

HITACHI

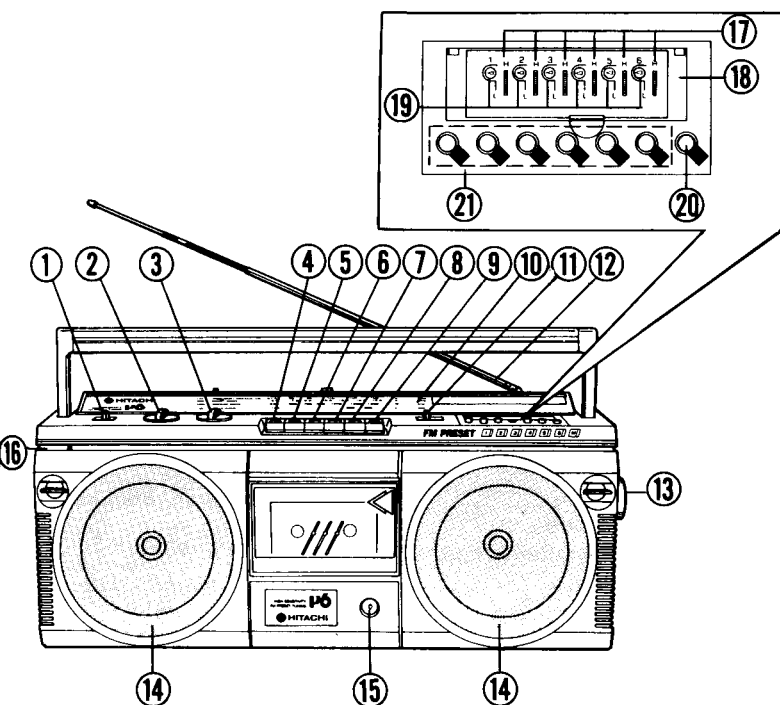
SERVICE MANUAL

TY

No. 532 E

TRK-P6E
E, E (BS)

TN-21V-582



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KEY TO ILLUSTRATIONS

- | | |
|-----------------------|--------------------------------|
| ① FUNCTION SELECTOR | ⑫ TELESCOPIC ANTENNA (AERIAL) |
| ② TONE CONTROL | ⑬ TUNING KNOB |
| ③ VOLUME CONTROL | ⑭ SPEAKERS |
| ④ PAUSE BUTTON | ⑮ HEADPHONES SOCKET |
| ⑤ STOP/EJECT BUTTON | ⑯ INNER MICROPHONE (MONO) |
| ⑥ FAST FORWARD BUTTON | ⑰ FM PRESET TUNING KNOBS |
| ⑦ REWIND BUTTON | ⑱ FM PRESET TUNING KNOBS COVER |
| ⑧ PLAYBACK BUTTON | ⑲ FM PRESET TUNING INDICATORS |
| ⑨ RECORD BUTTON | ⑳ FM MANUAL BUTTON |
| ⑩ FM STEREO INDICATOR | ㉑ FM PRESET BUTTONS |
| ⑪ BAND SELECTOR | |

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

RADIO CASSETTE TAPE RECORDER

August 1986

TOYOKAWA WORKS

SAFETY PRECAUTION

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

GENERAL SECTION

Semiconductors:	ICs: 5 Transistors: 5 Diodes: 11 LEDs: 1 Varicap: 3
Power Supply:	AC: 240V 50 Hz (for E (BS)) AC: 220V, 50 Hz (for E) DC: 12V (IEC R20 x 8 or equivalent)
Power (Mains) Consumption:	18W
Power output:	3.5W/CH x 2 (10% T.H.D. DC)
Speakers:	12 cm, 4 ohms x 2 2 cm, 300 ohms x 2
Dimensions:	50.5(W)x20.9(H)x15.6(D) cm
Weight	4.0 kg (with batteries)

TUNER SECTION

Circuit System	FM/SW/MW/LW 4-band superheterodyne
Tuning Range:	FM 87.5 to 108 MHz SW: 6 to 18 MHz MW: 530 to 1,605 kHz LW: 150 to 285 kHz
Sensitivity:	FM: 13 dB (pra.), 5 dB max.) SW: 30 dB (pra.), 20 dB (max.) MW: 50 dB (pra.), 40 dB (max.) LW: 55 dB (pra.), 48 dB (max.)
Intermediate Frequency:	FM: 10.7 MHz SW/MW/LW: 465 kHz

Antennas (Aerials):	FM/SW: Telescopic antenna (aerial) MW/LW: Ferrite-core antenna (aerial)
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TAPE RECORDER SECTION

Tape:	Cassette tape (C-30, 60, 90)
Tape Speed:	4.75 cm/s
Recording System:	AC bias, 58 kHz
Erasing System:	Magnet
Frequency Response:	Normal: 60 to 10,000 Hz
S/N (Signal to Noise Ratio):	40 dB
Wow & Flutter:	0.25% (WRMS)
Crosstalk:	Between tracks: 60 dB Between channels: 30 dB
Erase Ratio:	60 dB
Input sensitivity and Impedance:	CD/Line-in: 600 mV, 50 kohms
Output Level and load Impedance:	Headphones: 8 ohms-100 ohms
Distortion:	3%
Motor:	DC micromotor

DISASSEMBLY

1. Removing cassette lid (Fig. 1)

Open the cassette lid, and pull out it to the front while applying a force in the direction of the arrow.

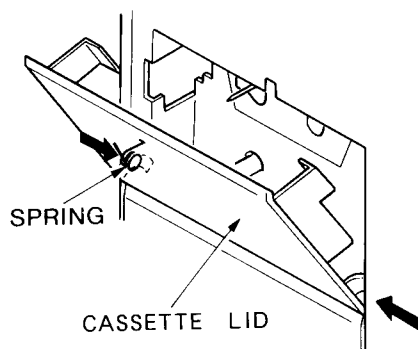


Fig. 1

2. Removing rear case (Fig. 2)

- (1) Remove the battery lid.
- (2) Remove 9 screws (A) and remove the rear case.

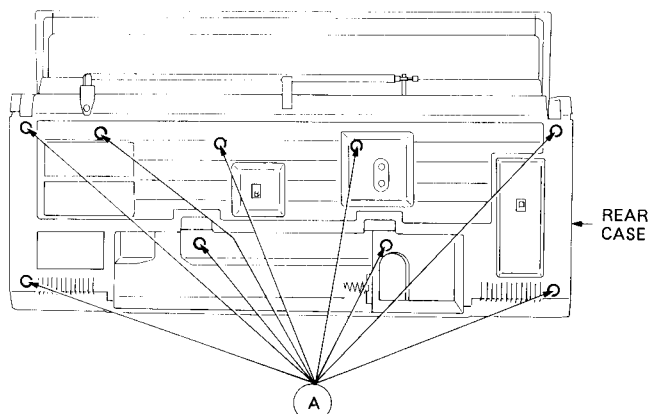


Fig. 2

3. Removing main P.W.B. (Fig. 3)

- (1) Remove VOLUME and TONE control knobs.
- (2) Remove the FUNCTION and BAND SELECTOR knobs, then remove the main PWB with preset switch.

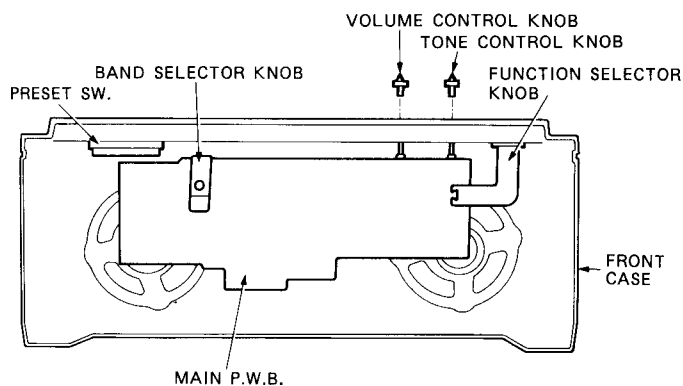


Fig. 3

4. Removing power supply P.W.B. (Fig. 4)

- (1) Remove 2 screws (B).
- (2) Remove power supply P.W.B. from the rear case.

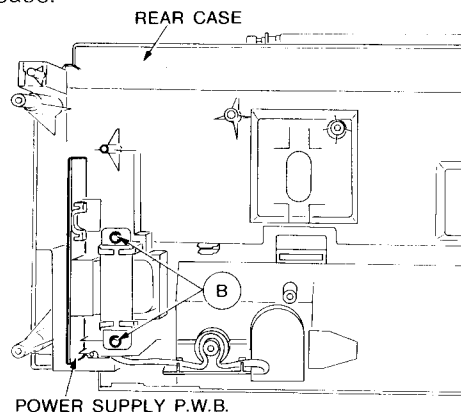


Fig. 4

5. Removing the cassette deck mechanism (Fig. 5)

- (1) Disengage 3 tabs (C) and remove the cassette deck mechanism.

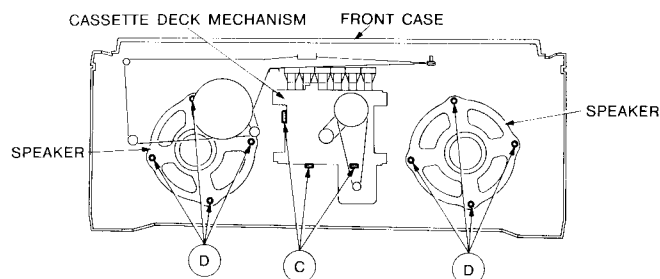


Fig. 5

6. Removing speakers (Fig. 5)

- (1) Remove 8 screws (D).
- (2) Remove the speakers.

ADJUSTMENT

1. Radio Section

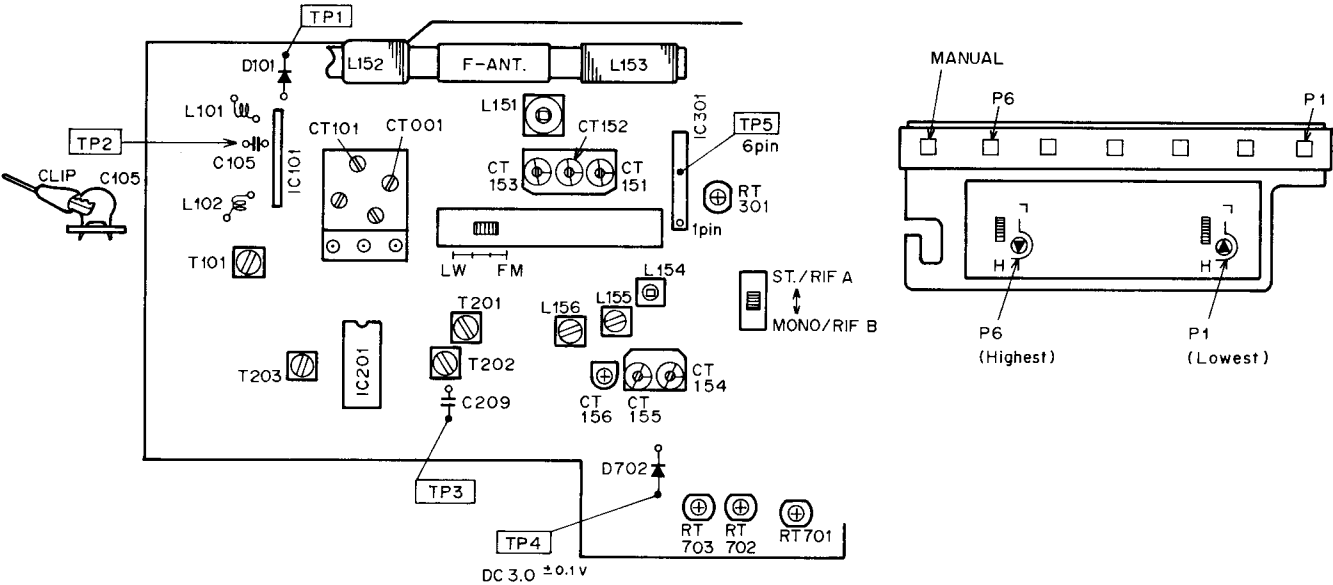


Fig. 6

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)	TP2	TP3	10.7 MHz	Highest	T101 T202	Note 1 Note 2
2		FM OSC (Covering)	● FM signal generator (400 Hz, 30% dev.) ● Oscilloscope ● VTVM	TP1 (thru FM dummy antenna) (Note 3)	TP3	See 1-2. FM Covering (Next page)			
3	(1)	FM ANT. (Tracking)				90 MHz	90 MHz	L101	Max
	(2)					106 MHz	106 MHz	CT101	
Repeat steps (1)									
4	(1)	FM MPX. (Multiplex)	● Frequency counter	Connect a 10μF 25V electrolytic capacitor between the No. 1 pin of IC301 and the ground.	TP5	—	—	RT301	38 kHz ± 50 Hz (Note 4)
5	(1)	AM IF	● Genescope (465 kHz)	Ferrite-core antenna (Note 5)	TP3	465 kHz	Highest	T201 T203	Note 6
	(2)					Repeat steps (1)			

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading			
			Measuring Instrument	Input Terminal	Output Terminal							
6	(1)	LW OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	TP3	145 kHz	Lowest	L156	Max.			
	(2)					290 kHz	Highest	CT156				
	(3)					Repeat steps (1) and (2)						
7	(1)	LW ANT. (Tracking)				● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	TP3	160 kHz	160 kHz	L153	Max.
	(2)								270 kHz	270 kHz	CT153 CT001	
	(3)								Repeat steps (1) and (2)			
8	(1)	MW OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	TP3				515 kHz	Lowest	L155	Max.
	(2)								1650 kHz	Highest	CT155	
	(3)								Repeat steps (1) and (2)			
9	(1)	MW ANT. (Tracking)				● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	Ferrite-core antenna (Note 5)	TP3	600 kHz	600 kHz	L152	Max.
	(2)								1400 kHz	1400 kHz	CT152	
	(3)								Repeat steps (1) and (2)			
10	(1)	SW OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	TP1 (thru SW dummy antenna) (Note 7)	TP3				5.8 MHz	Lowest	L154	Max.
	(2)								18.5 MHz	Highest	CT154	
	(3)								Repeat steps (1) and (2)			
11	(1)	SW ANT. (Tracking)				● AM signal generator (400 Hz, 30% mod.) ● VTVM ● Oscilloscope	TP1 (thru SW dummy antenna) (Note 7)	TP3	6.5 MHz	6.5 MHz	L151	Max.
	(2)								16 MHz	16 MHz	CT151	
	(3)								Repeat steps (1) and (2)			

1-2. FM Covering

Step		Signal Generator Frequency	Preset CH. and Dial Pointer Position	Voltage of TP4	Adjust	Reading	Note
1	Preset Covering	—	—	3.0 V ± 0.1	RT703	DC Volt meter	*1 Connect the DC volt meter to TP4
2		*2 See to ① ②	P1 ON	—	Vol. – P1	TP3 MAX	Fix the Vol. – P1 after searching lowest frequency.
3		*2 See to ③ ④	P6 ON	—	Vol. P6		Fix the Vol. – P6 after searching highest frequency.
4		87.5 MHz	P1 ON	—	L102		
5		(1) 108 MHz	P6 ON	—	RT701		
		(2) —		3.0 V ± 0.1	RT703		
		(3)		Repeat steps (1) and (2)			
6	Manual Covering	87.5 MHz	Manual ON Dial Pointer Lowest	—	RT702	TP3 MAX	
		—		3.0 V ± 0.1	RT703		
		(3)	Repeat steps (1) and (2)				

*1: Please use high internal impedance DC volt meter for measuring the voltage of TP4.

*2: How to adjust the Vol. – P1 (Lowest) and Vol. – P6 (Highest).

① Set the Vol. – P1 about lowest and receive the signal from Signal Generator.

② Adjust and search the lowest frequency so as to change the Vol. – P1 and the Signal Generator frequency.

③ Set the Vol. – P6 about highest and receive the signal from Signal Generator.

④ Adjust and search the highest frequency so as to change the Vol. – P6 and the Signal Generator frequency.

Note:

1. Feed in a weak signal to TP2 from the genescope. Adjust T101 for maximum gain and the waveform indicated in Figure 7. If the center of the waveform cannot be lined up on the marker, adjust the right/left balance.

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



Fig. 7

2. Use the T202 core to form the S-curve shown in Figure 8. Adjust the symmetry of A and B about point C for linearity.

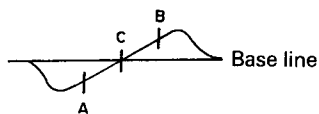
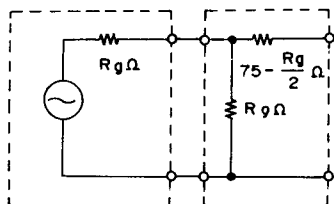


Fig. 8

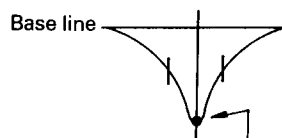
3. FM dummy antenna shows Figure 9.



Rg: SG's output impedance

Fig. 9

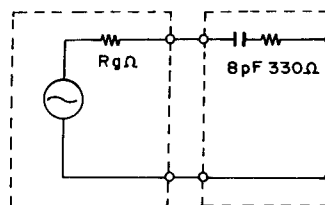
4. Connect the frequency counter to TP5 and connect a 330 kΩ resistor parallel with the frequency counter.
5. Connect AM signal generator to loop antenna, bring near to ferrite antenna.
6. Feed in a weak signal from the genescope. Adjust T201, T203 for maximum gain and the waveform of Figure 10.



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

Fig. 10

7. SW dummy antenna shows Figure 11.



Rg: SG's output impedance

Fig. 11

2. Tape Recorder Section

Perform the following adjustments in the sequence stated after cleaning the head, pressure 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 (4Ω load)	Tape speed adjustment tape (3 kHz)	Playback	Semivariable resistor in the motor (Fig. 12)	3 kHz ± 20 Hz (Note 1)
2	Head azimuth	● VTVM	—	Speaker terminal (4Ω load)	Head azimuth adjustment tape (10 kHz)	Playback	Azimuth adjusting screw	Output max. (Note 2)

Note:

1. Adjust within 30 sec. after heat-running for more than 20 minutes.
2. 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.

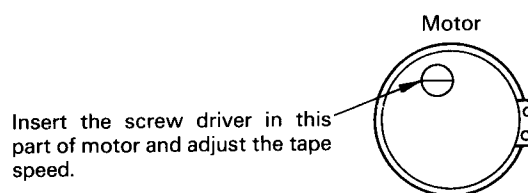


Fig. 12

INSPECTION OF MECHANISM

Item	Checking item		Reference value	Remarks
1	Pressure of pressure roller		300 – 500g	Note
2	Take-up torque		30 – 60 g·cm	
3	Fast forward/Rewind torque		50 g·cm or more	
4	Auto-Stop sensor operation force		40 – 75 g	
5	Brake torque		15 g·cm or more	Measured in stop mode
6	Back tension torque	Take-up	1 – 6 g·cm	
		Supply	2 – 6 g·cm	
7	Flywheel thrust gap		0.05 – 0.5 mm	
8	Button operation force	Play button	1.7 kg or less	
		FF button	1.0 kg or less	
		Rewind button	1.0 kg or less	
		Eject button	1.0 kg or less	
		Record button	1.0 kg or less	
		Pause button	1.5 kg or less	

Note:

Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released form the capstan.

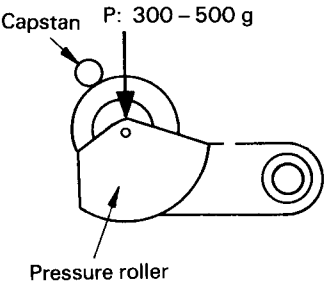


Fig. 13

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 under 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 Mold and metal	White grease (FL-LUBE-A)
Spring resonance prevention		Floil (GB-TS-1)

DIAL CORD STRINGING

Stringing method

- String the dial cord to each rollers according to the order from ① to ⑧ after turned the pulley to the end of clockwise direction.

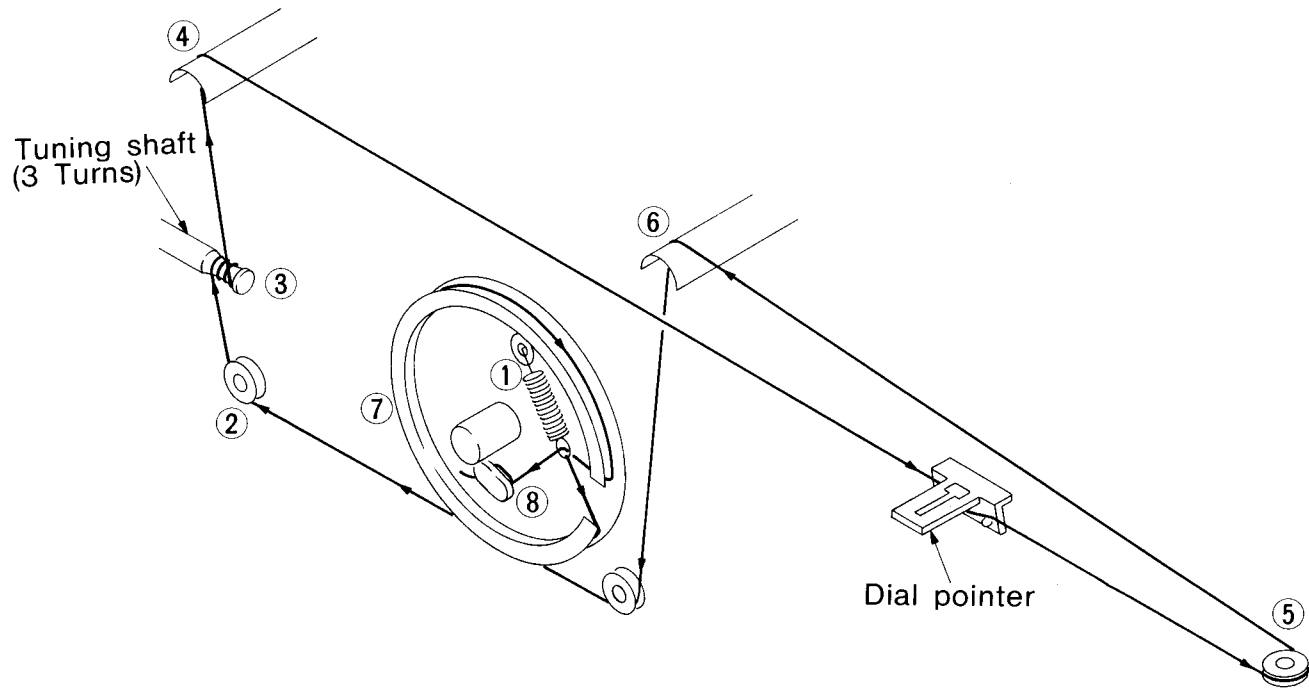
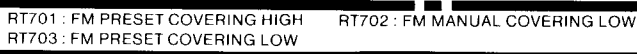


Fig. 14

CAUTION
Use the e
when the

Voltage. ☐ FM
☐ AM MODE



CAUTION
Use the elec
when the di

MAIN P.W.B. (Audio section)



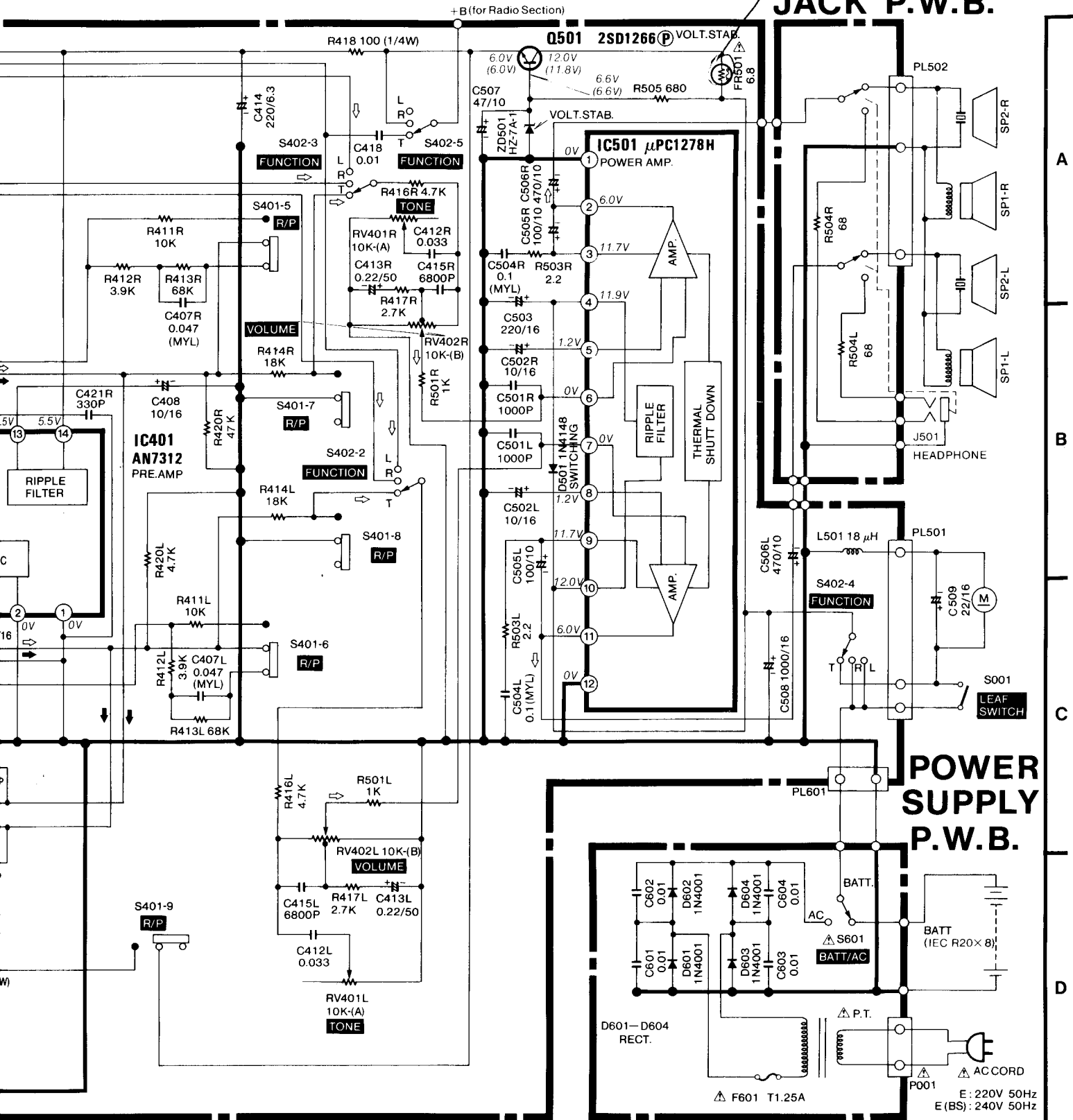
Signal: $\Rightarrow$ PLAY, MONITOR
 $\rightarrow$ REC
 Voltage: PLAY
 (REC)

CAUTION

Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10 mm ϕ .

※: Axial lead cylindrical ceramic capacitor

JACK P.W.B.



PRINTED WIRING BOARD

※: Axial leaf

IC101		
	FM	AM
1	0.7V	5.5V
2	1.5V	5.2V
3	4.1V	5.2V
4	1.4V	5.2V
5	0V	5.5V
6	4.1V	5.2V
7	3.3V	5.1V
8	4.0V	5.2V
9	4.1V	5.2V

IC201					
FM		AM			
1	07V	15V	9	14V	13V
2	07V	15V	10	48V	51V
3	18V	22V	11	48V	51V
4	23V	23V	12	14V	14V
5	08V	09V	13	14V	14V
6	08V	09V	14	14V	14V
7	07V	04V	15	14V	14V
8	0V	0V	16	48V	51V

IC301		
	FM	AM
1	27V	29V
2	34V	37V
3	48V	51V
4	40V	33V
5	0V	0V
6	42V	46V
7	41V	51V
8	23V	27V
9	23V	27V

IC401			
1	0V	8	0V
2	0V	9	1.3V
3	0V	10	1.3V
4	2.8V	11	2.8V
5	1.3V	12	0V
6	1.3V	13	5.5V
7	0V	14	5.5V

Q151		
	FM	AM
E	0.1V	0.1V
C	4.8V	5.1V
B	0.8V	0.8V

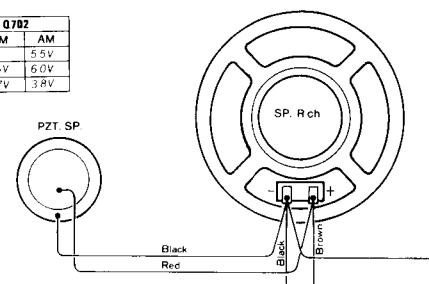
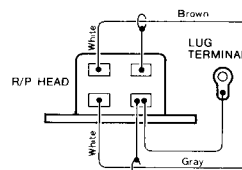
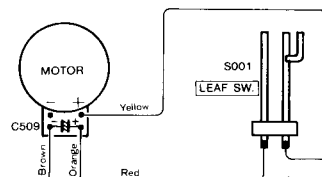
Q451		
	PLAY	REC
E	0V	0.1V
C	0V	5.1V
B	0V	0.8V

Q501		
	PLAY	REC
E	6.0V	6.0V
C	12.0V	11.8V
B	6.6V	6.6V

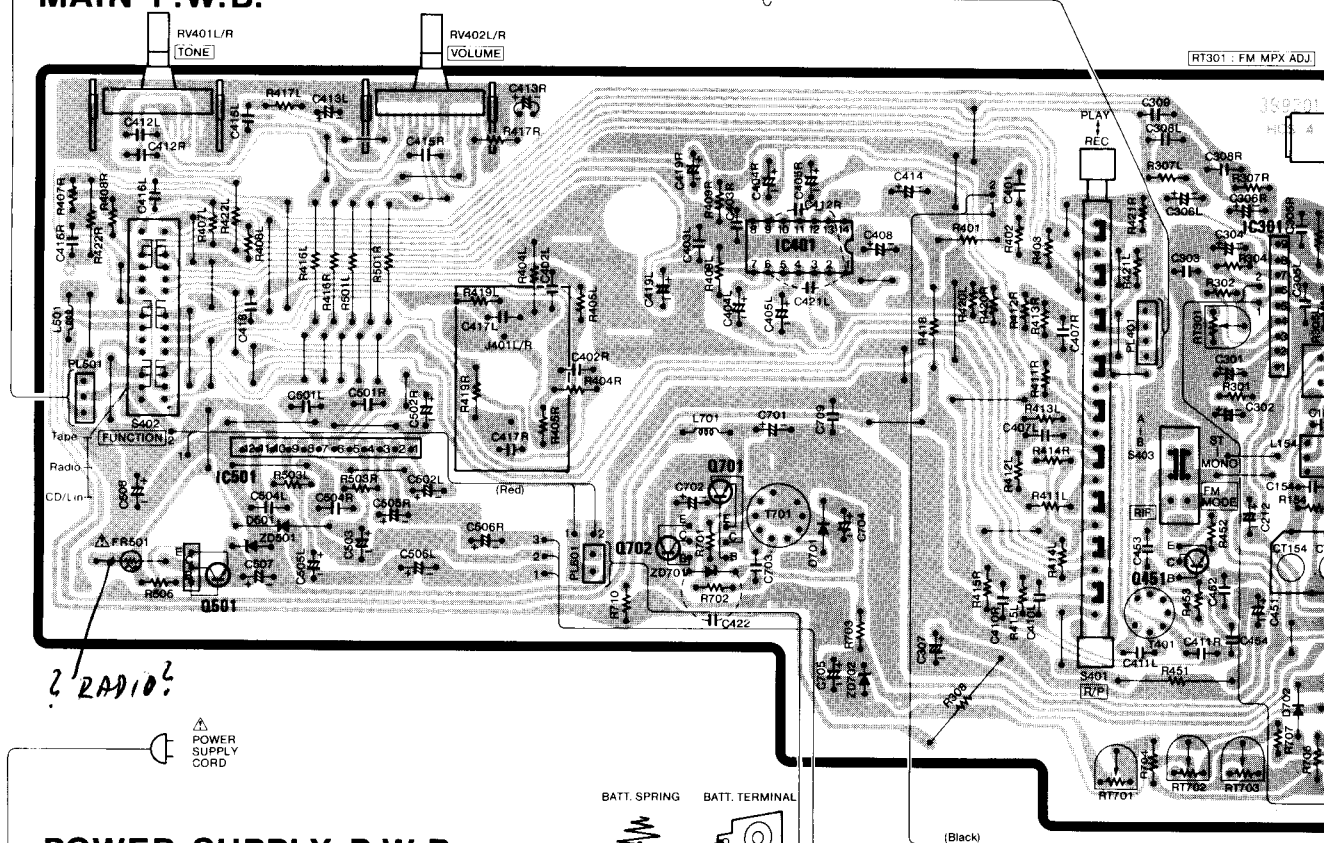
IC501			
1	0V	7	0V
2	6.0V	8	1.2V
3	11.7V	9	11.7V
4	11.9V	10	12.0V
5	1.2V	11	6.0V
6	0V	12	0V

Q701		
	FM	AM
E	0V	5.5V
C	4.2V	6.0V
B	0.6V	6.0V

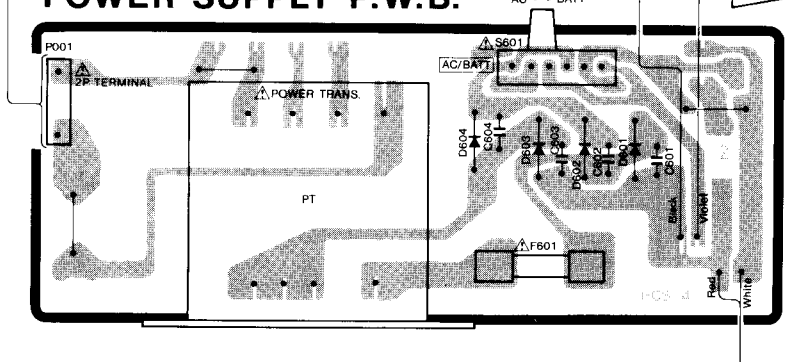
Q702		
	FM	AM
E	0V	55V
C	0.6V	60V
B	0.7V	38V



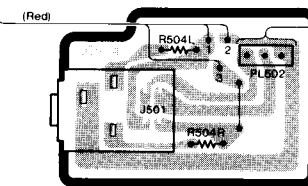
MAIN P.W.B.



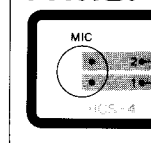
POWER SUPPLY P.W.B.



JACK P.W.B.



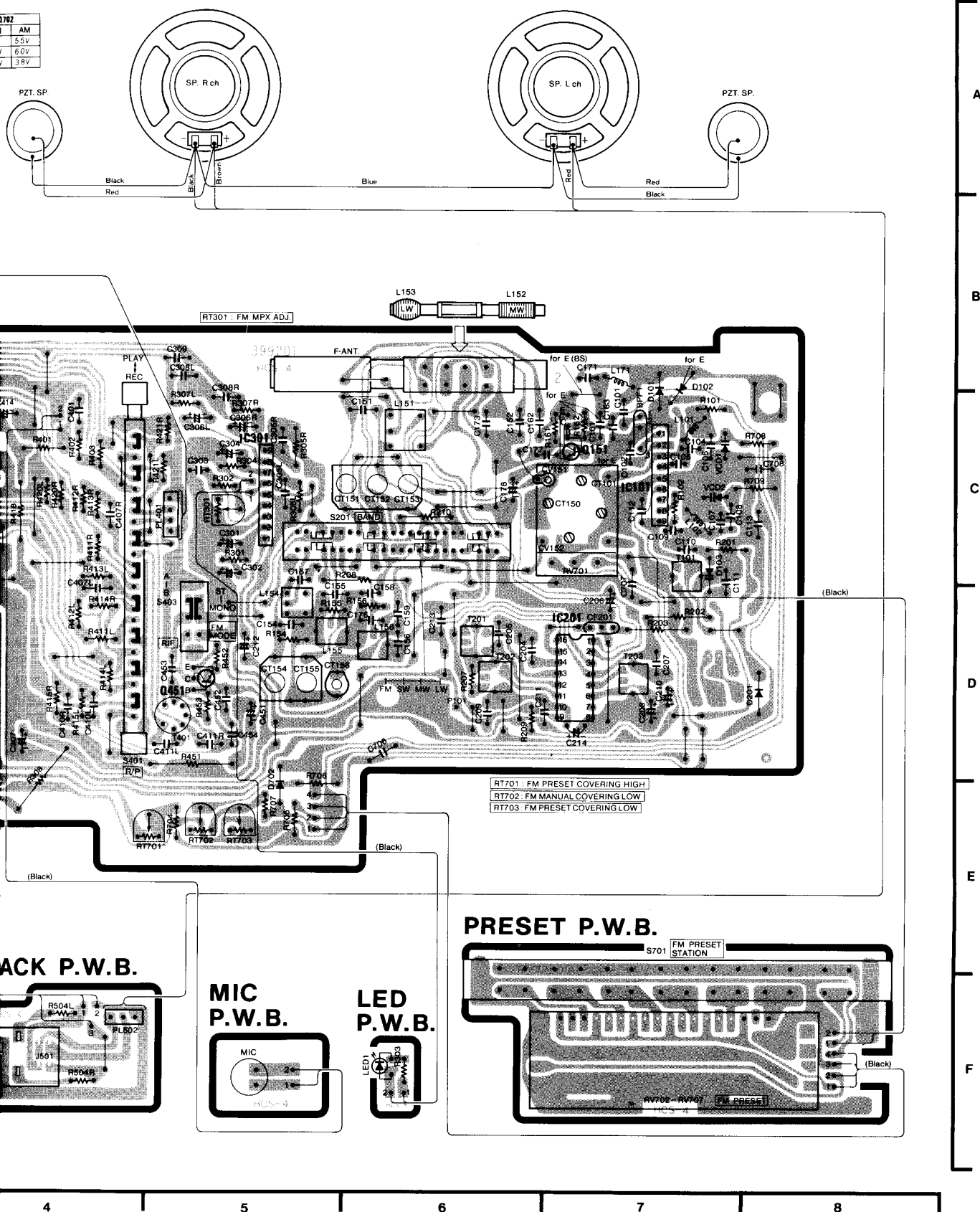
MIC
P.W.B.



Q451	
Y	REC
	01V
	51V
	08V

Q501		
	PLAY	REC
E	60V	60V
C	120V	118V
B	66V	66V

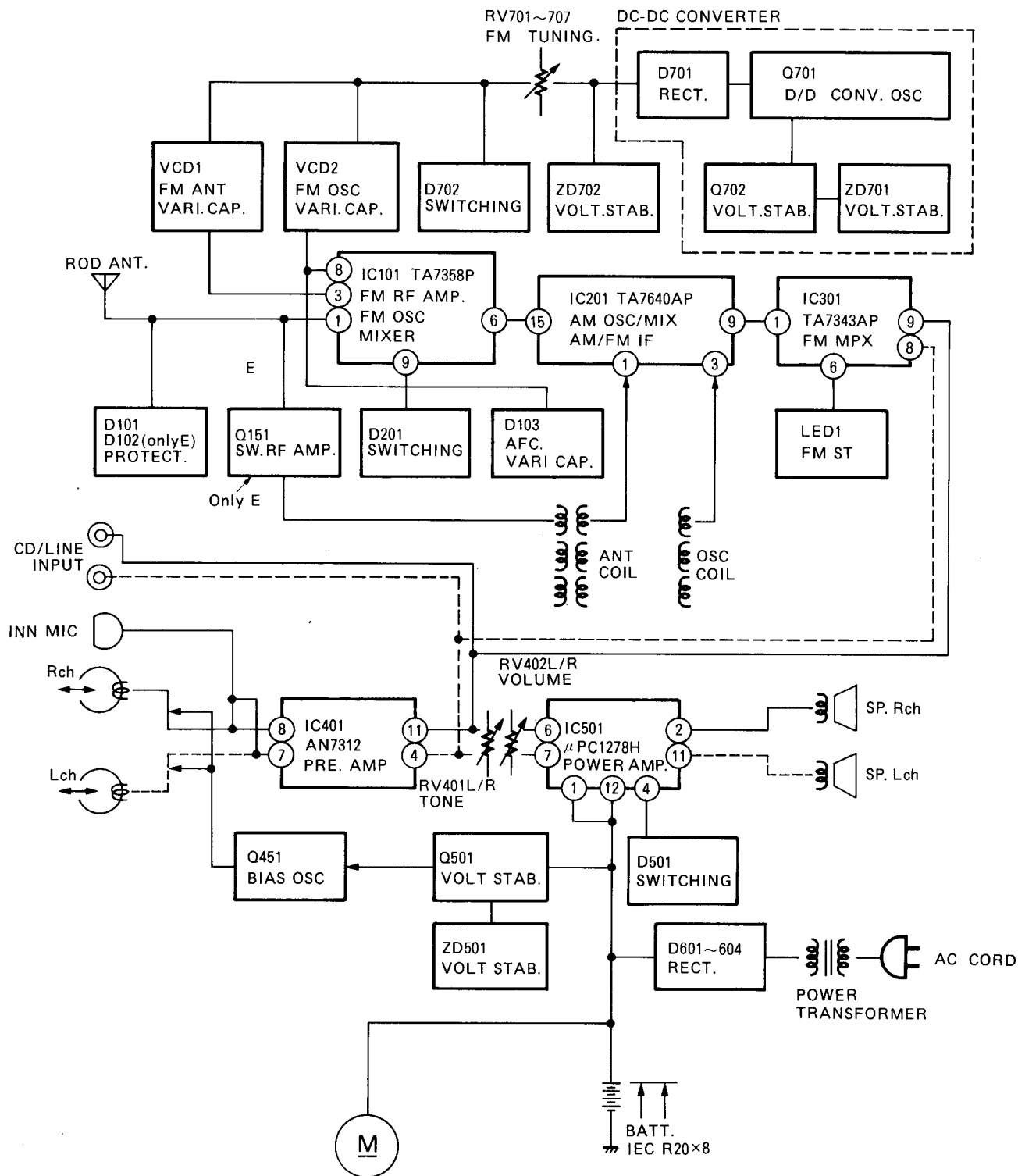
1702	
I	AM
	55V
V	60V
V	38V



BLOCK DIAGRAM

EXPLO

● CABIN

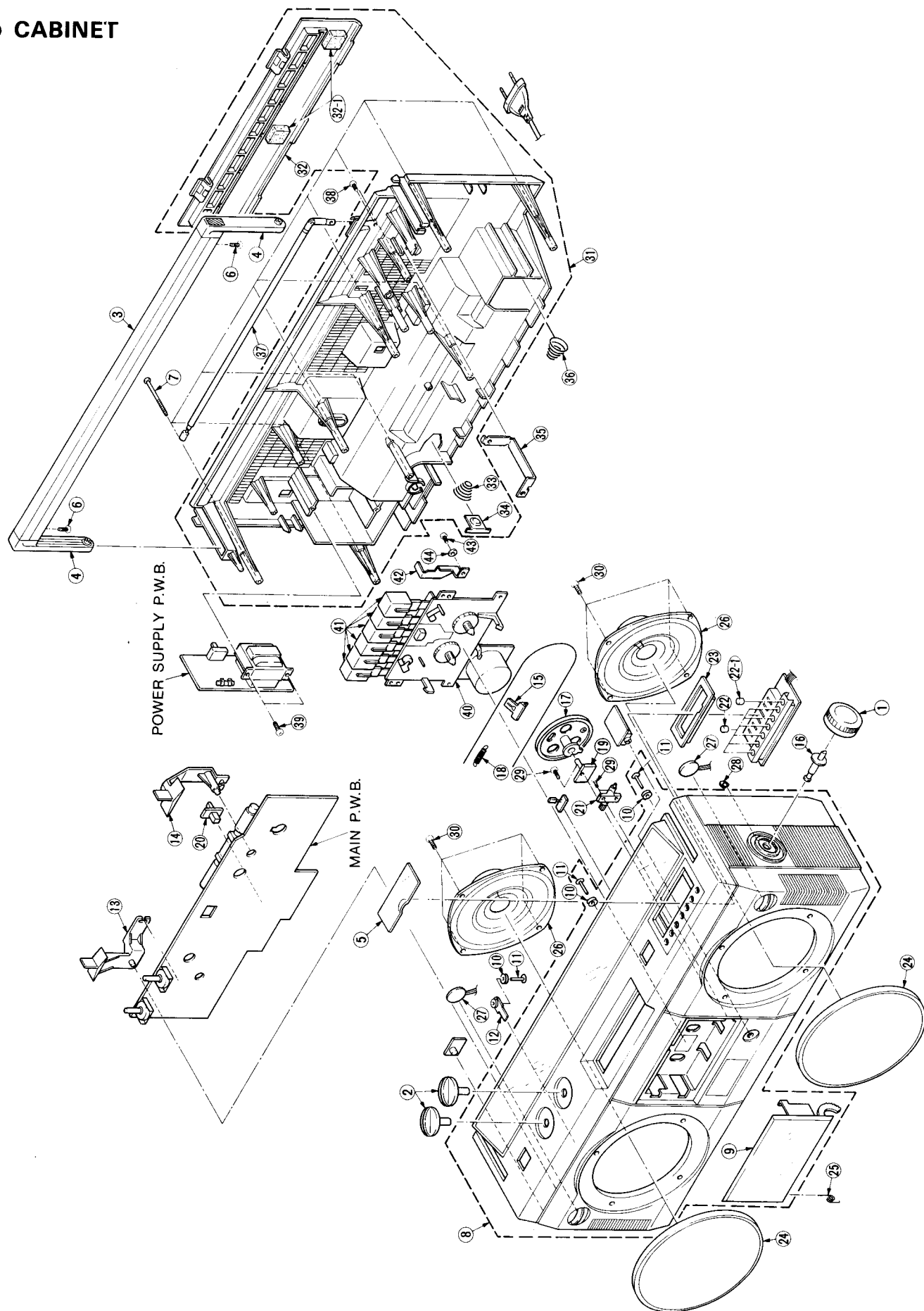


EXPLODED VIEW

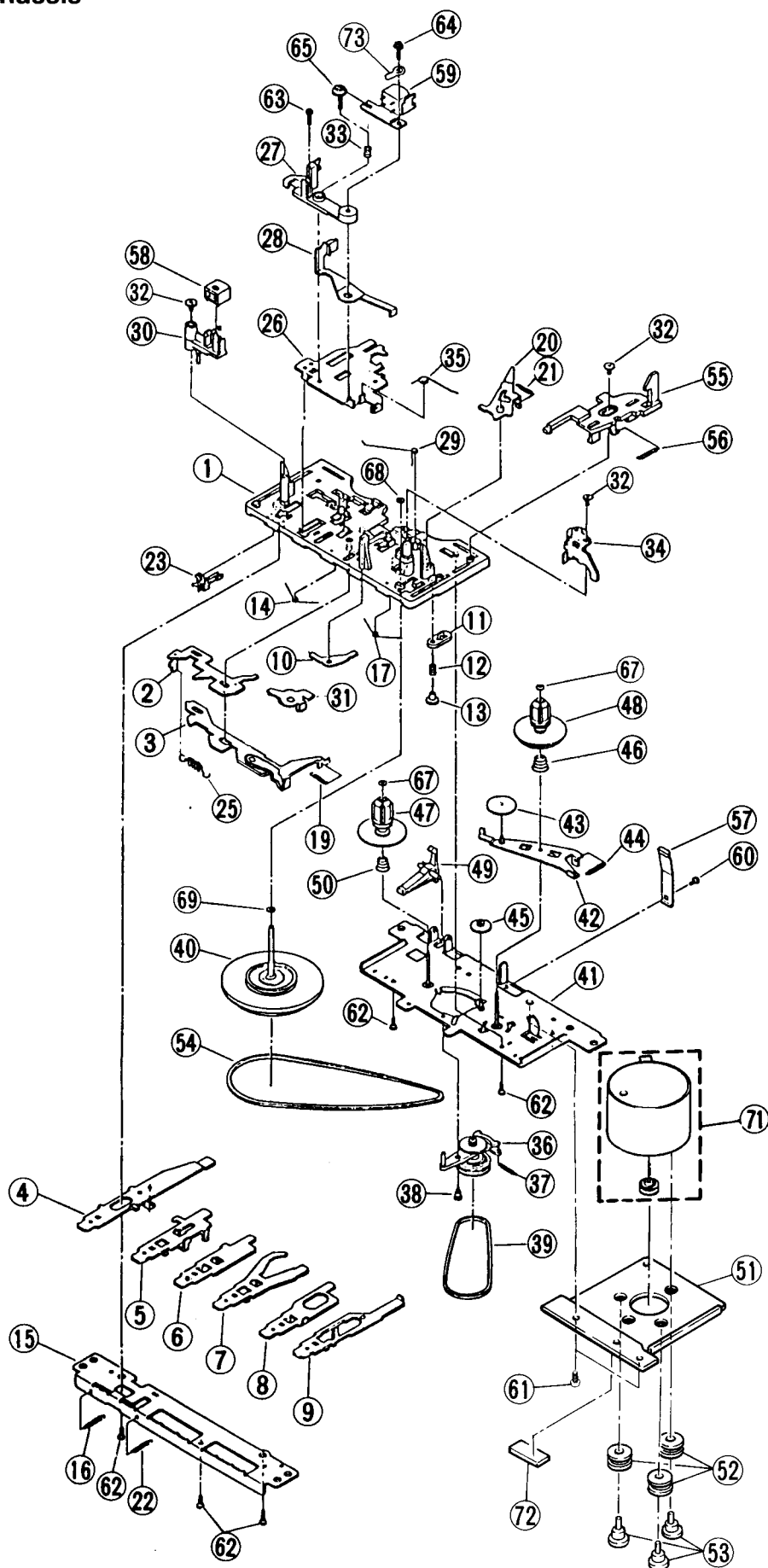
● CABINET

C
AB.

AC CORD



● Cassette Chassis



REPLAC

● Cabinet

ITEM NO.	PART NO.
for FI	
1	33031
	33031
2	38014
	38014
3	38017
	38017
	38017
4	38014
	38014
	38014
5	38015
6	45778
7	45778
for FRON	
8	40403
	40403
	40403
9	38015
10	39342

REPLACEMENT PARTS LIST

● Cabinet

ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION
for FINAL ASSEMBLY						for REAR CASE ASSEMBLY		
1	3303181	Knob 38 (for Black and Red)	11	4577661	Roller pin	31	4040321	Rear case assembly (for E) (Black)
	3303184	Knob 38 (for White)	12	3801571	Roller holder		4040322	Rear case assembly (for E) (White)
2	3801491	Knob 28 (for Black, Red)		3801532	Function lever (for White)		4040323	Rear case assembly (for E) (Red)
	3801492	Knob 28 (for White)	14	3801541	Band lever (for Black and Red)		4040325	Rear case assembly (for E(BS)) (Black)
3	3801771	Handle (for Black)		3801542	Band lever (for White)		4040326	Rear case assembly (for E(BS)) (White)
	3801772	Handle (SRM-144) (for White)	15	3801551	Pointer		4040327	Rear case assembly (for E(BS)) (Red)
	3801773	Handle (for Red)	16	4594823	Tuning shaft	32	3973501	Battery lid (for E) (Black) (for E(BS)) (Black)
4	3801461	Handle arm (for Black)	17	3801761	Pulley 100		3973504	Battery lid (for White)
	3801462	Handle arm (for White)	18	3340321	Spring M		3973505	Battery lid (for Red)
	3801463	Handle arm (for Red)	19	3801561	Pulley holder	32-1	3610078	Cushion
5	3801511	Preset lid	20	3801501	Select knob	33	3369849	Spring A
6	4577832	Screw, 3x10 BT flat head	21	3970221	Gear damper	34	4436665	Terminal
7	4577818	Screw, bind tapping 3x50	22	3801521	PR knob (for Black and Red)	35	4468601	ANT bracket
for FRONT CASE ASSEMBLY				3801523	PR knob (for white)	36	3369781	Battery spring
8	4040301	Front case assembly (Black)	22-1	3801522	PR knob	37	2758231	Telescopic antenna
	4040302	Front case assembly (White)	23	3801471	Preset holder	38	8744412	Screw, bind head 3x12
	4040303	Front case assembly (Red)	24	3801591	Speaker grille (for Black and white)	39	4578976	Screw, 3x20 BT bind
9	3801581	Cassette lid		3801592	Speaker grille (for White)	for CHASSIS ASSEMBLY		
10	3934271	8 roller	25	3368265	Lid spring	40	2588831	Mecha. assembly TN-21-582
			26	2403841	Speaker 12	41	3801481	Cassette button (for Black and Red)
			27	2403353	Speaker, piezo tweeter		3801482	Cassette button (for White)
			28	4418013	4 E ring	42	4468661	REC plate
			29	8691410	Screw, 3x10 BT bind head	43	4578281	2.6x4 screw
			30	4578972	3x10 BT flange screw	44	8815113	2.6 lock washer

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
CAPACITORS		
C101	0208666	CD 18pF $\pm 0.5\%$ 50V
C102	0244101	CD 1000pF $\pm 10\%$ 50V
C104	0244101	CD 1000pF $\pm 10\%$ 50V
C105	0248646	CD 6pF $\pm 0.5pF$ 50V
C106	0244101	CD 1000pF $\pm 10\%$ 50V
C107	1249526	CD 3pF $\pm 0.5pF$ 50V
C108	0244101	CD 1000pF $\pm 10\%$ 50V
C109	1241884	CD 22pF $\pm 5\%$ 50V
C110	0248465	CD 5pF $\pm 5pF$ 50V
C111	0209731	CD 1000pF $\pm 10\%$ 50V
C112	0244101	CD 1000pF $\pm 10\%$ 50V
C113	0208684	CD 100pF $\pm 5\%$ 50V
C151	0208633	CD 3pF $\pm 5pF$ 50V (for E (BS))
C151	0208664	CD 15pF $\pm 5\%$ 50V (for E)
C152	0208646	CD 6pF $\pm 5\%$ 50V
C154	0208668	CD 22pF $\pm 5\%$ 50V
C155	0208668	CD 22pF $\pm 5\%$ 50V
C156	0208648	CD 8pF $\pm 0.5\%$ 50V
C157	0275011	MF 0.01 μ F $\pm 10\%$ 50V
C158	1221393	ST 360pF $\pm 5\%$ 50V
C159	1221391	ST 180pF $\pm 5\%$ 50V
C161	0244171	CD 0.01 μ F $\pm 80\%$ 50V (for E)
C162	0244171	CD 0.01 μ F $\pm 80\%$ 50V
C163	0244173	CD 0.022 μ F $\pm 80\%$ 50V
C171	0248635	CD 5pF $\pm 0.25\%$ 50V
C173	0208680	CD 68pF $\pm 5\%$ 50V
C176	0208686	CD 120pF $\pm 5\%$ 50V
C177	0249766	CD 0.068 μ F $\pm 20\%$ 25V
C178	0252521	EL 10 μ F 16V
C204	0244171	CD 0.01 μ F $\pm 80\%$ 50V
C205	0244171	CD 0.01 μ F $\pm 80\%$ 50V
C206	0252325	EL 47 μ F 10V
C207	0244173	CD 0.022 μ F $\pm 80\%$ 50V
C208	0252322	EL 22 μ F 10V
C209	0209723	CD 470pF $\pm 10\%$ 50V
C210	0252805	EL 0.47 μ F 50V
C211	0209175	CD 0.047 μ F $\pm 80\%$ 50V
C212	0252813	EL 3.3 μ F 50V
C213	0209175	CD 0.047 μ F $\pm 80\%$ 50V
C214	0252232	EL 220 μ F 6.3V
C301	0252811	EL 1.0 μ F 50V
C302	0252813	EL 3.3 μ F 50V
C303	1221395	ST 1000pF $\pm 5\%$ 50V
C304	0252811	EL 1.0 μ F 50V
C305L,R	0209736	CD 6800pF $\pm 10\%$ 50V
C306L,R	0252801	EL 0.1 μ F 50V
C307	0252232	EL 220 μ F 6.3V
C308L	0209735	CD 4700pF $\pm 10\%$ 50V
C308R	0244109	CD 4700pF $\pm 10\%$ 50V
C309	0244107	CD 3300pF $\pm 10\%$ 50V
C401	0244175	CD 0.047 μ F $\pm 80\%$ 50V
C402L,R	0208688	CD 150pF $\pm 5\%$ 50V
C403L,R	0209732	CD 1500pF $\pm 10\%$ 50V
C404L,R	0252331	EL 100 μ F 10V
C405L,R	0252521	EL 10 μ F 16V
C407L,R	0275015	MF 0.047 μ F $\pm 10\%$ 50V
C408	0252521	EL 10 μ F 16V
C410L,R	0209733	CD 2200pF $\pm 10\%$ 50V

SYMBOL NO.	PART NO.	DESCRIPTION
C411L,R	0274013	MF 2200pF $\pm 10\%$ 50V
C412L,R	0249764	CD 0.033 μ F $\pm 20\%$ 50V
C413L,R	0252802	EL 0.22 μ F 50V
C414	0252232	EL 220 μ F 6.3V
C415R	0209736	CD 6800pF $\pm 10\%$ 50V
C415L	0244111	CD 6800pF $\pm 10\%$ 50V
C416L,R	0244101	CD 1000pF $\pm 10\%$ 50V
C417L,R	0248696	CD 330pF $\pm 5\%$ 50V
C418	0244171	CD 0.01pF $\pm 80\%$ 50V
C419L,R	0252811	EL 1.0 μ F 50V
C421L,R	0248696	CD 330pF $\pm 10\%$ 50V
C422	0244173	CD 0.022 μ F $\pm 80\%$ 50V
C451	0252331	EL 100 μ F 10V
C452	0209731	CD 1000pF $\pm 10\%$ 50V
C453	0275015	MF 0.047 μ F $\pm 10\%$ 50V
C454	0248686	CD 120pF $\pm 5\%$ 50V
C501L,R	0209731	CD 1000pF $\pm 10\%$ 50V
C502L,R	0252521	EL 10 μ F 16V
C503	0252532	EL 220 μ F 16V
C504L,R	0276011	MF 0.1 μ F $\pm 10\%$ 50V
C505L,R	0252331	EL 100 μ F 10V
C506L,R	0252335	EL 470 μ F 10V
C507	0252325	EL 47 μ F 10V
C508	0252541	EL 1000 μ F 16V
C509	0252522	EL 22 μ F 16V
C601	0244171	CD 0.01 μ F $\pm 80\%$ 50V
C602	0244171	CD 0.01 μ F $\pm 80\%$ 50V
C603	0244171	CD 0.01 μ F $\pm 80\%$ 50V
C604	0244171	CD 0.01 μ F $\pm 80\%$ 50V
C701	0252331	EL 100 μ F 10V
C702	0252812	EL 2.2 μ F 50V
C703	0274012	MF 1500pF $\pm 10\%$ 50V
C704	0252811	EL 1.0 μ F 50V
C705	0252811	EL 1.0 μ F 50V
C706	0276013	MF 0.22 μ F $\pm 10\%$ 50V
C707	0276011	MF 0.1pF $\pm 10\%$ 50V
C708	0249766	CD 0.068 μ F $\pm 20\%$ 50V
C709	0208686	CD 120pF $\pm 5\%$ 50V

RESISTORS		
R101	0170334	CF 33 Ω $\pm 5\%$ SRD1/6P
R102	0113575	CF 22 Ω $\pm 5\%$ SRD1/6P
R154	0113647	CF 22k Ω $\pm 5\%$ SRD1/6P
R155	0113643	CF 15k Ω $\pm 5\%$ SRD1/6P
R156	0113623	CF 2.2k Ω $\pm 5\%$ SRD1/6P
R161	0113591	CF 100 Ω $\pm 5\%$ SRD1/6P (for E)
R162	0113675	CF 300k Ω $\pm 5\%$ SRD1/6P (for E)
R201	0113663	CF 100k Ω $\pm 5\%$ SRD1/6P (for E)
R202	0113639	CF 10k Ω $\pm 5\%$ SRD1/6P
R203	0113597	CF 180 Ω $\pm 5\%$ SRD1/6P
R207	0113643	CF 15k Ω $\pm 5\%$ SRD1/6P
R208	0113583	CF 47k Ω $\pm 5\%$ SRD1/6P
R209	0113663	CF 100k Ω $\pm 5\%$ SRD1/6P
R210	0113623	CF 2.2k Ω $\pm 5\%$ SRD1/6P
R301	0113615	CF 1k Ω $\pm 5\%$ SRD1/6P
R302	0113639	CF 10k Ω $\pm 5\%$ SRD1/6P
R303	0170349	CF 560 Ω $\pm 5\%$ SRD1/8P
R304	0113671	CF 220k Ω $\pm 5\%$ SRD1/6P
R305L,R	0113627	CF 3.3k Ω $\pm 5\%$ SRD1/6P

SYMBOL NO.	PART NO.	DESCRIPTION
R307L,R	0113631	CF 4.7k Ω $\pm 5\%$ SRD1/6P
R308	0112912	MO47 Ω $\pm 10\%$ RS1B
R401	0113627	CF 3.3k Ω $\pm 5\%$ SRD1/6P
R402	0113615	CF 1k Ω $\pm 5\%$ SRD1/6P
R403	0113611	CF 680 Ω $\pm 5\%$ SRD1/6P
R404L,R	0113679	CF 470k Ω $\pm 5\%$ SRD1/6P
R405L,R	0113609	CF 560 Ω $\pm 5\%$ SRD1/6P
R407L	0113675	CF 47k Ω $\pm 5\%$ SRD1/6P
R407R	0170342	CF 47k Ω $\pm 5\%$ SRD1/8P
R408L,R	0113609	CF 560 Ω $\pm 5\%$ SRD1/6P
R409L,R	0113567	CF 10 Ω $\pm 5\%$ SRD1/6P
R411L,R	0113639	CF 10k Ω $\pm 5\%$ SRD1/6P
R412L,R	0113629	CF 3.9k Ω $\pm 5\%$ SRD1/6P
R413L,R	0113659	CF 68k Ω $\pm 5\%$ SRD1/6P
R414L,R	0113645	CF 18k Ω $\pm 5\%$ SRD1/6P
R415L,R	0113639	CF 10k Ω $\pm 5\%$ SRD1/6P
R416L,R	0113631	CF 4.7k Ω $\pm 5\%$ SRD1/6P
R417L,R	0113625	CF 2.7k Ω $\pm 5\%$ SRD1/6P
R418	0129561	CF 100 Ω $\pm 5\%$ SRD1/4P
R419L,R	0113659	CF 68k Ω $\pm 5\%$ SRD1/6P
R420L,R	0113631	CF 4.7k Ω $\pm 5\%$ SRD1/6P
R421L,R	0113663	CF 100k Ω $\pm 5\%$ SRD1/6P
R422L,R	0113645	CF 18k Ω $\pm 5\%$ SRD1/6P
R451	0112915	MO33 Ω $\pm 10\%$ RS1B
R452	0113561	CF 5.6 Ω $\pm 5\%$ SRD1/6P
R453	0113655	CF 47k Ω $\pm 5\%$ SRD1/6P
R501L,R	0113615	CF 1k Ω $\pm 5\%$ SRD1/6P
R503L,R	0113551	CF 2.2 Ω $\pm 5\%$ SRD1/6P
R504L,R	0170338	CF 68 Ω $\pm 5\%$ SRD1/8P
R505	0113611	CF 680 Ω $\pm 5\%$ SRD1/6P
R701	0113615	CF 1k Ω $\pm 5\%$ SRD1/6P
R702	0113587	CF 68 Ω $\pm 5\%$ SRD1/6P
R703	0113617	CF 1.2k Ω $\pm 5\%$ SRD1/6P
R704	0113655	CF 47k Ω $\pm 5\%$ SRD1/6P
R705	0113591	CF 100 Ω $\pm 5\%$ SRD1/6P
R706	0113643	CF 15k Ω $\pm 5\%$ SRD1/6P
R707	0113627	CF 3.3k Ω $\pm 5\%$ SRD1/6P
R708	0113647	CF 22k Ω $\pm 5\%$ SRD1/6P
R709	0113647	CF 22k Ω $\pm 5\%$ SRD1/6P
R710	0119504	MO18 Ω $\pm 10\%$ RS2B
△FR501	1118447	FR 6.8 Ω $\pm 5\%$ RN1/4B

ICS & TRANSISTORS		
IC101	2398201	TA7358P
IC201	2389511	TA7640AP
IC301	2301041	TA7343AP
IC401	2300881	AN7312
IC501	2389521	μ PC1278H
Q151	2319083	HIT9011GH (for E)
Q451	2319101	2SC1684R
Q501	2317803	2SD1266 ⊕
Q701	2318201	2SD592AR
Q702	2318191	2SC1815GR

DIODE		
D101	2398082	1N4148
D102	2398081	1N4148 (for E)
D103	2338031	1S2790
D201	2398082	1N4148

SYMBOL NO.	PART NO.
D501	2398082
D601	2398082
D602	2398082
D603	2398082
D604	2398082
D701	2337001
D702	2398082
ZD501	2337001
ZD701	2338001
ZD702	2338001
LED1	2397001
VCD1	2398082
VCD2	2398082
VARIABLES	
RV401L,R	0168001
RV402L,R	0168001
RV702	0189001
RV707	0189001
RT301	0189001
RT701	0189001
RT702	0189001
RT703	0189001
L101	2137001
L102	2137001
L151	2137001
L151	2137001
L152	2757001
L153	2757001
L154	2137001
L155	2137001
L156	2137001
L171	2137001
L501	2227001
L701	2227001
MISCELLANEOUS	
S001	2789001
S201	2629001
S401	2629001
S402	2628001
S403	2629001
△S601	2629001
S701	2639001
J401L,R	2678001
J501	2678001
BPf1	2137001
CF201	2135001
T101	2135001
T201	2154001
T202	2154001
T203	2154001
T401	2136001
T701	2267001

[illegible]

SYMBOL NO.	PART NO.	DESCRIPTION
D501	2398081	1N4148
D601	2398062	1N4001
D602	2398062	1N4001
D603	2398062	1N4001
D604	2398062	1N4001
D701	2337641	1SS81
D702	2398082	1N4148
ZD501	2337541	HZ-7A-1
ZD701	2338672	RD39EB6
ZD702	2338091	μ PC574j
LED1	2397753	LN217RP
VCD1	2398371	1SV50 (1)
VCD2	2398371	1SV50 (1)
VARIABLE RESISTORS		
RV401L,R	0166932	10k Ω (A)
RV402L,R	0166944	10k Ω (B)
RV702	0189351	100k Ω (B)
}	}	}
RV707	0189351	100k Ω (B)
RT301	0189331	5k Ω $\times$ 8
RT701	0189334	20k Ω $\times$ 8
RT702	0189332	10k Ω $\times$ 8
RT703	0189332	10k Ω $\times$ 8
COILS		
L101	2137680	FM RF coil
L102	2137689	FM OSC coil
L151	2137662	SW antenna coil (for E)
L151	2137661	SW antenna coil (for E (BS))
L152	2757994	Ferrite antenna
L153	2757994	Ferrite antenna
L154	2137671	SW OSC coil
L155	2137631	MW OSC coil
L156	2137642	LW OSC coil
L171	2137684	Choke coil
L501	2227748	Choke coil
L701	2227748	Choke coil
MISCELLANEOUS		
S001	2789801	Switch, leaf
S201	2629282	Slide switch
S401	2629293	Slide switch
S402	2628581	Slide switch
S403	2629331	Slide switch
S601	2629261	Slide switch
S701	2639626	Push switch
J401L,R	2678781	2P pin jack
J501	2678234	Headphone jack
BPF1	2137191	FM band pass filter
CF201	2135321	Ceramic filter
T101	2135651	FM IF transformer
T201	2154952	AM IF transformer
T202	2154964	FM IF transformer
T203	2154951	AM IF transformer
T401	2136891	REC OSC transformer
T701	2267021	DC-DC conv. trans

SYMBOL NO.	PART NO.	DESCRIPTION	
CT151	0283130	Semi variable capacitor	
CT152	}	}	
CT153			0283130
CT154			0283557
CT155	0283557		
CT156	0282148	Semi variable capacitor	
CT101	0282381	Variable capacitor with variable resistor	
CT150	}	}	
CV151			
CV152			
RV701	0282381	Variable capacitor with variable resistor	
△ F601	2728073	Fuse T1.25A	
	2737441	MIC	
△ P.T.	2249601	Power transformer 320G 7.8VA (for E)	
△ P.T.	2249602	Power transformer (for E(BS))	
△	2707709	Power supply cord (for E)	
△	2717902	Power supply cord (for E(BS))	
	2504841	M PWB assembly	
	8691406	Screw, 3x6 BT bind head	
	8691408	Screw, 3x8 BT bind head	
△ P001	2689461	2P Terminal	

● Cassette Chassis (TN-21-582 mecha. assembly)

ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION
1	4818991	Main base ass'y	25	4820218	Spring, switch actuator	48	4819034	Take-up reel ass'y
2	4818992	Switch plate	26	4820219	Head panel	49	4819035	Record safety lever
3	4832411	Push button actuator ass'y	27	4819014	Head base	50	4819032	Spring
4	4820212	Lever, REC button	28	4832412	Sensing plate ass'y	51	4820236	Bracket, motor
5	4820213	Lever, PLAY button	29	4820221	Spring, head panel	52	4819036	Motor rubber
6	4818996	Lever, RWD button	30	4819018	MG arm	53	4819533	Screw, motor collar
7	4818997	Lever, FF button	31	4819006	PR stopper	54	4820235	Main belt
8	4818998	Lever, STOP button	32	4819045	Screw	55	4819043	Lever, eject slide
9	4818999	PAUSE button lever ass'y	33	4819017	Spring	56	4819044	Spring, eject slide lever
10	4818990	Lever, RWD	34	4802222	Pressure roller arm ass'y	57	4820242	Pack spring
11	4819131	Lever, PAUSE	35	4820223	Spring, pressure roller arm	58	2557321	Erase head
12	4819132	Spring, PAUSE lever	36	4832413	RF pulley arm	59	2555671	Record playback head
13	4819133	Stopper, PAUSE	37	4820225	Spring, RF pulley arm	60	4819063	Screw, tapping 2x3
14	4820214	Spring, button lever	38	4832414	RF collar arm screw	61	4819068	Screw, tapping 2x4
15	4820215	Sub chassis	39	4820227	Belt	62	4819607	Screw, bind tapping 2x5
16	4819007	Spring, button lever	40	4820231	Flywheel ass'y	63	4819069	Screw, 2x6
17	4819100	Spring, button lever	41	4819575	Reel PWB ass'y	64	4819060	Screw, 2x7
19	4819008	Spring, actuator	42	4832415	Take up gear plate ass'y	65	4819600	Screw, azimuth
20	4819009	Lever, AUTO	43	4832416	Take up roller gear	67	4819077	Washer, 1.2
21	4819000	Spring, AUTO lever	44	4819020	Spring, TG plate	68	4819078	Washer, 1.55
22	4820217	Spring, PLAY button lever	45	4832417	FF gear	69	4832432	Washer cut 2.05x4x0.5
23	2789801	Switch, leaf	46	4819037	Spring	71	4820366	Motor assembly
			47	4819033	Supply reel ass'y	72	4820241	Mat
						73	4819062	Lug

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