

HITACHI

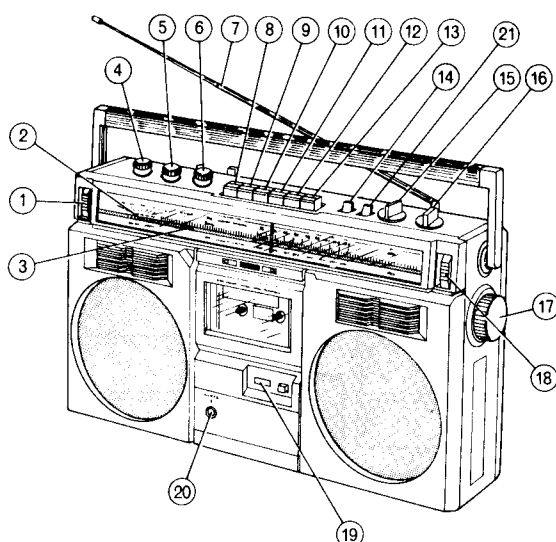
SERVICE MANUAL

TK

No. 1467E

TRK-7800E, E(BS)

KEY TO ILLUSTRATIONS



- ① BUILT-IN MICROPHONE (LEFT)
- ② LED LEVEL INDICATOR
- ③ FM STEREO INDICATOR
- ④ BALANCE CONTROL
- ⑤ TONE CONTROL
- ⑥ VOLUME CONTROL
- ⑦ TELESCOPIC ANTENNA (AERIAL)
- ⑧ PAUSE BUTTON
- ⑨ FAST-FORWARD/CUE BUTTON
- ⑩ REWIND/REVIEW BUTTON
- ⑪ PLAYBACK BUTTON
- ⑫ RECORD BUTTON
- ⑬ STOP/EJECT BUTTON
- ⑭ MODE SWITCH
- ⑮ FUNCTION SELECTOR
- ⑯ BAND SELECTOR
- ⑰ TUNING CONTROL
- ⑱ BUILT-IN MICROPHONE (RIGHT)
- ⑲ TAPE COUNTER
- ⑳ HEADPHONE SOCKET
- ㉑ TAPE SELECT SWITCH

SPECIFICATIONS

GENERAL SECTION

Semi-conductors : IC's : 9
Transistors : 9
Diodes : 12
Vari-cap : 1
LED : 6

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

Power (Mains) Consumption : 15W (E), 12W (BS)

Dimensions : 265 (H)×468 (W)×152 (D)

Weight : 4.9kg (with batteries)

Power output : 2.5W/CH (T.H.D 10%) 3.5W/CH M.P.O

Speaker : 120mm 2.8 Ohm×2
30mm 4 Ohm×2

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 1605 kHz
LW : 150 to 350 kHz

Sensitivity : FM : 10 dB (pra.) 0 dB (max.)
SW : 30 dB (pra.) 20 dB (max.)
MW : 45 dB (pra.) 35 dB (max.)
LW : 55 dB (pra.) 40 dB (max.)

Intermediate Frequency : FM : 10.7 MHz
SW/MW/LW : 465 kHz

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

TAPE RECORDER

Tape : Cassette tape (C-30, 60, 90)

Tape Speed : 4.75cm/s

Recording System and Bias Frequency : AC bias, 57 kHz

Erasing System : Quasi-AC erase

Track System : 4 track 2 channel

Frequency Response : 50 to 10,000 Hz

S/N (Signal to Noise Ratio) : 45 dB

Wow and Flutter : 0.1% (WRMS)

Distortion : 2%

Cross Talk : 60 dB (Between tracks)

Erase Ratio : 60 dB

Input Sensitivity and Impedance : Microphone -55 dB, 500 Ohms
Record/playback (DIN) 22.5mV, 50K Ohms

Output Level and Impedance : Record/playback (DIN) 400mV, 6K Ohms
Headphone 60 Ohms
Ext. speaker 3.2 Ohms

Fast Forward or Rewinding Time : 120 sec. (Using C-60)

Motor : DC Micro Motor

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANG TO IMPROVEMENT

CASSETTE TAPE RECORDER WITH FM/SW/MW/LW RADIO

Dec. 1980

TOKAI WORKS

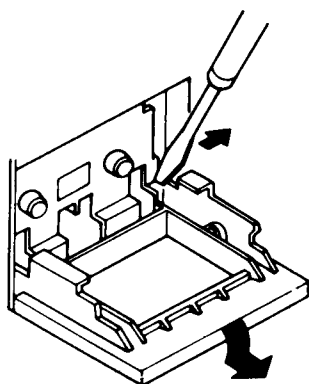
SAFETY PRECAUTION

The following precautions should be observed when servicing.

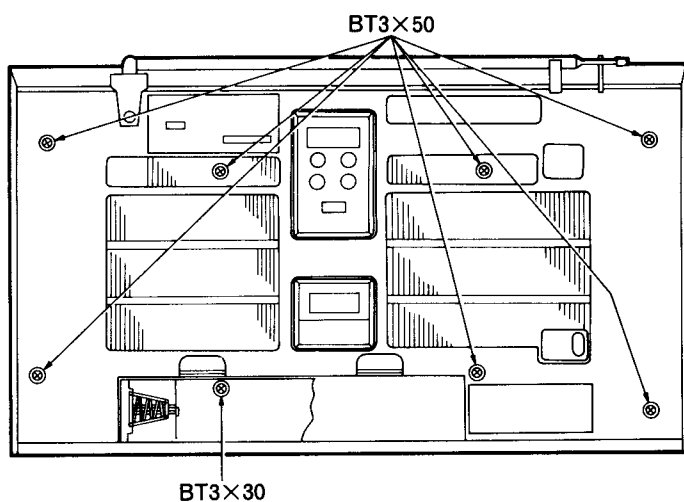
1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes. Critical parts are marked with $\triangle$ in the schematic diagram and circuit board 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.

DISASSEMBLY

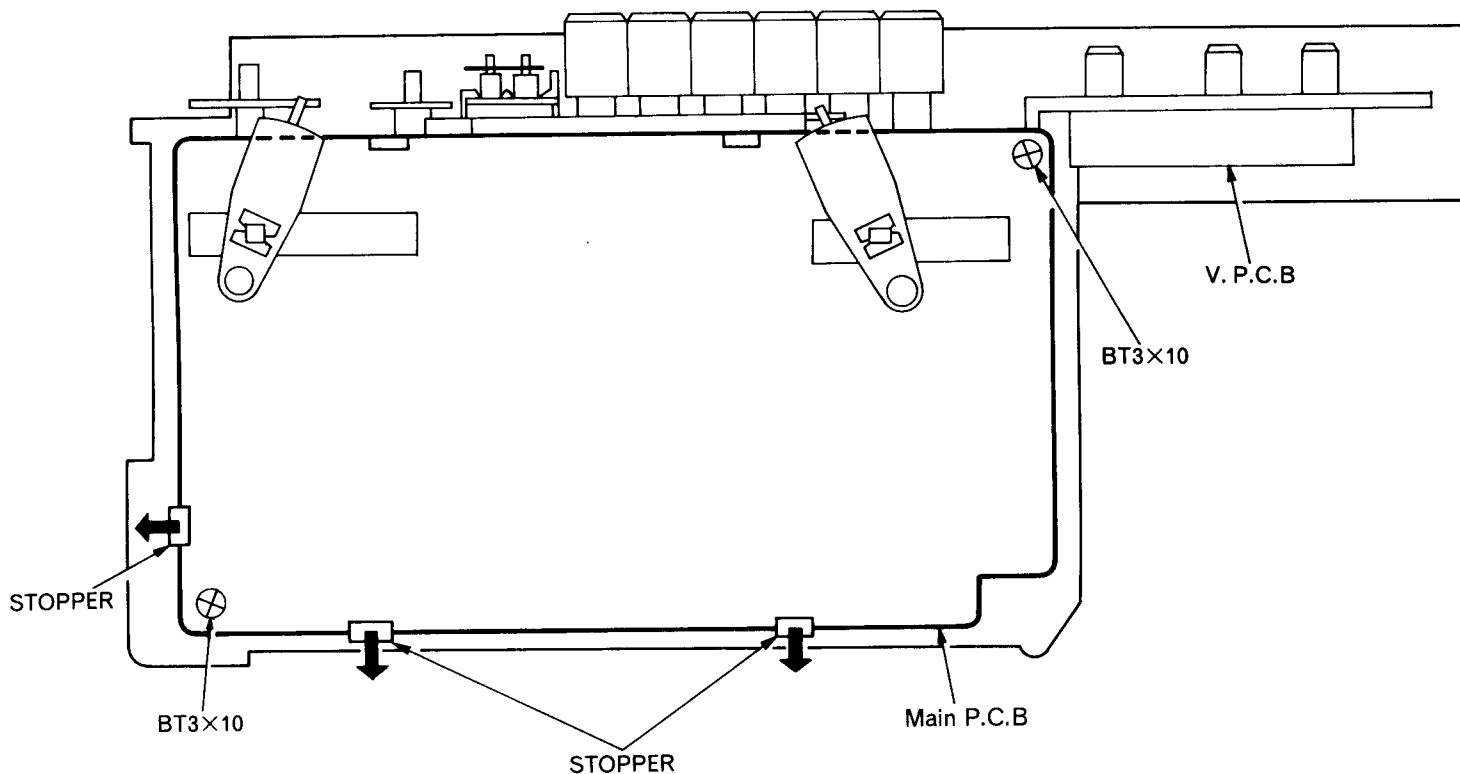
1. Cassette lid



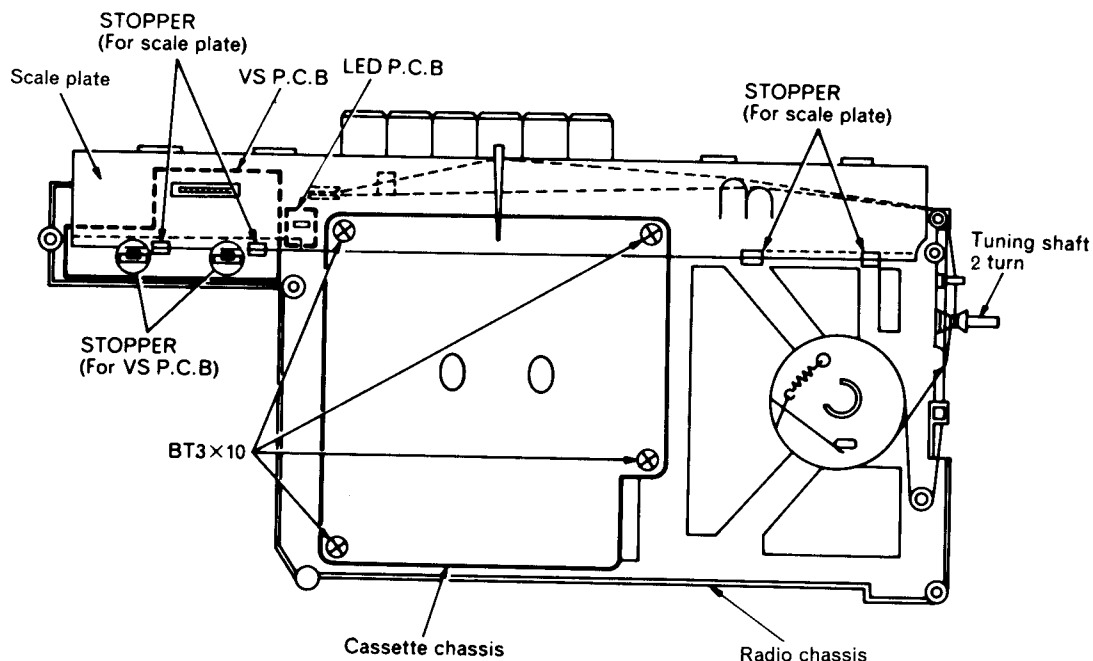
2. Rear case



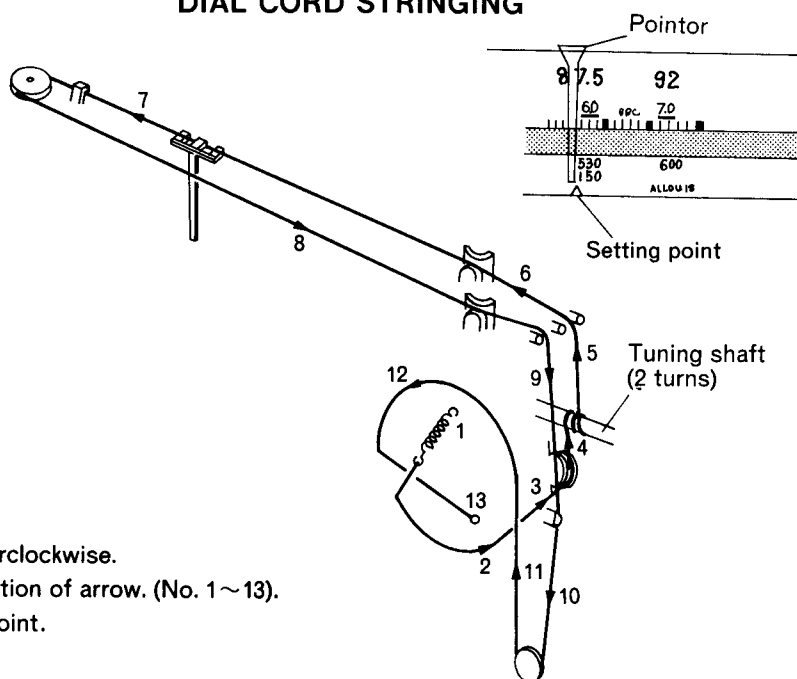
3. MAIN P.C.B



4. Cassette chassis and VS P.C.B



DIAL CORD STRINGING



STRING METHOD

1. Turn the pulley fully counterclockwise.
2. String the dial cord to direction of arrow. (No. 1~13).
3. Set the pointer to setting point.

LUBRICATION

Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed below 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
Spring resonance prevention		Froil (GB-TS-1)
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
	Mold and metal	(FL-LUBE-A)

ADJUSTMENT

TUNER

STEP	ADJUSTMENT ITEM		GENESCOPE GENERATOR	TERMINAL		DIAL POINTER POSITION	ADJUST	READING
				INPUT	OUTPUT			
1	FM IF	Tune	10.7 MHz	TP3	TP5 (TP6)	High end	T203	Note 1
		S-Curve					T101	Max.
								T203
2	FM RF	Covering	87.5 MHz	Antenna terminal (with dummy antenna) TP1, 2		Low end	L103	Max.
			108 MHz			High end	CT102	
		Tracking	90 MHz			90 MHz	L101	
			106 MHz			106 MHz	CT101	
3	AM IF		465 kHz	Ferrite-core antenna	TP4	High end	T201 T202 T204	Max.
4	SW RF	Covering	5.8 MHz	Antenna terminal (with dummy antenna) TP1, 2	TP4	Lowest	L156	Max.
			18.5 MHz			Highest	CT156	
		Tracking	6.5 MHz			6.5 MHz	L153	
			16 MHz			16 MHz	CT153	
5	MW RF	Covering	515 kHz	Ferrite-core antenna	TP4	Lowest	L155	Max.
			1650 kHz			Highest	CT155	
		Tracking	600 kHz			600 kHz	L152	
			1400 kHz			1400 kHz	CT152	
6	LW RF	Covering	145 kHz	Ferrite-core antenna	TP4	Lowest	L154	Max.
			360 kHz			Highest	CT154	
		Tracking	160 kHz			160 kHz	L151	
			330 kHz			330 kHz	CT151	
7	FM MPX		—	Note 3	TP7	—	RT301	19 kHz ±100 Hz

Note 1. Before FM IF adjustment, turn T203 fully counterclockwise.

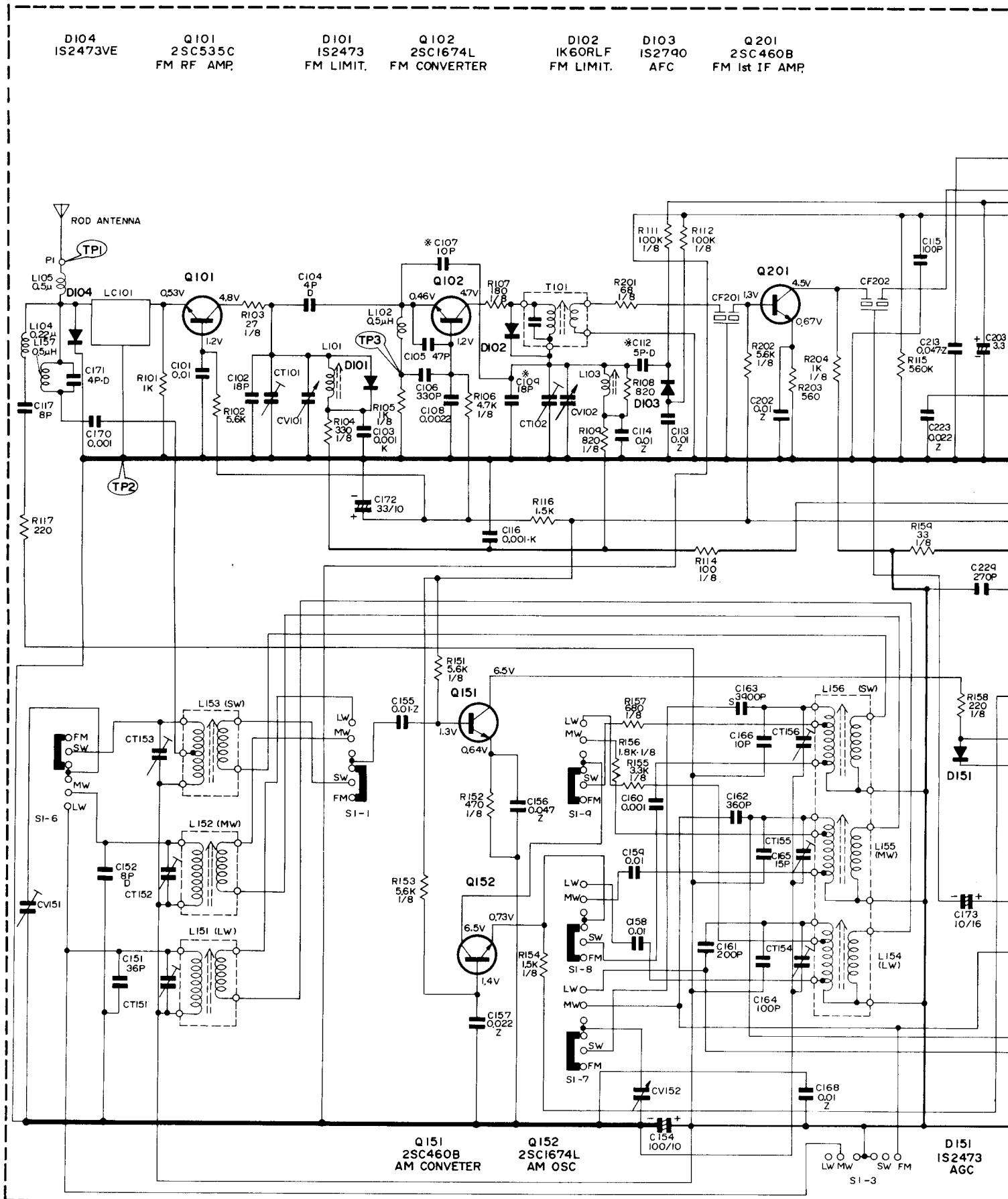
Note 2. Adjust T203 so that the output is like the S-curve for symmetrical sine wave.

Note 3. Connect a 10 μ F/25V electrolytic capacitor between the No. 2-pin of IC301 and Ground.

TAPE RECORDER

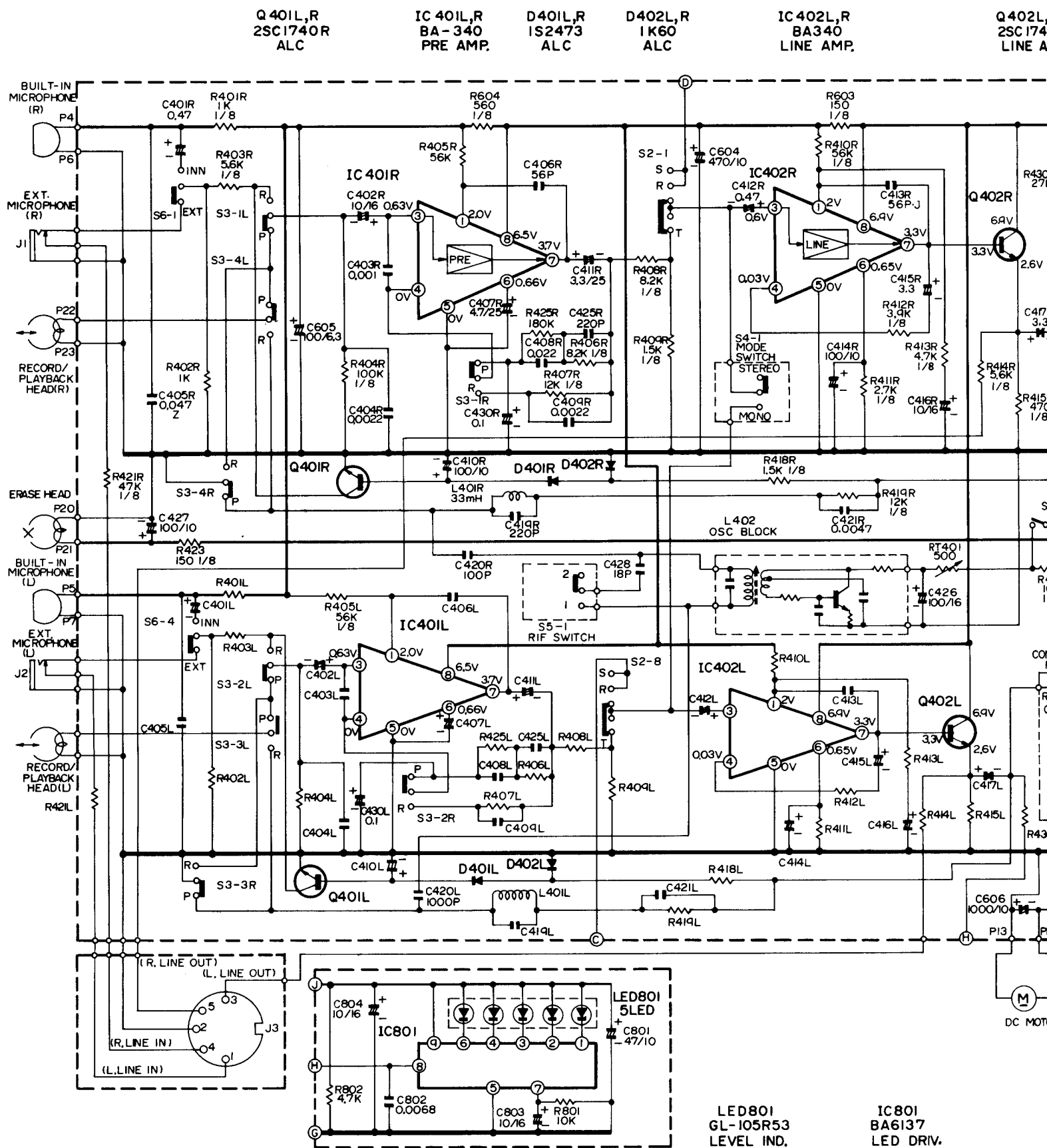
STEP	ADJUSTMENT ITEM	TAPE	MODE	TERMINAL		ADJUST	READING
				OUTPUT	INPUT		
1	Bias current	—	RECORD	Both terminal of R/P Head	—	RT401	21V (at METAL position)
2	Head azimuth	Test-tape (MTT-116L 10 kHz)	Playback	R/P Socket (output)	—	Azimuth adjustment screw.	Maximum output

SCHEMATIC DIAGRAM



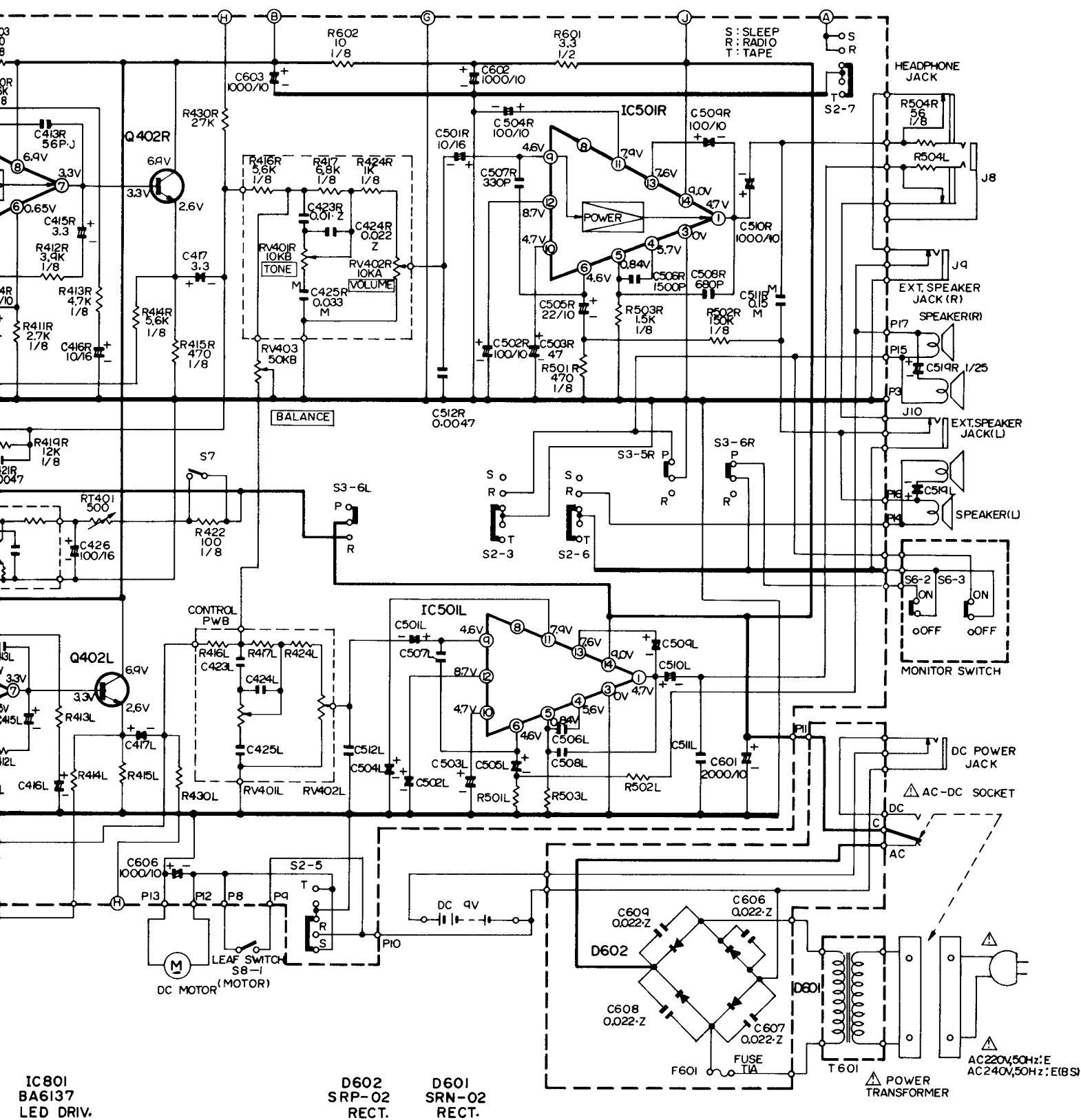


SCHEMATIC DIAGRAM



Q402L,R
2SC1740R
LINE AMP.

IC501L,R
LA-4112
POWER AMP.



Note

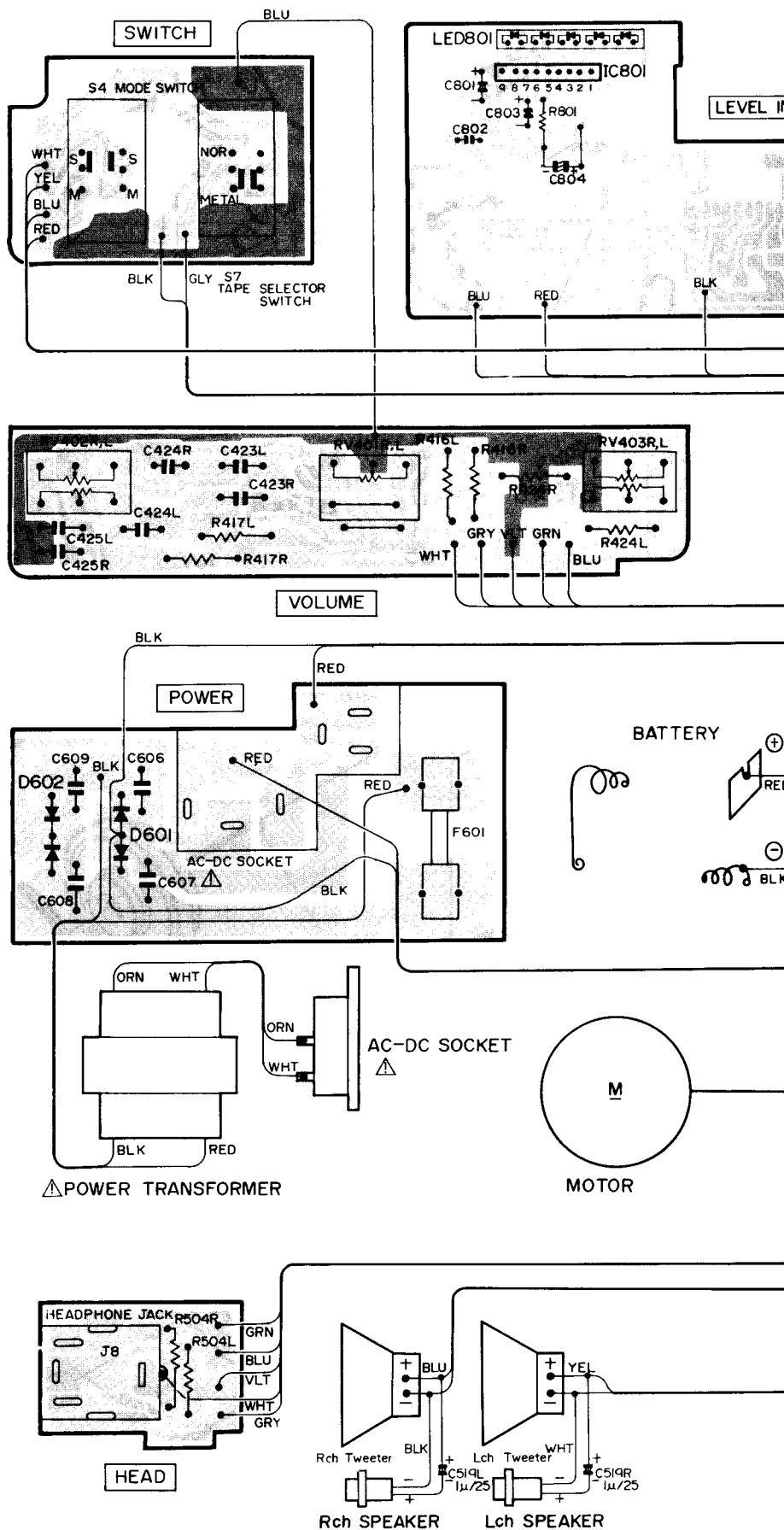
1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.

Circuit No.		
Value	No indicated	Ω (Ohm) M : 1000k Ω
Tolerance	No indicated	$\pm 5\%$ K : $\pm 10\%$ M : $\pm 20\%$
Wattage	No indicated	$\frac{1}{4}W$
Sort	No indicated	Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film

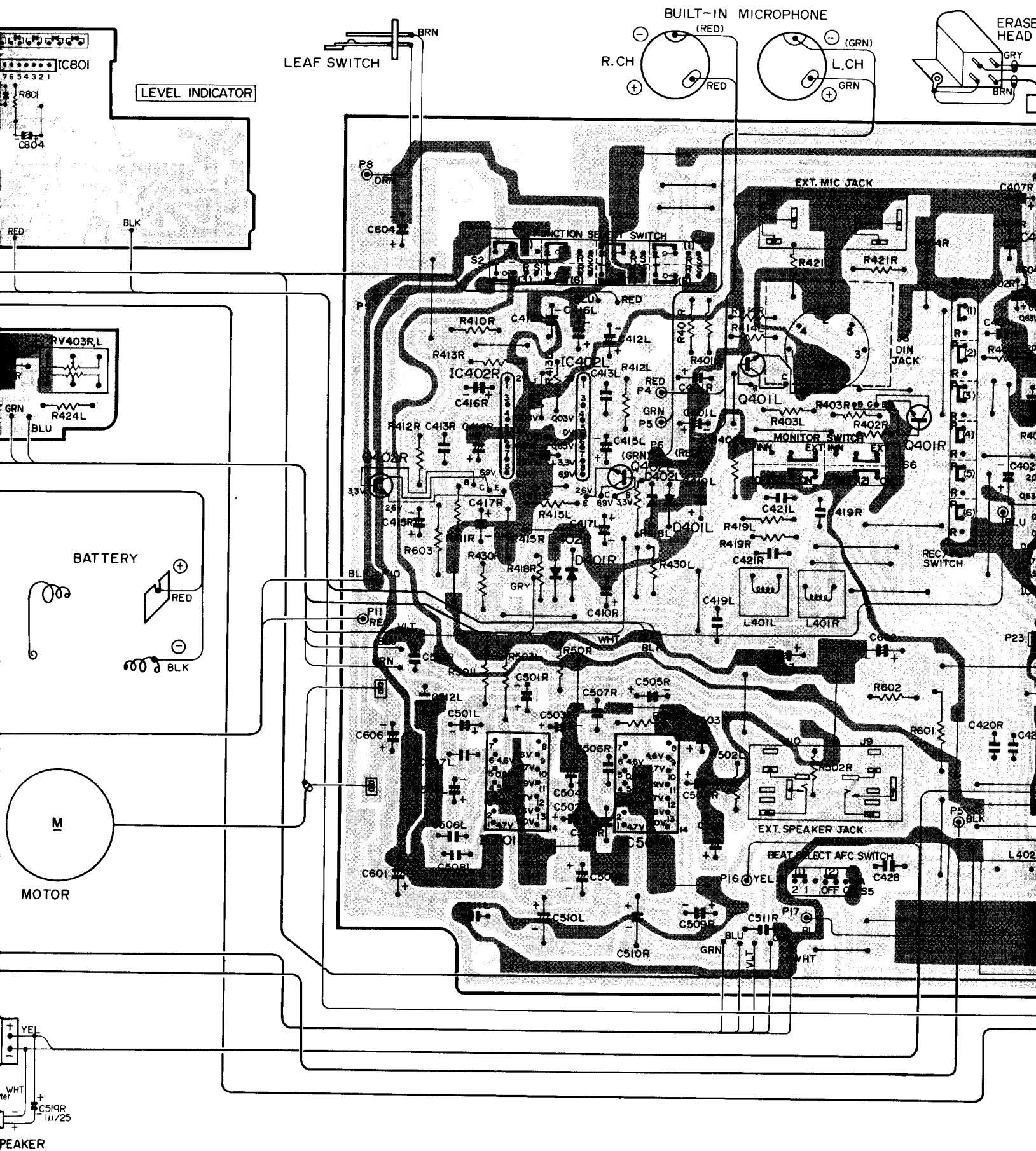
Circuit No.		
Value	No indicated	μF P : PF
Tolerance	No indicated	$\pm 10\%$ J : $\pm 5\%$ M : $\pm 20\%$ Z : $+80\%$ - 20% D : $\pm 0.5pF$ C : $\pm 0.25pF$
Sort		Ceramic Electrolytic Mylar Polyester Styrol
Voltage	No indicated	50VV

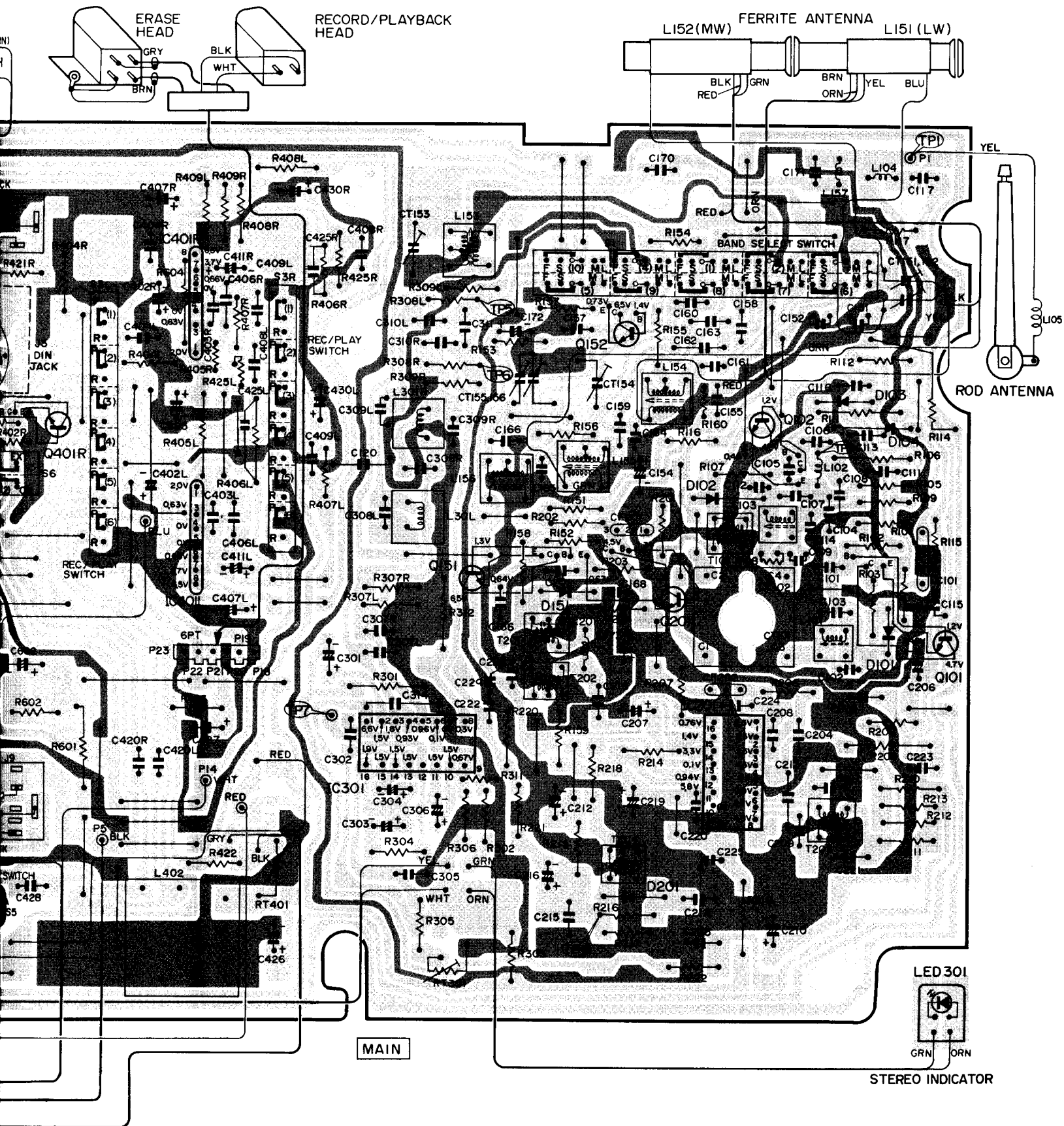
3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with *, use specified ones stated on parts list since required temperature characteristics.

CIRCUIT BOARD DIAGRAM



■ : Ground ■ : Signal, +B

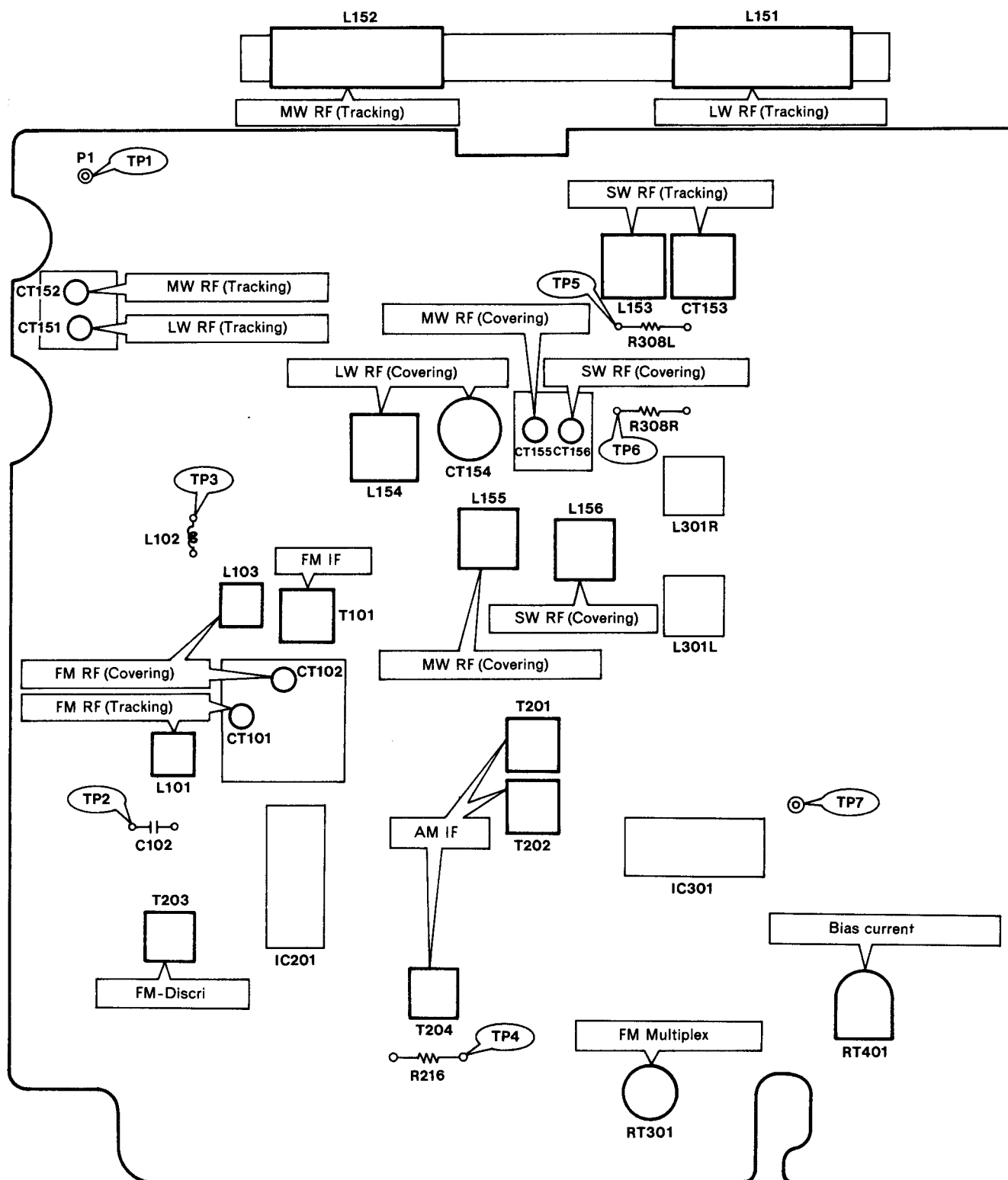




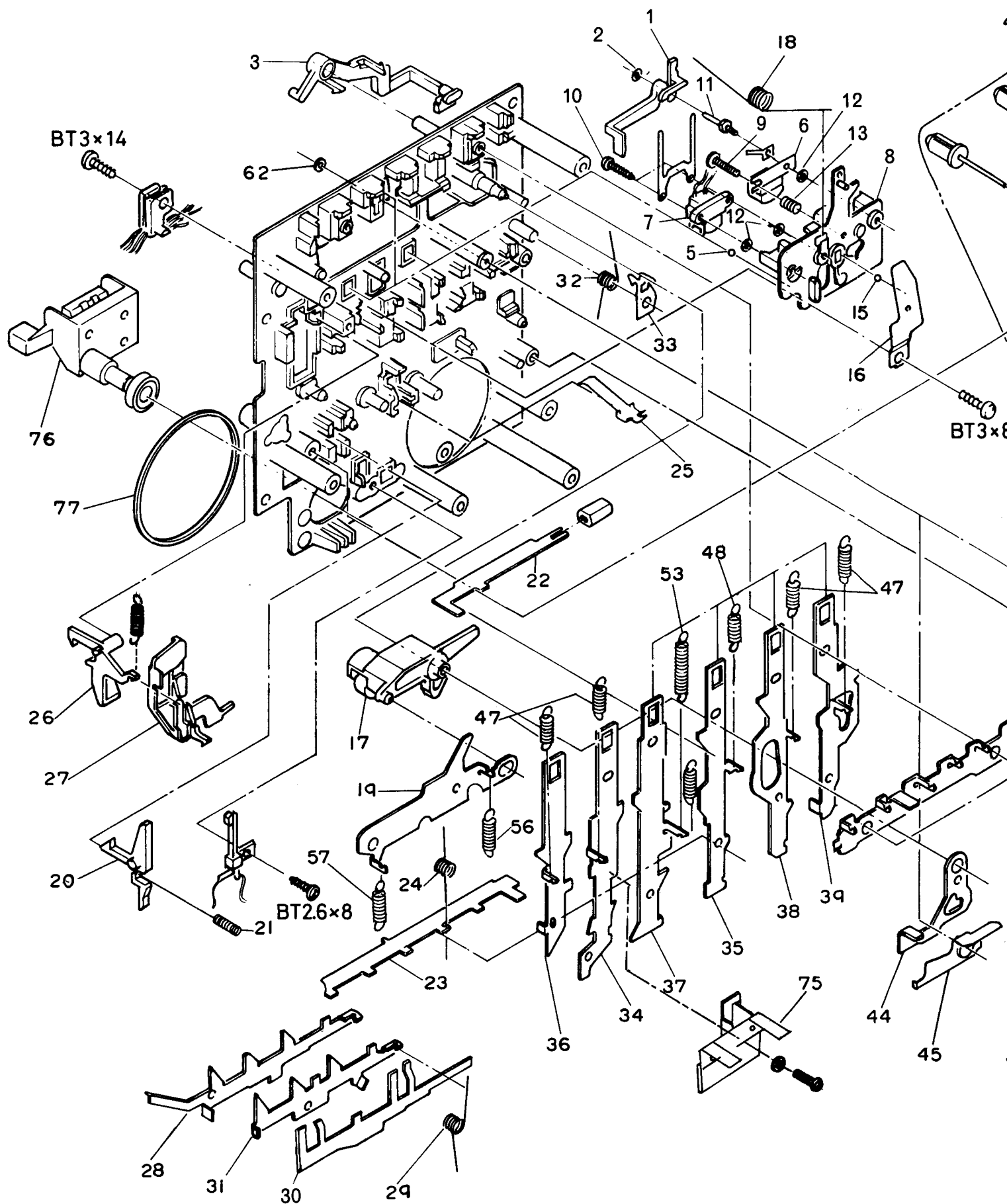
INSPECTION

Mode	Item	Pressure or Torque
Playback	Pressure of pressure roller	400~600gr
	Take-up torque	45~65gr-cm
	Supply reel back tension	1~4gr-cm
Rewind	Rewind torque	65~140gr-cm
Fast forward	Fast forward torque	65~140gr-cm

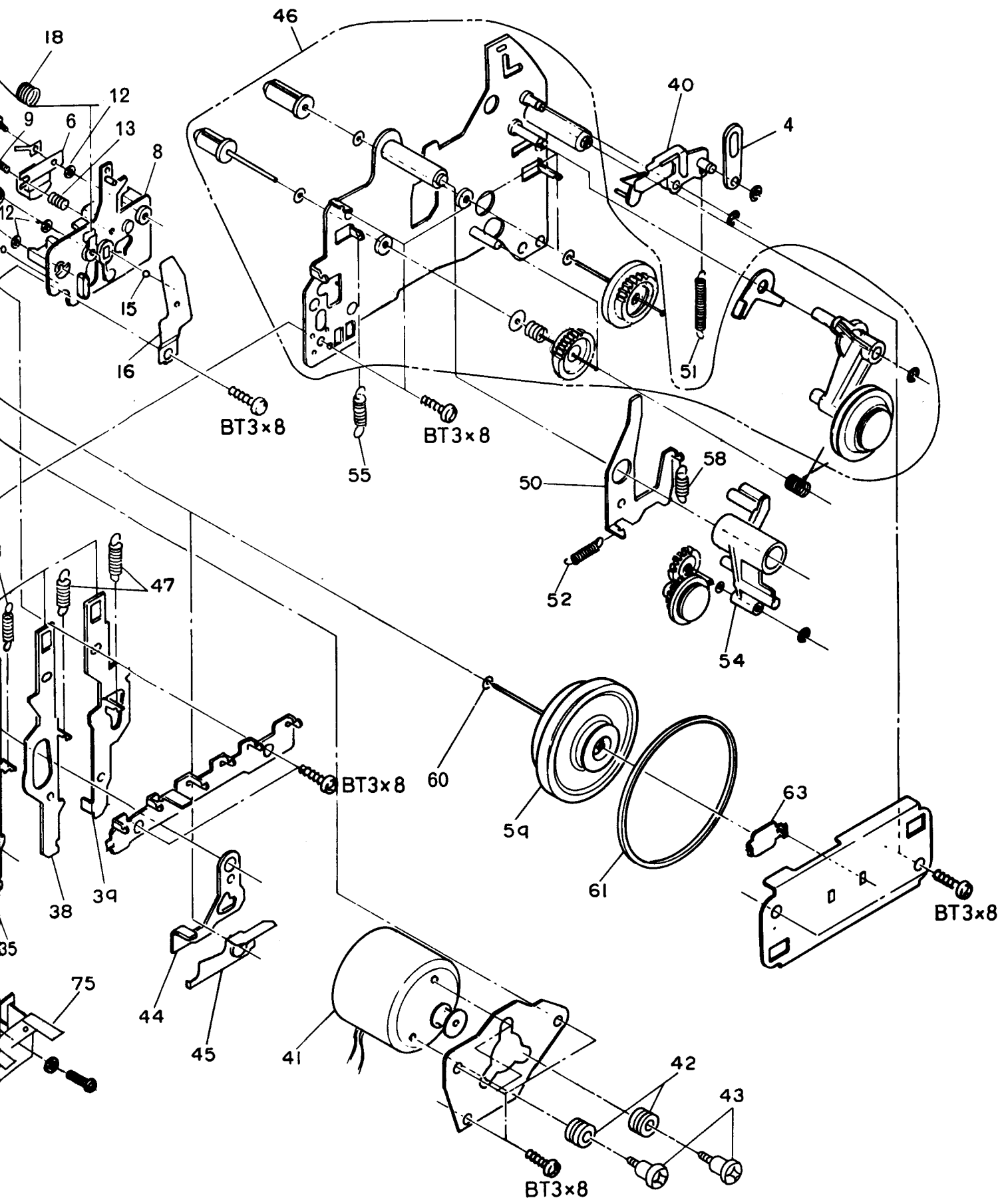
ADJUSTMENT PARTS LOCATION



EXPLODED VIEW

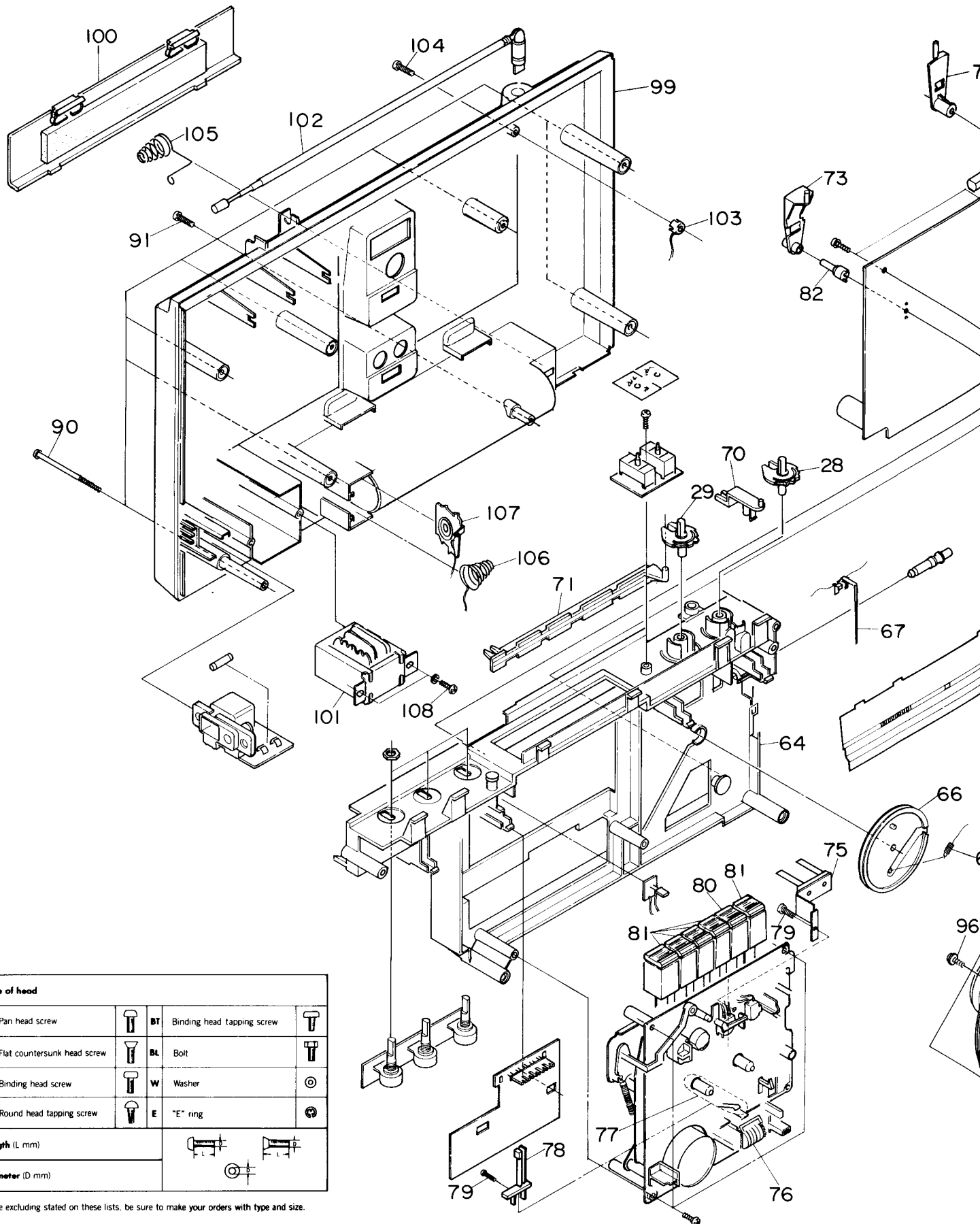


Note : Components marked without numbers in this drawing are not s

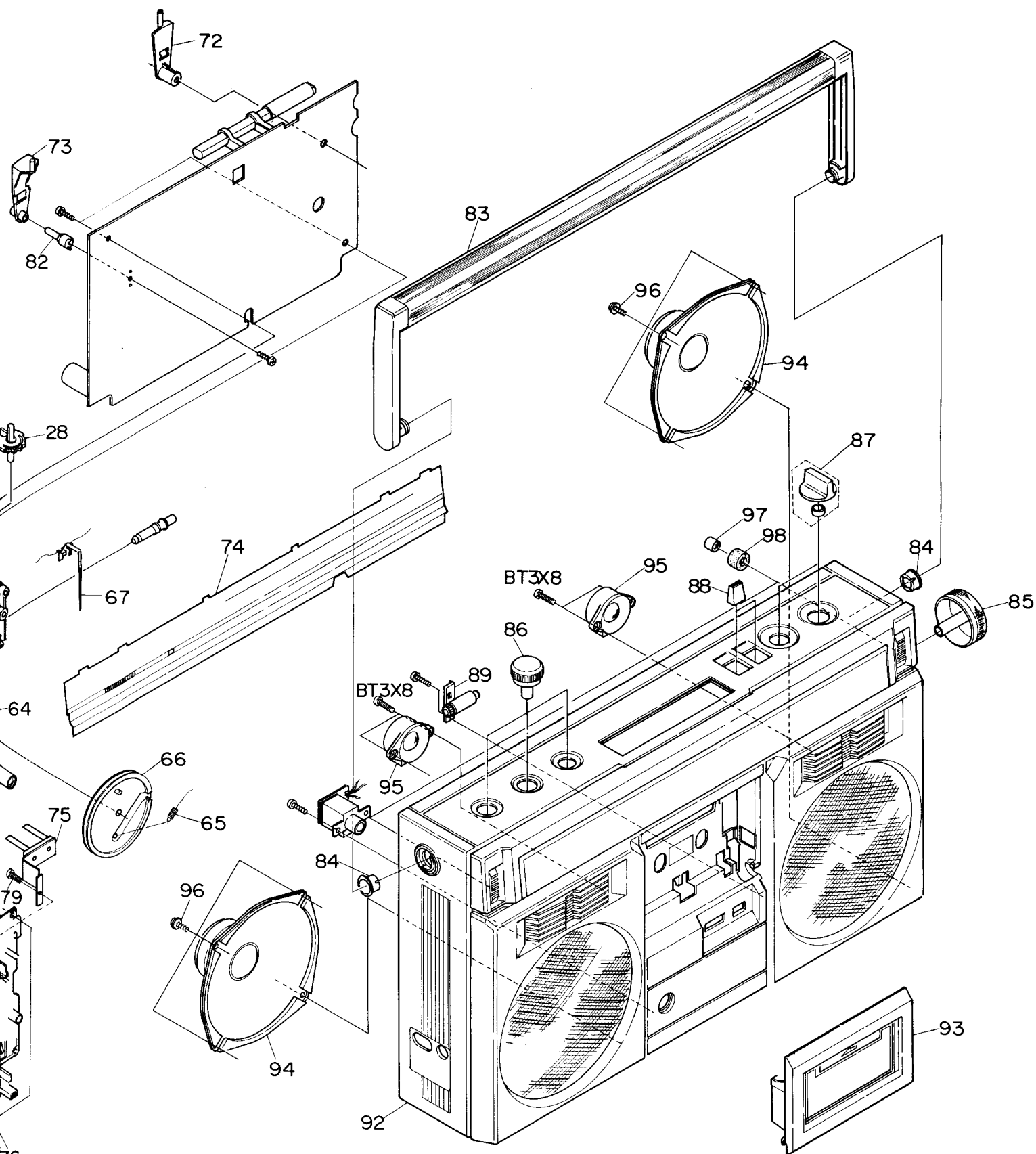


without numbers in this drawing are not specified as replacement parts.

EXPLODED VIEW



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



REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
FOR CASSETTE DECK ASSEMBLY (A)					
5	0948492	BALL - 2MMD	57	6323064	SPRING
6	5444991	RECORD PLAYBACK HEAD	58	6300996	SPRING
7	5445371	ERASE HEAD	59	6373361	FLYWHEEL ASSEMBLY
8	6761471	HEAD PLATE	60	7778856	POLYESTER WASHER
9	7781004	SCREW	61	6354211	BELT
10	7780913	TAPPING SCREW-2MMDX10MM	62	7786621	POLYSLIDER WASHER
11	7545533	SPECIAL SCREW	63	6743884	THRUST SUPPORT
12	7778183	POLYESTER WASHER	FOR CASSETTE DECK ASSEMBLY (B)		
13	6321733	HEAD SPRING C	64	6764191	CHASSIS ASSEMBLY
15	0948492	BALL - 2MMD	65	6316231	SPRING M
16	6329637	HEAD PLATE HOLDER	66	6345591	PULLEY
17	6383143	PRESSURE ROLLER ARM ASSEMBLY	67	6394551	POINTER
18	6307741	SPRING	68	6764281	EXCHANGE LEVER (4P)
19	7286183	LEVER FOR PLAY/RECORD	69	6764282	EXCHANGE LEVER (3P)
20	6741104	RECORD PREVENTION ARM	70	6764141	BAND ARM
21	6304161	SPRING	71	6764181	FUNCTION SLIDER
22	7286257	PLAY/RECORD PLATE	72	6764131	BAND LEVER
23	7308358	LOCK PLATE	73	6750872	LEVER (FUNCTION)
24	6307733	SPRING	74	6467982	SCALE PLATE
25	6530471	CASSETTE HOLDER	75	7298402	RECORDING SPRING ASSEMBLY
26	6740983	EJECT ARM	76	5559257	COUNTER
27	6761392	EJECT SLIDER	77	6355202	COUNTER BELT
28	7329702	SWITCH PLATE	78	5603451	LEAF SWITCH
29	6308102	SPRING	79	7780185	PAN HEAD B TIGHTENING SCREW-2.6MMDX 6MM
30	7338032	S LOCK PLATE	80	6257643	BUTTON ASS.(REC)
31	7329721	PLATE FOR REVIEW,CUE	81	6257644	BUTTON ASS.(PAUSE,FF,REW,PLAY,STOP/ EJECT
32	6307711	SPRING	82	6750881	STUD for FUNCTION LEVER
33	7286245	PAUSE LOCK PIECE	MISCELLANEOUS		
34	7329334	RECORD SLIDER	83	6334302	HANDEL ASSEMBLY
35	7329352	REWIND SLIDER	84	6763912	HANDEL PIECE
36	7329321	STOPE SLIDER	85	6283417	TUNING KNOB
37	7329341	PLAY SLIDER	86	6283523	KNOB (VOLUME,BALANCE,TONE)
38	7329311	FF SLIDER	87	6283391	KNOB ASSEMBLY (FUNCTION,BAND)
39	7329561	PAUSE SLIDER	88	6296851	LEVER KNOB
41	6420863	DC MOTOR ASSEMBLY	89	6763961	GEAR DAMPER ASSEMBLY
42	6576083	RUBBER PLATE	90	7781148	BT SCREW-3MMDX50MM
43	7539007	SPECIAL SCREW	91	7781147	BT BIND HEAD SCREW-3MMDX30MM
44	7287819	RC LEVER	92	6104782	FRONT CASE ASSEMBLY
45	7311143	FF FUNCTION LEVER	93	6764514	CASSETTE LID ASSEMBLY
46	7330865	TURNTABLE HOLDER ASSEMBLY	94	5406413	SPEAKER-12CM
47	6300375	SPRING FOR RECORDING PLATE	95	5409101	SPEAKER-3CM
48	6324814	SPRING	96	7781133	BT SCREW-3MMD
50	7286032	LEVER FOR FF/REWIND	97	5421571	BUILT IN MICROPHONE
40	7317882	SEETING OFF LEVER ASSEMBLY	98	6570221	MICROPHONE HOLDER
51	6302956	SPRING	99	6104802	REAR CASE ASSEMBLY (E)
52	6300375	SPRING FOR RECORDING PLATE		6104803	REAR CASE ASSEMBLY (BS)
53	6301233	SPRING	100	6172401	BATTERY LID ASSEMBLY
54	7109603	FF,REWIND ARM ASSEMBLY	101	5211921	POWER TRANS 4VA,400G (E)
55	6300981	SPRING			
56	6301361	SPRING			

SYMBOL-NO
CT151
CT152
CT153
CT154
CV101
CV102
CV151
CV152
C102
C107
C109
C112
C151
RT301
RT401
RV401LR
RV402LR
RV403LR
D101
D102
D103
D104
D151
D201
D401LR
D402LR
D601
D602
IC201
IC301
IC401LR
IC402LR
IC501LR
IC801
LED301
LED801
Q101
Q102
Q151
Q152
Q201
Q401LR
Q402LR
T101

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
CAPACITORS					
CT151	0283557	TRIMMER 8PF	T201	5130153	AM IF TRANSFORMER
CT152	0283557	TRIMMER 8PF	T202	0322127	IFT TRANSFORMER 30KOHM: 0.5KOHM
CT153	5058191	TRIMMER 10PF	T203	5140073	FM IF TRANSFORMER
CT154	5058102	VARIABLE CAPACITOR	T204	5130122	AM IFT
CV101	5052501	PLASTIC FILM VARIABLE CAPACITOR	COILS		
CV102	5052501	PLASTIC FILM VARIABLE CAPACITOR	L101	5126006	FM RF COIL 0.5 MICROH
CV151	5052501	PLASTIC FILM VARIABLE CAPACITOR	L102	5123271	FM TRAP COIL 0.5MH
CV152	5052501	PLASTIC FILM VARIABLE CAPACITOR	L103	5126564	FM OSCILLATOR COIL
C102	0248496	CERAMIC DISC 18PF+-5% (N-750)	L104	5150013	FM CHOKE COIL 0.25 MICROH
C107	0248310	CERAMIC DISC 10PF+-5%	L151	5113191	FERRITE CORE ANTENNA
C109	0246446	CERAMIC, DISCAL CAPACITOR 18PF 0.5P F (NP-0)	L152	5113191	FERRITE CORE ANTENNA
C112	0248475	CERAMIC DISC CAPACITOR 5PF +- 0.5PF	L153	5123493	SW ANTENNA
C151	0248672	CERAMIC DISC 33PF+-0.25PF	L154	5120465	LW OSC
RESISTORS			L155	5120319	OSCILLATOR COIL
RT301	5007186	SEMI VARIABLE RESISTOR 10KOHM	L156	5123494	SW OSC
RT401	0151815	SEMI VARIABLE RESISTOR 200 OHM	L157	0333116	CHOKE COIL
RV401LR	5000185	VARIABLE 50KOHM(B)	L201	5152027	CHOKE COIL
RV402LR	5000043	VARIABLE 10KOHM (B)	L301LR	5150571	CHOKE COIL 33MH
RV403LR	5000042	VARIABLE 10KOHM (A)	L401LR	5150571	CHOKE COIL 33MH
SEMI-CONDUCTORS			L402	5260831	OSCILLATOR BLOCK
D101	5330573	DIODE 1S2473	MISCELLANEOUS		
D102	5331052	DIODE 1K60RLF-2	5653211	DIN JACK	
D103	5330661	DIODE SILICON LS2790 200MHZ 80MW	5653241	AC-DC SOCKET	
D104	5330571	DIODE 1S2473VE	5659121	BACK COVER	
D151	5330573	DIODE 1S2473	CF201	5160211	CERAMIC FILTER CF107A
D201	5331052	DIODE 1K60RLF-2	CF202	5160211	CERAMIC FILTER CF107A
D401LR	5330573	DIODE 1S2473	△ F601	5720179	FUSE 1A
D402LR	5331051	DIODE 1K60	J 1	5679442	JACK PLATE (EXT. MIC(R))
D601	5331452	DIODE SRP02-100NLF	J 2	5679442	JACK PLATE (EXT. MIC(L))
D602	5331451	DIODE SRP02-100NLF	J 8	5674133	HEAD PHONE JACK
IC201	5351411	IC HA11251	J 9	5679442	JACK PLATE (EXT. SP(R))
IC301	5350684	IC HA1330	J10	5679442	JACK PLATE (EXT. SP(L))
IC401LR	5350962	IC BA340	LC101	5161551	FILTER
IC402LR	5350962	IC BA340	S 1	5625011	SLIDE SWITCH (BAND)
IC501LR	5350702	IC LA4112	S 2	5620382	SLIDE SWITCH (FUNCTION)
IC801	5352572	IC BA6137	S 3	5623271	SLIDE SWITCH (REC./P.B)
LED301	5380271	LED GL-9PR2	S 4	5604082	LEVER SWITCH (MODE)
LED801	5380681	LED GL-105R53	S 5	5621184	SLIDE SWITCH (RIF)
Q101	0573511	TRANSISTOR SILICON 2SC535C 700M	S 6	5620701	SLIDE SWITCH (MONITOR)
Q102	5321271	TRANSISTOR SILICON 2SC1674L 600MHZ	S 7	5604082	LEVER SWITCH (TAPE SELECTOR)
Q151	0573486	TRANSISTOR SILICON 2SC460B 230M	FOR ACCESSORIES		
Q152	5321271	TRANSISTOR SILICON 2SC1674L 600MHZ	△	5747321	POWER CORD
Q201	0573486	TRANSISTOR SILICON 2SC460B 230M	△	5746341	CORD ASSEMBLY (BS)
Q401LR	5321293	TRANSISTOR 2SC1740LN-R	△	5896391	FM ANTENNA (BS)
Q402LR	5321293	TRANSISTOR 2SC1740LN-R	FOR CASSETTE DECK ASSEMBLY (A)		
TRANSFORMERS			1	6752792	PICK UP PIECE
T101	5140071	FM IFT	2	7786115	POLYESTER WASHER
			3	6752801	PICK UP LEVER
			4	7311883	CONNECT LEVER

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
MISCELLANEOUS			105	6308962	SPRING
△	5212125	POWER TRANSFORMER (BS)	106	0681129	SPRING A
102	5752531	ROD ANTENNA	107	7334161	TERMINAL
103	5687142	CAP TERMINAL	108	7781146	BT SCREW-3MMDX20MM
104	8744414	BIND SCREW-3MMDX14MM			



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