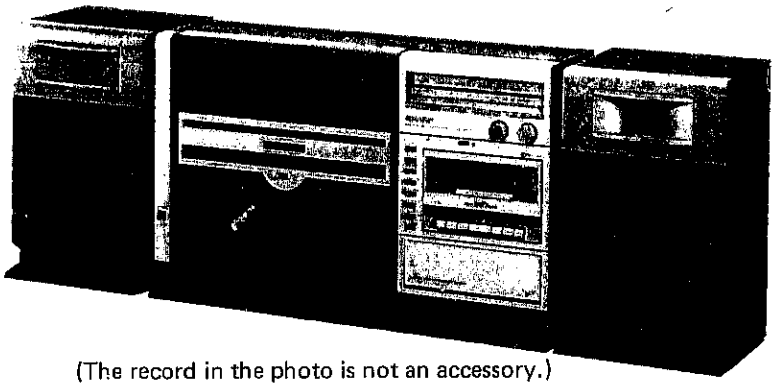
SHARP SERVICE MANUAL

ATSM681071MCT



(The record in the photo is not an accessary.)

Photo { Main Unit: VZ-3000H
Speaker Box: CP-V300H

VZ-3000H/E
CP-V300H

In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

DOLBY SYSTEM ®

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

APSS
Auto Program Search System

INDEX TO CONTENTS

FEATURES

<VZ-3000H/E>
- Automatic playing of both sides of a record.
- Fully automatic control of the record with microcomputer and linear tracking mechanism.
- Compact, space-saving vertical player.

<CP-V300H>
- At the speaker section:
  Bass ref. type 2-way speaker system
  16 cm free edge woofer
  LC type network

SHARP CORPORATION OSAKA, JAPAN

- **For a complete description of the operation of unit, please refer to the operation manual.**

SPECIFICATIONS

<VZ-3000H/E>

General

Rated voltage:	AC 110 V, 220 V, 240 V, 50/60 Hz
Power consumption:	230 W
Dimensions (Main unit):	597(W) x 170(D) x 378(H) mm
Weight (Main unit):	14.6 kg
Input sockets:	Microphone: 1 mV/10K ohms, φ6.3 mm jack
	Aux (P.B.): 190 mV, 47K ohms
Output sockets:	Aux (REC): 130 mV, 100K ohms
	Speaker: 4 ohms
	Headphones: 8 ohms, φ6.3 mm jack
Outer sockets:	FM antenna: FM 300 ohms balanced
	MW/LW antenna: outside antenna
	Ground: MW/LW antenna ground
Semiconductors:	1 LSI, 17 ICs, 1 FET, 54 transistors, 56 diodes, 7 LEDs, 2 photo-transistors, 3 photo-interruptors 2 infrared emitting diodes

Amplifier Section

Circuit:	OCL power amp with ± power supply
Power output:	RMS; 25W x 2 at 0.5% THD, 4 ohms
Total harmonics distortion:	0.1% (4 ohms at 20W output)
Frequency response:	40 Hz ~20 kHz ±1.5 dB
Tone controls:	Bass: ±9 dB (100 Hz)
	Treble: ±9 dB (10 kHz)

Tuner Section

Circuit:	Superheterodyne FM/MW/LW tuner, PLL stereo demodulation circuit, FM muting circuit built-in
Frequency range:	FM: 87.6 ~108 MHz
	MW: 520 ~1,620 kHz
	LW: 148.5 ~285 kHz [VZ-3000H]
	150 ~285 kHz [VZ-3000E]
Intermediate frequency:	FM: 10.7 MHz
	MW/LW: 455 kHz [VZ-3000H]
	465 kHz [VZ-3000E]
Sensitivity:	FM: 2.0μV at S/N 26 dB, 40 kHz dev.
	MW/LW: 350μV/m
Separation:	FM: 36dB (1 kHz FM stereo)
S/N:	FM: 70dB (monaural 1 kHz)

Cassette Deck Section

Recording tracks:	4 track 2 channel stereo system
Recording system:	AC bias (85 kHz)
Erasing system:	AC erasing system (85 kHz)
Head:	Record/playback head x 1, Erase head x 1
Motor:	Electronic control DC motor
Tape speed:	4.8 cm/sec.
Fast forward time:	100 sec. (C-60 tape)
Rewind time:	100 sec. (C-60 tape)
Wow & flutter:	0.2% (DIN)
Frequency response:	Normal tape: 30 ~14,000 Hz
	Chrome tape: 30 ~15,000 Hz
	Metal tape: 30 ~16,000 Hz
S/N:	Dolby NR off: 52 dB
	Dolby NR on: 62 dB
	(Metal tape, over 5 kHz)

Player Section

Type:	Microcomputer control, Linear tracking full auto, Belt drive
Motor:	DC motor with FG (for platter drive) x 1,
	DC motor (for tonearm drive) x 1
Drive system:	Belt drive system
Speeds:	33-1/3, 45 rpm
Wow & Flutter:	0.085% (DIN)
S/N:	66 dB (DIN-B)
Tonearm:	Dynamic balanced, Linear tracking
Cartridge:	VM type
	Frequency response: 20 ~20,000 Hz
	Output voltage: 2.8 mV (1 kHz, 50mm/sec.)
	Exchangeable stylus: STY-121
Supplied devices:	Automatic door open/close, auto lead-in, auto return, auto record size sensing, automatic speed selection, dual play, repeat play

<CP-V300H>

Speaker Section

Cabinet type:	Bass ref. type 2-way speaker system
Speakers:	16 cm free edge woofer
	5 cm tweeter
Frequency range:	60 ~20,000 Hz
Crossover frequency:	2,500 Hz
	Woofer high-cut; 6 dB/oct
	Tweeter low-cut; 12 dB/oct
Maximum rated input:	50 W (MPO)
Impedance:	4 ohms
Sound pressure level:	89 dB/Wm
Dimensions:	220(W) x 220(D) x 378(H)mm
Weight:	4.7 kg x 1

* Specifications for this model are subject to change without prior notice.

VOLTAGE SELECTOR ADJUSTMENT

The voltage selector is located on the rear panel of the deck. If adjustment is necessary, use a screwdriver in order to turn the selector in either direction until the correct voltage figure is displayed in the window next to the adjustment screw.

NAMES OF PARTS

<VZ-3000H/E>

Front Parts

1 Power Switch
2 Side B Play Indicator
3 Dual Play Indicator
4 Repeat-Play Indicator
5 Side A Play Indicator
6 Player Door
7 Signal Meter
8 FM Stereo Indicator
9 Function Selector Buttons
10 Volume Control Knob
11 Tuning Control Knob
12 Tape Counter
13 Tape Counter Reset Button
14 Player Door Open/Close Key
15 Play/Cut Key
16 Tonearm Cue Key
17 Tonearm Forward Key
18 Tonearm Reverse Key
19 Dual Play Key
20 Repeat-Play Key
21 Side A/B Selector Key
22 Headphones Jack
23 Microphone Jacks

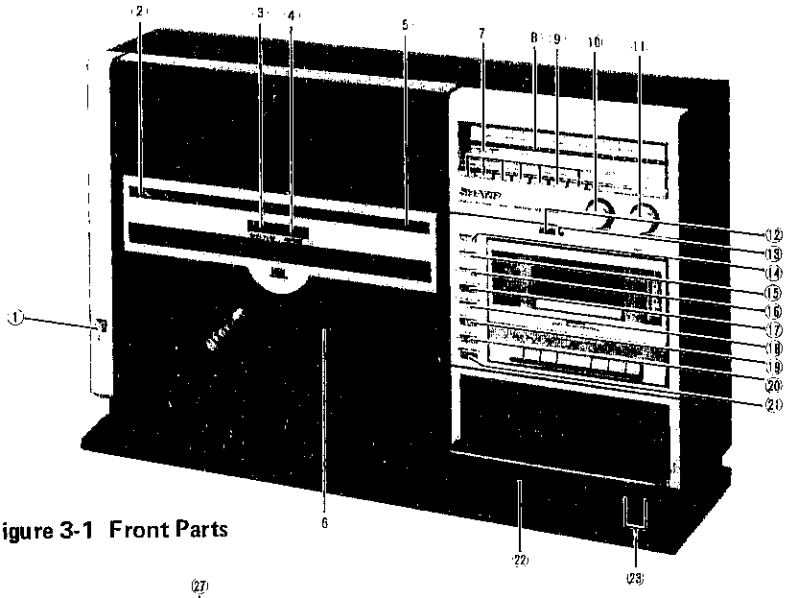


Figure 3-1 Front Parts

Tape Deck Parts

24 APSS Indicator
25 Dolby NR Indicator
26 Record Indicator
27 Cassette Holder
28 Tape Level Meter
29 Cassette Eject Button
30 Record Button
31 Play Button
32 Stop Button
33 Rewind Button
34 Fast Forward Button
35 Pause Button

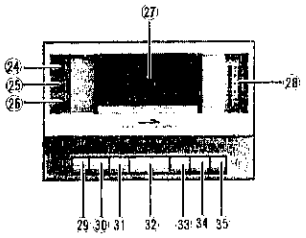


Figure 3-2 Tape Deck Parts

Control Parts

36 Speed (33/45) Selector Key
37 Dolby NR Switch
38 Tape Selector Switches
39 Loudness Switch
40 Record Level Control Knobs
41 Bass Control Knob
42 Treble Control Knob
43 Balance Control Knob
44 Mic Mixing Knob

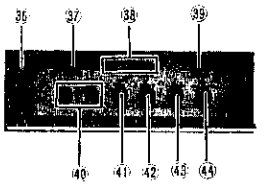


Figure 3-3 Control Parts

Rear Parts

45 Antenna Sockets
46 AUX (REC/P.B.) Input Socket
47 Hole to open player door in case of power failure.
48 Speaker Socket
49 Beat Cancel Switch
50 AC Power Supply Cord
51 Voltage Selector

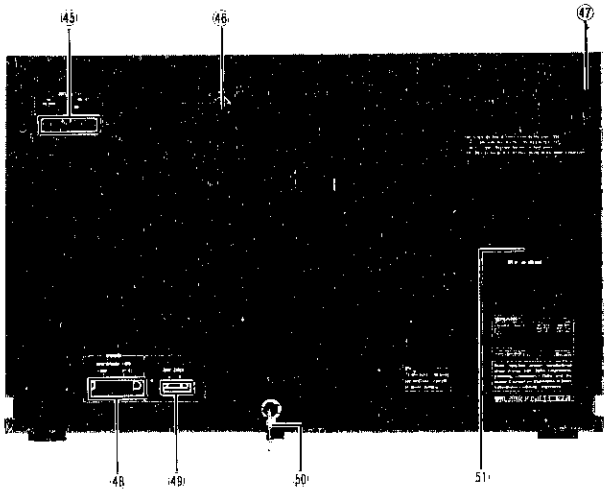


Figure 3-4 Rear Parts

<CP-V300H>

Speaker Parts

1 Tweeter
2 Woofer

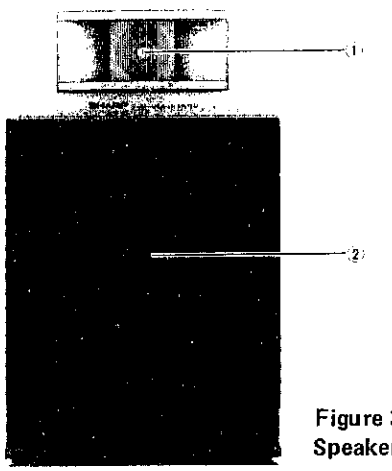


Figure 3-5
Speaker Parts

DISASSEMBLY

Cautions on Disassembly

Follow the below-mentioned notes when disassembling the set and reassembling it, to keep its safety and excellent performance:

1. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the set.
2. Take cassette tape and record out of the unit.
3. Take off nylon bands or wire holders where they need be removed when disassembling the set. After repairing the set, be sure to rearrange the leads at where they have been before disassembling.
4. Take sufficient care on station electricity of integrated circuits and other circuits when repairing.

<VZ-3000H/E>

[A] REMOVAL OF DUST COVER

1. Remove two screws from the dust cover. See Figure 4-1.
2. Pull out the dust cover in the arrow direction shown in Figure 4-1, holding its lower part.

[B] REMOVAL OF PLAYER DOOR FRONT COVER

1. Remove the dust cover in the same way as in "[A] REMOVAL OF DUST COVER."
2. Remove six hooks shown in Figure 4-2, and pull out the play door front cover (its upper half must be taken off first and then its lower half.)

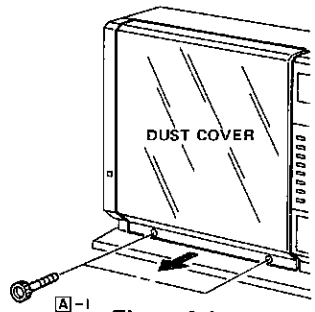


Figure 4-1

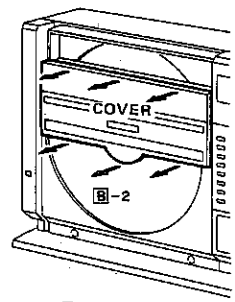


Figure 4-2

[C] REMOVAL OF REAR LID

1. Remove ten screws at the rear lid shown in Figure 4-3, and take it off.

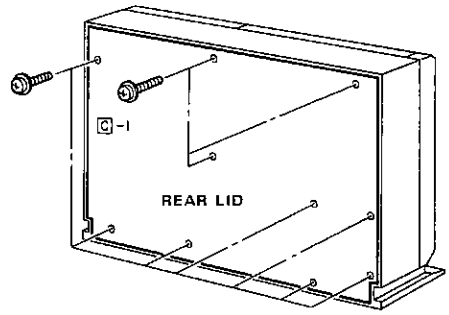


Figure 4-3

[D] REMOVAL OF CABINET

1. Remove the dust cover and rear lid in the same ways as in "[A] REMOVAL OF DUST COVER" and "[C] REMOVAL OF REAR LID."
2. Disconnect two connectors (JCN901, JCN902) shown in Figure 4-4.
3. Remove eight screws at the cabinet shown in Figure 4-4.
4. Pull out eight knobs shown in Figure 4-5, and depress the cassette eject button to open the cassette holder.
5. Push the door lever shown in Figure 4-4 with a pencil or the like, and open the door.
6. Bring down the set with its rear side facing downwards, remove eight screws from the cabinet, and take out the cabinet by holding its both sides: do not touch the player door. See Figure 4-5.

* For easier removal of the cabinet, it is advised to remove two screws at the player mechanism.

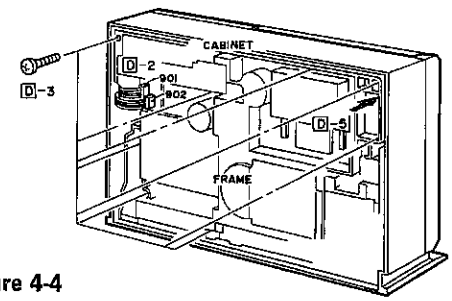


Figure 4-4

[E] REMOVAL OF PLAYER MECHANISM

1. Remove the cabinet in the same way as in "[D] REMOVAL OF CABINET."
2. Remove two holders from the P.W. Board (PWB-B2) shown in Figure 5-2.
3. Pull out two sockets (CNS13, CNS514) shown in Figure 5-1.
4. Remove six screws from the player mechanism shown in Figure 5-1, and take the mechanism off.

[F] REMOVAL OF TAPE MECHANISM

1. Remove the cabinet in the same way as in "[D] REMOVAL OF CABINET."
2. Pull out four sockets (CNS201, CNS202, CNS851, CNS852) shown in Figure 5-3.
3. Remove four screws from the tape mechanism shown in Figure 5-2 and counter belt, and take the mechanism off.

[G] REMOVAL OF CASSETTE HOLDER

1. Remove the cabinet in the same way as "[D] REMOVAL OF CABINET."

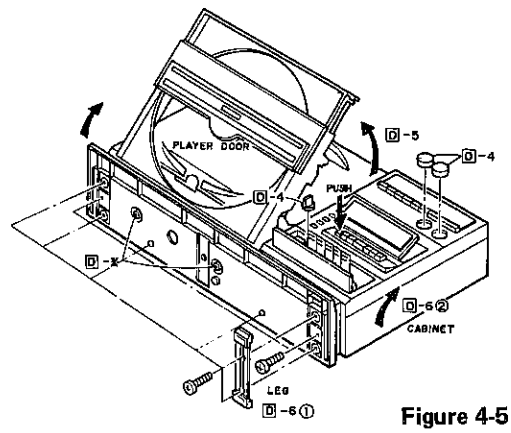


Figure 4-5

2. Detach the control indication plate shown in Figure 5-4, by removing binding agent and four hooks. Remove one screw from the cassette holder, and take the holder off.
   * At left of the cassette holder there is a spring.
   * When reassembling the control indication plate, secure it with binding agent.

H REMOVAL OF CONTROL LID

1. Remove the cabinet in the same way as in "D REMOVAL OF CABINET."
2. Push the control lid at its ▼ marked portion, and open it.
3. Push the control lid in the arrow direction shown in Figure 5-4, and remove it (first the part ① and then the part ②).
   * Remove the spring at right of the control lid.

I REMOVAL OF P.W. BOARDS

* Prior to disassembling each P.W.B., remove the cabinet in the same way as in "D REMOVAL OF CABINET."

1. Control P.W.B. (PWB-D2)
- Remove three screws from the P.W.B. shown in Figure 5-2, and take it off.

2. Tape deck P.W.B. (PWB-D5)
- Remove three sockets (CNS201, CNS202, CNS203) and four screws from the P.W.B., and take it off.

3. Tuner P.W.B. (PWB-D1)
- Remove seven function selector buttons shown in Figure 5-2 from the left side by using a screwdriver, without injuries to the buttons. Then remove two screws and dial cord.
- Remove three screws and one socket (CNS101) from the P.W.B. shown in Figure 5-3, and take it off.

4. Power P.W.B. (PWB-C2) with heat sink
- Remove one socket (CNS401) and six screws from the PWB and heat sink shown in Figure 5-3, and take the P.W.B. (with heat sink) off.

5. Power block (PWB-C1)
- Remove seven screws from the power block shown in Figure 5-3, and take it off.

Note:
* Remove two screws and five push-rivets from the insulating cover.
* When replacing the power IC or transistor, apply silicon grease between it and heat sink.

6. Speaker socket/beat cancel switch P.W.B. (PWB-C7, PWB-D6)
- Remove two screws from the bracket shown in Figure 5-3.

7. LED drive P.W.B. (WPB-C3)
- Remove one socket (CNS901) and two screws from the P.W.B. shown in Figure 5-3, and take it off.

8. Signal meter P.W.B. (PWB-C6)
- Remove one socket (CNS101) and one screw from the P.W.B. shown in Figure 5-3, and take it off.

9. Microphone jack P.W.B. (PWB-D3)
- Remove two nuts from the P.W.B. shown in Figure 5-2, and take it off.

10. Volume P.W.B. (PWB-D4)
- Remove one nut from the P.W.B. shown in Figure 5-2, and take it off.

11. Headphones jack P.W.B. (PWB-C4)
- Remove one nut from the headphone jack shown in Figure 5-2. Then take the headphone jack P.W.B. off.

12. Meter/tape indicator P.W.B. (PWB-C9, PWB-C8)
- Remove four screws from the P.W.B. shown in Figure 5-5, and take it off.

13. DIN Socket P.W.B. (PWB-D7)
- Remove two hooks from the antenna terminal bracket, shown in Figure 5-3, and take it off.

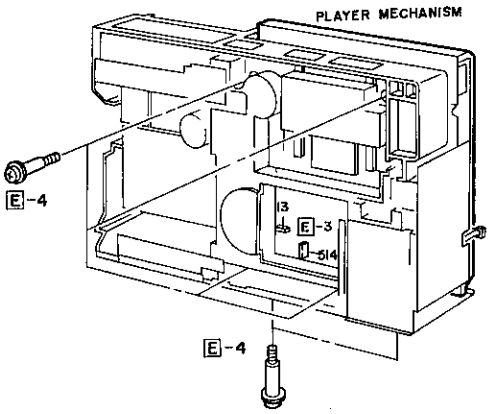


Figure 5-1

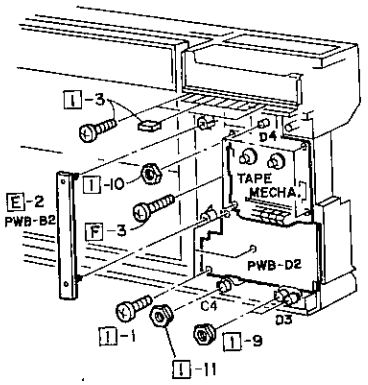


Figure 5-2

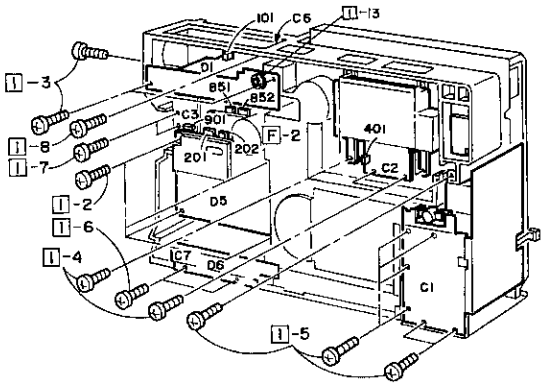


Figure 5-3

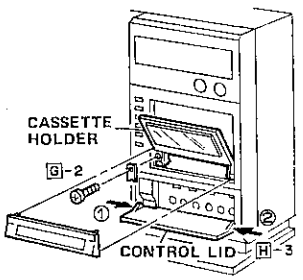


Figure 5-4

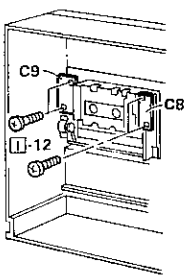


Figure 5-5

14. Tape mechanism P.W.B. (PWB-E)

- Remove the tape mechanism in the same way as in "F REMOVAL OF TAPE MECHANISM."
- Remove one screw from the record selector lever, two screws from the motor bracket and one screw from the P.W.B. shown in Figure 6-1. Then take the P.W.B. off.

15. Microcomputer P.W.B. (PWB-B1)

- Remove the player mechanism in the same way as "E REMOVAL OF PLAYER MECHANISM."
- Remove four screws from the P.W.B. shown in Figure 6-2, and take it off.

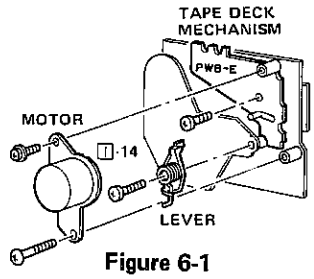


Figure 6-1

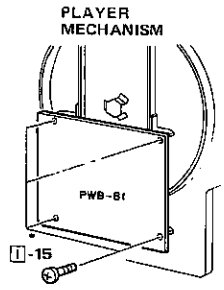


Figure 6-2

<CP-V300H>

REMOVAL OF SPEAKER BOX

1. Speaker net

- As shown in Figure 6-3, pull the net in the arrow directions in the numerical order ①, ②, ③ and ④. The parts ③ and ④ must be removed by using a bladed screwdriver.

2. Speaker

- For removal of the speaker, see Figure 20-4.

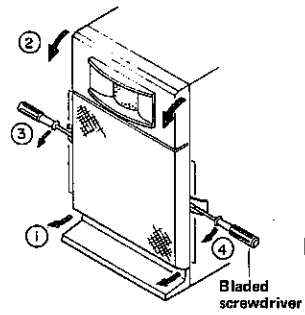


Figure 6-3

DIAL CORD STRINGING

- **Setting order:**

1. Turn the drum fully counterclockwise (at the highest frequency position), and put a hook of the spring in the hole of the drum.
2. Proceed with stringing in the numerical order from ① to ⑧.
3. After the stringing, turn the dial drive shaft fully counterclockwise (at the lowest frequency position), and align the center of the pointer to zero point of the dial scale plate.

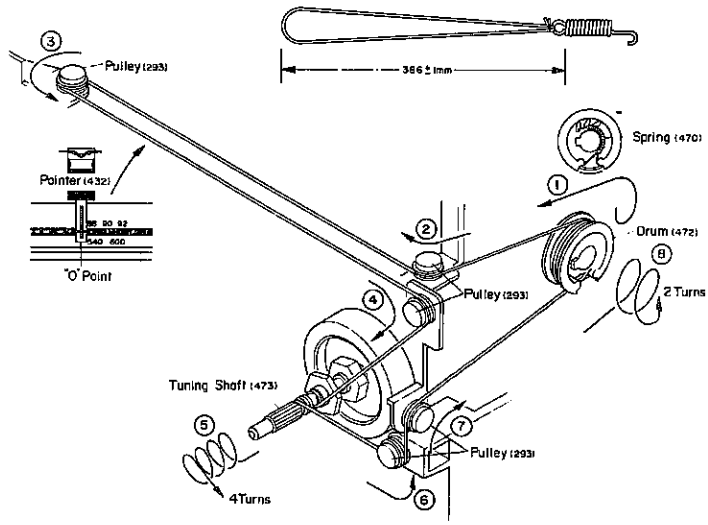


Figure 6-4

SETTING OF PLAYER WIRE

- **Setting order**

1. Set the drum at its rest position, and put a hook of the spring in the hole of the drum.
2. Stretch the wire in the numerical order from ① to ⑫.
3. After setting the wire, set the side A tonearm and side B tonearm at their lead-in positions. Refer to the instructions in "POSITIONAL ADJUSTMENT OF TONEARM LEAD-IN POSITION."

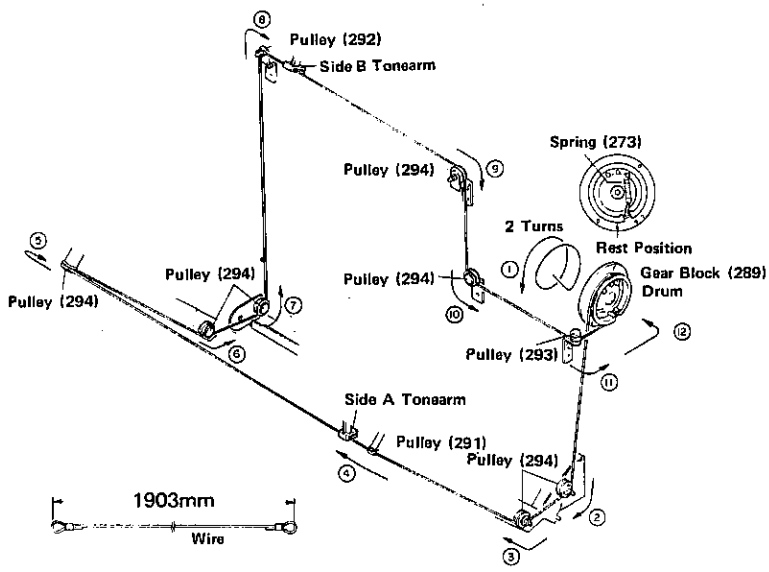
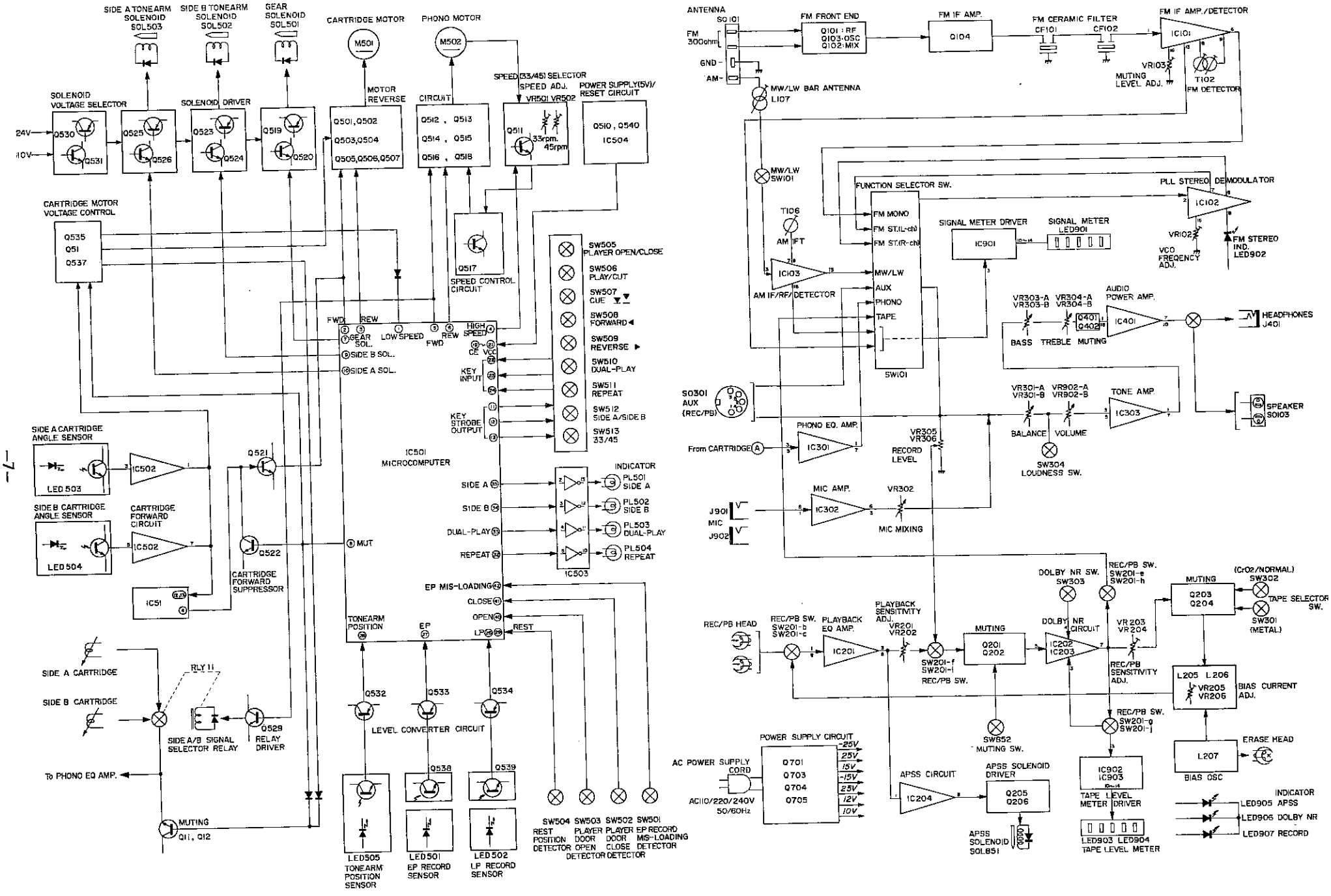


Figure 6-5



(PLAYER CONTROL SECTION)

(AUDIO SECTION)

Figure 7 BLOCK DIAGRAM

< OUTLINE OF PLAYER CONTROL SECTION >

KEY CONTROL SECTION

This section is made up of nine keys, and each key is of the lock-out type and its chattering time is limited to 40 msec.

1. **Player door open/close key**
   Key for opening and closing the player door.
2. **Play/cut key**
   Enables to begin playing a record and to stop it while it is playing – this is effective when the player door is closed. When the tonearm is at its rest position (at right for side A, or at left for side B), player operation starts when this key is pushed: when the tonearm is not at its rest position, the key functions as cut key.
3. **Tonearm cue key**
   Enables cue up and cue down motion of the tonearm while a record is being played. It is used to keep or cancel cue up mode when the set is not playing a record.
4. **Side A/side B selector key**
   Changes side A play and side B play. With this change, the tonearm moves to a lead-in position, which results in playing of the back side of a record which you are listening to.
5. **Tonearm forward key**
   Enables to move the tonearm toward the optional portion on a record (to later selections). The tonearm can move until pushing the key is stopped.
6. **Tonearm reverse key**
   Enables to move the tonearm back to the optional portion on a record (to previous selections). The tonearm can move until pushing this key is stopped.
7. **Speed (33/45) selector key**
   Enables to manually change the speed for a record.
8. **Dual play key**
   Enables to play side A (or side B) followed by automatic play of side B (or side A). The dual play is cancelled by pushing the key again.
9. **Repeat play key**
   Enables to repeat play of side A or side B. The repeat play is cancelled by pushing the key again.

SENSOR SECTION

1. **Player door open sensor**
   The skelton switch detects that the play door is opened completely.
2. **Player door close sensor**
   The skelton switch detects that the player door is closed completely.
3. **EP record misload sensor**
   The microswitch finds an error that an EP record is loaded in the LP record holder.
4. **Tonearm rest position sensor**
   The skelton switch detects that the tonearm is at its rest position (at right for side A, at left for side B).
5. **Tonearm position sensor**
   When the tonearm is out of its rest position, the photo-sensor produces four pulses to detect how far from the rest position the tonearm is situated.
6. **EP/LP sensor**
   With the player door closed, the photosensor works to detect that an EP or LP record is loaded or that neither is loaded.

INDICATOR SECTION

1. **Side A play indicator**
   Lights up when side A play is instructed by the side A/side B selector key and when side A of a record is being played.
2. **Side B play indicator**
   Lights up when side B play is instracted by the side A/side B selector key and when side B play of a record is being played.
3. **Dual play indicator**
   Lights up when dual play is instructed by the dual play key and when side A (or side B) of a record is played followed by automatic playing of side B (or side A).
4. **Repeat play indicator**
   Lights up when repeat play is instructed by the repeat play key and when a record is played repeatedly. Each indicator lights up when it receives "high" level signal from the microcomputer.

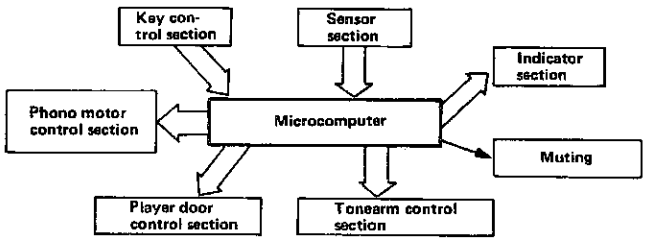


Figure 8-1

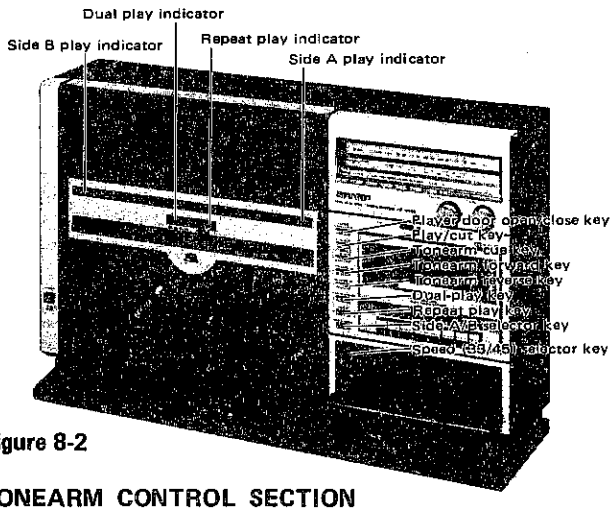


Figure 8-2

TONEARM CONTROL SECTION

Forward/reverse motion of the tonearm and also its up/down motion are controlled by the microcomputer's signals to be applied to the cartridge motor and tonearm solenoid.

- Output signal (D12) for side B tonearm solenoid: the tonearm moves down when the signal is at "high" level.
- Output signal (D11) for side B tonearm solenoid: the tonearm moves down when the signal is at "high" level.
- Output signal (D3) for cartridge motor low speed rotation: the motor rotates at low speed when the signal is at "low" level.
- Output signal (D4) for cartridge motor forward rotation: the tonearm rotates forwards when the signal is at "low" level.
- Output signal (D5) for cartridge motor backward rotation: the tonearm rotates backwards when the signal is at "low" level.

PLAYER DOOR CONTROL SECTION

Opening and closing of the player door is controlled by the microcomputer's signals to be applied to the gear changeover solenoid (to change the gear blocks) and to the cartridge motor (in the tonearm control section).

- Output signal (D9) for gear changeover solenoid: the gear blocks are changed when the signal is at "high" level.

- Output signal (D4) for cartridge motor forward rotation: the cartridge motor rotates forwards when the signal is at "low" level (with the player door opened).
- Output signal (D5) for cartridge motor backward rotation: the cartridge rotates backwards when the signal is at "low" level (with the player door closed).

* The cartridge motor rotates at any time at high speeds.

PHONO MOTOR CONTROL SECTION

Side A or side B play is selected by the microcomputer's signals to be applied to the phono motor: the motor rotates forwards for side A play, and rotates backwards for side B play.

- Output signal (D6) for phono motor high-speed rotation: the motor rotates at high speeds (45 r.p.m.) when the signal is at "low" level.
- Output signal (D7) for phono motor forward rotation: the motor rotates forwards when the signal is at "low" level.
- Output signal (D8) for phono motor backward rotation: the motor rotates backwards when the signal is at "low" level.

MUTING

Muting occurs when the output signal (D10) from the microcomputer is at "high" level.

< FUNCTIONS OF PLAYER CONTROL SECTION >

WITH POWER ON

The microcomputer starts operating when the power switch is turned on, and the VZ-3000H/E is first set as follows:

1. The tonearm returns to its rest position if it has been at the other position.
2. Side A of a record is ready to be played when the player door has been locked completely.
3. When the player door has been closed, the microcomputer detects whether there is a record in the compartment or not. If it is loaded, its side A is ready to be played: in the case of EP record, the speed is set at 45 r.p.m. and in the case of LP record it is set at 33 r.p.m. If an EP record is loaded by mistake in the LP record holder, the door is opened, and side A of a record is ready to be played.

DOOR OPEN OPERATION

When the door has been closed, it opens when the player door open/close key is operated or when the microcomputer finds that an EP record is loaded in the LP record holder.

1. When the tonearm is out of its rest position with the door closed, it returns to the rest position, then the door is allowed to open.
2. All the indicators are put off while the door is opening. When the opening completes, side A of a record is allowed to be played.

* Any key operation is impossible while the door is opening.

DOOR CLOSE OPERATION

When the door has been opened, it is closed when the player door open/close key is operated: it is impossible when the tonearm is moving forwards or backwards, and when the microcomputer detects that an EP record is loaded in the LP record holder.

1. While the door is closing, if the microcomputer detects EP record misloading, the door stops and intends to open again.
2. When the door is closed completely, the microcomputer makes the tonearm return to its rest position if it has been at the other position. The microcomputer also detects whether a record is loaded or not and, if loaded, playing starts: in the case of EP record, the speed is set at 45 r.p.m., and in the case of LP record, the speed is set at r.p.m. All the indicators go off where no record is loaded. If an EP record is misloaded in the LP record holder, the door, if closed, will open.

PLAY START OPERATION

When a record has been loaded with the player door opened, the player door is closed when the player door open/close key is operated, then playing the record starts automatically. Where the tonearm is at the rest position and a record has been loaded with the player door closed, playing the record starts when the play/cut key or tonearm forward key is pushed. When playing starts, the tonearm moves at high speeds toward its lead-in position according to the microcomputer's signals to decide the rotational direction and speed of the phono motor; then the tonearm moves down to the record (cue up/down operation).

* At the lead-in position, the tonearm moves forwards when the tonearm forward key is pushed.

PLAY CUT OPERATION

Play cut operation is allowed when the tonearm is away from its rest position with the player door closed. It starts when the play/cut key is operated or when the player door open/close key is pushed to open the door.

1. All the indicators other than side A or side B indicator go off while the play cut operation is performed.
2. The play cut operation makes the tonearm move up if it has been down on the record and also makes the phono motor stop to rotate.

TONEARM FORWARD OPERATION

When the player door is opened:

The tonearm moves forwards when the tonearm forward key is pushed.

1. When the tonearm forward key is pushed, the tonearm advances to EP lead-in position, and moves down to the record surface.
   However, if the tonearm has been inside the EP lead-in position, it remains where it is when the tonearm forward key is pushed and then moves down to the record surface.

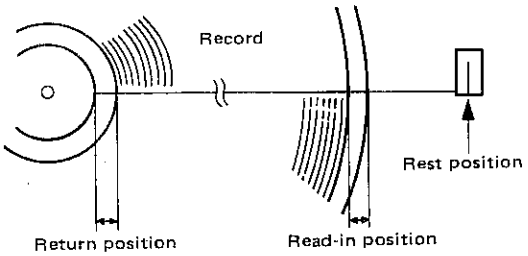


Figure 9

When the player door is closed:

The tonearm moves forwards when the tonearm forward key is pushed, provided that a record is loaded and that the tonearm is not at its returning process.

1. When the tonearm has been at the rest position, pushing the tonearm forward key makes the tonearm move up and brings it to its lead-in position. After the lead-in position, the tonearm forward speed slows down but the tonearm continues to move inwards until pushing the key is stopped.
2. After the forward operation completes, the tonearm perform, cue up or down operation according to the setting of tonearm cue key.
3. If the tonearm reaches its return position with a continuous push of the tonearm forward key, it automatically starts to return toward the rest position.

TONEARM BACKWARD OPERATION

The tonearm moves backwards when the tonearm reverse key is pushed, provided that the tonearm is away from the rest position and the player door is closed.

1. Where the tonearm is placed between the rest position and lead-in position, play operation is cut when the tonearm reverse key is pushed.
2. Where the tonearm is at any place between the lead-in position and return position, the tonearm moves backwards when the tonearm reverse key is pushed.
3. While the tonearm is moving down, pushing the tonearm reverse key makes the tonearm move up and then backwards at low speed. The backward motion continues until pushing the key is stopped.
4. After the backward operation completes, the tonearm performs cue up or cue down operation according to the setting of the tonearm cue key.
5. If the tonearm moves back until it reaches the place between the lead-in position and rest position, the set gets in repeat play mode so that the tonearm again moves toward the lead-in position of the same record as previously played. Then the tonearm performs cue up or cue down operation according to the setting of the tonearm cue key.

CUE UP/CUE DOWN OPERATION

Record play stops temporarily when the tonearm cue key is pushed, and it resumes from that position when the key is again pushed. Temporary stop of record play is called cue up operation while its restarting is called cue down operation.

Cue up operation changes to cue down operation and vice versa each time the tonearm cue key is pushed.

- **Cue down operation**

1. Cue up state is cancelled and the side A or side B play indicator goes off.
2. Cue down operation lasts 1 second, and 2 seconds later the muting is cancelled.
3. If the tonearm cue key is pushed while the cue down operation is performed, cue up operation starts.

- **Cue up operation**

1. Cue up operation starts, and the side A or side B play indicator blinks (with approx. 3 Hz signal).
2. Cue up operation lasts 1 second. Muting occurs for 290 msec before cue up operation has started.
3. It is not possible to push the tonearm cue key while cue up operation is performed, thus no cue down operation being allowed.

SIDE A/B SELECTION

Side A play or side B play is selected by pushing the side A/B selector key. During cue down operation, this selection starts after the tonearm has been raised up.

1. The tonearm returns to the rest position and then moves into the lead-in position of the back side of the record you are listening to. Then the tonearm will perform cue up or cue down operation according to the setting of the tonearm cue key.
2. While the tonearm is returning to the rest position, the play indicator blinks (with approx. 3/2 Hz signal) to show that the back side of the record you are listening to will next begin playing from the beginning.
3. There is a time delay of about 1 second when the phono motor changes its direction: about 1 second after this change, the motor stops and then restarts rotating in the reverse direction. And it takes about 1 second for the motor to be set at its normal r.p.m.
   These time delays are to keep a safe side A/B selection of a record to be played.

AUTO RETURN FUNCTION

When side A or side B play is finished, the tonearm is lifted off the record, it goes back to its rest position and the record stops revolving. If the tonearm has been in cue down position, it performs cue up operation and returns to its rest position.

1. If only the repeat play key has been pushed, one side of the record is played repeatedly.
   If both the repeat play and dual play keys have been pushed, both sides of the record are played repeatedly.
2. For one side repeat play, when side A (or B) is finished, the tonearm returns to the rest position and the same side begins playing again from the beginning. For dual-side repeat play, when side A (or B) is finished, the tonearm returns to the rest position and the side B (or A), or the back side of the record you are listening to, begins playing from the beginning: if the tonearm cue key has been pushed, the tonearm performs cue up operation before playing the back side has started.
3. Unless both the repeat play and dual play keys have been pushed, the tonearm cue key once pushed is ineffective during the auto return operation.
4. During the auto return operation in one side repeat play, the play indicator blinks (with approx. 3/2 Hz signal) to show that the same side as you are listening to will begin playing again from the beginning: during the auto return operation in dual side repeat play, the play indicator blinks (with 3/2 Hz signal) to show that the back side of the record you are listening to will begin playing.

SIGNALS FROM SENSORS TO MICROCOMPUTER

1. **Detection of tonearm position**
   Performed by using SW504, LED505 and a gear drum. SW504 is the sensor which detects that the tonearm is at the rest position. LED505 is the sensor which detects that the tonearm is at the lead-in or return position. The outputs from these sensors are shown in Figure 11-1, which are applied to pin (29) (R13) and pin (28) (R12) of the microcomputer.
2. **Detection of EP/LP record loading or no loading**
   LED501 and LED502 sense whether an EP or LP record is loaded or not loaded, and their outputs which are shown in Table 10-1 are applied via Q538 (for EP record) or Q539 (for LP record) to pins (27) and (26) of the microcomputer.

Table 10-1

Load condition	EP record detection (pin (29))	LP record detection (pin (26))
No loading	H	H
Mis-loading	H	L
EP record loaded	L	H
LP record loaded	L	L

Note:
The content of "Mis-loading" in this table is different from that of "3. EP mis-loading detection" next described.

3. **EP mis-loading detection**
   If an EP record is loaded by error into the LP record holder, SW501 turns on and its output signal (at "low" level) is applied to pin (42) (D_2) of the microcomputer.
4. **Player door close detection**
   Closing the player door causes SW502 to turn on, and its output signal (at "low" level) is applied to pin (41) (D_1) of the microcomputer.

5. Player door open detection

Opening the player door causes SW503 to turn on, and its output signal (at "low" level) is applied to pin (40) (D_0) of the microcomputer.

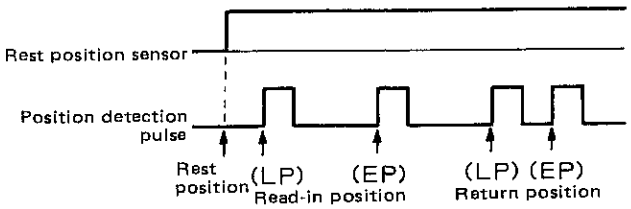


Figure 11-1

PLAYER CONTROL KEYS OPERATION TABLE

Effective range of each player control key is variable according to which mode the set is being situated in, which is shown in Table 11-1.

Note:

Mark ○; With each key pushed, the corresponding mode is obtained.
Mark △; With each key pushed, the corresponding mode is obtained but with other mode accompanied.
Mark *; With the reverse key pushed, the tonearm moves backwards only after it has moved forwards, when the player cord door is opened.

Table 11-1

Key code	1	2	3	4	5	6	7	8	9
Key / Mode	Dual play	Side A/ side B	Repeat play	Cue up/ cue down	Play/cut	Forwarded	Reverse	33/45	Player door open/ close
Door is opened.	○	○	○	○		△	△*		△
Door is closing.	○	○	○	○					△
Door is closed. (Record loaded, tonearm at rest position)	○	○	○	○	△	△		○	△
Tonearm is placed between rest position and lead-in position.	○	△	○	○	△	△	△	△	△
During playing.	○	△	○	△	△	△	△	△	△
During return.	○	○	○		△			△	△
During stop.									△
During cue up.	△	△	○		△	△	△	△	△
During cue down.	○	△	○	△	△	△	△	△	△
Door is opening.									
Door is closed. (Record not loaded, tonearm at rest position)									△

<CIRCUITS AROUND THE MICROCOMPUTER>

POWER CONTROL CIRCUIT

This circuit consists of ZD501, Q510, Q540 and IC504, and when the power switch is turned on, it controls the power supply (5 V) to be less than 10 msec for its rising, so that the microcomputer is automatically reset.

The 12 V line is controlled by ZD501, Q510 and Q540 to produce a power of more than 6 V, which is then applied to pin (1) of IC504. IC504 is to produce a regulated power of 5 V.

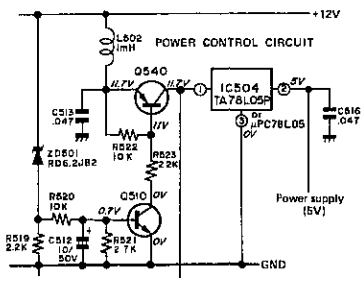


Figure 11-2

CARTRIDGE MOTOR HIGH SPEED/LOW SPEED SELECTOR CIRCUIT

This circuit is made up of Q51, Q535 and Q537, to which is applied the signal from pin (1) (D_3) of the microcomputer. When the signal from the microcomputer is at "high" level, it causes Q537 to turn on and Q51 to turn off, and the resultant voltage (11V) is applied to the cartridge motor to allow it to rotate at high speed. On the other hand, when it is at "low" level, it causes Q537 to turn off and Q51 to turn on, and the resultant voltage (6V) is applied to the cartridge motor to allow it to rotate at low speed.

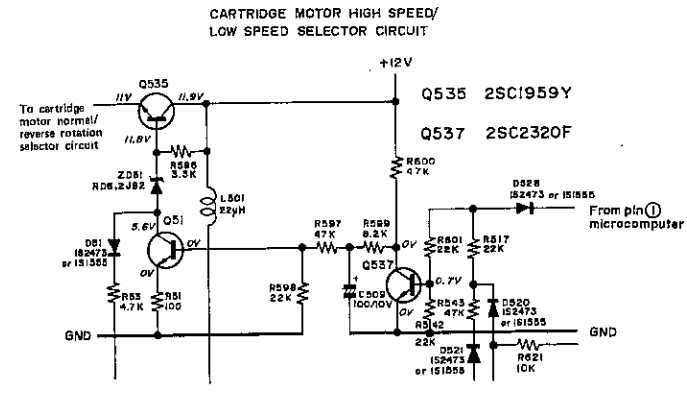


Figure 11-3

CARTRIDGE MOTOR NORMAL/REVERSE ROTATION SELECTOR CIRCUIT

This circuit is made up of Q501 to Q504, Q506 and Q507, and changes the power supply to make the cartridge motor rotate in normal of reverse direction.

1. **To make the motor rotate in normal direction (with player door open operation, and tonearm backward operation):**
   In this case, the output from pin ② of the microcomputer becomes "low" level to turn off Q507. With Q507 turned off, Q506 and Q501 turn on so that pin ① and pin ② of the motor are negative and positive respectively, thus allowing the motor to revolve in normal direction.
2. **To make the motor rotate in reverse direction (with player door close operation, and tonearm forward operation):**
   In this case, the output from pin ③ of the microcomputer becomes "low" level to turn off Q503. With Q503 turned off, Q504 and Q502 turn on so that pin ① and pin ② of the motor are positive and negative respectively, thus allowing the motor to revolve in reverse direction.

CARTRIDGE MOTOR STOP CIRCUIT

When both pins ② and ③ of the microcomputer are at "high" level, Q505 turns on. With Q505 turned on, Q501 and Q502 turn on to get shorted the motor terminals, the motor thus stopping immediately.

SOLENOID DRIVE CIRCUIT

This circuit consists of Q519, Q520, Q523 to Q526, Q530 and Q531, and drives the solenoids shown below.

1. **Gear solenoid (SOL501)**
   When the player door open/close key has been pushed, the output from pin ⑦ of the microcomputer becomes "high" level to turn on Q502 and Q519. Then Q531 and Q530 turn on to charge C504 up, and the resultant power of 24 V attracts the gear solenoid.
   Thereafter this attraction continues with the power of 10 V.
2. **Side A tonearm solenoid (SOL503)**
   When the tonearm cue key for the side A has been pushed the output from pin ⑩ of the microcomputer becomes "high" level to turn on Q526 and Q525. The same operation as in 1 above occurs thereafter.
3. **Side B tonearm solenoid (SOL502)**
   When the tonearm cue key for the side B has been pushed, the output from pin ⑨ of the microcomputer becomes "high" level to turn on Q524 and Q523. The same operation as in 1 above occurs thereafter.

CARTRIDGE ANGLE DETECTOR/CARTRIDGE FORWARD CIRCUIT

This circuit is composed of photo sensor LED503 for side A (or LED504 for side B), IC51, IC502, Q51, Q521, Q522, Q535 and Q537, and controls the cartridge forward operation when a record is playing.

At the start of playing the side A of a record, the tonearm is kept slantwise the angle of which is detected by LED503 (now there is no light emission to the LED503), and the resultant signal ("high" level) is applied to pin ③ of IC502. Then the signal goes out of pin ① of IC502 and is fed to the oscillator circuit (IC51) and cartridge motor voltage control circuit (Q51, Q535 and Q537).

The "high" level signal applied to the oscillator circuit goes out of pin ④, which is a pulse shown in Fig. 12-3 Ⓑ to drive Q521, the output of which is reversed in polarity to be fed to the cartridge motor normal/reverse rotation selector circuit.

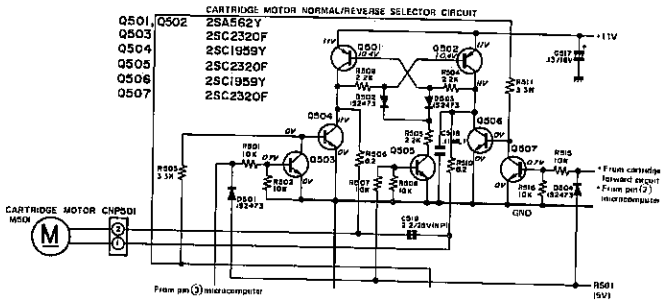


Figure 12-1

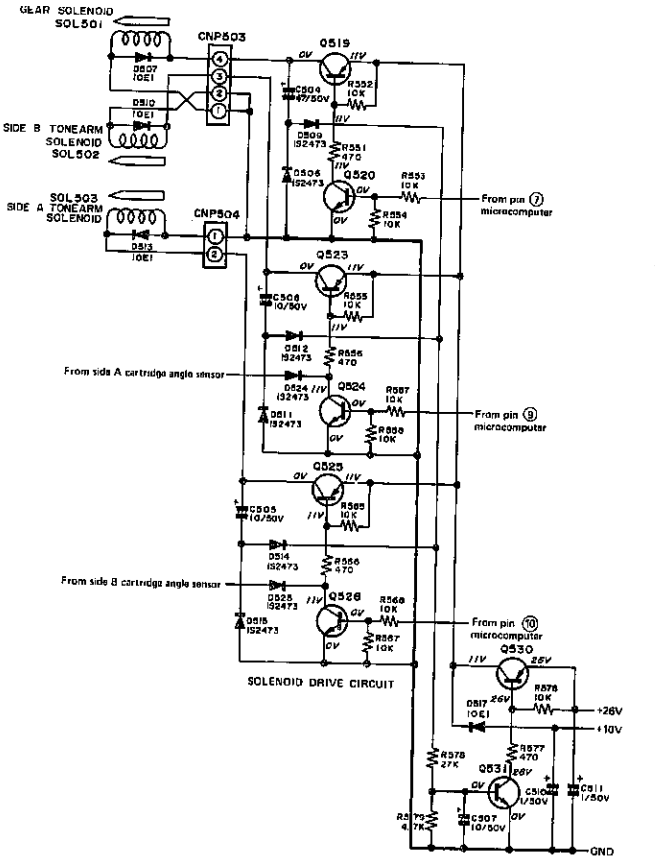


Figure 12-2

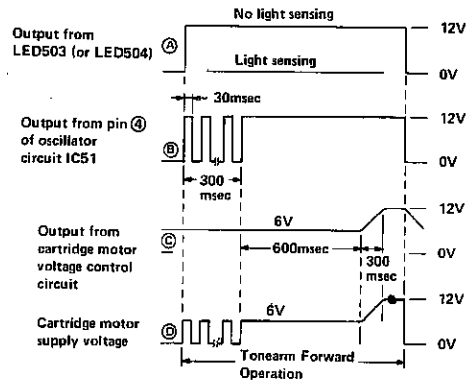


Figure 12-3

The oscillation takes place between pins ① and ② of 2 NAND gate circuit, and its pulse time (30 msec) is decided by C51 and R58, and its duration (300 msec) is decided by C54 and R56.

The "high" level signal applied to the cartridge motor voltage control circuit turns on Q537 and about 900 msec later (this time is decided by R599 and C509) it turns off Q51. Therefore as shown in Fig. 12-3 Ⓒ, a power of 12 V is fed to the voltage control circuit when Q51 is turned off while it is limited to 6 V by ZD51 when Q51 is turned on. In this way, the voltage to be fed to the cartridge motor is stabilized as shown in Fig. 12-3 Ⓓ, so that the motor rotation is quiet with no vibration and noise.

As a result of forward rotation of the cartridge motor, when the tonearm advances to reach the place where its turning angle is horizontal, a light is emitted to LED503, whose output is at "low" level and causes the cartridge motor to stop.

If there is something accidental to make slantwise the cartridge to cause its erroneous angle to be detected by LED503, Q522 turns on to stop the cartridge forward motion.

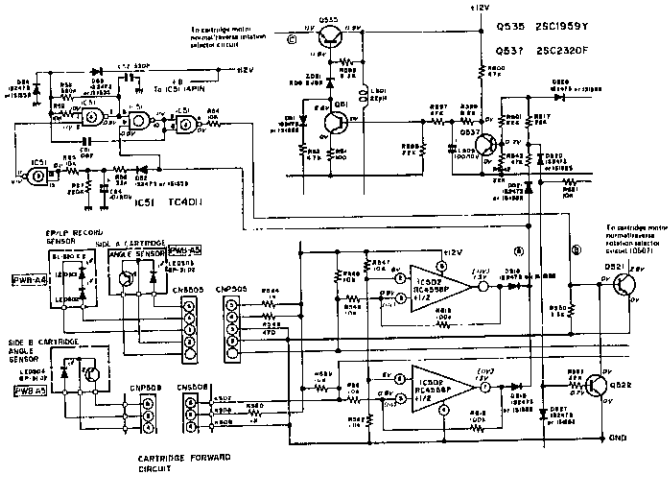


Figure 13-1

SIDE A/SIDE B SIGNAL SELECTOR CIRCUIT

This circuit consists of Q529 and RLY11.

When the side B selector button is pushed, the output from pin ⑤ of the microcomputer becomes "high" level to turn on Q529. With Q529 turned on, there is current to run in RLY11 so that side A play is changed to side B play. When the side A selector button is pushed, Q529 turns OFF.

MUTING CIRCUIT

This circuit is made up of Q11 (or Q12). When the output from pin ⑧ of the microcomputer is at "high" level, Q11 (or Q12) turns on to cut off the signal which is applied to the side A (or side B) cartridge. This muting occurs unless the set is playing.

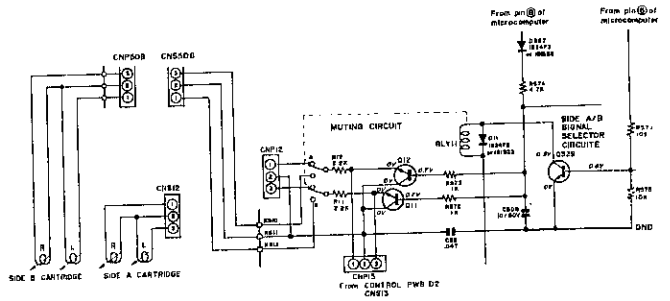


Figure 13-2

INDICATOR DRIVE CIRCUIT

This circuit is made up of inverter IC503.

When any of the side A/side B selector, dual play and repeat keys is pushed, the output from the microcomputer becomes "high" level to be applied to the inverter IC503. Here it is inverted to be "low" level signal to light up the indicator corresponding to one of these buttons which has been pushed.

PHOTO SENSOR LEVEL CONVERTER CIRCUIT

This circuit is made up of Q532, Q533 and Q534, and the signal from each sensor is here so processed that it is shaped in waveform and changed in level to be applied to the microcomputer.

1. **Tonearm position detection**
   When an EP or LP record is at the lead-in position or return position, LED505 and gear drum work together to detect this, and the resultant signal is applied to Q532 to turn it on, so that there is a pulse which is at "high" level (at 5 V) to arrive at pin ㉘ of the microcomputer.
2. **Record detection**
   - If an EP record is loaded, the sensor stops light emission to Q538, and so Q533 turns off. With Q533 turned off, the input signals to pin ㉗ and pin ㉖ of the microcomputer are at "low" level and "high" level respectively, so that the microcomputer can tell that an EP record has been loaded – see Table 10-1.
   - If an LP record is loaded, the sensor stops light emission to Q538 and Q539, and so Q533 and Q534 turn off. With Q533 and Q534 turned off, the input signals to pin ㉗ and pin ㉖ of the microcomputer are both at "low" level, so that the microcomputer can tell that an LP record has been loaded – see Table 10-1.

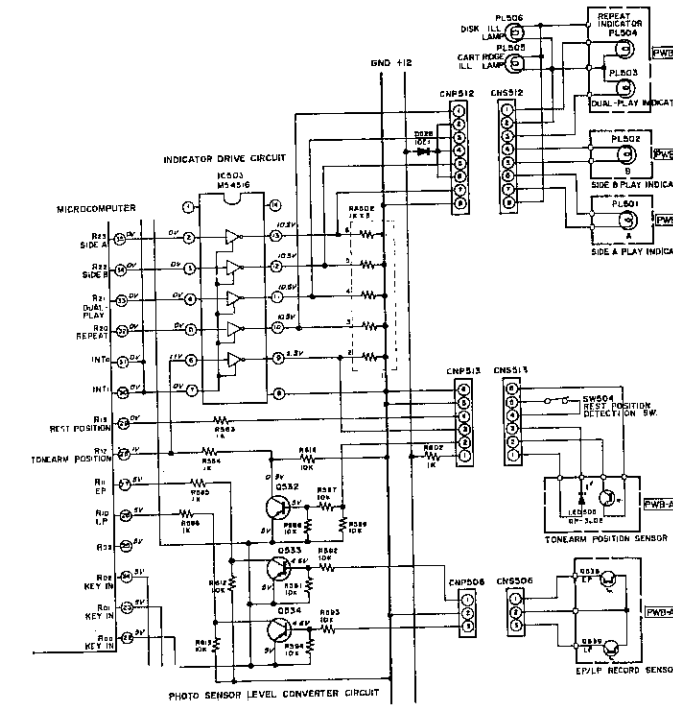


Figure 13-3

- When no record is loaded, the sensor sends its light to Q538 and Q539, and so Q533 and Q534 turn on.
  With Q533 and Q534 turned on, the input signals to pin ㉗ and ㉖ of the microcomputer are both at "high" level, so that the microcomputer can tell that no record has been loaded – see Table 10-1.

PHONO MOTOR CONTROL CIRCUIT

This circuit consists of Q511 to Q518 and controls a proper rotation of the phono motor.

1. Speed (33/45 r.p.m.) selection

When the speed is set at 33 r.p.m., the output from pin ④ of the microcomputer becomes "high" level to turn on Q511, thus the phono motor revolving at the speed of 33 r.p.m. When the speed is set at 45 r.p.m., the output from pin ④ of the microcomputer becomes "low" level to turn off Q511, thus the phono motor revolving at the speed of 45 r.p.m.

The speed is adjustable with VR501 (for 33 r.p.m.) and VR502 (for 45 r.p.m.).

2. Normal/reverse rotation selection

- Normal rotation:

When the side A is playing, the output from pin ⑤ of the microcomputer is at "low" level to turn off Q518 and turn on Q516 and Q514. Then pin ② and pin ① of the phono motor are positive and negative respectively, so that the phono motor revolves in normal direction.

- Reverse rotation:

When the side B is playing, the output from pin ⑥ of the microcomputer is at "low" level to turn off Q512 and turn on Q513 and Q515. Then pin ② and pin ① of the phono motor is negative and positive respectively, so that the phono motor revolves in reverse direction.

3. Speed control

There may be a variation of the motor rotational speed, and this causes voltage at the base of Q517 to change in accordance with such amount of the variation. Thus this Q517 (of Darlington connection type) controls a proper voltage to apply it to the phono motor, with its speed being kept steady.

If, for instance, the motor speed is higher than specified, voltage at the base of Q517 decreases while its collector voltage increases, resulting in that voltage to be applied to the phono motor decreases so that the motor speed grows down to the specified one.

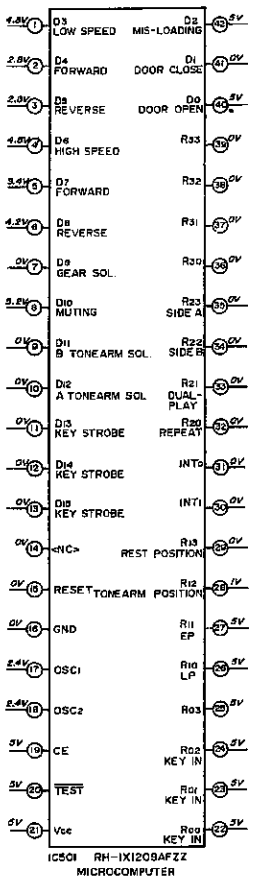


Figure 14-1

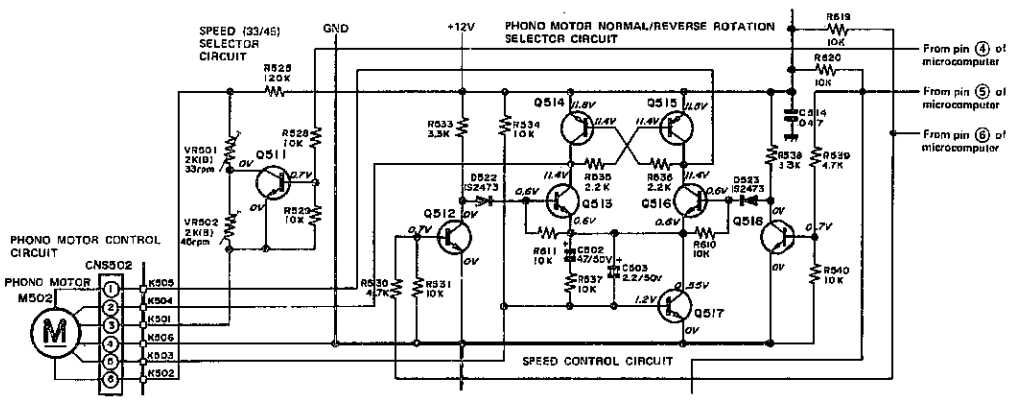


Figure 14-2

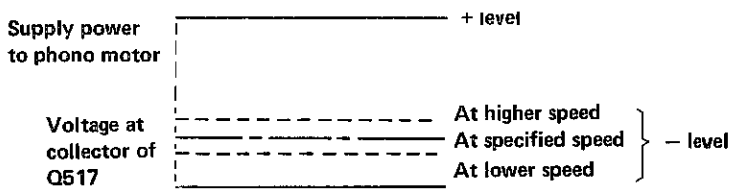


Figure 14-3

ADJUSTMENT OF TAPE MECHANISM

PINCH ROLLER PRESSURE CHECK

1. Place the unit in PLAY mode.
2. Push the pinch roller, at the point shown in Fig. 14-4, by using a tension gauge (500 gr.) so that it will come off the capstan. Then, slowly release the tension until the pinch roller hits the capstan again (i.e., the pinch roller is about to rotate again). Check, then, the tension gauge is reading 295 gr. to 365 gr.
3. If the reading is outside the range of 295 gr. to 365 gr. replace the pressure spring of the pinch roller.

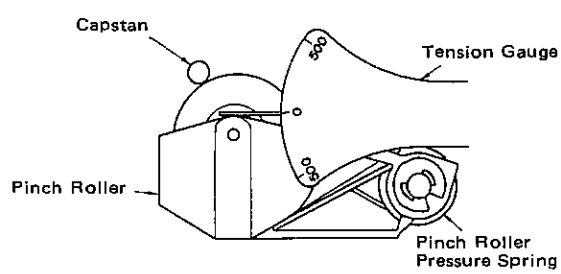


Figure 14-4

TORQUE CHECK AT PLAY, FAST FORWARD AND REWIND MODES

Put a torque meter cassette in the cassette compartment of the set, and see that the measured torque in each mode is normal as follows:

Table 15-1

Mode	Torque meter cassette	Measured torque
Playback	TW-2111	35 ~65 gram·cm
Fast-forward	TW-2231	90 ~135 gram·cm
Rewind	TW-2231	90 ~135 gram·cm

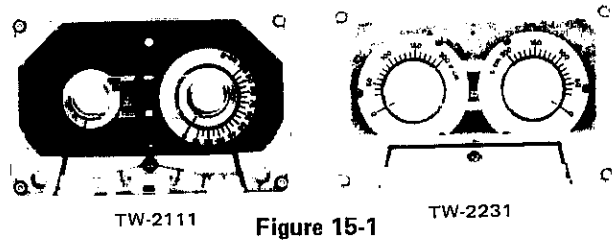


Figure 15-1

GAP CHECK OF PINCH ROLLER LEVER

Place the set in play mode, and see that the pinch roller lever moves to create the gaps Ⓐ, Ⓑ and Ⓒ as shown in Fig. 15-2.

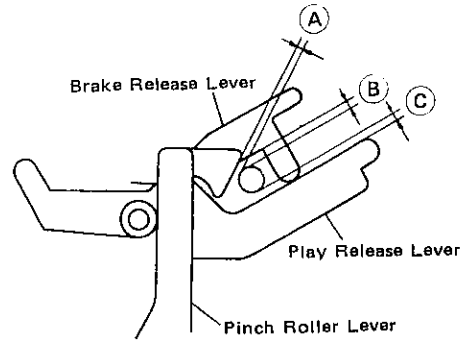


Figure 15-2

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

As shown in Fig. 15-3, make connection of instruments, and adjust the head azimuth adjusting screw so that VTVM reading is maximal, with no phase difference between channels.

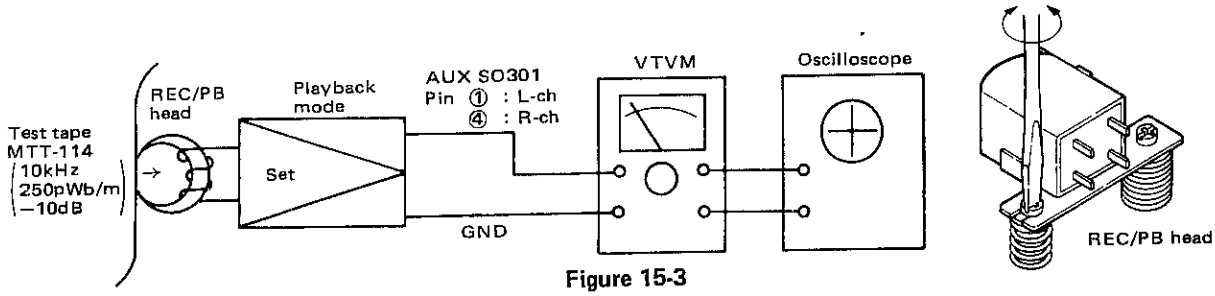


Figure 15-3

TAPE SPEED ADJUSTMENT

As shown in Fig. 15-4, make connection of instruments, put a screwdriver (for high-frequency use) into the hole of the motor, and adjust the variable resistor so that the output frequency is 2970 to 3000 Hz on frequency counter.

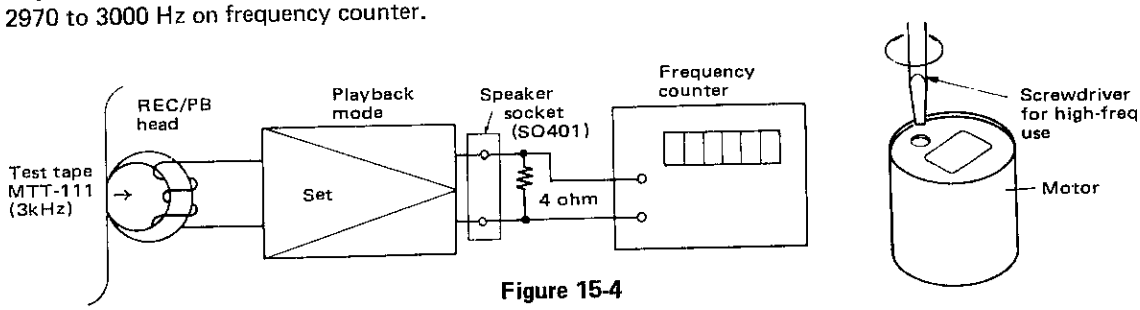


Figure 15-4

ADJUSTMENT OF PLAYER MECHANISM

POSITIONAL ADJUSTMENT OF PLAY DOOR OPEN/CLOSE GEAR (DOOR ARM OPERATING LEVER) AND PLAYER DOOR ARM

1. Keeping the player door open, bring the player door arm close to the player door open/close gear, then temporarily fit this gear to the shaft with screw. Then see that there is no thrust clearance at both sides.
2. Bring the player door fully toward arrow Ⓐ direction, and secure the screw firmly.

* In the case of replacing the door arm operating lever assembly:
After the procedure of 2 above, close the door and lock it — by pushing up the right door lock lever, or pushing down the left door lock lever. Then fix the door arm operating lever with two screws, and secure them together with adhesives (instant-dry type).

3. Opening and closing the player door, see that the player door open/close detector switch is normal to detect the open/close operation. If not, see "POSITIONAL ADJUSTMENT OF PLAYER DOOR CLOSE DETECTOR SWITCH" and "POSITIONAL ADJUSTMENT OF PLAYER DOOR OPEN DETECTOR SWITCH".

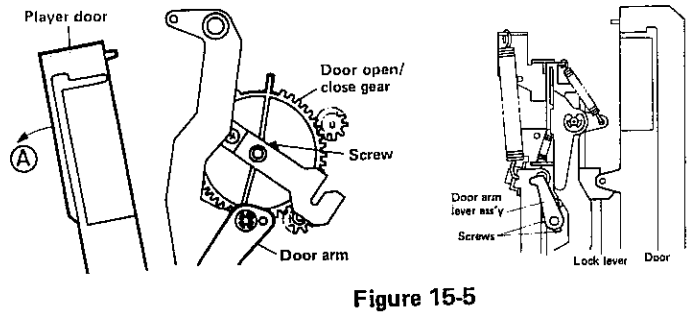


Figure 15-5

POSITIONAL ADJUSTMENT OF PLAYER DOOR CLOSE DETECTOR SWITCH

1. Close the player door, and bring the cushion rubber, at the door left-side arm, to the switch bracket.
2. Turn the player door close detector switch in arrow Ⓐ direction shown in Fig. 16-1, and stop it at where it is about to switch on.

POSITIONAL ADJUSTMENT OF PLAYER DOOR OPEN DETECTOR SWITCH

1. Fully open the player door by using the player door open lever.
2. Turn the player door open detector switch in arrow Ⓑ direction shown in Fig. 16-1, and stop it at where it is about to switch on.

POSITIONAL ADJUSTMENT OF REST POSITION DETECTOR SWITCH

1. Push the gear block's center gear in arrow Ⓐ direction shown in Fig. 16-2, and turn the drum so that its point Ⓑ shown in Fig. 16-2 is in the position shown in Fig. 16-3.
2. Stop the gear block's center gear to put the drum out of rotation.
3. Turn the rest position detector switch in arrow Ⓒ direction shown in Fig. 16-2, and stop it at where it switches on touching the drum projection.
4. Returning the tonearm to the rest position with the power switch turned on, see that there is a clearance of 1 mm between the cartridge and the cabinet (chassis) surface.

POSITIONAL ADJUSTMENT OF SIDE A/SIDE B TONEARM SOLENOID

1. Loosen the screws at the tonearm solenoid, and put it in attraction.
2. Secure the screws so that there is a clearance of 1 to 1.5 mm at the port Ⓐ shown in Fig. 16-3, between the tonearm guide and arm guide operating level: then, the arm Ⓑ must be at down position as shown in Fig. 16-3.
3. Putting the solenoid in attraction with the power switch turned on, see that up/down motion of the arm is normal.

POSITIONAL ADJUSTMENT OF GEAR SOLENOID

1. Loosen the screws at the gear solenoid, and put it in attraction.
2. Secure the screws so that the center gear and small gear are fully engaged together (if not so, turn the warm gear), with the center gear going down to the full extent.
3. Putting the solenoid in attraction with the power switch turned on, see that the center gear is fully engaged with the drum and player door open/close gear.

POSITIONAL ADJUSTMENT OF TONEARM LEAD-IN POSITION

1. Load an LP record in the set, with the power switch turned on.
2. Push the tonearm cue key.
3. Push the player door open/close key, then see that the player door is closed and the tonearm is moving from the rest position to the LP lead-in position.
4. Loosen the screws at the side A or side B tonearm clamper to allow motion of the tonearm.
5. Secure the screws so that the cartridge stylus tip is at the central part of the lead-in position.
6. Again push the tonearm cue key to lower the cartridge, then see that the stylus tip is moving down to the central part of the lead-in position. If not, push the play/cut key to cause the tonearm to return to the rest position, then repeat steps 2 to 6 above.

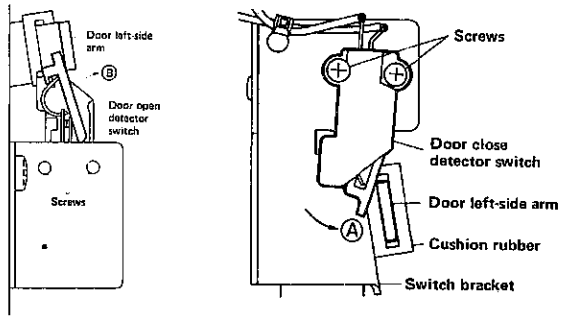


Figure 16-1

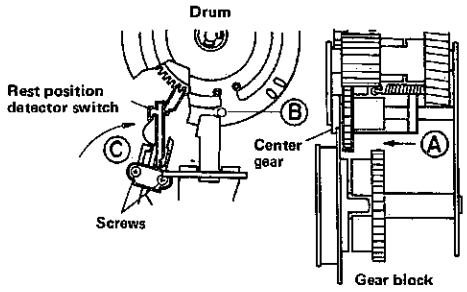


Figure 16-2

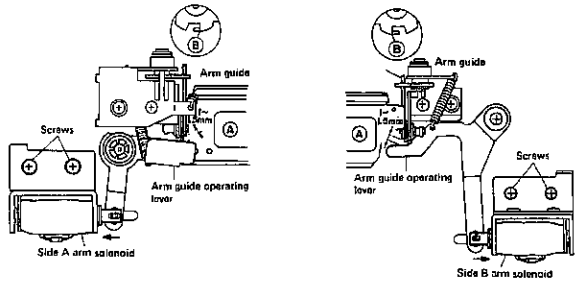


Figure 16-3

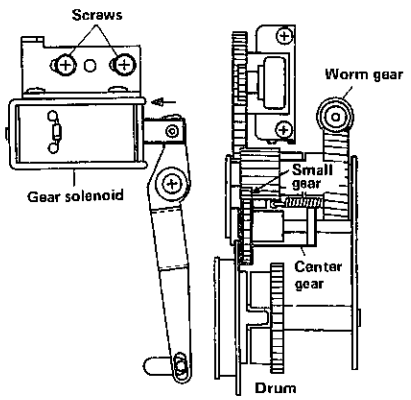


Figure 16-4

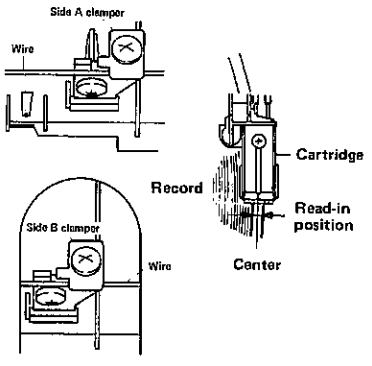


Figure 16-5

7. Take the same adjustment while loading an EP record in the set.

ROTATIONAL ADJUSTMENT OF PHONO MOTOR

1. Prepare an LP record which is provided with a strobo viewer, and load it in the set. Then put the set in cue up mode – by pushing the tonearm cue key first and then the player door open/close key.
2. Adjust variable resistor VR501 or VR502 so that the strobo viewer appears to be still.
   - VR501: at 33 r.p.m. speed
   - VR502: at 45 r.p.m. speed (set by the speed selector key)

ADJUSTMENT AND CHECK OF RECORD/PLAYBACK AMPLIFIER CIRCUIT

BIAS CURRENT ADJUSTMENT

- Make connection of instruments as shown in Fig. 17-2, and adjust variable resistor VR205 or VR206 so that bias current available with the tape selector switch set at each position is shown in Table 17-1.

Table 17-1

Tape selector switch	Voltage (Bias current)	Adjustment
Normal	36mV (360μA)	VR205 (L-ch) VR206 (R-ch)
CrO_2	47 ~53mV (470 ~530μA)	Checking
Metal	66 ~74mV (660 ~740μA)	

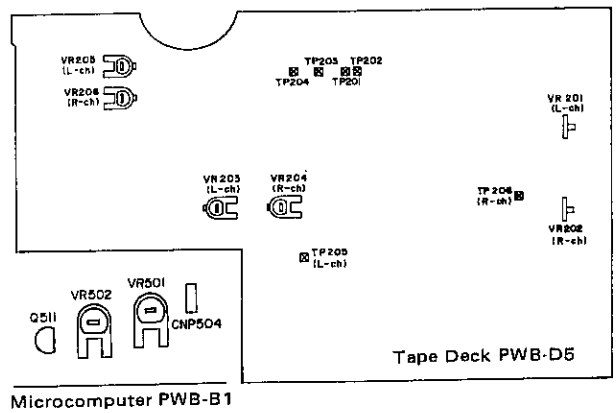


Figure 17-1 Adjustment points

ERASE CURRENT CHECK

- Make connection of instruments as shown in Fig. 17-3, and check if the erase current is as shown in Table 17-2.

(Table 17-2)

Tape selector switch	Voltage (erase current)
Metal	120 ~160mV (120 ~160mA)

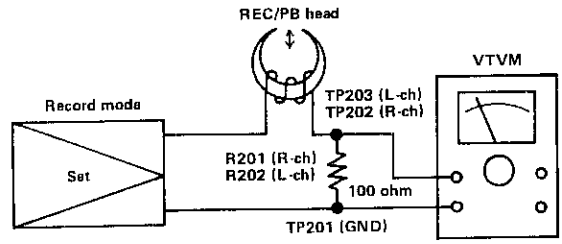


Figure 17-2

PLAYBACK SENSITIVITY ADJUSTMENT

- Make connection of instruments as shown in Fig. 17-4, and adjust variable resistor VR201 or VR202 so that the playback sensitivity is as shown in Table 17-3.

Table 17-3

Switch	Voltage	Adjustment
Tape selector switch at "normal" Dolby NR switch at "on"	580mV	VR201 (L-ch) VR202 (R-ch)

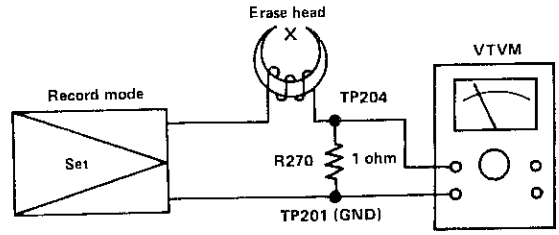


Figure 17-3

RECORD/PLAYBACK SENSITIVITY ADJUSTMENT

- Make connection of instruments as shown in Fig. 17-5, adjust variable resistor VR305, VR306, VR203 or VR204 so that the record/playback sensitivity is as shown in Table 17-4.

Table 17-4

Step	Switch	Voltage	Adjustment
Record	Tape selector switch at "normal" Dolby NR switch at "off"	410mV	Record level controls VR305 (L-ch), VR306 (R-ch)
Play-back		365 ~ 460mV	VR203 (L-ch), VR204 (R-ch)

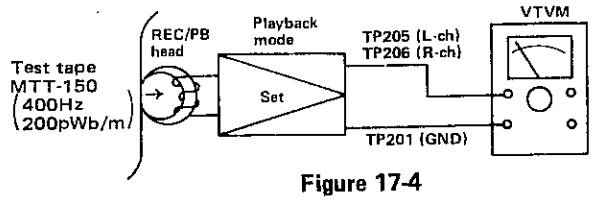


Figure 17-4

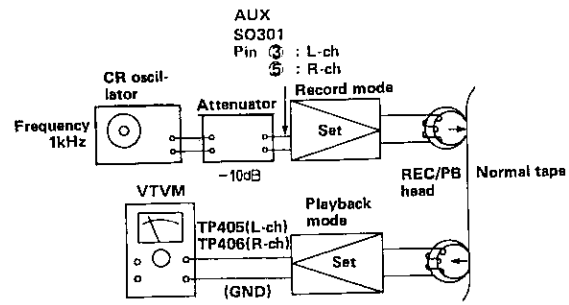


Figure 17-5

ADJUSTMENT OF TUNER CIRCUIT

AM IF/RF ADJUSTMENT

STEP	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	METER CONNECTION	ADJUSTMENT	REMARKS
		CONNECTION	FREQUENCY				
1	MW IF	Refer to Figure 18-1. (Reduce the input as low as possible.)	455kHz [VZ-3000H] 465kHz [VZ-3000E] (400Hz, 30%, AM modulated)	Highest frequency	Refer to Figure 18-1.	IF Transformer T104	Turn the core of T104 until IF waveform is maximal as shown in Fig. 18-2. Repeat this twice or three times to obtain best result.
2	LW Band coverage	Refer to Figure 18-3. (Reduce the input as low as possible.)	145kHz (400Hz, 30%, AM modulated)	Lowest frequency	Refer to Figure 18-3.	Oscillation coil L109	Adjust for maximal output.
3		Same as step 2.	295kHz (400Hz, 30%, AM modulated)	Highest frequency	Same as step 2.	Oscillation trimmer TC106A	Same as step 2.
4	LW Tracking	Same as step 2.	160kHz (400Hz, 30%, AM modulated)	Tune to 160kHz.	Same as step 2.	Antenna coil L107A	Same as step 2.
5		Same as step 2.	260kHz (400Hz, 30%, AM modulated)	Tune to 260kHz.	Same as step 2.	Antenna trimmer TC104A.	Same as step 2.
6	MW Band coverage	Same as step 2.	515kHz (400Hz, 30%, AM modulated)	Lowest frequency	Same as step 2.	Oscillation coil L110	Same as step 2.
7		Same as step 2.	1650kHz (400Hz, 30%, AM modulated)	Highest frequency	Same as step 2.	Oscillation trimmer TC106B	Same as step 2.
8	MW Tracking	Same as step 2.	600kHz (400Hz, 30%, AM modulated)	Tune to 600kHz	Same as step 2.	Antenna coil L107B	Same as step 2.
9		Same as step 2.	1400kHz (400Hz, 30%, AM modulated)	Tune to 1400kHz	Same as step 2.	Antenna trimmer TC104B.	Same as step 2.
10	Repeat steps 2 ~9 until no further improvement can be made, and try step 1 once more.						

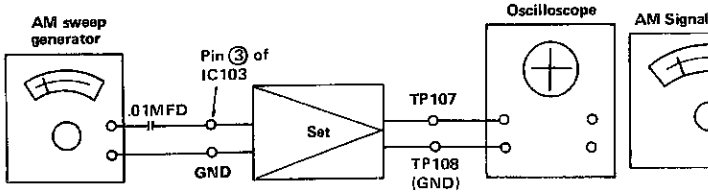


Figure 18-1 AM IF Adjustment

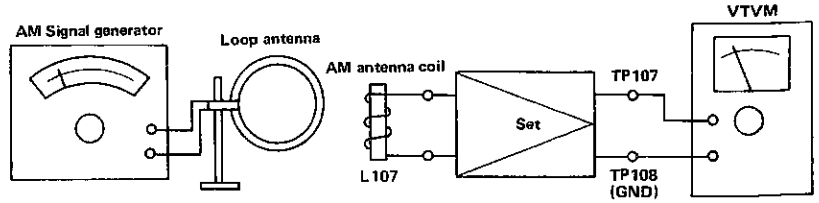


Figure 18-3 AM RF Adjustment

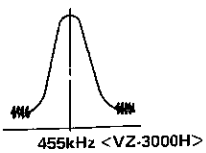


Figure 18-2 AM IF Curve

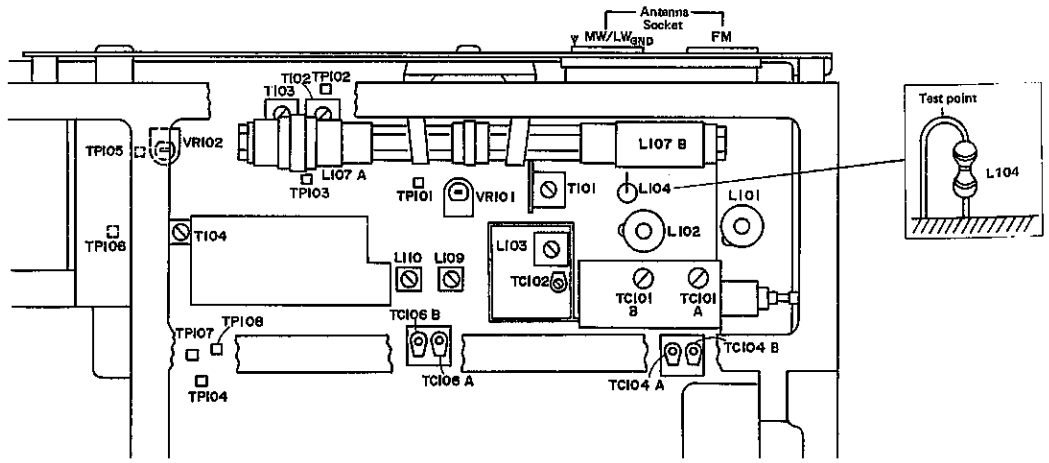


Figure 18-4 Adjustment points

THE INSTRUCTION OF FREQUENCY ADJUSTMENT (VZ-3000H Only)

In order to comply with FTZ rule: Nr. 358/1970, please fix the low end of dial frequency (87.6MHz) and the high end of dial frequency (108MHz) on FM band, by adjusting oscillation coils (L103) and oscillation trimmer (TC102), respectively, as illustrated in Figure 18-4.

FM IF/RF ADJUSTMENT

- Set the function selector switch at FM MONO position.

STEP	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	METER CONNECTION	ADJUSTMENT	REMARKS
		CONNECTION	FREQUENCY				
1	IF	Refer to Figure 19-2.	10.7MHz (400Hz, 40kHz dev., FM modulated)	Highest frequency	Refer to Figure 19-2. (Test point TP104)	IF Transformer T101	Turn the core of T101 until waveform is symmetrical in right and left as shown Fig. 19-1.
2	Detection	Same as step 1.	Same as step 1.	Same as step 1.	Same as step 1. (Test point TP104)	Detector T102, T103	Turn the cores of T102 and T103 until waveform is symmetrical in the upper and lower with best linearity ("S" curve), as shown in Fig. 19-3.
3	Repeat steps 1 and 2 until no further improvement can be made.						
4	Band coverage	Refer to Figure 19-4. (Reduce the input as low as possible.)	87.3MHz (400Hz, 40kHz dev., FM modulated)	Lowest frequency	Refer to Figure 19-4.	Oscillation coil L103	Adjust for maximal output.
5		Same as step 4.	109MHz (400Hz, 40kHz dev., FM modualted)	Highest frequency	Same as step 4.	Oscillation trimmer TC102	Same as step 4.
6	Tracking	Same as step 4.	90MHz (400Hz, 40kHz dev., FM modulated)	Tune to 90MHz.	Same as step 4.	RF coil L102, Antenna coil L101	Same as step 4.
7		Same as step 4.	106MHz (400Hz, 40kHz dev., FM modulated)	Tune to 106MHz.	Same as step 4.	RF trimmer TC101B. Antenna trimmer TC101A.	Same as step 4.
8	Repeat step 4, 5, 6 and 7 until no further improvement can be made.						
9	Upon completion of the tracking, give no signal to the input then adjust the core of T102 so that there is no voltage caused between the test points TP103 and TP102.						

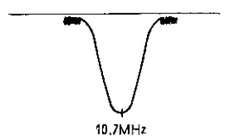


Figure 19-1 FM IF Curve

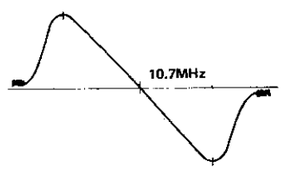


Figure 19-3 FM S Curve

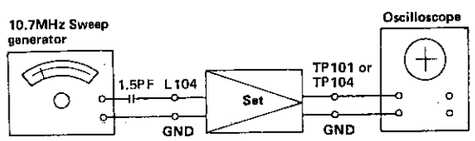


Figure 19-2 FM IF Adjustment

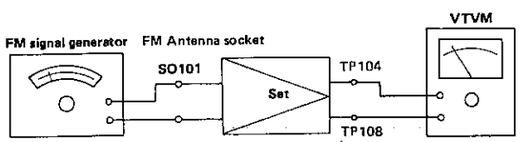


Figure 19-4 FM RF Adjustment

ADJUSTMENT OF VCO FREQUENCY AND MUTING LEVEL

VCO Frequency

1. Make connection of instruments as shown in Fig. 20-1.
2. Set the function selector switch at "FM MONO" position.
3. Set FM signal generator to produce a signal of 98 MHz, 60 dB, 400 Hz, 100% modulated, and let the set tune this signal.
4. Set the function selector switch at "FM STEREO" position.
5. Shorting test point TP102 and ground, adjust variable resistor VR102 so that frequency counter reads 76 kHz ±76 Hz.
   After VCO frequency adjustment, remove the shorting between TP102 and ground.

Muting

6. Connect FM signal generator to FM antenna terminal of the set across FM stereo modulator which is set at modulation 100%, modulation frequency 1 kHz. Set the output of FM signal generator to be 25 dB at the antenna open terminal, and adjust semi-variable resistor VR101 until the muting is cancelled.

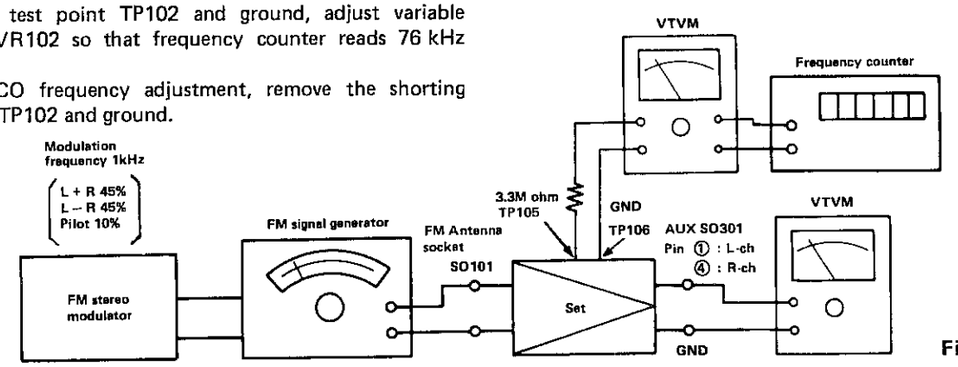


Figure 20-1

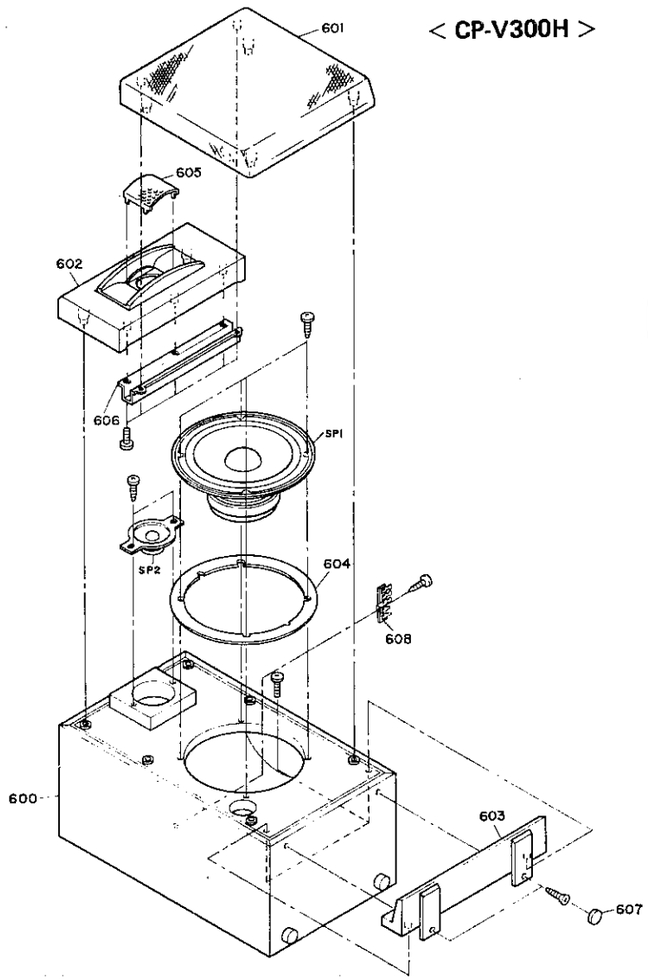


Figure 20-4 EXPLODED VIEW

< CP-V300H >

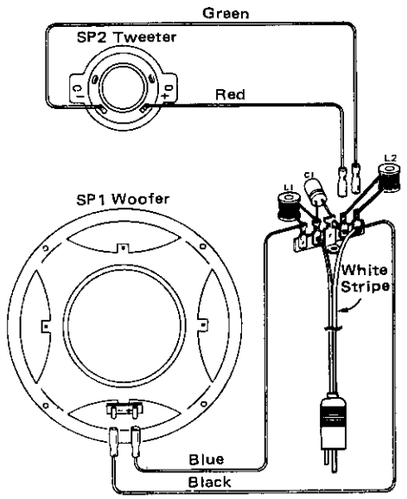


Figure 20-2 WIRING CONNECTION

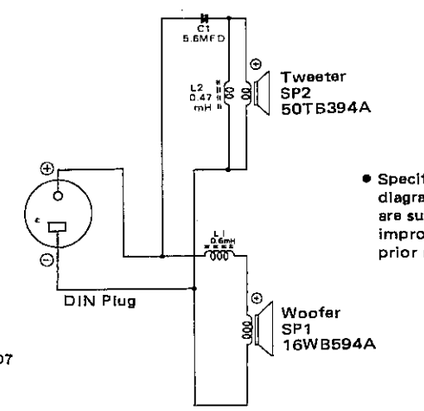
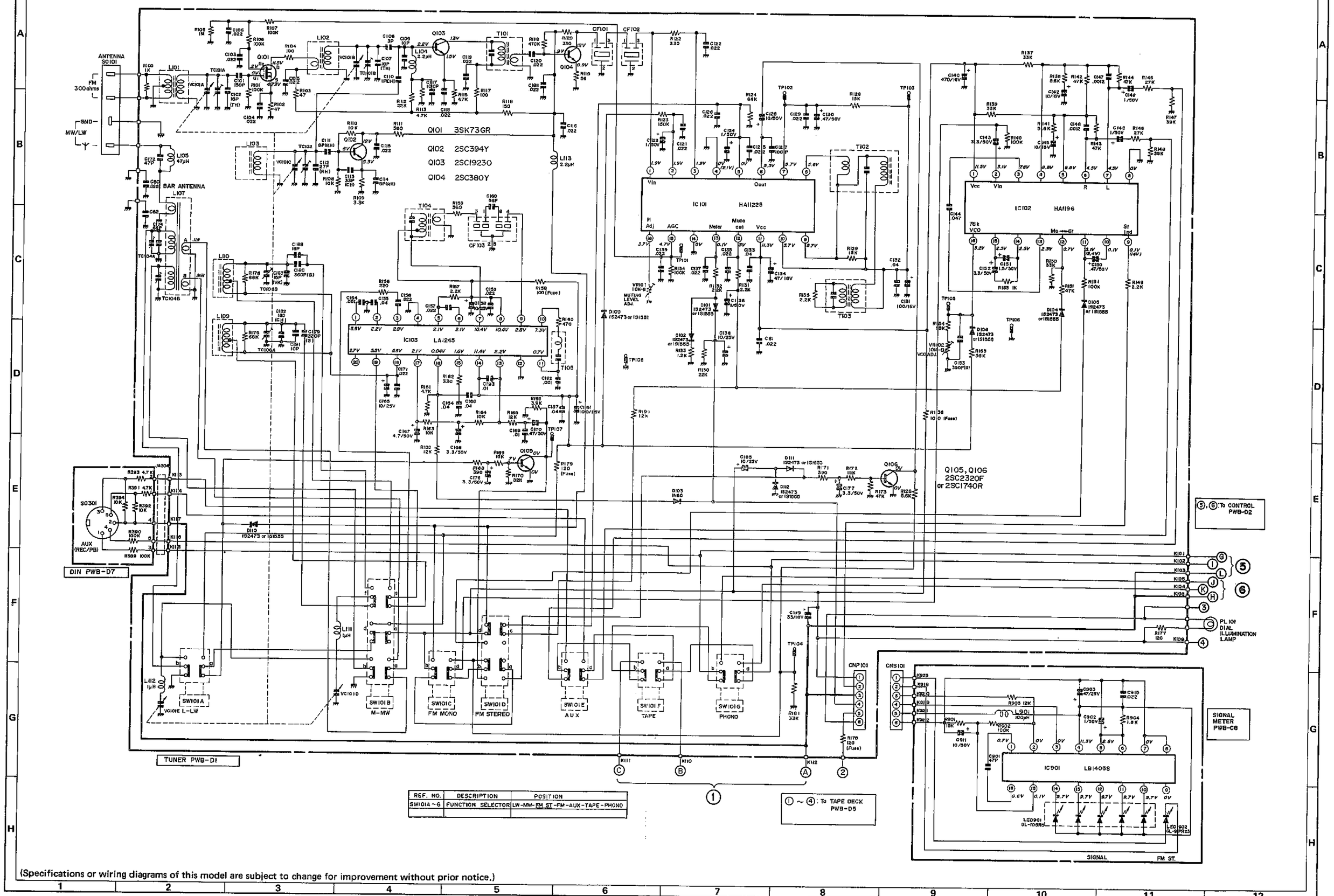


Figure 20-3 SCHEMATIC DIAGRAM

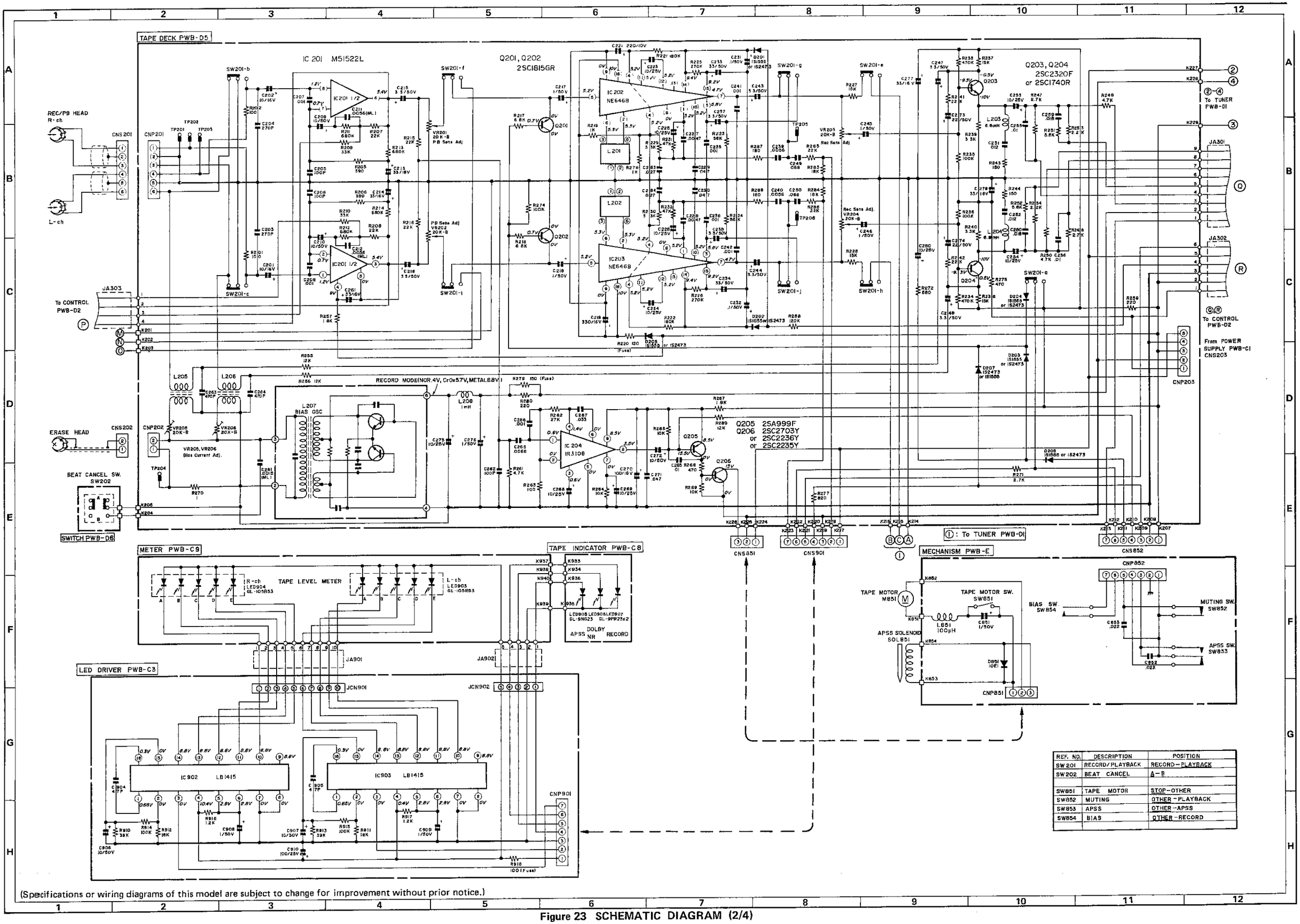
- Specifications or wirin diagrams of this model are subject to change f improvement without prior notice.



REF. NO.	DESCRIPTION	POSITION
SW101A~G	FUNCTION SELECTOR	LW-MW-FM ST-FM-AUX-TAPE-PHONO

(Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.)

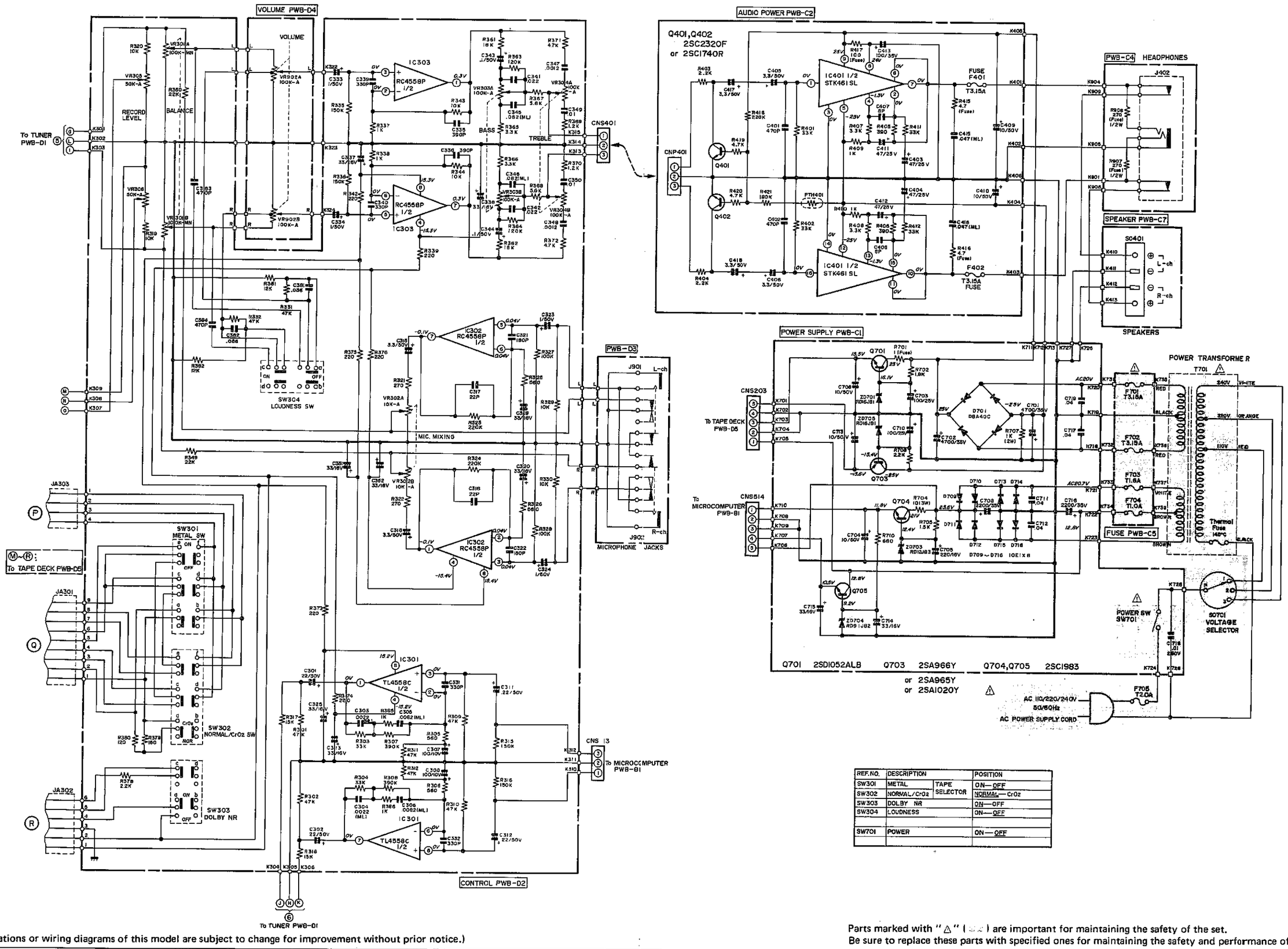
Figure 21 SCHEMATIC DIAGRAM (1/4)



REF. NO.	DESCRIPTION	POSITION
SW201	RECORD/PLAYBACK	RECORD–PLAYBACK
SW202	BEAT CANCEL	A–B
SW851	TAPE MOTOR	STOP–OTHER
SW852	MUTING	OTHER–PLAYBACK
SW853	APSS	OTHER–APSS
SW854	BIAS	OTHER–RECORD

(Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.)

Figure 23 SCHEMATIC DIAGRAM (2/4)

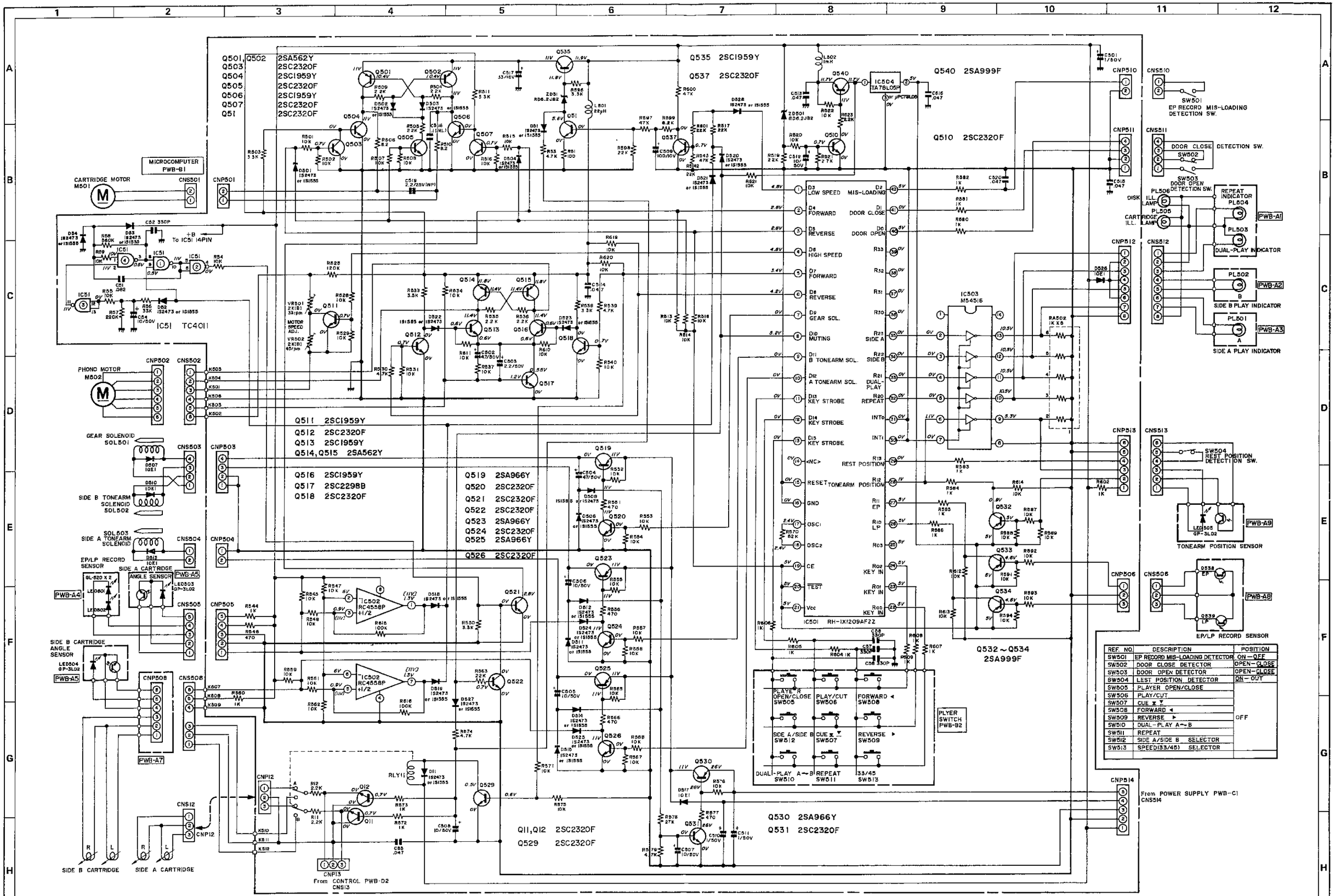


REF.NO.	DESCRIPTION		POSITION
SW301	METAL	TAPE SELECTOR	ON—OFF
SW302	NORMAL/CrO2		NORMAL—CrO2
SW303	DOLBY NR		ON—OFF
SW304	LOUDNESS		ON—OFF
SW701	POWER		ON—OFF

(Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.)

Parts marked with "△" ( ) are important for maintaining the safety of the set.
Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Figure 25 SCHEMATIC DIAGRAM (3/4)



REF. NO.	DESCRIPTION	POSITION
SW501	EP RECORD MIS-LOADING DETECTOR	ON – OFF
SW502	DOOR CLOSE DETECTOR	OPEN – CLOSE
SW503	DOOR OPEN DETECTOR	OPEN – CLOSE
SW504	REST POSITION DETECTOR	ON – OUT
SW505	PLAYER OPEN/CLOSE	OFF
SW506	PLAY/CUT	
SW507	CUE ▼	
SW508	FORWARD ◀	
SW509	REVERSE ▶	
SW510	DUAL – PLAY A ~ B	
SW511	REPEAT	
SW512	SIDE A/SIDE B SELECTOR	
SW513	SPEED(33/45) SELECTOR	

(Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.)

Figure 27 SCHEMATIC DIAGRAM (4/4)

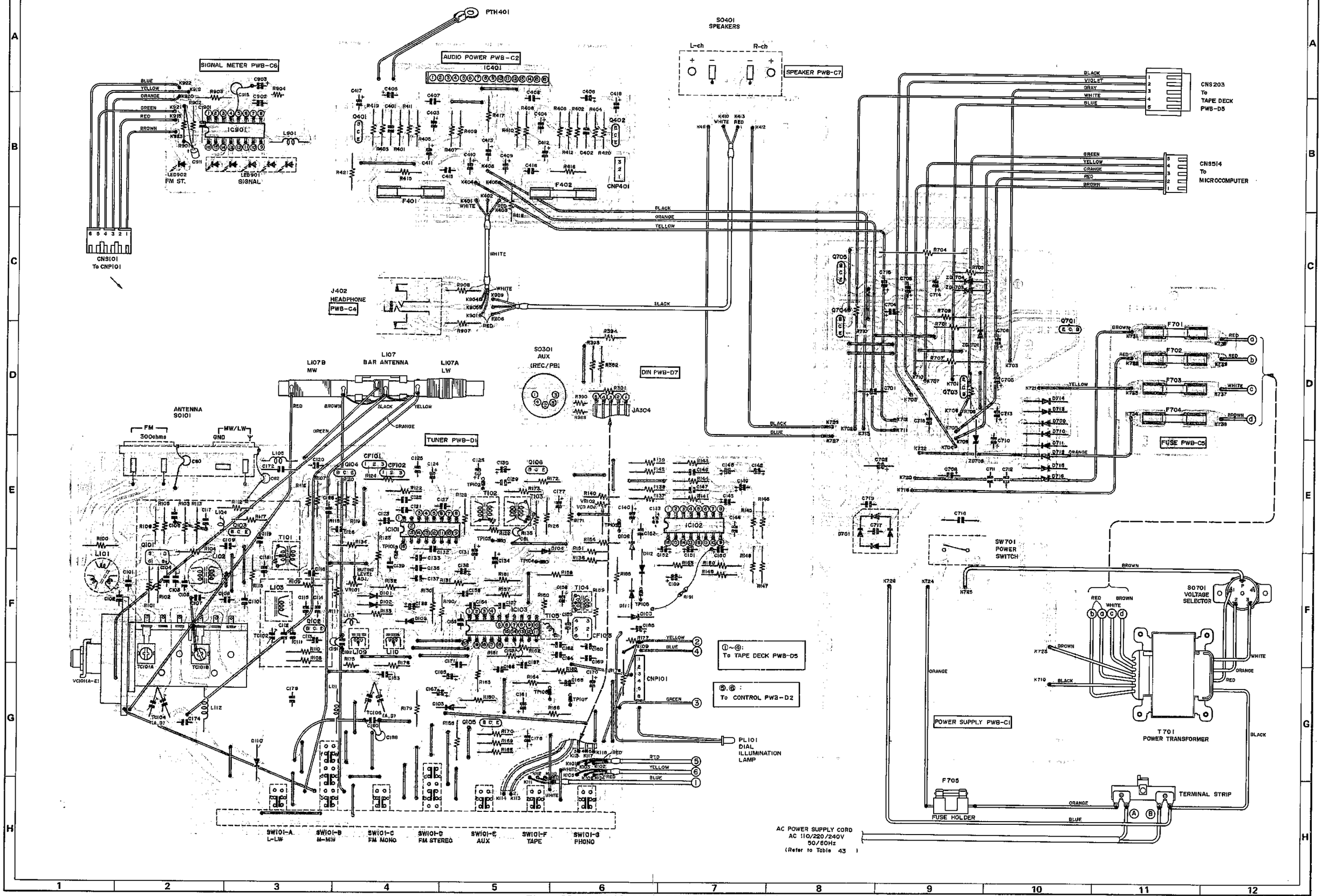


Figure 29 WIRING SIDE OF P.W. BOARD (1/3)

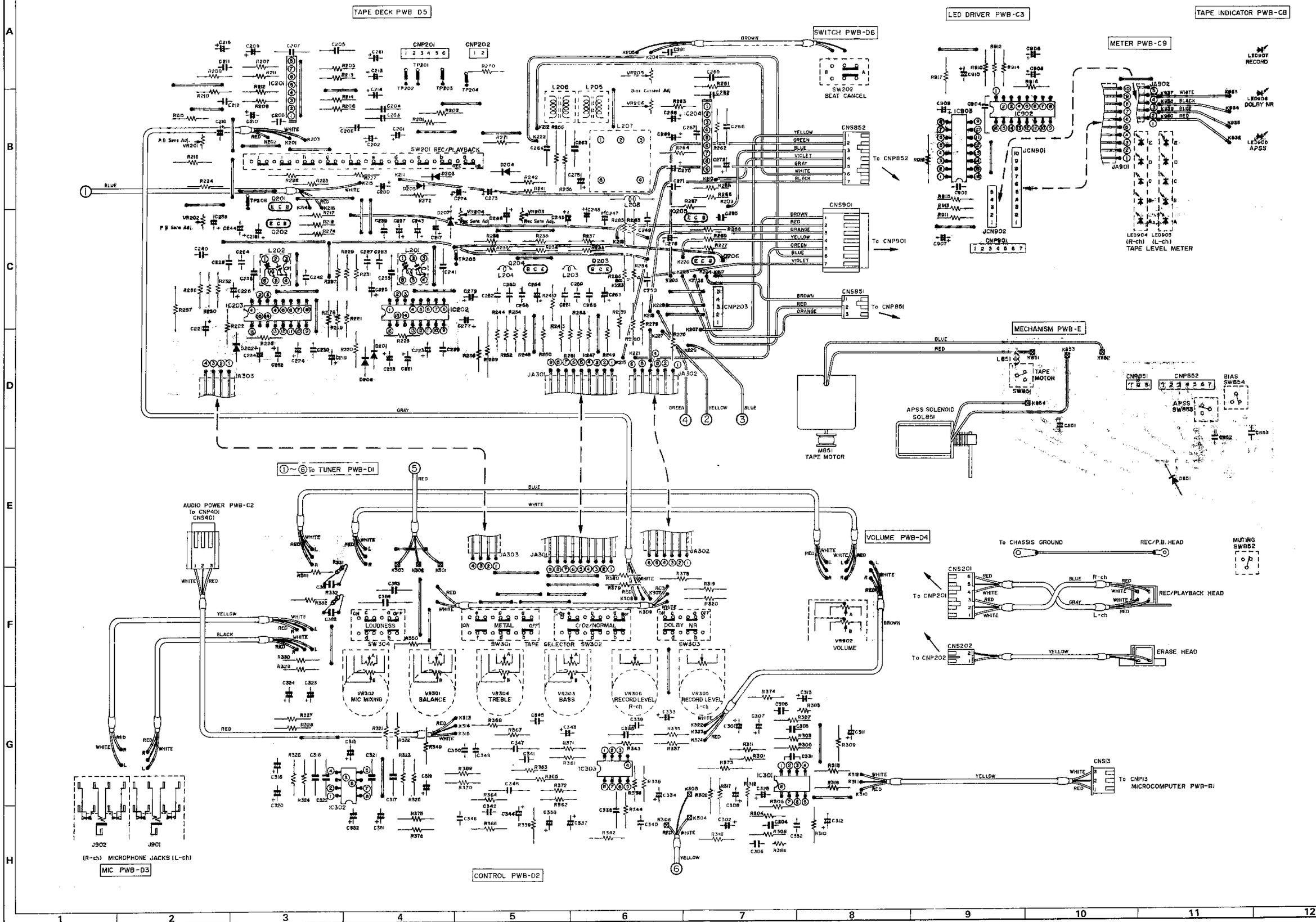


Figure 31 WIRING SIDE OF P.W. BOARD (2/3)

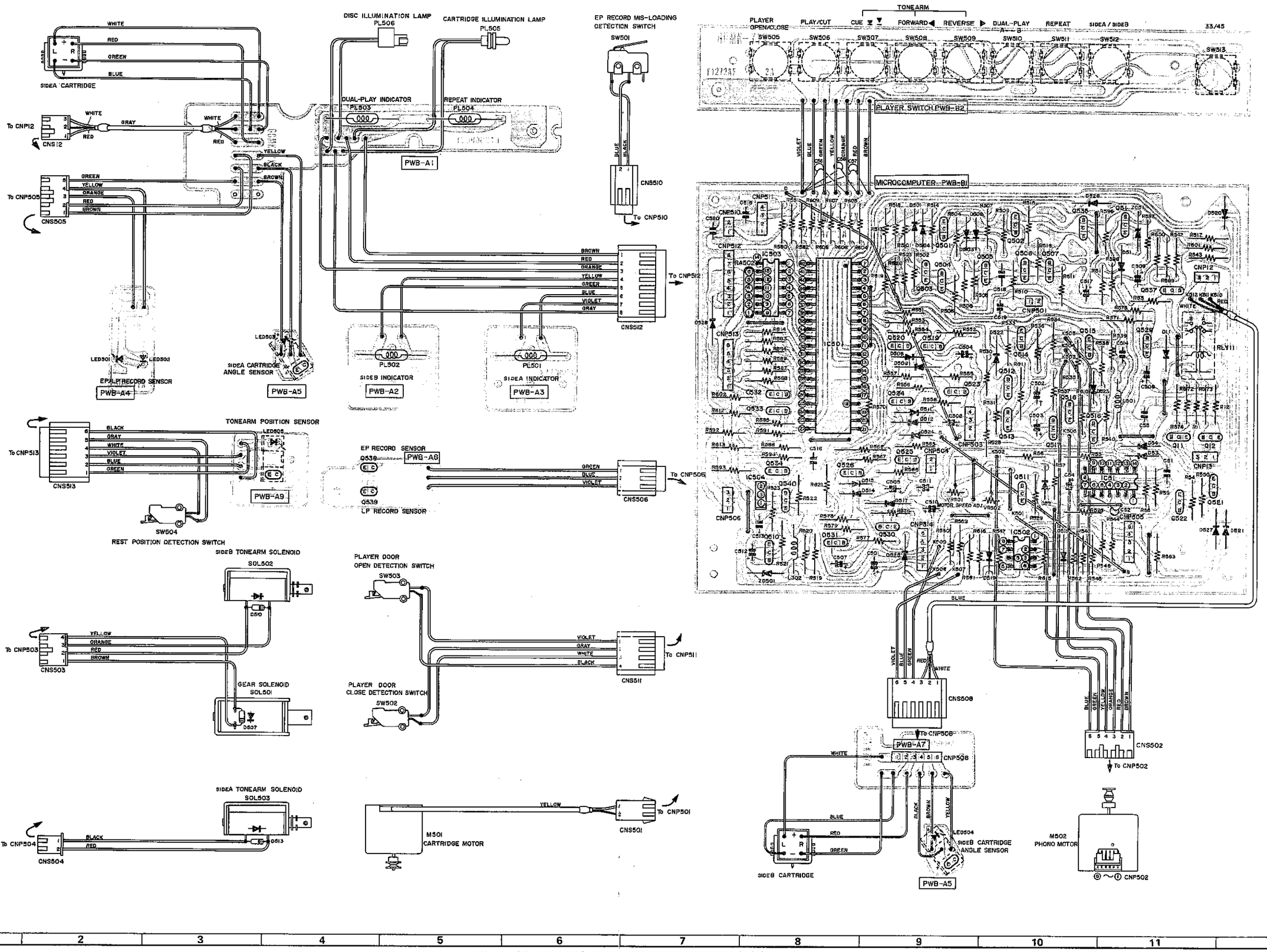


Figure 33 WIRING SIDE OF P.W. BOARD (3/3)

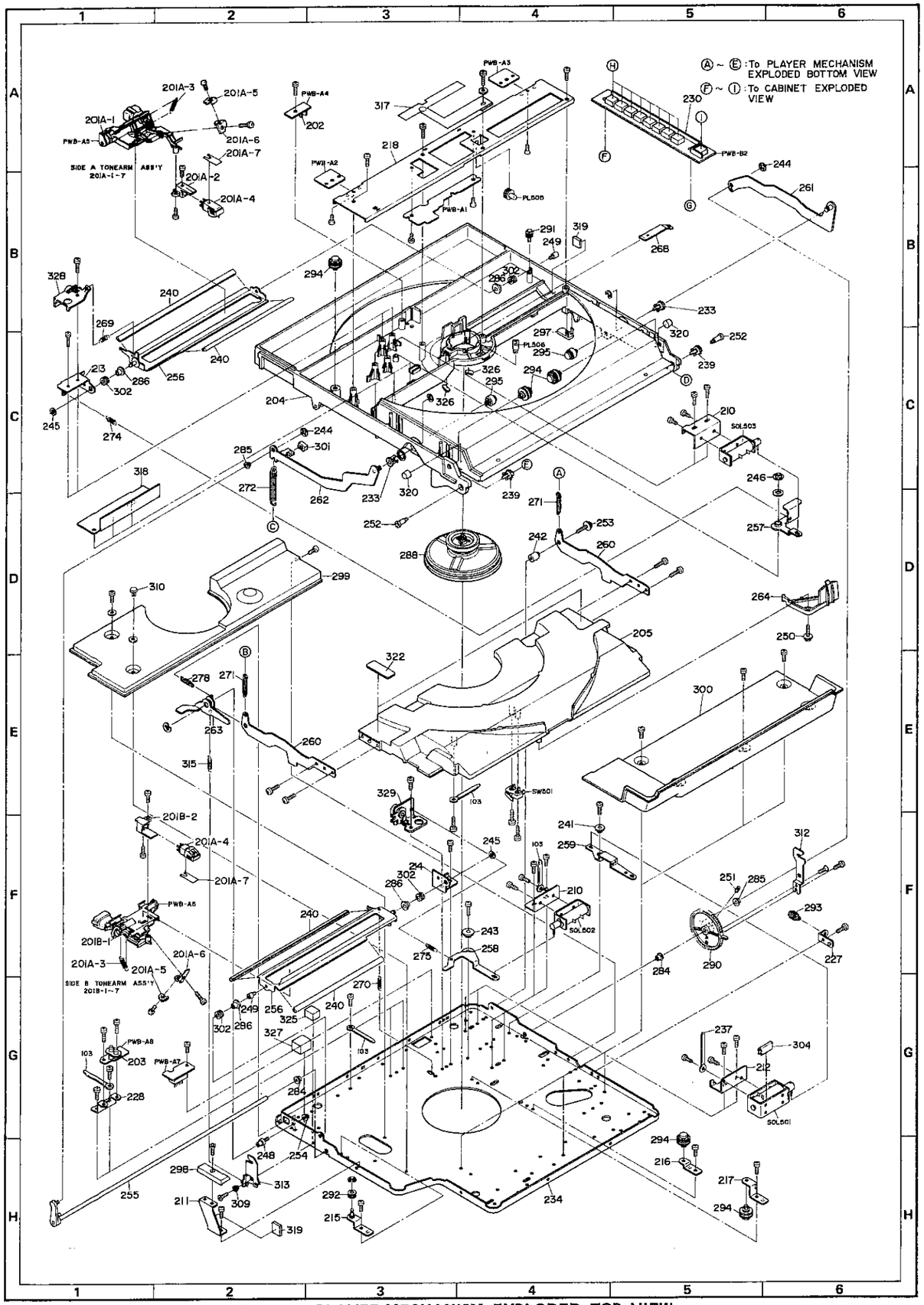


Figure 35 PLAYER MECHANISM EXPLODED TOP VIEW

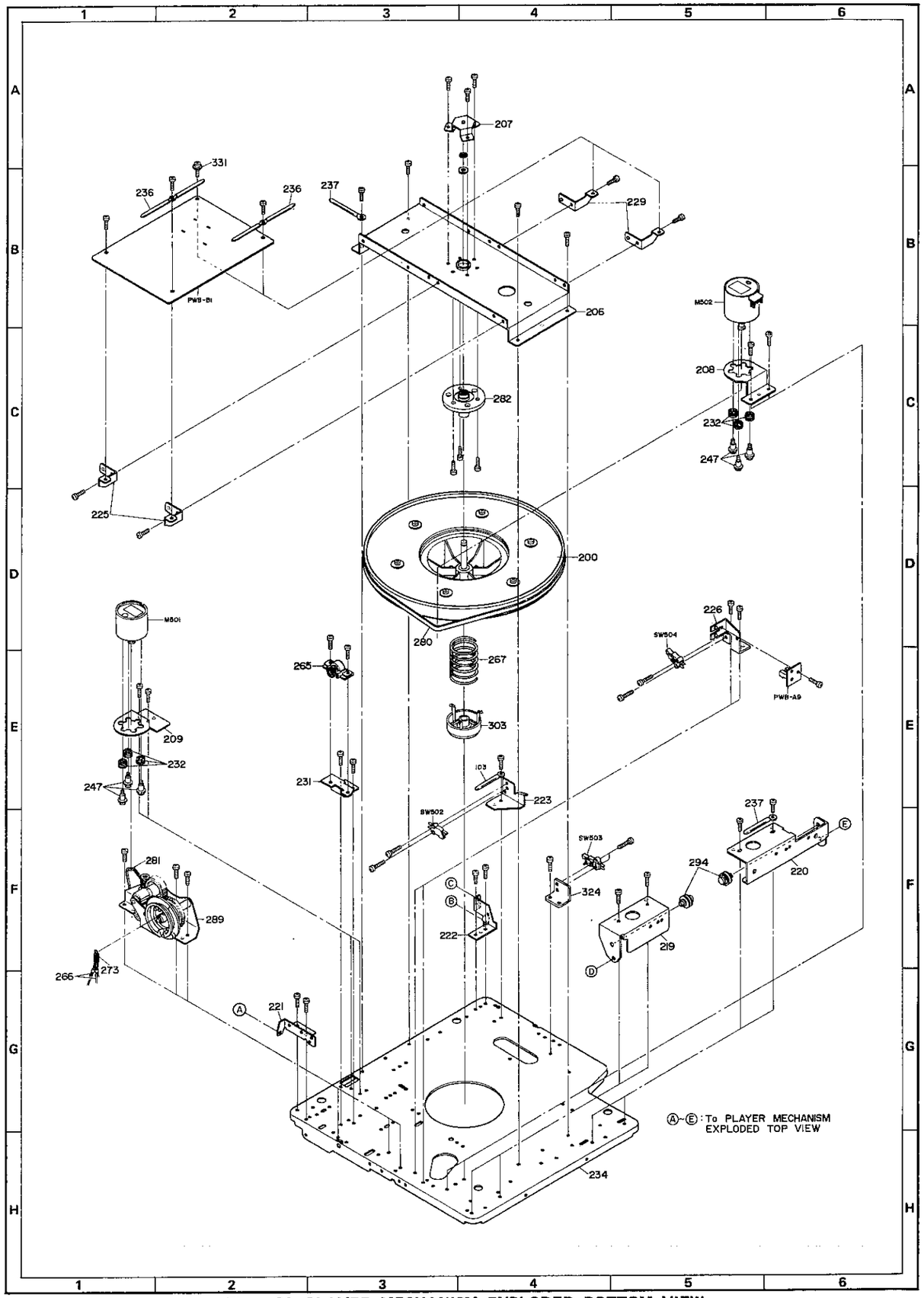


Figure 36 PLAYER MECHANISM EXPLODED BOTTOM VIEW

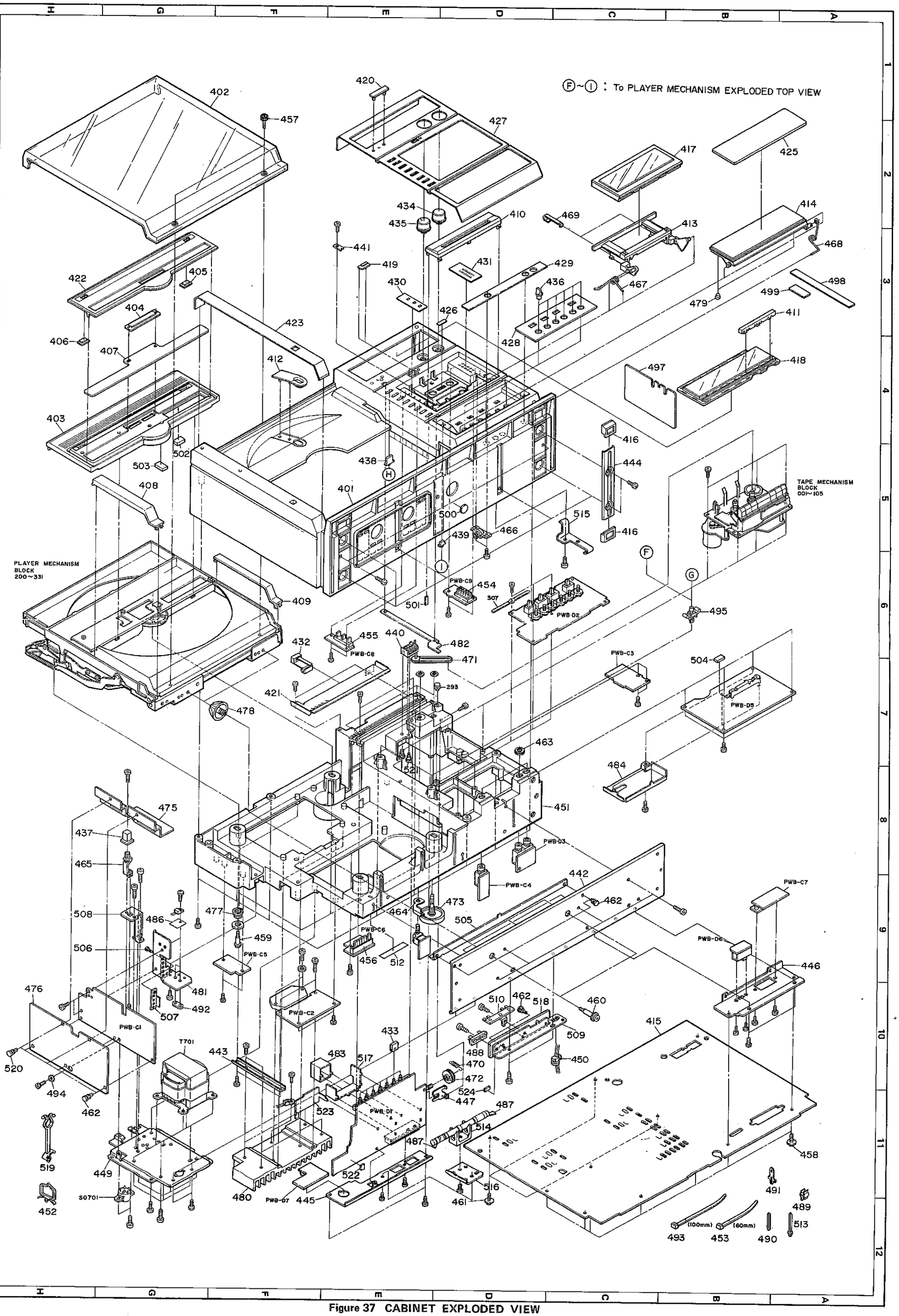


Figure 37 CABINET EXPLODED VIEW

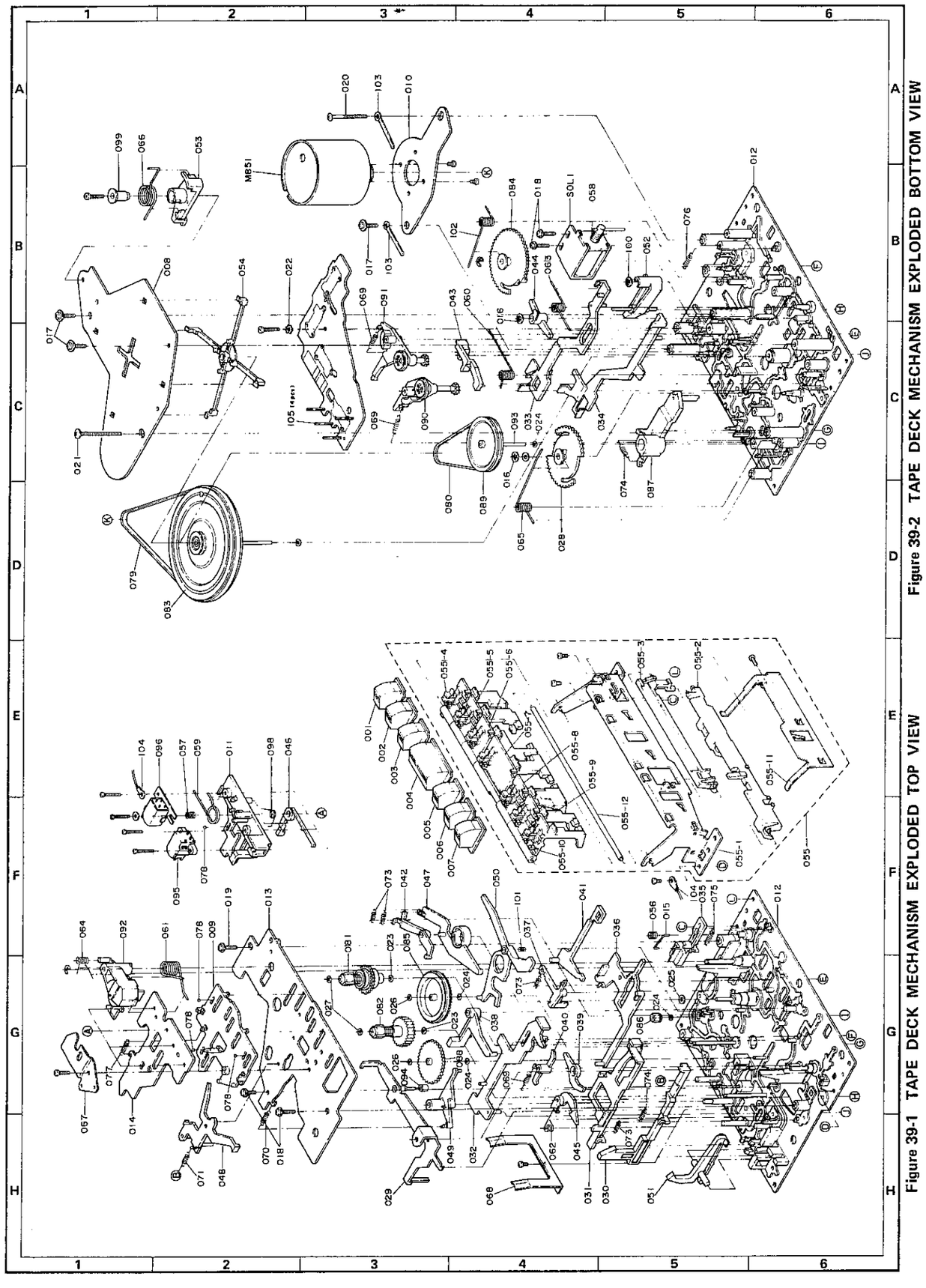


Figure 39-1 TAPE DECK MECHANISM EXPLODED TOP VIEW

Figure 39-2 TAPE DECK MECHANISM EXPLODED BOTTOM VIEW

· VHIHA11225/-1 (HA11225): IC101

(1) 1st-IF amp.
(2) 2nd-IF amp.
(3) 3rd-IF amp.
(4) Quadrature detector
(5) AFC amp.
(6) Audio amp.
(7) Level detector
(8) Level detector
(9) Level detector
(10) Level detector
(11) 0V switch
(12) Audio mute control amp.
(13) Meter drive
(14) Level mute drive
(15) OR circuit

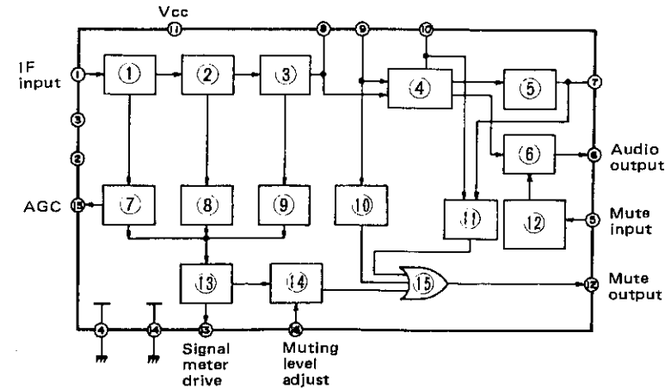


Figure 40-1 BLOCK DIAGRAM OF IC

· RH-IX1053AFZZ (HA1196): IC102

(1) Pre-amp.
(2) Phase detector
(3) DC amp.
(4) V.C.O. (76kHz)
(5) 1/2 div. circuit (38kHz)
(6) 1/2 div. circuit ∠90° (19kHz)
(7) Stereo demodulator
(8) 19kHz ∠0°
(9) Stereo/mono switch
(10) Constant voltage circuit
(11) Amp.
(12) Amp.
(13) Phase detector
(14) DC amp.
(15) Stereo indicator drive

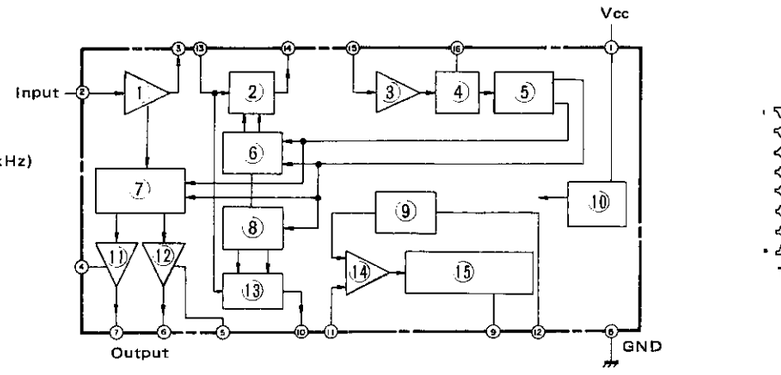


Figure 40-2 BLOCK DIAGRAM OF IC

· VHILA1245//-1 (LA1245): IC103

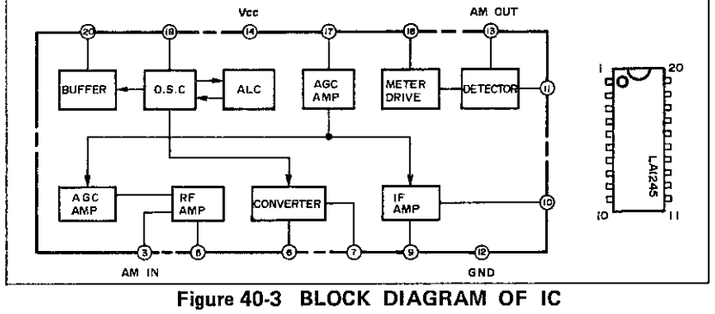


Figure 40-3 BLOCK DIAGRAM OF IC

· VHIM51522L/-1 (M51522L): IC201

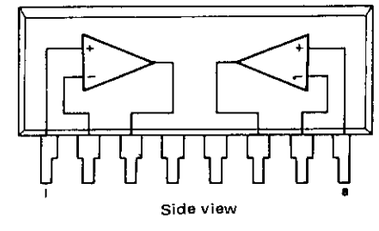
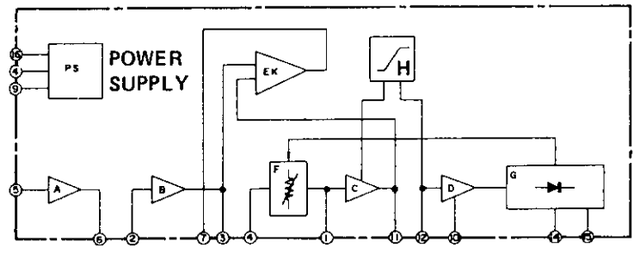


Figure 40-4 BLOCK DIAGRAM OF IC

· VHINE646B//-1F (NE646B): IC202, 203



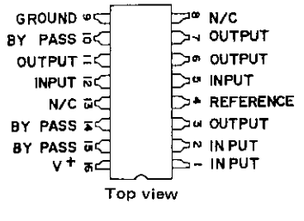


Figure 40-5 BLOCK DIAGRAM OF IC

· VHIIR3108//-1 (IR3108): IC204

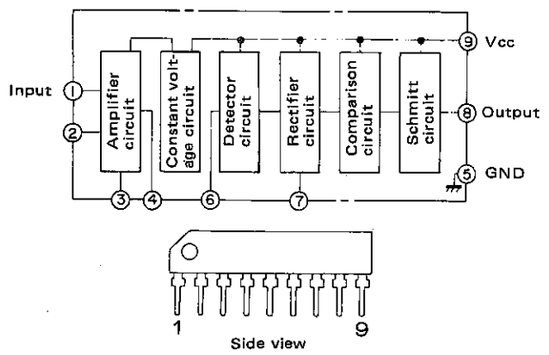


Figure 41-1 BLOCK DIAGRAM OF IC

· VHITL4558C/-1 (TL4558C): IC301
· VHIRC4558P/-1 (RC4558P): IC302, 303, 502

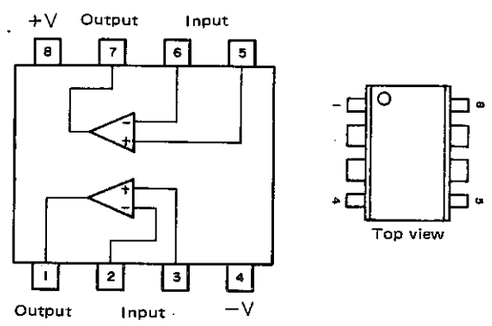


Figure 41-2 BLOCK DIAGRAM OF IC

· VHISTK461SL-1 (STK461SL): IC401

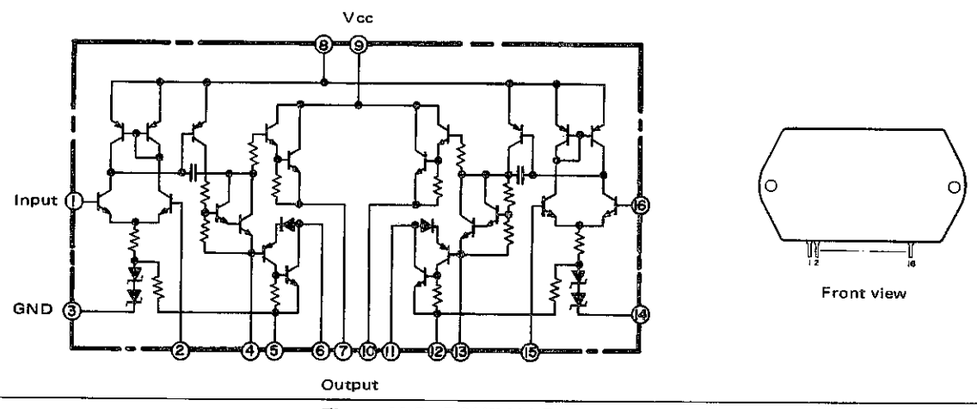


Figure 41-3 EQUIVALENT CIRCUIT OF IC

· RH-IX1209AFZZ: IC501

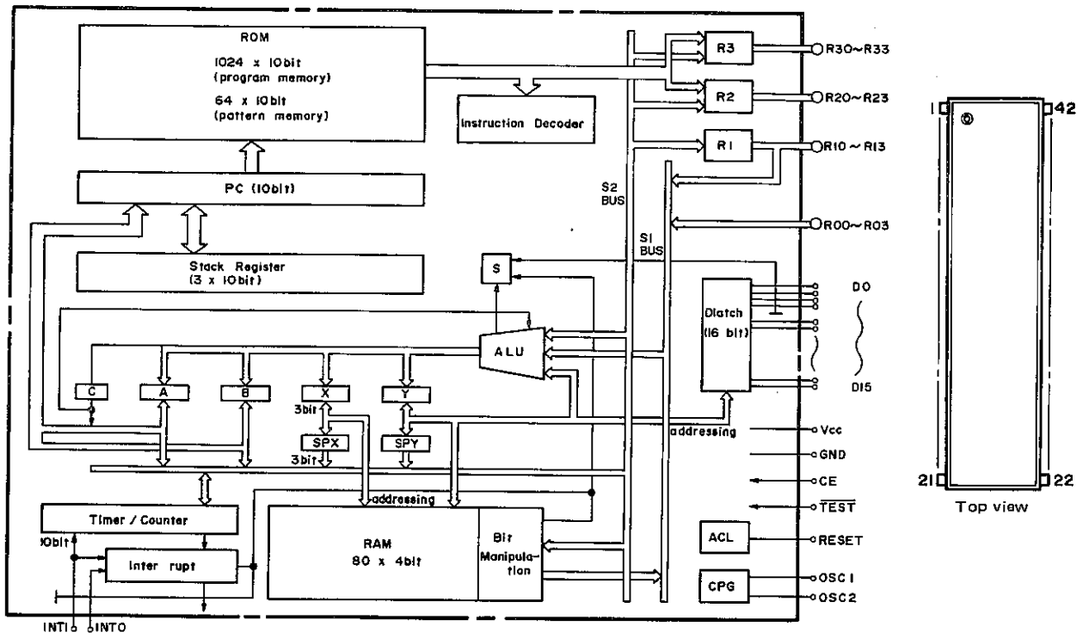


Figure 41-4 BLOCK DIAGRAM OF IC

· VHIM54516//-1 (M54516): IC503

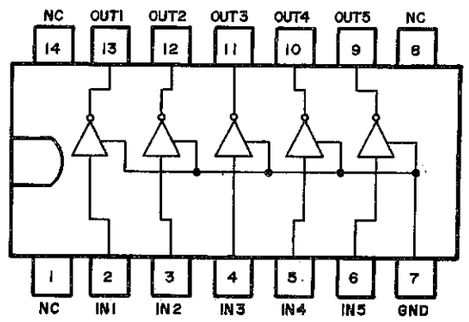
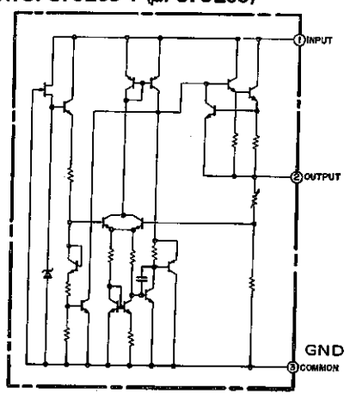


Figure 42-1 BLOCK DIAGRAM OF IC

· VHITA78L05P-1 (TA78L05P): IC504
· VHIUPC78L05-1 (μPC78L05)



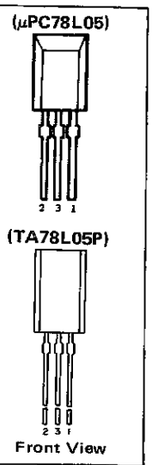


Figure 42-2 EQUIVALENT CIRCUIT OF IC

· VHILB1405S/1F (LB1405S): IC901
· VHILB1415//-1 (LB1415): IC902, 903

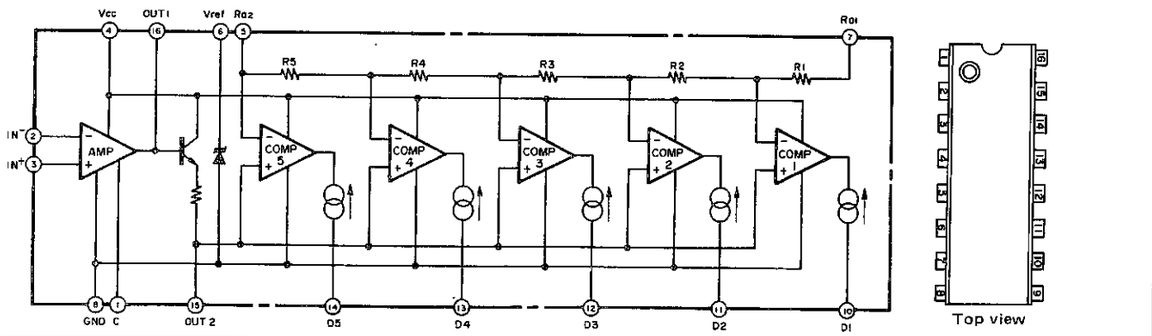


Figure 42-3 BLOCK DIAGRAM OF IC

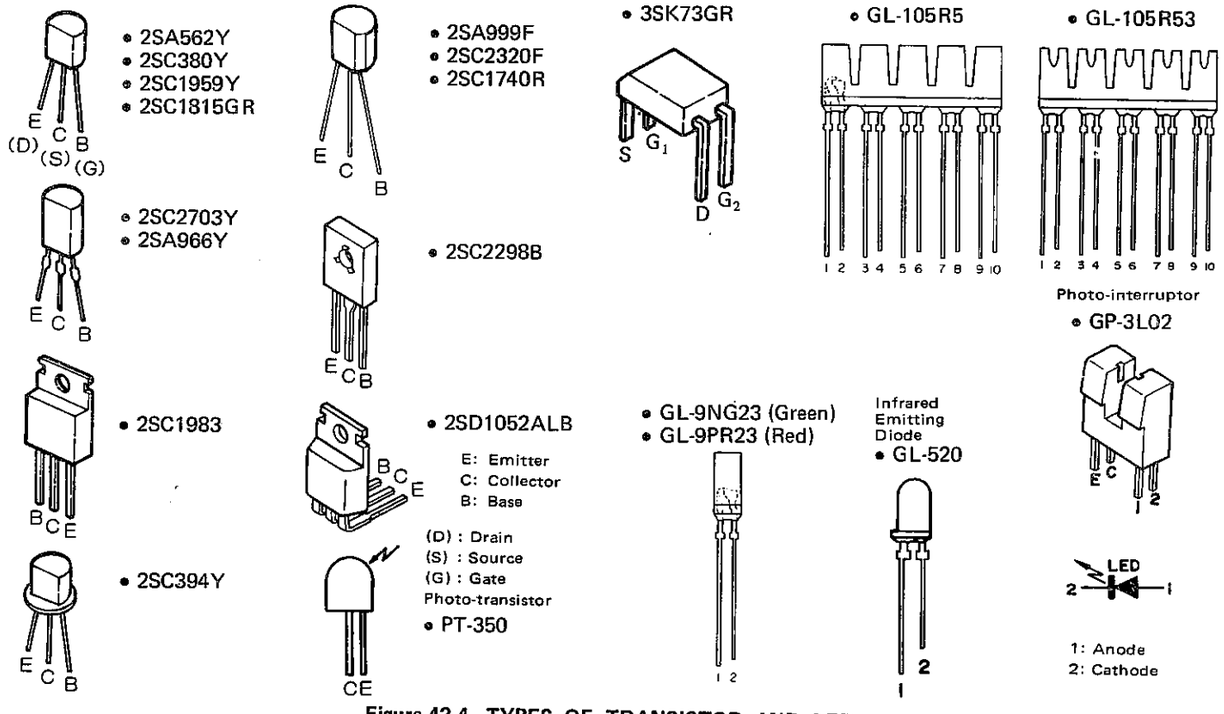


Figure 42-4 TYPES OF TRANSISTOR AND LED

CAUTION

If any one of the wire holders shown in the Figure 43 is once removed for some reason, be sure to reprise it to the original place in the same appearance as before.

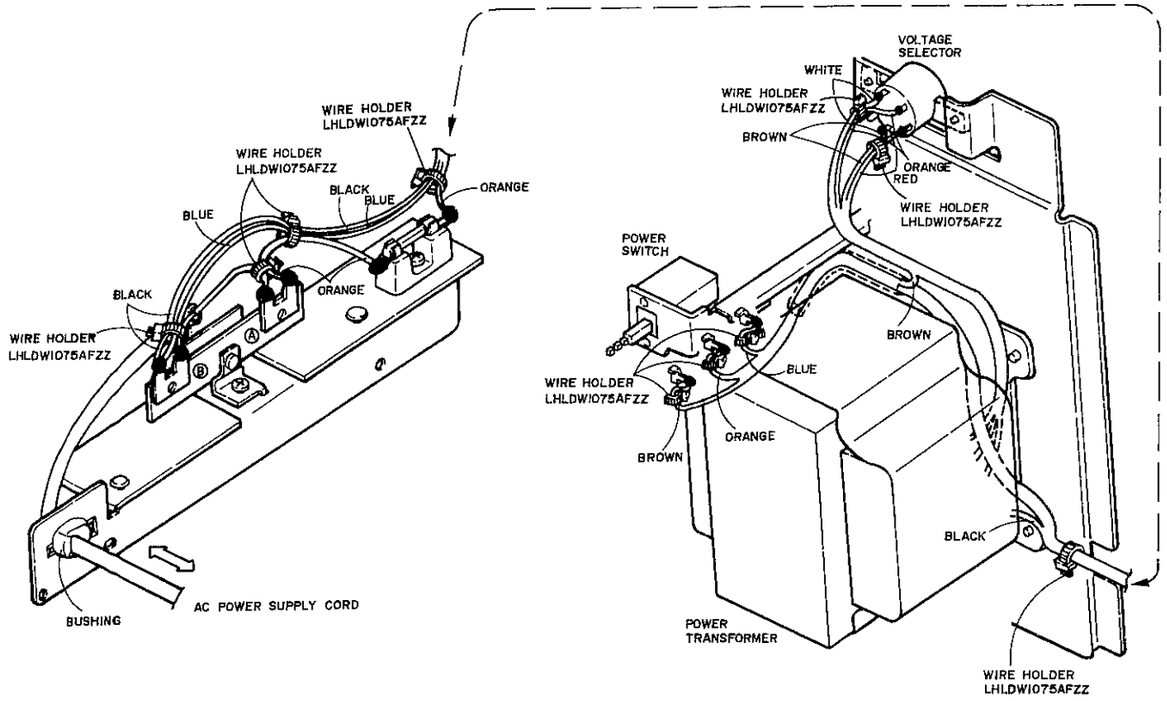


Figure 43

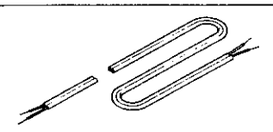
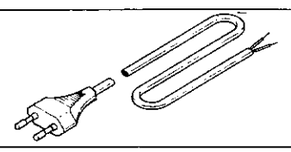
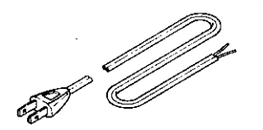
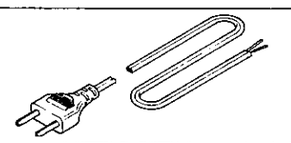
AC Power supply cord	Bushing	Connection		Figure
		(A)	(B)	
QACCB0054AF09	LBSHC0002AGZZ	Brown	Blue	
QACCV0001AGZZ	LBSHC0004AGZZ	Brown	Blue	
QACCZ0002TA0F	LBSHC0053AFZZ	Brown	Brown	
QACCZ0053AF00	LBSHC0053AFZZ	Black	Black	

Table 43 AC POWER SUPPLY CORD WIRING CONNECTIONS

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER 2. REF. NO.
3. PART NO. 4. DESCRIPTION

NOTES:
Parts marked with "⚠" ( ) ar
important for maintaining the safety c
the set.
Be sure to replace these parts with spec
fied ones for maintaining the safety an
performance of the set.

REF. NO.	PART NO.	DESCRIPTION	CODE
	INTEGRATED CIRCUITS		
IC51	RH-IX1146AFZZ	2-input NAND Gate (TC4011)	AE
IC101	VHIHA11225/-1	FM IF Amplifier/Detector (HA11225)	AN
IC102	RH-IX1053AFZZ	PLL Stereo Demodulator (HA1196)	AM
IC103	VHILA1245//-1	AM RF/IF Amplifier and Detector (LA1245)	AL
IC201	VHIM51522L/-1	Playback Equalizer Amplifier (M51522L)	AG
IC202, 203	VHINE646B//1F	Dolby NR Circuit (NE646B)	AM
IC204	VHIIR3108//-1	APSS Circuit (IR3108)	AK
IC301	VHITL4558C/-1	Phono Equalizer Amplifier (TL4558C)	AH
IC302	VHIRC4558P/-1	Microphone Amplifier (RC4558P)	AG
IC303	VHIRC4558P/-1	Tone Amplifier (RC4558P)	AG
IC401	VHISTK461SL-1	Audio Power Amplifier (STK461SL)	AY
IC501	RH-IX1209AFZZ	Microcomputer	AY
IC502	VHIRC4558P/-1	Cartridge Forward Circuit (RC4558P)	AG
IC503	VHIM54516//-1	Inverter (M54516)	
IC504	VHITA78L05P-1	5V Voltage (TA78L05P)	AF
or	VHIUPC78L05-1	Regulator (μPC78L05)	
IC901	VHILB1405S/1F	Signal Meter Driver (LB1405S)	AH
IC902, 903	VHILB1415//-1	Tape Level Meter Driver (LB1415)	
	TRANSISTORS		
Q11, 12	VS2SC2320-F-1	Muting (2SC2320F)	AB
Q51	VS2SC2320-F-1	Cartridge Motor Voltage Control (2SC2320F)	
Q101	VS3SK73-GR/-1	FET, FM RF Amplifier (3SK73GR)	AF
Q102	VS2SC394-Y/-1	FM Oscillator (2SC394Y)	AC
Q103	VS2SC1923O/-1	FM Mixer (2SC1923O)	
Q104	VS2SC380-Y/-1	FM IF Amplifier (2SC380Y)	
Q105, 106	VS2SC1740R/-1	Muting (2SC1740R or	AB
or	VS2SC2320-F-1	2SC2320F)	
Q201, 202	VS2SC1815GR-1	Muting (2SC1815GR)	AB
Q203, 204	VS2SC1740R/-1	Muting (2SC1740R or	AB
or	VS2SC2320-F-1	2SC2320F)	
Q205	VS2SA999-F/-1	APSS Solenoid Driver (2SA999F)	AC
Q206	VS2SC2703-Y-1	APSS Solenoid Driver	AD
or	VS2SC2235Y/-1	(2SC2703Y or 2SC2235Y	
or	VS2SC2236Y/-1	or 2SC2236Y)	
Q401, 402	VS2SC1740R/-1	Muting (2SC1740R or	AB
or	VS2SC2320-F-1	2SC2320F)	
Q501, 502	VS2SA562-Y/-1	Cartridge Motor Revers Circuit (2SA562Y)	AC
Q503	VS2SC2320-F-1	Cartridge Motor Revers Circuit (2SC2320F)	AB
Q504	VS2SC1959Y/-1	Cartridge Motor Revers Circuit (2SC1959Y)	AC
Q505	VS2SC2320-F-1	Cartridge Motor Stop Circuit (2SC2320F)	AB
Q506	VS2SC1959Y/-1	Cartridge Motor Revers Circuit (2SC1959Y)	AC
Q507	VS2SC2320-F-1	Cartridge Motor Forward Circuit (2SC2320F)	AB
Q510	VS2SC2320-F-1	Voltage Control (2SC2320F)	
Q511	VS2SC1959Y/-1	Phono Motor Speed Selector (2SC1959Y)	AC
Q512	VS2SC2320-F-1	Phono Motor Reverse Circuit (2SC2320F)	AB
Q513	VS2SC1959Y/-1	Phono Motor Reverse Circuit (2SC1959Y)	AC
Q514, 515	VS2SA562-Y/-1	Phono Motor Reverse Circuit (2SA562Y)	
Q516	VS2SC1959Y/-1	Phono Motor Reverse Circuit (2SC1959Y)	
Q517	VS2SC2298-B-1	Phono Motor Speed Control (2SC2298B)	AF
Q518	VS2SC2320-F-1	Phono Motor Forward Circuit (2SC2320F)	AB
Q519	VS2SA966-Y/-1	Gear Solenoid Driver (2SA966Y)	AE
Q520	VS2SC2320-F-1	Gear Solenoid Driver (2SC2320F)	AB
Q521	VS2SC2320-F-1	Cartridge Forward Circuit (2SC2320F)	
Q522	VS2SC2320-F-1	Cartridge Forward Suppressor (2SC2320F)	AE
Q523	VS2SA966-Y/-1	Side B Tonearm Solenoid Driver (2SA966Y)	AB
Q524	VS2SC2320-F-1	Side B Tonearm Solenoid Driver (2SC2320F)	AE
Q525	VS2SA966-Y/-1	Side A Tonearm Solenoid Driver (2SA966Y)	AB
Q526	VS2SC2320-F-1	Side A Tonearm Solenoid Driver (2SC2320F)	
Q529	VS2SC2320-F-1	Side A/B Signal Selector (2SC2320F)	AE
Q530	VS2SA966-Y/-1	Solenoid Voltage Selector (2SA966Y)	AB
Q531	VS2SC2320-F-1	Solenoid Voltage Selector (2SC2320F)	
Q532, 533, Q534	VS2SA999-F/-1	Level Converter (2SA999F)	AC
Q535	VS2SC1959Y/-1	Cartridge Motor Voltage Control (2SC1959Y)	
Q537	VS2SC2320-F-1	Cartridge Motor Voltage Control (2SC2320F)	AB
Q538	VHPPT-350//-1	Photo-transistor EP Record Sensor (PT-350)	AH
Q539	VHPPT-350//-1	Photo-transistor LP Record Sensor (PT-350)	AH
Q540	VS2SA999-F/-1	Microcomputer Reset (2SA999F)	AC
Q701	VS2SD1052ALBF	Constant Voltage (2SD1052ALB)	AF
Q703	VS2SA966-Y/-1	Constant Voltage (2SA966Y	AE
or	VS2SA965-Y/-1	or 2SA965Y	
or	VS2SA1020-Y-1	or 2SA1020Y	
Q704, 705	VS2SC1983//-1	Constant Voltage (2SC1983)	AH

REF. NO.	PART NO.	DESCRIPTION	CODE
		DIODES	
		• Diode VHD1S2473//-1 (1S2473) used in this set is replaceable with the other VHD1S1555V/1G (1S1555).	
D11	VHD1S2473//-1	Discharge (1S2473)	AB
D51, 52	VHD1S2473//-1	Reverse Current Protector (1S2473)	
D53, 54	VHD1S2473//-1	Protector (1SC2473)	
D101, 102	VHD1S2473//-1	Signal Level Shift (1S2473)	
D103	VHD1N60////-1	Signal Level Shift (1N60)	
D104, 105, D106, 109, D110, 111, D112, 201, D202, 203, D204, 205, D206, 207, D501, 502, D503, 504	VHD1S2473//-1	Reverse Current Protector (1S2473)	
D506	VHD1S2473//-1	Discharge (1S2473)	
D507	RH-DX1006AFZZ	Surge Absorber (10E1)	
D509	VHD1S2473//-1	Reverse Current Protector (1S2473)	
D510	RH-DX1006AFZZ	Surge Absorber (10E1)	
D511	VHD1S2473//-1	Discharge (1S2473)	
D512	VHD1S2473//-1	Reverse Current Protector (1S2473)	
D513	RH-DX1006AFZZ	Surge Absorber (10E1)	
D514	VHD1S2473//-1	Reverse Current Protector (1S2473)	
D515	VHD1S2473//-1	Discharge (1S2473)	
D517	VHD10E1////-1	Reverse Current Protector (10E1)	AC
D518, 519, D520, 521, D522, 523, D524, 525	VHD1S2473//-1	Reverse Current Protector (1S2473)	AB
D526	VHD10E1////-1	Level Shift (10E1)	AC
D527, 528	VHD1S2473//-1	Reverse Current Protector (1S2473)	AB
D701	VHDDBA40C//-1	Bridge Rectifier (DBA40C)	AH
D709, 710, D711, 712, D713, 714, D715, 716	VHD10E1////-1	Rectifier (10E1)	AC
D851	RH-DX1006AFZZ	Surge Absorber (10E1)	AB
LED501	VHPGL-520//-1	Infrared Emitting Diode, EP Record Sensor (GL-520)	AG
LED502	VHPGL-520//-1	Infrared Emitting Diode, LP Record Sensor (GL-520)	
LED503	VHPGP3L02//-1	Photo-interruptor, Side A Cartridge Angle Sensor (GP-3L02)	AK
LED504	VHPGP3L02//-1	Photo-interruptor, Side B Cartridge Angle Sensor (GP-3L02)	
LED505	VHPGP3L02//-1	Photo-interruptor, Tonearm Position Sensor (GP-3L02)	
LED901	VHPGL105R5/-1	LED Array (5), Signal Meter (GL-105R5)	AH
LED902	VHPGL-9PR23-1	LED, FM Stereo Indicator (GL-9PR23)	AC
LED903, 904	VHPGL105R53-1	LED Array (5), Tape Level Meter (GL-105R53)	AK
LED905	VHPGL-9NG23-1	LED, APSS Indicator (GL-9NG23)	AC
LED906	VHPGL-9PR23-1	LED, Dolby NR Indicator (GL-9PR23)	AC
LED907	VHPGL-9PR23-1	LED, Record Indicator (GL-9PR23)	
ZD51, 501	VHERD6R2JB2-1	Zener, 6V Constant Voltage (RD6.2JB2)	AB
ZD701	VHERD160JB1-1	Zener, 16V Constant Voltage (RD16JB1)	
ZD703	VHERD120JB3-1	Zener, 12V Constant Voltage (RD12JB3)	
ZD704	VHERD9R1JB2-1	Zener, 9V Constant Voltage (RD9.1JB2)	
ZD705	VHERD160JB1-1	Zener, 16V Constant Voltage (RD16JB1)	
		COILS	
L101	RCILA0407AFZZ	FM Antenna	AD
L102	RCILR0350AFZZ	FM RF	
L103	RCILB0434AFZZ	FM Oscillation	
L104	VP-CH2R2M0000	2.2μH, FM IF Trap	AB
L105	VP-CH470K0000	47μH, Choke	
L107	RCILA0530AFZZ	AM Bar Antenna	AM
L109	RCILB0557AFZZ	LW Oscillation	AD
L110	RCILB0550AFZZ	MW Oscillation	AC
L111, 112	VP-CH1R0M0000	1μH, Choke	AB
L113	VP-CH2R2M0000	2.2μH, Choke	
L201, 202	RCILL0068AFZZ	Dolby NR Low Pass Filter	AG
L203, 204	RCILZ0086AFZZ	6.8mH, Peaking	AC
L205, 206	RCILB0480AFZZ	Bias Step-up	AD
L207	RCILB0513AFZZ	Bias Oscillation Circuit	AN
L208	VP-CH102K0000	1mH, Noise Filter	AB
L501	VP-CH220K0000	22μH, Noise Filter	
L502	VP-CH102K0000	1mH, Noise Filter	
L851	RCILZ0062AFZZ	100μH, Noise Filter	AC
L901	VP-CH101K0000	100μH, Noise Filter	AB
		TRANSFORMERS	
T101	RCILI0204AFZZ	FM IF	AC
T102	RCILD0066AFZZ	FM Detector	AE
T103	RCILD0067AFZZ	FM Detector	AE
T104	RCILI0292AFZZ	AM IF Filter [VZ-3000E]	AD
	RCILI0293AFZZ	AM IF Filter [VZ-3000H]	
T105	RCILI0219AFZZ	AM IF	
⚠ T701	RTRNP0768AFZZ	Power	BC
		FILTERS	
CF101, 102	RFILF0077AFZZ	Ceramic, FM 10.7MHz	AF
CF103	RFILA0074AFZZ	Ceramic, 455kHz [VZ-3000H]	AE
	RFILA0076AFZZ	Ceramic, 465kHz [VZ-3000E]	AF
		RESISTOR ARRAY	
RA502	RMPTC0036AFZZ	1K ohm x 5	AC
		POSISTER	
PTH401	RH-QX1002AFZZ	Positive Temperature Coefficient	AG
		CONTROLS	
VR101	RVR-M0248AFZZ	10K ohm (B), FM Muting Level Adjustment	AB
VR102	RVR-M0199AFZZ	10K ohm (B), VCO Frequency Adjustment	AC
VR201, 202	RVR-M0289AFZZ	20K ohm (B), Tape Playback Sensitivity Adjustment	AB

REF. NO.	PART NO.	DESCRIPTION	CODE
VR203, 204	RVR-M0256AFZZ	20K ohm (B), Tape Record Sensitivity Adjustment	AB
VR205, 206	RVR-M0256AFZZ	20K ohm (B), Bias Current Adjustment	
VR301 A, B	RVR-G0065AFZZ	100K ohm (MN), Balance Control	AG
VR302 A, B	RVR-A0168AFZZ	10K ohm (A), Microphone Mixing Control	
VR303 A, B	RVR-A0163AFZZ	100K ohm (A), Bass Control	
VR304 A, B	RVR-A0163AFZZ	100K ohm (A), Treble Control	
VR305, 306	RVR-A0164AFZZ	50K ohm (A), Record Level Control	AD
VR501	RVR-M0323AFZZ	2K ohm (B), Phono-Motor Speed (33rpm) Adjustment	AB
VR502	RVR-M0323AFZZ	2K ohm (B), Phono Motor Speed (45rpm) Adjustment	
VR902 A, B	RVR-B0241AFZZ	100K ohm (A), Volume Control	AH
VC101 A~E TC101 A, B	RVC-W0053AFZZ	Variable Capacitor Tuning with Trimmer Assembly TC101A: FM Antenna Trimmer TC101B: FM RF Trimmer	AU
TC102	RTO-H1065AFZZ	Trimmer, FM Oscillator	AD
TC104 A, B	RTO-H2050AFZZ	Trimmer Assembly A: LW Antenna B: MW Antenna	
TC106 A, B	RTO-H2050AFZZ	Trimmer Assembly A: LW Oscillator B: MW Oscillator	
		ELECTROLYTIC CAPACITORS	
		(Unless otherwise specified electrolytic capacitors are ±20% type.)	
C54	RC-EZA106AF1H	10MFD, 50V	AB
C123, 124	RC-EZA105AF1H	1MFD, 50V	
C128	RC-EZV106AF1H	10MFD, 50V	
C130	VCEALV1HW474M	.47MFD, 50V	
C131	RC-EZS107AF1C	100MFD, 16V	
C134	RC-EZA476AF1C	47MFD, 16V	
C136	RC-EZA105AF1H	1MFD, 50V	
C138	RC-EZA106AF1E	10MFD, 25V	
C140	RC-EZS477AF1C	470MFD, 16V	AC
C142	RC-EZT106AF1C	10MFD, 16V	AB
C143	RC-EZA335AF1H	3.3MFD, 50V	
C145	RC-EZT106AF1C	10MFD, 16V	
C148, 149	RC-EZT105AF1H	1MFD, 50V	
C150	VCEALU1HW474M	.47MFD, 50V	
C151	VCEALV1HW155M	1.5MFD, 50V	
C152	VCEALV1HW335M	3.3MFD, 50V	
C158	RC-EZA106AF1E	10MFD, 25V	
C161	RC-EZS107AF1C	100MFD, 16V	
C165	RC-EZA106AF1E	10MFD, 25V	
C167	RC-EZV475AF1H	4.7MFD, 50V	
C168	RC-EZV335AF1H	3.3MFD, 50V	
C170	RC-EZV474AF1H	.47MFD, 50V	
C176, 177	RC-EZA335AF1H	3.3MFD, 50V	AB
C185	RC-EZA106AF1E	10MFD, 25V	
C189	RC-EZV336AF1C	33MFD, 16V	
C201, 202	VCEALA1CC106M	10MFD, 16V	
C209, 210	RC-EZA106AF1H	10MFD, 50V	
C213, 214	RC-EZA336AF1C	33MFD, 16V	
C215, 216	RC-EZA335AF1H	3.3MFD, 50V	
C217, 218	RC-EZA105AF1H	1MFD, 50V	
C219	RC-EZV337AF1C	330MFD, 16V	AC
C221	RC-EZA227AF1A	220MFD, 10V	AB
C223, 224, C225, 226	RC-EZA106AF1E	10MFD, 25V	
C231, 232	VCEALA1HW104K	.1MFD, 50V, ±10%	

REF. NO.	PART NO.	DESCRIPTION	CODE
C233, 234	VCEALA1HW334K	.33MFD, 50V, ±10%	AB
C237, 238, C243, 244	RC-EZA335AF1H	3.3MFD, 50V	
C245, 246	RC-EZA105AF1H	1MFD, 50V	
C247, 248	RC-EZA335AF1H	3.3MFD, 50V	
C253, 254	RC-EZA106AF1E	10MFD, 25V	
C261	RC-EZA336AF1C	33MFD, 16V	
C268, 269	RC-EZA106AF1E	10MFD, 25V	
C270	RC-EZS107AF1C	100MFD, 16V	
C272	RC-EZV106AF1H	10MFD, 50V	
C273, 274	VCEALA1HW224M	.22MFD, 50V	
C275	RC-EZA106AF1E	10MFD, 25V	
C276	RC-EZA105AF1H	1MFD, 50V	
C277, 279	RC-EZA336AF1C	33MFD, 16V	AB
C280	RC-EZA106AF1E	10MFD, 25V	
C301, 302	VCEALA1HW224M	.22MFD, 50V	
C307, 308	RC-EZA107AF1A	100MFD, 10V	
C311, 312	VCEALA1HC224M	.22MFD, 50V	
C313	RC-EZA336AF1C	33MFD, 16V	AC
C315, 316	RC-EZA335AF1H	3.3MFD, 50V	
C319, 320	RC-EZA336AF1C	33MFD, 16V	
C323, 324	VCEALA1HC105M	1MFD, 50V	
C325	RC-EZA336AF1C	33MFD, 16V	
C333, 334	RC-EZA105AF1H	1MFD, 50V	
C337, 338	RC-EZA336AF1C	33MFD, 16V	
C343, 344	VCEALA1HW104K	.1MFD, 50V, ±10%	AB
C351, 352	RC-EZA336AF1C	33MFD, 16V	
C403, 404	RC-EZA476AF1H	47MFD, 25V	AC
C405, 406	RC-EZA335AF1H	3.3MFD, 50V	
C409, 410	RC-EZA106AF1H	10MFD, 50V	AB
C411, 412	RC-EZA476AF1E	47MFD, 25V	
C413	RC-EZV107AF1V	100MFD, 35V	AC
C417, 418	RC-EZA335AF1H	3.3MFD, 50V	
C501	RC-EZA105AF1H	1MFD, 50V	AB
C502	RC-EZA475AF1H	4.7MFD, 50V	
C503	VCEALA1HW225M	2.2MFD, 50V	
C504	RC-EZA476AF1H	47MFD, 50V	AC
C505, 506, C507, 508	RC-EZA106AF1H	10MFD, 50V	
C509	RC-EZA107AF1A	100MFD, 10V	
C510, 511	RC-EZA105AF1H	1MFD, 50V	AB
C512	RC-EZV106AF1H	10MFD, 50V,	
C517	RC-EZA336AF1C	33MFD, 16V	
C519	VCE9AU1EW225M	2.2MFD, 25V, Non-polar	AC
C701, 702	RC-EZ1149AFZZ	4700MFD, 35V	AK
C703	RC-EZA107AF1E	100MFD, 25V	AC
C704	RC-EZA106AF1H	10MFD, 50V	AB
C705	RC-EZV227AF1C	220MFD, 16V	
C706	RC-EZA106AF1H	10MFD, 50V	
C708	RC-EZW228AF1V	2200MFD, 35V	AC
C710	RC-EZA107AF1E	100MFD, 25V	
C713	RC-EZA106AF1H	10MFD, 50V	AB
C714, 715	RC-EZA336AF1C	33MFD, 16V	
C716	RC-EZW228AF1V	2200MFD, 35V	AE
C851	RC-EZS105AF1H	1MFD, 50V	
C902	RC-EZA105AF1H	1MFD, 50V	
C903	RC-EZV476AF1E	47MFD, 25V	AB
C906, 907	RC-EZA106AF1H	10MFD, 50V	
C908, 909	RC-EZA105AF1H	1MFD, 50V	
C910	RC-EZA107AF1E	100MFD, 25V	AC
C911	RC-EZV106AF1H	10MFD, 50V	AB
		CAPACITORS	
		(Unless otherwise specified capacitors are 50V, +80 −20%, Ceramic type.)	
C51	VCQYKU1HM823J	.082MFD, 50V, ±5%, Mylar	AC
C52	VCCSPU1HL331K	330PF, 50V, ±10%, Ceramic	AA
C55	VCKZPU1HF473Z	.047MFD	
C56, 57, C58	VCCSPU1HL331K	330PF, 50V, ±10%, Ceramic	AA
C60, 61, C62	VCKZPU1HF223Z	.022MFD	

REF. NO.	PART NO.	DESCRIPTION	CODE
C101	VCCSPU1HL151K	150PF, 50V, ±10%, Ceramic	
C102	VCCTPU1HH180J	18PF, 50V, ±5%, Ceramic (Blue)	
C103, 104, C105, 106	VCKZPA1HF223Z	.022MFD	
C107	VCCTPU1HH180J	18PF, 50V, ±5%, Ceramic (Blue)	
C108	VCCSPV1HL3R0C	3PF, 50V, ±.25PF, Ceramic	
C109	VCCSPU1HL100K	10PF, 50V, ±10%, Ceramic	
C110	VCCCPU1HH1R0C	1PF, 50V, ±.25PF, Ceramic (Black)	
C111	VCCRPU1HH8R0D	8PF, 50V, ±.5PF, Ceramic (Yellow)	
C112	VCCRPU1HH270J	27PF, 50V, ±5%, Ceramic (Yellow)	
C113	VCCCPU1HH330J	33PF, 50V, ±5%, Ceramic (Black)	AA
C114	VCCRPU1HH8R0D	8PF, 50V, ±.5PF, Ceramic (Yellow)	
C115	VCKZPA1HF223Z	.022MFD	
C116	VCKZPU1HF223Z	.022MFD	
C117	VCCSPV1HL101J	100PF, 50V, ±5%, Ceramic	
C118, 119, C120, 121, C122	VCKZPA1HF223Z	.022MFD	
C125, 126	VCKZPU1HF223Z	.022MFD	
C127	VCCSPV1HL101J	100PF, 50V, ±5%, Ceramic	
C129	VCKZPU1HF223Z	.022MFD	
C132	VCKZPU1HF403Z	.04MFD	
C133	VCKZPA1HF403A	.04MFD	
C135,137	VCKZPA1HF223Z	.022MFD	
C139	VCKZPU1HF223Z	.022MFD	
C144	VCTYPU1EX473K	.047MFD, 25V, ±10%, Semiconductor	AB
C146, 147	VCKYAT1HB122K	.0012MFD, 50V, ±10%, Ceramic	AA
C153	VCQSMU1HS391J	390PF, 50V, ±5%, Styrol	
C154	VCKZPA1HF102Z	.001MFD	AA
C155	VCKZPA1HF403Z	.04MFD	AA
C156, 157, C159	VCKZPA1HF223Z	.022MFD	AA
C160	VCCSPV1HL560J	56PF, 50V, ±5%, Ceramic	AA
C162	VCKZPA1HF102Z	.001MFD	AA
C164, 166	VCKZPA1HF403Z	.04MFD	AA
C166	VCKZPU1HF403Z	.04MFD	AA
C169	VCKZPA1HF103Z	.01MFD	AA
C171	VCKZPA1HF223Z	.022MFD	AA
C172	VCCSAT1HL470J	47PF, 50V, ±5%, Ceramic	AA
C174	VCCSPV1HL680J	68PF, 50V, ±5%, Ceramic	AA
C179	VCQSMU1HS221J	220PF, 50V, ±5%, Styrol	
C180	VCQSMU1HS361J	360PF, 50V, ±5%, Styrol	
C182	VCCCPU1HH181J	180PF, 50V, ±5%, Ceramic (Black)	AA
C183	VCCVPU1HK150J	15PF, 50V, ±5%, Ceramic	
C186	VCKZPA1HF223Z	.022MFD	AA
C187	VCKZPA1HF403Z	.04MFD	AA
C188	VCCSPV1HL180J	18PF, 50V, ±5%, Ceramic	AA
C191	VCCSPU1HL100K	10PF, 50V, ±10%, Ceramic	AA
C193	VCKZPU1HF103Z	.01MFD	AA
C203, 204	VCKYAT1HB271K	270PF, 50V, ±10%, Ceramic	AA
C205, 206	VCCSAT1HL101J	100PF, 50V, ±5%, Ceramic	AA
C207	VCKYAT1HB102K	.001MFD, 50V, ±10%, Ceramic	AA
C208	VCKZPA1HF102Z	.001MFD	AA
C211, 212	VCQYKU1HM562J	.0056MFD, 50V, ±5%, Mylar	
C227, 228	VCTYPA1EX472J	.0047MFD, 25V, ±5%, Semiconductor	AB
C229, 230	VCTYPA1EX473J	.047MFD, 25V, ±5%, Semiconductor	AB
C235, 236	VCKYAT1HB102K	.001MFD, 50V, ±10%, Ceramic	AA
C239, 240	VCTYPA1EX562J	.0056MFD, 25V, ±5%, Semiconductor	AB
C241	VCKYAT1HB102K	.001MFD, 50V, ±10%, Ceramic	AA
C242	VCKZPA1HF102Z	.001MFD	AA
C249, 250	VCTYPA1EX683K	.068MFD, 25V, ±10% Semiconductor	AB
C251, 252	VCTYPA1EX123J	.012MFD, 25V, ±5%, Semiconductor	AB
C255, 256	VCTYPA1EX103K	.01MFD, 25V, ±10%, Semiconductor	AA
C259, 260	VCTYPA1EX183K	.018MFD, 25V, ±10%, Semiconductor	AA
C262	VCCSAT1HL101J	100PF, 50V, ±5%, Ceramic	AA
C263, 264	VCKYAT1HB471K	470PF, 50V, ±10%, Ceramic	AA
C265	VCTYAT1EX682K	.0068MFD, 25V, ±10%, Semiconductor	AA
C266	VCKYAT1HB102K	.001MFD, 50V, ±10%, Ceramic	AA
C267	VCTYPA1EX333J	.033MFD, 25V, ±5%, Semiconductor	
C271	VCKZPA1HF473Z	.047MFD	AA
C281	VCQYKA1HM152K	.0015MFD, 50V, ±10%, Mylar	AB
C283, 284	VCTYPA1EX273J	.027MFD, 25V, ±5%, Semiconductor	AB
C285	VCKZPU1HF103Z	.01MFD	AA
C303, 304	VCQYKV1HM222J	.0022MFD, 50V, ±5%, Mylar	AB
C305, 306	VCQYKV1HM822J	.0082MFD, 50V, ±5%, Mylar	AB
C317, 318	VCCSAT1HL220J	22PF, 50V, ±5%, Ceramic	AA
C321, 322	VCKYAT1HB181K	180PF, 50V, ±10%, Ceramic	AA
C331, 332	VCCSPV1HL331J	330PF, 50V, ±5%, Ceramic	
C335, 336	VCKYAT1HB391K	390PF, 50V, ±10%, Ceramic	AA
C339, 340	VCCSPA1HL331J	330PF, 50V, ±5%, Ceramic	
C341, 342	VCTYPA1EX223K	.022MFD, 25V, ±10%, Semiconductor	AA
C345, 346	VCQYKA1HM823K	.082MFD, 50V, ±10%, Mylar	AB
C347, 348	VCKYAT1HB122K	.0012MFD, 50V, ±10%, Ceramic	AA
C349, 350	VCTYPA1EX103K	.01MFD, 25V, ±10%, Semiconductor	AA
C381, 382	VCTYPA1EX563K	.056MFD, 25V, ±10%, Semiconductor	AB
C383, 384, C401, 402	VCKYAT1HB471K	470PF, 50V, ±10%, Ceramic	AA
C407, 408	VCCSPA1HL8R0C	8PF, 50V, ±.25PF, Ceramic	AA
C415, 416	VCQYKA1HM473K	.047MFD, 50V, ±10%, Mylar	AB
C513, 514, C515, 516	VCKZPA1HF473Z	.047MFD	AA
C518	VCQYKU1HM104M	.1MFD, 50V, ±20%, Mylar	AC
C520	VCKZPA1HF473Z	.047MFD	AA
C711, 712, C717	VCKZPA1HF403Z	.04MFD	AA
△ C718	RC-FZ071CAFZZ	.01MFD, 250V, ±20%, Ceramic	AE
C719	VCKZPA1HF403Z	.04MFD	AA
C852, 853	VCKZPU1HF223Z	.022MFD	AA
C901, 904	VCCSAT1HL470J	47PF, 50V, ±5%, Ceramic	AA
C905	VCCSPA1HL470J	47PF, 50V, ±5%, Ceramic	AA
C915	VCKZPU1HF223Z	.022MFD	AA

RESISTORS

(Unless otherwise specified resistors are 1/4W, ±5%, Carbon type.)

R11, 12	VRD-ST2EE222J	2.2K ohm	AA
R51	VRD-ST2EE101J	100 ohm	
R53	VRD-ST2EE472J	4.7K ohm	
R54, 55	VRD-ST2EE103J	10K ohm	
R56	VRD-ST2EE333J	33K ohm	
R57	VRD-ST2EE224J	220K ohm	
R58	VRD-ST2EE564J	560K ohm	
R59	VRD-ST2EE103J	10K ohm	
R100	VRD-ST2EE102J	1K ohm	
R101	VRD-ST2EE104J	100K ohm	
R102, 103	VRD-ST2EE470J	47 ohm	
R104	VRD-ST2EE101J	100 ohm	
R105	VRD-ST2EE105J	1Meg ohm	
R106, 107	VRD-ST2EE104J	100K ohm	
R108	VRD-ST2EE103J	10K ohm	
R109	VRD-ST2EE332J	3.3K ohm	
R110	VRD-ST2EE103J	10K ohm	
R111	VRD-ST2EE561J	560 ohm	
R112	VRD-ST2EE223J	22K ohm	
R113, 115	VRD-ST2EE472J	4.7K ohm	AA
R116	VRD-ST2EE151J	150 ohm	
R117	VRD-ST2EE101J	100 ohm	
R118	VRD-ST2EE474J	470K ohm	
R119	VRD-ST2EE560J	56 ohm	
R120, 122	VRD-ST2EE331J	330 ohm	
R123	VRD-ST2EE154J	150K ohm	
R124	VRD-ST2EE683J	68K ohm	
R126	VRD-ST2EE562J	5.6K ohm	
R128, 129	VRD-ST2EE153J	15K ohm	
R130	VRD-ST2EE223J	22K ohm	
R131	VRD-ST2EE222J	2.2K ohm	
R132	VRD-ST2EE223J	22K ohm	
R133	VRD-ST2EE122J	1.2K ohm	
R134	VRD-ST2EE104J	100K ohm	
R135	VRD-ST2EE222J	2.2K ohm	
R136	VRG-ST2EC101J	100 ohm, 1/4W, ±5%, Fusible	AB
R137	VRD-ST2EE333J	33K ohm	
R138	VRD-ST2EE562J	5.6K ohm	
R139	VRD-ST2EE333J	33K ohm	
R140	VRD-ST2EE104J	100K ohm	
R141	VRD-ST2EE562J	5.6K ohm	
R142, 143, R144	VRD-ST2EE473J	47K ohm	
R145, 146	VRD-ST2EE273J	27K ohm	
R147, 148	VRD-ST2EE393J	39K ohm	AA
R149	VRD-ST2EE222J	2.2K ohm	
R150	VRD-ST2EE333J	33K ohm	
R151	VRD-ST2EE473J	47K ohm	
R153	VRD-ST2EE103J	1K ohm	
R154	VRD-ST2EE183J	18K ohm	
R155	VRD-ST2EE563J	56K ohm	
R156	VRD-ST2EE221J	220 ohm	
R157	VRD-ST2EE222J	2.2K ohm	
R158	VRG-ST2EC101J	100 ohm, 1/4W, ±5%, Fusible	AB
R159	VRD-ST2EE561J	560 ohm	
R160	VRD-SU2EE471J	470 ohm	
R161	VRD-ST2EE473J	4.7K ohm	
R162	VRD-ST2EE331J	330 ohm	
R163, 164	VRD-ST2EE103J	10K ohm	
R165	VRD-ST2EE123J	12K ohm	
R166	VRD-ST2EE392J	3.9K ohm	
R168	VRD-ST2EE391J	390 ohm	AA
R169	VRD-ST2EE153J	15K ohm	
R170	VRD-ST2EE823J	82K ohm	
R171	VRD-ST2EE391J	390 ohm	
R172	VRD-ST2EE153J	15K ohm	
R173	VRD-ST2EE473J	47K ohm	
R175	VRD-SU2EE683J	68K ohm	
R176	VRD-ST2EE683J	68K ohm	
R177	VRD-SU2EE121J	120 ohm	
R178, 179	VRG-ST2EC121J	120 ohm, 1/4W, ±5%, Fusible	AB
R180	VRD-ST2EE123J	12K ohm	AA
R181	VRD-ST2EE333J	33K ohm	
R190	VRD-ST2EE123J	12K ohm	
R191	VRD-ST2EE104J	100K ohm	
R201, 202	VRD-ST2EE101J	100 ohm	
R205, 206	VRD-ST2EE391J	390 ohm	
R207, 208	VRD-ST2EE223J	22K ohm	AA
R209, 210	VRD-ST2EE333J	33K ohm	
R211, 212, R213, 214	VRD-ST2EE684J	680K ohm	
R215, 216	VRD-ST2EE223J	22K ohm	
R217, 218	VRD-ST2EE682J	6.8K ohm	
R219	VRD-ST2EE102J	1K ohm	
R220	VRG-ST2EC121J	120 ohm, 1/4W, ±5%, Fusible	AB
R221, 222	VRD-ST2EE184J	180K ohm	
R223, 224	VRD-ST2EE563J	56K ohm	
R225, 226	VRD-ST2EE274J	270K ohm	
R227, 228	VRD-ST2EE153J	15K ohm	
R229, 230	VRD-ST2EE332J	3.3K ohm	
R231, 232	VRD-ST2EE473J	47K ohm	
R233, 234	VRD-ST2EE474J	470K ohm	
R235, 236	VRD-ST2EE104J	100K ohm	
R237, 238	VRD-ST2EE153J	15K ohm	
R239, 240	VRD-ST2EE332J	3.3K ohm	
R241, 242	VRD-ST2EE223J	22K ohm	
R243, 244	VRD-ST2EE151J	150 ohm	
R247, 248	VRD-ST2EE272J	2.7K ohm	
R249, 250	VRD-ST2EE472J	4.7K ohm	
R251, 252	VRD-ST2EE562J	5.6K ohm	
R253, 254	VRD-ST2EE222J	2.2K ohm	
R255, 256	VRD-ST2EE123J	12K ohm	AA
R257	VRD-ST2EE182J	1.8K ohm	
R258	VRD-ST2EE124J	120K ohm	
R259	VRD-ST2EE221J	220 ohm	
R261	VRD-ST2EE472J	4.7K ohm	
R262	VRD-ST2EE273J	27K ohm	
R263	VRD-ST2EE101J	100 ohm	
R264	VRD-ST2EE103J	10K ohm	
R266	VRD-ST2EE103J	10K ohm	
R267	VRD-ST2EE182J	1.8K ohm	
R268	VRD-ST2EE471J	470 ohm	
R269	VRD-ST2EE103J	10K ohm	
R270	VRD-ST2EE1R0J	1 ohm	
R271	VRD-ST2EE272J	2.7K ohm	
R272	VRD-ST2EE561J	560 ohm	
R274	VRD-ST2EE104J	100K ohm	
R275	VRD-ST2EE471J	470 ohm	
R276	VRD-ST2EE102J	1K ohm	
R277	VRD-ST2EE821J	820 ohm	
R279	VRG-ST2EC151J	150 ohm, 1/4W, ±5%, Fusible	AB
R280	VRD-ST2EE221J	220 ohm	
R283, 284	VRD-ST2EE183J	18K ohm	
R285, 286	VRD-ST2EE223J	22K ohm	
R287, 288	VRD-ST2EE181J	180 ohm	
R289	VRD-ST2EE123J	12K ohm	
R301, 302	VRD-ST2EE473J	47K ohm	
R303, 304	VRD-ST2EE333J	33K ohm	
R305, 306	VRD-ST2EE561J	560 ohm	
R307, 308	VRD-ST2EE394J	390K ohm	
R309, 310, R311, 312	VRD-ST2EE473J	47K ohm	AA
R315, 316	VRD-ST2EE154J	150K ohm	
R317, 318	VRD-ST2EE153J	15K ohm	
R319, 320	VRD-ST2EE103J	10K ohm	
R321, 322	VRD-ST2EE271J	270 ohm	
R323, 324	VRD-ST2EE224J	220K ohm	
R325, 326	VRD-ST2EE561J	560 ohm	
R327, 328	VRD-ST2EE104J	100K ohm	
R329, 330	VRD-ST2EE103J	10K ohm	
R331, 332	VRD-SU2EE473J	47K ohm	
R335, 336	VRD-ST2EE154J	150K ohm	
R337, 338	VRD-ST2EE102J	1K ohm	
R339	VRD-ST2EE221J	220 ohm	

REF. NO.	PART NO.	DESCRIPTION	CODE
R342	VRD-ST2EE221J	220 ohm	
R343, 344	VRD-ST2EE103J	10K ohm	
R349, 350	VRD-ST2EE223J	22K ohm	
R361, 362	VRD-ST2EE183J	18K ohm	
R363, 364	VRD-ST2EE124J	120K ohm	
R365, 366	VRD-ST2EE332J	3.3K ohm	
R367, 368	VRD-ST2EE562J	5.6K ohm	
R369, 370	VRD-ST2EE122J	1.2K ohm	
R371, 372	VRD-ST2EE472J	4.7K ohm	
R373, 374	VRD-ST2EE221J	220 ohm	
R375, 376	VRD-ST2EE221J	220 ohm	
R378	VRD-ST2EE222J	2.2K ohm	
R379	VRD-ST2EE151J	150 ohm	
R380	VRD-ST2EE121J	120 ohm	AA
R381, 382	VRD-ST2EE123J	12K ohm	
R385, 386	VRD-SU2EE102J	1K ohm	
R389, 390	VRD-SU2EE104J	100K ohm	
R391	VRD-ST2EE472J	4.7K ohm	
R392	VRD-ST2EE103J	10K ohm	
R393	VRD-ST2EE472J	4.7K ohm	
R394	VRD-ST2EE103J	10K ohm	
R389, 390	VRD-SU2EE104J	100K ohm	
R401, 402	VRD-ST2EE333J	33K ohm	
R403, 404	VRD-ST2EE222J	2.2K ohm	
R405, 406	VRD-ST2EE391J	390 ohm	
R407, 408	VRD-ST2EE332J	3.3K ohm	
R409, 410	VRD-ST2EE102J	1K ohm	
R411, 412	VRD-ST2EE333J	33K ohm	
R415, 416	VRG-ST2ED4R7J	4.7 ohm, 1/4W, ±5%, Fusible	AB
R417	VRG-ST2EC101J	100 ohm, 1/4W, ±5%, Fusible	AB
R418	VRD-ST2EE224J	220K ohm	
R419, 420	VRD-ST2EE472J	4.7K ohm	
R421	VRD-ST2EE184J	180K ohm	
R501, 502	VRD-ST2EE103J	10K ohm	
R503	VRD-ST2EE332J	3.3K ohm	
R504	VRD-ST2EE222J	2.2K ohm	
R505	VRD-ST2EE222J	2.2K ohm	
R506	VRD-ST2EE8R2J	8.2 ohm	
R507, 508	VRD-ST2EE103J	10K ohm	
R509	VRD-ST2EE222J	2.2K ohm	
R510	VRD-ST2EE8R2J	8.2 ohm	
R511	VRD-ST2EE332J	3.3K ohm	
R513, 514, R515, 516	VRD-ST2EE103J	10K ohm	
R517	VRD-ST2EE223J	22K ohm	
R518	VRD-ST2EE103J	10K ohm	
R519	VRD-ST2EE222J	2.2K ohm	
R520	VRD-ST2EE103J	10K ohm	
R521	VRD-ST2EE272J	2.7K ohm	
R522	VRD-ST2EE103J	10K ohm	
R523	VRD-ST2EE222J	2.2K ohm	
R525	VRD-ST2EE124J	120K ohm	
R528, 529	VRD-ST2EE103J	10K ohm	
R530	VRD-ST2EE472J	4.7K ohm	
R531	VRD-ST2EE103J	10K ohm	
R533	VRD-ST2EE332J	3.3K ohm	
R534	VRD-ST2EE103J	10K ohm	
R535, 536	VRD-ST2EE222J	2.2K ohm	
R537	VRD-ST2EE103J	10K ohm	
R538	VRD-ST2EE332J	3.3K ohm	
R539	VRD-ST2EE472J	4.7K ohm	
R540	VRD-ST2EE103J	10K ohm	
R542	VRD-ST2EE223J	22K ohm	
R543	VRD-ST2EE473J	47K ohm	
R544	VRD-ST2EE102J	1K ohm	
R545	VRD-ST2EE103J	10K ohm	
R546	VRD-ST2EE471J	470 ohm	
R547, 548	VRD-ST2EE103J	10K ohm	
R550	VRD-ST2EE332J	3.3K ohm	
R551	VRD-ST2EE471J	470 ohm	
R552	VRD-ST2EE103J	10K ohm	
R553, 554, R555	VRD-ST2EE103J	10K ohm	
R556	VRD-ST2EE471J	470 ohm	
R557, 558, R559	VRD-ST2EE103J	10K ohm	
R560	VRD-ST2EE102J	1K ohm	
R561, 562	VRD-ST2EE103J	10K ohm	
R563	VRD-ST2EE223J	22K ohm	
R565	VRD-ST2EE103J	10K ohm	
R566	VRD-ST2EE471J	470 ohm	
R567, 568	VRD-ST2EE103J	10K ohm	
R570	VRD-ST2EE823J	82K ohm	
R571	VRD-ST2EE103J	10K ohm	
R572, 573	VRD-ST2EE102J	1K ohm	
R574	VRD-ST2EE472J	4.7K ohm	
R575, 576	VRD-ST2EE103J	10K ohm	
R577	VRD-ST2EE471J	470 ohm	
R578	VRD-ST2EE273J	27K ohm	
R579	VRD-ST2EE472J	4.7K ohm	
R580, 581, R582, 583, R584, 585, R586	VRD-ST2EE102J	1K ohm	AA
R587, 588, R589, 590, R591, 592, R593, 594,	VRD-ST2EE103J	10K ohm	
R596	VRD-ST2EE332J	3.3K ohm	
R597	VRD-ST2EE473J	47K ohm	
R598	VRD-ST2EE223J	22K ohm	
R599	VRD-ST2EE822J	8.2K ohm	
R600	VRD-ST2EE472J	4.7K ohm	
R601	VRD-ST2EE223J	22K ohm	
R602	VRD-ST2EE102J	1K ohm	
R604, 605, R606, 607, R608, 609	VRD-ST2EE102J	1K ohm	
R610, 611	VRD-SU2EE103J	10K ohm	
R612, 613, R614	VRD-ST2EE103J	10K ohm	
R615, 616	VRD-ST2EE104J	100K ohm	
R619, 620, R621	VRD-SU2EE103J	10K ohm	
R701	VRG-ST2ED1R0J	1 ohm, 1/4W, ±5%, Fusible	AB
R702	VRD-ST2EE182J	1.8K ohm	AA
R704	RR-XZ1023AFZZ	10 ohm, 3W, ±10% Cement (RGF3)	AD
R705	VRD-ST2EE152J	1.5K ohm	AA
R707	VRS-PU3DB102J	1K ohm, 2W, ±5%, Metal Oxide Film	AB
R708	VRD-ST2EE222J	2.2K ohm	
R710	VRD-ST2EE681J	680 ohm	
R901	VRD-ST2EE183J	18K ohm	AA
R902	VRD-ST2EE104J	100K ohm	
R903	VRD-ST2EE123J	12K ohm	
R904	VRD-SU2EE182J	1.8K ohm	
R907, 908	VRG-ST2HC271J	270 ohm, 1/2W, ±5%, Fusible	AB
R910	VRD-ST2EE393J	39K ohm	
R911, 912	VRD-ST2EE183J	18K ohm	
R913	VRD-ST2EE393J	39K ohm	AA
R914, 915	VRD-ST2EE104J	100K ohm	
R916, 917	VRD-ST2EE122J	1.2K ohm	
R918	VRG-ST2EC101J	100 ohm, 1/4W, ±5%, Fusible	AB

CIRCUIT PARTS

CNP12	QCNCM399CAFZZ	Plug, 3 Pin	AB
CNP13	QCNCM463CAFZZ	Plug, 3 Pin	AA
CNP101	QCNCM402FAFZZ	Plug, 6 Pin	AC
CNP201	QCNCM421FAFZZ	Plug, 6 Pin	AD
CNP202	QCNCM417BAFZZ	Plug, 2 Pin	AB
CNP203	QCNCM416EAFZZ	Plug, 5 Pin	AC
CNP401	QCNCM436CAFZZ	Plug, 3 Pin	AA
CNP501	QCNCM398BAFZZ	Plug, 2 Pin	AB
CNP502	————	Plug, 6 Pin (REF. NO. M502)	—
CNP503	QCNCM400DAFZZ	Plug, 4 Pin	AB
CNP504	QCNCM462BAFZZ	Plug, 2 Pin	AA
CNP505	QCNCM401EAFZZ	Plug, 5 Pin	AD
CNP506	QCNCM436CAFZZ	Plug, 3 Pin	AA
CNP508	QCNCM439FAFZZ	Plug, 6 Pin	AB
CNP510	QCNCM431BAFZZ	Plug, 2 Pin	AA
CNP511	QCNCM437DAFZZ	Plug, 4 Pin	
CNP512	QCNCM432HAFZZ	Plug, 8 Pin	
CNP513	QCNCM439FAFZZ	Plug, 6 Pin	AB
CNP514	QCNCM465EAFZZ	Plug, 5 Pin	
CNP851	QCNCM418CAFZZ	Plug, 3 Pin	
CNP852	QCNCM422GAFZZ	Plug, 7 Pin	AD
CNP901	QCNCM435GAFZZ	Plug, 7 Pin	AB
CNS12	QCNW-1242AFZZ	Socket Assembly, 3 Pin	AF
CNS13	CCNCW335CAF01	Socket Assembly, 3 Pin	
CNS101	CCNCW308FAF06	Socket Assembly, 6 Pin	
CNS201	QCNW-1049AFZZ	Socket Assembly, 6 Pin	AH
CNS202	QCNW-1050AFZZ	Socket Assembly, 2 Pin	AE
CNS203	CCNCW321EAF03	Socket Assembly, 5 Pin	
CNS401	CCNCW327CAF02	Socket Assembly, 3 Pin	
CNS501	————	Socket, 2 Pin (REF. NO.M501)	—
CNS502	QCNW-1081AFZZ	Socket Assembly, 6 Pin	AF
CNS503	QCNW-1079AFZZ	Socket Assembly, 4 Pin	
CNS504	QCNW-1073AFZZ	Socket Assembly, 2 Pin	AC
CNS505	QCNW-1075AFZZ	Socket Assembly, 5 Pin	AF
CNS506	QCNW-1077AFZZ	Socket Assembly, 3 Pin	AE
CNS508	QCNW-1238AFZZ	Socket Assembly, 6 Pin	AH
CNS510	QCNW-1072AFZZ	Socket Assembly, 2 Pin	AC
CNS511	QCNW-1078AFZZ	Socket Assembly, 4 Pin	AF
CNS512	QCNW-1076AFZZ	Socket Assembly, 8 Pin	AH
CNS513	QCNW-1080AFZZ	Socket Assembly, 6 Pin	AG
CNS514	CCNCW337EAF01	Socket Assembly, 5 Pin	
CNS851	CCNCW305CAF03	Socket Assembly, 3 Pin	
CNS852	CCNCW309GAF02	Socket Assembly, 7 Pin	
CNS901	CCNCW326GAF04	Socket Assembly, 7 Pin	
⚠ F401, 402, ⚠ F701, 702	QFS-C322CAFNI	Fuse, T3.15A/250V	
⚠ F703	QFS-C162CAGNI	Fuse, T1.6A/250V	AE
⚠ F704	QFS-C102CAGNI	Fuse, T1.0A/250V	
⚠ F705	QFS-C202CAGNI	Fuse, T2.0A/250V	
JA301	QCNW-1014AFZZ	Jumper, 9 Leads (200mm)	AD
JA302	QCNW-1013AFZZ	Jumper, 6 Leads (200mm)	AC
JA303	QCNW-1012AFZZ	Jumper, 4 Leads (200mm)	AB
JA304	QCNW-1045AFZZ	Jumper, 5 Leads (170mm)	AC
JA901	QCNW-1113AFZZ	Jumper, 10 Leads (160mm)	AD
JA902	QCNW-1112AFZZ	Jumper, 5 Leads (190mm)	AC
JCN901	QCNCW300KAFZZ	Connector for Jumper Lead, 10 Pin	AE
JCN902	QCNCW295EAFZZ	Connector for Jumper Lead, 5 Pin	AD
J402	QJAKJ0093AFZZ	Jack, Headphones	AG
J901, 902	QJAKE0083AFZZ	Jack, Microphone	AH
M501	RMOTV0098AFZZ	Motor, Cartridge	AT
M502	RMOTP0060AFZZ	Motor, Phono	AX
M851	RMOTV0093AFZZ	Motor, Tape	AV
PL101	————	Lamp, Dial Illumination (REF. NO. 432)	—
PL501	RLMPM0129AFZZ	Lamp, Side A Play Indicator	
PL502	RLMPM0129AFZZ	Lamp, Side B Play Indicator	AD
PL503	RLMPM0129AFZZ	Lamp, Dual-Play Indicator	
PL504	RLMPM0129AFZZ	Lamp, Repeat-Play Indicator	
PL505	RLMPM0130AFZZ	Lamp, Cartridge Illumination	
PL506	RLMPM0133AFZZ	Lamp, Disc Illumination	AE
RLY11	RRLYZ0082AFZZ	Relay, Side A/B Signal Selector	AN
SOL501	RPLU-0139AFZZ	Solenoid, Gear	AQ
SOL502	RPLU-0140AFZZ	Solenoid, Side B Tonearm	
SOL503	RPLU-0140AFZZ	Solenoid, Side A Tonearm	AM
SOL851	RPLU-0114AFZZ	Solenoid, APSS	
SO101	QSOCD2497AFZZ	Socket, Antenna	AF
SO301	QSOCD4502AFZZ	DIN Socket, AUX(REC/PB)	AG
SO401	QSOCD2484AFZZ	Socket, Speaker	AF
⚠ SO701	QSOCE0567AFZZ	Voltage Selector	AG
SW101 (A~G)	QSW-P0353AFZZ	Switch Assembly, Function Selector	AS
SW201 (a~j)	QSW-S0320AFZZ	Switch, Record/Playback	AG
SW202	QSW-S0233AFZZ	Switch, Beat Cancel	AE
SW301 (a~f)	QSW-S0314AFZZ	Switch, Tape Selector (Metal)	AG
SW302 (a~f)	QSW-S0314AFZZ	Switch, Tape Selector (CrO_2/Normal)	
SW303 (a~d)	QSW-S0313AFZZ	Switch, Dolby NR	
SW304 (a~d)	QSW-S0313AFZZ	Switch, Loudness	AF
SW501	QSW-M0071AFZZ	Switch, EP Mis-Loading Detector	
SW502	QSW-F0161AFZZ	Switch, Door Close Detector	
SW503	QSW-F0161AFZZ	Switch, Door Open Detector	AD
SW504	QSW-F0161AFZZ	Switch, Rest Position Detector	
SW505	QSW-Z0051AFZZ	Switch, Player Door Open/Close	AC
SW506	QSW-Z0051AFZZ	Switch, Play/Cut	
SW507	QSW-Z0051AFZZ	Switch, Cue	
SW508	QSW-Z0051AFZZ	Switch, Forward	
SW509	QSW-Z0051AFZZ	Switch, Reverse	
SW510	QSW-Z0051AFZZ	Switch, Dual-Play	AC
SW511	QSW-Z0051AFZZ	Switch, Repeat Play	
SW512	QSW-Z0051AFZZ	Switch, Side A/Side B Selector	
SW513	QSW-Z0051AFZZ	Switch, Speed (33/45) Selector	
⚠ SW701	QSW-P9132AFZZ	Switch, Power	AG
SW851	QSW-F0148AFZZ	Switch, Tape Motor	
SW852	QSW-F0137AFZZ	Switch, Muting	
SW853	QSW-F0137AFZZ	Switch, APSS	AE
SW854	QSW-F0149AFZZ	Switch, Bias	
	QCNW-1019AFZZ	Connecting Lead Assembly, 4 Leads	AH
	QCNW-1020AFZZ	Connecting Lead Assembly, 3 Leads	AC
	QCNW-1045AFZZ	Jumper, 5 Leads (160mm)	AC
	QCNW-1083AFZZ	Connecting Lead, 8 Leads	
	QCNW-1240AFZZ	Connecting Lead Ass'y for Microcomputer PWB, 10 Leads	AE
⚠	QACCZ0002TA0F	AC Power Supply Cord; Refer to Table 43	AG
⚠	QACCZ0053AF00		AK
⚠	QACCV0001AGZZ		AL
⚠	QACCB0054AF09		

TAPE DECK MECHANICAL PARTS

001	JKNBP0142AFSA	Button, Pause	
002	JKNBP0143AFSA	Button, Fast-forward	
003	JKNBP0144AFSA	Button, Rewind	
004	JKNBP0145AFSA	Button, Stop	
005	JKNBP0146AFSA	Button Play	AE
006	JKNBP0147AFSA	Button, Record	
007	JKNBP0148AFSA	Button, Eject	
008	LANGF0575AFZZ	Bracket, Flywheel	
009	LANGG0078AFZZ	Sub Chassis Guide	
010	LANGK0248AFZZ	Bracket, Motor	AC
011	LANGT0978AFZZ	Head Base	AB
012	LCHSM0360AFZZ	Main Chassis	
013	LCHSM0361AFZZ	Second Chassis	
014	LCHSS0159AFZZ	Sub Chassis	

REF. NO.	PART NO.	DESCRIPTION	CODE
015	LPINZ0051AFZZ	Pin, Pause Lever	
016	LSTWC2001AFZZ	Stop Ring, 2mm Dia.	
017	LX-HZ0056AFFD	Screw, 3mm Dia. x 10mm	
018	LX-HZ0077AFZZ	Screw, 2.6mm Dia. x 10mm	
019	LX-HZ0078AFZZ	Screw, 2.6mm Dia. x 12mm	
020	LX-HZ0080AFZZ	Screw, 3mm Dia. x 25mm	
021	LX-HZ0081AFZZ	Screw, 3mm Dia. x 30mm	AA
022	LX-WZ0014AGFK	Lock Washer, 2.6mm Dia.	
023	LX-WZ5018AGZZ	Washer, 2.1mm Dia.	
024	LX-WZ5020AGZZ	Washer, 1.7mm Dia.	
025	LX-WZ9053AFZZ	Washer, Oil Thrower	
026	LX-WZ9063AFZZ	Washer, 2mm Dia.	
027	LX-WZ9064AFZZ	Washer, 1.5mm Dia.	
028	MCAMP0054AFZZ	Cam, Pause	AB
029	MLEVF1120AFZZ	Arm, P.A.D.	AD
030	MLEVP0215AFZZ	Lever, Cassette Holder Lock	
031	MLEVP0216AFZZ	Lever, Record	AB
032	MLEVP0217AFZZ	Lever, Play	
033	MLEVP0218AFZZ	Lever, Rewind	
034	MLEVP0219AFZZ	Lever, Fast-forward	AC
035	MLEVP0220AFZZ	Lever, Pause	
036	MLEVP0221AFZZ	Lever, P.A.D. Lock	
037	MLEVP0222AFZZ	Arm, P.A.D. Lock	
038	MLEVP0223AFZZ	Lever, Start	
039	MLEVP0224AFZZ	Lever, Eject Prevention	
040	MLEVP0225AFZZ	Lever, Record Prevention	
041	MLEVP0226AFZZ	Lever, Lock Release	
042	MLEVP0227AFZZ	Lever, Brake Release	AB
043	MLEVP0228AFZZ	Lever, APSS Switch Operation	
044	MLEVP0229AFZZ	Lever, Fast-forward/Rewind Prevention	
045	MLEVP0230AFZZ	Arm, Record Sensor	
046	MLEVP0231AFZZ	Lever, Sub Chassis Lock	
047	MLEVP0232AFZZ	Arm, Play Release	
048	MLEVP0233AFZZ	Lever, Brake	
049	MLEVP0234AFZZ	Lever, Auto Stop Killer	
050	MLEVP0235AFZZ	Lever, Sensor	
051	MLEVP0236AFZZ	Lever, Erase Prevention	
052	MLEVP0237AFZZ	Arm, Record Interlocking	AD
053	MLEVP0238AFZZ	Lever, Record Conversion	AC
054	MLEVP0239AFZZ	Pad, Thrust	AC
055	JBOTN0075AFZZ	Button Block Assembly	AP
055-1	LANGK0250AFFW	Bracket, Button Block	AC
055-2	MLEVP0240AFZZ	Lever, Button Lock (Main)	
055-3	MLEVP0241AFZZ	Lever, Button Lock (Sub)	AB
055-4	MLEVP0242AFZZ	Lever, Pause Button	
055-5	MLEVP0243AFZZ	Lever, Fast-forward Button	AC
055-6	MLEVP0245AFZZ	Lever, Rewind Button	
055-7	MLEVP0246AFZZ	Lever, Stop Button	AB
055-8	MLEVP0247AFZZ	Lever, Play Button	
055-9	MLEVP0248AFZZ	Lever, Record Button	
055-10	MLEVP0249AFZZ	Lever, Eject Button	AC
055-11	MSPRP0253AFFW	Spring (Plate Type), Button Lever	
055-12	NSFTT0144AFFD	Shaft, Button Lever	
056	MSPRC0229AFFJ	Spring Pause Lever Pin	
057	MSPRC0230AFFJ	Spring, Head Azimuth	
058	MSPRC0231AFFJ	Spring, APSS Solenoid	
059	MSPRD0311AFFJ	Spring, Over Stroke	
060	MSPRD0312AFFJ	Spring, P.A.D. Lock Lever	AB
061	MSPRD0314AFFJ	Spring Pinch Roller	
062	MSPRD0315AFFJ	Spring, Record Sensor Arm	
063	MSPRD0316AFFJ	Spring, Fast-forward/Rewind Return Lever	
064	MSPRD0317AFFJ	Spring, Pinch Roller Return	
065	MSPRD0318AFFJ	Spring, Pinch Roller Return	
066	MSPRD0319AFFJ	Spring, Record Conversion Lever	AC
067	MSPRP0251AFFJ	Spring (Plate type), Sub Chassis Pressing	AB
068	MSPRP0252AFFJ	Spring (Plate type), Cassette Pressing	AB
069	MSPRT0739AFFJ	Spring, Record Prevention Lever/Fast-forward Roller/ Rewind Roller	AB
070	MSPRT0740AFFJ	Spring, Auto Stop Killer	AB
071	MSPRT0741AFFJ	Spring, Brake Lever	AB
073	MSPRT0743AFFJ	Spring, Record Lever/P.A.D. Lock Lever/Brake Release Lever	AB
074	MSPRT0744AFFJ	Spring, Cassette Holder Lock Lever/Play Arm	AB
075	MSPRT0745AFFJ	Spring, Pause Lever	AB
076	MSPRT0746AFFJ	Spring, Play Lever	AB
077	MSPRT0747AFFJ	Spring, Sub Chassis Return	AB
078	NBALS0006AGFJ	Steel Ball, 2mm Dia.	AA
079	NBLTH0076AFJJ	Belt, Flywheel Drive	AC
080	NBLTK0184AFZZ	Belt, Play	AB
081	NDAIR0150AFSA	Turntable, Take-up	AG
082	NDAIR0151AFSA	Turntable, Supply	AE
083	NFLYC0090AFZZ	Flywheel	AP
084	NGERH0066AFZZ	Gear, P.A.D.	AB
085	NGERH0067AFZZ	Gear, Play	AE
086	NGERP0051AFZZ	Gear, Play Drive	AB
087	NIDR-0073AFZZ	Arm, Play	AD
088	NIDR-0074AFZZ	Idler, Rewind	AB
089	NPLYR0076AFZZ	Pully, Play	AB
090	NROLV0017AFZZ	Roller, Fast-forward	AF
091	NROLX0014AFZZ	Roller, Rewind	AF
092	NROLY0037AFZZ	Pinch Roller	AE
093	NSFTN0008AFFW	Shaft, Play Pulley	AB
094	PGUMR0052AFZZ	Cushion, P.A.D. Lever	AB
095	RHEDA0077AFZZ	Erase Head	AM
096	RHEDH0085AFZZ	Record/Playback Head	AS
098	MSPRD0335AFFJ	Spring, Sub Chassis Lock Lever	AB
099	NSFTT0148AFFW	Shaft, Record Conversion Lever	AD
100	LSTWC4004AFZZ	Stop Ring, 4mm Dia.	AA
101	MSPRC0248AFFJ	Spring, Sensor Lever	AB
102	MSPRD0349AFFJ	Spring, P.A.D. Gear	AB
103	LHLDW3056AFZZ	Wire Holder	AA
104	QCNW-0964AFZZ	Earth Terminal with Lead	AC
105	QLUGP9052AFZZ	Wrapping Pin	AA

PLAYER MECHANICAL PARTS

200	CTNT-0051AF01	Turntable Assembly	
201A	CAMR-0051AF02	Side A Tonearm Assembly	
201A-1	———	Side A Tonearm	—
201A-2	LHLDZ1131AFSA	Holder, Cartridge	AF
201A-3	MSPRT0774AFFJ	Spring, Stylus Pressure	AA
201A-4	RCTRE5054AFSA	Cartridge with Stylus	AY
	PNDLD0050AFZZ	Stylus (STY-121)	
201A-5	LHLDW3067AFFW	Wire Cramp (Lower Part)	AB
201A-6	LHLDW3068AFFW	Wire Cramp (Upper Part)	AB
201A-7	PCOVS3079AFFW	Shield, Cartridge	AB
201B	CAMR-0051AF01	Side B Tonearm Assembly	
201B-1	———	Side B Tonearm	—
201B-2	LHLDZ1131AFSB	Holder, Cartridge	
201A-3	MSPRT0774AFFJ	Spring, Stylus Pressure	AA
201A-4	RCTRE5054AFSA	Cartridge with Stylus	AY
	PNDLD0050AFZZ	Stylus (STY-121)	AX
201A-5	LHLDW3067AFFW	Wire Cramp (Lower Part)	AB
201A-6	LHLDW3068AFFW	Wire Cramp (Upper Part)	AB
201A-7	PCOVS3079AFFW	Shield, Cartridge	AB
202	GDAI-1011AFSA	Spacer, Infrared Emitting Diode	AB
203	GDAI-1012AFSA	Spacer, Phototransistor	AB
204	GFTAF1022AFSA	Player Door	AW
205	GFTAF1023AFSA	Base, Disc	AN
206	LANGF0595AFZZ	Bracket, Flywheel	AK
207	LANGF0596AFZZ	Turntable Thrust Assembly	AE
208	LANGF0597AFZZ	Bracket, Phono Motor	AC
209	LANGF0598AFZZ	Bracket, Cartridge Motor	AC
210	LANGF0599AFZZ	Bracket, Tonearm Solenoid	AB
211	LANGF0600AFZZ	Bracket, Brush	AC
212	LANGF0601AFZZ	Bracket, Gear Solenoid	AC
213	LANGF0602AFZZ	Bracket, Side A Tonearm Guide	AC
214	LANGF0603AFZZ	Bracket, Side B Tonearm Guide	AC
215	LANGF0604AFZZ	Bracket Assembly, Pulley	AC
216	LANGF0605AFZZ	Bracket, Pulley	AB
217	LANGF0606AFZZ	Bracket, Pulley	AB
218	LANGF0607AFZZ	Bracket, Door Strength	AF
219	LANGF0608AFFW	Bracket, Door Right Side	AE
220	LANGF0609AFFW	Bracket, Door Left Side	AE
221	LANGF0611AFZZ	Bracket (Right Side), Spring	AC
222	LANGF0612AFZZ	Bracket (Left Side), Spring	AC
223	LANGF0613AFZZ	Bracket, Door Close Detection Switch	AC
225	LANGF0615AFZZ	Bracket, PWB	AC
226	LANGF0616AFZZ	Bracket, Rest Position Detection Switch	AD
227	LANGF0621AFZZ	Bracket, Pulley	AB
228	LANGF0622AFZZ	Bracket, PWB	AB
229	LANGF0623AFZZ	Bracket, PWB	AC
230	LANGH0138AFZZ	Bracket, PWB Strength	AC
231	LANGK0265AFFW	Bracket, Damper	AC
232	LBSHS0001AG00	Bushing, Motor	AA
233	LBSHZ0074AFZZ	Bushing, Door Shaft	AA
234	LCHSP0050AFZZ	Main Chassis	
236	LHLDW9002CEZZ	Holder, Wire	AA
237	LHLDW9003CEZZ	Holder, Wire	AA
239	LBSHZ0075AFZZ	Bushing, Door Shaft	
240	LRALP0050AFZZ	Rail, Tonearm Guide	AB
241	LSLVM0107AFFW	Sleeve (ϕ10mm)	AB
242	LSLVM0108AFFW	Sleeve (ϕ8mm)	AB
243	LSLVM0109AFFW	Sleeve (ϕ12mm)	AB
244	LSTWC3002AFZZ	Stopper (ϕ3mm)	
245	LX-WZ1057AFZZ	Stopper (ϕ6mm)	
246	LSTWC6006AFZZ	Stopper (ϕ6mm)	
247	LX-BZ0219AFFD	Screw, Motor	AA
248	LX-BZ0305AFFD	Screw (Shaft), Disc Base Lever	AA
249	LX-BZ0306AFFW	Screw (Shaft), Tonearm Guide	AB
250	LX-BZ0309AFFD	Screw, EP Mis-Loading Detection Lever	AA
251	LX-BZ0310AFZZ	Set Screw (M3x4mm)	AA
252	LX-BZ0313AFFD	Screw (Shaft)	AA
253	LX-HZ0073AFZZ	Screw, Disc Base Lever	AA
254	LX-NZ0122AFFD	Nut, Disc Base Lever Screw	AA
255	CARMM0065AF01	Door Arm Lever Assembly	
256	MLEVF1204AFZZ	Tonearm Guide	AF
257	MLEVF1205AFZZ	Side A Tonearm Guide Operating Lever	AC
258	MLEVF1206AFZZ	Side B Tonearm Guide Operating Lever	AD
259	MLEVF1207AFZZ	Gear Shift Lever	AC
260	MLEVF1208AFZZ	Arm, Disc Base	AF
261	MLEVF1209AFZZ	Arm, Door Right Side	AH
262	MLEVF1210AFZZ	Arm, Door Left Side	AH
263	MLEVF1212AFZZ	Lever, Door Open	AC
264	MLEVP0294AFZZ	Lever, EP Mis-Loading Detector	AB
265	MLIFP0012AFZZ	Damper	AD
266	MLNKM0050AFZZ	Tonearm Wire Assembly	AQ
267	MSPRC0247AFFJ	Spring, EP Adaptor	AB
268	MSPRP0271AFZZ	Spring (Plate type), Disc Pressure	AD
269	MSPRT0767AFFJ	Spring, Side A Tonearm Guide	AA
270	MSPRT0768AFFJ	Spring, Side B Tonearm Guide	AA
271	MSPRT0769AFFJ	Spring, Disc Base Arm	AA
272	MSPRT0770AFFJ	Spring, Door Left Side Arm	AC
273	MSPRT0771AFFJ	Spring, Tonearm Wire	AA
274	MSPRT0772AFFJ	Spring, Side A Tonearm Guide Lever	AA
275	MSPRT0773AFFJ	Spring, Side B Tonearm Guide Lever	AA
278	MSPRT0789AFFJ	Spring, Door Open Lever	AA
280	NBLTH0080AF00	Belt, Turntable	AG
281	NBLTK0168AF00	Belt, Gear	AB
282	NBRGC0076AFZZ	Bearing, Turntable	AG
284	NBRGP0054AFZZ	Spacer, Door Open/Close Shaft	AA
285	NBRGP0055AFZZ	Sleeve, Door Arm	AA
286	NBRGM0052AFFW	Bearing, Tonearm Guide	AB
288	CDRM-0170AF01	Disc Pressure Assembly	AL
289	NGERH0069AFZZ	Gear Assembly	AT
290	NGERH0075AFZZ	Gear, Door Open/Close	AG
291	NPLYB0051AFZZ	Pulley with Shaft	AA
292	NPLYB0051AF01	Pulley	AA
293	NPLYD0052AFZZ	Pulley with Revet (Small)	AB
294	NPLYD0059AFZZ	Pulley with Revet (Large)	AB
295	NROLP0070AFZZ	Roller with Revet	AA
297	PBRSR0002AFZZ	Brush, Side A	AD
298	PBRSR0003AFZZ	Brush, Side B	AD
299	PCOVZ1056AFZZ	Cover, Mechanism Upper Part	AD
300	PCOVZ1057AFZZ	Cover, Mechanism Lower Part	AD
301	PCUSG0138AF00	Cushion, Door Arm	AB
302	PCUSG0139AF00	Cushion, Tonearm Guide Shaft	AA
303	PEPAP0051AFSA	EP Adaptor	AD
304	PCOVU7126AF00	Insulator, Gear Solenoid	AA
309	LSLVM0115AFFW	Sleeve, Lock Lever	AB
310	LX-LZ0071AFZZ	Rivet	AA
312	MLEVF1237AFFE	Lever, Door Right Side Lock	AC
313	MLEVF1238AFFE	Lever, Door Left Side Lock	AC
315	MSPRT0800AFFJ	Spring, Door Lock Lever	AA
317	PSLDC7059AFZZ	Shield, Side A	AB
318	PSLDM3211AFFW	Shield, Side B	AC
319	PGUMS0170AFZZ	Cushion, Tonearm	AA
320	PGUMM0145AF00	Rubber, Pulley	AA
322	HDECP0060AFSA	Sheet, Disc Base	AA
324	LANGT1045AFZZ	Bracket, Door Open Detection Switch	
325	PCUSS0142AFZZ	Cushion, Tonearm	AA
326	PGUMS0174AF00	Cushion, Door	AA
327	PGUMS0185AF00	Cushion, Tonearm Balance	AB
328	MLIFM0050AFZZ	Damper Assembly, Side A Tonearm	AK
329	MLIFM0051AFZZ	Damper Assembly, Side B Tonearm	AK
331	LX-HZ0053AFFD	Screw, Microcomputer PWB	AA

CABINET EXPLODED VIEW PARTS

401	GCAB-1070AFSA	Cabinet	BB
402	GCOVA1237AFSA	Dust Cover	AW
403	GCOVA1238AFSA	Cover, Player Door Front	AK
404	GCOVA1239AFSA	Cover, Dual-Play/Repeat-Play Indicator	AB
405	GCOVA1240AFSA	Cover, Side A Play Indicator	AB
406	GCOVA1240AFSB	Cover, Side B Play Indicator	AB
407	GCOVA1261AFSA	Indication Plate	AC
408	GCOVA1242AFSA	Cover, Door Left Side	AC

REF. NO.	PART NO.	DESCRIPTION	CODE
409	GCOVA1243AFSA	Cover, Door Right Side	AC
410	GCOVA1259AFSA	Indication Plate, Tape Deck Control	AM
411	GCOVA1270AFSA	Cover, Function Selector Button Right Side	AE
412	GCOVH8051AFSA	Rubber, Disc Fit	AC
413	GFTAC1155AFSA	Cassette Holder	AF
414	GFTAF1024AFSA	Control Lid	AE
415	GFTAR6197AFSA	Rear Plate [VZ-3000H]	AP
	GFTAR6202AFSA	Rear Plate [VZ-3000E]	
	GFTAR6217AFSA	Rear Plate [VZ-3000H for HELIP]	
416	GLEGG0057AF00	Leg	
417	CMADC0051AF02	Window, Cassette Holder	
418	GMADD0072AFSA	Window, Dial	AE
419	GMADK0051AFSA	Window, Tape Counter	AB
420	HBDGB3041GESA	Badge, SHARP	AE
421	HDALM0331AFSA	Dial Scale	AL
422	HDECA0470AFSA	Decoration Plate, Player Door Cover	AQ
423	HDECA0471AFSA	Decoration Plate, Cabinet Left Side	AH
425	HDECA0472AFSA	Decoration Plate, Control Lid	AH
426	HDECZ0063AFSA	Mirror	AA
427	HINDM1467AFSA	Decoration Plate, Cabinet Right Side	AW
428	HINDM1468AFSA	Indication Plate, Control Section	AG
429	HINDM1474AFSA	Indication Plate, Mic/Phones Jacks	AE
430	HINDM1470AFSA	Indication Plate, Tape Indicator	AD
431	HINDM1471AFSA	Indication Plate, Tape Level Meter	AD
432	HSSND0278AFSA	Dial Pointer with Lamp (PL101)	AP
433	JKNBM0395AFSA	Button, Function Selector	AD
434	JKNBN0481AFSA	Knob, Tuning	AE
435	JKNBN0482AFSA	Knob, Volume Control	AE
436	JKNBN0483AFSA	Knob, Control	AA
437	JKNBP0138AFSA	Button, Power	AD
438	JKNBZ0206AFSA	Key, Player Operation	AD
439	JKNBZ0207AFSA	Key, Speed (33/45) Selector	AB
440	KCOUB0110AFZZ	Tape Counter	AL
441	LANGA0070AFFW	Plate, Cassette Holder Pressure	AA
442	LANGF0617AFZZ	Bracket, Base	AN
443	LANGF0618AFZZ	Bracket, Heat Sink	AB
444	LANGF0619AFZZ	Bracket, Leg	AD
445	LANGQ0836AFZZ	Bracket, Antenna Terminal	AE
446	LANGQ0835AFZZ	Bracket, Speaker Terminal	AE
447	LANGQ0813AFZZ	Bracket, PWB	AB
449	LANGR0529AFZZ	Bracket, Power Transformer	AH
450	LBSHC0002AGZZ / LBSHC0004AGZZ / LBSHC0053AFZZ	Bushing, AC Power Supply Cord; Refer to Table 43	AB
451	LCHSZ0085AFZZ	Frame	AX
452	LHLDW1050AFZZ	Holder, Wire	AA
453	LHLDW1075AFZZ	Holder, Wire (60mm)	AA
454	LHLDZ1128AFZZ	Holder, Tape Level Meter	AB
455	LHLDZ1129AFZZ	Holder, Tape Indicator	AA
456	LHLDZ1130AFZZ	Holder, Signal Meter	AA
457	LX-BZ0316AFFF	Screw, Dust Cover	AA
458	LX-HZ0053AF00	Screw, Rear Plate	AA
459	LX-HZ0068AFFD	Screw	AA
460	LX-HZ0084AFFD	Screw	AB
461	LX-JZ0005AFFF	Screw, Rear Plate	AA
462	LX-LZ0051AF00	Rivet	AA
463	LX-NZ0141AFFW	Nut, Phones/Mic Jacks	AB
464	LX-WZ3070AFZZ	Lug, Ground	AA
465	MLEVP0298AF00	Lever, Power Switch	AC
466	MLIFP0009AFZZ	Damper	AD
467	MSPRD0346AFFJ	Spring, Cassette Holder Open	AA
468	MSPRD0347AFFJ	Spring, Control Lid Open	AB
469	MSPRP0242AFFJ	Spring (Plate type), Cassette Pressure	AA
470	MSPRT0766AFFJ	Spring, Dial Cord	AA
471	NBLTK0195AFZZ	Belt, Tape Counter	AB
472	NDRM-0169AFZZ	Drum	AC
473	NSFTD0209AFZZ	Tuning Shaft	AM
475	PCOVW1121AFZZ	Cover, Power Supply PWB	AF
476	PCOVW1119AFZZ	Cover, Power Supply PWB	AG
477	PCUSG0140AF00	Cushion, Player Mechanism	AA
478	PCUSG0143AF00	Cushion (Leg), Player Mechanism	AE
479	PCUSG0146AF00	Cushion, Control Lid	AB
480	PRDAR0247AFFW	Heat Sink, Power IC	AY
481	PRDAR0262AFZZ	Heat Sink, Transistor	AK
482	PSHEZ0104AFZZ	Stopper, Player Operation Key	
483	PSLDC3139AFZZ	Shield, Variable Capacitor	AB
484	PSLDC3131AFZZ	Shield, Control PWB	AC
486	PSPAZ9002AGZZ	Insulator (Mica)	AA
487	PSTPK0005AGZZ	Stopper, Bar Antenna Coil	
△488	QFSHC0003AGZZ	Holder, Fuse (F705)	AD
489	QFSHD2051AFZZ	Holder, Fuse (F401, 402, 701 ~ 704)	AA
490	QLUGP0111CEFW	Wrapping Pin (Small)	AA
△491	QLUGP0156AFZZ	Wrapping Pin (Large)	AA
492	QSOCT0252AFZZ	Socket, Transistor	AC
493	LHLDW1068AFZZ	Holder, Wire (100mm)	AA
494	LX-WZ3017CEFN	Washer	AA
495	LHLDF1266AFZZ	Holder, Player Switch PWB	AB
497	PSLDM3213AFZZ	Shield, Cabinet	AD
498	PSLDC7060AFZZ	Shield, Control Lid	AB
500	PFLT-0455AF00	Felt, Leg	AB
501	PSPAI0178AF00	Spacer, Indication Plate	AB
502	PCUSS0141AF00	Cushion, Tonearm	AA
503	PCUSS0143AFZZ	Cushion (Holder), Wire	AE
504	PGUMS0173AF00	Cushion, Tape Deck PWB	AC
505	PCOVZ1058AFZZ	Cover	AD
506	LX-BZ0220AFFF	Screw, Resistor (R704) Bracket	AA
507	LANGK0271AFZZ	Bracket, Resistor (R704)	AB
508	LANGQ0828AFZZ	Bracket, Power Switch	
509	LANGQ0827AFZZ	Bracket, Fuse Holder	AC
△510	QLUGL0451AFZZ	Terminal Strip (2-Lug)	AD
512	TLABP0191AFZZ	Caution Label, Fuse	
513	QLUGP9052AFZZ	Test Pin	AA
514	LHLDA1001SG00	Holder, Bar Antenna	AC
515	MSPRP0281AFZZ	Spring (Plate type), Shield	AB
516	LANGQ0837AFZZ	Bracket, AM Bar Antenna	AC
517	PSLDM3224AFZZ	Shield, Variable Capacitor	AB
518	PCOVW1120AFZZ	Cover, Fuse Holder Bracket	AC
519	LHLDW1053AFZZ	Holder, Wire	AB
520	LX-LZ0067AF00	Rivet	
521	LX-JZ0008AFFD	Screw, Tape Counter	
522	PGUMS0192AF00	Cushion, Tuner PWB	
523	PSLDC3140AFZZ	Shield, Tuner PWB	
524	TLABP0155AFZZ	Label, T2.0A	

PACKING PARTS

	GCOVA8007AFZZ	LP Sensor Cap	AC
	GCOVA8008AFZZ	EP Sensor Cap	AC
	LHLDK1052AFZZ	Holder, AC Power Supply Cord	AA
	QANTW0058AFZZ	FM Antenna	AK
	QPLGA0250AFZZ	Adaptor, AC Power Supply Cord [VZ-3000E]	AF
	SPAKA0743AFZZ	Packing Add, Left Side	AK
	SPAKA0744AFZZ	Packing Add, Right Side	AK
	SPAKC1760AFZZ	Packing Case [VZ-3000H]	AD
	SPAKC1765AFZZ	Packing Case [VZ-3000E]	
	SPAKC1815AFZZ	Packing Case [VZ-3000H for HELIP]	
	SPAKP0148AFZZ	Polyethylene Bag	AG
	SPAKX0420AFZZ	Cushion, Dust Cover Left Side	AA
	SPAKX0421AFZZ	Cushion, Dust Cover Right Side	AA
	SPAKX0480AFZZ	Packing Add, Upper Part	
	SPAKX0483AFZZ	Protection Sheet, Player [VZ-3000H]	
	SPAKX0484AFZZ	Protection Sheet, Player [VZ-3000E]	
	SPAKZ0121AFZZ	Attached Bar, Player Door Open	
	SPAKY0472AFZZ	Cover, Stylus	
	SSAKA0007AFZZ	Polyethylene Bag, EP/LP Sensor Cap	AA
	SSAKA0024AFZZ	Polyethylene Bag, Accessories	AA
	TINSE0734AFZZ	Operation Manual [VZ-3000E]	
	TINSZ0297AFZZ	Operation Manual [VZ-3000H]	
	TTAGH0189AFZZ	Tag	

P.W.B. ASSEMBLY (Not Replacement Item)

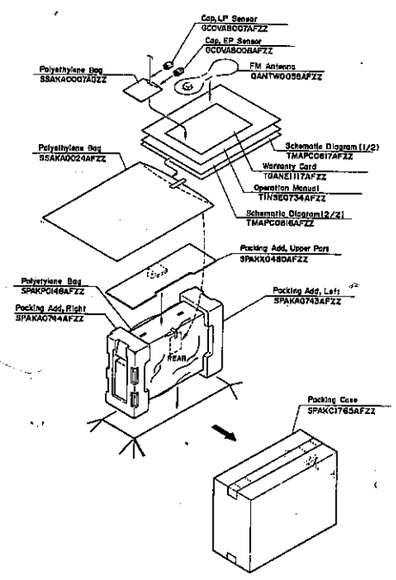
PWB-B1, B2	DUNTX0056AF03 (Combined Assembly)	Microcomputer P.W. Board	—
PWB-C1~C9	DUNTA0126AF03 (Combined Assembly)	Power Supply P.W. Board/Audio Power P.W. Board	—
PWB-D1~D7	DUNTK0050AF03 (Combined Assembly)	Tuner P.W. Board/Control P.W. Board/Tape Deck P.W. Board [VZ-3000H]	—
	DUNTK0050AF06 (Combined Assembly)	Tuner P.W. Board/Control P.W. Board/Tape Deck P.W. Board [VZ-3000E]	—

SPEAKER < CP-V300H >

C1	RC-EZ1025AFZZ	Electrolytic Capacitor (Non-polar), 5.6MFD	AF
L1	RCILF0024AGZZ	Coil, 0.6mH	AL
L2	RCILF0050AFZZ	Coil, 0.47mH	AF
SP1	VSP0016WB594A	Woofer	
SP2	VSP0050TB394A	Tweeter	
600	GBOXS0080AFSA	Box Assembly	BF
601	GWAKP1100AFSA	Net Assembly	AV
602	HDECQ0141AFSA	Decoration Panel, Tweeter	
603	HDECQ0142AFSA	Decoration Plate, Box Leg	AL
604	HDECZ0068AFSA	Speaker Ring, Woofer	AE
605	HPNC-0136AFSA	Metal Net, Tweeter	AF
606	LANGJ0090AFZZ	Bracket, Net	AD
607	PFLT-0457AF00	Felt, Leg	AB
608	QLUGL0454AFZZ	Lug	AC
	QCNW-1147AFZZ	Speaker Cord Assembly, 4 Leads	AD
	QCNW-0973AFZZ	Speaker Output Cord with DIN Plug	AL
	SPAKA0766AFZZ	Packing Add, Upper Part [VZ-3000H for HELIP with Unit]	
	SPAKA0765AFZZ	Packing Add, Lower Part [VZ-3000H for HELIP with Unit]	
	SPAKA0781AFZZ	Packing Add.	
	SPAKC1780AFZZ	Packing Case	
	SSAKA0024AFZZ	Polyethylene Bag, Operation Manual	
	TINSZ0303AFZZ	Operation Manual	
	TSPC-0751AFZZ	Specification Label	

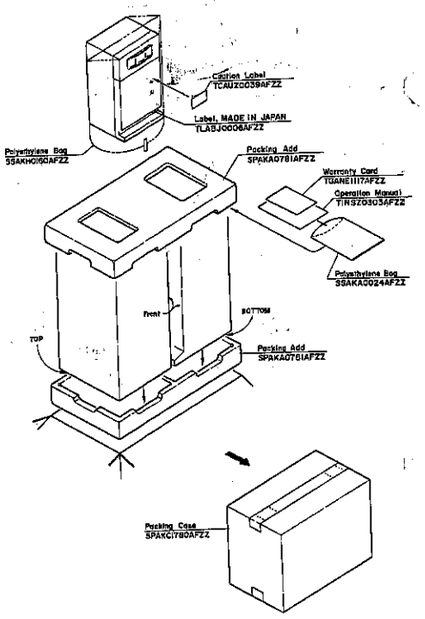
PACKING METHOD

< VZ-3000E Only >



- TCAUH0056AGZZ
  Caution Label, AC Power Supply Cord
- TCAUH0254AFZZ
  Caution Label, Front Door
- TCAUH0256AFZZ
  Caution Label, Upper
- TCAUH0268AFZZ
  Caution Label, Player Door
- TCAUZ0039AFZZ
  Caution Label, Polyethylene Bag (Unit)
- TLABJ0006AFZZ
  Label, MADE IN JAPAN
- SPAKX0484AFZZ
  Protection Sheet, Player

< CP-V300H >



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