

Service Manual

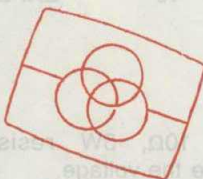
QUARTZ Synthesizer LW/MW/FM
Stereo Radio with Double Cassette
Tape Deck and Record Player

Stereo Music System

SG-HM10L

Color

(K)...Black Type



Area

Country Code	Area	Color
(EN)	Continental Europe	(K)
(GB)	Great Britain	(K)
(GN)	Oceania	(K)

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

Input sensitivity and impedance

CD 250 mV/18 kΩ

Graphic equalizer frequency

100 Hz, 1 kHz, 10 kHz, ±10 dB

Load impedance

4 Ω ~ 16 Ω

■ FM TUNER SECTION

Frequency range 87.50 ~ 108.00 MHz (0.05 MHz steps)

Sensitivity 25.2 dBf, (5 μV, IHF '58)

S/N 26 dB 3.8 μV (40 kHz mod., 75 Ω)

Total harmonic distortion

1 kHz MONO 0.3%

STEREO 0.5%

S/N

MONO 60 dB (65 dB, IHF)

Image rejection at 98 MHz

35 dB

Stereo separation

1 kHz 35 dB

Antenna terminals

75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range

MW 522 ~ 1611 kHz (9 kHz steps)

530 ~ 1620 kHz (10 kHz steps)

LW 155 ~ 353 kHz (9 kHz steps)

153 ~ 351 kHz (-2 kHz shift)

Sensitivity (for 50 mW)

MW 200 μV/m (999 kHz)

LW 500 μV/m (254 kHz)

■ CASSETTE DECK SECTION

Deck system

Full auto stop double cassette system

Track system

4-track, 2-channel

Heads

(tape deck 1)

Play

Solid permalloy head

(tape deck 2)

Rec/play

Solid permalloy head

Erasing

Double-gap ferrite head

Motors

DC servo motor

Recording system

AC bias

Erasing system

AC erase

Tape speed

4.8 cm/sec. (1-7/8 ips)

Frequency response

NORMAL

50 Hz ~ 12 kHz (DIN)

S/N

50 dB (A-WTD)

Wow and flutter

0.15% (WRMS)

■ PHONO SECTION

Player system

Belt Drive Automatic Turntable

Phono motor

DC servo motor

Turntable size

28 cm (11")

Turntable speeds

33-1/3 rpm, 45 rpm

Cartridge type

Ceramic

Stylus

Sapphire

(Part No. EPS-41ST)

Stylus pressure

5.5 g

■ GENERAL

Power consumption

51 W

Power supply

For continental Europe

AC 50 Hz/60 Hz, 220 V

For Great Britain and Oceania

AC 50 Hz/60 Hz, 240 V

Dimensions (W × H × D)

360 × 323 × 370 mm

(14-3/16" × 12-23/32" × 14-9/16")

Weight

5.5 kg (12.1 lb.)

Notes:

- Specifications are subject to change without notice. Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

Panasonic

Matsushita Electric Industrial Co., Ltd.

Central P.O. Box 288, Osaka 530-91, Japan

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BEFORE REPAIR

- (1) Turn off the power supply. Using a 10 Ω , 5W resistor connect both ends of power supply capacitors (C701, 3300 μ F) in order to discharge the voltage.
- (2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50Hz/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage 220V/240V.

Power supply voltage	AC220V	AC240V
Consumed current 50Hz	45~85 mA	40~80 mA
Consumed current 60Hz	45~85 mA	40~80 mA

PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- * No sound is heard when the power is switched ON.
- * Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

Note:

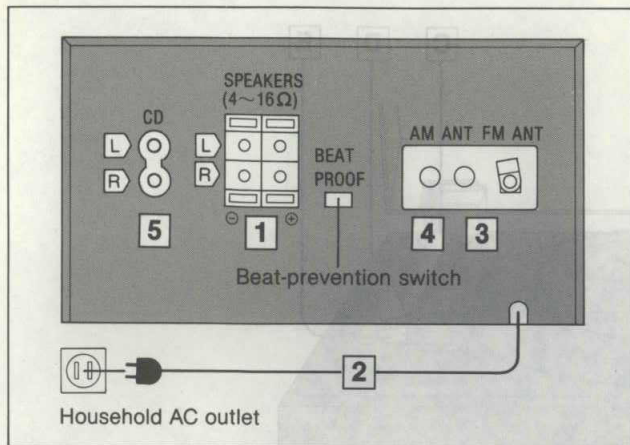
When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

ACCESSORIES

- Dust cover (SYE1130) 1
- Dust cover hinges (SBH9385) 2

- FM indoor antenna (SSA269) 1
- 45-rpm adaptor (SJY5018-1) 1
- Platter mat (SJY4076) 1

CONNECTIONS



Note:

An outdoor antenna should be installed by a competent technician only.

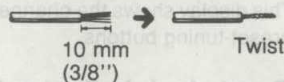
1 "SPEAKERS" terminals

The impedance of any speaker used with this unit must be 4–16 ohms.

Be sure to connect the striped cords to the negative terminals.

Connection of speaker cords

- Strip off the outer covering, and twist the center conductor.



- Tilt the lever back and insert the cord.



- Close the lever and pull the cord gently to be sure that it is secure.

Notes:

- To prevent damage to circuitry, never short-circuit positive (+) and negative (–) speaker terminals.
- Be sure to only connect positive (+) cords to positive (+) terminals, and negative (–) cords to negative (–) terminals.
- Connections of speaker cords should be made before connecting the AC power supply cord.



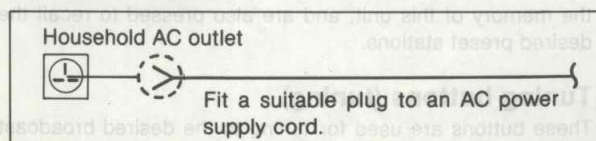
2 AC power supply cord

- Connect this cord only after all other cables have been connected.

Note:

Configuration of the AC outlet and AC power supply cord differ according to area.

- For United Kingdom**



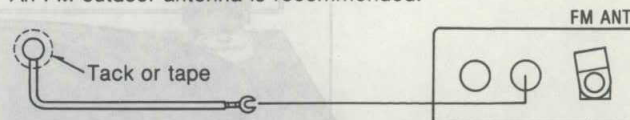
3 "FM ANT" terminal

FM indoor antenna (included)

Attach to a wall (using tack or tape) facing in the direction of best reception.

For best reception sound quality:

An FM outdoor antenna is recommended.



Notes:

- The tack should not contact the internal antenna wire.
- Disconnect this antenna if an FM outdoor antenna is installed.

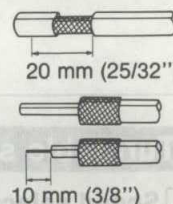
FM outdoor antenna (not included)

If the FM indoor antenna does not provide satisfactory reception of FM broadcasts, an outdoor antenna should be used.

The outdoor antenna may be required in a mountainous region, or if this unit is located inside a reinforced-concrete building, etc.

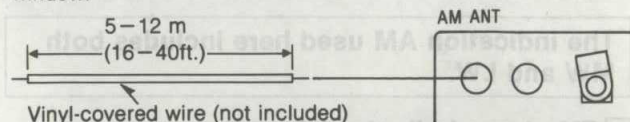
How to connect 75-ohm coaxial cable

- Remove a piece of the outer vinyl sheath from the end.
- Fold back the end of the shield braid.
- Remove a piece of the inner vinyl sheath covering the core wire.
- With the shield braid in secure contact, connect the core wire.



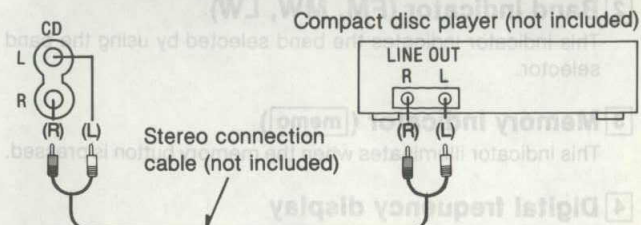
4 "AM ANT" terminals

The outdoor antenna may be required in a mountainous region, or if this unit is located inside a reinforced-concrete building, etc. Use 5–12 m (16–40 ft.) of vinyl-covered wire horizontally at the window.

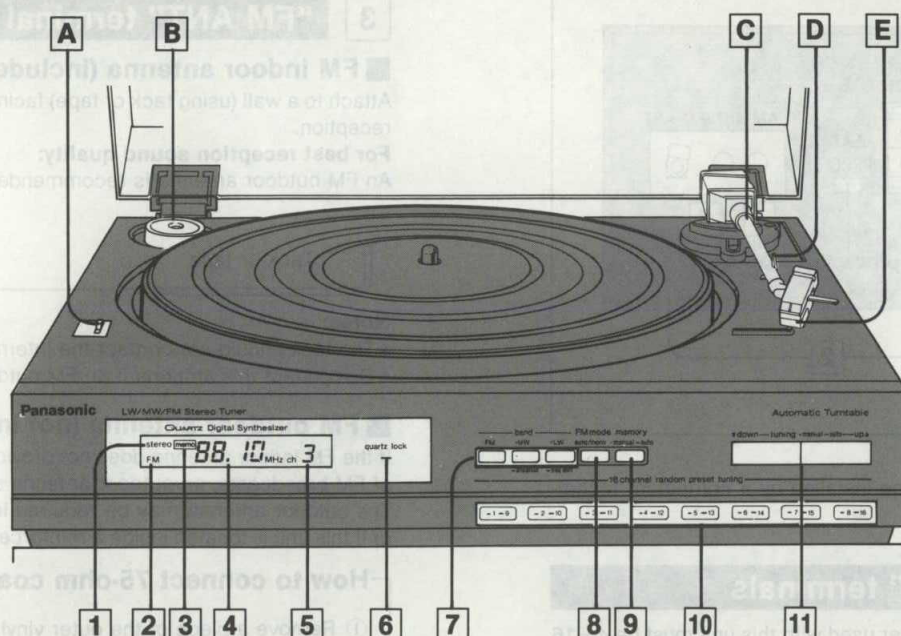


5 "CD" terminals

Connect a compact disc player. An audio tape deck (for playback only) can also be connected.



LOCATION OF CONTROLS



Turntable section

A Speed selector (SPEED)

This selector is used to set the turntable speed to agree with the speed of the phono disc to be played.

B 45-rpm disc adaptor

This adaptor should be used when playing a disc with a large center hole.

C Tonearm

D Arm rest

E Cartridge

Tuner section

The indication AM used here includes both MW and LW.

1 FM stereo indicator (stereo)

This indicator automatically illuminates when an FM stereo broadcast is being received.

It will not illuminate if the FM mode selector is set to the monaural mode.

2 Band indicator (FM, MW, LW)

This indicator indicates the band selected by using the band selector.

3 Memory indicator (memo)

This indicator illuminates when the memory button is pressed.

4 Digital frequency display

This display shows the frequency of the FM or AM station.

5 Channel display

This display shows the channel number selected by one of the preset-tuning buttons.

6 Quartz-lock indicator (quartz lock)

This indicator illuminates when the tuner is precisely tuned to a broadcast station.

7 Band selectors (band)

These selectors are used to select the band.

allocation: When the MW button is pressed for about 4 seconds, the MW frequency step will change to 10 kHz per step. (This unit is set to 9 kHz before shipment.) In order to return to the original frequency indication, press this button for about 4 seconds again.

freq shift: When the LW button is pressed for about 2 seconds during reception of an LW broadcast, the LW frequency will decrease by 2 kHz. In order to return to the original frequency indication, press this button for about 2 seconds again.

8 FM mode selector (FM mode)

This unit automatically switches to the stereo mode when an FM stereo broadcast is received. This selector is used to select the mode (stereo or monaural) of FM broadcast signals.

9 Memory button (memory)

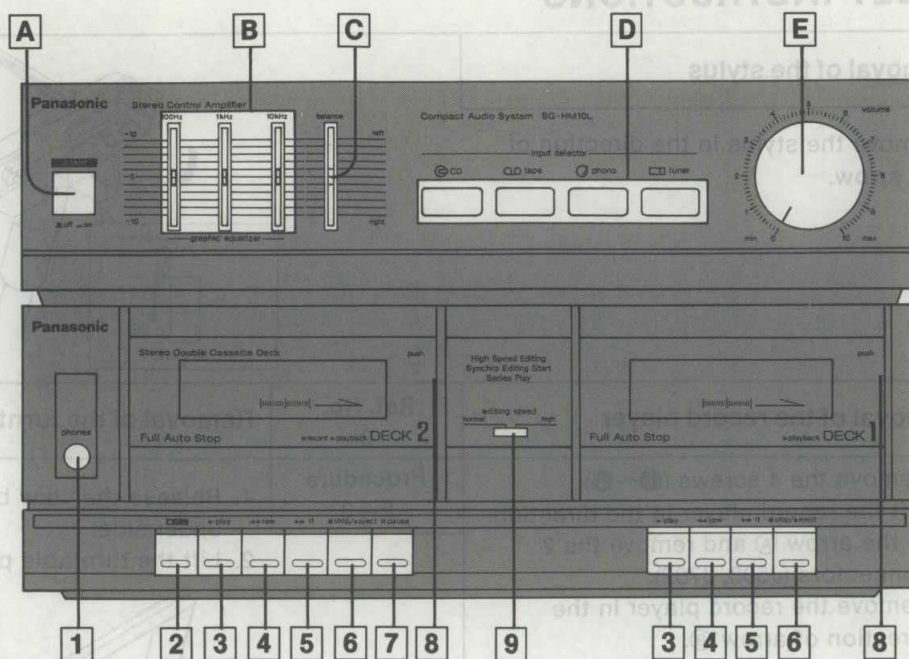
This button can be used when presetting broadcast station frequencies to the memory.

10 Preset-tuning buttons (16 channel random preset tuning)

These buttons are used to preset broadcast frequencies into the memory of this unit, and are also pressed to recall the desired preset stations.

11 Tuning buttons (tuning)

These buttons are used for tuning to the desired broadcast station.



Amplifier section

A Power switch (power)

B Equalizer controls (graphic equalizer)

These controls are for compensation of tonal quality. By sliding the controls at each of the indicated frequencies in the "+" direction, the tonal quality is increased, and by sliding them in the "-" direction, the tonal quality is decreased.

C Balance control (balance)

This control can be used to adjust the balance of sound heard from the left and right speaker systems.

D Input selectors (input selector)

These selectors are used to select the sound source to be heard, such as a phono disc, radio broadcast, etc.

E Volume control (volume)

Cassette deck section

1 Headphones jack (phones)

2 Record button (○ rec)

This button is used when making a recording (tape deck 2 only).

3 Playback button (▶ play)

4 Rewind button (◀◀ rew)

5 Fast-forward button (▶▶ ff)

6 Stop/eject button (■ stop/ ▲ eject)

This button is used to open the cassette holder, and to stop tape movement.

7 Pause button (|| pause)

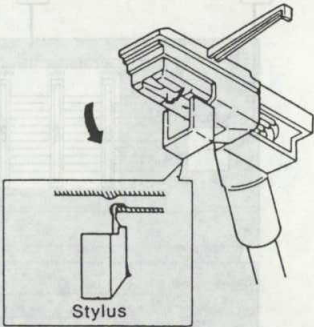
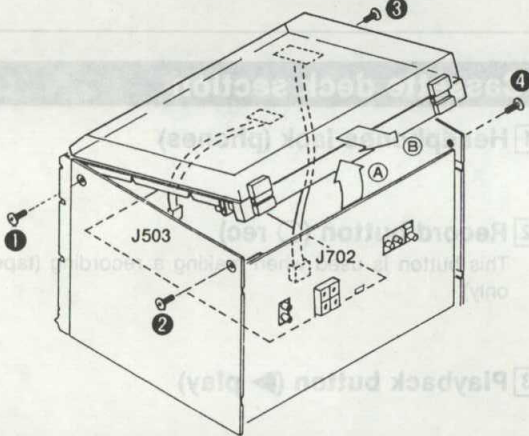
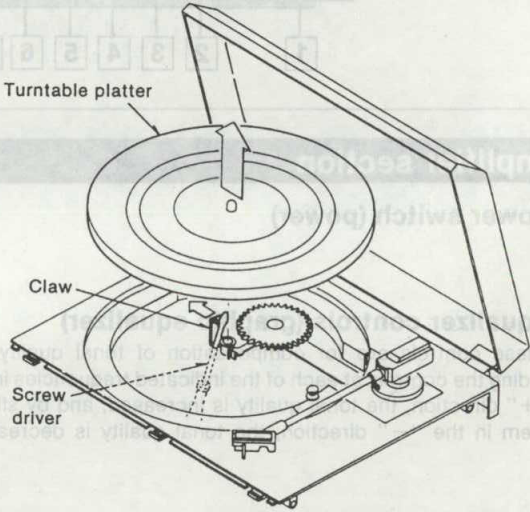
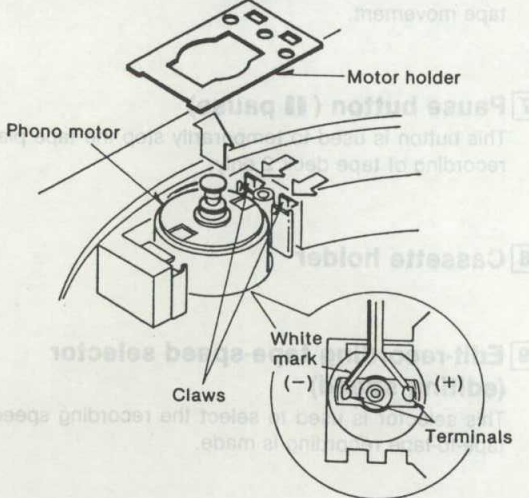
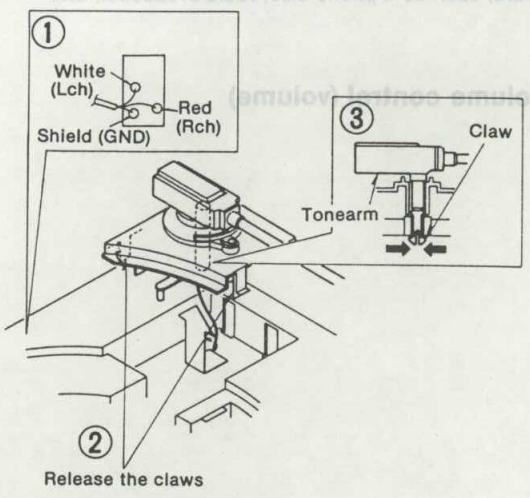
This button is used to temporarily stop the tape playback or recording of tape deck 2 only.

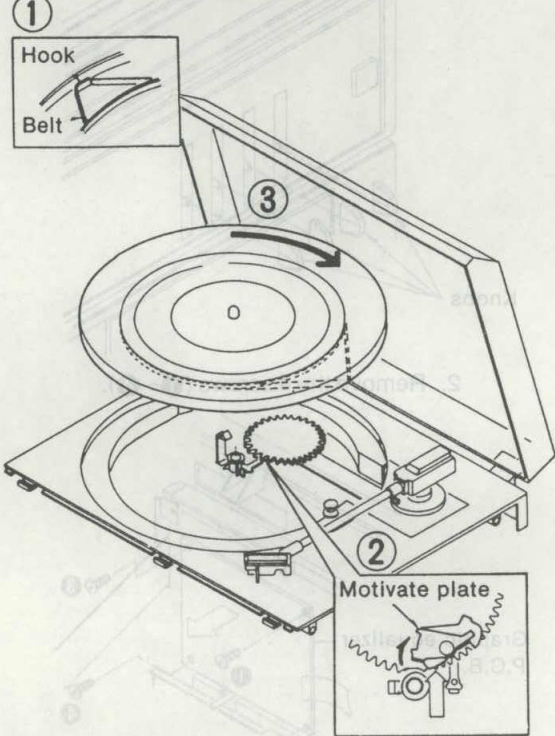
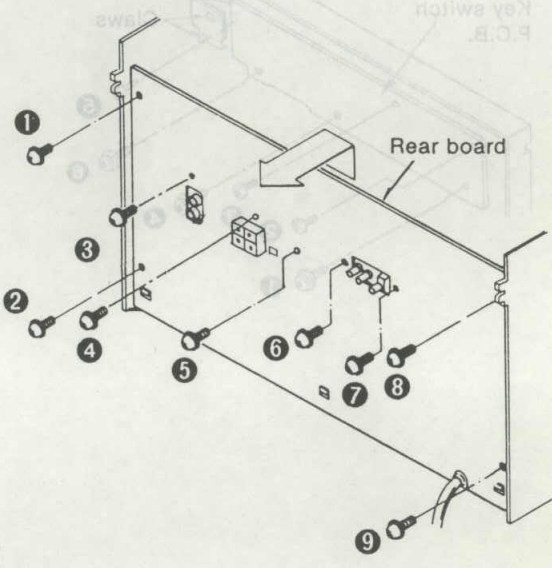
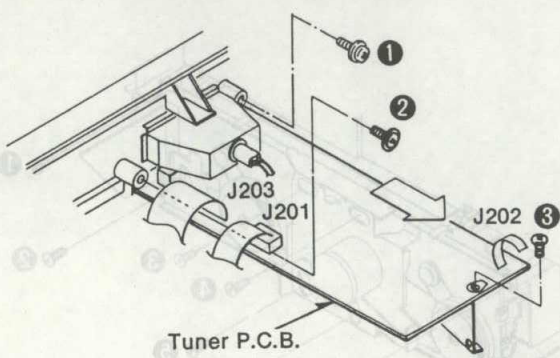
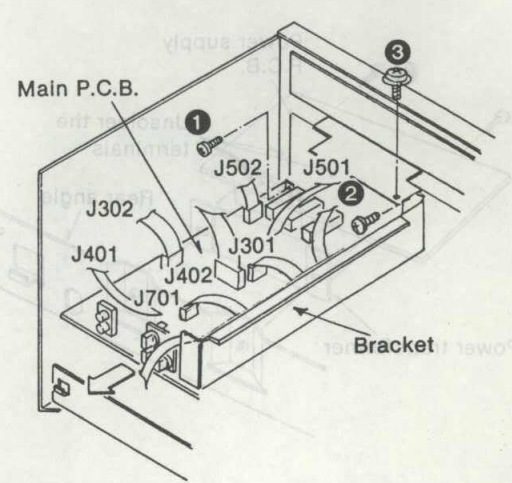
8 Cassette holder

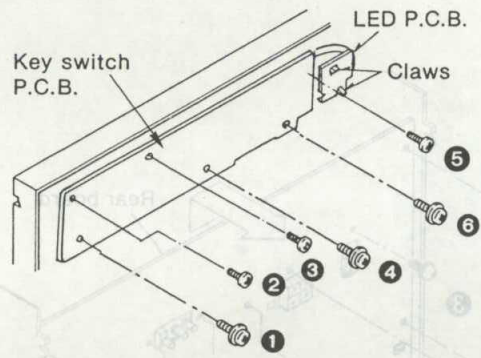
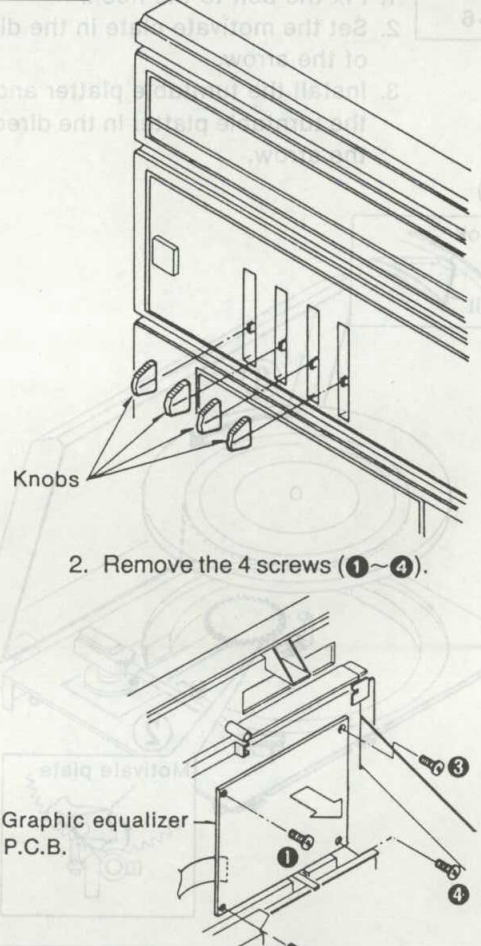
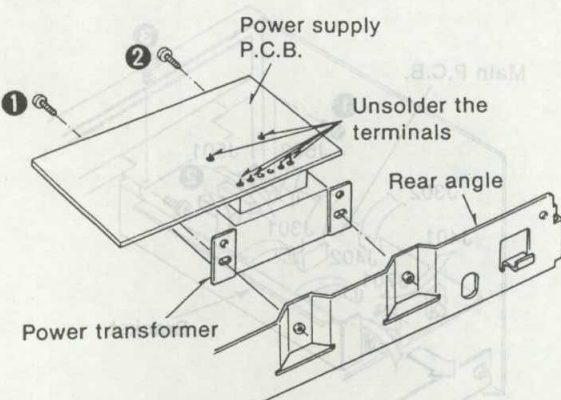
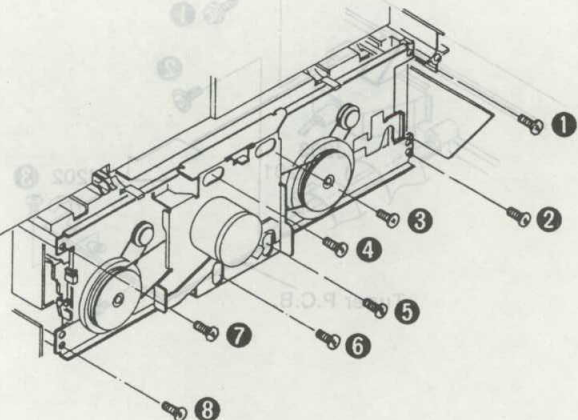
9 Edit-recording tape-speed selector (editing speed)

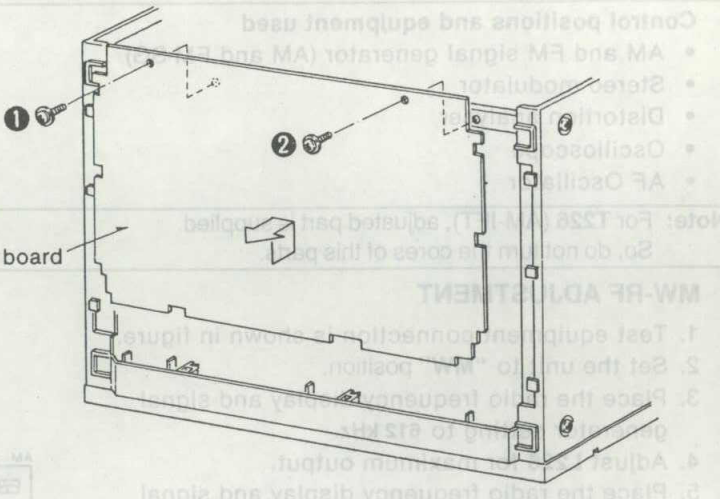
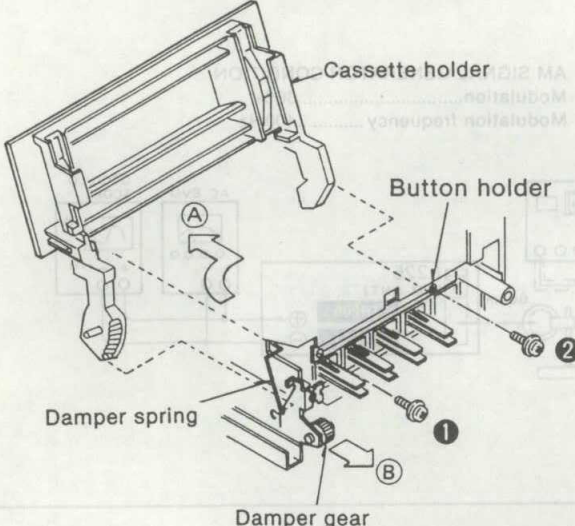
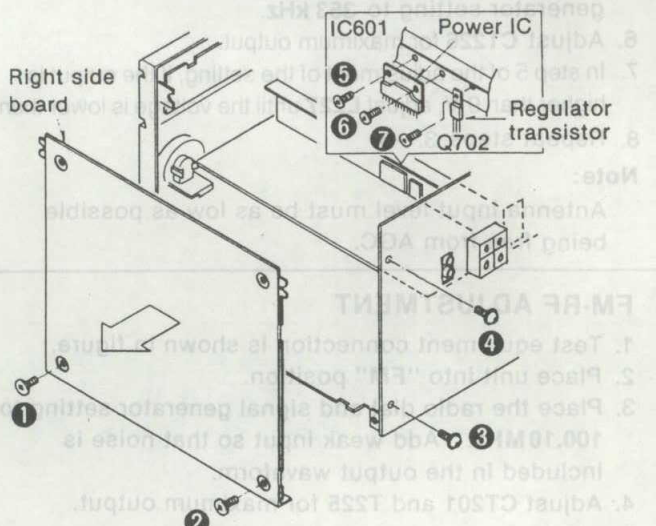
This selector is used to select the recording speed when a tape-to-tape recording is made.

DISASSEMBLY INSTRUCTIONS

Ref. No. 1	Removal of the stylus		
Procedure 1	<ul style="list-style-type: none"> Remove the stylus in the direction of the arrow. 		
Ref. No. 2	Removal of the record player	Ref. No. 3	Removal of the turntable platter
Procedure 2	<ol style="list-style-type: none"> Remove the 4 screws (①~④). Lift the record player in the direction of the arrow (A) and remove the 2 connectors (J503, J702). Remove the record player in the direction of arrow (B). 	Procedure 2→3	<ol style="list-style-type: none"> Release the claw by screwdriver from under side. Lift the turntable platter.
			
Ref. No. 4	Removal of the phono motor	Ref. No. 5	Removal of the tonearm
Procedure 2→3→4	<ol style="list-style-type: none"> Unsolder the terminals of the phono motor. Release the 2 claws and remove the motor holder. Lift the phono motor. 	Procedure 2→5	<ol style="list-style-type: none"> Unsolder the 3 leads. Release the 2 claws and remove the tonearm base in the direction of the arrow. Release the claw and lift the tonearm.
			

Ref. No. 6	Installation of the turntable platter	Ref. No. 7	Removal of the rear board
Procedure 2→3→6	<ol style="list-style-type: none"> 1. Fix the belt to the hook. 2. Set the motivate plate in the direction of the arrow. 3. Install the turntable platter and turn the turntable platter in the direction of the arrow. 	Procedure 2→7	<ol style="list-style-type: none"> 1. Remove the 9 screws (①~⑨). 2. Remove the rear board in the direction of the arrow.
			
Ref. No. 8	Removal of the tuner P.C.B.	Ref. No. 9	Removal of the main P.C.B.
Procedure 2→8	<ol style="list-style-type: none"> 1. Remove the 3 screws (①~③). 2. Remove the 3 connectors (J201, J202, J203). 3. Remove the tuner P.C.B. in the direction of the arrow. 	Procedure 2→7→9	<ol style="list-style-type: none"> 1. Remove the 3 screws in main P.C.B. (①, ②) and bracket (③). 2. Remove the 9 connectors (J201, J301, J302, J401, J402, J501, J502, J601, J701) and remove the main P.C.B. in the direction of the arrow.
			

<p>Ref. No. 10</p> <p>Procedure 2→10</p>	<p>Removal of the key switch P.C.B.</p> <ol style="list-style-type: none"> 1. Remove the 6 screws in key switch P.C.B. (①~⑥). 2. Release the 2 claws. 	<p>Ref. No. 11</p> <p>Procedure 2→8→11</p>	<p>Removal of the graphic equalizer P.C.B.</p> <ol style="list-style-type: none"> 1. Pull out the 4 knobs.
			
<p>Ref. No. 12</p> <p>Procedure 2→12</p>	<p>Removal of the power transformer</p> <ol style="list-style-type: none"> 1. Remove the 2 screws (①, ②). 2. Unsolder the terminals of the power transformer. 	<p>Ref. No. 13</p> <p>Procedure 2→5→13</p>	<p>Removal of the cassette tape deck</p> <ol style="list-style-type: none"> 1. Open the cassette holder. 2. Remove the 8 screws (①~⑧). 3. Remove the 3 connectors (J301, J302, J402).
			

Ref. No. 14	Removal of the bottom board		
Procedure 2→14	1. Remove the 2 screws (①, ②). 2. Remove the bottom board in the direction of the arrow.		
Ref. No. 15	Removal of the cassette holder	Ref. No. 16	Removal of the power IC and regulator transistor
Procedure 2→15	1. Remove the damper spring. 2. Remove the cassette holder in the direction of the arrow ①.	Procedure 2→16	
 <p>• Removal of the operation buttons</p> <ul style="list-style-type: none"> Remove the 2 screws (①, ②) of the button holder. <p>• Removal of the damper ass'y</p> <ul style="list-style-type: none"> Pull the damper ass'y in the direction of the arrow ③. 		<p>1. Remove the 4 screws (①~④). 2. Remove the right side board. 3. Unsolder the power IC or regulator transistor. 4. Remove the 3 screws (⑤~⑦).</p> <p>• When mounting the power IC or regulator transistor. Apply silicone compound (SZOYG6260) to the rear side of power IC or regulator transistor.</p> 	

MEASUREMENTS AND ADJUSTMENTS

• AM/FM TUNER

Control positions and equipment used

- AM and FM signal generator (AM and FM-SG)
- Stereo modulator
- Distortion analyser
- Oscilloscope
- AF Oscillator
- AC and DC electronic voltmeter (EVM)
- Frequency counter
- Choke coil (100 μ H)
- Resistor (330 k Ω)
- Capacitor (200 pF)

Note: For T226 (AM-IFT), adjusted part is supplied.
So, do not turn the cores of this parts.

MW-RF ADJUSTMENT

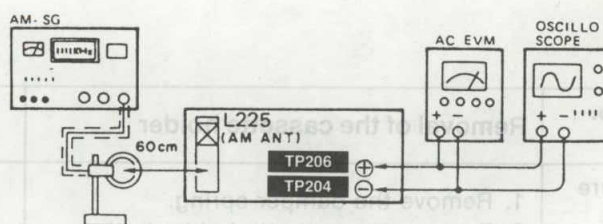
1. Test equipment connection is shown in figure.
2. Set the unit to "MW" position.
3. Place the radio frequency display and signal generator setting to 612 kHz.
4. Adjust L226 for maximum output.
5. Place the radio frequency display and signal generator setting to 1503 kHz.
6. Adjust CT225 for maximum output.
7. In step 5 of the adjustment of the setting, if the output is higher than 9 V, adjust L227 until the voltage is lower than 9 V.
8. Repeat steps 3.~6.

Note:

Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION

Modulation.....30 %
Modulation frequency400 Hz



LW-RF ADJUSTMENT

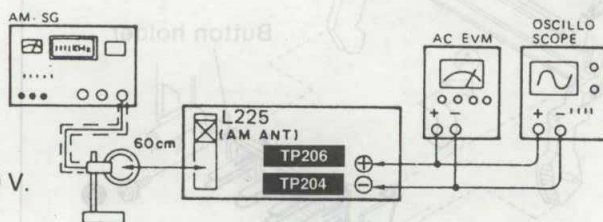
1. Test equipment connection is shown in figure.
2. Set the unit to "LW" position.
3. Place the radio frequency display and signal generator setting to 155 kHz.
4. Adjust L228 for maximum output.
5. Place the radio frequency display and signal generator setting to 353 kHz.
6. Adjust CT226 for maximum output.
7. In step 5 of the adjustment of the setting, if the output is higher than 9 V, adjust L227 until the voltage is lower than 9 V.
8. Repeat steps 3.~6.

Note:

Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION

Modulation.....30 %
Modulation frequency400 Hz



FM-RF ADJUSTMENT

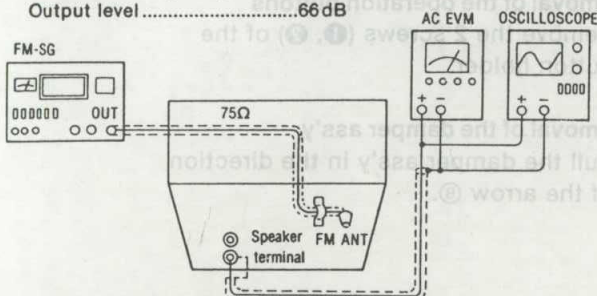
1. Test equipment connection is shown in figure.
2. Place unit into "FM" position.
3. Place the radio dial and signal generator setting to 100.10 MHz. Add weak input so that noise is included in the output waveform.
4. Adjust CT201 and T225 for maximum output.

Note:

As three output reading will be present, adjustments must be made at center frequency.

FM SIGNAL GENERATOR CONDITION

Modulation.....100 %
Modulation frequency1 kHz
Output level66 dB

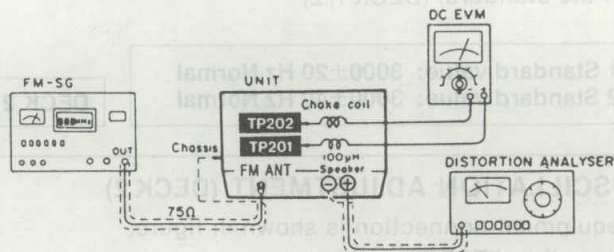


FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "FM" position.
3. Place the radio frequency display and signal generator setting to 100.10 MHz.
4. Adjust T227 core so that voltage measured in signal mode is 0 mV (0 ± 30 mV) in 300 mV range.
5. Adjust T228 so that the distortion factor of Lch is minimized.
6. Repeat steps 4 and 5 a few times.
7. Make sure that the distortion factors of Lch and Rch are at minimum and nearly equal.

Note:

The adjusting screwdriver used should be made of resin.

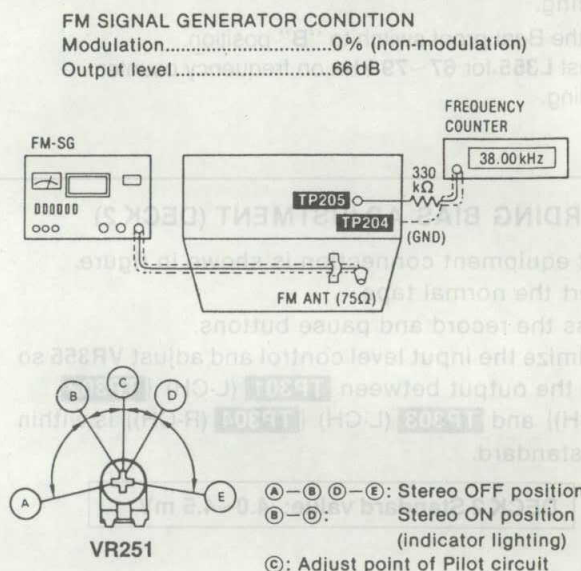


MPX VCO ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "FM auto" position.
3. Place the radio dial and signal generator setting to 100.10 MHz.
4. Adjust VR251 for 38 kHz ± 0.05 kHz on frequency counter reading.

★ USING ALTERNATE SYSTEM

1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust VR251 until stereo indicator lights up. Cement arm of VR251 as shown in figure.



• CASSETTE DECK

MEASUREMENT CONDITION:

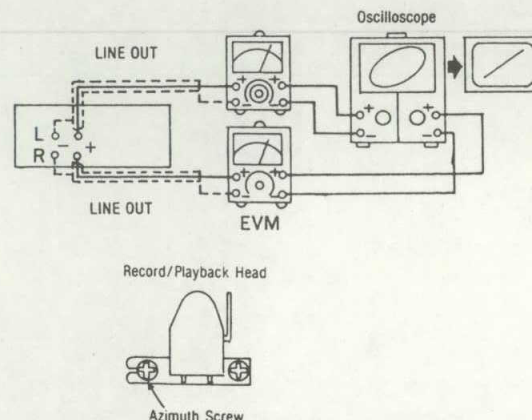
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Beat proof switch... "A" position

TEST TAPE:

- Head azimuth adjustment (8 kHz, -20 dB): QZZCFM
- Tape speed adjustment (3 kHz, -10 dB): QZZCWAT
- Normal reference blank: QZZCRA

HEAD AZIMUTH ADJUSTMENT (DECK 1, 2)

1. Test equipment connection is shown in figure.
2. Playback the azimuth adjusted part (8 kHz, -20 dB) of the test tape (QZZCFM) and regulate the angle adjusting screw so that the outputs of L-CH and R-CH are maximized. (When the adjusting positions are different with L-CH and R-CH, find a position where the outputs of L-CH and R-CH are balanced, and then make the adjustment.)
3. At the same time, draw a lissajous waveform and eliminate phase deflection.
4. After the adjustment, apply screw-lock to the angle adjusting value.

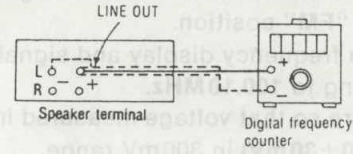


TAPE SPEED ADJUSTMENT (DECK 1, 2)

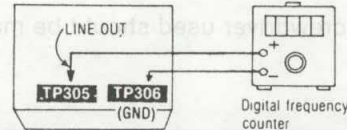
1. Test equipment connection is shown in figure.
2. Set the unit to "TAPE" position.
3. Playback the middle part of the test tape (QZZCWAT).
4. Adjust VR401 in the motor so that the output is within the standard. (DECK 1, 2)

DECK 1 Standard value: 3000 ± 20 Hz Normal
DECK 2 Standard value: 3000 ± 40 Hz Normal

DECK 2 Standard value: 5625 ± 285 Hz High

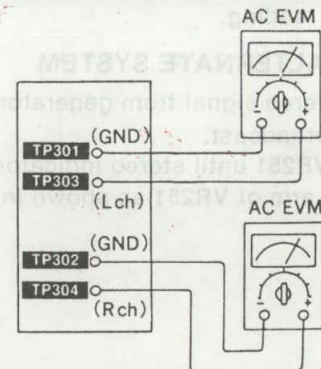
**BIAS OSCILLATION ADJUSTMENT (DECK 2)**

1. Test equipment connection is shown in figure.
2. Set the unit to "TAPE" position.
3. Place cassette deck into REC mode.
4. Adjust L355 for 70~88 kHz on frequency counter reading.
5. Set the Beat proof switch to "B" position.
6. Adjust L355 for 67~79 kHz on frequency counter reading.

**RECORDING BIAS ADJUSTMENT (DECK 2)**

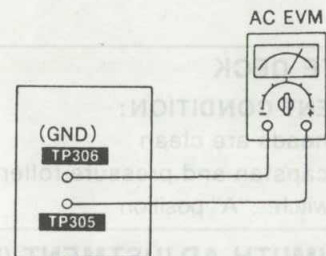
1. Test equipment connection is shown in figure.
2. Insert the normal tape.
3. Press the record and pause buttons.
4. Minimize the input level control and adjust VR355 so that the output between TP301 (L-CH) (TP302 (R-CH)) and TP303 (L-CH) (TP304 (R-CH)) is within the standard.

DECK 2 Standard value: 4.0~4.5 mV

**ERASE CURRENT ADJUSTMENT (DECK 2)**

1. Test equipment connection is shown in figure.
2. Insert the normal tape.
3. Press the record and pause buttons.

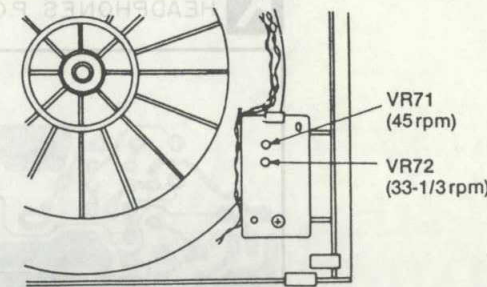
DECK 2 Standard value: more than 50 mV



● TURNTABLE

ROTATING SPEED ADJUSTMENT

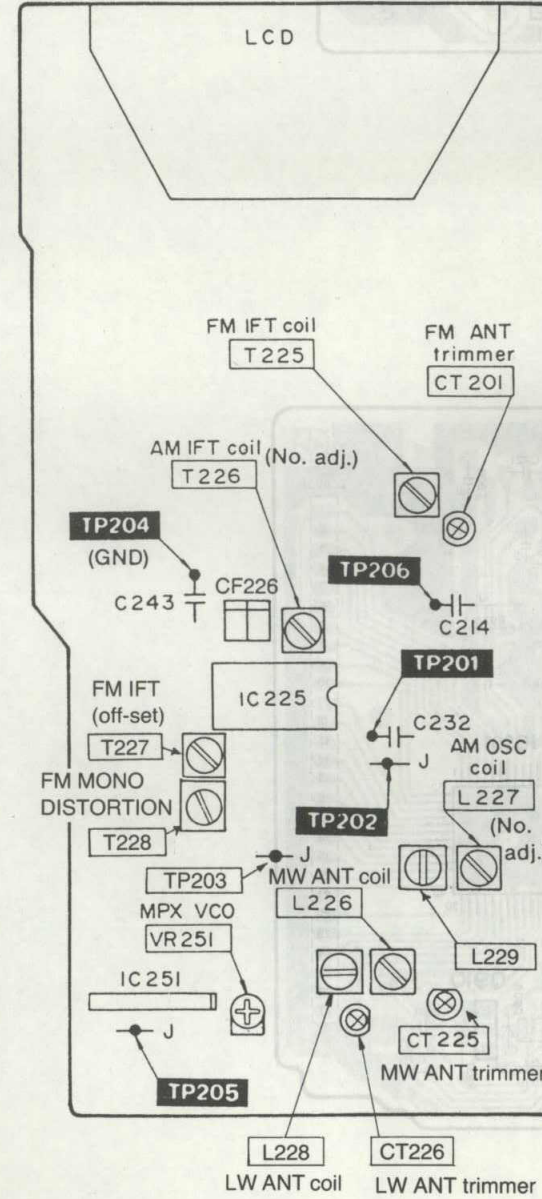
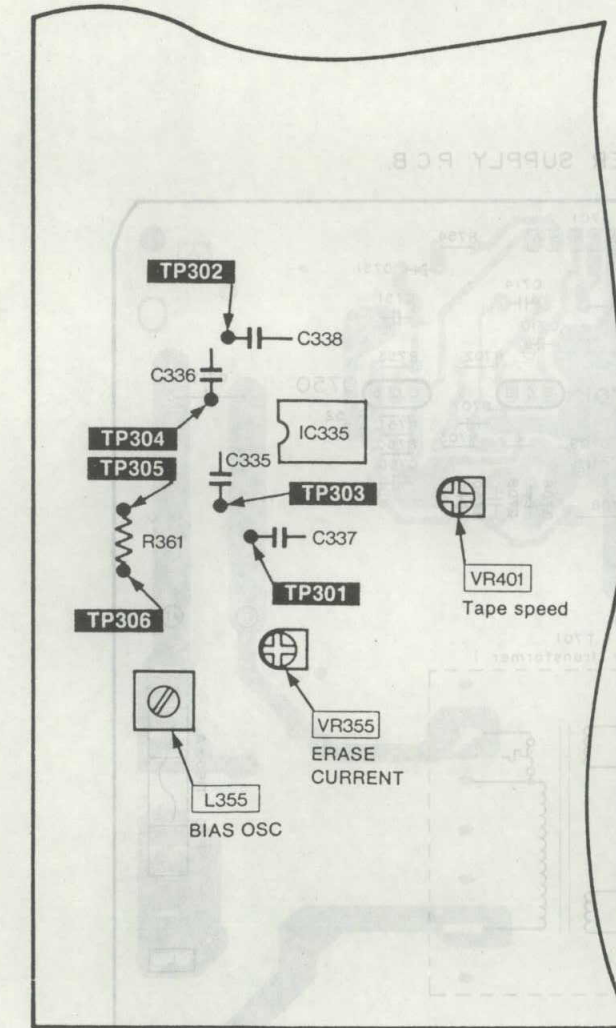
1. Set the speed selector to "33".
 2. Turn the power switch "on" and press the start button.
 3. Adjust VR72 so that the turntable platter rotates at the rated speed. (33-1/3rpm)
 4. Set the speed selector to "45".
 5. Adjust VR71 so that the turntable platter rotates at the rated speed. (45rpm)
- Note: Be sure to adjust 33-1/3rpm first.



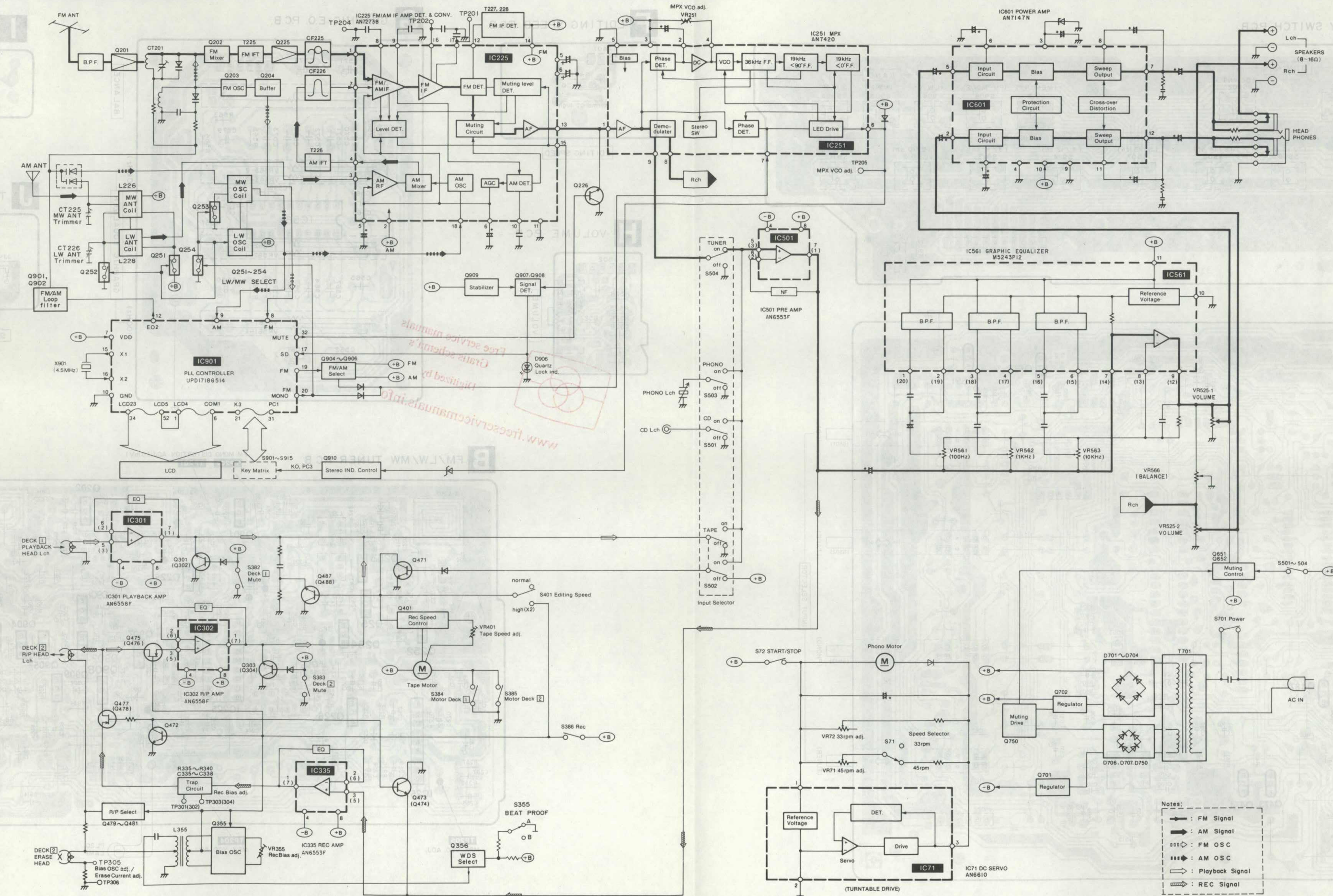
■ ADJUSTMENT POINTS

● Main P.C.B.

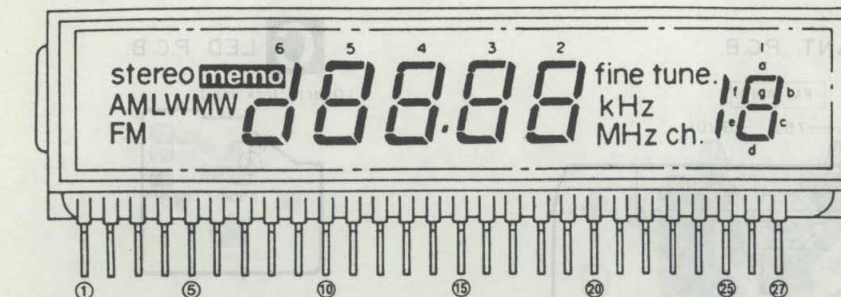
● Tuner P.C.B.



■ BLOCK DIAGRAM



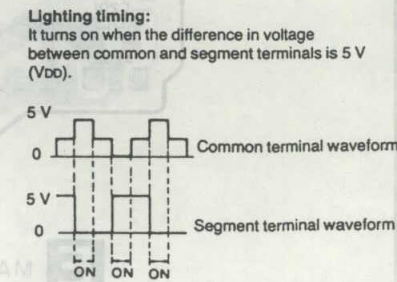
■ DESCRIPTION OF LCD PANEL



Common terminal - ①, ② Segment terminal - ③ ~ ⑲

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
COM 1	COM1	—	MEMO	—	AM	—	FM	6b	5f	5e	5d	5a	4f	4e
COM 2	—	COM2	—	LW	—	MW	6d, e, g	6c	5b	5g	5c	—	4b	4g

No.	15	16	17	18	19	20	21	22	23	24	25	26	27
COM 1	4d	4a	3f	3e	3d	3a	2a, d, f	kHz	stereo	ch	1d	1e	1f
COM 2	4c	—	3b	3g	3c	2b, e	2g	line tune	/	1a	1c	1g	1b

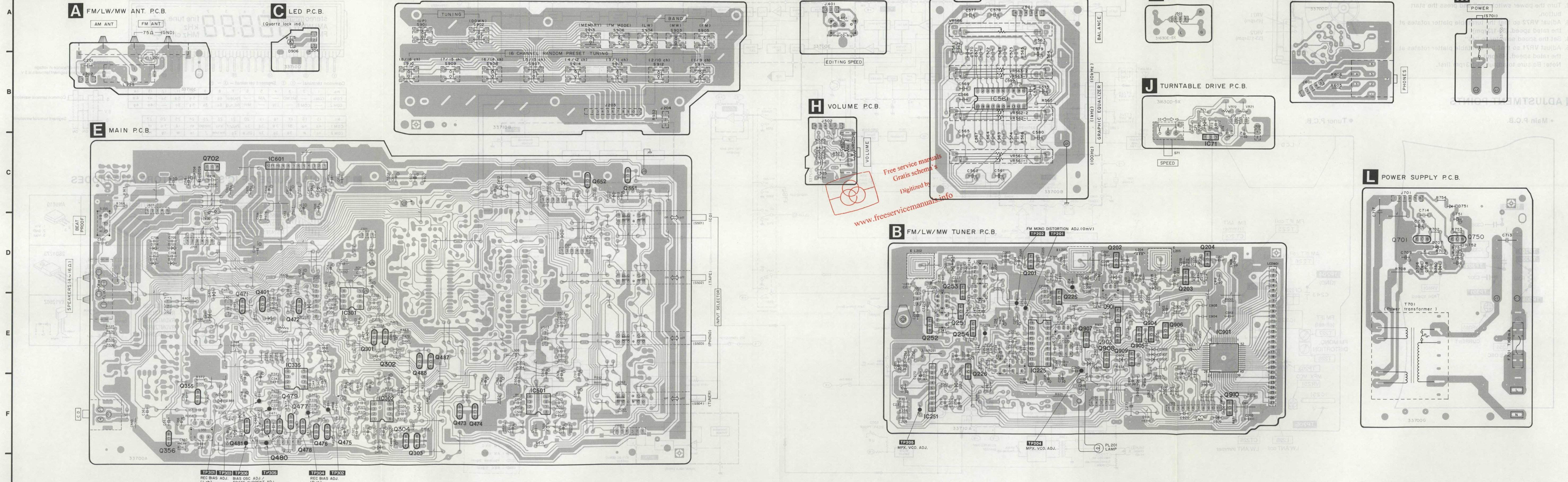


■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

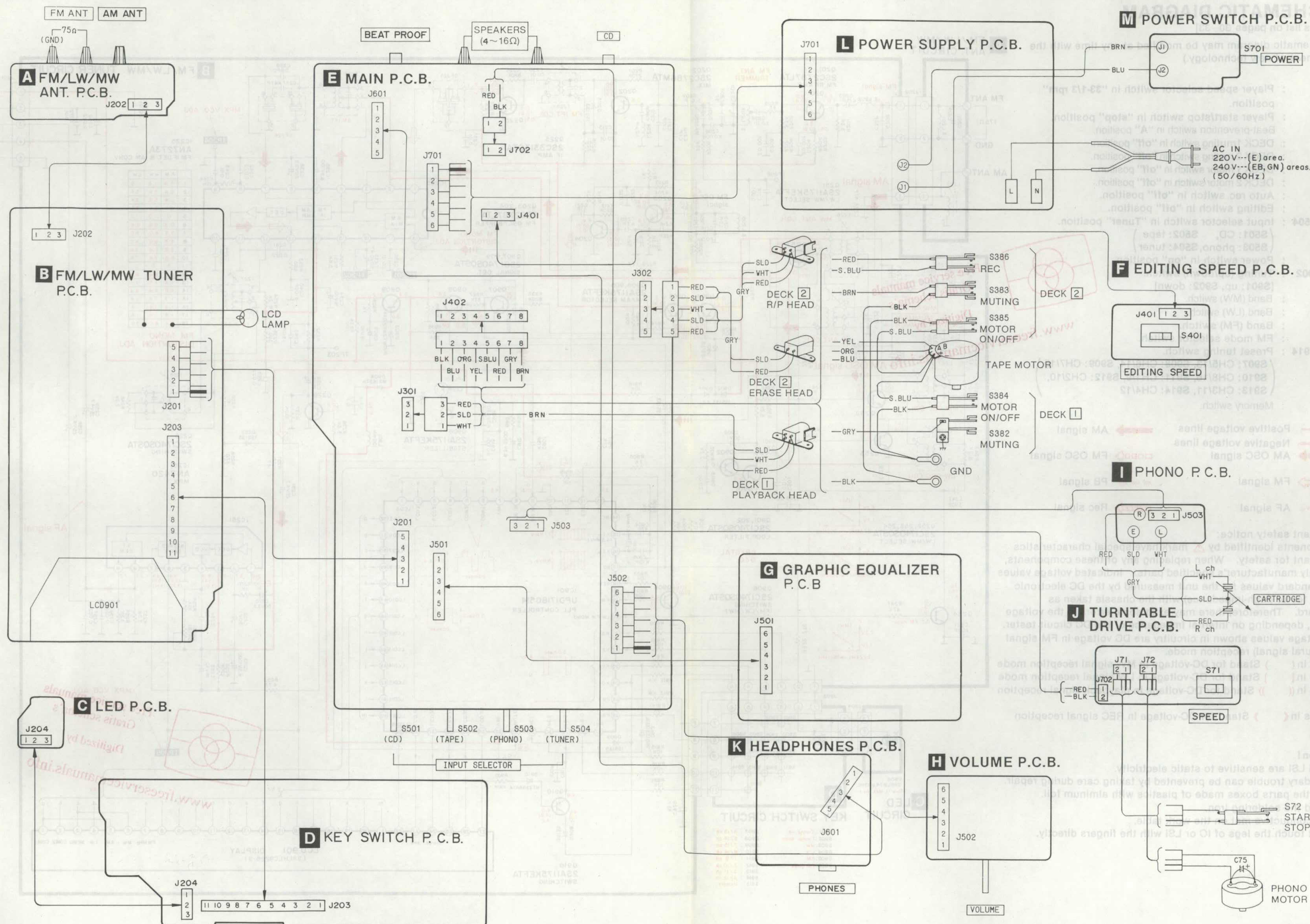
 AN6553F 8 Pin AN6558F 8 Pin AN7273B 18 Pin M5243P12 20 Pin	 AN7420 9 Pin	 UPD1718G514 52 Pin	 AN6610 1 Pin
 AN7147N 12 Pin	 2SA684, 2SD1302	 2SJ105	 2SA1175, 2SC2784, 2SC2785, 2SC2786, 2SC2787L, 2SC3312, 2SC3313
 SVGLB74UR3HL	 MA165, MA29WA, 1SR35200, 1SS133, MA162A	 RVDMT28R2B, RVDMT215B, RVDMT12BT, RVDMT26R2B, RVDMT3R6ATA	 MA325G, KV1260Z

Notes:
— : FM Signal
— : AM Signal
— : FM OSC
— : AM OSC
— : Playback Signal
— : REC Signal

PRINTED CIRCUIT BOARDS (Parts list on pages 30-35)



Free service manuals
Gratis schema's
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SCHEMATIC DIAGRAM

[Parts list on pages 30~33]

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

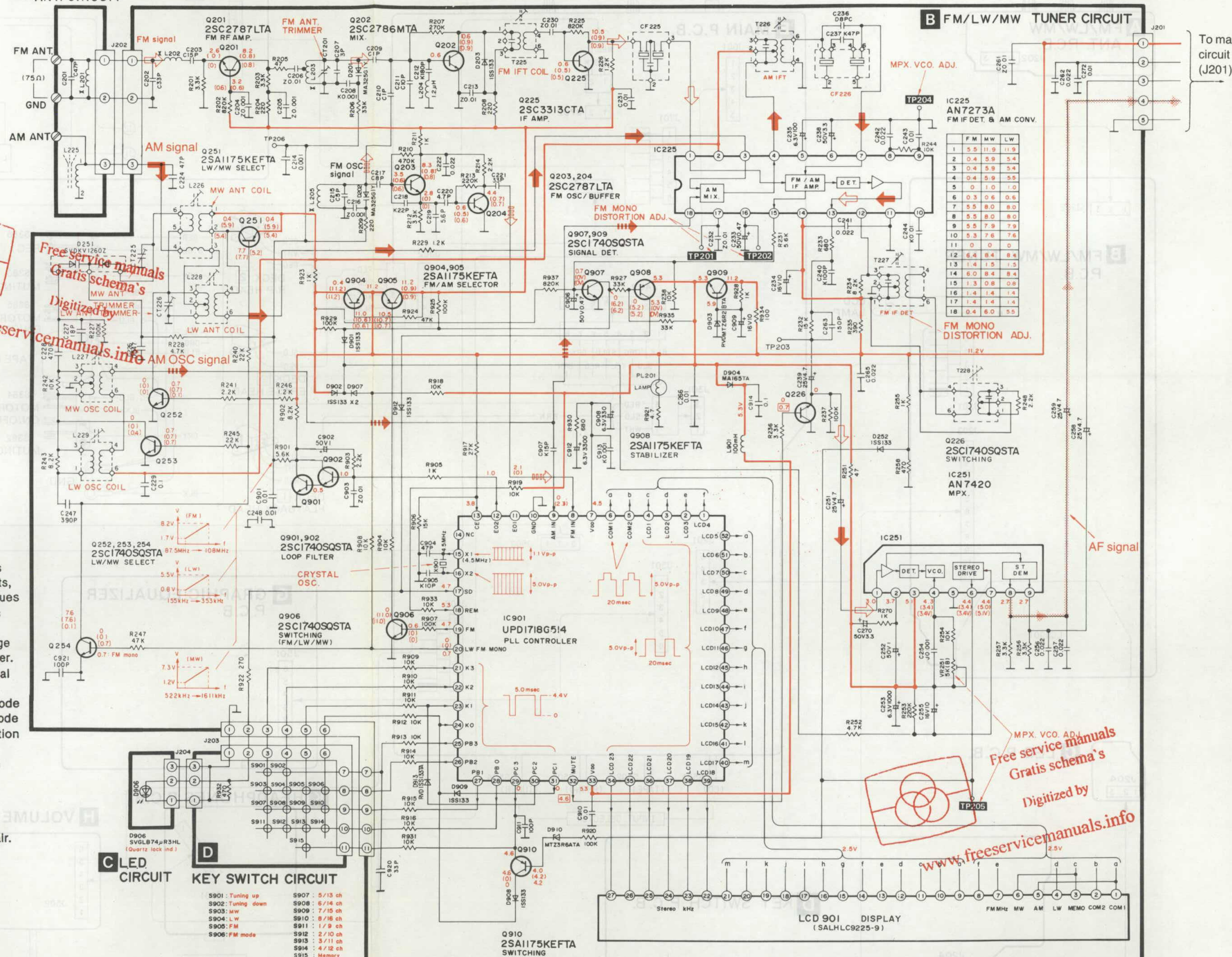
- S71 : Player speed selector switch in "33-1/3 rpm" position.
- S72 : Player start/stop switch in "stop" position.
- S355 : Beat-prevention switch in "A" position.
- S382 : DECK 1 muting switch in "off" position.
- S383 : DECK 2 muting switch in "off" position.
- S384 : DECK 1 motor switch in "off" position.
- S385 : DECK 2 motor switch in "off" position.
- S386 : Auto rec switch in "off" position.
- S401 : Editing switch in "off" position.
- S501~504 : Input selector switch in "Tuner" position.
(S501: CD, S502: tape)
(S503: phono, S504: tuner)
- S701 : Power switch in "on" position.
- S901, 902 : Tuning (up/down) switch.
[S901: up, S902: down]
- S903 : Band (MW) switch.
- S904 : Band (LW) switch.
- S905 : Band (FM) switch.
- S906 : FM mode selector switch.
- S907~914 : Preset tuning switch.
(S907: CH5/13, S908: CH6/14, S909: CH7/15,
S910: CH8/16, S911: CH1/9, S912: CH2/10,
S913: CH3/11, S914: CH4/12)
- S915 : Memory switch.

- Positive voltage lines → AM signal
- Negative voltage lines → FM OSC signal
- AM OSC signal → PB signal
- FM signal → AF signal
- AF signal → Rec signal

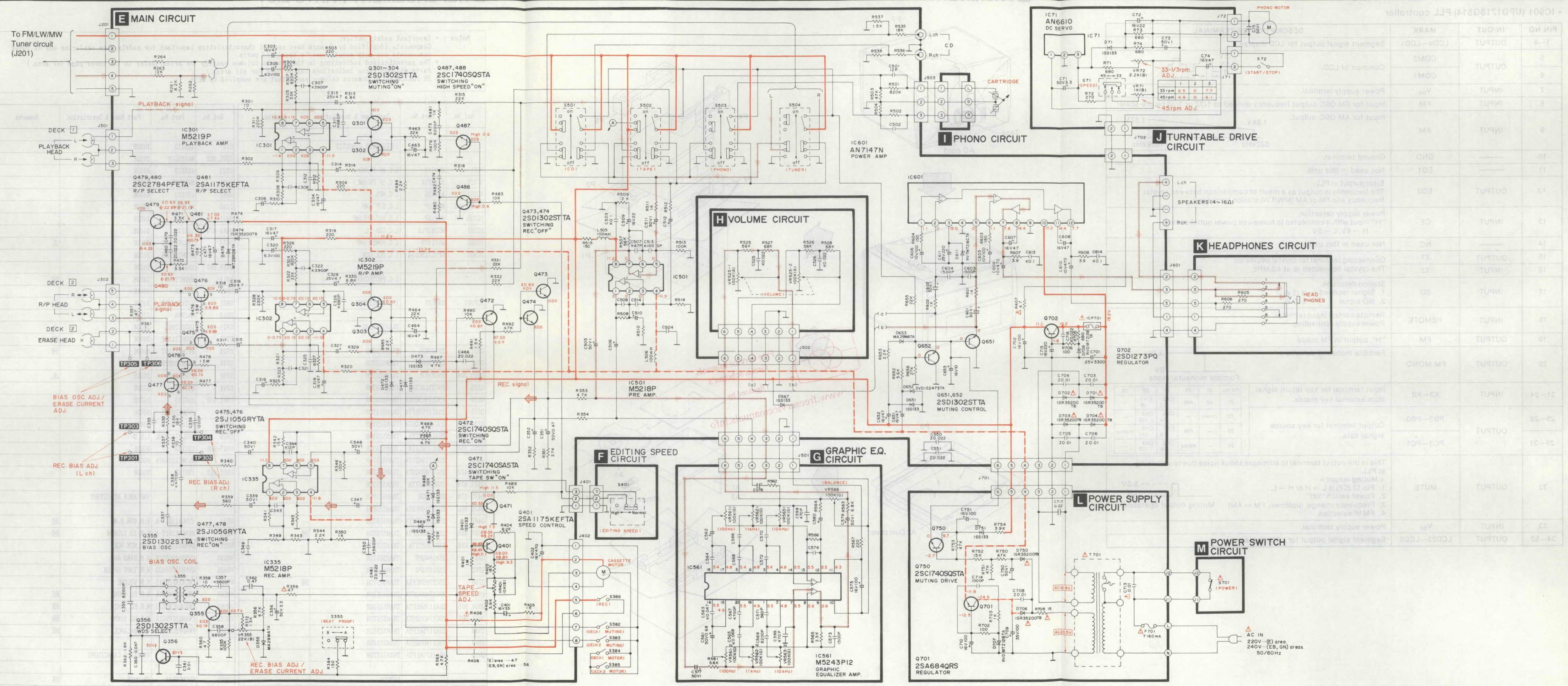
- Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts. Indicated voltage values are standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on internal impedance of the DC circuit tester.
- All voltage values shown in circuitry are DC voltage in FM signal (Monaural signal) reception mode.
- Figure in () Stand for DC-voltage in MW signal reception mode
Figure in [] Stand for DC-voltage in LW signal reception mode
Figure in (()) Stand for DC-voltage in playback signal reception mode
Figures in < > Stand for DC-voltage in REC signal reception mode

- * Caution!
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
- * Cover the parts boxes made of plastics with aluminum foil.
 - * Ground the soldering iron.
 - * Put a conductive mat on the work table.
 - * Do not touch the legs of IC or LSI with the fingers directly.

A FM/LW/MW ANT. CIRCUIT



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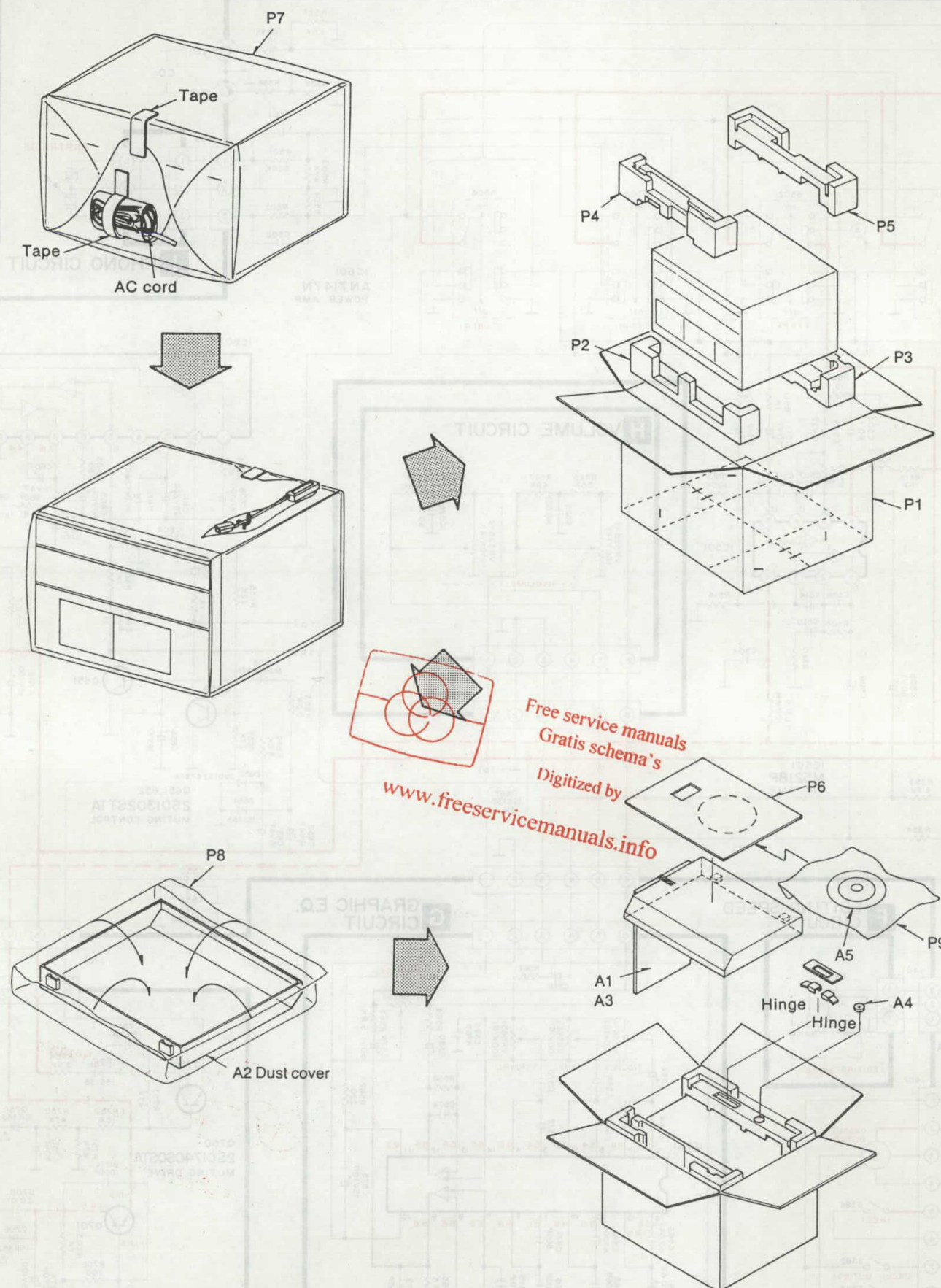


FUNCTIONS OF IC TERMINALS

IC901 (UPD1718G514) PLL controller

PIN NO	IN/OUT	MARK	DESCRIPTION OF TERMINAL
1~4	OUTPUT	LCD4~LCD1	Segment signal output for LCD display.
5	OUTPUT	COM2	Common of LCD.
6		COM1	
7	INPUT	V _{DD}	Power supply terminal.
8	INPUT	FM	Input for FM OSC output frequency divided to 1/32 or 1/33 by pre-scaler.
9	INPUT	AM	Input for AM OSC output.
10	—	GND	Ground terminal.
11	—	EO1	Not used in this unit.
12	OUTPUT	EO2	Error output of PLL. The frequency is output as a result of comparison between crystal frequency and FM or AM (MW/LW) station frequency.
13	INPUT	CE	Power supply detection. "H" input with it connected to home-use power outlet socket. H → 4V, L → 0V
14	—	NC	Not used in this unit.
15	OUTPUT	X1	Connecting terminal for crystal oscillator.
16	INPUT	X2	The crystal connected is at 4.5MHz.
17	INPUT	SD	Station detection. 1. Signal received → H (5V) 2. NO signal → L (0V)
18	INPUT	REMOTE	Remote control input terminal. Power supply connecting.
19	OUTPUT	FM	"H" output in FM mode.
20	OUTPUT	FM MONO	Forcible monaural selection.
21~24	INPUT	K3~K0	Input terminal for key return signal from external key matrix.
25~28	OUTPUT	PB3~PB0	Output terminal for key source signal data.
29~31		PC3~PC1	
32	OUTPUT	MUTE	This is the output terminal to eliminate shock noise due to unlocking at PLL. <Muting output> 1. Pin 13 (CE) is L → H or H → L. 2. Power switch "off". 3. Frequency change. (up/down, FM ↔ AM) 4. FM IF selection.
33	INPUT	V _{DD}	Power supply terminal.
34~52	OUTPUT	LCD23~LCD5	Segment signal output for LCD display.

PACKING



REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
* [M] Indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
INTEGRATED CIRCUITS				D71	1SS133	DIODE	
IC71	AN6610	I. C. DC SERVO		D201, 202	MA325G1Y	DIODE	
IC225	AN7273A	I. C. IF FM/AM		D203	1SS133	DIODE	
IC251	AN7420	I. C. MPX		D251	KV1260Z	DIODE	
IC301, 302	M5219P	I. C. R/P AMP		D252	1SS133	DIODE	
IC335, 501	M5218P	I. C. REC/PREAMP		D355	MA29WA	DIODE	
IC561	M5243P12	I. C. GRA EQ.		D401	1SS133	DIODE	
IC601	AN7147N	I. C. POWER AMP		D469-473	1SS133	DIODE	
IC901	UPD1718G514	I. C. PLL CON		D474	1SR35200TB	DIODE	Δ
		I. C. PROTECTOR		D476	RVDMT28R2B	DIODE	
		I. C. PROTECTOR		D477, 567	1SS133	DIODE	
ICP701	SRUF25	I. C. PROTECTOR		D611	RVDMT216C	DIODE	[M]
		TRANSISTORS		D651	1SS133	DIODE	
Q201	2SC2787L	TRANSISTOR		D652	SVD1S2473TA	DIODE	
Q202	2SC2786M	TRANSISTOR		D653	MA29WA	DIODE	
Q203, 204	2SC2787L	TRANSISTOR		D701-706	1SR35200A	DIODE	Δ
Q225	2SC3313CTA	TRANSISTOR		D707	RVDMT212BT	DIODE	[M]
Q226	2SC1740SQSTA	TRANSISTOR		D709	RVDMT213BT	DIODE	[M]
Q251	2SA1175KEFTA	TRANSISTOR		D746	RVDMT28R2BTA	DIODE	
Q252-254	2SC1740SQSTA	TRANSISTOR		D750	1SR35200A	DIODE	Δ
Q301-304	2SD1302STTA	TRANSISTOR		D751	1SS133	DIODE	
Q355, 356	2SD1302STTA	TRANSISTOR		D901, 902	1SS133	DIODE	
Q401	2SA1175KEFTA	TRANSISTOR		D903	RVDMT26R2B	DIODE	
Q471, 472	2SC1740SQSTA	TRANSISTOR		D904	MA165	DIODE	
Q473, 474	2SD1302STTA	TRANSISTOR		D906	SVGLB74UR3HL	L. E. D	
Q475-478	2SJ105GR	TRANSISTOR		D907-909	1SS133	DIODE	
Q479, 480	2SC2784PFETA	TRANSISTOR		D910	RVDMT23R6ATA	DIODE	
Q481	2SA1175KEFTA	TRANSISTOR		D912, 913	1SS133	DIODE	
Q487, 488	2SC2785KEFTA	TRANSISTOR	[M]	VARIABLE RESISTORS			
Q651, 652	2SD1302STTA	TRANSISTOR		VR71	RVNCA13B1T-A	V. R. 45R. P. M.	[M]
Q701	2SA684QRS	TRANSISTOR		VR72	RVNCA23B1T-A	V. R. 33. 1/3RPM	[M]
Q702	2SD1273PQ	TRANSISTOR		VR251	SVNAA53B2-Q	V. R. MPX VCO	
Q750	2SC2785KEFTA	TRANSISTOR	[M]	VR355	QVNB3A00B223	V. R. BIAS ADJ.	
Q901, 902	2SC1740SQSTA	TRANSISTOR		VR401	QVNB3A00B103	V. R. TAPE SPEED	
Q904, 905	2SA1175KEFTA	TRANSISTOR		VR525	EWXCTAF20A15	V. R. VOLUME	
Q906, 907	2SC1740SQSTA	TRANSISTOR		VR561	EWAHQ2C95G15	V. R. EQ. 100HZ	[M]
Q908	2SA1175KEFTA	TRANSISTOR		VR562	EWAHQ2C95G15	V. R. EQ. 1KHZ	[M]
Q909	2SC1740SQSTA	TRANSISTOR		VR563	EWAHQ2C95G15	V. R. EQ. 10KHZ	[M]
Q910	2SA1175KEFTA	TRANSISTOR		VR566	EWAHV2C95G15	V. R. BALANCE	[M]
DIODES				VARIABLE CAPACITORS			
CT201	SVCCT54A	TRIMMER	[M]				

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
CT225	SVCVCT54C	TRIMMER	[M]				
CT226	ECRLA020E53R	TRIMMER				SWITCHES	
		COILS		S701	SSH1071	SW, POWER	△
L204	RLQZP1R2MT-Y	COIL	[M]	S71	SSS167	SW, PLAYER SPEED	
L225	SLF6C1-10	ANTENNA COIL		S72	SSP66	SW, PLAYER START	
L226	SLA2B3-P	ANTENNA COIL		S355	SSS153	SW, BEAT PROOF	
L227	SL02B9R-M	OSCILLATOR COIL	[M]	S401	SSS167	SW, EDITING SPEED	
L228	SLA1B7R-P	COIL		S501	SSH4109	SW, CD	
L229	SL01B5-M	COIL	[M]	S502	SSH4109	SW, TAPE	
L355	SL09Z15-M	OSC COIL	[M]	S503	SSH4109	SW, PHONO	
L505	ELEPK101KA	CHOKE COIL		S504	SSH4109	SW, TUNER	
L506	ELEPH101KA	CHOKE COIL		S901	SSG13	SW, TUNING UP	
L901	RLQZP101KT-Y	COIL		S902	SSG13	SW, TUNING DOWN	
		TRANSFORMERS		S903	SSG13	SW, MW	
				S904	SSG13	SW, LW	
T225	SL14B108-M	I. F. T.		S905	SSG13	SW, FM	
T226	SL12B101-M	I. F. T.		S906	SSG13	SW, FM MODE	
T227	SL14B511-Z	I. F. T.		S907	SSG13	SW, CH5/13	
T228	SL14B513-Z	I. F. T.		S908	SSG13	SW, CH6/14	
T701	SLT5L285-K	POWER TRANSFORMER	[M]△ (EB, GN)	S909	SSG13	SW, CH7/15	
T701	SLT5L286-K	POWER TRANSFORMER	[M]△ (E)	S910	SSG13	SW, CH8/16	
		FILTERS		S911	SSG13	SW, CH1/9	
				S912	SSG13	SW, CH2/10	
CF225	SVFE107MS2-A	CERAMIC FILTER		S913	SSG13	SW, CH3/11	
CF226	SVFSF450F7L	CERAMIC FILTER	[M]	S914	SSG13	SW, CH4/12	
		OSCILLATORS		S915	SSG13	SW, MEMORY	
X901	SVQ43U452-D	CRYSTAL OSC.				DECK SWITCHES	
		DISPLAY		S382	RFA95ZA	SW, MUTING (DECK1)	[M]
LCD901	SALHLC9225-9	DISPLAY		S383	RFA96ZA	SW, MUTING (DECK2)	[M]
		LAMP		S384	RFA91ZA	SW, MOTOR (DECK1)	
PL201	XAMR78S250	LAMP		S385	RFA91ZA	SW, MOTOR (DECK2)	
				S386	RFA94ZA	SW, REC (DECK2)	[M]
						FUSE	
				F701	XBA2C016TB0	FUSE 250V T160mA	△

Notes : * Capacity value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

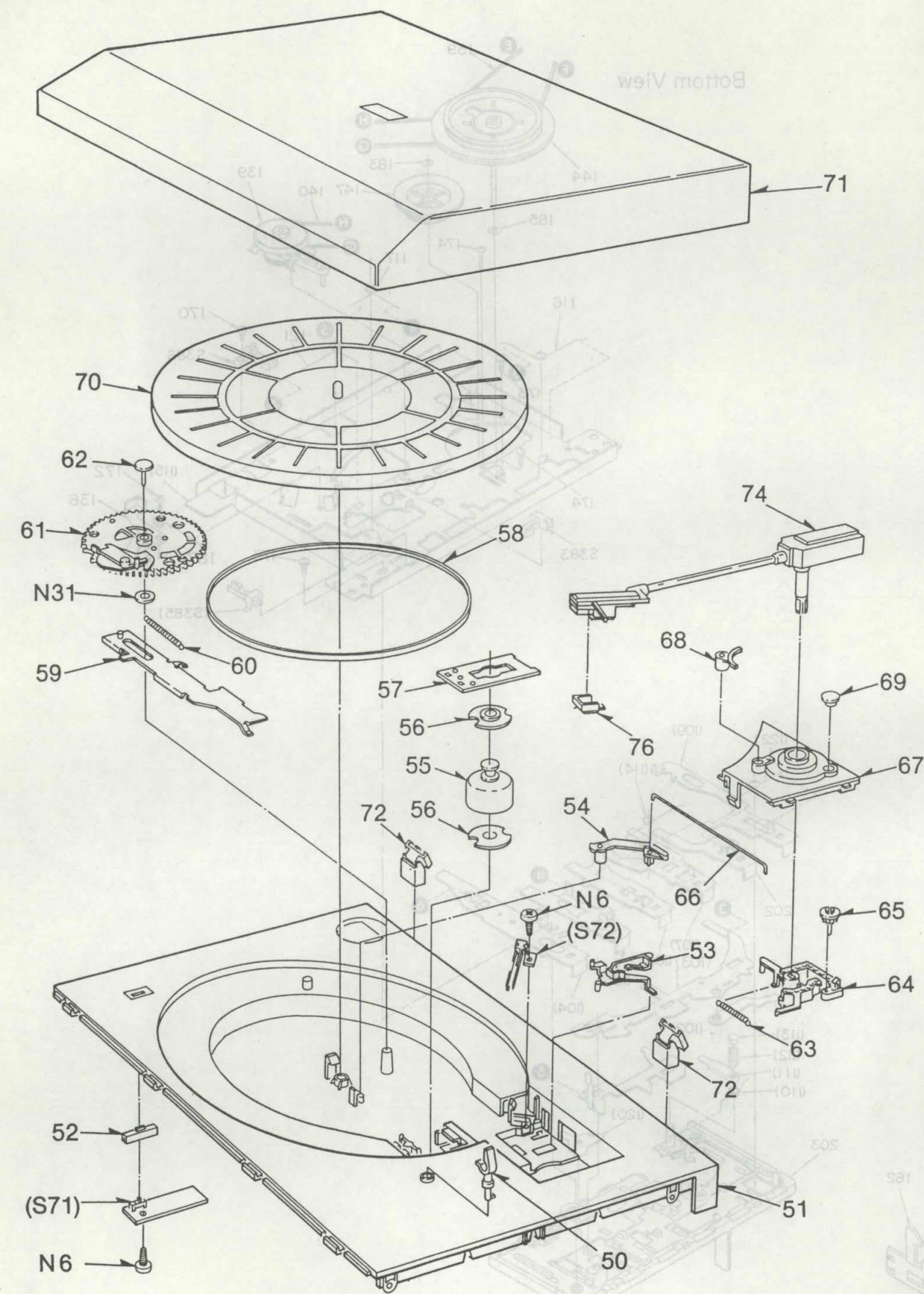
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R201	ERDS2TJ332	1/4W 3.3K	R207	ERDS2TJ274	1/4W 270K
			R202	ERDS2TJ824	1/4W 820K	R208, 209	ERDS2TJ221	1/4W 220
			R203	ERDS2TJ332	1/4W 3.3K	R210	ERDS2TJ474	1/4W 470K
R71	ERDS2TJ681	1/4W 680	R204	ERDS2TJ221	1/4W 220	R211	ERDS2TJ102	1/4W 1K
R72	ERDS2TJ271	1/4W 270	R205	ERDS2TJ470	1/4W 47	R212	ERDS2TJ332	1/4W 3.3K
R73, 74	ERDS2TJ681	1/4W 680	R206	ERDS2TJ333	1/4W 33K	R213	ERDS2TJ224	1/4W 220K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R214	ERDS2TJ222	1/4W 2.2K	R341, 342	ERDS2TJ153	1/4W 15K	R537, 538	ERDS2TJ152	1/4W 1.5K
R225	ERDS2TJ824	1/4W 820K	R343, 344	ERDS2TJ222	1/4W 2.2K	R561, 562	ERDS2TJ562	1/4W 5.6K
R226	ERD25FJ122	1/4W 1.2K	R345, 346	ERDS2TJ104	1/4W 100K	R563, 564	ERDS2TJ682	1/4W 6.8K
R227	ERDS2TJ104	1/4W 100K	R349, 350	ERDS2TJ102	1/4W 1K	R565, 566	ERDS2TJ332	1/4W 3.3K
R228	ERDS2TJ472	1/4W 4.7K	R351, 352	ERDS2TJ272	1/4W 2.7K	R567	ERD25FJ221	1/4W 220
R229	ERDS2TJ122	1/4W 1.2K	R353, 354	ERDS2TJ472	1/4W 4.7K	R601, 602	ERDS2TJ102	1/4W 1K
R231	ERDS2TJ562	1/4W 5.6K	R355	ERDS2TJ104	1/4W 100K	R603, 604	ERDS2TJ151	1/4W 150
R232	ERDS2TJ153	1/4W 15K	R356	ERDS2TJ472	1/4W 4.7K	R605, 606	ERDS2TJ271	1/4W 270
R233	ERDS2TJ681	1/4W 680	R357	ERDS2TJ470	1/4W 47	R607, 608	ERDS2TJ3R9	1/4W 3.9
R234	ERDS2TJ822	1/4W 8.2K	R358	ERDS2TJ100	1/4W 10	R652	ERDS2TJ562	1/4W 5.6K
R235	ERDS2TJ391	1/4W 390	R359	ERD25TJ470P	1/4W 47 (M) (E)	R653	ERDS2TJ222	1/4W 2.2K
R236	ERDS2TJ332	1/4W 3.3K	R359	ERD2FCG470P	1/4W 47 (EB, GN)	R655	ERDS2TJ223	1/4W 22K
R237	ERDS2TJ104	1/4W 100K	R360	ERDS2TJ47	1/4W 4.7	R656	ERDS2TJ273	1/4W 27K
R238	ERDS2TJ103	1/4W 10K	R361	ERD25FJ1R0	1/4W 1	R702	ERDS2TJ101	1/4W 100
R240	ERDS2TJ223	1/4W 22K	R362	ERDS2TJ182	1/4W 1.8K	R703	ERDS2TJ102	1/4W 1K
R241	ERDS2TJ222	1/4W 2.2K	R363	ERDS2TJ472	1/4W 4.7K	R705	ERDS2TJ681	1/4W 680
R242	ERDS2TJ103	1/4W 10K	R364	ERDS2TJ151	1/4W 150	R706	ERDS2TJ101	1/4W 100
R243	ERDS2TJ822	1/4W 8.2K	R372	ERDS2TJ152	1/4W 1.5K	R708	ERD25FJ150P	1/4W 15 (E)
R244	ERDS2TJ103	1/4W 10K	R401	ERDS2TJ105	1/4W 1M	R708	ERD2FCG150P	1/4W 15 (EB, GN)
R245	ERDS2TJ223	1/4W 22K	R402	ERDS2TJ392	1/4W 3.9K	R750, 751	ERDS2TJ473	1/4W 47K
R246	ERDS2TJ122	1/4W 1.2K	R403	ERDS2TJ183	1/4W 18K	R752	ERDS2TJ153	1/4W 15K
R247	ERDS2TJ473	1/4W 47K	R404	ERDS2TJ822	1/4W 8.2K	R753	ERDS2TJ473	1/4W 47K
R248	ERDS2TJ222	1/4W 2.2K	R405	ERDS2TJ102	1/4W 1K	R754	ERDS2TJ392	1/4W 3.9K
R251	ERDS2TJ470	1/4W 47	R406	ERD25FJ47	1/4W 4.7 (E)	R901	ERDS2TJ562	1/4W 5.6K
R252	ERDS2TJ472	1/4W 4.7K	R406	ERD2FCJ5R6P	1/4W 5.6 (EB, GN)	R902	ERDS2TJ822	1/4W 8.2K
R253	ERDS2TJ224	1/4W 220K	R407	ERD25FJ47	1/4W 4.7 (E)	R903	ERDS2TJ222	1/4W 2.2K
R254	ERDS2TJ103	1/4W 10K	R407	ERD2FCJ47P	1/4W 4.7 (EB, GN)	R904	ERDS2TJ103	1/4W 10K
R255	ERDS2TJ102	1/4W 1K	R463, 464	ERDS2TJ223	1/4W 22K	R905	ERDS2TJ102	1/4W 1K
R256, 257	ERDS2TJ332	1/4W 3.3K	R465	ERDS2TJ472	1/4W 4.7K	R906	ERDS2TJ153	1/4W 15K
R258	ERDS2TJ471	1/4W 470	R467, 468	ERDS2TJ472	1/4W 4.7K	R907	ERDS2TJ104	1/4W 100K
R261, 262	ERDS2TJ822	1/4W 8.2K	R471, 472	ERDS2TJ332	1/4W 3.3K	R908-916	ERDS2TJ103	1/4W 10K
R263, 264	ERDS2TJ123	1/4W 12K	R473	ERDS2TJ103	1/4W 10K	R917	ERDS2TJ273	1/4W 27K
R270	ERDS2TJ102	1/4W 1K	R474	ERDS2TJ102	1/4W 1K	R918, 919	ERDS2TJ103	1/4W 10K
R301, 302	ERDS2TJ100	1/4W 10	R475, 478	ERDS2TJ155	1/4W 1.5M	R920	ERDS2TJ104	1/4W 100K
R303, 304	ERD25FJ221	1/4W 220	R479, 480	ERDS2TJ104	1/4W 100K	R921	ERD2FCJ47P	1/4W 4.7
R305, 306	ERDS2TJ333	1/4W 33K	R481, 482	ERDS2TJ102	1/4W 1K	R922	ERDS2TJ271	1/4W 270
R307, 308	ERDS2TJ824	1/4W 820K	R483	ERDS2TJ103	1/4W 10K	R923	ERDS2TJ102	1/4W 1K
R309, 310	ERDS2TJ221	1/4W 220	R484, 485	ERDS2TJ222	1/4W 2.2K	R924	ERDS2TJ473	1/4W 47K
R311, 312	ERDS2TJ224	1/4W 220K	R486, 487	ERDS2TJ103	1/4W 10K	R925	ERDS2TJ104	1/4W 100K
R313, 314	ERDS2TJ682	1/4W 6.8K	R489, 490	ERDS2TJ103	1/4W 10K	R927	ERDS2TJ333	1/4W 33K
R315, 316	ERDS2TJ223	1/4W 22K	R491	ERDS2TJ152	1/4W 1.5K	R928	ERDS2TJ102	1/4W 1K
R317, 318	ERDS2TJ100	1/4W 10	R492	ERDS2TJ472	1/4W 4.7K	R929	ERDS2TJ104	1/4W 100K
R319, 320	ERDS2TJ221	1/4W 220	R501, 502	ERDS2TJ824	1/4W 820K	R930	ERDS2TJ681	1/4W 680
R321, 322	ERDS2TJ333	1/4W 33K	R503, 504	ERDS2TJ473	1/4W 47K	R931	ERDS2TJ103	1/4W 10K
R323, 324	ERDS2TJ824	1/4W 820K	R507, 508	ERDS2TJ563	1/4W 56K	R932	ERDS2TJ471	1/4W 470
R325, 326	ERDS2TJ221	1/4W 220	R509, 510	ERDS2TJ123	1/4W 12K	R933	ERDS2TJ103	1/4W 10K
R327, 328	ERDS2TJ224	1/4W 220K	R511, 512	ERD25TJ102	1/4W 1K	R934	ERDS2TJ101	1/4W 100
R329, 330	ERDS2TJ682	1/4W 6.8K	R513, 514	ERDS2TJ104	1/4W 100K	R935	ERDS2TJ333	1/4W 33K
R331, 332	ERD25FJ223	1/4W 22K	R515	ERDS2TJ151	1/4W 150	R937	ERDS2TJ824	1/4W 820K
R335, 336	ERDS2TJ183	1/4W 18K	R525, 526	ERDS2TJ563	1/4W 56K			
R337, 338	ERDS2TJ100	1/4W 10	R527, 528	ERDS2TJ683	1/4W 68K			CAPACITORS
R339, 340	ERDS2TJ561	1/4W 560	R535, 536	ERDS2TJ183	1/4W 18K			

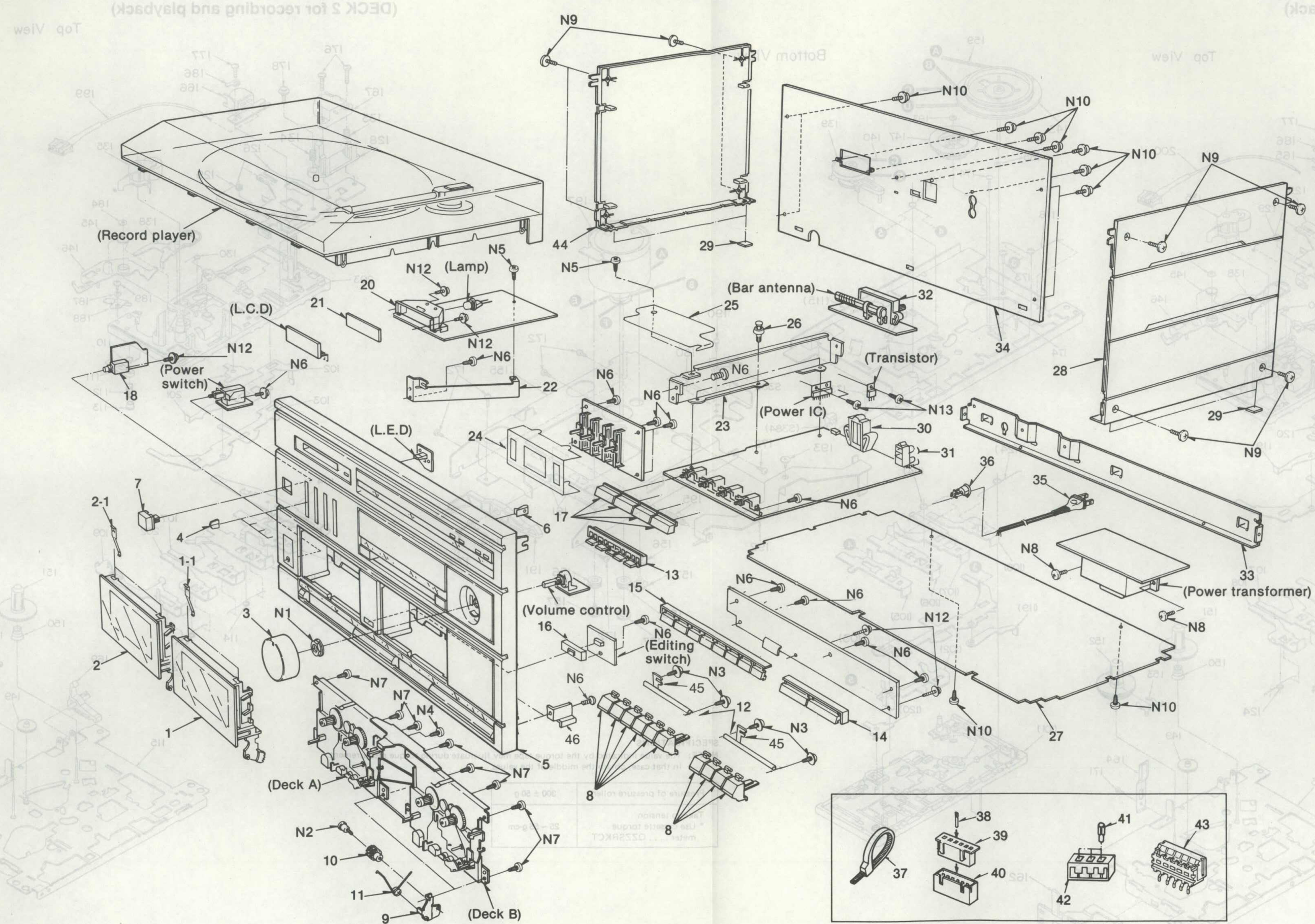
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C71	ECEA1HU3R3	50V 3.3U	C263	RCBC1H151KBY	50V 150P	C575	ECEA1CU101	16V 100U
C72	ECEA1CU220	16V 22U	C265	ECKD1H223PF	50V 0.022U	C577-580	ECEA1HU010	50V 1U
C73	ECEA1HU010	50V 1U	C266	ECFV1E103MD	25V 0.01U M	C598	RCBS1H471KBY	50V 470P
C74	ECEA1CU470	16V 47U	C270	ECEA1HU3R3B	50V 3.3U	C599	RCBC1H471KBY	50V 470P
C75	ECEA1HU010	50V 1U	C272	ECBS1C103NYY	16V 0.01U	C601, 602	ECEA1HU010	50V 1U
C201	ECCD1H470KC	50V 47P	C303, 304	ECEA1CU470	16V 47U	C603, 604	ECKD1H152KB	50V 1500P
C202	ECCD1H330K	50V 33P	C305, 306	ECEA0JU101	6.3V 100U	C605, 606	ECEA1AU101	10V 100U
C203	ECCD1H150KC	50V 15P	C307, 308	ECFT1E392KDY	25V 3900P	C607, 608	ECEA1CU470	16V 47U
C204, 205	ECKD1H102PF	50V 0.001U	C311, 312	ECKD1H681KB	50V 680P	C609, 610	ECEA1AU471	10V 470U
C206	ECKF1H103ZF	50V 0.01U	C313-316	ECEA1EU4R7	25V 4.7U	C611	ECEA1EU221	16V 220U
C207	ECCD1H030CC	50V 3P	C317, 318	ECEA1CU470	16V 47U	C613, 614	ECFT1E104KDY	25V 0.1U
C208	ECKD1H102KB	50V 1000P	C319, 320	ECEA0JU101	6.3V 100U	C651, 652	ECEA1CU470	16V 47U
C209, 210	ECCD1H010CC	50V 1P	C321, 322	ECFT1E392KDY	25V 3900P	C653	ECEA1CU100	16V 10U
C211	RCBS1H100JLY	50V 10P	C325, 326	ECKD1H681KB	50V 680P	C701	ECEA1ES332	25V 3300U
C212	ECKD1H181KB	50V 180P	C327, 328	ECEA1EU4R7	25V 4.7U	C702	ECEA1CU101	16V 100U
C213	ECKF1H103ZF	50V 0.01U	C335, 336	ECQM1H122KV3	50V 1200P	C703-706	ECKF1H103ZF	50V 0.01U
C214	ECKD1H102KB	50V 0.001U	C337, 338	ECQM1H472JZ	50V 4700P	C708	ECKF1H103ZF	50V 0.01U
C215	ECCD1H050CC	50V 5P	C339, 340	ECEA1HU010	50V 1U	C709	ECEA1VU101	35V 100U
C216	ECKD1H102KB	50V 1000P	C343, 344	ECCD1H120KC	50V 12P	C710	ECEA1CU101	16V 100U
C217	ECCD1H080CC	50V 8P	C347, 348	ECEA1HU010	50V 1U	C713	ECKWKC103PF2	400V 0.01U Δ(E)
C218	ECCD1H220KC	50V 22P	C349, 350	ECFT1E562KDY	25V 5600P	C713	ECKDKC103PF2	400V 0.01U Δ(E, GN)
C219	RCBS1H5R6KCY	50V 5.6P	C351, 352	ECEA1HUR47	50V 0.47U	C714	ECKD1H102KB	50V 1000P
C220	RCBD1H4R7KCY	50V 4.7P	C355	ECQM1H822JV3	50V 8200P	C715	ECEA1CU221	16V 220U
C221	ECCD1H330K	50V 33P	C356	ECEA50M3R3	50V 3.3U	C716	ECFTD223JX	25V 0.022U
C222	ECKD1H223PF	50V 0.022U	C357	ECQM1H562JZ	50V 5600P	C717	ECQM1224MZW	100V 0.22U
C224	ECCD1H470K	50V 47P	C358	ECQM1H682KV3	50V 6800P	C750	ECEA1HU010	50V 1U
C226	ECFTD473JX	25V 0.047U	C360	ECQM1H473KV3	50V 0.047U	C751	ECEA1CU101	16V 100U
C227	ECCD1H180KC	50V 18P	C361	ECKT1H103ZF	50V 0.01U	C901	ECKF1H103ZF	50V 0.01U
C228	ECQP1471JZ	125V 470P	C362	ECQV1H474JZ3	50V 0.47U	C902	ECEA50M1RB	50V 1U
C229	ECFT1E104MDY	25V 0.1U	C401	ECEA1CU330	16V 33U	C903	ECKF1H103ZF	50V 0.01U
C230-232	ECKF1H103ZF	50V 0.01U	C402	ECEA1CU471E	16V 220U	C904	RCBC1H470JLY	50V 47P
C233	ECEA1HUR47	50V 0.47U	C463, 464	ECEA1CU470	16V 47U	C905	RCBS1H100JLY	50V 10P
C234	ECEA1CU100	16V 10U	C466	ECKD1H223PF	50V 0.022U	C906	ECEA1HUR47	50V 0.47U
C235	ECEA0JU101	6.3V 100U	C471	ECEA1CU470	16V 47U	C907	ECCD1H150KC	50V 15P
C236	ECCD1H080CC	50V 8P	C473, 474	ECFT1E822KDY	25V 8200P	C908	ECEA0JS331	6.3V 330U
C237	ECCD1H470K	50V 47P	C479-481	ECKD1H223PF	50V 0.022U	C909	ECEA1CU100	16V 10U
C238	ECEA1HU3R3	50V 3.3U	C501, 502	ECCD1H120KC	50V 12P	C910	ECFT1E103KDY	25V 0.001U
C239	ECEA1EU4R7	50V 4.7U	C503, 504	ECFT1E104KDY	25V 0.1U	C911	ECBS1H101JLY	50V 100P
C240	ECCD1H101K	50V 100P	C505, 506	ECEA1HU010	50V 1U	C912	ECEA0JU332	6.3V 3300U
C241, 242	ECKD1H223PF	50V 0.022U	C507, 508	ECCD1H470K	50V 47P	C913	RCBS1H102KBY	50V 0.001U M
C243, 244	ECKF1H103ZF	50V 0.01U	C509, 510	ECEA1CU220	16V 22U	C914	ECFT1E104MD	25V 0.1U
C247	ECQP1391JZT	100V 390P M	C511, 512	ECEA1HU010	50V 1U	C920	RCBS1H330JLY	50V 33P
C248	ECKF1H103ZF	50V 0.01U	C513, 514	ECKD1H102KB	50V 1000P	C921	ECCD1H101K	50V 100P
C251	ECEA1EU4R7	25V 4.7U	C525, 526	ECFTD223JX	25V 0.022U			
C252	ECEA1HU010B	50V 1U	C550, 551	ECKD1H223PF	50V 0.022U			
C253	ECEA0JU102E	6.3V 1000U	C561, 562	ECEA50ZR68	50V 0.68U			
C254	ECQP1102JZ	100V 0.001U	C563, 564	ECFTD473JX	25V 0.047U			
C255	ECEA1CU100	16V 10U	C565, 566	ECFT1E683KDY	25V 0.068U			
C256, 257	ECFTD223JX	25V 0.022U	C567, 568	ECFT1E472KDY	25V 4700P			
C258, 259	ECEA1EU4R7	25V 4.7U	C569, 570	ECFT1E822KDY	25V 8200P			
C261	ECKF1H103ZF	50V 0.01U	C571, 572	ECKD1H561KB	50V 560P			
C262	ECKD1H223PF	50V 0.022U	C573, 574	ECFT1E152KDY	25V 1500P			

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CASSETTE DECK		160	RF1552A	RUBBER SPACER	
				161	RF1562A	RUBBER SPACER	
101	RFU1542A	CHASSIS		162	RFY8892A	LEVER	
102	RFY9052A	SWITCH PLATE	[M]	164	RFS4672A	SPRING	
103	RFY9062A	LEVER	[M]	165	RFH212A	P. HEAD	[M]
104	RFY8682A	LEVER		166	RFH222A	R/P. HEAD	[M]
105	RFY8692A	LEVER		167	RFH232A	E. HEAD	[M]
106	RFY8702A	LEVER		169	RFY7162A	LEVER	
107	RFY8712A	FF BUTTON LEVER		170	RFE4752A	SCREW	
108	RFY8722A	LEVER		171	XTN2+3B	SCREW	
109	RFY9072A	PAUSE BUTTON LEVER	[M]	172	XTN2+4B	TAPPING SCREW	
110	RFS8372A	SPRING		173	XSN2+4	SCREW	
111	RFY9082A	PAUSE LEVER	[M]	174	RFE4962A	SCREW	
112	RFS8132A	COIL SPRING		175	XSN2+6	SCREW	
113	RFX1742A	SPACER		176	RFE5062A	SCREW	[M]
114	RFS8142A	COIL SPRIN		177	RFE4982A	SCREW	
115	RFU1552A	CHASSIS		178	RFE2302A	SCREW	
116	RFS8152A	COIL SPRING		179	RFE4542A	SCREW	
117	RFS8162A	COIL SPRING		183	RFN832A	WASHER	
119	RFY8442A	LEVER		184	RFN2142A	WASHER	
120	RFX1752A	SPACER		185	RFN1222A	WASHER	
121	RFS8172A	COIL SPRING		186	RFE2282A	TERMIANL	
122	RFS8182A	COIL SPRING		187	RFY8772A	COLLAR	
124	RFS8422A	SPRING	[M]	188	RFD3962A	CHASSIS	
125	RFU1572A	CHASSIS		189	RFE4972A	SCREW	
126	RFU1752A	CHASSIS	[M]	190	RFE4532A	SCREW	
127	RFU1682A	CHASSIS		191	RFY9102A	PKICK LEVER	[M]
128	RFU1672A	HEAD PANEL		192	RFY9112A	PKICK LEVER	[M]
129	RFS8302A	SPRING		193	RFE2392A	SCREW	
130	RFS8202A	COIL SPRING		194	RFX1342A	COLLAR	
133	RFS5782A	SPRING		195	RFS6872A	SPRING	
134	RFS447Z	SPRING		197	RFM1622A	MOTOR ASS' Y	[M]
135	RFR572A	ROLLER		199	SWKGH30P2	REED WIRE	[M]
136	RFY9092A	REC ARM	[M]	200	SWKGH30P3	REED WIRE	[M]
138	RFY8842A	LEVER		201	RFY9242A	LEVER	[M]
139	RFQ612A	PULLEY		202	RFY9252A	LEVER	[M]
140	RFB992A	BELT		203	RFU1782A	CHASSIS	
143	RFF702A	FLYWHEEL ASS' Y	[M]				
144	RFF712A	FLYWHEEL ASS' Y	[M]				
145	RFS8222A	COIL SPRING					
146	RFY8742A	LEVER					
147	RFG1362A	GEAR					
149	RFG1102A	GEAR					
150	RFS7082A	COIL SPRING					
151	RFJ892A	SUPPLY REEEL ASS' Y	[M]				
152	RFJ902A	TAKE UP REEL ASS' Y	[M]				
153	RFY8752A	LEVER					
155	RFD4042A	MOTOR BRACKET	[M]				
156	RFI272A	MOTOR BUBBER					
157	RFE2132A	SCREW					
159	RFB1022A	MAIN BELT	[M]				

EXPLODED VIEW (RECORD PLAYER)



EXPLODED VIEW (CABINET)



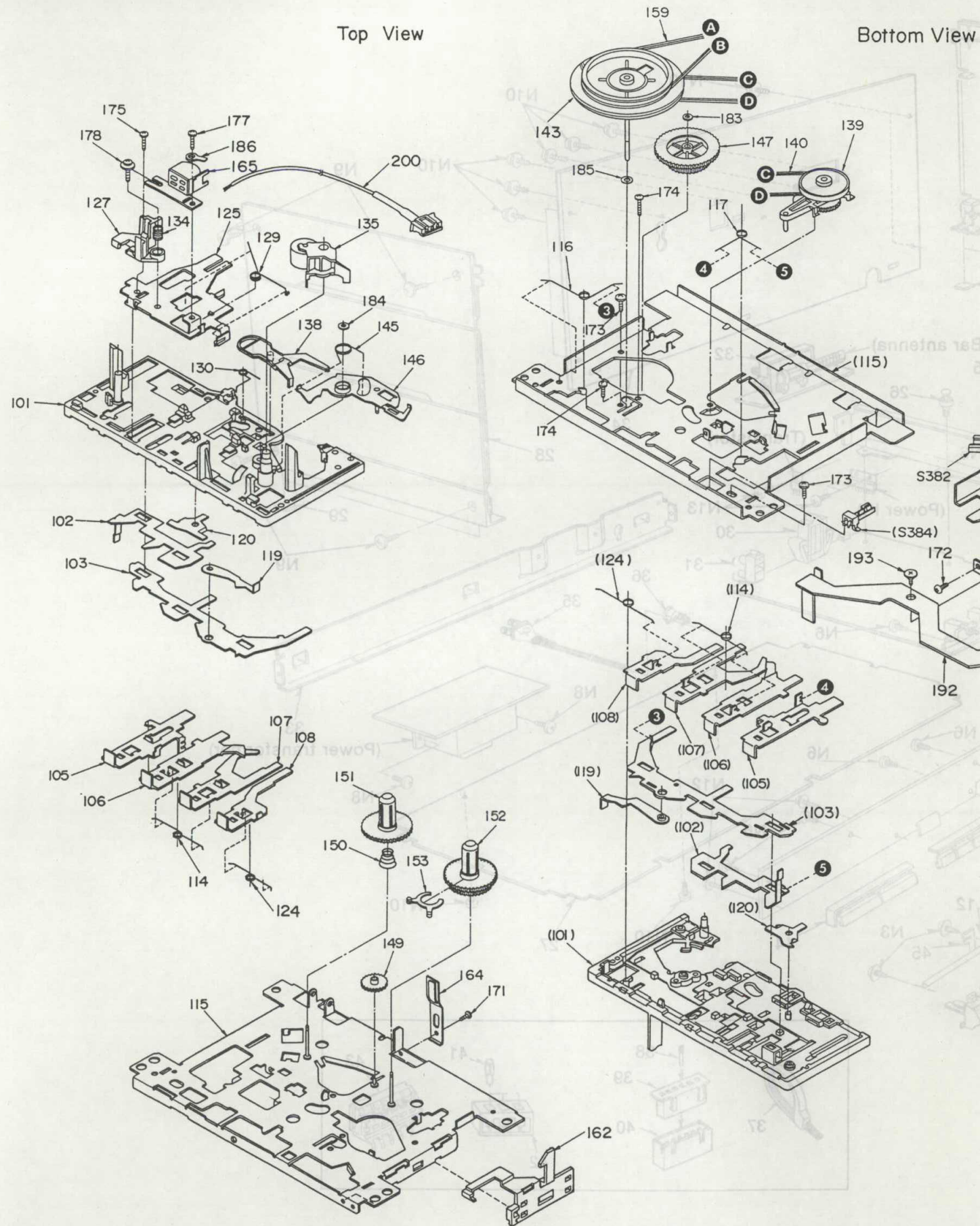
EXPLODED VIEW

(DECK 1 for play back)

Top View

EXPLODED VIEW

(DECK 1 for play back)

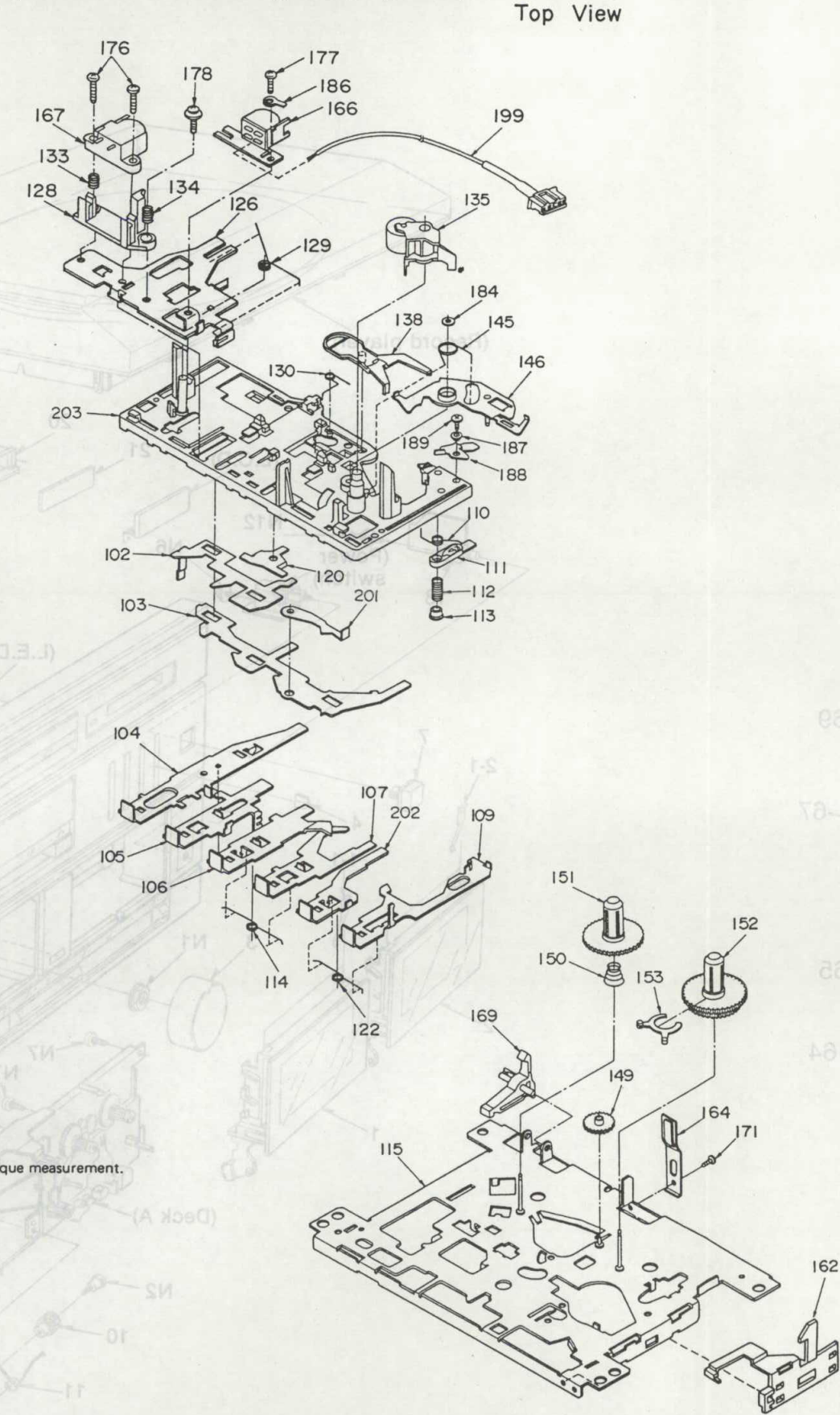


SPECIFICATIONS

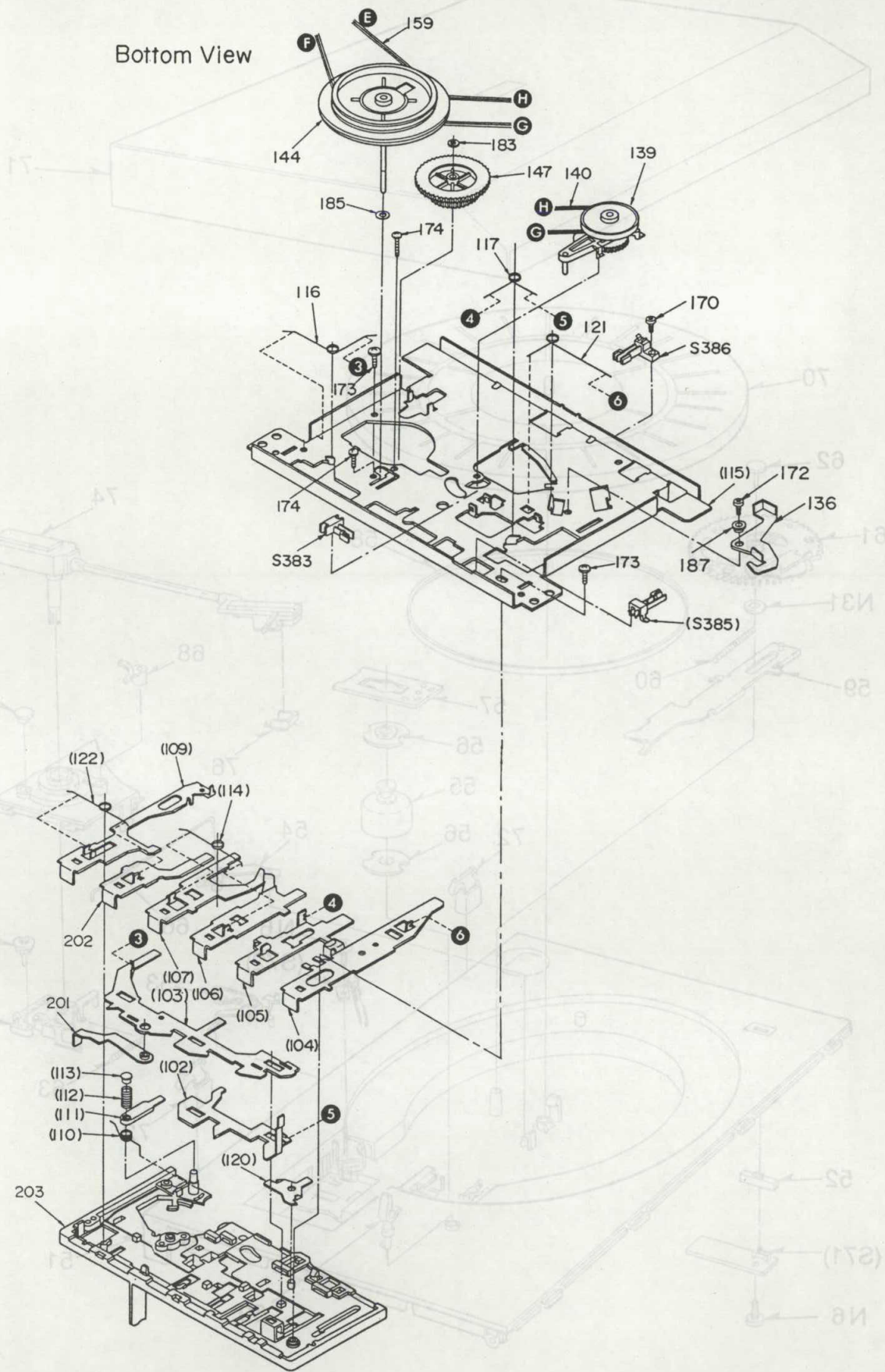
NOTE: The value indicated by the torque tape may fluctuate during torque measurement.
In that case, obtain the middle of the values.

Pressure of pressure roller	300 ± 50 g
Takeup tension * Use cassette torque meter QZZSRKCT	25 ~ 55 g-cm

(DECK 2 for recording and playback)



Bottom View



Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS		39	SJS5811	SOCKET (8P)	
1	RYF0044	CASSETTE HOLDER	[M]	40	SJT3213	CONNECTOR (2P)	
1-1	QBP2006A	SPRING		40	SJT3319	CONNECTOR (3P)	
2	RYF0045	CASSETTE HOLDER	[M]	40	SJT3321	CONNECTOR (2P)	
2-1	QBP2006A	SPRING		40	SJT3511	CONNECTOR (5P)	
3	SBN1254	KNOB, MAIN VOL		40	SJT3809	CONNECTOR (8P)	
4	SBD248YAB-0	KNOB, GRAPHIC EQ	[M]	41	RJF282A	FUSE HOLDER	
5	RYPO102	FRONT PANEL	[M]	42	SJS50378JQ	CONNECTOR (3P)	
6	SNE4060	U NUT		43	SJT30543-V	CONNECTOR (5P)	
7	SBC666-1	BUTTON, POWER		43	SJT30343-V	CONNECTOR (2P)	
8	SBC1072	BUTTON, CASSETTE		43	SJT30640LX-V	CONNECTOR (6P)	
9	SMQ30030	BRACKET (DECK 2)		44	SKM7840U	SIDE PANEL (L)	[M] (E, GN)
9	SMQ30056	BRACKET (DECK 1)	[M]	44	RKM0069	SIDE PANEL (L)	[M] (EB)
10	SMQ4096	GEAR		45	SNE1005	TERMINAL	
11	SMQ60028	SPRING	[M]	46	SJW3145	BRACKET	[M]
12	SUX102	SHAFT		N1	SNE4021	NUT	
13	SBC1070	BUTTON, BAND SELECTOR		N2	SNE2120	NUT	
14	SBC1068	BUTTON, TUNING		N3	XTW3+8T	SCREW	
15	SBC1069-3	BUTTON, PRESET	[M]	N4	XTB3+8JFR	SCREW	
16	SBN1132	BUTTON, EDITING		N5	XTBS3+8JFZ1	SCREW	
17	SBC1071	BUTTON, INPUT SELECTOR		N6	XTB3+10G	SCREW	
18	SJJ138	JACK, HEAD PHONES		N7	XTB3+10GFR	SCREW	
20	SMP409	LAMP CASE		N8	XTB4+8F	SCREW	
21	SDU296	DISPLAY FILTER		N9	XTB4+12JFZ	SCREW	
22	SJW3048	BRACKET		N10	XTW3+10T	SCREW	
23	SJW3143	BRACKET	[M]	N12	XTWS3+10Q	SCREW	
24	SMC1316	SHIELD PLATE	[M]	N13	XTB3+8J	SCREW	
25	SMC6439	SHIELD PLATE	[M]	N31	XWE8D14	WASHER	
26	SHR9094	LATCH				RECORD PLAYER	
27	SKU11930	BOTTOM BOARD	[M] (E, GN)	50	SJY5218	PU REST	
27	RKU0010	BOTTOM BOARD	[M] (EB)	51	RKQ0068	CABINET PLATE ASS'Y	[M]
28	SKM7840-2U	SIDE PANEL (R)	[M]	52	SBN1132	KNOB, SPEED SE.	
29	SHS3276	FOOT	[M]	53	SJY5223	BRACKET	
30	SJF5406	TERMINAL BOARD, SPEAKER		54	SJY5222	LEVER	
31	SJF3068-NJ	TERMINAL BOARD, INPUT	[M]	55	MMNGD16-KM5	DC MOTOR ASS'Y	[M]
32	SJF4317	TERMINAL BOARD, ANTENNA		56	SHGD1660	MOTOR CUSHION RUBBER	[M]
33	SJW3144	BRACKET	[M]	57	SJY90456	ANGLE	
34	RGR0048	REAR PANEL	[M] (E)	58	SJY90080-2	TURNTABLE DRIVE BELT	
34	RGR0049	REAR PANEL	[M] (GN)	59	SJYGH10-KP	PLATE	
34	SGP7550A	REAR PANEL	[M] (EB)	60	SJY90406	SPRING	
35	SFDAB31E01	POWER CORD	△ (E)	61	SJYGD16-KM	MAIN GEAR ASS'Y	[M]
35	SFDAB31G01	POWER CORD	△ (EB)	62	SHR417	PLASTIC SPACER	
35	SJA190	POWER CORD	△ (GN)	63	SUS786	SPRING	
36	SHR127	SPACER, POWER CORD	(E, GN)	64	SJY5220	CAM	
36	SHR129	SPACER, POWER CORD	(EB)	65	SJY5221	CAM	
37	SHR301	CLAMPER		66	SJY90455	LEVER	
38	SJT783	TERMINAL		67	SKM7860	PLATE	[M]
39	SJS5215	CONNECTOR (2P)		68	SJY5224-3	LIFTER	
39	SJS5331	SOCKET (3P)		69	SHG9246-1	RUBBER, CAP	
39	SJS5523	CONNECTOR (5P)		70	SJYGW7CD-KN2	TURN TABLE ASS'Y	

Ref. No.	Part No.	Part Name & Description	Remarks
71	SYE1130	DUST COVER	(M)
72	SBH9385	HINGE	(M)
74	SFAB27Z	PICKUP ARM	(M)
76	EPS41ST	STYLUS	
		PACKING MATERIAL	
P1	SPG6484	CARTON BOX	(M) (E, GN)
P1	SPG6475	CARTON BOX	(M) (EB)
P2	SPS5314	PAD	(M)
P3	SPS5315	PAD	(M)
P4	SPS5312	PAD	(M)
P5	SPS5313	PAD	(M)
P6	SPS5316	PAD	(M)
P7	SPP761	PROTECTION COVER	(M)
P8	SPP746	PROTECTION BAG	(M)
P9	XZB28X35A01	PROTECTION COVER	(M)
		ACCESSORIES	
A1	SQF13451	INSTRUCTIONS MANUAL	(M) (E)
A1	SQF13452	INSTRUCTIONS MANUAL	(M) (GN)
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