

HITACHI

SERVICE MANUAL

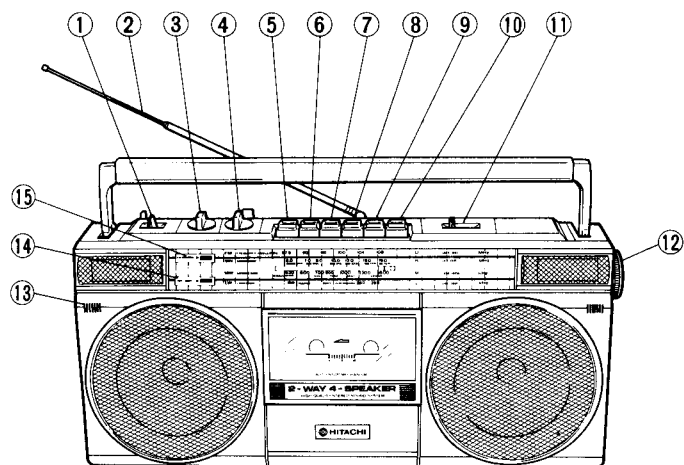
TY

No. 581 E

TRK-6835

(E, E(BS))

TN-33ZV-968 chassis



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KEY TO ILLUSTRATIONS

- | | |
|------------------------|----------------------------------|
| ① FUNCTION SELECTOR | ⑨ PLAYBACK BUTTON |
| ② ROD ANTENNA (AERIAL) | ⑩ RECORD BUTTON |
| ③ TONE CONTROL | ⑪ BAND SELECTOR |
| ④ VOLUME CONTROL | ⑫ TUNING CONTROL |
| ⑤ PAUSE BUTTON | ⑬ BUILT-IN MICROPHONE (MONAURAL) |
| ⑥ STOP/EJECT BUTTON | ⑭ RECORD/BATTERY INDICATOR |
| ⑦ FAST FORWARD BUTTON | ⑮ FM STEREO INDICATOR |
| ⑧ REWIND BUTTON | |

SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with Δ in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

RADIO CASSETTE TAPE RECORDER

Octorber 1987

YOKOHAMA WORKS

SPECIFICATIONS

GENERAL SECTION

Semi-conductors : IC's : 5
Transistors : 5 (E)
4 [E(BS)]
Diodes : 5
LED's : 2
Zener diode : 1

Power (Mains)
Supply : AC : 220V, 50Hz (E)
240V, 50Hz [E(BS)]
DC : 9V
(IEC R20 × 6 or equivalent)

Power (Mains)
Consumption : 8W
Dimensions : 454(W) × 209(H) × 121(D) mm
Weight : 3.3kg (with batteries)
Power output : 5W P.M.P. (AC operation)
1.2W/ch (10% THD, DC)
Speakers : 100mm, 8ohms × 2
20mm, 300ohms × 2

TUNER SECTION

Circuit System : FM/SW/MW/LW 4-band
superheterodyne
Tuning Range : FM : 87.5 to 108MHz
SW : 6 to 18MHz
MW : 530 to 1605kHz
LW : 150 to 285kHz

Antennas (Aerials) : FM/SW : Rod antenna
(aerial)
MW/LW : Built-in ferrite-core
antenna (aerial)

TAPE RECORDER SECTION

Tape : Cassette tape
Tape Speed : 4.75cm/s
Recording System : AC bias
Erasing System : Magnet
Track System : 4 track 2 channel
Frequency Response : Normal : 80Hz to 10kHz
S/N (Signal to Noise
Ratio) : 43 dB
Wow and Flutter : 0.25% (WRMS)
Crosstalk : 65 dB (Between tracks)
40 dB (Between channels)
Erase Ratio : 60 dB
Input Sensitivity
Impedance : EXT. Mic in 0.6mV 2.2kohms
Output Impedance : Headphones : 8 to 300ohms
Distortion : 3%
Motor : DC micromotor

Specifications are subject to change for performance improvement without notice.

MAINTENANCE

■ Clean cabinet and panels when dirty

Clean off dirt on the surfaces with a dry cloth. Never use thinners, benzene or alcohol since these will damage the surface finish.

DISASSEMBLY

1. Removing Cassette lid (Fig. 1)

Push the tab with minus ⊖ screwdriver in the direction of arrow and pull out the cassette lid.

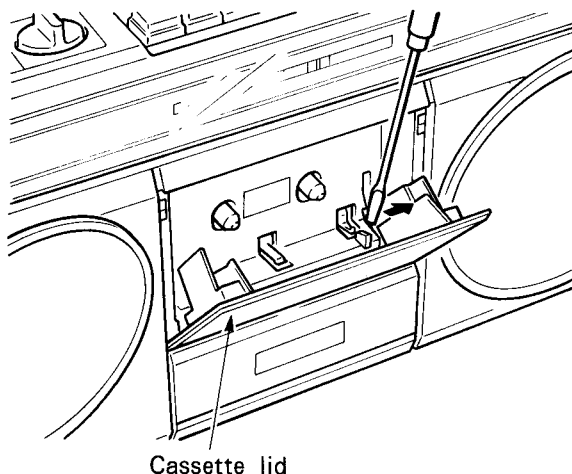


Fig. 1

2. Removing Rear case (Fig. 2)

Remove 6 screws (A).

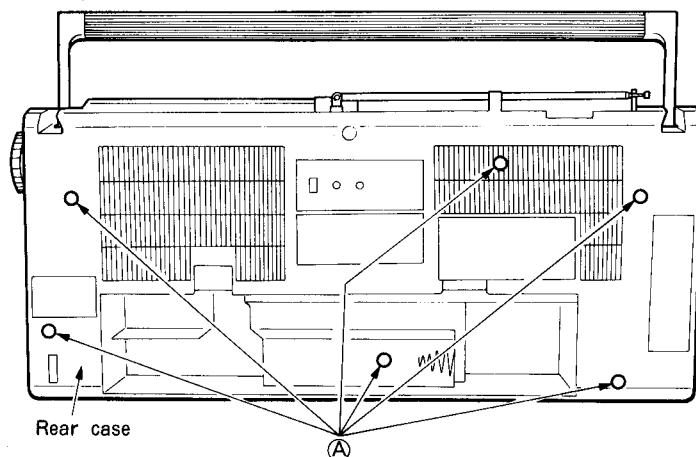


Fig. 2

3. Removing Main P.W.B.

- (1) Remove the VOLUME and TONE CONTROL knobs. (Fig. 3)
 - (2) Remove the FUNCTION and BAND SELECTOR knobs. (Fig. 3)
 - (3) Remove the 2 screws ⑧. (Fig. 4)
- When install the Main P.W.B., confirm that the coupling position of record/playback switch and record arm.

4. Removing the HEADPHONES JACK P.W.B. (Fig. 4)

Remove the 1 screw ③.

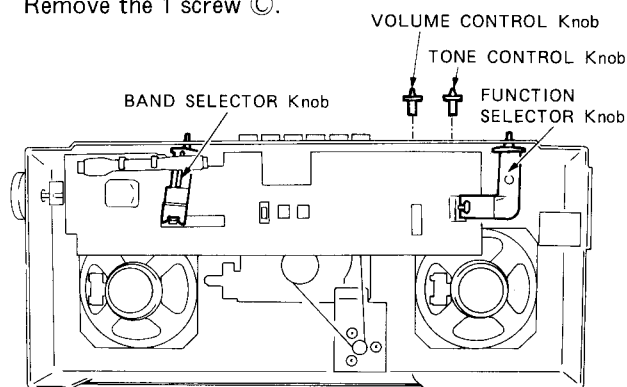


Fig. 3

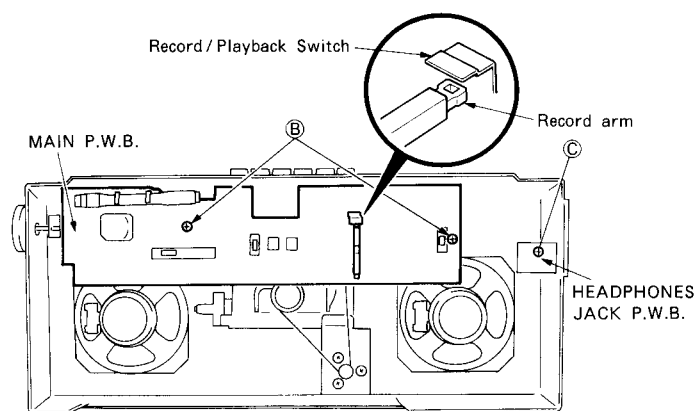


Fig. 4

5. Removing Power P.W.B. (Fig. 5)

Remove the 2 screws ①.

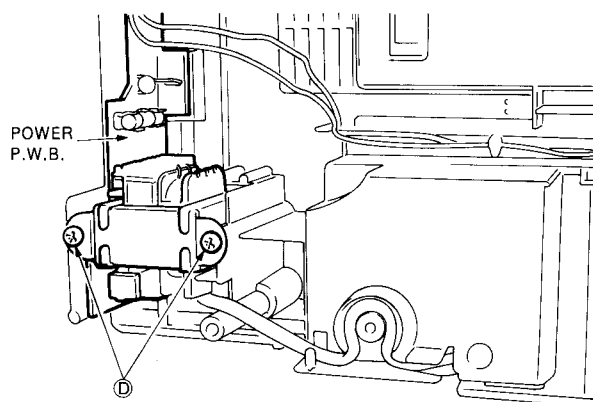


Fig. 5

6. Removing Cassette deck mechanism (Fig. 6)

Remove the 3 screws ⑤.

7. Removing speakers (Fig. 6)

Remove the 8 screws ⑥.

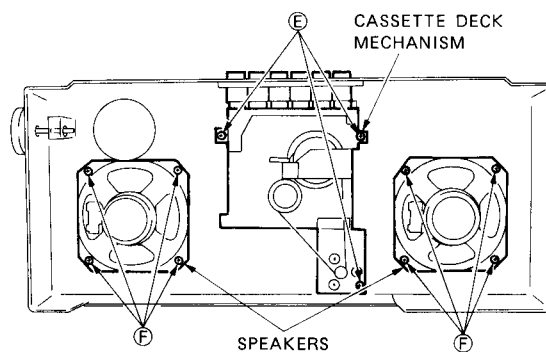


Fig. 6

INSPECTION OF MECHANISM

Mode	Item	Pressure or Torque
Playback	Pressure of pinch roller	300 g — 500 g
	Auto stop sensor pressing force	40 g — 75 g
	Take-up torque	40 g - cm — 70 g - cm
	Supply reel back tension	2 g - cm — 6 g - cm
Rewind	Rewind torque	65 g - cm — 140 g - cm
Fast forward	Fast forward torque	65 g - cm — 140 g - cm

LUBRICATION

Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point.

Lubricate the respective parts listed once every 1000 hours or once a year normal conditions of use.

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

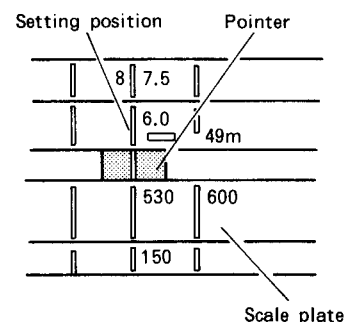
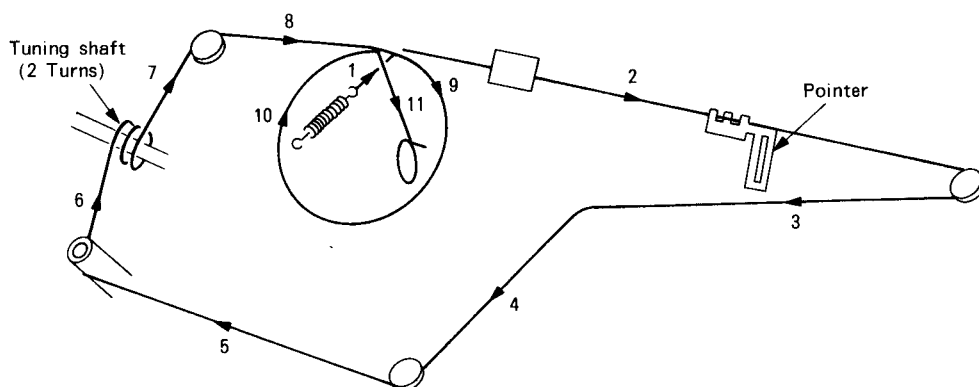
Lubrication point		Oil or Grease
Rotary section	Metal and metal	Pan motor oil (10W-40)
	Mold and metal	Sonic slider oil (# 1600)
Sliding section	Metal and metal	Hitasol(MO-138)
	Mold and mold	White grease (FL-LUBE-A)
	Mold and metal	White grease (FL-LUBE-A)
Spring resonance prevention		Floil (GB-TS-1)

DIAL CORD STRINGING

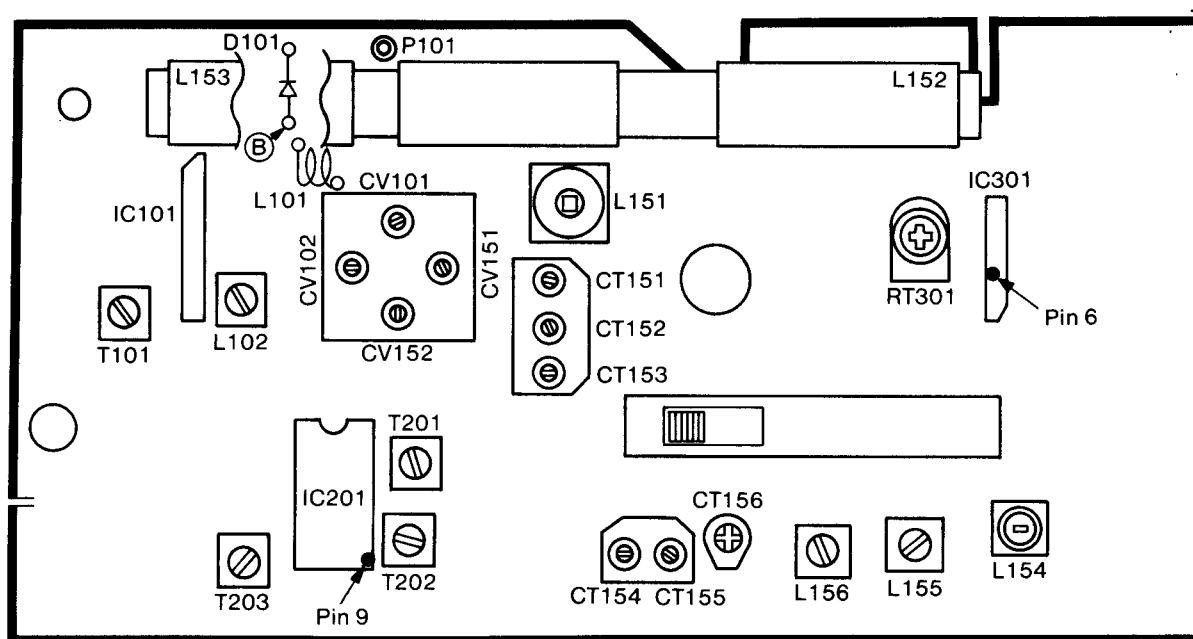
String the dial cord as shown in the diagram below after removing the MAIN P.W.B. and cassette chassis.

Stringing method

1. Turn the pulley fully clockwise.
2. String the dial cord in the direction of arrow. (Nos. 1-11)
3. After installing the MAIN P.W.B. move the pointer to the setting position.



ADJUSTMENT



1. Radio Section FM Section

* W. Germany and Italy

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading			
			Measuring Instrument	Input Terminal	Output Terminal							
1	(1)	FM IF	Turn T202 fully counterclockwise.									
	(2)	S-Curve	● Genescope (10.7 MHz)	IC101 Body	IC201 Pin ㉑	10.7 MHz	Highest	T101 T202	Note 1 Note 2			
2	(1)	FM OSC (Covering)	● FM signal generator (400 Hz, 30% dev.) ● Oscilloscope ● VTVM	P101 (thru FM dummy antenna) (Note 3) GND : point ㉒	IC201 Pin ㉑	87 MHz *(87.5 MHz)	Lowest	L102	Max.			
	(2)					109 MHz *(108 MHz)	Highest	CV102				
	(3)					Repeat steps (1) and (2)						
3	(1)	FM ANT. (Tracking)							90 MHz	90 MHz	L101	Max
	(2)								106 MHz	106 MHz	CV101	
	(3)					Repeat steps (1) and (2)						
4	(1)	FM MPX. (Multiplex)	● Frequency counter	Connect a 10μF 25V electrolytic capacitor between the No.1 pin of IC301 and the ground	IC301 Pin ㉔	—	—	RT301	38 kHz ±20 Hz (Note 4)			

AM Section

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	AM IF	● Genescope (465 kHz)	Ferrite-core antenna (Note 5)	IC201 Pin ⑨	465 kHz	Highest	T201 T203	Note 6
	(2)					Repeat step (1)			
2	(1)	LW OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.) ● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)		145 kHz	Lowest	L156	Max.
	(2)					290 kHz	Highest	CT156	
	(3)					Repeat steps (1) and (2)			
3	(1)	LW ANT. (Tracking)				160 kHz	160 kHz	L153	Max.
	(2)					270 kHz	270 kHz	CT153	
	(3)					Repeat steps (1) and (2)			
4	(1)	MW OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.) ● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)		515 kHz	Lowest	L155	Max.
	(2)					1650 kHz	Highest	CT155	
	(3)					Repeat steps (1) and (2)			
5	(1)	MW ANT. (Tracking)				600 kHz	600 kHz	L152	Max.
	(2)					1400 kHz	1400 kHz	CT152	
	(3)					Repeat steps (1) and (2)			
6	(1)	SW OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.) ● VTVM ● Oscilloscope	P101 (thru SW. dummy antenna) (Note 7) GND : point ⑧		5.8 MHz	Lowest	L154	Max.
	(2)					18.5 MHz	Highest	CT154	
	(3)					Repeat steps (1) and (2)			
7	(1)	SW ANT. (Tracking)				6.5 MHz	6.5 MHz	L151	Max.
	(2)					16 MHz	16 MHz	CT151	
	(3)					Repeat steps (1) and (2)			

Note :

- Feed in a weak signal to L104 from the genescope. Adjust T101 for maximum gain and the waveform indicated in Fig. 1. If the center of the waveform cannot be lined up on the maker, adjust the right/left balance.

Adjust the genescope output so that there is a little noise riding on the leading edge.

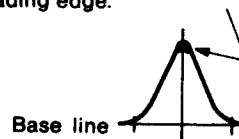


Fig.1

- Use the T202 core to form the S-curve shown in Fig. 2. Adjust the symmetry of A and B about point C for linearity.

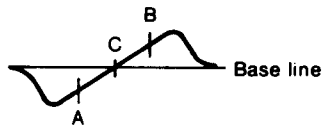


Fig.2

- FM dummy antenna is shown in Fig. 3.

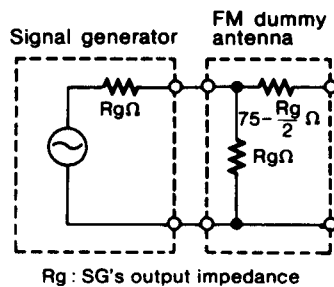
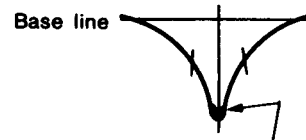


Fig.3

- Connect the frequency counter to No.6 pin of IC301 and connect a 100 kΩ resistor parallel with the frequency counter.

- Connect the output of AM signal generator to the loop antenna, and put it near to the ferrite antenna.
- Feed in a weak signal from the genescope. Adjust T201, T203 for maximum gain and the waveform of Fig. 4.



Adjust the genescope output so that there is a little noise riding on the leading edge.

Fig.4

- SW. dummy antenna is shown in Fig. 5.

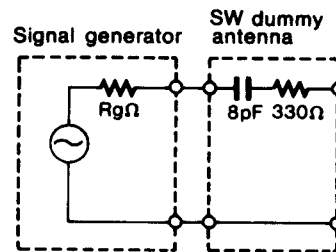


Fig.5

2. Tape Recorder Section

Perform the following adjustments in the sequence stated after cleaning the head, pinch roller, and capstan with a head cleaning stick moistened in alcohol.

Step	Adjustment Item	Measuring Instrument & Connection			Check Tape	Mode	Adjust	Reading
		Measuring Instrument	Input Terminal	Output Terminal				
1	Tape speed	• Frequency counter	—	Speaker terminal (8Ω load)	Tape speed adjustment tape (3 kHz)	Playback	Semivariable resister in the motor	3kHz ± 20Hz (Note 1)
2	Head azimuth	• VTVM	—	Speaker terminal (8Ω load)	Head azimuth adjustment tape (10kHz)	Playback	Azimuth adjusting screw	Output max. (Note 2)

Note :

- Adjust within 30 sec. after heat-running for more than 20 minutes.

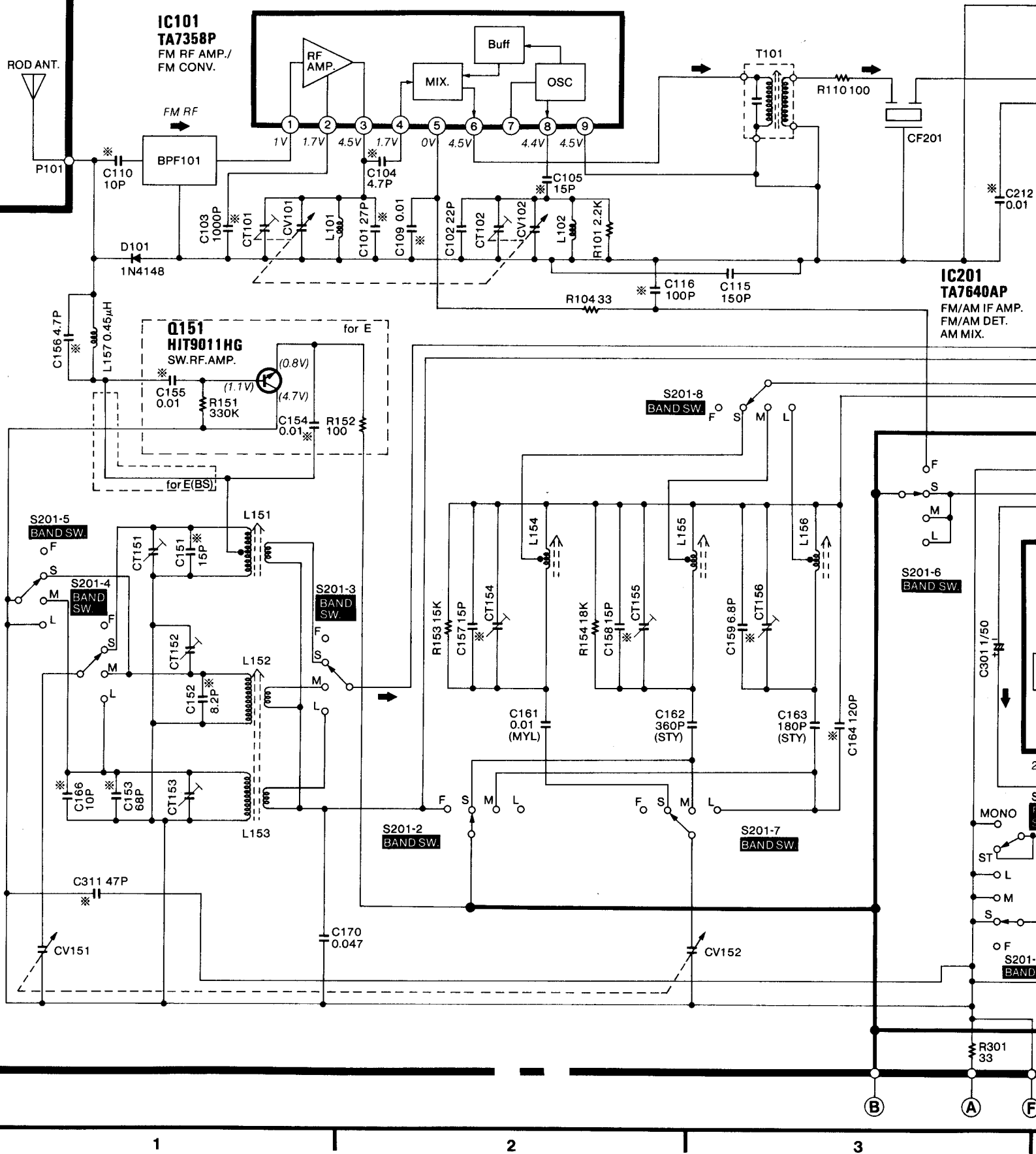
- When the maximum values of both channels are different, adjust to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be within 2 dB.

CIRCUIT DIAGRAM

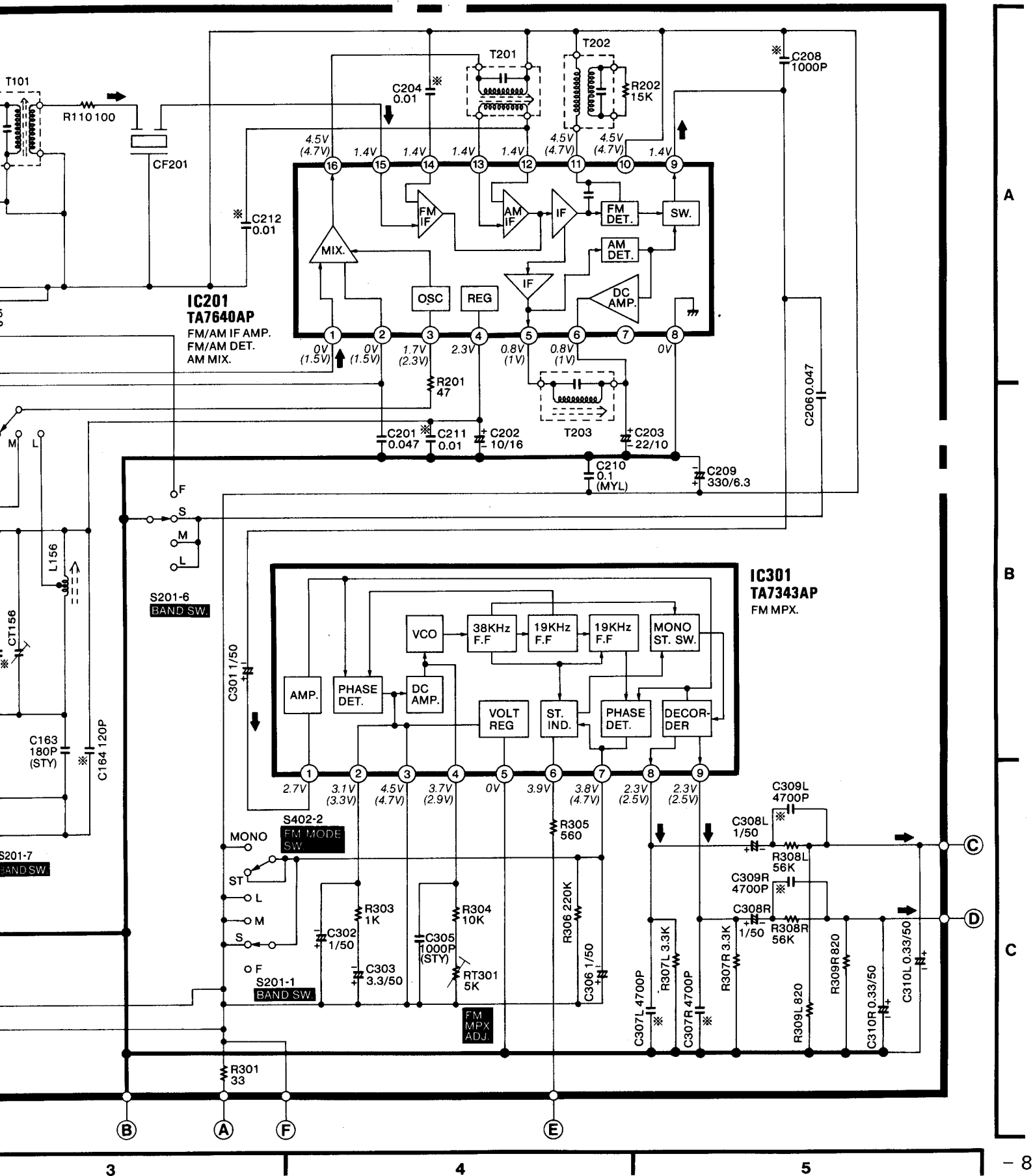
* : Axial lead cylindrical ceramic capacitor

MAIN P.W.B.(TUNER SECTION)

() VOLTAGE : AM MODE

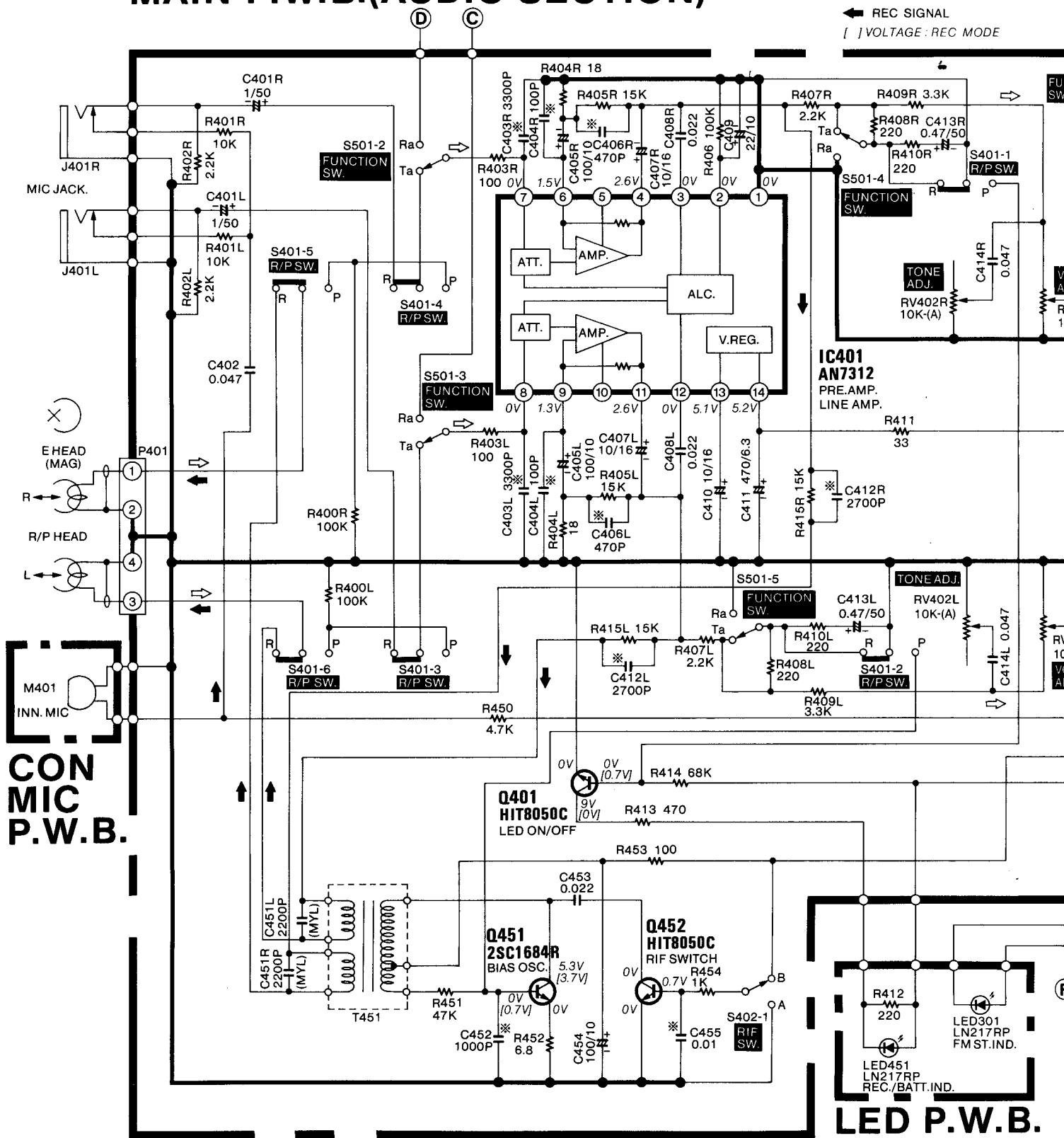


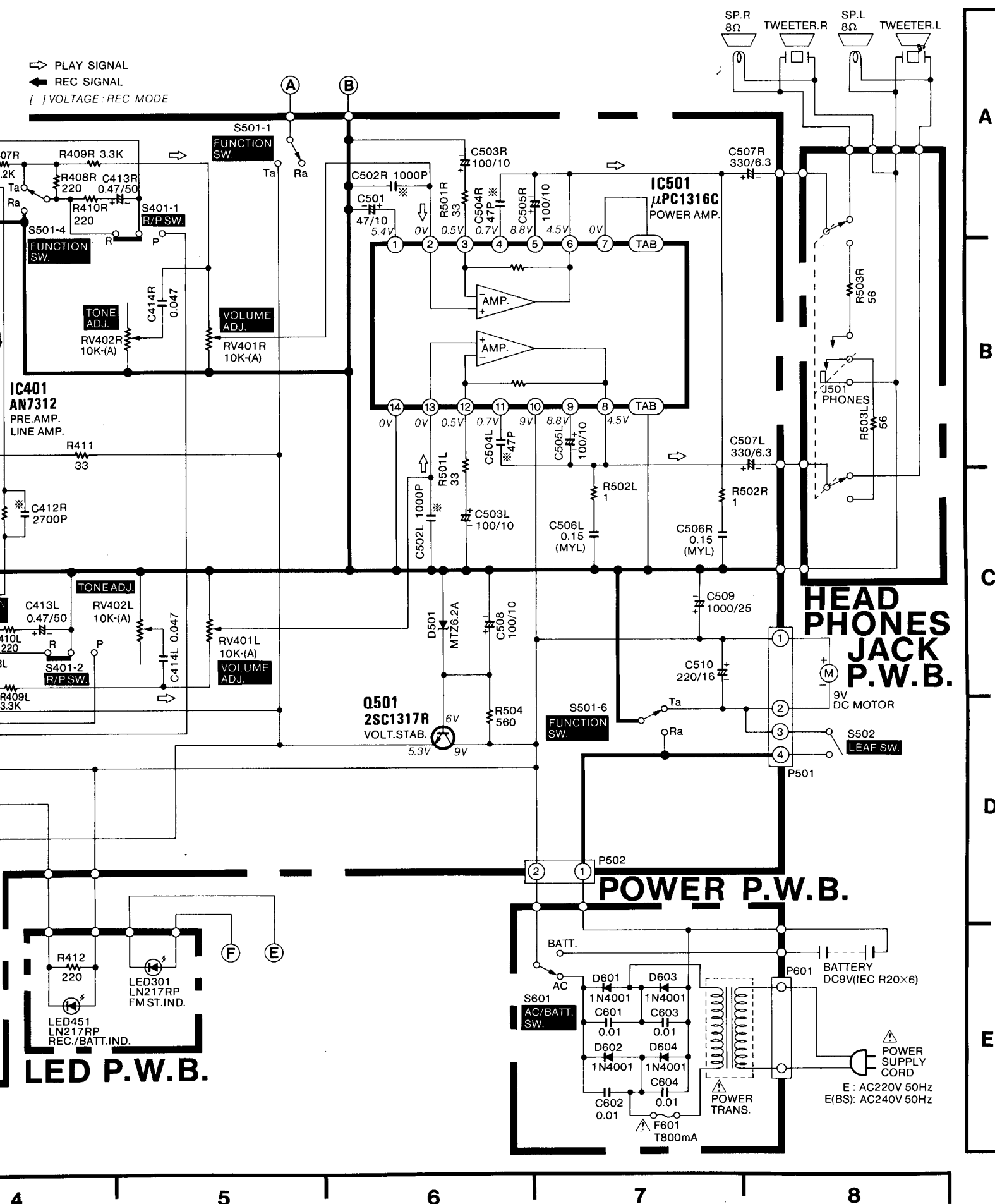
RE: AM MODE



MAIN P.W.B.(AUDIO SECTION)

⇒ PLAY SIGNAL
 ← REC SIGNAL
 [] VOLTAGE: REC MODE

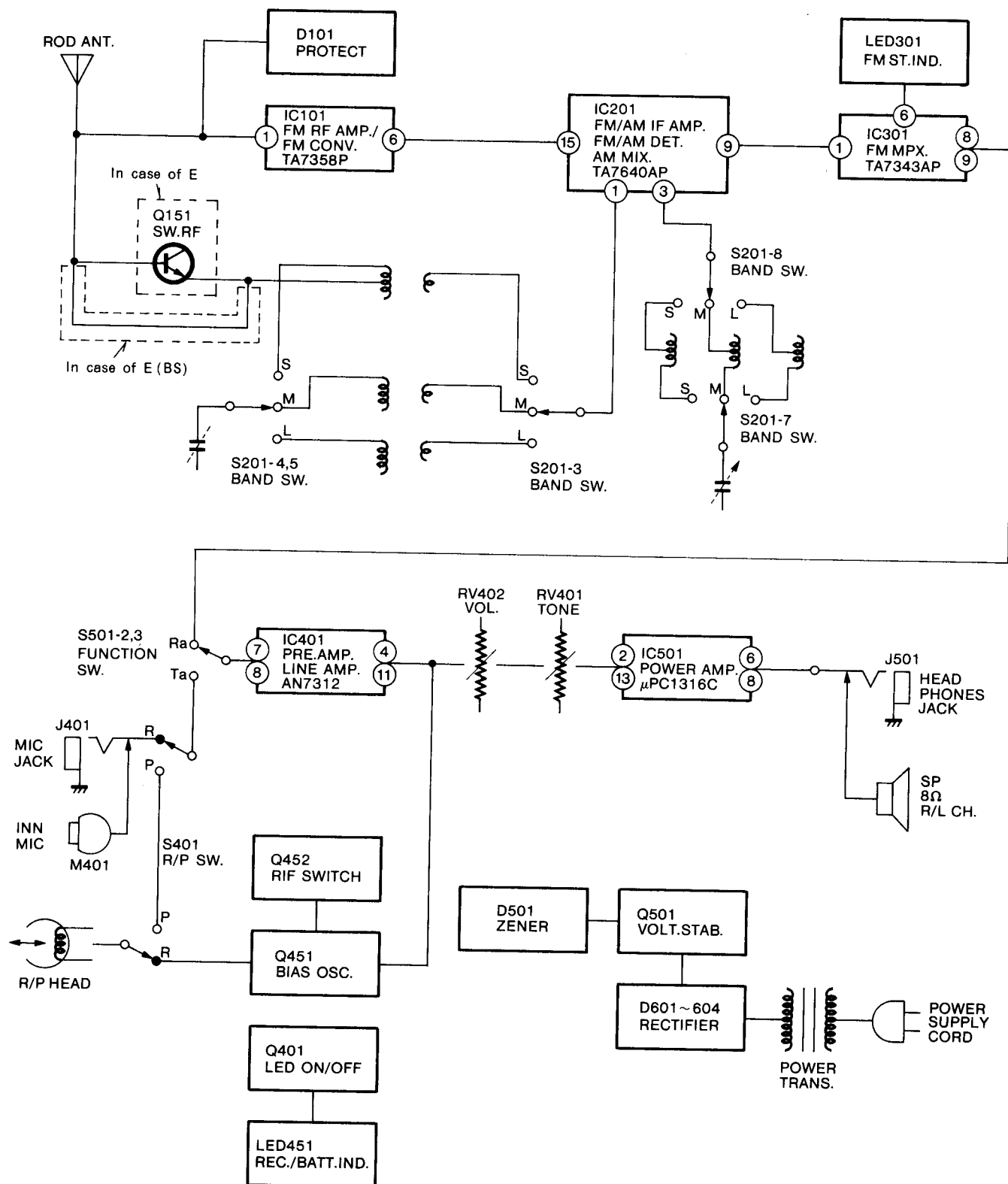




BLOCK DIAGRAM

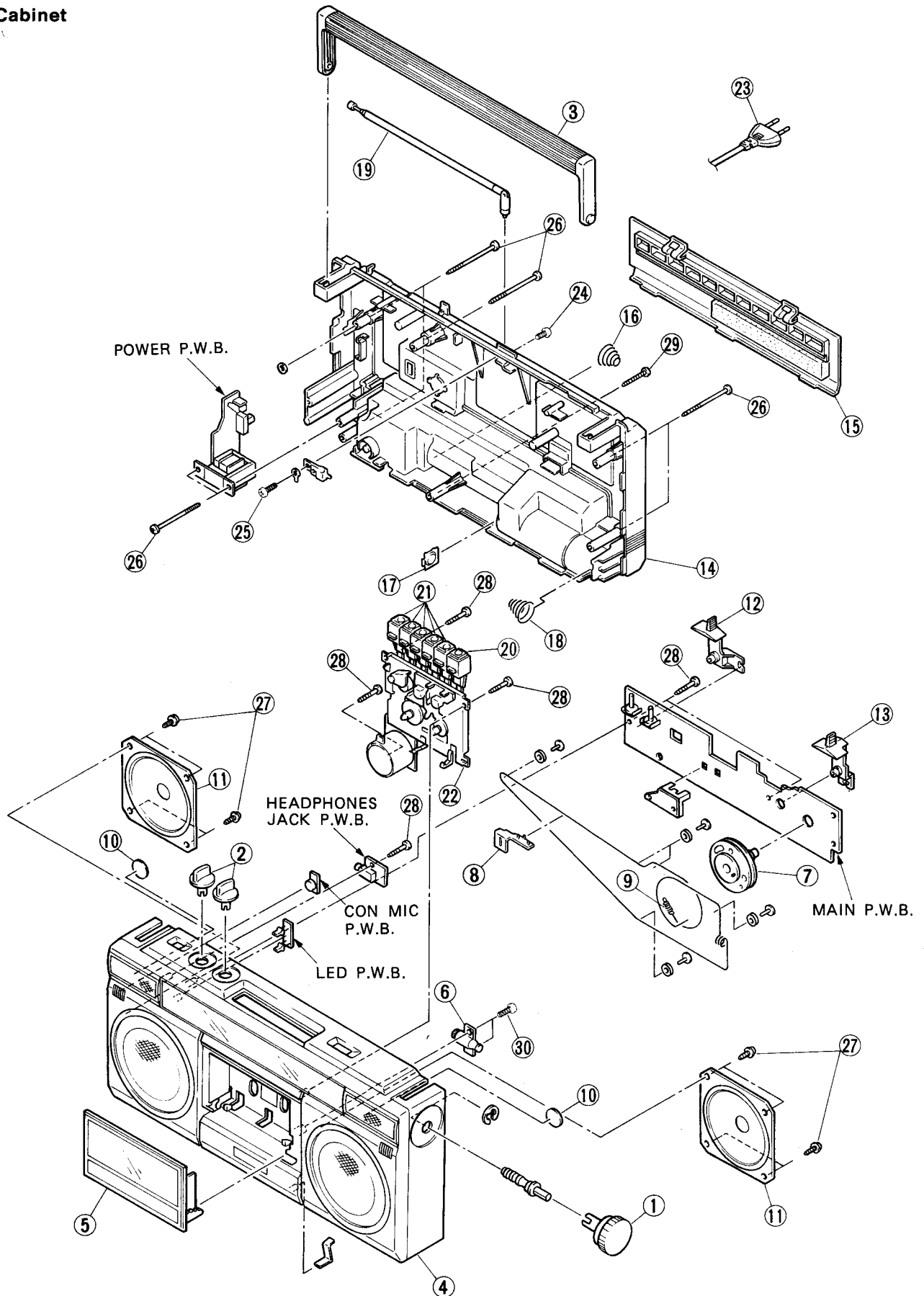
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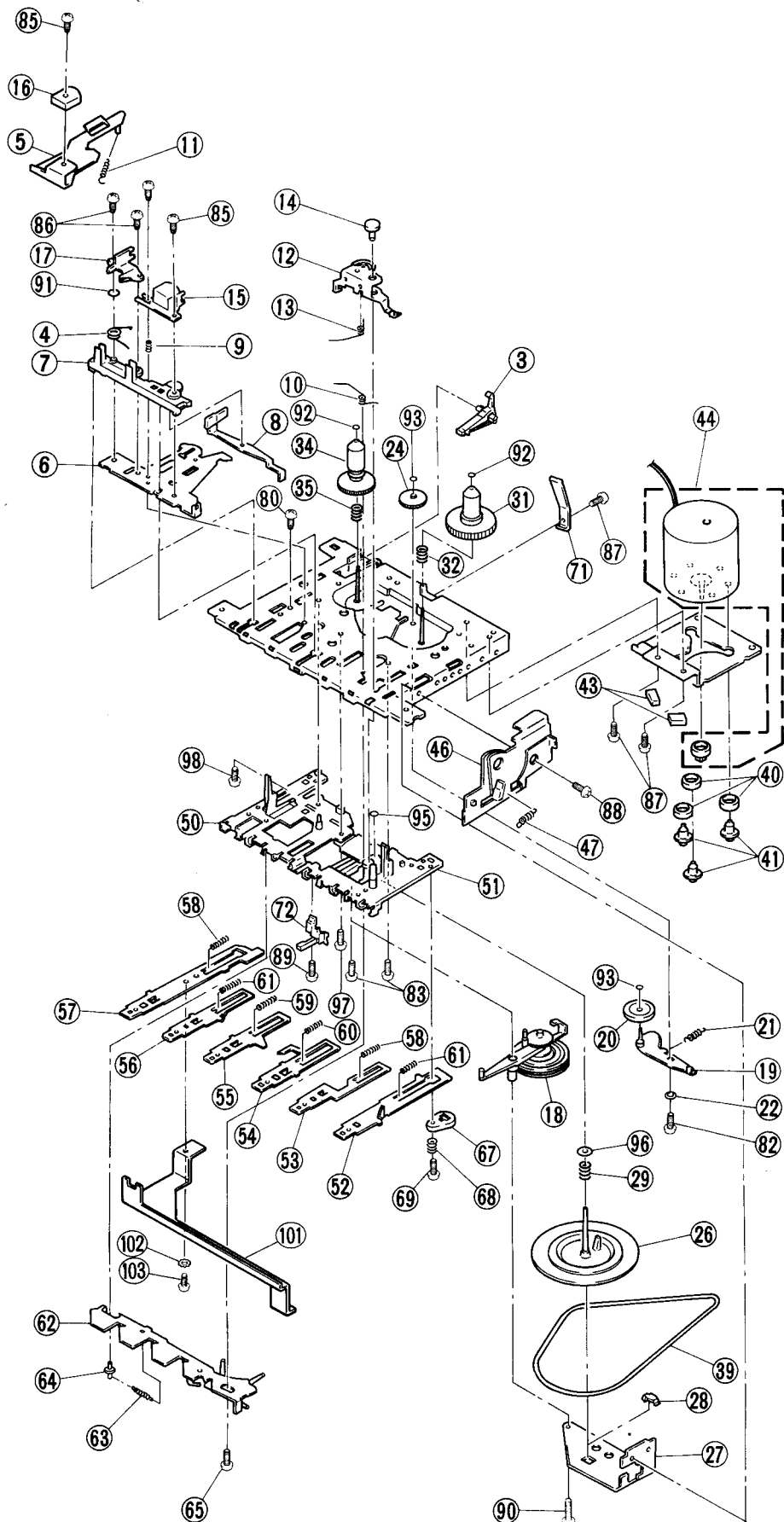


EXPLODED VIEW

● Cabinet

1
ND.X.
BAP01
HEAD
PHONES
JACKSP
8Ω
R/L CH.POWER
SUPPLY
CORD

● Cassette chassis (TN-33ZV-968)



REPLACEMENT PARTS LIST

CD.....Ceramic discal
CC..... Cylindrical ceramic

EL..... Electrolytic
MF..... Mylar, film

ST..... Styrol
CF..... Carbon film

ME..... Metal
MO..... Metal, oxide

CO..... Composition
FR..... Fuse resistor

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
CAPACITORS			C452	0240045	CC 1000pF ±10% 50V	R504	0113609	CF 560Ω ±5% SRD1/6P
C101	0230622	CC 27pF ±5% 50V	C453	0209763	CD 0.022μF ±20% 25V	ICS & TRANSISTORS		
C102	0208038	CD 22pF ±5% 50V	C454	0252331	EL 100μF 10V	IC101	2398201	TA7358P
C103	0240045	CC 1000pF ±10% 50V	C455	0240061	CC 0.01μF ±30% 16V	IC201	2389511	TA7640AP
C104	0230608	CC 4.7pF ±10% 50V	C501	0252325	EL 47μF 10V	IC301	2301041	TA7343AP
C105	0230616	CC 15pF ±5% 50V	C502L,R	0240045	CC 1000pF ±10% 50V	IC401	2300881	AN7312
C109	0240061	CC 0.01μF ±30% 16V	C503L,R	0252331	EL 100μF 10V	IC501	2302071	μPC1316C
C110	0230612	CC 10pF ±5% 50V	C504L,R	0230628	CC 47pF ±5% 50V	Q151	2319083	HIT9011HG
C115	0248728	CD 150pF ±10% 50V	C505L,R	0252331	EL 100μF 10V			[for E]
C116	0240033	CC 100pF ±10% 50V	C506L,R	0276012	MF 0.15μF ±10% 50V	Q401	2319052	HIT8050C
C151	0230616	CC 15pF ±5% 50V	C507L,R	0252233	EL 330μF 6.3V	Q451	2319101	2SC1684R
C152	0230611	CC 8.2pF ±10% 50V	C508	0252331	EL 100μF 10V	Q452	2319052	HIT8050C
C153	0230632	CC 68pF ±5% 50V	C509	0256643	EL 1000μF 16V	Q501	2318011	2SC1317R
C154	0240061	CC 0.01μF ±30% 16V	C510	0252532	EL 220μF 16V	DIODES		
C155	0240061	CC 0.01μF ±30% 16V	C601	0244171	CD 0.01μF 50V	D101	2398082	1N4148
		[for E]	C602	0244171	CD 0.01μF 50V	D501	2397261	MTZ6.2A
		[for E]	C603	0244171	CD 0.01μF 50V	D601	2398063	1N4001
C156	0230608	CC 4.7pF ±10% 50V	C604	0244171	CD 0.01μF 50V	D602	2398063	1N4001
C157	0230616	CC 15pF ±5% 50V	RESISTORS			D603	2398063	1N4001
C158	0230616	CC 15pF ±5% 50V	R101	0113623	CF 2.2kΩ ±5% SRD1/6P	D604	2398063	1N4001
C159	0230610	CC 6.8pF ±10% 50V	R104	0113579	CF 33Ω ±5% SRD1/6P	LED301	2397753	LN217RP
C161	0275011	MF 0.01μF ±10% 50V	R110	0113591	CF 100Ω ±5% SRD1/6P	LED451	2397753	LN217RP
C162	1221393	ST 360pF ±5% 50V	R151	0113675	CF 330kΩ ±5% SRD1/6P	VARIABLE REISITORS		
C163	1221391	ST 180pF ±5% 50V			[for E]	RT301	0199332	5kΩ FM MPX ADJ.
C164	0240034	CC 120pF ±10% 50V	R152	0113591	CF 100Ω ±5% SRD1/6P	RV401L,R	0189532	10kΩ-(A)
C166	0230612	CC 10pF ±5% 50V			[for E]	RV402L,R	0189532	VOLUME ADJ.
C170	0249765	CD 0.047μF ±20% 25V	R153	0113643	CF 15kΩ ±5% SRD1/6P			10kΩ-(A)
C201	0209765	CD 0.047μF ±20% 25V	R154	0113645	CF 18kΩ ±5% SRD1/6P			TONE ADJ.
C202	0252521	EL 10μF 16V	R201	0113583	CF 47Ω ±5% SRD1/6P	COILS & TRANSFORMERS		
C203	0252322	EL 22μF 10V	R202	0113643	CF 15kΩ ±5% SRD1/6P	L101	2137683	FM RF coil
C204	0240061	CC 0.01μF ±30% 16V	R301	0129543	CF 33Ω ±5% SRD1/4P	L102	2135253	FM OSC coil
C206	0209765	CD 0.047μF ±20% 25V	R303	0113615	CF 1kΩ ±5% SRD1/6P	L151	2137661	SW ANT coil
C208	0240045	CC 1000pF ±10% 50V	R304	0113639	CF 10kΩ ±5% SRD1/6P			[for E(BS)]
C209	0252233	EL 330μF 6.3V	R305	0113609	CF 560Ω ±5% SRD1/6P	L151	2137662	SW ANT coil
C210	0276011	MF 0.1μF ±10% 50V	R306	0113671	CF 220kΩ ±5% SRD1/6P			[for E]
C211	0240061	CC 0.01μF ±30% 16V	R307L,R	0113627	CF 3.3kΩ ±5% SRD1/6P	L152	2757992	Ferrite antenna
C212	0240061	CC 0.01μF ±30% 16V	R308L,R	0113657	CF 56kΩ ±5% SRD1/6P	L153	2757992	Ferrite antenna
C301	0252811	EL 1μF 50V	R309L,R	0113613	CF 820Ω ±5% SRD1/6P	L154	2137671	SW OSC coil
C302	0252811	EL 1μF 50V	R400L,R	0113663	CF 100kΩ ±5% SRD1/6P	L155	2137631	MW OSC coil
C303	0252813	EL 3.3μF 50V	R401L,R	0113639	CF 10kΩ ±5% SRD1/6P	L156	2137642	LW OSC coil
C305	1221395	ST 1000pF ±5% 50V	R402L,R	0113623	CF 2.2kΩ ±5% SRD1/6P	L157	2137684	Choke coil
C306	0252811	EL 1μF 50V	R403L,R	0113591	CF 100Ω ±5% SRD1/6P	T101	2154962	FM IF Transformer
C307L,R	0240057	CC 4700pF ±30% 16V	R404L,R	0113573	CF 18Ω ±5% SRD1/6P	T201	2154952	AM IF Transformer
C308L,R	0252811	EL 1μF 50V	R405L,R	0113643	CF 15kΩ ±5% SRD1/6P	T202	2154964	FM IF Transformer
C309L,R	0240057	CC 4700pF ±20% 16V	R406	0113663	CF 100kΩ ±5% SRD1/6P	T203	2154951	AM IF Transformer
C310L,R	0252803	EL 0.33μF 50V	R407L,R	0113623	CF 2.2kΩ ±5% SRD1/6P	T451	2136891	REC OSC Transformer
C311	0230628	CC 47pF ±5% 50V	R408L,R	0113599	CF 220Ω ±5% SRD1/6P	MISCELLANEOUS		
C401L,R	0252811	EL 1μF 50V	R409L,R	0113627	CF 3.3kΩ ±5% SRD1/6P	CV101		
C402	0209765	CD 0.047μF ±20% 25V	R410L,R	0113599	CF 220Ω ±5% SRD1/6P	CV102		
C403L,R	0240055	CC 3300pF ±20% 16V	R411	0129543	CF 33Ω ±5% SRD1/4P	CV151	0282182	Capacitor variable
C404L,R	0240033	CC 100pF ±10% 50V	R412	0113599	CF 220Ω ±5% SRD1/6P	CV152		
C405L,R	0252331	EL 100μF 10V	R413	0113607	CF 470Ω ±5% SRD1/6P	CT101		
C406L,R	0240041	CC 470pF ±10% 50V	R414	0113659	CF 68kΩ ±5% SRD1/6P	CT102		
C407L,R	0252521	EL 10μF 16V	R415L,R	0113643	CF 15kΩ ±5% SRD1/6P	CT151		
C408L,R	0209763	CD 0.022μF ±20% 25V	R450	0113631	CF 4.7kΩ ±5% SRD1/6P	CT152	0283130	Capacitor semi variable
C409	0252322	EL 22μF 10V	R451	0113655	CF 47kΩ ±5% SRD1/6P	CT153		
C410	0252521	EL 10μF 16V	R452	0113563	CF 6.8Ω ±5% SRD1/6P	CT154	0283557	Capacitor semi variable
C411	0252235	EL 470μF 6.3V	R453	0113591	CF 100Ω ±5% SRD1/6P	CT155		
C412L,R	0240054	CC 2700pF ±20% 16V	R454	0113615	CF 1kΩ ±5% SRD1/6P			
C413L,R	0252805	EL 0.47μF 50V	R501L,R	0113579	CF 33Ω ±5% SRD1/6P			
C414L,R	0209765	CD 0.047μF ±20% 25V	R502L,R	0129802	CF 1Ω ±5% SRD1/4P			
C451L,R	0274013	MF 2200pF ±10% 50V	R503L,R	0113585	CF 56Ω ±5% SRD1/6P			

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
CT156	0282148	Capacitor semi variable		2527381	Power PWB assy [for E]	14	4044241	Rear case assy [for E]
S201	2629282	Slide switch BAND		2527382	Power PWB assy [for E(BS)]		4044242	Rear case assy [for E(BS)]
S401	2628361	Slide switch (6-2) REC/PLAY	CABINET CHASSIS ASSEMBLY			15	3973521	Battery lid assy
S402	2629331	Slide switch FM MODE/RIF	1	3303491	Knob	16	3369849	Spring
S501	2628372	Slide switch (6-2) FUNCTION	2	3303171	Select knob	17	4436666	Terminal
S601	2629261	Slide switch AC/BATT	3	4441871	Handle assy	18	3390071	Battery spring
BPF101	2137191	FM band pass filter	4	4044211	Front case assy (BLACK)	19	2758012	Rod antenna
CF201	2135321	Ceramic filter		4044212	Front case assy (WHITE)	20	3303163	Cassette button
J401L,R	2679441	Jack		4044213	Front case assy (RED)	21	3303164	Cassette button
J501	2678761	Stereo jack	5	3807221	Cassette lid	22	2589371	Mechanism TN-33ZV-968
M401	2737102	Microphone	6	3970221	Gear damper assy	23	2707709	Power supply cord [for E]
P601	2689461	2P terminal	7	3348711	Puiley	24	2717902	Power supply cord [for E(BS)]
	2527371	Main PWB assy [for E]	8	3388243	Pointer	25	4592528	Flange head screw (3×8)
	2527372	Main PWB assy [for E(BS)]	9	3340321	Spring	26	8691408	BT bind screw (3×8)
△	5213432	Power transformer (4.8 VA 190G) [for E]	10	2403353	Piezo tweeter	27	7981148	BT screw (3×50)
△	5213433	Power transformer (4.8 VA 190G) [for E(BS)]	11	2403392	Speaker 10 cm	28	4578972	BT flange screw (3×10)
△F601	2728071	Fuse (T800mA)	12	4477891	Function lever (A)	29	4577816	BT screw (3×20)
			13	4442031	Function lever	30	8691414	BT bind head screw (3×14)
							8691410	BT screw (3×10)

Cassette chassis (TN-33ZV-968 mecha. assembly)

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
3	3959031	Record prevention lever	32	3365151	Back tension spring	65	3959231	Actuator shaft
4	4817021	Spring	34	3959381	Supply reel assy	67	3959271	Pause lever
5	4856452	EH base plate	35	4856459	Back tension spring	68	4815032	Pause lever spring
6	4815003	Head panel	39	4689791	Main belt	69	4815033	Pause lever stopper
7	3959051	Head base	40	4689851	Motor rubber	71	3390571	Pack spring
8	4815004	Sensing plate assy	41	4586421	Special screw	72	2629251	Leaf switch (S502)
9	3365081	Head spring	43	4747991	Mat	80	4817010	Arm lever collar screw
10	4815005	Head panel spring	44	4816991	Motor assy	82	8691104	BT screw (2×4)
11	4856453	Spring	46	4471881	Eject assy	83	8691105	BT screw (2×5)
12	4815006	Pinch roller assy	47	3390651	Eject slide lever spring	85	8691128	+ - Cap screw (2×8)
13	3365101	Spring	50	4815021	Button base (R)	86	8691108	BT screw (2×8)
14	3959061	Pinch roller arm stopper	51	4817009	Button base (L)	87	4578281	DT screw (2.6×4)
15	4856454	R/P head	52	4815023	PAUSE button lever assy	88	8711305	Pan head screw (2.6×5)
16	4856455	Erase head	53	4815024	STOP button lever	89	4592014	PT screw (2×6)
17	4856456	EH base	54	4815025	F.F. button lever	90	8691110	Bind tapping screw (2×10)
18	4856457	RF pulley arm assy	55	4815026	RWD button lever	91	4701927	Washer (2.4)
19	4815008	Take up roller arm assy	56	4815027	PLAY button lever	92	4701925	Polyslider washer (1.6)
20	4856458	Take up roller assy	57	4815028	REC button lever	93	4701926	Polyslider washer (1.2)
21	3365121	Spring	58	3365171	Button lever spring	95	4701921	Nylon washer (1.85)
22	4586351	Collar	59	3365181	Spring	96	4701924	Nylon washer (2.05)
24	3959111	FF gear	60	3365191	Button lever spring	97	8691106	BT screw (2×6)
26	4815011	Flywheel assy	61	3365211	Spring	98	4586481	Collar screw
27	4815012	Flywheel holder	62	4471751	Push button actuator assy	101	7363851	Record plate
28	3959151	Flywheel plate	63	3365201	Spring	102	8815113	Lock washer (2.6)
29	3365131	Spring	64	3959221	Actuator shaft	103	0741304	Bind screw (2.6×4)
31	4815013	Take up reel assy						

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