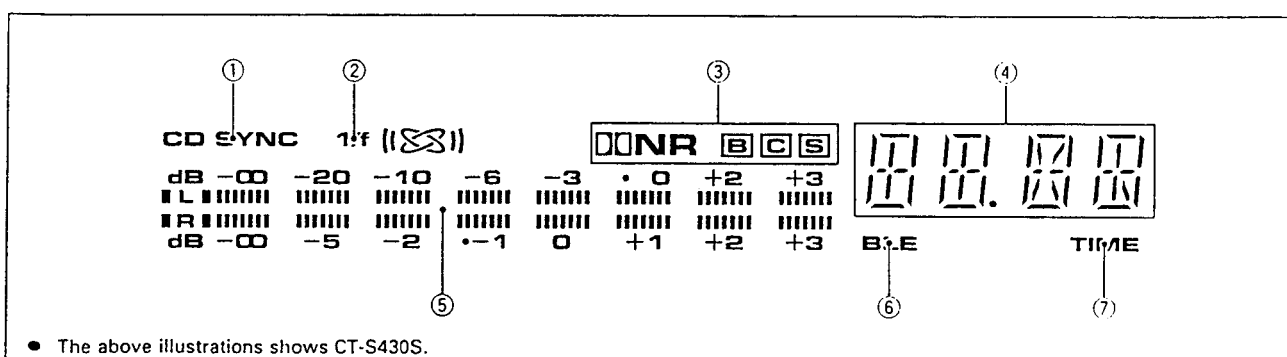
### ⑪ CD · DECK SYNCHRO recording button (CD SYNCHRO)

### ⑫ Headphones jack (PHONES)

### ⑬ Recording balance control (REC BALANCE)

### ⑭ SUPER AUTO BLE button

### ⑮ Recording level control (REC LEVEL)



### ① CD · DECK SYNCHRO indicator (CD SYNC)

Lights when synchro recording from a CD player is being carried out.

### ② FLEX indicator (1/f)

This indicator lights when the FLEX button is pressed.

### ③ DOLBY NR B/C/S indicator (CT-S430S)

### DOLBY NR B/C indicator (CT-S330)

### ④ Counter indicator

Normally the tape number or time counter is displayed. Flashes for four seconds after the power cord is connected to the power supply.

### ⑤ Level meter with peak hold function

The ● beside the -1 dB mark (at Expand mode) or 0 dB mark (at Wide mode) indicates the Dolby NR systems reference level.

Meter range:

Wide mode: -20 dB to +3 dB

Expand mode: -5 dB to +3 dB

- Selected meter range is shown on the function display by pressing the METER RANGE button.

### ⑥ BLE indicator

### ⑦ TIME counter indicator

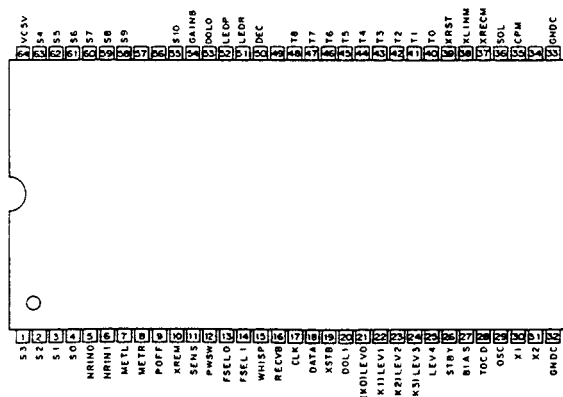
Lights up in the time counter mode.

## 1.3 IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

### ■ PD4508A (MAIN UNIT, IC501)

#### ● Pin Arrangement (Top view)



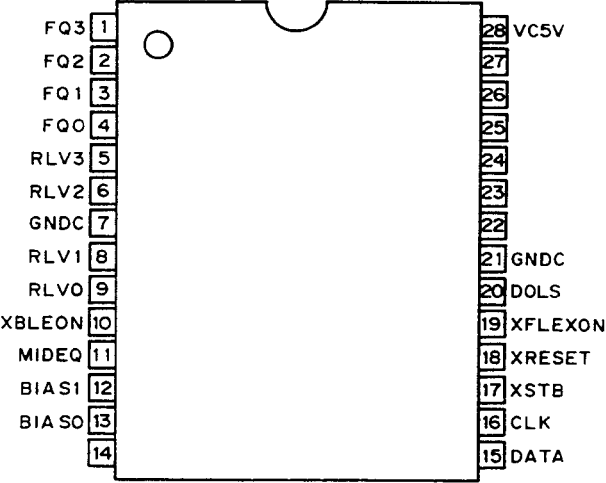
#### ● Pin Function

| Pin No. | Name        | I/O    | Function                                                          |
|---------|-------------|--------|-------------------------------------------------------------------|
| 1       | S3          | O      | Segment output, key scan output.                                  |
| 2       | S2          | O      |                                                                   |
| 3       | S1          | O      |                                                                   |
| 4       | S0          | O      |                                                                   |
| 5       | NRINO       | I      | Not used.                                                         |
| 6       | NRIN1       | I      |                                                                   |
| 7       | METL        | I      | Level detection input, Lch.                                       |
| 8       | METR        | I      | Level detection input, Rch.                                       |
| 9       | POFF        | I      | POWER OFF input. "H":Active.                                      |
| 10      | XREM        | I      | Remote commander input. "L":Active.                               |
| 11      | SENS        | I      | Sensing pulse input                                               |
| 12      | PWSW        | I      | POWER SW input                                                    |
| 13      | FSEL0       | O      | AUTO BLE frequency select output (3 KHz)                          |
| 14      | FSEL1       | O      | AUTO BLE frequency select output (10 KHz)                         |
| 15      | XHISP       | O      | 2× speed select output during AUTO BLE. "L":2× speed.             |
| 16      | XRECVB      | O      | Meter circuit time constant switching output. "L":FAST, "H":SLOW. |
| 17      | CLK         | O      | Expansion IC clock output and memory IC clock output              |
| 18      | DATA        | I, O   | Expansion IC data output and memory IC data input/output          |
| 19      | XSTB        | O      | Expansion IC strobe output. "L" during communication output.      |
| 20      | DOL1        | O      | DOLBY switching output 1                                          |
| 21      | LEVEL0 (K0) | O<br>I | Level scan output.<br>Key scan input.                             |
| 22      | LEVEL1 (K1) | O<br>I | Level scan output.<br>Key scan input.                             |
| 23      | LEVEL2 (K2) | O<br>I | Level scan output.<br>Key scan input.                             |
| 24      | LEVEL3 (K3) | O<br>I | Level scan output.<br>Key scan input.                             |
| 25      | LEVEL4      | O      | Level scan output.                                                |

| Pin No. | Name   | I/O | Function                                                      |
|---------|--------|-----|---------------------------------------------------------------|
| 26      | STBY   | O   | STANDBY display output                                        |
| 27      | BIAS   | O   | BIAS oscillation output                                       |
| 28      | TOCD   | O   | CD SYNC output                                                |
| 29      | OSC    | O   | AUTOBLE 400/3K/10 KHz square wave output                      |
| 30      | X1     | —   | Crystal/ceramic connection for main system clock oscillation  |
| 31      | X2     | —   |                                                               |
| 32      | GNDC   | —   | GND                                                           |
| 33      | (XT1)  | —   | Crystal connection for subsystem clock oscillation. GND.      |
| 34      | (XT2)  | —   | Crystal connection for subsystem clock oscillation. Not used. |
| 35      | CPM    | O   | Capstan motor driving                                         |
| 36      | SOL    | O   | Solenoid driving                                              |
| 37      | XRECMT | O   | Record mute output. "L":ON.                                   |
| 38      | XLINMT | O   | Line mute output. "L":ON.                                     |
| 39      | XRST   | I   | System reset input. "L":Active.                               |
| 40      | T0     | O   | FL display grid output                                        |
| 41      | T1     | O   |                                                               |
| 42      | T2     | O   |                                                               |
| 43      | T3     | O   |                                                               |
| 44      | T4     | O   |                                                               |
| 45      | T5     | O   |                                                               |
| 46      | T6     | O   |                                                               |
| 47      | T7     | O   |                                                               |
| 48      | T8     | O   |                                                               |
| 49      | —      | —   | Not used.                                                     |
| 50      | DEC    | O   | DECODE/ENCODE output. "H":DECODE, "L":ENCODE.                 |
| 51      | LEDR   | O   | Output for displaying playback system running                 |
| 52      | LEDP   | O   | Output for displaying record system running                   |
| 53      | DOLO   | O   | DOLBY switching output 0                                      |
| 54      | GAINB  | O   | FLEX IC gain switching output                                 |
| 55      | S10    | O   | Segment output                                                |
| 56      | VLOAD  | —   | Connected to pull-down resistor for FL controller/driver      |
| 57      | VPRE   | —   | Output buffer power supply for FL controller/driver           |
| 58      | S9     | O   | Segment output                                                |
| 59      | S8     | O   | Segment output, key scan output.                              |
| 60      | S7     | O   |                                                               |
| 61      | S6     | O   |                                                               |
| 62      | S5     | O   |                                                               |
| 63      | S4     | O   |                                                               |
| 64      | VC5V   | —   | + 5V power supply                                             |

■ NJU3718L (MAIN UNIT, IC502)

● Pin Arrangement (Top view)



● Pin Functions

| Pin No.  | Name     | Function                                       |
|----------|----------|------------------------------------------------|
| 1        | FQ3      | Output BIT 3 for compensating AUTO BLE HIGH EQ |
| 2        | FQ2      | Output BIT 2 for compensating AUTO BLE HIGH EQ |
| 3        | FQ1      | Output BIT 1 for compensating AUTO BLE HIGH EQ |
| 4        | FQ0      | Output BIT 0 for compensating AUTO BLE HIGH EQ |
| 5        | RLV3     | Output BIT 3 for compensating AUTO BLE LEVEL   |
| 6        | RLV2     | Output BIT 2 for compensating AUTO BLE LEVEL   |
| 7        | GNDC     | GND                                            |
| 8        | RLV1     | Output BIT 1 for compensating AUTO BLE LEVEL   |
| 9        | RLV0     | Output BIT 0 for compensating AUTO BLE LEVEL   |
| 10       | XBLEON   | AUTO BLE ON output. "L":ON during BLE.         |
| 11       | MIDEQ    | Output for compensating AUTO BLE MID EQ        |
| 12       | BIAS1    | Output BIT 1 for compensating AUTO BLE BIAS    |
| 13       | BIAS0    | Output BIT 0 for compensating AUTO BLE BIAS    |
| 14       | —        | Not used.                                      |
| 15       | DATA     | Serial data signal input                       |
| 16       | CLK      | Clock signal input                             |
| 17       | XSTB     | Strobe signal input                            |
| 18       | XRST     | System reset input. "L":Active.                |
| 19       | XFLEX ON | Flex IC ON output. "L" during FLEX ON.         |
| 20       | DOLS     | Dolby S ON output                              |
| 21       | GNDC     | GND                                            |
| 22 to 27 | —        | —                                              |
| 28       | VC5      | +5V power supply                               |

■ AT24C01-10PC (MAIN UNIT, IC505)

● Pin Functions

| Pin No. | Name | Function                        |
|---------|------|---------------------------------|
| 1       | NC   | Not used.                       |
| 2       |      |                                 |
| 3       |      |                                 |
| 4       | GND  | GND                             |
| 5       | DATM | Serial data signal input/output |
| 6       | CLKM | Clock signal input              |
| 7       | NC   | Connected to GND.               |
| 8       | VCC  | 5V power supply                 |

## 1.4 ADJUSTMENTS

### 1. MECHANICAL ADJUSTMENT

| 1. Tape speed Adjustment |                              |                     |                                           |
|--------------------------|------------------------------|---------------------|-------------------------------------------|
| Mode                     | Test tape                    | Adjustment position | Specification rating (playback frequency) |
| PLAY                     | Play the STD-301 tape (3kHz) | VR852               | 3000Hz $\pm$ 5Hz                          |

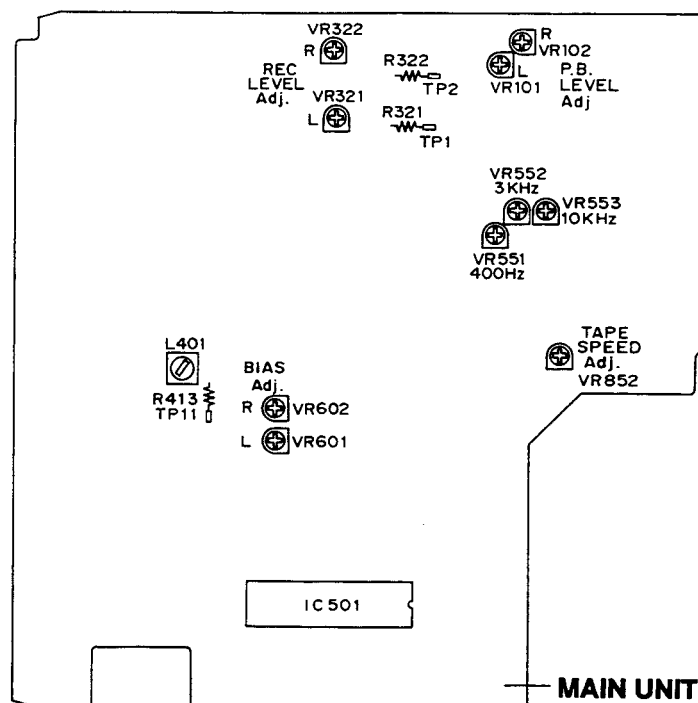


Fig. 1 Adjusting points

#### ● Before performing the head azimuth adjustment

Remove the azimuth cover before performing this adjustment.

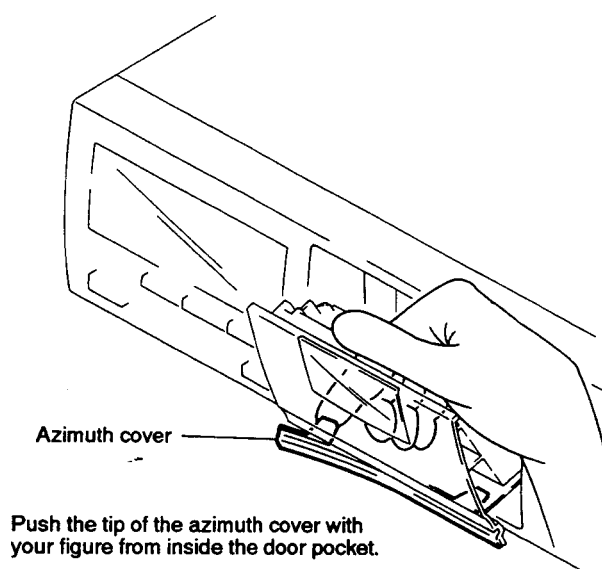


Fig. 2 Removal of azimuth cover

## 2. ELECTRICAL ADJUSTMENTS

### Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBV=1 Vrms.
5. Connect a 10 k $\Omega$  load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.

DOLBY NR : OFF  
TAPE SELECTOR : NORM

### Test Tapes

STD-331E : Playback adjustments  
(See Fig. 3)  
STD-631 or STD-632 : NORMAL blank tape  
STD-621 : CrO<sub>2</sub> blank tape  
STD-610 : METAL blank tape

\* As the reference recording level is 250 nwb/m for STD-331E, the recording level will be higher by 4 dB for STD-331B (160 nwb/m). When adjusting, pay carefull attention to the type of tape used.

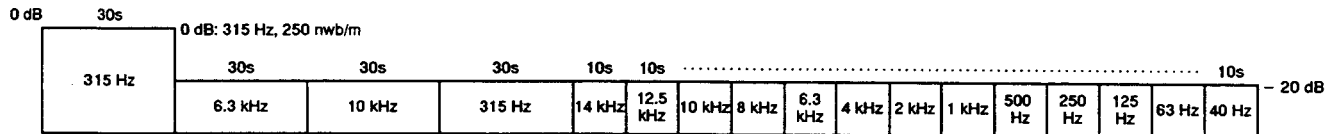


Fig. 3 Constants of the test tape STD-331E

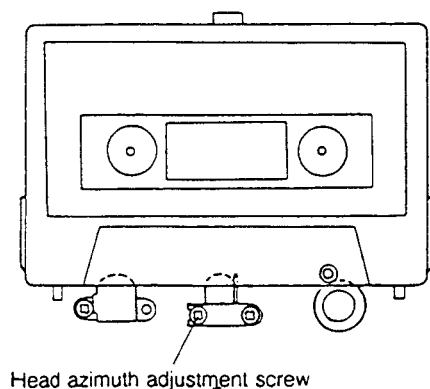


Fig. 4 Head azimuth adjustment

### List of Adjustments

#### Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

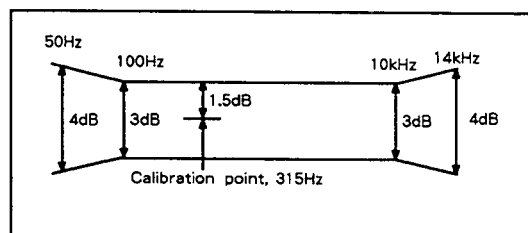
#### Recording sections

1. Bias oscillator adjustment.
2. Recording bias adjustment.
3. Recording level adjustment.
4. Level meter check
5. AUTO BLE adjustment.

NOTE: This unit has an automatic tape selection feature.

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"DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

### PLAY BACK



### RECORDING

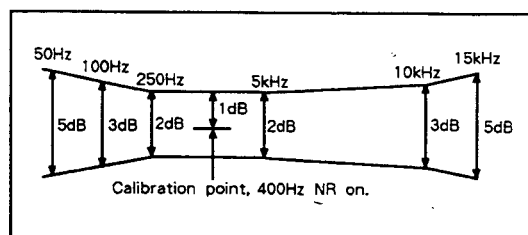


Fig. 5 Frequency response zone

## PLAYBACK SECTION

### 1. Head Azimuth Adjustment

- Turn VR101, 102 to mechanical center positions.

| No. | Mode | Input signal & test tape                                    | Adjustment location                            | Measuring location | Adjustment value               | Remarks |
|-----|------|-------------------------------------------------------------|------------------------------------------------|--------------------|--------------------------------|---------|
| 1.  | PLAY | Play the 10 kHz/-20 dB section of STD-331E test tape.       | Head azimuth adjustment screw.<br>(See Fig. 4) | LINE OUT           | Maximum playback signal level. |         |
| 2.  | STOP | Lock the screw with screw lock after completing adjustment. |                                                |                    |                                |         |

### 2. Playback Level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

| No. | Mode | Input signal & test tape                                | Adjustment location                | Measuring location         | Adjustment value | Remarks                                                                      |
|-----|------|---------------------------------------------------------|------------------------------------|----------------------------|------------------|------------------------------------------------------------------------------|
| 1.  | PLAY | Play the 315 Hz/0 dB section of the STD-331E test tape. | Deck<br>VR101 (Lch)<br>VR102 (Rch) | TP. 1 (Lch)<br>TP. 2 (Rch) | -6.7 dBV         | This adjustment must be performed accurately for proper Dolby level setting. |

## RECORDING SECTION

### 1. Bias Oscillator Adjustment

| No. | Mode | Input signal & test tape                         | Adjustment location | Measuring location | Adjustment value      | Remarks |
|-----|------|--------------------------------------------------|---------------------|--------------------|-----------------------|---------|
| 1.  | REC  | Load the STD-610 test tape with no input signal. | Deck<br>L401        | TP. 11             | 105 kHz $\pm$ 0.3 kHz |         |

### 2. Recording Bias Adjustment

- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

| No. | Mode | Input signal & test tape                                                                                          | Adjustment location                | Measuring location | Adjustment value                                                                                                                                       | Remarks |
|-----|------|-------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1.  | REC  | Load the STD-631 or STD-632 test tape. Record the 315 Hz and 6.3 kHz signals at -26 dBV input level and playback. | Deck<br>VR601 (Lch)<br>VR602 (Rch) | LINE OUT           | Repeatedly record, playback and adjust so that the playback level of 6.3 kHz signal becomes + 0.5dB $\pm$ 0.5 dB when compared with the 315 Hz signal. |         |

### 3. Recording Level Adjustment

| No. | Mode          | Input signal & test tape                                                                  | Adjustment location                          | Measuring location         | Adjustment value                                                                           | Remarks |
|-----|---------------|-------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------|---------|
| 1.  | REC/<br>PAUSE | Apply a 315 Hz signal to the line input terminals, load the STD-631 or STD-632 test tape. | Volume of the output level of the oscillator | TP. 1 (Lch)<br>TP. 2 (Rch) | -11.2 dBV                                                                                  |         |
| 2.  | REC/<br>PLAY  | Record the above signal onto the STD-631 or STD-632 test tape, and playback.              | Deck<br>VR321 (Lch)<br>VR322 (Rch)           |                            | Repeatedly record, playback and adjust so that the playback signal level becomes -11.2dBV. |         |
| 3.  | REC/<br>PLAY  | Record the above signal onto the STD-621 test tape, and playback.                         | Check                                        |                            | -11.2 dBV $\pm$ 1.5 dB                                                                     |         |
| 4.  | REC/<br>PLAY  | Record the above signal onto the STD-610 test tape, and playback.                         | Check                                        |                            | -11.2 dBV $\pm$ 1.5 dB                                                                     |         |

## 4. Level Meter Check

| No. | Mode          | Input signal & test tape                           | Adjustment location                          | Measuring location         | Adjustment value                                                                                                   | Remarks |
|-----|---------------|----------------------------------------------------|----------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------|---------|
| 1.  | REC/<br>PAUSE | Apply a 315 Hz signal to the line input terminals. | Volume of the output level of the oscillator | TP. 1 (Lch)<br>TP. 2 (Rch) | Check that the level meters "0 dB" light up within $-7.2 \text{ dBV} \pm 2 \text{ dB}$ of the signal output level. |         |

## 5. AUTO BLE Adjustment

- BLE adjustment should be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the Test Mode.  
Turn on the power, and after more than 4 seconds, press the "COUNTER RESET" button, "COUNTER MODE" button and **|||** (PAUSE) button simultaneously.
- Releasing the Test Mode.  
Press the "COUNTER RESET" button.

| No. | Mode | Input signal & test tape                   | Adjustment location | Measuring location | Adjustment value                                                                                                                                                                                                                                                                                                                                                                 | Remarks                                               |
|-----|------|--------------------------------------------|---------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 1.  |      | Set to test mode.                          | —                   | —                  | —                                                                                                                                                                                                                                                                                                                                                                                |                                                       |
| 2.  |      | Press the AUTO BLE key on the front panel. | VR551               | Level meter<br>Rch | Adjust the Lch segment which is lit until Rch is not lighting up.<br>Lch <input checked="" type="checkbox"/> → <input type="checkbox"/><br>Rch <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/><br>( <input checked="" type="checkbox"/> : light up <input type="checkbox"/> : not light up) | 400 Hz adjustment<br>(Test mode 1<br>FL indication 1) |
| 3.  |      | Press the AUTO BLE key on the front panel. | VR552               |                    |                                                                                                                                                                                                                                                                                                                                                                                  | 3 kHz adjustment<br>(Test mode 2<br>FL indication 2)  |
| 4.  |      | Press the AUTO BLE key on the front panel. | VR553               |                    |                                                                                                                                                                                                                                                                                                                                                                                  | 10 kHz adjustment<br>(Test mode 3<br>FL indication 3) |

## 1.5 PARTS LIST FOR EXPLODED VIEWS AND PACKING

### NOTES:

- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by “ $\odot$ ” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

### 1. EXTERIOR AND PACKING

#### ■ CONTRAST OF HBXJ, HB, HEM, HEWM, HEWMXJ, HL, HLXJ, HEMXJ, SD AND SDXJ TYPES

HBXJ, HB, HEM, HEWM, HEWMXJ, HL, HLXJ, HEMXJ, SD and SDXJ have the same construction except for the following:

| Mark     | No. | Symbol & Description                                                                                    | Part No.  |          |          |           |             |          |           |            |          |           |
|----------|-----|---------------------------------------------------------------------------------------------------------|-----------|----------|----------|-----------|-------------|----------|-----------|------------|----------|-----------|
|          |     |                                                                                                         | HBXJ type | HB type  | HEM type | HEWM type | HEWMXJ type | HL type  | HLXJ type | HEMXJ type | SD type  | SDXJ type |
| NSP      | 4   | TRN 1 unit                                                                                              | RWZ3298   | RWZ3298  | RWZ3217  | RWZ3217   | RWZ3217     | RWZ3217  | RWZ3217   | RWZ3217    | RWZ3218  | RWZ3218   |
| NSP      | 5   | TRN 2 unit                                                                                              | RWZ3220   | RWZ3220  | Not used | Not used  | Not used    | Not used | Not used  | Not used   | Not used | Not used  |
| $\Delta$ | 9   | Power Transformer<br>(AC220-230/230-240V)                                                               | RTT1254   | RTT1254  | RTT1254  | RTT1254   | RTT1254     | RTT1254  | RTT1254   | RTT1254    | Not used | Not used  |
| $\Delta$ | 9   | Power Transformer<br>(AC110/120-127/220/240V)                                                           | Not used  | Not used | Not used | Not used  | Not used    | Not used | Not used  | Not used   | RTT1255  | RTT1255   |
| $\Delta$ | 10  | Power cord with HB plug                                                                                 | PDG1055   | PDG1055  | Not used | Not used  | Not used    | Not used | Not used  | Not used   | Not used | Not used  |
| $\Delta$ | 10  | Power cord with HE plug                                                                                 | Not used  | Not used | PDG1003  | PDG1003   | PDG1003     | PDG1003  | PDG1003   | PDG1003    | Not used | Not used  |
| $\Delta$ | 10  | Power cord with SD plug                                                                                 | Not used  | Not used | Not used | Not used  | Not used    | Not used | Not used  | Not used   | PDG1013  | PDG1013   |
| NSP      | 16  | Main chassis                                                                                            | RNB1100   | RNB1090  | RNB1090  | RNB1090   | RNB1100     | RNB1090  | RNB1100   | RNB1100    | RNB1090  | RNB1100   |
|          | 32  | FL lens                                                                                                 | RAH2413   | RAH2413  | RAH2413  | RAH2413   | RAH2413     | RAH2414  | RAH2414   | RAH2413    | RAH2414  | RAH2414   |
|          | 35  | Rear panel                                                                                              | RNA1818   | RNA1847  | RNA1848  | RNA1848   | RNA1814     | RNA1822  | RNA1840   | RNA1814    | RNA1820  | RNA1838   |
| $\Delta$ | 45  | Pin cap                                                                                                 | VEC1616   | VEC1616  | Not used | Not used  | Not used    | Not used | Not used  | Not used   | Not used | Not used  |
| $\Delta$ | 48  | Voltage selector                                                                                        | Not used  | Not used | Not used | Not used  | Not used    | Not used | Not used  | Not used   | PSB1002  | PSB1002   |
| $\Delta$ | 49  | Fuse (T5A)                                                                                              | PEK1003   | PEK1003  | Not used | Not used  | Not used    | Not used | Not used  | Not used   | Not used | Not used  |
|          | 67  | Connection cord with mini plug                                                                          | PDE-319   | PDE1247  | PDE1247  | PDE1247   | PDE-319     | PDE1247  | PDE-319   | PDE-319    | PDE-319  | PDE-319   |
|          | 57  | Control cord                                                                                            | RDE1030   | RDE1038  | RDE1038  | RDE1038   | RDE1030     | RDE1038  | RDE1030   | RDE1030    | RDE1030  | RDE1030   |
|          | 58  | Operating instructions (English)                                                                        | RRB1146   | RRB1146  | Not used | Not used  | Not used    | Not used | Not used  | Not used   | Not used | Not used  |
|          | 58  | Operating instructions<br>(English, French, German, Italian,<br>Dutch, Swedish, Spanish,<br>Portuguese) | Not used  | Not used | RRE1101  | Not used  | Not used    | Not used | Not used  | RRE1101    | Not used | Not used  |
|          | 58  | Operating instructions (German)                                                                         | Not used  | Not used | Not used | RRD1150   | RRD1150     | Not used | Not used  | Not used   | Not used | Not used  |
|          | 58  | Operating instructions<br>(English, Spanish, Chinese)                                                   | Not used  | Not used | Not used | Not used  | Not used    | RRE1102  | RRE1102   | Not used   | RRE1102  | RRE1102   |
|          | 61  | Packing case                                                                                            | RHG1572   | RHG1593  | RHG1609  | RHG1609   | RHG1571     | RHG1574  | RHG1580   | RHG1613    | RHG1573  | RHG1582   |
|          | 65  | Pad spacer A                                                                                            | RHC1039   | RHC1039  | Not used | Not used  | Not used    | Not used | Not used  | Not used   | Not used | Not used  |
|          | 66  | Pad spacer B                                                                                            | RHC1041   | RHC1041  | Not used | Not used  | Not used    | Not used | Not used  | Not used   | Not used | Not used  |

#### ■ PARTS LIST FOR HBXJ TYPE

| Mark     | No. | Description                    | Part No. | Mark | No. | Description          | Part No.  |
|----------|-----|--------------------------------|----------|------|-----|----------------------|-----------|
|          | 1   | Main unit                      | RWZ3208  |      | 12  | Door spring L        | RBH1384   |
|          | 2   | Dolby S unit                   | RWX1101  |      | 13  | Half pressure spring | RBK1004   |
|          | 3   | OPSW unit                      | RWZ3211  |      | 14  | LED lens             | PNW2019   |
| NSP      | 4   | TRN 1 unit                     | RWZ3298  |      | 15  | Damper assy          | REC1005   |
| NSP      | 5   | TRN 2 unit                     | RWZ3220  |      |     |                      |           |
|          | 6   | FL unit                        | RWZ3214  | NSP  | 16  | Main chassis         | RNB1100   |
| $\Delta$ | 7   | Strain relief                  | CM - 22B |      | 17  | Cord clasper         | RNH - 184 |
| $\Delta$ | 8   | Fuse FU1001, FU1002<br>(T1.0A) | REK1022  |      | 18  | Indicator lens S     | RNK1911   |
| $\Delta$ | 9   | Power transformer              | RTT1254  |      | 19  | Insulator            | PNW1912   |
| $\Delta$ | 10  | Power cord with HB plug        | PDG1055  |      | 20  | Balance knob         | RAC1705   |
|          | 11  | Mechanism unit                 | RYM1226  |      | 21  | VR knob              | RAC1707   |
|          |     |                                |          |      | 22  | Eject spring L       | RBH1379   |
|          |     |                                |          |      | 23  | Operation knob       | RAC1795   |

**2. MECHANISM UNIT**

| Mark | No. | Description                      | Part No.     |
|------|-----|----------------------------------|--------------|
|      | 24  | Eject knob                       | RAC1906      |
|      | 25  | Power knob                       | RAC1809      |
|      | 26  | Door lens                        | RAH2171      |
|      | 27  | Mode knob A                      | RAC1907      |
|      | 28  | Name plate                       | RAM1007      |
| NSP  | 29  | Eject collar                     | RLA1283      |
|      | 30  | Indication panel                 | REE - 113    |
| NSP  | 31  | Arm collar                       | RLA1290      |
|      | 32  | FL lens                          | RAH2413      |
|      | 33  | Door pocket                      | RAH2443      |
|      | 34  | Front panel                      | RAH2411      |
|      | 35  | Rear panel                       | RNA1818      |
|      | 36  | Bonnet                           | REA1077      |
|      | 37  | Eject spring                     | RBH1340      |
|      | 38  | Washer                           | WA52D120D025 |
| NSP  | 39  | PCB spacer                       | PNY - 404    |
|      | 40  | Eject arm L                      | RNE1763      |
|      | 41  | Eject lever L                    | RNK2045      |
|      | 42  | Connector assy 3P                | RKP1672      |
|      | 43  | Connector assy 2P                | RKP1681      |
|      | 44  | Azimuth cover                    | RAH2431      |
|      | 45  | Pin cap                          | VEC1616      |
| NSP  | 46  | Binder                           | Z09 - 058    |
|      | 47  | Earth lead assy                  | RDF1089      |
|      | 48  | .....                            |              |
| △    | 49  | Fuse (T5A)                       | PEK1003      |
|      | 50  | Screw                            | BBZ30P080FMC |
|      | 51  | Screw                            | IBZ30P150FCU |
|      | 52  | Screw                            | BSZ26P120FMC |
|      | 53  | Screw                            | ABZ30P080FMC |
|      | 54  | Screw                            | IPZ26P080FMC |
|      | 55  | Screw                            | BCZ26P050FMC |
|      | 56  | Connection cord assy             | RDE1036      |
|      | 57  | Control cord                     | RDE1030      |
|      | 58  | Operating instructions (English) | RRB1146      |
|      | 59  | Pad (L)                          | RHA1111      |
|      | 60  | Pad (R)                          | RHA1112      |
|      | 61  | Packing case                     | RHG1572      |
|      | 62  | Sheet                            | RHX - 034    |
|      | 63  | Spacer A                         | RHC1044      |
|      | 64  | .....                            |              |
|      | 65  | Pad spacer A                     | RHC1039      |
|      | 66  | Pad spacer B                     | RHC1041      |
|      | 67  | Connection cord with mini plug   | PDE - 319    |

| Mark | No. | Description        | Part No.     |
|------|-----|--------------------|--------------|
|      | 1   | Plunger            | RLA1288      |
|      | 2   | PCB Control BLK    | RXA1625      |
|      | 3   | Push Switch        | RSG1018      |
|      | 4   | SPLF               | RSN1023      |
|      | 5   | Photo - Transistor | SPI33534FG   |
|      | 6   | MTR Main BLK       | RXM1075      |
|      | 7   | Solenoid BLK       | RXP1021      |
|      | 8   | Spring Interlock L | RBH1385      |
|      | 9   | Arm Interlock L    | RNE1780      |
|      | 10  | Chassis Base BLK   | RXA1627      |
|      | 11  | Spring Brake       | RBH1387      |
|      | 12  | Main Belt          | REB1163      |
|      | 13  | F/R Belt           | REB1254      |
|      | 14  | Lever Brake        | RNK2071      |
|      | 15  | E Head             | RPB1040      |
|      | 16  | Pinch Roller BLK R | RXA1630      |
|      | 17  | Head Spacer        | RNK1631      |
|      | 18  | Clutch Assy BLK    | RXA1631      |
|      | 19  | Screw              | RBA1113      |
|      | 20  | Washer 2.1 × 0.25T | RBF1038      |
|      | 21  | Spring Reel (L)    | RBH1388      |
|      | 22  | Spring Reel (R)    | RBH1389      |
|      | 23  | Cam Spring         | RBH1393      |
|      | 24  | Spacer             | RLA1286      |
|      | 25  | Lever F/R          | RNE1782      |
|      | 26  | Reel Feather       | RNK2072      |
|      | 27  | Reel Base          | RNK2073      |
|      | 28  | Play Gear (A)      | RNK2074      |
|      | 29  | FF Gear (A)        | RNK2075      |
|      | 30  | F/R Pulley         | RNK2076      |
|      | 31  | Clutch Assy BLK    | RXA1632      |
|      | 32  | Washer             | WA17D040D025 |
|      | 33  | Washer             | WA23F060M040 |
|      | 34  | Spring (Azimuth)   | RBH1076      |
|      | 35  | F Lock Screw       | RBA1031      |
|      | 36  | Spring HB          | RBH1390      |
|      | 37  | Head Base          | RNE1784      |
|      | 38  | R/P Head           | RPB1056      |
|      | 39  | Stop Ring          | YE15FUC      |
|      | 40  | Screw              | RBA1113      |
|      | 41  | Washer 2.0 × 0.3   | RBE1009      |
|      | 42  | Spring Arm Play    | RBH1391      |
|      | 43  | Spacer             | RLA1286      |
|      | 44  | Washer             | WA26D047D050 |
|      | 45  | Cam Gear           | RNK2078      |
|      | 46  | Arm Play           | RNK2079      |
|      | 47  | Spring Cassette    | RNE1786      |
|      | 48  | Screw              | BMZ26P040FZK |
|      | 49  | Washer             | WA26D045D025 |

## 1.6 PCB PARTS LIST

### NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560  $\Omega$   $\rightarrow$   $56 \times 10^1 \rightarrow$  561 ..... RD1/8PM  $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix}$  J  
 47k  $\Omega$   $\rightarrow$   $47 \times 10^3 \rightarrow$  473 ..... RD1/4PS  $\begin{bmatrix} 4 & 7 & 3 \end{bmatrix}$  J  
 0.5  $\Omega$   $\rightarrow$  0R5 ..... RN2H  $\begin{bmatrix} 0 & R & 5 \end{bmatrix}$  K  
 1  $\Omega$   $\rightarrow$  010 ..... RS1P  $\begin{bmatrix} 0 & 1 & 0 \end{bmatrix}$  K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k  $\Omega$   $\rightarrow$   $562 \times 10^1 \rightarrow$  5621 ..... RN1/4PC  $\begin{bmatrix} 5 & 6 & 2 & 1 \end{bmatrix}$  F

### LIST OF WHOLE PCB ASSEMBLIES

| Mark | PCB Assemblies  | Part No.  |         |          |           |             |          |           |            |          |           |
|------|-----------------|-----------|---------|----------|-----------|-------------|----------|-----------|------------|----------|-----------|
|      |                 | HBXJ type | HB type | HEM type | HEWM type | HEWMXJ type | HL type  | HLXJ type | HEMXJ type | SD type  | SDXJ type |
| NSP  | Mother unit     | RWM1697   | RWM1697 | RWM1693  | RWM1693   | RWM1693     | RWM1693  | RWM1693   | RWM1693    | RWM1695  | RWM1695   |
|      | └ Main unit     | RWZ3208   | RWZ3208 | RWZ3208  | RWZ3208   | RWZ3208     | RWZ3208  | RWZ3208   | RWZ3208    | RWZ3208  | RWZ3208   |
|      | └└ Dolby S unit | RWX1101   | RWX1101 | RWX1101  | RWX1101   | RWX1101     | RWX1101  | RWX1101   | RWX1101    | RWX1101  | RWX1101   |
|      | └ OPSW unit     | RWZ3211   | RWZ3211 | RWZ3211  | RWZ3211   | RWZ3211     | RWZ3211  | RWZ3211   | RWZ3211    | RWZ3211  | RWZ3211   |
|      | └ FL unit       | RWZ3214   | RWZ3214 | RWZ3214  | RWZ3214   | RWZ3214     | RWZ3214  | RWZ3214   | RWZ3214    | RWZ3214  | RWZ3214   |
| NSP  | └ TR 2 unit     | RWZ3220   | RWZ3220 | Not used | Not used  | Not used    | Not used | Not used  | Not used   | Not used | Not used  |
| NSP  | └ TR 1 unit     | RWZ3298   | RWZ3298 | RWZ3217  | RWZ3217   | RWZ3217     | RWZ3217  | RWZ3217   | RWZ3217    | RWZ3218  | RWZ3218   |

### TRN 1 UNIT

RWZ3298, RWZ3217 and RWZ3218 have the same construction except for the following:

| Mark     | Symbol & Description | Part No.     |              |           | Remarks |
|----------|----------------------|--------------|--------------|-----------|---------|
|          |                      | RWZ3298      | RWZ3217      | RWZ3218   |         |
| $\Delta$ | C1025                | CKSQYF223Z50 | CKSQYF223Z50 | Not used  |         |
| $\Delta$ | C1033                | Not used     | Not used     | VCG - 044 |         |
| $\Delta$ | C1031                | Not used     | VCG - 044    | Not used  |         |
| $\Delta$ | Capacitor cover      | Not used     | REC - 150    | REC - 150 |         |
|          | Terminal             | Not used     | Not used     | PKC - 027 |         |

### ■ PARTS LIST FOR HBXJ AND HB TYPES

| Mark                  | No.                        | Description | Part No.    | Mark | No.                        | Description | Part No.     |
|-----------------------|----------------------------|-------------|-------------|------|----------------------------|-------------|--------------|
| <b>DOLBY S UNIT</b>   |                            |             |             |      | C1037, C1038               |             | CFTYA334J50  |
| <b>SEMICONDUCTORS</b> |                            |             |             |      | C1013, C1014, C1055, C1056 |             | CKSQYB102K50 |
|                       | IC1001, IC1002             |             | CXA1417Q    |      | C1007, C1008, C1025, C1026 |             | CKSQYB104K25 |
| <b>CAPACITORS</b>     |                            |             |             |      | C1043, C1044, C1067, C1068 |             | CKSQYB104K25 |
|                       | C1003, C1004, C1015, C1016 |             | CEJA010M50  |      | C1077, C1078, C1081, C1082 |             | CKSQYB104K25 |
|                       | C1051, C1052               |             | CEJA010M50  |      | C1087, C1088               |             | CKSQYB104K25 |
|                       | C1089, C1090               |             | CEJA100M25  |      | C1023, C1024, C1049, C1050 |             | CKSQYB153K50 |
|                       | C1085, C1086               |             | CEJA220M25  |      | C1065, C1066, C1069-C1072  |             | CKSQYB182K50 |
|                       | C1033, C1034               |             | CEJAR10M50  |      | C1083, C1084               |             | CKSQYB182K50 |
|                       | C1001, C1002, C1031, C1032 |             | CEJAR22M50  |      | C1079, C1080               |             | CKSQYB183K50 |
|                       | C1045, C1046, C1091, C1092 |             | CEJAR22M50  |      | C1059, C1060               |             | CKSQYB222K50 |
|                       | C1027, C1028, C1041, C1042 |             | CEJAR47M50  |      | C1009, C1010, C1073, C1074 |             | CKSQYB223K50 |
|                       | C1075, C1076               |             | CEJAR47M50  |      | C1093, C1094               |             | CKSQYB333K50 |
|                       | C1019, C1020               |             | CFTYA224J50 |      | C1005, C1006, C1061, C1062 |             | CKSQYB393K50 |
|                       |                            |             |             |      | C1063, C1064               |             | CKSQYB471K50 |

| Mark | No.                                | Description | Part No.     |
|------|------------------------------------|-------------|--------------|
|      | C1047, C1048                       |             | CKSQYB473K50 |
|      | C1011, C1012                       |             | CKSQYB681K50 |
|      | C1017, C1018, C1053, C1054         |             | CKSQYB822K50 |
|      | C1021, C1022, C1039, C1040         |             | CKSQYB823K25 |
|      | C1029, C1030, C1035, C1036 (47/16) |             | RCH1095      |

**RESISTORS**

All Resistors

RS1/10S□□□J

**OTHERS**

CN1002 2MM PIN HEADER 7P

6033B-07Z029

CN1001 2MM PIN HEADER 8P

6033B-08Z029

**MAIN UNIT****SEMICONDUCTORS**

|   |                                   |              |
|---|-----------------------------------|--------------|
|   | IC505                             | AT24C01-10PC |
|   | IC351                             | CXA1198AP    |
|   | IC251                             | CXA1563S     |
|   | IC1601, IC554, IC701              | M5218AFP     |
|   | IC101                             | NJM4580ED    |
| △ | IC1003                            | NJM7806FA    |
| △ | IC1004                            | NJM78L05A    |
| △ | IC1005                            | NJM7906FA    |
|   | IC502                             | NJU3718L     |
|   | IC201                             | PA0059AM     |
|   | IC501                             | PD4508A      |
|   | IC1701                            | TC4050BP     |
|   | IC601                             | UPC1297CA    |
|   | IC223                             | XRA10393F    |
|   | Q510                              | 2SA1037K     |
| △ | Q211, Q421, Q602, Q852            | 2SA1309A     |
|   | Q1001, Q431, Q856                 | 2SB1238X     |
|   | Q854                              | 2SB1425      |
|   | Q1006, Q1007, Q253, Q254          | 2SC3311A     |
|   | Q351, Q352, Q858                  | 2SC3311A     |
|   | Q401, Q402                        | 2SD1302      |
|   | Q1603, Q1604, Q353, Q354, Q403    | 2SD2144S     |
|   | Q701, Q702                        | 2SD2144S     |
|   | Q553                              | 2SK246       |
|   | Q161, Q162                        | 2SK373       |
|   | Q1005, Q332, Q501, Q502, Q762     | DTA114TS     |
|   | Q1010, Q841-Q843                  | DTA124EK     |
|   | Q165                              | DTA124ES     |
|   | Q105, Q106, Q163, Q164, Q210      | DTC114TS     |
|   | Q901, Q902                        | DTC114TS     |
|   | Q1165, Q507, Q551, Q552           | DTC124EK     |
|   | Q167, Q168, Q212, Q213            | DTC124ES     |
|   | Q255-Q260, Q355-Q358, Q422        | DTC124ES     |
|   | Q432, Q511, Q512, Q603, Q853      | DTC124ES     |
|   | Q855, Q857                        | DTC124ES     |
|   | Q1151, Q1153, Q1155, Q1157, Q1159 | FMG1         |
|   | Q1161                             | FMG1         |
| △ | D1001, D1009, D1010, D1013-D1016  | 1SR35-100AVL |
| △ | D812                              | 1SR35-100AVL |
|   | D431                              | 1SS252       |
|   | D1011, D1017, D1018, D1161, D1162 | 1SS254       |
|   | D1602-D1604, D161, D162           | 1SS254       |

| Mark | No.                          | Description | Part No.  |
|------|------------------------------|-------------|-----------|
|      | D1620-D1622, D163-D167, D201 |             | 1SS254    |
|      | D210-D212, D251-D253         |             | 1SS254    |
|      | D421-D423, D432, D433        |             | 1SS254    |
|      | D502, D503, D510, D521-D527  |             | 1SS254    |
|      | D742, D841-D843, D913, D921  |             | 1SS254    |
| △    | D1002                        |             | MTZJ27B   |
|      | D765                         |             | MTZJ3. 9B |
| △    | D1004                        |             | MTZJ7. 5B |
|      | D501                         |             | MTZJ9. 1A |

**COILS AND FILTERS**

|                   |         |
|-------------------|---------|
| L402              | LFA121J |
| L401 (105K)       | RTD1039 |
| L601, L602 (105K) | RTD1046 |
| L351, L352        | RTF1102 |
| F251, F252        | RTF1208 |

**CAPACITORS**

|                                  |              |
|----------------------------------|--------------|
| C609, C610                       | CCCSL101K500 |
| C161, C162                       | CCSQCH100D50 |
| C105, C106, C613, C723, C724     | CCSQCH101J50 |
| C359, C360                       | CCSQCH221J50 |
| C213, C321, C322, C358, C555     | CEAS010M50   |
| C1016, C111, C112, C201, C202    | CEAS100M50   |
| C408, C617, C707, C708           | CEAS100M50   |
| C103, C104, C210, C214-C216      | CEAS101M10   |
| C261, C262, C721, C722           | CEAS101M10   |
| C1001, C1004                     | CEAS101M50   |
| C1010                            | CEAS102M10   |
| C1018                            | CEAS220M16   |
| C1009, C1012                     | CEAS331M10   |
| C131, C132, C1603, C1604, C209   | CEAS470M16   |
| C259, C260, C361, C362           | CEAS470M16   |
| C402, C403, C409, C513, C520     | CEAS470M16   |
| C205, C206, C211, C219           | CEAS470M50   |
| C355, C356, C917, C918           | CEAS470M50   |
| C614                             | CEASR10M50   |
| C203, C204, C287, C288           | CFTYA103J50  |
| C255, C256                       | CFTYA104J50  |
| C404                             | CFTYA223J50  |
| C257, C258                       | CFTYA683J50  |
| C1606, C509, C510, C514, C521    | CKCYF103Z50  |
| C910                             | CKCYF103Z50  |
| C1008, C1020-C1022, C1607, C1701 | CKCYF473Z50  |
| C2020, C357, C706                | CKCYF473Z50  |
| C554, C601, C602                 | CKSQYB103K50 |
| C503                             | CKSQYB104K25 |
| C504                             | CKSQYB123K50 |
| C217, C218                       | CKSQYB222K50 |
| C505, C552, C605, C606           | CKSQYB223K50 |
| C553                             | CKSQYB472K50 |
| C607, C608                       | CKSQYB473K50 |
| C851                             | CKSQYB681K50 |
| C603, C604                       | CKSQYB821K50 |
| C551                             | CKSQYB823K25 |
| C769                             | CKSQYF473Z50 |
| C405, C406                       | CQMA332J50   |
| C407                             | CQMA472J50   |

| Mark             | No.                            | Description | Part No.     | Mark                       | No.                              | Description | Part No.     |
|------------------|--------------------------------|-------------|--------------|----------------------------|----------------------------------|-------------|--------------|
|                  | C101, C102                     |             | CQMA681J50   |                            | VR321, VR322, VR551-VR553 (22K)  |             | RCP1046      |
|                  | C109, C110                     |             | CQMA682J50   |                            | VR601, VR602 (22K $\Omega$ )     |             | RCP1046      |
|                  | C401                           |             | CQPA822J100  |                            | VR2003                           |             | RCS1028      |
|                  | C860 (2200/16)                 |             | PCH1114      |                            | VR2002                           |             | RCV1095      |
|                  | C611, C612 (430P/500)          |             | RCG1005      |                            | Other Resistors                  |             | RS1/10S□□□J  |
|                  | C1011 (1000/25)                |             | RCH1113      |                            |                                  |             |              |
|                  | C1005, C1006 (2200/25)         |             | RCH1114      |                            |                                  |             |              |
| <b>RESISTORS</b> |                                |             |              | <b>OTHERS</b>              |                                  |             |              |
|                  | R502, R503                     |             | RA4T223J     |                            | CN903 8P JUMPER CONNECTOR        |             | 52147-0810   |
|                  | R501                           |             | RA4T274J     |                            | CN902 10P JUMPER CONNECTOR       |             | 52147-1010   |
|                  | R517                           |             | RA7T274J     |                            | CN1401 11P JUMPER CONNECTOR      |             | 52147-1110   |
|                  | R321, R322 (560 $\Omega$ )     |             | RCN1024      |                            | CN901 12P JUMPER CONNECTOR       |             | 52147-1210   |
|                  | R1702 (11K/22K)                |             | RCX1020      |                            | CN401 KR CONNECTOR               |             | B2B-PH-K-E   |
|                  |                                |             |              |                            | CN100 KR CONNECTOR               |             | B3B-PH-K-E   |
|                  | R413                           |             | RD1/2LMF010J |                            | JA1602 MINI JACK                 |             | PKN1005      |
|                  | R1001                          |             | RD1/2LMF152J |                            | JA701 4P JACK                    |             | RKB-020      |
|                  | R421                           |             | RD1/2LMF181J |                            | JA2003 HEADPHONE JACK            |             | RKN1002      |
|                  | R411                           |             | RD1/2LMF391J |                            | JA902, JA903 REMOTE CONTROL JACK |             | RKN1004      |
|                  | R1164, R707, R708, R867        |             | RD1/6PM104J  |                            | PCB BINDER                       |             | VEF1008      |
|                  |                                |             |              |                            | PCB BINDER                       |             | VEF1040      |
|                  | R2015, R2016, R265, R266       |             | RD1/6PM112J  |                            | EARTH PLATE                      |             | VNF-091      |
|                  | R733, R734, R860               |             | RD1/6PM112J  |                            | X501 CERAMIC RESONATOR (4.19MHz) |             | VSS1014      |
|                  | R1163, R352, R353              |             | RD1/6PM114J  |                            |                                  |             |              |
|                  | R1613, R1614, R715, R716       |             | RD1/6PM152J  |                            |                                  |             |              |
|                  | R1003, R1004, R401, R402, R408 |             | RD1/6PM153J  |                            |                                  |             |              |
|                  |                                |             |              | <b>OPSW UNIT</b>           |                                  |             |              |
|                  | R351                           |             | RD1/6PM154J  | <b>SEMICONDUCTORS</b>      |                                  |             |              |
|                  | R375, R711, R712               |             | RD1/6PM184J  |                            | Q1401                            |             | DTA114TS     |
|                  | R355                           |             | RD1/6PM203J  |                            | D1451                            |             | SEL6410G     |
|                  | R111, R112, R201, R350, R354   |             | RD1/6PM223J  |                            | D1452                            |             | SEL6C10R     |
|                  | R709, R710, R925, R926         |             | RD1/6PM223J  |                            |                                  |             |              |
|                  |                                |             |              | <b>SWITCHES AND RELAYS</b> |                                  |             |              |
|                  | R363                           |             | RD1/6PM224J  |                            | S1401-S1404, S1406-S1412         |             | RSG1030      |
|                  | R775, R776                     |             | RD1/6PM241J  |                            |                                  |             |              |
|                  | R327, R328                     |             | RD1/6PM272J  | <b>RESISTORS</b>           |                                  |             |              |
|                  | R367                           |             | RD1/6PM273J  |                            | All Resistors                    |             | RD1/6PM□□□J  |
|                  | R261, R262                     |             | RD1/6PM302J  |                            |                                  |             |              |
|                  |                                |             |              | <b>FL UNIT</b>             |                                  |             |              |
|                  | R340, R341                     |             | RD1/6PM331J  | <b>SEMICONDUCTORS</b>      |                                  |             |              |
|                  | R325, R326, R524, R525         |             | RD1/6PM332J  |                            | Q1501                            |             | DTC124ES     |
|                  | R741, R742, R851               |             | RD1/6PM332J  |                            | D1512-D1515, D1526, D1529        |             | ISS254       |
|                  | R113, R114, R366, R379         |             | RD1/6PM333J  |                            | D1520                            |             | SEL6210S     |
|                  | R378                           |             | RD1/6PM433J  |                            |                                  |             |              |
|                  |                                |             |              | <b>SWITCHES AND RELAYS</b> |                                  |             |              |
|                  | R1605, R1606                   |             | RD1/6PM470J  |                            | S1505-S1508                      |             | RSG1030      |
|                  | R119, R120, R703, R704         |             | RD1/6PM471J  |                            |                                  |             |              |
|                  | R207, R208, R323, R324         |             | RD1/6PM472J  | <b>RESISTORS</b>           |                                  |             |              |
|                  | R117, R424, R434, R521-R523    |             | RD1/6PM473J  |                            | All Resistors                    |             | RD1/6PM□□□J  |
|                  | R701, R702                     |             | RD1/6PM473J  |                            |                                  |             |              |
|                  |                                |             |              | <b>OTHERS</b>              |                                  |             |              |
|                  | R101, R102, R109, R110         |             | RD1/6PM474J  |                            | V1501 FL INDICATOR TUBE          |             | RAW1124      |
|                  | R403                           |             | RD1/6PM4R7J  |                            |                                  |             |              |
|                  | R203, R204                     |             | RD1/6PM512J  | <b>TR 2 UNIT</b>           |                                  |             |              |
|                  | R356                           |             | RD1/6PM513J  |                            |                                  |             |              |
|                  | R2019, R2020, R855, R865       |             | RD1/6PM561J  | <b>CAPACITORS</b>          |                                  |             |              |
|                  |                                |             |              |                            | △ C1032 (0.01/400)               |             | VCG-044      |
|                  | R387, R388                     |             | RD1/6PM622J  | <b>TR 1 UNIT</b>           |                                  |             |              |
|                  | R377, R864                     |             | RD1/6PM683J  |                            |                                  |             |              |
|                  | R267, R268, R393, R394         |             | RD1/6PM822J  | <b>CAPACITORS</b>          |                                  |             |              |
|                  | R364, R368, R376, R380         |             | RD1/6PM823J  |                            | C1025                            |             | CKSQYF223Z50 |
|                  | R365                           |             | RD1/6PM913J  |                            |                                  |             |              |
| △                | R1020                          |             | RFA1/4L4R7J  |                            |                                  |             |              |
|                  | VR101, VR102 (4.7K)            |             | RCP1020      |                            |                                  |             |              |
|                  | VR852 (1.0K $\Omega$ )         |             | RCP1044      |                            |                                  |             |              |

# Service Manual

ORDER NO.  
**RRZ1123**

The chapter 1 of this Service Manual will not be reprinted. On your additional orders, we may supply only the chapter 2. For the chapter 1, please make copies and attach to the chapter 2 at your side if necessary.

**STEREO CASSETTE DECK**

# CT-S430S

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## CHAPTER 2

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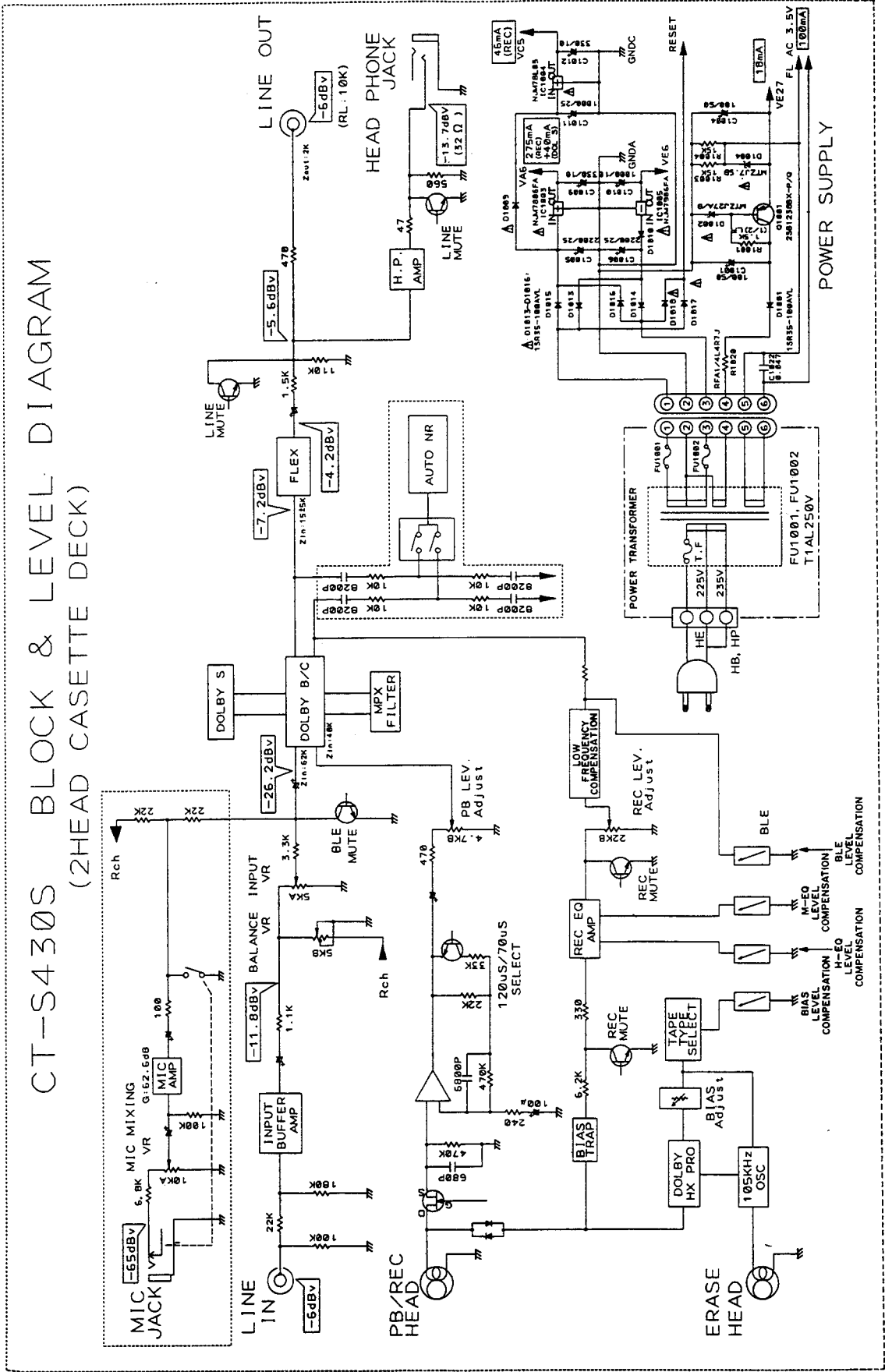
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### CONTENTS

#### CHAPTER 2

|                                      |      |
|--------------------------------------|------|
| 2.1 BLOCK DIAGRAM .....              | 2-2  |
| 2.2 EXPLODED VIEWS AND PACKING ..... | 2-3  |
| 2.3 SCHEMATIC DIAGRAMS .....         | 2-7  |
| 2.4 PCB CONNECTION DIAGRAM .....     | 2-13 |

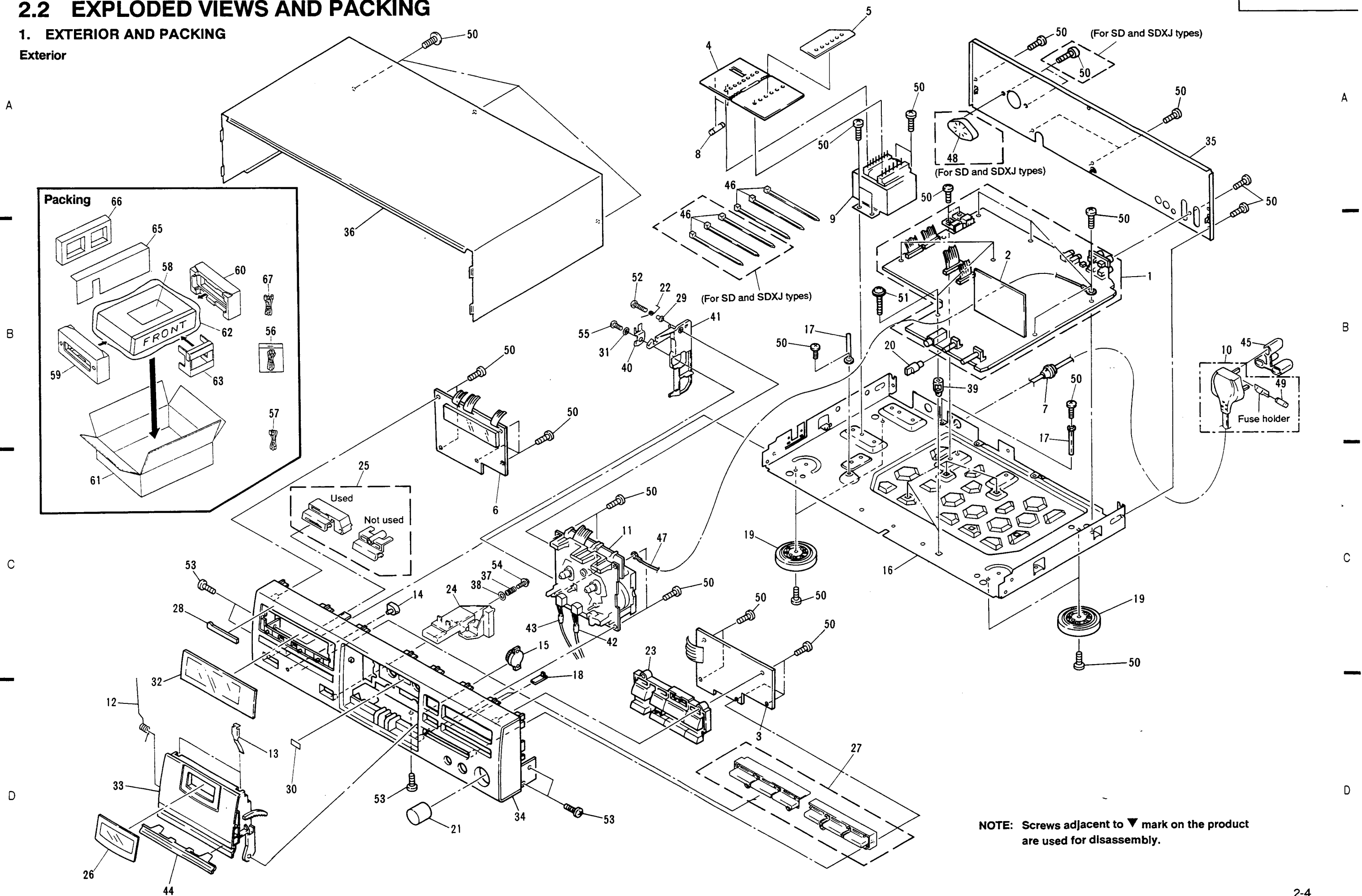
2.1 BLOCK DIAGRAM



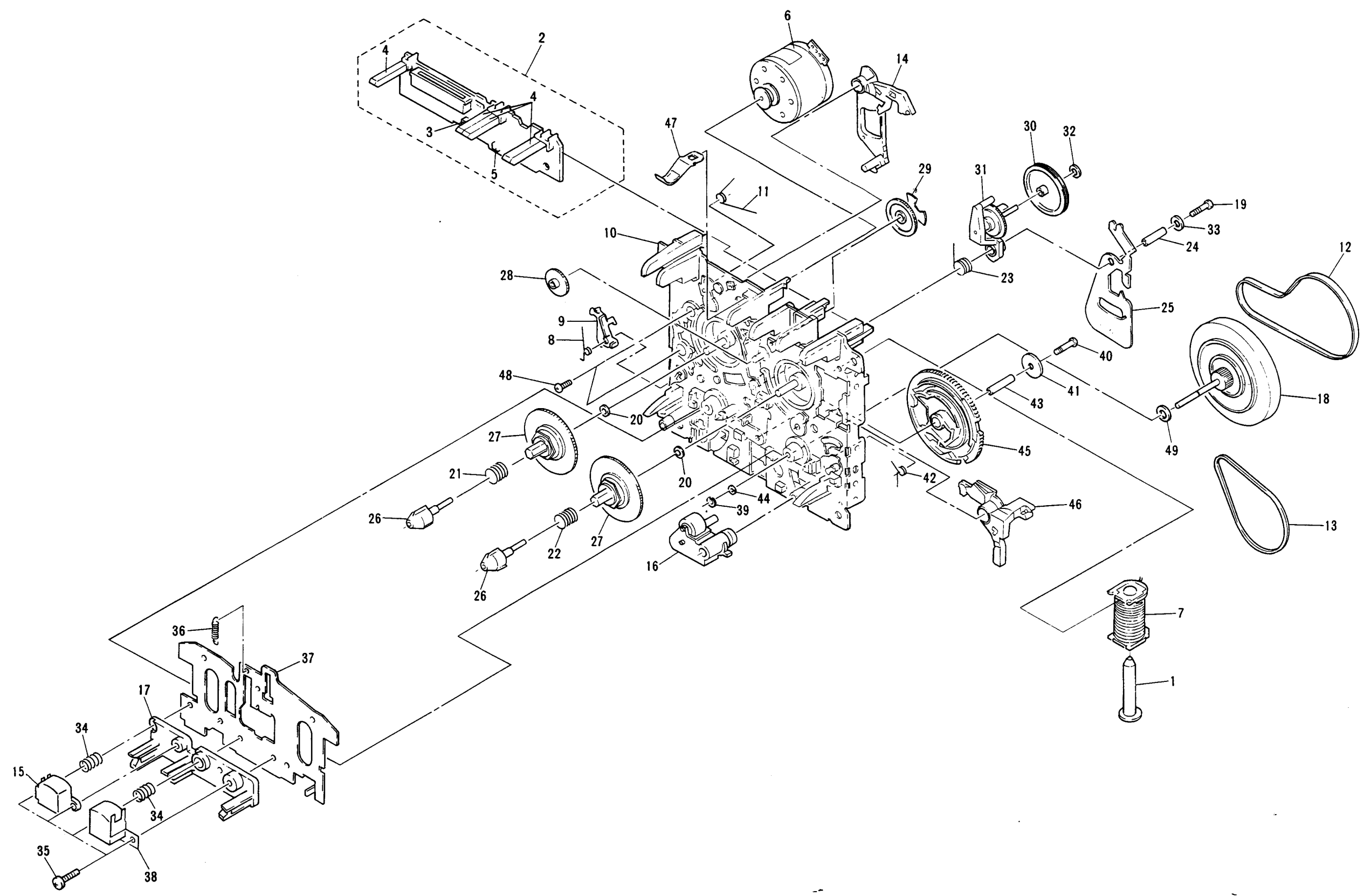
## 2.2 EXPLODED VIEWS AND PACKING

### 1. EXTERIOR AND PACKING

#### Exterior



2. MECHANISM UNIT



A

B

C

D

2.3 SCHEMATIC DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 6A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:  
Unit: k: kΩ, M: MΩ, or Ω unless otherwise noted.  
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.  
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.

4. CAPACITORS:  
Unit: p: pF or μF unless otherwise noted.  
Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.  
Rated voltage: 50V except for electrolytic capacitors.

5. COILS:  
Unit: m: mH or μH unless otherwise noted.

6. VOLTAGE AND CURRENT:  
□ or - V :  
DC voltage (V) in STOP mode unless otherwise noted.  
⇐ mA or - mA :  
DC current in STOP mode unless otherwise noted.

7. OTHERS:  
• ○ or ● : Adjusting point.  
• ◁ : Measurement point.  
• The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

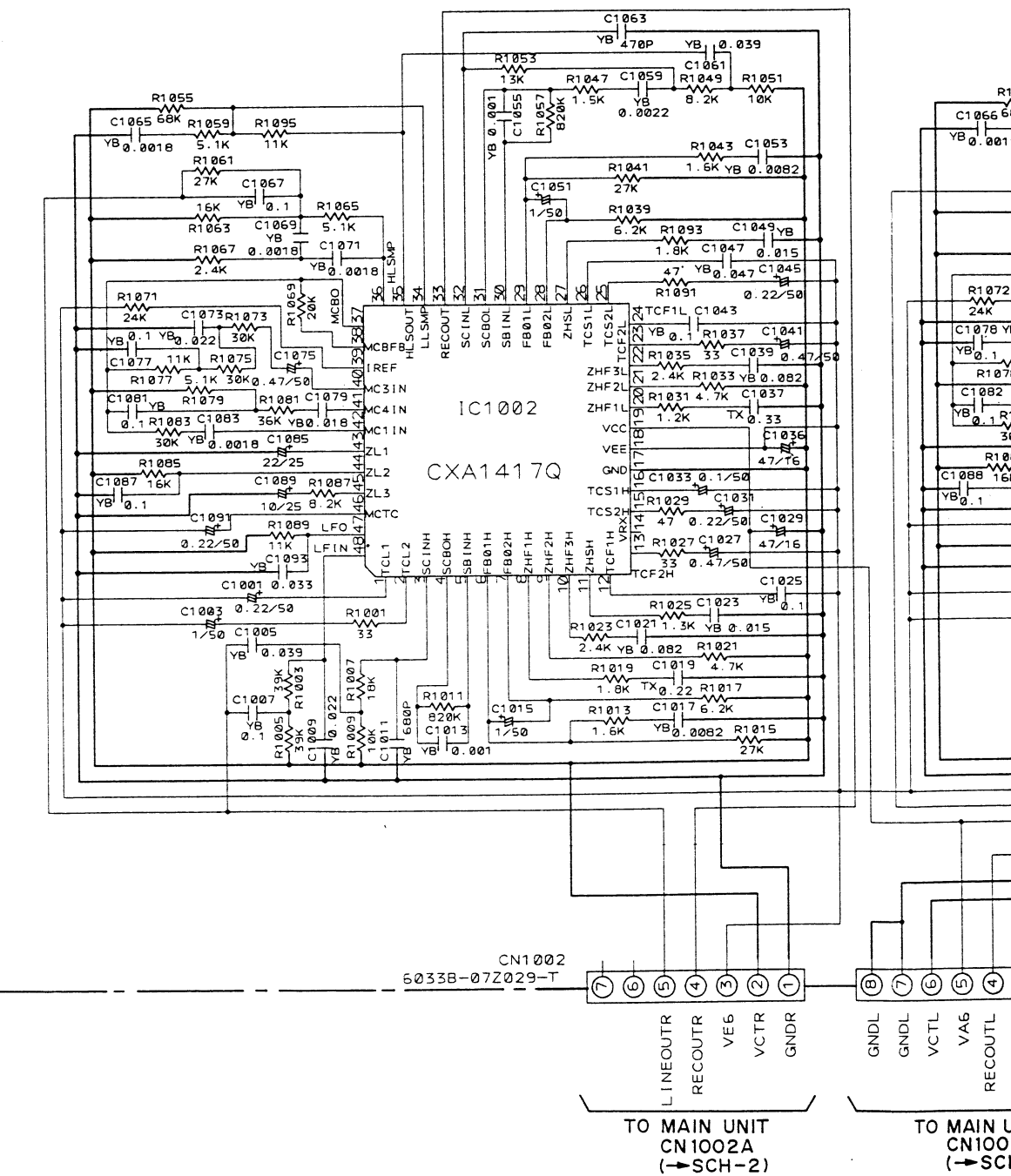
8. SCH-□ ON THE SCHEMATIC DIAGRAM:  
• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

9. SWITCHES (Underline indicates switch position):  
OPSW UNIT  
S1401 : ◀REW  
S1402 : REC  
S1403 : AUTO BLE  
S1404 : ■STOP  
S1406 : FLEX (l/f)  
S1407 : ▶▶FF  
S1408 : ▶▶PLAY  
S1409 : CD SYNCHRO  
S1410 : ■PAUSE  
S1411 : REC MUTE  
S1412 : DOLBY NR

FL UNIT  
S1505 : POWER SW  
S1506 : COUNTER RESET  
S1507 : COUNTER MODE/DISP OFF  
S1508 : METER RANGE

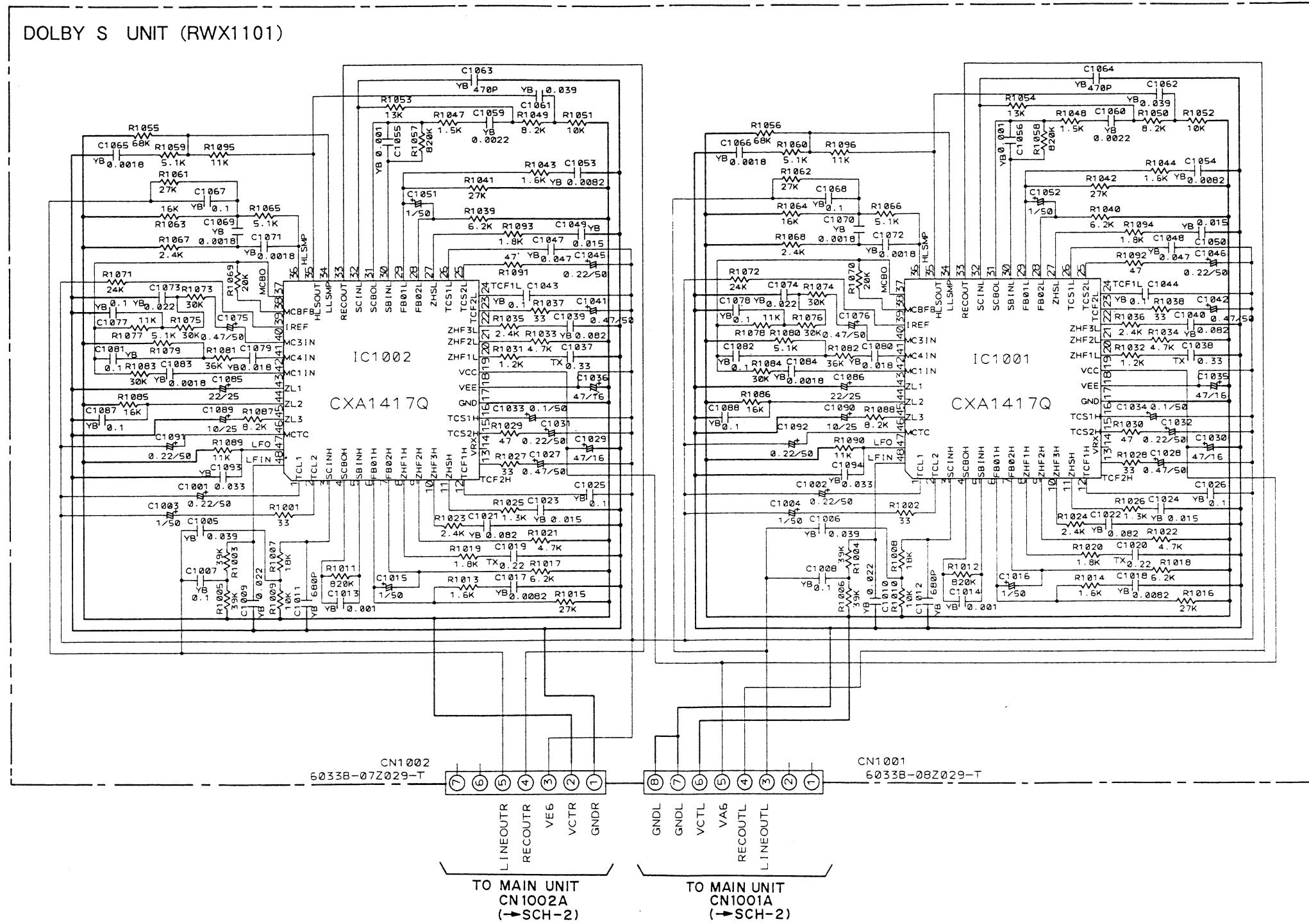
1. DOLBY S UNIT

DOLBY S UNIT (RWX1101)



## 1. DOLBY S UNIT

SCH-1



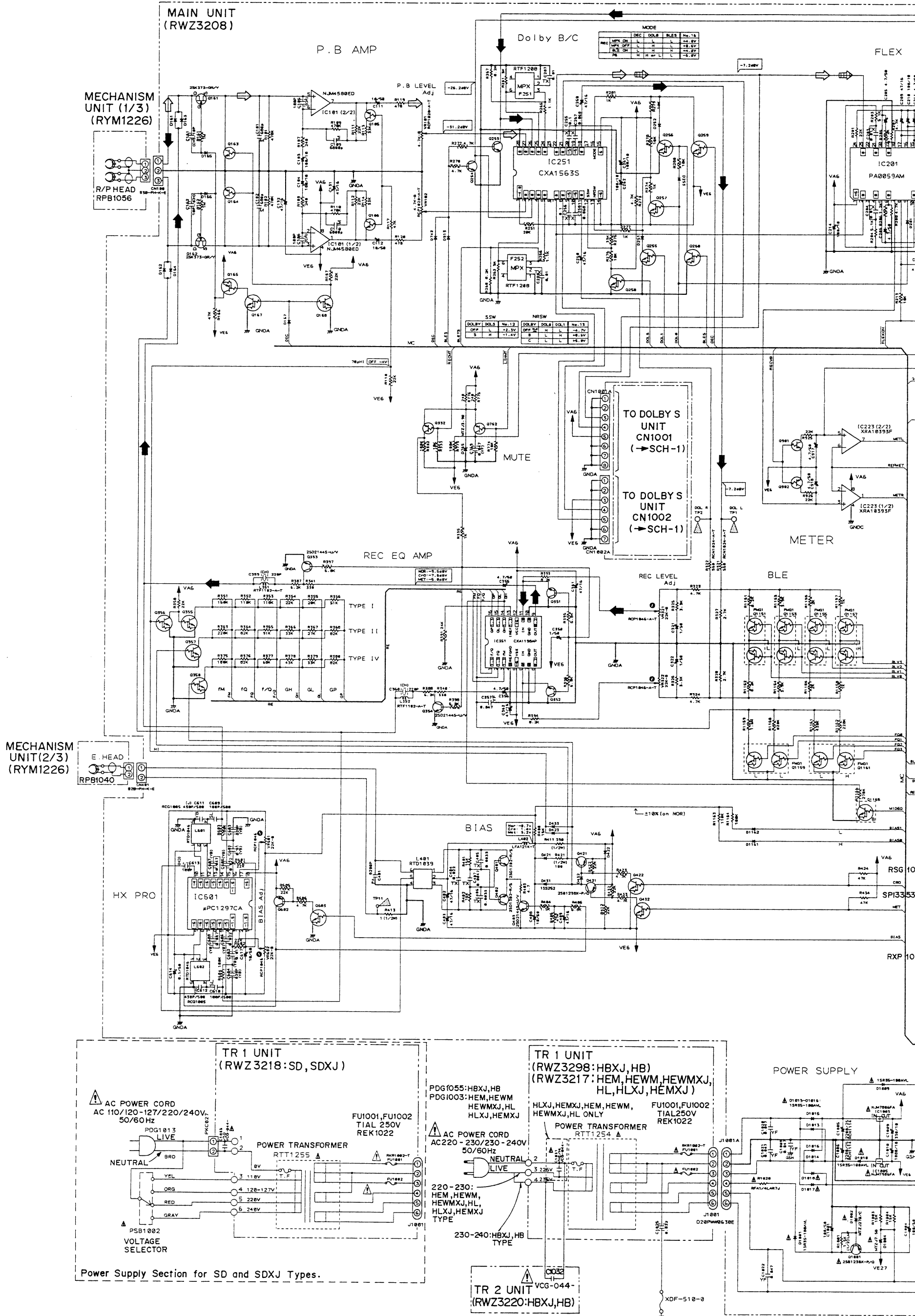
SCH-1

DOLBY S UNIT

DOLBY S UNIT

SCH-1

2. MAIN, OPSW, FL, TR 1 AND TR 2 UNIT



SCH-2

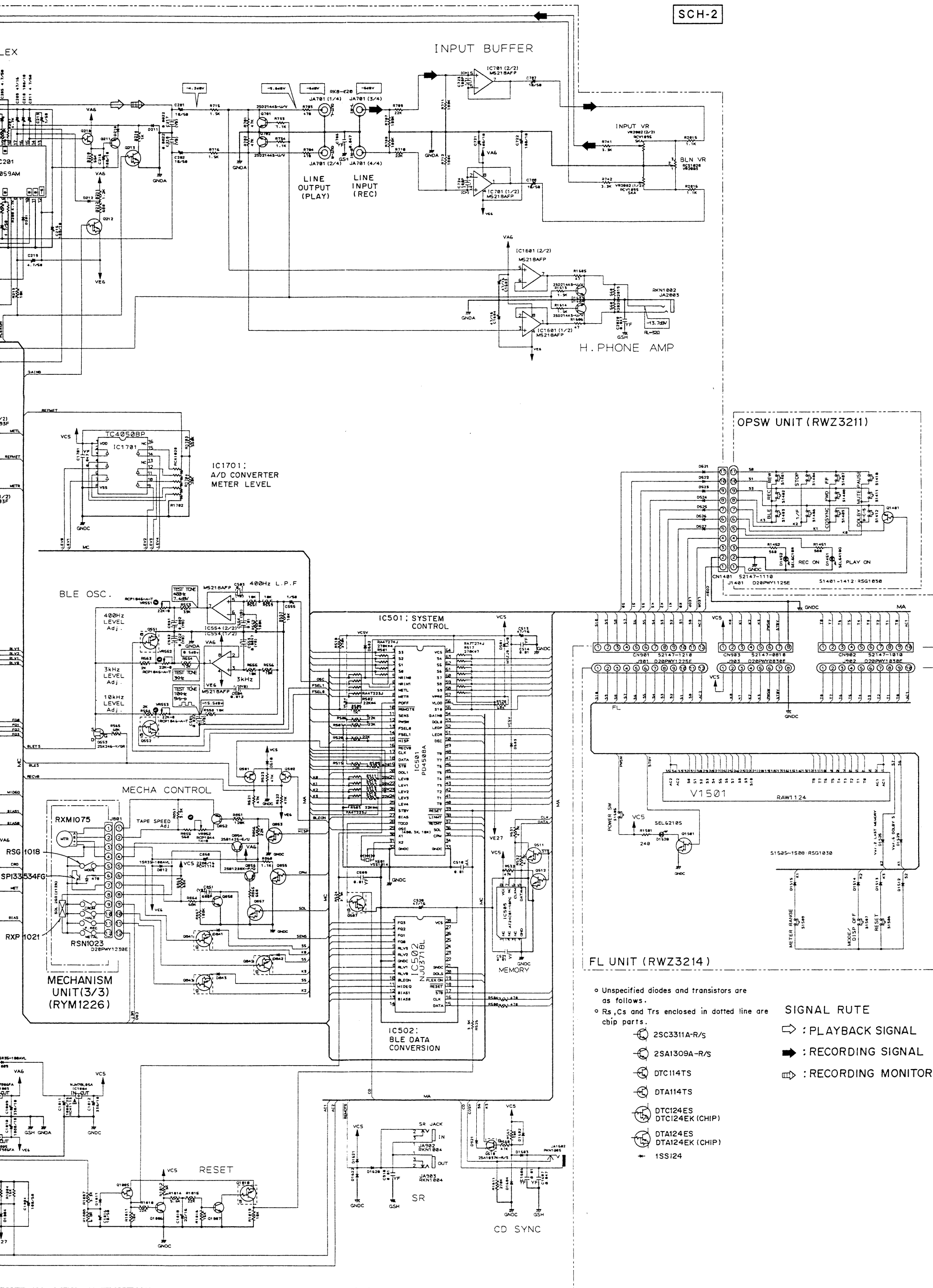
MAIN UNIT, OPSW UNIT,  
FL UNIT, TR 1 UNIT,  
TR 2 UNIT

Line Voltage Selection

Line voltage can be changed by the following modification:  
1. Disconnect the AC power cord.  
2. Remove the cover.  
3. Change the connection of TRANSFORMER 1 UNIT primary pins.

4. Stick a line voltage label on the rear panel.

| Part No.  | Description |
|-----------|-------------|
| AAX - 193 | 220V label  |
| AAX - 192 | 240V label  |



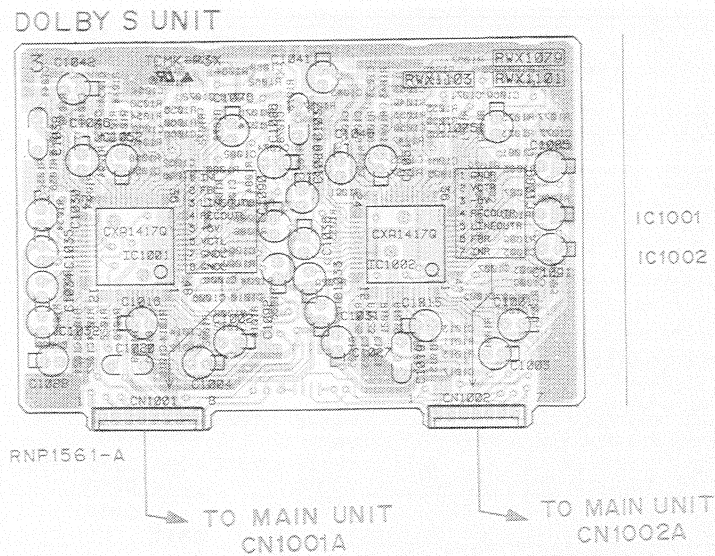
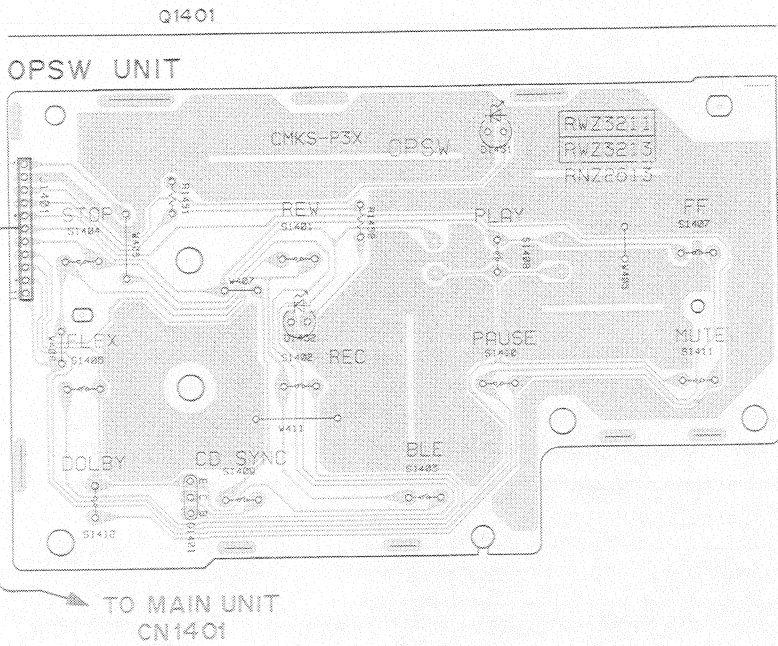
- Unspecified diodes and transistors are as follows.
- Rs, Cs and Trs enclosed in dotted line are chip parts.
- SIGNAL RATE**
- ⇒ : PLAYBACK SIGNAL
- ➡ : RECORDING SIGNAL
- ⇨ : RECORDING MONITOR SIGNAL
- 2SC3311A-R/S
- 2SA1309A-R/S
- DTC114TS
- DTA114TS
- DTC124ES
- DTC124EK (CHIP)
- DTA124ES
- DTA124EK (CHIP)
- 1SS124

MAIN UNIT, OPSW UNIT,  
FL UNIT, TR 1 UNIT,  
TR 2 UNIT

**SCH-2**

2.4 PCB CONNECTION DIAGRAM

• This diagram is viewed from the mounted parts side.



• This diagram is viewed from the pink colored foil side.  
• This PCB is double sided.

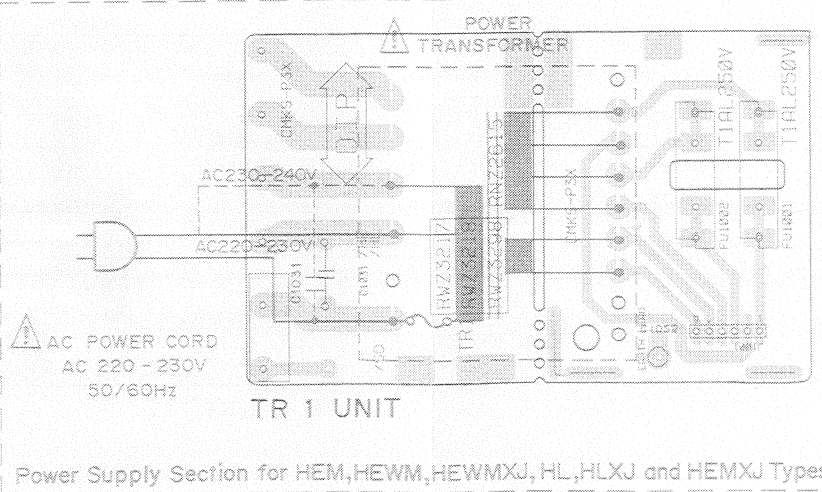
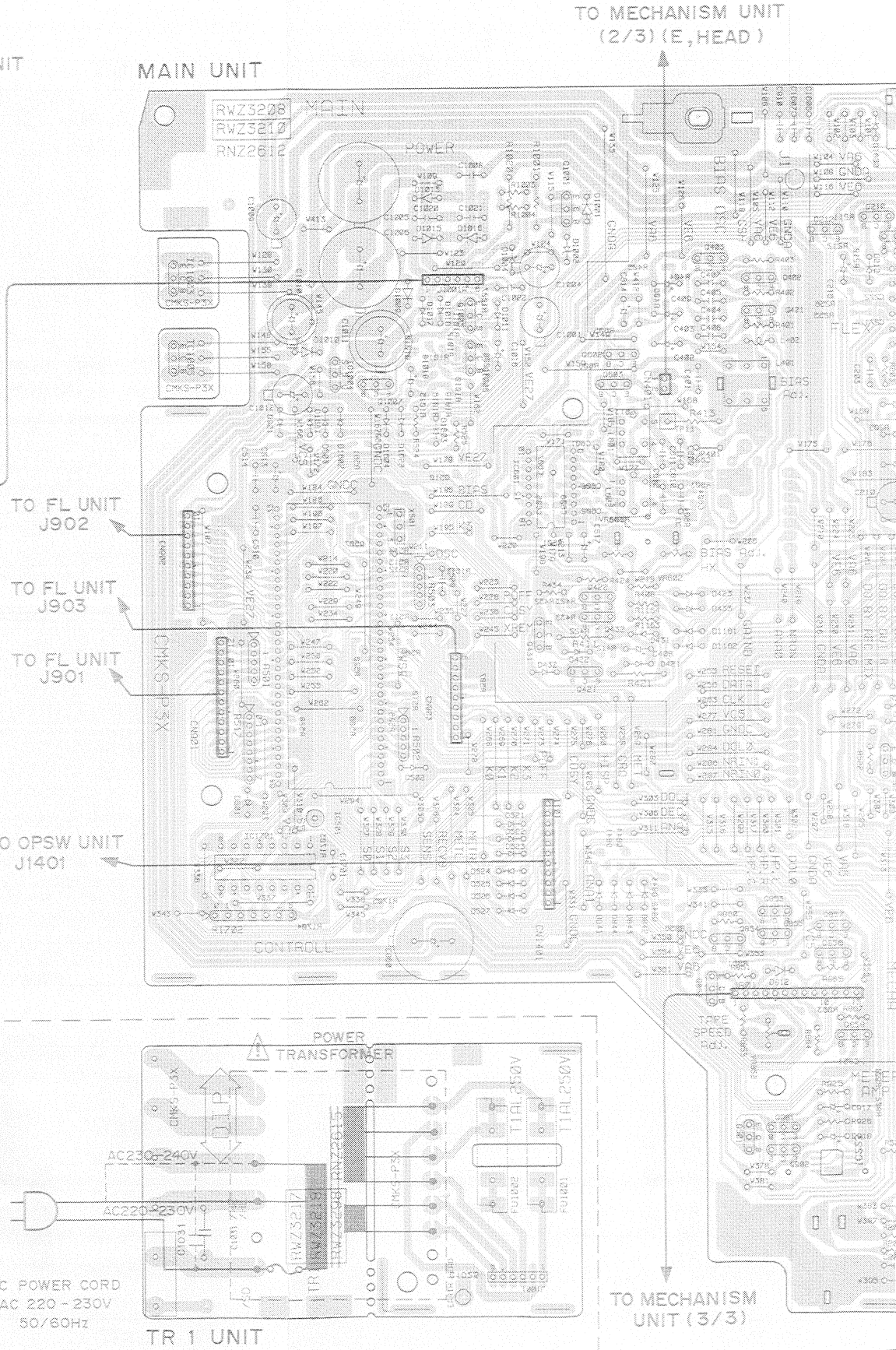
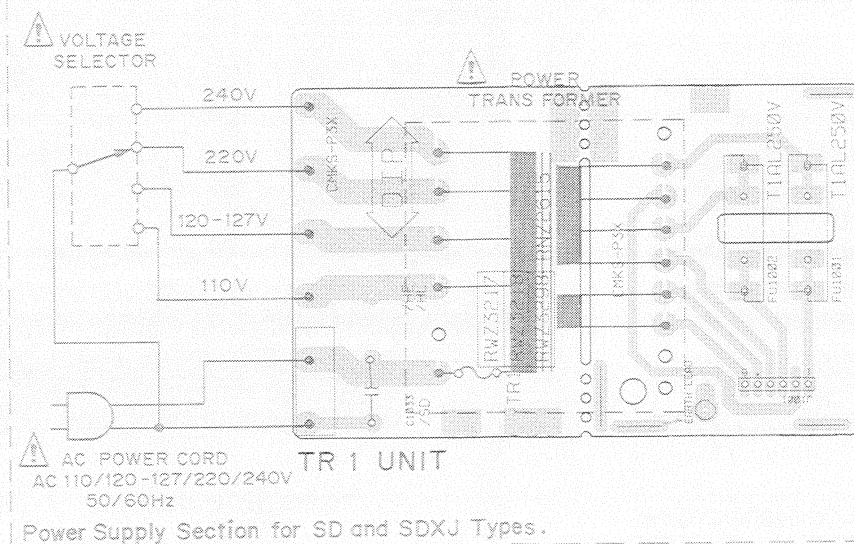
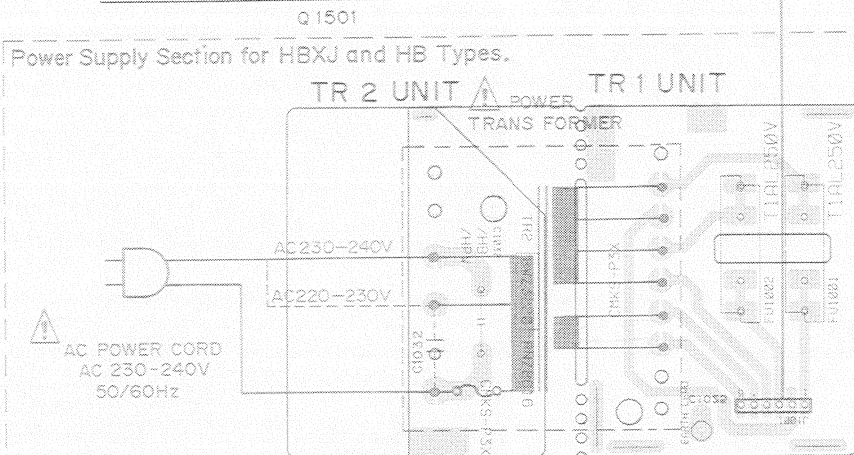
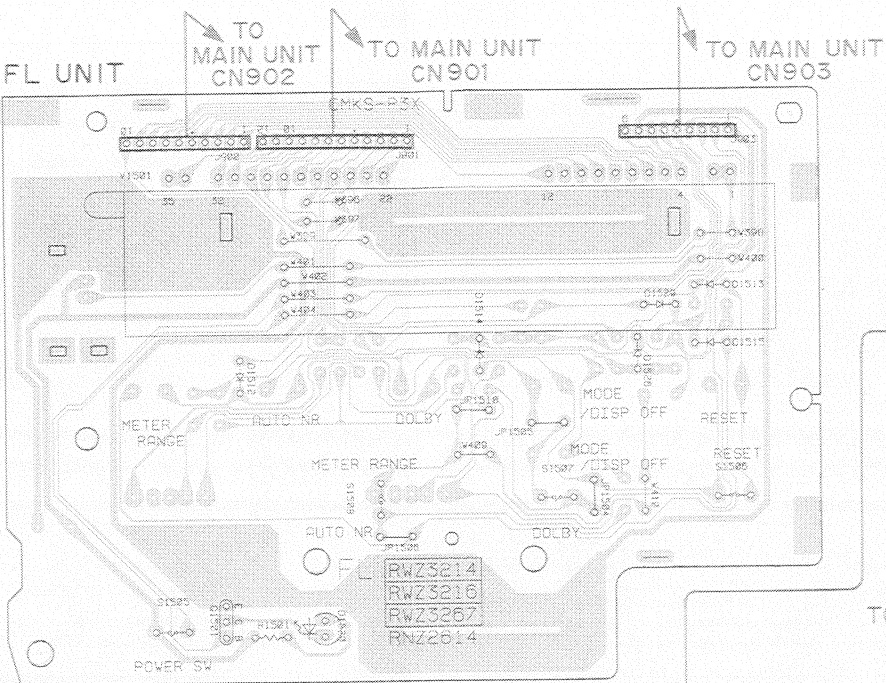
NOTE FOR PCB DIAGRAMS:  
1. Part numbers in PCB diagrams match those in the schematic diagrams.  
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

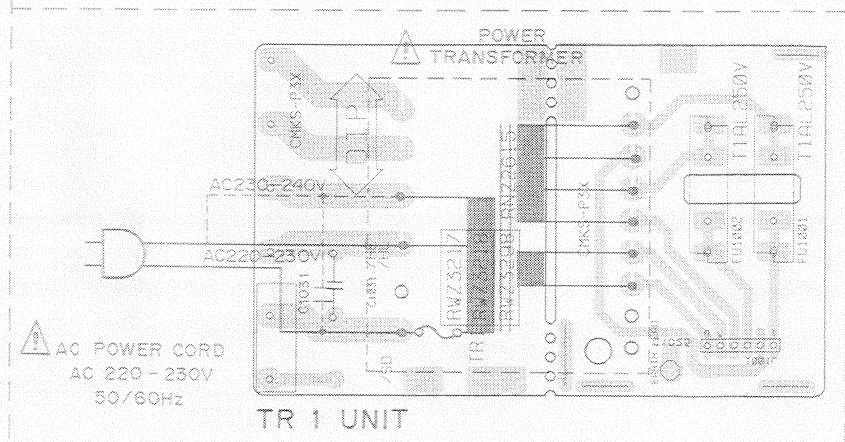
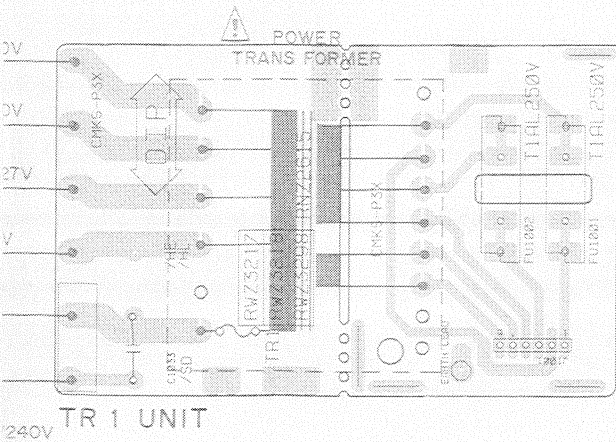
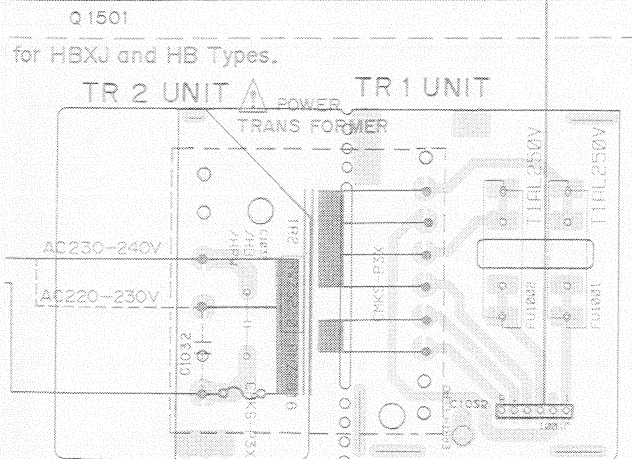
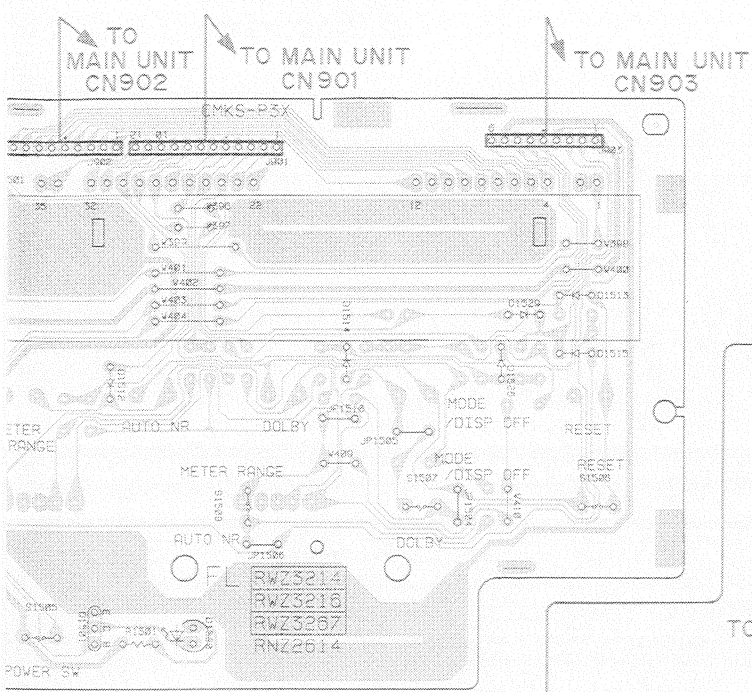
| Symbol in PCB Diagrams | Symbol in Schematic Diagrams | Part Name             |
|------------------------|------------------------------|-----------------------|
|                        |                              | Transistor            |
|                        |                              | Diode                 |
|                        |                              | Capacitor (Polarized) |

3. The transistor terminal marked with E or C shows the emitter.  
4. The diode terminal marked with C or P shows cathode side.  
5. The capacitor terminal marked with @ or - shows negative terminal.

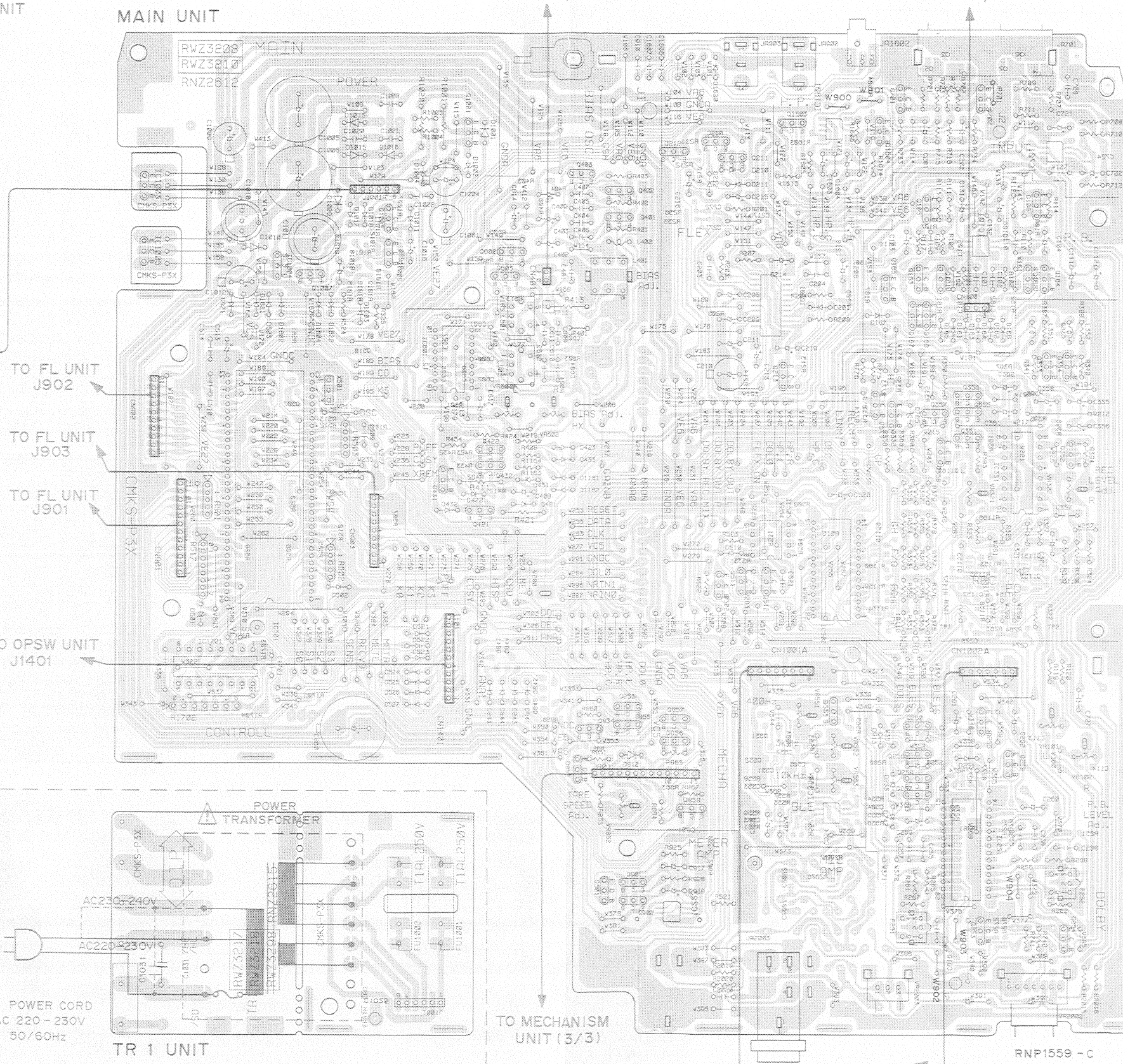
NOTE FOR PCB DIAGRAMS:  
1. Part numbers in PCB diagrams match those in the schematic diagrams.  
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

| Symbol in PCB Diagrams | Symbol in Schematic Diagrams | Part Name                |
|------------------------|------------------------------|--------------------------|
|                        |                              | Transistor               |
|                        |                              | Transistor with resistor |
|                        |                              | Field effect transistor  |
|                        |                              | Resistor array           |
|                        |                              | 3-terminal regulator     |





Power Supply Section for HEM, HEWM, HEWMXJ, HL, HLXJ and HEMXJ Types



Q1603 Q701  
Q210 Q702  
Q1001 Q212 Q1604  
Q1001 Q211 Q1001

IC1003 Q403  
Q1005 Q402 Q106  
Q1006 Q401 Q105  
IC1005 Q602 Q162  
IC1004 Q603 Q163 Q164  
Q1007 Q165 Q161  
Q1010 Q166  
Q167 Q168

IC601 Q353 Q354  
Q150 Q213 Q356

VR601 Q762 Q357 Q355  
VR602 Q332 Q351 Q352

Q422 Q410  
Q432 Q431 IC351

IC501  
Q421 Q510 Q512  
IC505 Q511 Q512  
IC502 Q502 Q510  
Q511 Q512

IC1701 Q480  
Q853 Q857 Q480  
Q854 Q855 Q553 Q255  
Q856 Q260

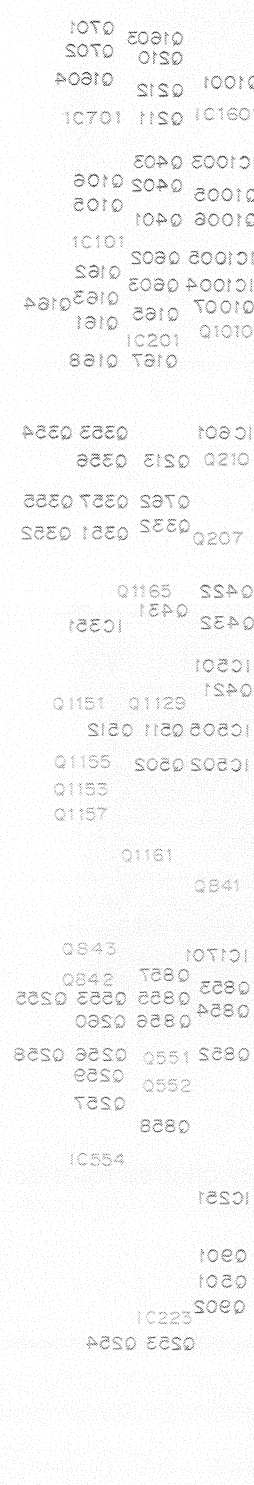
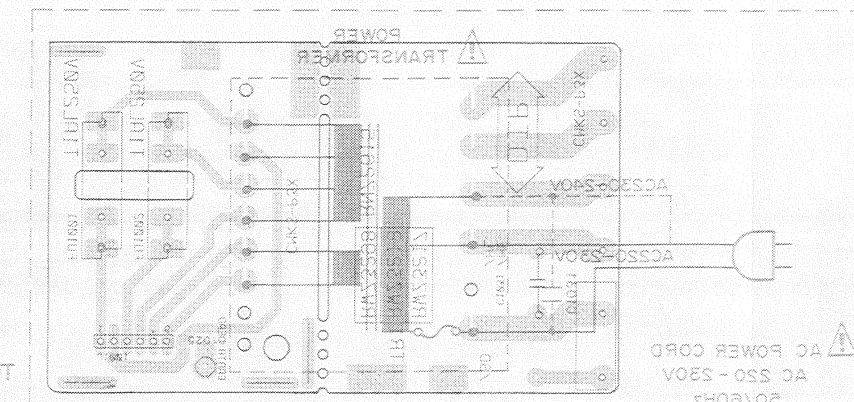
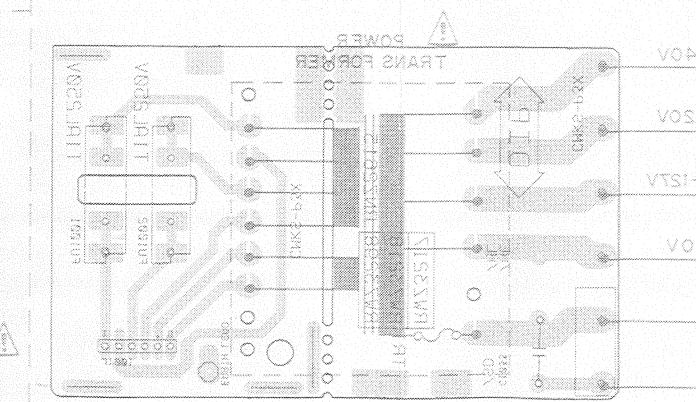
VR551 VR101  
VR552 Q852 Q250 Q256 Q258  
VR102 Q259  
VR553 Q257

VR552 Q858 Q250

IC251

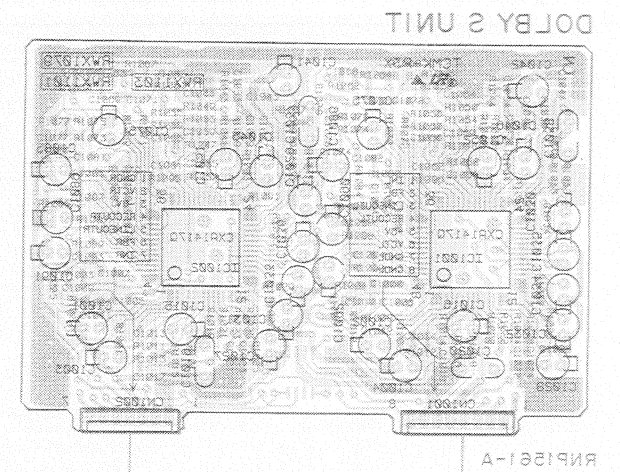
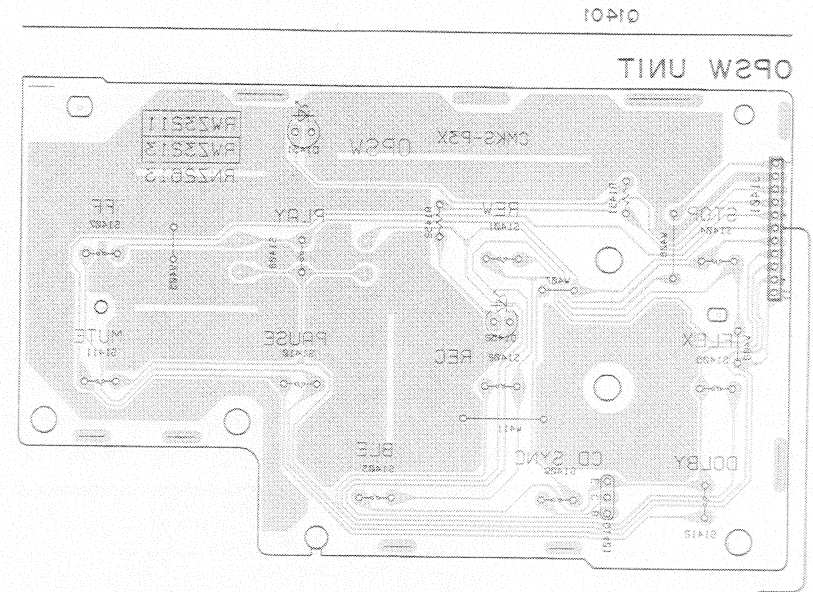
Q901  
Q501  
Q902 Q5501  
Q253 Q254

VR2003  
VR2002



## 2.4 PCB CONNECTION DIAGRAM

- This diagram is viewed from the foil side.



- This diagram is viewed from the gray colored foil side.
- This PCB is double sided.

