

HITACHI

SERVICE MANUAL

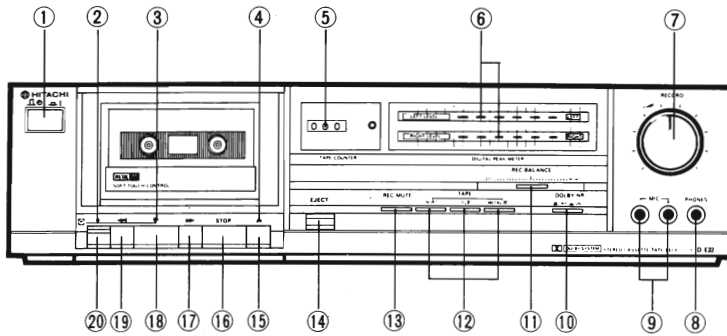
TK

No. 1682E

D-E22

(U,C,FS,BS,AU,W)

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KEY TO ILLUSTRATIONS

- | | |
|---------------------------|-----------------------------|
| ① POWER (MAINS) SWITCH | ⑪ RECORDING BALANCE CONTROL |
| ② RECORDING INDICATOR | ⑫ TAPE SELECT SWITCHES |
| ③ PLAYBACK INDICATOR | ⑬ REC. MUTE SWITCH |
| ④ PAUSE INDICATOR | ⑭ EJECT BUTTON |
| ⑤ TAPE COUNTER | ⑮ PAUSE BUTTON |
| ⑥ DIGITAL PEAK METERS | ⑯ STOP BUTTON |
| ⑦ RECORDING LEVEL CONTROL | ⑰ FAST FORWARD BUTTON |
| ⑧ HEADPHONE SOCKET | ⑱ PLAYBACK BUTTON |
| ⑨ MICROPHONE SOCKETS | ⑲ REWIND BUTTON |
| ⑩ DOLBY NR SWITCH | ⑳ RECORD BUTTON |

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 makes. Critical parts are marked with Δ in the schematic diagram, and circuit board diagram.
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

STEREO CASSETTE TAPE DECK

February 1982

TOKAI WORKS

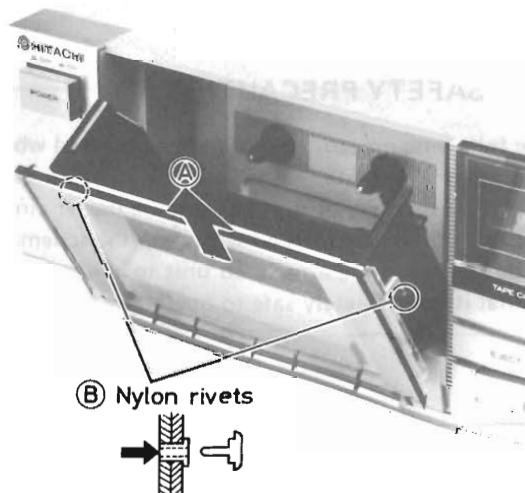
SPECIFICATIONS

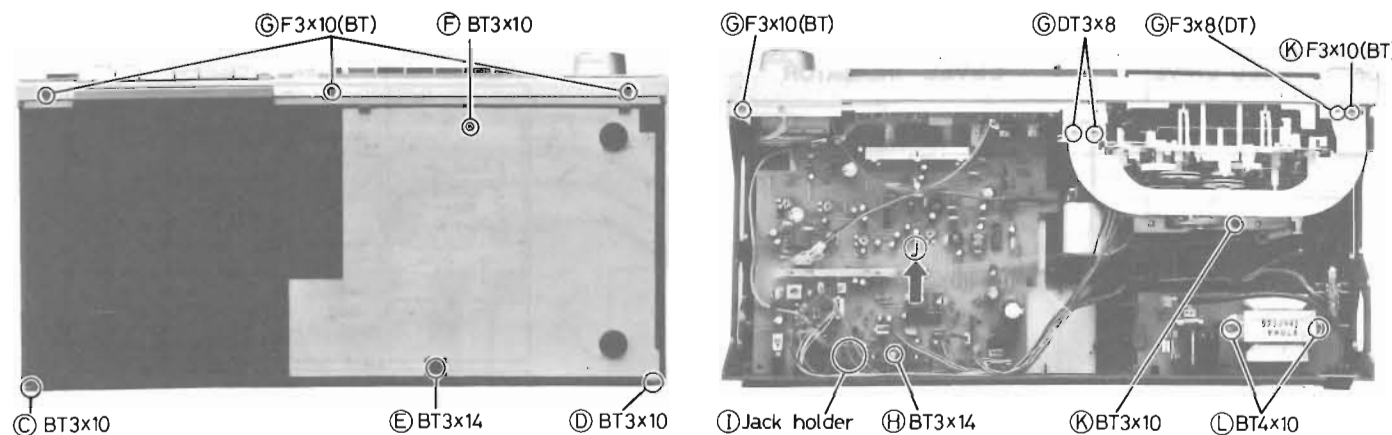
Semiconductors:		Wow and Flutter:	0.05% (WRMS) 0.17%*
ICs:	4	Input Sensitivity and Impedance:	
Transistors:	7	Microphone:	0.5 mV, 300 ohms~5k ohms
Diodes:	7 (U, C, BS) 8 (FS, AU, W)	Line in:	80 mV, 50k ohms or more
LEDs:	15	Record/Playback (DIN):	0.3 mV, 3k ohms (FS, AU, W)
Track System:	4 track 2 channel stereo	Output Level:	500 mV
Tape:	Cassette tape (C-30, 60, 90)	Output Load Impedance:	
Tape Speed:	4.75 cm/s	Line out:	50k ohms or more
Recording System and Bias Frequency:	AC bias, 85 kHz	Record/Playback (DIN):	50k ohms or more (FS, AU, W)
Erasing System:	AC erase	Headphone:	8 ohms~2k ohms
Erase Ratio:	65 dB or more (at 1 kHz)	Distortion:	1.0% (1 kHz, 160 nWb/m)
Frequency Response:		Crosstalk:	60 dB or more (at 1 kHz)
NOR-I:	20 Hz~15 kHz 30 Hz~14 kHz (±3 dB) 30 Hz~14 kHz*	Channel Separation:	30 dB or more (at 1 kHz)
CrO ₂ -II:	20 Hz~16 kHz 30 Hz~15 kHz (±3 dB) 30 Hz~15 kHz*	Power Supply:	AC 120V, 60 Hz (U, C) AC 220V, 50 Hz (FS) AC 240V, 50 Hz (BS, AU) AC 100-110V/115-127V/ 200-220V/230-250V, 50/60 Hz (W)
METAL-IV:	20 Hz~17 kHz 30 Hz~16 kHz (±3 dB) 30 Hz~16 kHz*	Power Consumption:	9W
S/N (Signal to Noise Ratio):		Dimensions:	110(H) x 435(W) x 227(D) mm
Dolby NR ON:	66 dB (Weighted A, Reference 3% THD Metal Tape) 65 dB*	Weight:	3.3 kg
Dolby NR OFF:	58 dB (Weighted A, Reference 3% THD Metal Tape) 57 dB*	Motor:	Electronically controlled DC motor
		Heads:	Metal SL Record/playback head Three-gap ferrite Erase head

* According to DIN 45 500

DISASSEMBLY

1. **Cassette clear panel**
 - 1) Depress the eject button to open the cassette door.
 - 2) Lift up the cassette clear panel in the direction of the arrow (A).
2. **Cassette door**
Remove (B) (two) nylon rivets.
3. **Upper cover**
Remove (C) and (D) (two) screws.
4. **Bottom cover**
Remove (D), (E) and (F) (three) screws.
5. **Front panel**
Remove (G) (seven) screws.
6. **Main PC board**
 - 1) Remove (E) and (H) (two) screws and jack holder (I).
 - 2) Lift up the front panel side of the PC board and pull the PC board in the direction of the arrow (J).
7. **Cassette chassis**
Remove (K) (two) screws.
8. **Power PC board**
Remove (L) (two) screws.





ADJUSTMENT

Perform the following adjustments in the sequence stated after cleaning the heads, pressure roller and capstan with a head cleaning stick moisted in alcohol. Also, unless otherwise specified, set the switches and controls to the positions indicated in the table.

Symbol No.	Switches and Controls	Position	Symbol No.	Switches and Controls	Position
S2-S4	Tape select switches	NOR-I	RV1	Recording level control	Max.
S5	Dolby NR switch	OFF	RV2	Recording balance control	Center
S7 (FS, AU, W only)	Input select switch	LINE			

* According to DIN 45 500

Item	Adjustments	Measuring Instrument and Connection			Check Tape	Mode	Adjusted Position	Adjusted Value	Remarks
		Measuring Instrument	Input Terminal	Output Terminal					
1	Tape speed	• Frequency counter	—	LINE OUT	MTT-111, 3000 Hz (3150 Hz*)	Playback	Semi-variable resistor in the motor	3000 Hz +30 Hz -10 (3150 Hz*)	See Note 1
2	Head azimuth	• VTVM	—	LINE OUT	MTT-316, 12.5 kHz	Playback	Azimuth adjusting screw	Output Max.	See Note 2
3	Playback gain	• VTVM	—	TP1L, R	MTT-150, 400 Hz, 200 nWb/m	Playback	RT1L, R	580 mV	See Note 3
4	Bias current	• VTVM	—	TP3L, R	—	Record	RT3L, R	15V	See Note 4
		Set RT2L, R to the center.							
		• Audio oscillator (1.25kHz/12.5kHz, 0dB -20dB) • Attenuator • VTVM	LINE IN	LINE OUT	Hitachi UD tape	Record/playback	RT3L, R	Output difference within ±1 dB	See Note 5
5	Record level	• Audio oscillator (400Hz, 0dB)	LINE IN	—	Hitachi UD tape	Record/playback	RT2L, R	Digital peak meter indicates 0dB	See Note 6
6	Digital peak meter	• Audio oscillator (400Hz) • Attenuator • VTVM	LINE IN	LINE OUT	—	Record	RT4L, R	0 dB indicator lights	See Note 7

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.
- Playback a test tape (MTT-150, 400 Hz 200 nWb/m) and adjust RT1L, R so that the level of TP1L, R becomes 580 mV.
- Adjust RT3L, R so that the bias voltage of TP3L, R becomes 15V in the recording mode.
- 1) Set RT2L, R to the center.
2) Feed a 1.25 kHz signal to the LINE IN jacks in the recording mode and adjust the audio oscillator output so that the digital peak meter indicates 0 dB. Then, adjust the attenuator to lower the input level by 20 dB.
3) Record the signal on Hitachi UD tape with the conditions of item 2), then continue to record with the audio oscillator frequency set to 12.5 kHz.
4) Playback the recorded signal and adjust RT3L, R so

that the output level difference between two frequencies is within ±1 dB measured at the LINE OUT jacks.

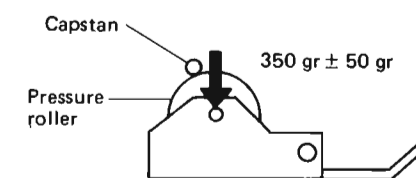
- 1) Feed a 400 Hz signal to the LINE IN jacks in the recording mode and adjust the audio oscillator output so that the digital peak meter indicates 0 dB.
2) Record the signal on Hitachi UD tape with the conditions of item 1).
3) Playback the recorded signal and adjust RT2L, R so that the digital peak meter indicates 0 dB.
- 1) Feed a 400 Hz signal to the LINE IN jacks in the recording mode and adjust the audio oscillator output so that the source monitor level at LINE OUT jacks becomes -3 dBm.
2) Then, adjust RT4L, R so that the digital peak meter indicates 0 dB.
3) Adjust the attenuator to lower the input level by 0.5 dB and adjust RT4L, R so that 0 dB indicators of the digital peak meter goes off.
4) Increase the input level by 0.5 dB and confirm the 0 dB indicators of the digital peak meter lights.

INSPECTION OF MECHANISM

Check Item	Reference Value	Remarks
1 Pressure of pressure roller	350 gr ± 50 gr	Note 1
2 Torque	Take-up	33 to 65 gr-cm Measure in playback mode
	Fast forward	70 to 120 gr-cm Measure in fast forward mode
	Rewind	70 to 120 gr-cm Measure in rewind mode
3 Back-tension	Take-up reel	6 gr-cm Measure in playback mode (with counter)
	Supply reel	1 ~ 3 gr-cm Measure in playback mode
4 Brake-torque	10 gr-cm or more	Measure in stop mode
5 Flywheel thrust gap	0.05 ~ 0.5 mm	

Note 1. Pressure of pressure roller

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 from the capstan.



LUBRICATIONS

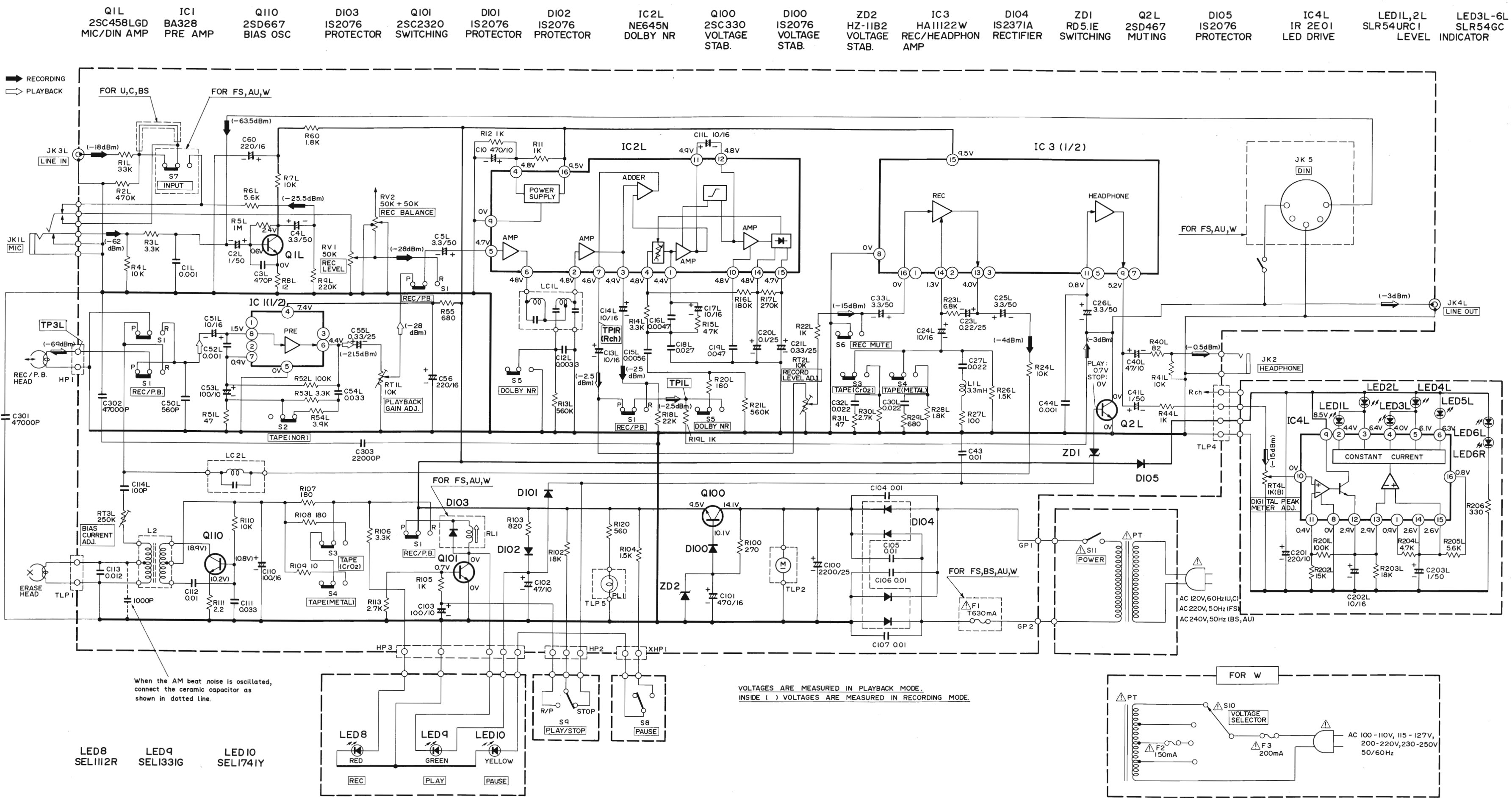
Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed once every 1000 hours or once a year under normal conditions of use. Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Lubrication	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	Floil (GB-TS-1)
Spring resonance prevention		

REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
CAPACITORS					
C 1LR	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10%	Q 1LR	5320024	TRANSISTOR SILICON 2SC458DLG
C 3LR	0209006	CERAMIC DISC (RESISTOR SHAPE) 470PF+-10%	Q 2LR	5321194	TRANSISTOR 2SD467BC
C 43	0209026	CERAMIC DISC (RESISTOR SHAPE) 0.01M F+-30%	Q100	5323131	TRANSISTOR 2SD330ALE
C 50LR	0209007	CERAMIC DISC (RESISTOR SHAPE) 560PF +-10%	Q101	5322623	TRANSISTOR 2SC2320EF
C 52LR	0209010	CERAMIC DISC (RESISTOR SHAPE) 1000P F+-10%	Q110	5322651	TRANSISTOR 2SD667C
C114LR	0208141	CERAMIC DISC (RESISTOR SHAPE) 100PF +-5%	ZD 1	5330848	ZENER DIODE RD5.1EB2
RESISTORS					
RT 1LR	5007477	SEMI VARIABLE 10K OHM	ZD 2	5330555	ZENER DIODE H211B2
RT 2LR	5007477	SEMI VARIABLE 10K OHM	COILS		
RT 3LR	5007482	SEMI VARIABLE 250K OHM	L 1LR	5150364	CHOKE COIL 3.3 MH
RT 4LR	5007474	SEMI VARIABLE 1K OHM	L 2	5260461	BIAS OSCILLATOR COIL
RV 1	5000876	VARIABLE RESISTOR 50K OHM(A)	MISCELLANEOUS		
RV 2	5023023	VARIABLE RESISTOR 100K OHM(B)	△	5746342	POWER CORD (BS)
R109	0170474	FUSE RESISTOR 10 OHM+-5% 1/4W	△	5746443	POWER CORD (U,C)
SEMI-CONDUCTORS					
D100-102	5330135	DIODE 1S2076A	△	5746571	POWER CORD (AU)
D103	5330135	DIODE 1S2076A (W,FS,AU)	△	5746661	POWER CORD (W,FS)
D104	5331831	DIODE 1SRBA10F	△F 1	5720174	FUSE 630MA (W,FS,BS,AU)
D105	5330135	DIODE 1S2076A	△F 2	5720105	FUSE 150MA (W)
IC 1	5350713	IC BA328-LN	△F 3	0591100	FUSE 200MA (W)
IC 2LR	5352592	IC NE645N	JK 1LR	5679824	JACK (MIC)
IC 3	5350462	IC HA11122	JK 2	5679824	JACK (HEADPHONE)
IC 4LR	5352401	IC IR2E01	JK 3LR	5676261	PIN JACK ASSEMBLY (LINE IN)
LED 1LR	5380482	LED SLR54URC1	JK 4LR	5676261	PIN JACK ASSEMBLY (LINE OUT)
LED 2LR	5380482	LED SLR54URC1	JK 5	5651141	5P DIN SOCKET (W,FS,AU)
LED 3LR	5380481	LED SLR-54GC	LC 1LR	5161666	DOLBY FILTER
LED 4LR	5380481	LED SLR-54GC	LC 2LR	5120562	TRAP COIL
LED 5LR	5380481	LED SLR-54GC	PL1	5765071	LAMP
LED 6LR	5380481	LED SLR-54GC	RL 1	5641141	REED RELAY (W, FS, AU)
LED 8	5380631	LED SEL1112R	S 1	5623435	SLIDE SWITCH (REC./P.B.)
LED 9	5380641	LED SEL1331G	S 2-6	5634435	PUSH SWITCH (TAPE, DOLBY NR, REC. MUTE)
LED 10	5380651	LED SEL1741Y	S 7	5633901	PUSH SWITCH (INPUT) [W, FS, AU]
			S 9	5633361	PUSH SWITCH (PLAY/STOP)
			△S 10	5605121	ROTARY SWITCH (VOLTAGE SELECTOR) [W]
			△S 11	5637038	PUSH SWITCH (POWER)
FOR ACCESSORIES					
				7740321	HEAD CLEANING STICK
				5894163	PATCH CORD
				5652291	SOCKET ADAPTER (W)

SCHMATIC DIAGRAM



Note

1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.

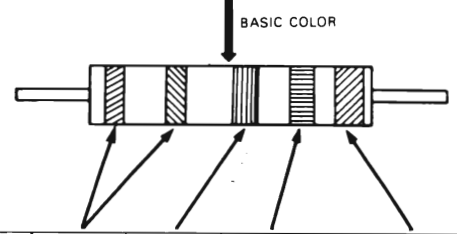
Resistor	
Value	No indicated Ω(Ohm) M : 1000Ω
Tolerance	No indicated ±5% K : ±10% M : ±20%
Wattage	No indicated ¼W
Sort	No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film

Capacitor	
Value	No indicated μF P : PF
Tolerance	No indicated ±10% J : ±5% M : ±20% Z : +80%, -20% D : ±0.5pF C : ±0.25pF
Sort	Ceramic Electrolytic Mylar Polyester Styrol
Voltage	No indicated 50VV

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with *, use specified ones stated on parts list since required temperature characteristics.

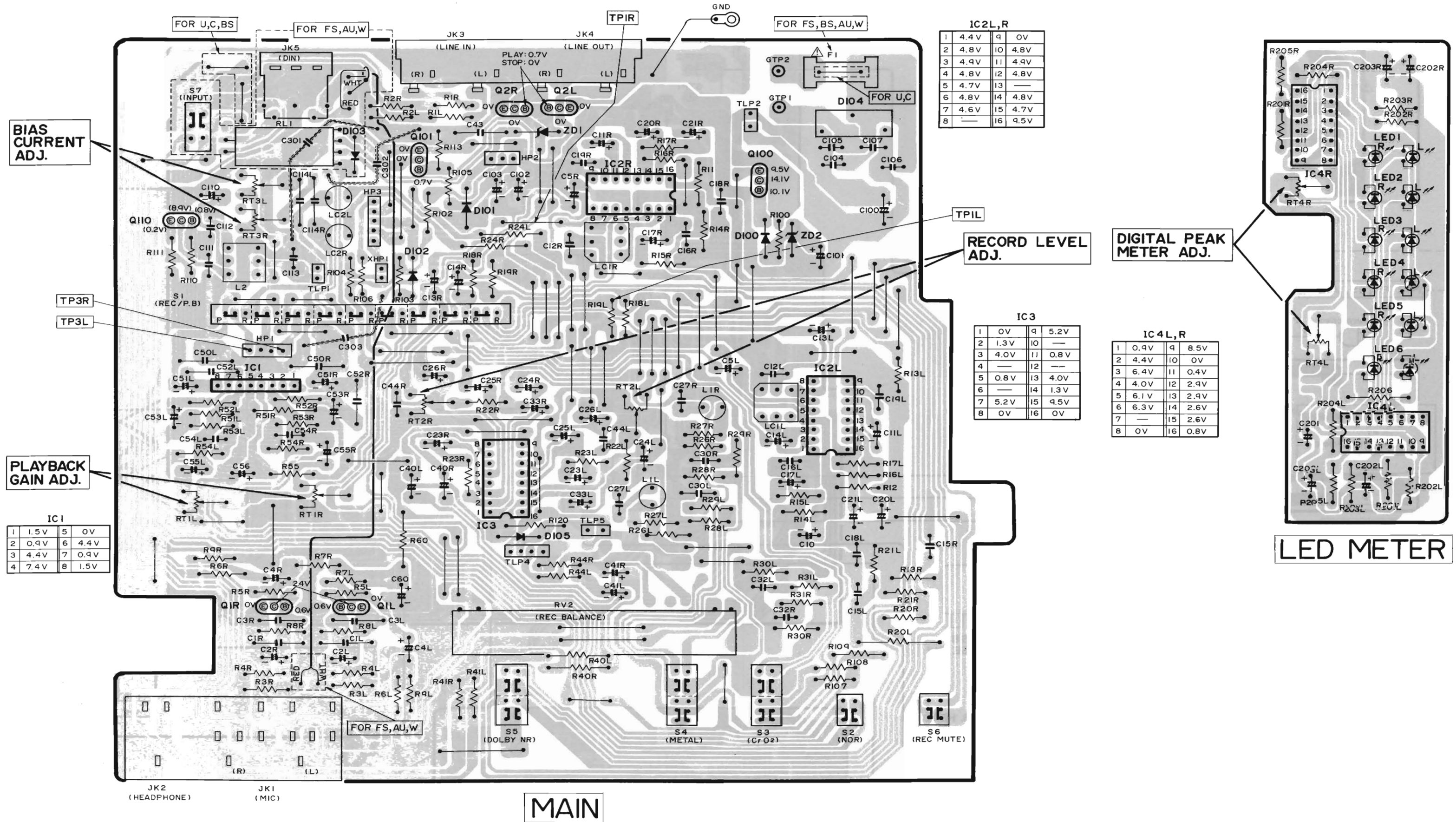
HOW TO READ CAPACITY OF RESISTOR SHAPE CAPACITORS

COLOR	RATED VOLTAGE
Pink	25V
Light green	50V



COLOR	CAPACITY	MULTIPLE	TOLERANCE	CHARACTERISTICS
Black	0	10 ⁰	±20%	For temperature compensation
Brown	1	10 ¹		
Red	2	10 ²		
Orange	3	10 ³		
Yellow	4	10 ⁴		
Green	5	10 ⁵		
Blue	6			
Violet	7			
Grey	8		±30%	High dielectric constant type
White	9			For temperature compensation
Gold		10 ⁻¹	±5%	
Silver			±10%	High dielectric constant type

CIRCUIT BOARD DIAGRAM



BIAS CURRENT ADJ.

TP3R

TP3L

PLAYBACK GAIN ADJ.

IC1			
1	1.5V	5	0V
2	0.9V	6	4.4V
3	4.4V	7	0.9V
4	7.4V	8	1.5V

IC2L,R			
1	4.4V	9	0V
2	4.8V	10	4.8V
3	4.9V	11	4.9V
4	4.8V	12	4.8V
5	4.7V	13	—
6	4.8V	14	4.8V
7	4.6V	15	4.7V
8	—	16	9.5V

RECORD LEVEL ADJ.

IC3			
1	0V	9	5.2V
2	1.3V	10	—
3	4.0V	11	0.8V
4	—	12	—
5	0.8V	13	4.0V
6	—	14	1.3V
7	5.2V	15	9.5V
8	0V	16	0V

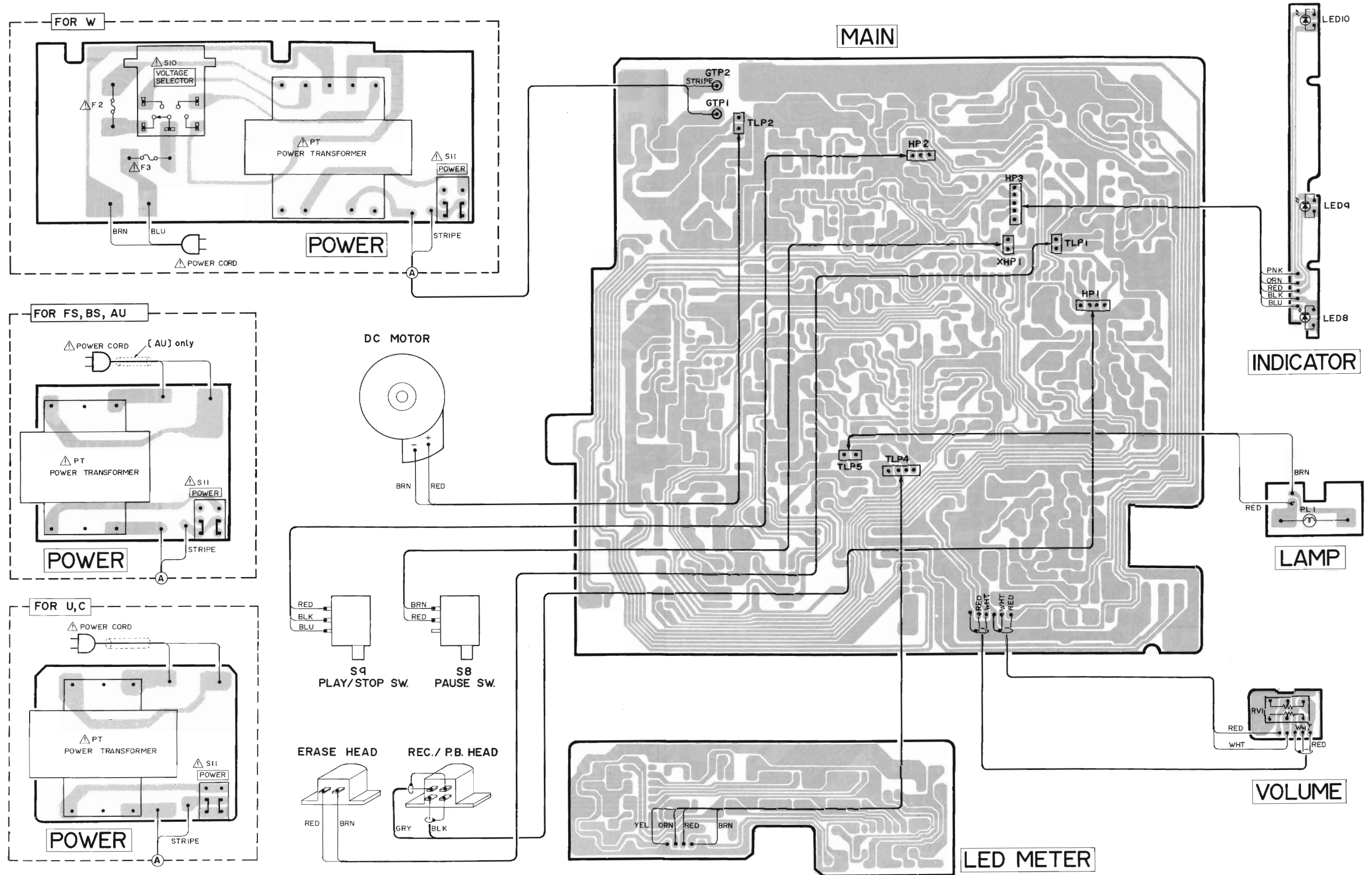
DIGITAL PEAK METER ADJ.

IC4L,R			
1	0.9V	9	8.5V
2	4.4V	10	0V
3	6.4V	11	0.4V
4	4.0V	12	2.9V
5	6.1V	13	2.9V
6	6.3V	14	2.6V
7	—	15	2.6V
8	0V	16	0.8V

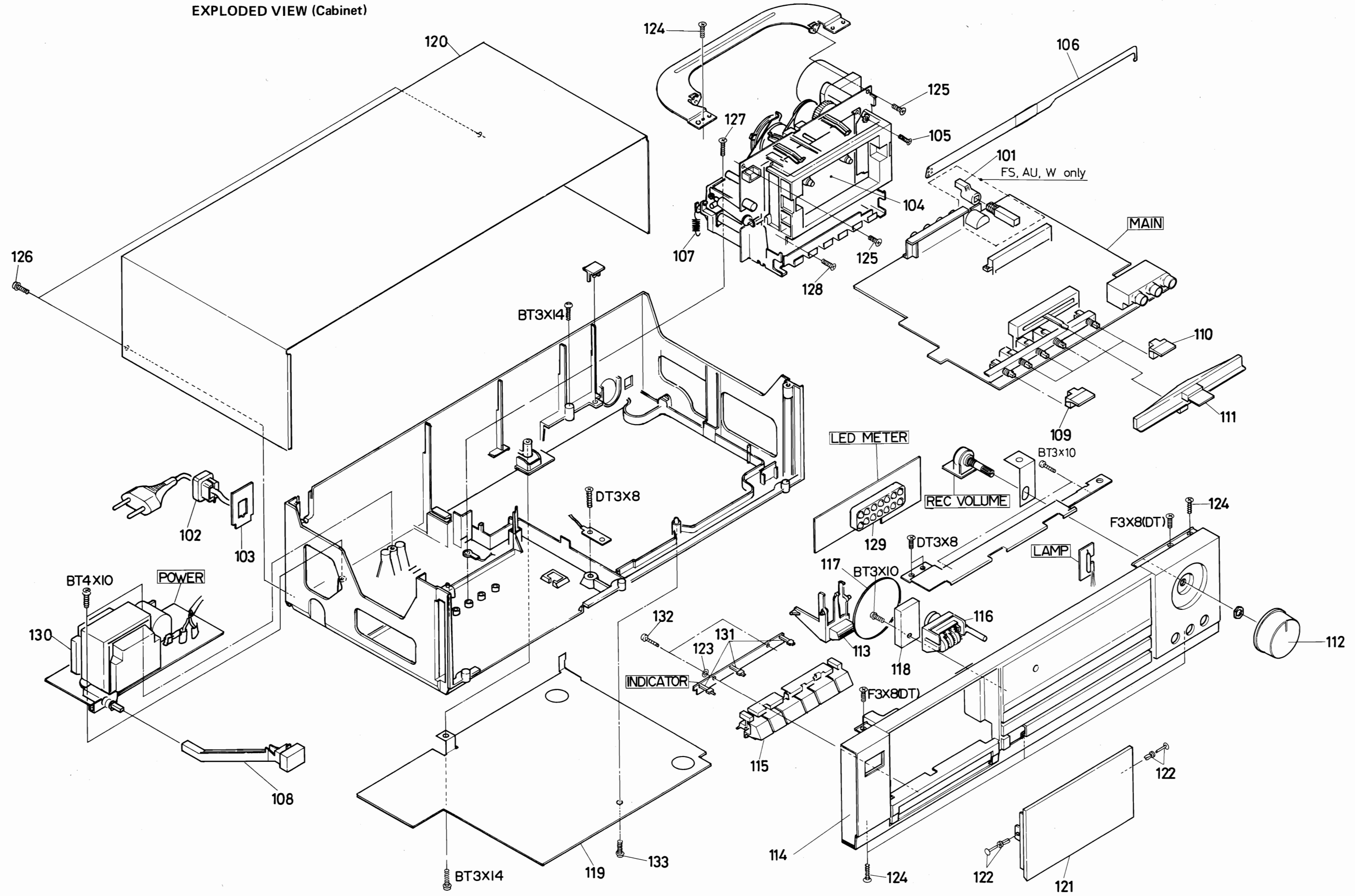
LED METER

MAIN

WIRING DIAGRAM

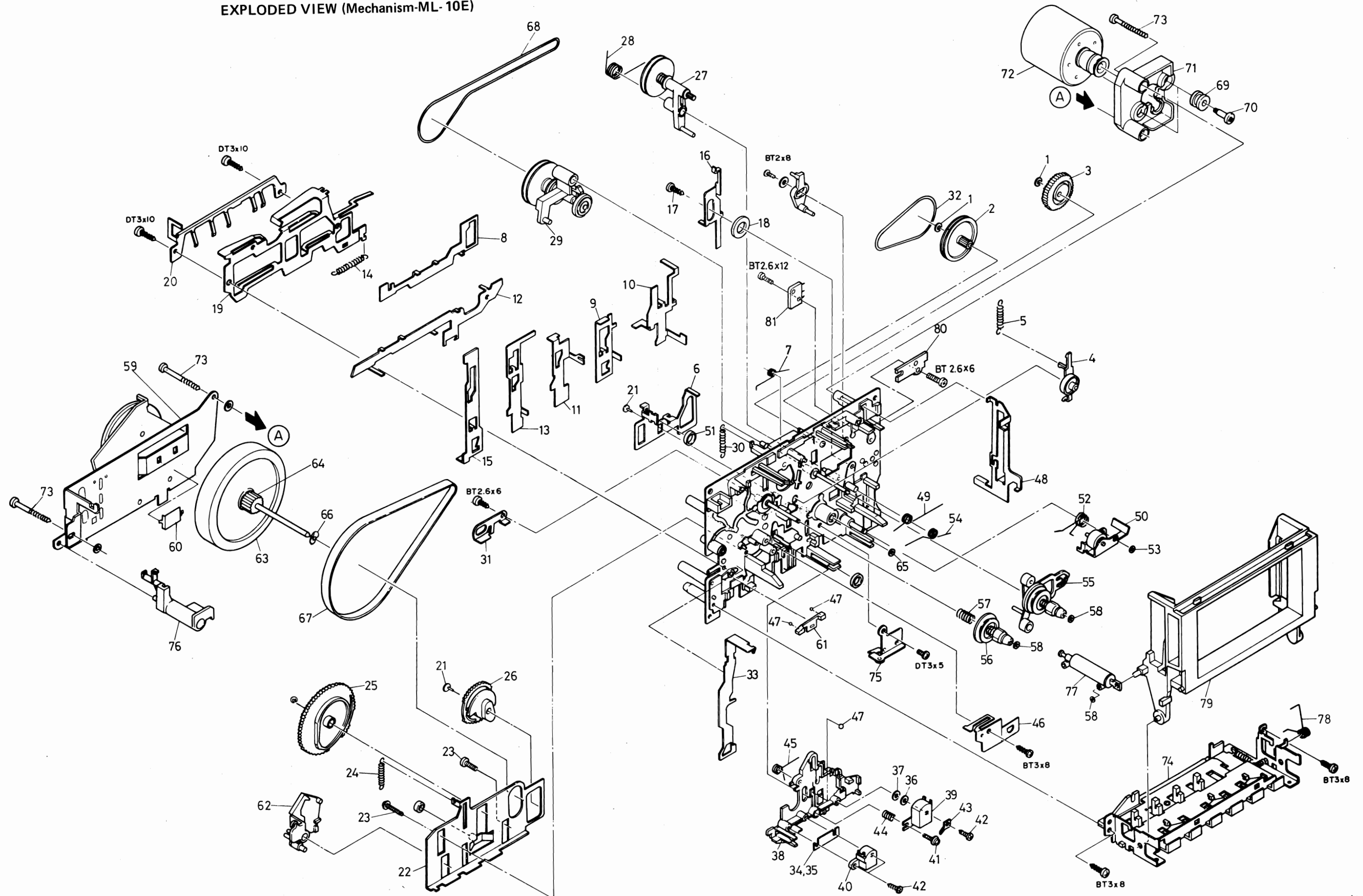


EXPLODED VIEW (Cabinet)



Note: Components marked without numbers in this drawing are not specified as replacement parts.

EXPLODED VIEW (Mechanism-ML-10E)

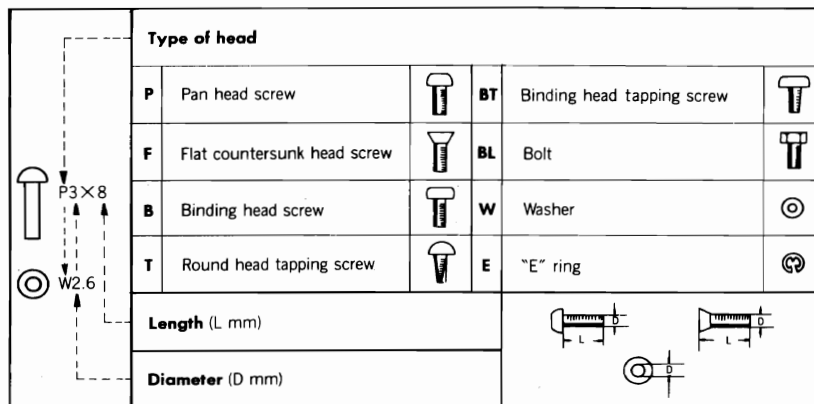


Note: Components marked without numbers in this drawing are not specified as replacement parts.

REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO.	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
MECHANISM (ML-10E)			42	7780913	BIND TAPPING SCREW-2MMDX10MM
1	7788061	POLY SLIDER WASHER	43	7342491	EARTH PLATE
2	6430982	PULLEY GEAR FOR AUTO STOP	44	6321733	HEAD SPRING C
3	6431291	CAM GEAR	45	6547733	HEAD PLATE SPRING
4	6762725	FF ARM ASSEMBLY	46	6534246	HEAD HOLDER SPRING
5	6540702	SPRING	47	0948492	BALL - 2MMD
6	7331678	BRAKE PLATE	48	7347932	EJECT SLIDER
7	6546562	SPRING FOR BRAKE PLATE	49	6546518	SPRING FOR EJECT SLIDER
8	7337198	AUTO STOP PREVENTION SLIDER ASSEMBLY	50	7329781	PRESSURE ROLLER ARM ASSEMBLY
9	7348441	FF SLIDER	51	6586007	BRAKE RUBBER
10	7331786	PAUSE SLIDER	52	6547553	SPRING FOR PRESSURE ROLLER
11	7348591	PLAY SLIDER	53	7786219	POLYESTER WASHER
12	7340006	LOCK PLATE	54	6546507	SPRING
13	7339992	REWIND SLIDER	55	6414234	TURNTABLE ASSEMBLY
14	6300083	SPRING	56	6414021	TURNTABLE ASSEMBLY
15	7347945	RECORD SLIDER	57	6305892	BACK TENSION SPRING
16	7343241	AUTO STOP SENSING LEVER	58	7786115	POLYESTER WASHER
17	7781133	BT SCREW-3MMD	59	7345154	FLYWHEEL SUPPORT ASSEMBLY
18	7787951	WASHER	60	6530926	FLYWHEEL SUPPORT SPRING
19	6535114	LEAF SPRING	61	6765041	BALL SUPPORT
20	6535282	LEAF SPRING	62	6765598	POWER ASSIST LOCK ARM
21	7552446	PIN	63	6374052	FLYWHEEL ASSEMBLY
22	7331879	POWER ASSIST SLIDER ASSEMBLY	64	6431501	FLYWHEEL GEAR
23	7781135	BT SCREW-3MMD	65	7786623	POLY SLIDER WASHER
24	6542021	SPRING FOR POWER ASSIST	66	7772623	SPRING
25	6431541	POWER ASSIST GEAR	67	6357163	FLYWHEEL BELT
26	6430975	PAUSE GEAR	68	6355381	BELT
27	6762675	TAKE UP ARM ASSEMBLY	69	6576082	RUBBER PLATE
28	6546453	SPRING FOR TAKE UP ARM	70	7539004	MOTOR FIXING SCREW
29	6762645	REWIND ARM ASSEMBLY	71	6766011	MOTOR HOLDER
30	6301704	SPRING	72	6420843	DC MOTOR ASSEMBLY
31	7333965	REWIND HOLDER	73	7781147	BT BIND HEAD SCREW-3MMDX30MM
32	6355382	BELT	74	7341333	BUTTON HOLDER ASSEMBLY
33	7347951	RECORD PREVENTION SLIDER	75	7334765	STOP ARM ASSEMBLY
34	7757052	SPACER	76	6763115	RECORD CHANGE ARM
35	7757051	SPACER	77	6769221	DAMPER ASSEMBLY
36	7771441	WASHER - 2 MMD	78	6546485	SPRING FOR CASSETTE HOLDER
37	7771442	WASHER-2MMD	79	6770513	CASSETTE HOLDER
38	6765806	HEAD BASE	80	7343301	E STOPPER
39	5449021	RECORD PLAYBACK HEAD	81 (S8)	5633361	PUSH SWITCH (PAUSE)
40	5445351	ERASE HEAD			
41	7781005	SCREW FOR HEAD MOUNTING			

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
MISCELLANEOUS			119	6045154	BOTTOM COVER
101	6050541	KNOB (INPUT) (W, FS, AU)	120	6045051	UPPER COVER (W, FS, BS, AU)
△ 102	6794401	BUSHING (U, C, W, FS, AU)	120	6045052	UPPER COVER (U, C)
△ 102	6794411	BUSHING (BS)	121	6093741	CASSETTE DOOR ASSEMBLY
103	7347131	BUSHING HOLDER	122	6795242	NYLON RIVET
104	6634034	CASSETTE METAL	123	7601203	WASHER-2.6MMD
105	0678316	DT SCREW-2.6MMDX16MM(BLACK)	124	7781581	BT FLAT SCREW-3MMDX10MM
106	7333334	RECORD PLATE	125	8602408	DT FLAT SCREW-3MMD x 8MM
107	6302746	SPRING FOR RECORD	126	8698410	BT BIND SCREW-3MMDX10MM (W, FS, BS, AU)
108	6768024	PUSH BUTTON ASSEMBLY (POWER) (U, C, W, AU)	126	8699410	BT BIND HEAD SCREW-3MMDX10MM (BLACK) (U, C)
108	6768025	PUSH BUTTON ASSEMBLY (POWER) (FS, BS)	127	8699410	BT BIND HEAD SCREW-3MMD x 10MM (BLACK)
109	6055752	PUSH BUTTON (REC. MUTE)	128	8691312	BT BIND SCREW-2.6MMDX12MM
110	6055751	PUSH BUTTON (TAPE, DOLBY NR)	129	6769431	LED SPACER
111	6292401	SLIDE KNOB ASSEMBLY (REC BALANCE)	△ 130	5212495	POWER TRANSFORMER (U, C)
112	6288851	KNOB ASSEMBLY (RECORD LEVEL)	△ 130	5212593	POWER TRANSFORMER (FS)
113	6292161	EJECT BUTTON ASSEMBLY	△ 130	5212594	POWER TRANSFORMER (BS, AU)
114	6770695	FRONT FRAME ASSEMBLY (U, C, W, AU)	△ 130	5212941	POWER TRANSFORMER (W)
114	6770696	FRONT FRAME ASSEMBLY (FS, BS)	131	6770642	LED SPACER
115	6060511	FUNCTION BUTTON ASSEMBLY	132	7780264	BT BIND SCREW -2.6MMD x 14MM
116	5559482	COUNTER	133	8691410	BT BIND SCREW -3MMD x 10MM
117	6354663	BELT			
118	6771651	COUNTER HOLDER			



When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.

**HITACHI SALES CORPORATION OF AMERICA****Eastern Regional Office**

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Tel. Tokyo (03) 502-2111

D-E22 TK No.1682E TOKAI

U,C,FS,BS,AU,W

RECEIVED NOV 1 2 1982

Technical Information

This equipment is a version in which the 5 P DIN socket contained in Serial No. xxx02551x is deleted.
The deleted parts, the P.W.B. drawings before and after the revision, and the revised basic circuit diagram are shown in the present service manual.

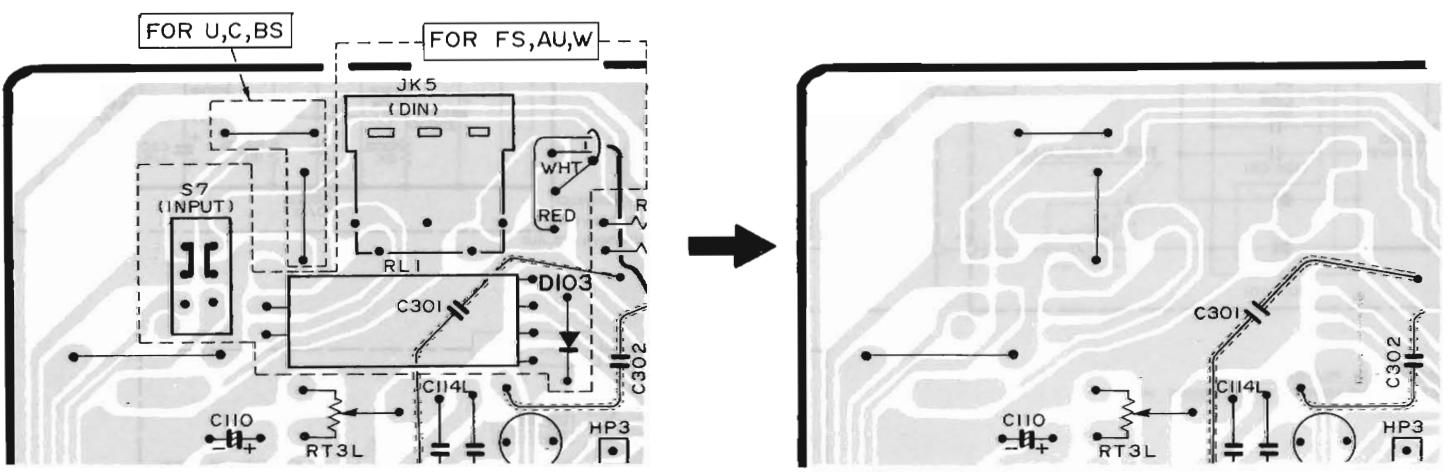
REPLACEMENT PARTS LIST (The deleted parts are shown here.)

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
D 103	5330135	1S 2076A	RL 1	5641141	Reed relay
S 7	5633901	Push switch (INPUT SELECTOR)		6050541	Knob (INPUT SELECTOR)
JK 5	5651141	5P DIN Socket			

PRINTED WIRING BOARD

Before the revision

After the revision



SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

STEREO CASSETTE TAPE DECK

May 1982 TOYOKAWA WORKS



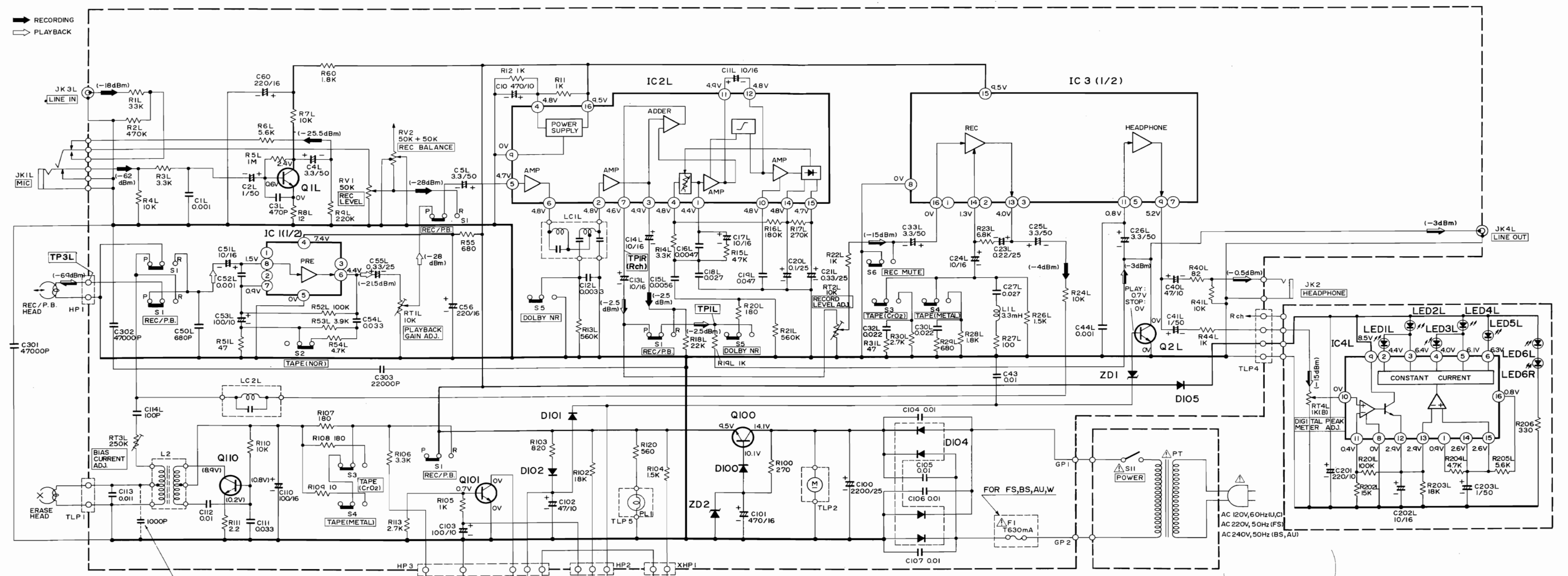
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D-E22 TK No. 1682 E-1 TOYOKAWA
(U, C, FS, BS, AU, W)

CIRCUIT DIAGRAM

- Q1L 2SC458LGD MIC/DIN AMP
- IC1 BA328 PRE AMP
- Q110 2SD667 BIAS OSC
- DIO3 IS2076 PROTECTOR
- Q101 2SC2320 SWITCHING
- DIO1 IS2076 PROTECTOR
- DIO2 IS2076 PROTECTOR
- IC2L NE645N DOLBY NR
- Q100 2SC330 VOLTAGE STAB.
- DIO0 IS2076 VOLTAGE STAB.
- ZD2 HZ-11B2 VOLTAGE STAB.
- IC3 HA11122W REC/HEADPHON AMP
- DIO4 IS2371A RECTIFIER
- ZD1 RD5.1E SWITCHING
- Q2L 2SD467 MUTING
- DIO5 IS2076 PROTECTOR
- IC4L IR 2E01 LED DRIVE
- LED1L,2L SLR54URC1 LEVEL INDICATOR
- LED3L-6L SLR54GC INDICATOR



When the AM beat noise is oscillated, connect the ceramic capacitor as shown in dotted line.

VOLTAGES ARE MEASURED IN PLAYBACK MODE.
INSIDE () VOLTAGES ARE MEASURED IN RECORDING MODE.

LED8 SEL1112R
LED9 SEL1331G
LED10 SEL1741Y

