MITSUBISHI

SERVICE MANUAL

CASSETTE TAPE PLAYER WITH AM/FM·MPX

MODEL : RX707-II

SPECIFICATIONS

FM TUNERS		
Usable Sencitivity		22 dBf (3.5μV/ 75Ω)
Capture Ratio		3 dB
Alternate Channel Selectivity		86 dB
Stereo Separation (at 1000Hz)		35 dB
Signal/Noise Ratio		60 dB
Tuning Range		88 to 108 MHz
AM TUNERS		
Sensitivity (20dB S/N)		12μV
Selectivity (at 10KHz)		40 dB
AGC Figure of Merit		55 dB
Signal/Noise Ratio		54 dB
Tuning Range		525 to 1615 KHz
AUDIO		
MAX Power Output per CH/4Ω		7W, 100 to 10 KHz
Power Output at 5% THD		4W, 100 to 10 KHz
Power Output at 1% THD		3.5W, 100 to 10 KHz
Frequency Response (±3dB)		50 to 20 KHz
TAPE		
Track		4 Track 2 Channel
Wow & Flutter		0.15% Wrms
Stereo Separation		40 dB
Signal/Noise Ratio (A-Weighted)		
120μS		50 dB
Crosstalk		45 dB
FF time	(by C-60)	140 sec
REW time	(by C-60)	140 sec
GENERAL		
Semiconductors		
Integrated Circuits		9 pcs
Transistors		5 pcs
Diodes		14 pcs
Dimensions		
Chassis	(HxWxD)	50 x 178 x 120 mm
	(HxWxD)	2 x 7 x 4-3/4 in
Nose Piece	(HxWxD)	42.5 x 106 x 25 mm
	(HxWxD)	1-11/16 x 4-3/16 x 1 in
Mounting Center		130, 140, 148 mm
		5-1/8, 5-1/2, 5-13/16 in
Weight		1.5 kg (3.3 lbs)
Power Requirement		14.4 V
Current Consumption		0.7A at 1W x 2

MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD.

73-75 EPPING ROAD NORTH RYDE N.S.W. 2113 SYDNEY AUSTRALIA

FEATURES

1. Diamond compact chassis. (2 x 7 x 4-¾ ").
2. 5FM or 5AM Pushbutton Tuning.
3. Auto-reverse tape mechanism.
4. Locking fast-forward/fast-rewind.
5. Tape program selector.
6. MONO/STEREO switch for FM.
7. Super DX/LOC circuit.
8. 7 watts RMS maximum per channel at 4 ohms.
9. Fader and balance controls for 4-speaker system
10. Separate AM/FM dial illumination (AM-amber, FM-green)
11. Power antenna lead.
12. Adjustable shafts.
13. Loudness control switch.
14. FM Stereo and tape direction indicators.

ALIGNMENT PROCEDURES

AM Alignment

- Power source voltage DC 14.4V.
- The "AM-FM" switch must be in the "AM" position.
- Alignment of Tuner for IF, RF test have been done.
- The following steps must be followed after Tuner is replaced.

Step	Circuit	Connection		Frequency	Position of Tuning dial	Adjust	Remarks
		Input	Output				
1	IF	Connect SMG output to VC1 thru chassis.	Connect SMG input to TP2 (R6) thru chassis.	262.5MHz	—	T2 T3 T4	Maximum
2	RF	Fig. 2	Connect SMG input to TP2 (R6) thru chassis.	1630KHz	1630KHz	VC3	1630 ± 10KHz
3				1400KHz	1400KHz	VC1 VC2	Maximum
4				600KHz	600KHz	T1	Maximum

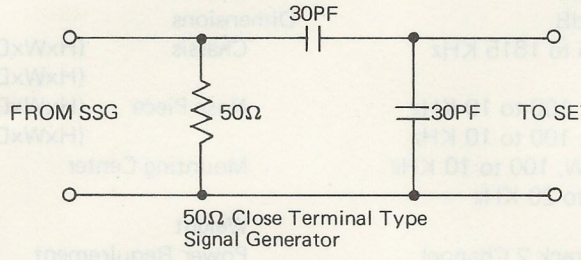


Fig. 1

AM DUMMY ANTENNA

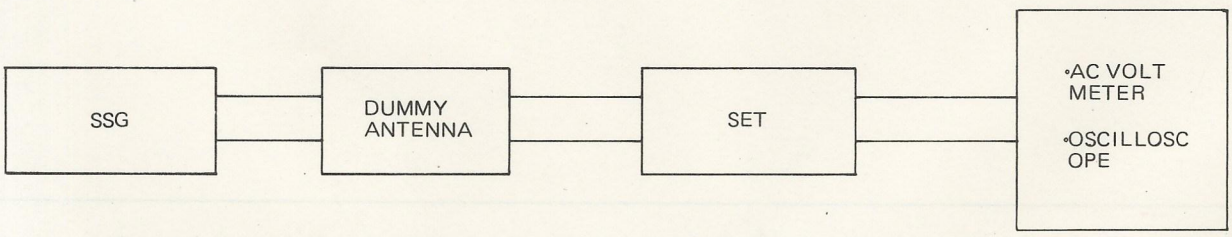


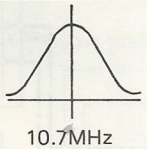
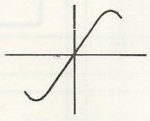
Fig. 2

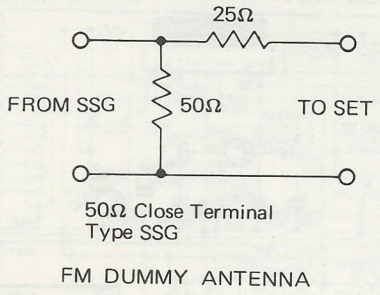
TAPE PLAYER Alignment

Step	Circuit	Tape Used	Conditions	Adjust	Remarks
1	Adjustment of head azimuth	TEAC MTT-113	Check left channel output in L.R running	Adjustment of head azimuth screw	Maximum output
2	Power Level difference Confirmation.	TEAC MTT-118	Check left channel output in L.R running	Confirmation	Level difference 3dB "LOUD SW OFF"

FM Alignment

- Power source voltage DC 14.4V.
- The "AM-FM" switch must be in the "FM" position.
- The following steps must be followed after Tuner is replaced.
- When adjusting an insulated screw driver must be used.

Step	Circuit	Connectios		Frequency	Position of tuning dial	Adjust	Remarks
		Input	Output				
1	IF	Connect SMG output to TP101 thru 10μF and chassis	Connect SMG input to TJ151 and chassis	10.7MHz	Low-edge	T101	 10.7MHz
2						T151	 10.7MHz
3	RF	Connect RF sweep output to SOCKET-ANT and chassis	Connect SMG input to TJ151 and chassis	108MHz	108MHz	VC103	receive 108MHz
4				—	Low-edge 87.5MHz Hight-edge 108.5MHz	Confirmation	frequency ±1.5MHz
5				108MHz	108MHz	VC101 VC102	Maximum
6				88, 98, 108 MHz	88, 98, 108 MHz	Confirnation	Limiting Sensitivity must be 23dBμV
7	MPX	Connect Counter to TP4 (R168) thru, 220KΩ chassis (Fig. 4)		—	—	VR151	76±0.4KHz



FM DUMMY ANTENNA

Fig. 3

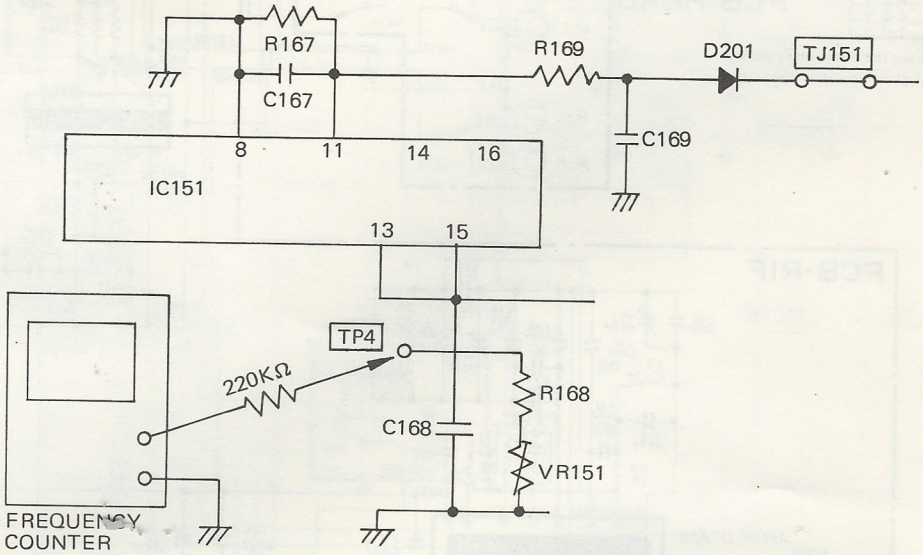


Fig. 4

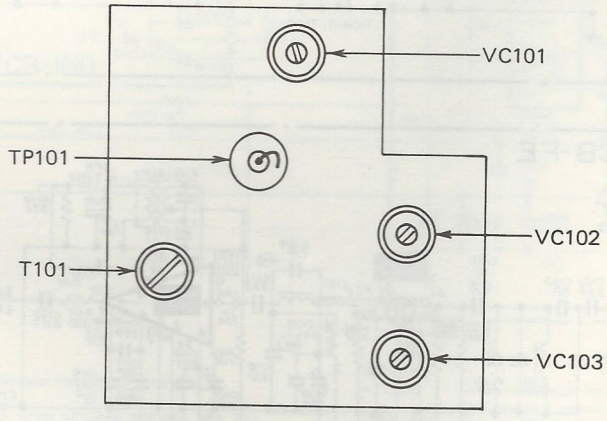
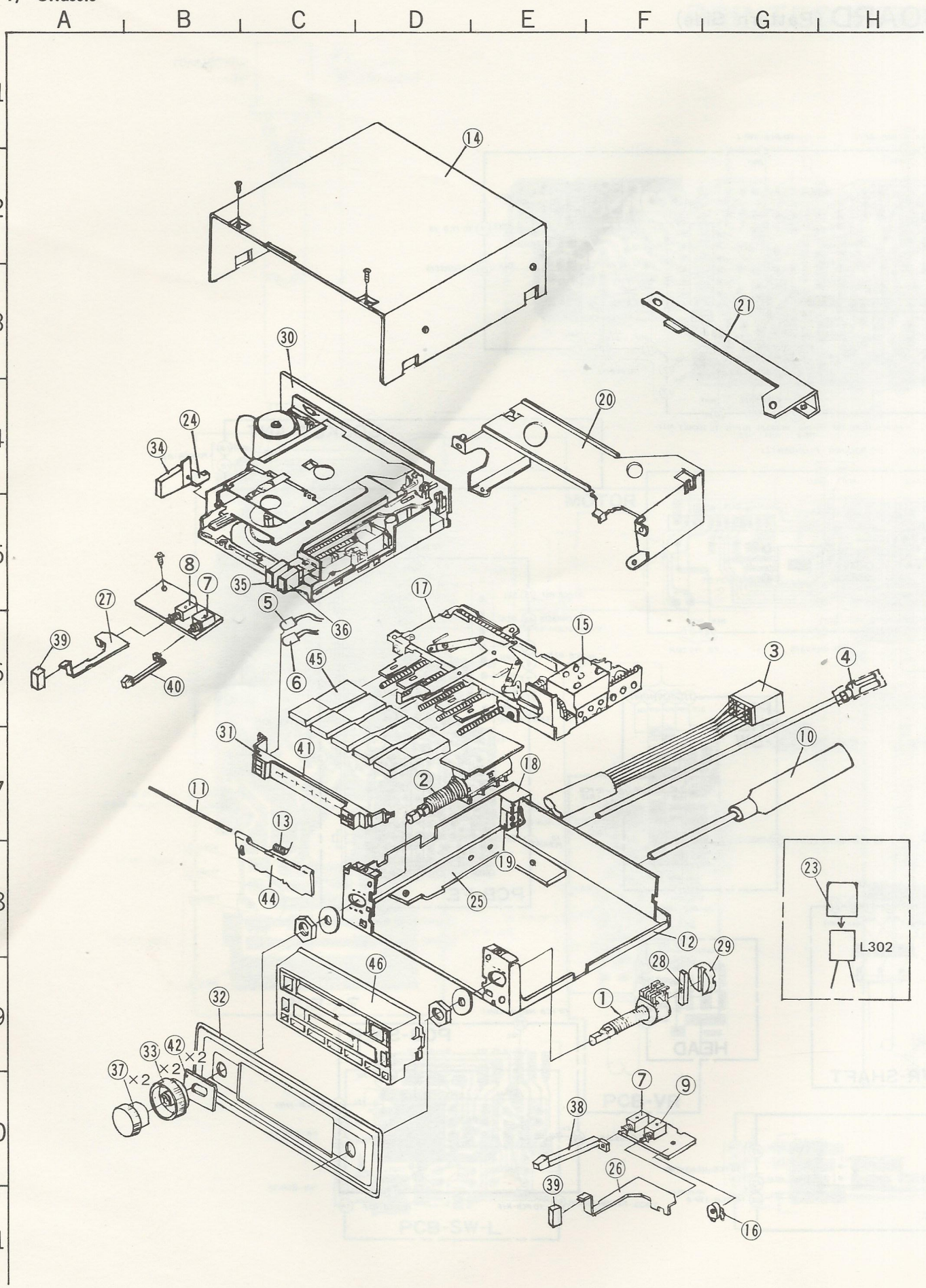


Fig. 5 FM FRONT END

EXPLODED VIEW

1) Chassis



MECHANICAL PARTS LIST

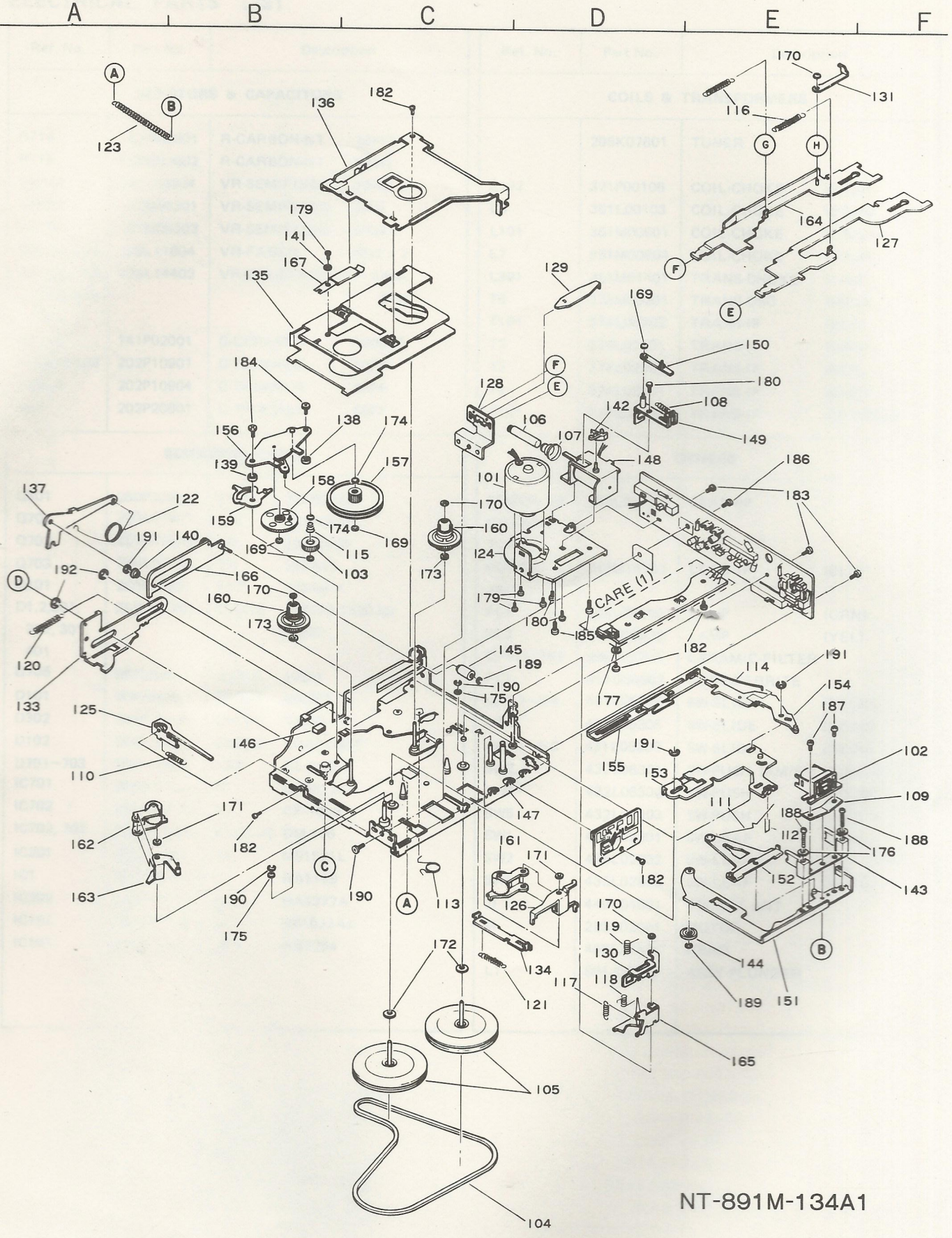
1) Chassis

Ref. No.	Part No.	Description	Index
1	129L11604	VR-FADER	F–9
2	129L14401	VR-DOUBLE-SHAFT	D–7
3	242L25701	LEAD-9P	G–6
4	242M14703	LEAD-1P	H–6
5	253L02302	LAMP (GRN)	C–6
6	253L02309	LAMP (YEL)	C–6
7	432L06301	SW-PUSH (S2, 4)	B–5, F–10
8	432L06302	SW-PUSH (S3)	B–5
9	432L06303	SW-PUSH (S5)	F–10
10	449L04501	SOCKET-ANT	G–7
11	531M08201	SHAFT-SHUTTER	B–7
12	560J02301	CHASSIS	F–8
13	570M36302	SPRING-SHUTTER	C–7
14	590K31601	UPPER-COVER	E–2
15	591L01601	SHIELD-COVER	E–6
16	202P20601	C-TRIMMER	G–11
17	295K07601	TUNER	D–5
18	590L01701	SHIELD-CASE	E–7
19	590L01801	HOLDER-CP	E–8
20	591L01901	HOLDER-DECK-F	F–4
21	591L02001	HOLDER-DECK-R	G–3
22			
23	591M81001	SHIELD-CAP	G–8
24	591M96402	LEVER-EJ	B–4

Ref. No.	Part No.	Description	Index
25	592M02001	HEAT-SINK	E–8
26	592M02101	LEVER-SW	F–10
27	592M02102	LEVER-SW	A–5
28	641M27901	JOINT-W	F–9
29	641M28001	JOINT-VR	G–8
30	642M18701	INSULATOR	C–3
31	701K01501	HOLDER-DIAL	C–7
32	702K24601	FACE-PLATE	C–9
33	704L15402	KNOB-B	B–9
34	704L16101	KNOB-D (EJ)	B–4
35	704L16102	KNOB-D (FF)	B–5
36	704L16103	KNOB-D (REW)	D–6
37	704L16301	KNOB-A	B–9
38	704M54701	BUTTON-SJ	F–10
39	704M54801	BUTTON-B	A–6, E–10
40	704M54901	BUTTON-LD	B–6
41	707L11001	DIAL	C–7
42	713M05302	ORNAMENT-791	B–9
43			
44	768M12902	SHUTTER	C–8
45	704L06206	BUTTON-TUNER	C–6
46	963K09502	ASSY-PANEL	D–9

EXPLODED VIEW

2) Deck



MECHANICAL PARTS LIST
2) Deck

Ref. No.	Part No.	Description	Index
101	288L02001	MOTOR	D–3
102	460L02401	HEAD	F–5
103	520J00101	IDLER-GEAR	C–4
104	521L00301	MAIN-BELT	D–7
105	524J00101	FEYWHEEL	D–7
106	531J00101	MOVABLE-IRON-CORE	D–3
107	570J00101	SPRING-PLUNGER	D–3
108	570J00102	SPRING-CAM-SW-LEVER	E–3
109	570J00103	SPRING-HEAD-PLATE	F–5
110	570J00104	SPRING-TIMING-PLATE	A–5
111	570J00105	SPRING-PINCH-ROLLER	E–5
112	570J00106	SPRING-ACT-SW	E–5
113	570J00107	SPRING-CHANGE-LEVER	C–6
114	570J00108	SPRING-TENSION	E–4
115	570J00109	SPRING-IDLER-GEAR	C–4
116	570J00201	SPRING-LEVER	E–1
117	570J00202	SPRING-MINI	D–6
118	570J00203	SPRING-RELEASE	D–6
119	570J00204	SPRING-LOCK-PLATE	D–6
120	570J00205	SPRING-EJ-LEVER	A–4
121	570J00206	SPRING-MAIN-SW	D–6
122	570J00207	SPRING-EJECTOR	B–3
123	570J00208	SPRING-HEAD-BASE	A–1
124	590J02601	MOTOR-BRACKET	D–4
125	590J02602	TIMING-PLATE	A–4
126	590J02603	MAIN-SW-ARM	D–6
127	590J02604	FF-LEVER	F–2
128	590J02605	BRACKET-LEVER	C–3
129	590J02606	NON-LOCK-PLATE	D–2
130	590J02607	LOCK-PLATE	D–6
131	590J02608	PUSH-REVERSE-PLATE	F–1
132			
133	590J02701	EJECT-LEVER	A–4
134	590J02702	MAIN-SW-LEVER	D–6
135	590J02703	ELEVATOR-HOLDER	B–2
136	590J02704	ELEVATOR-ARM	B–1
137	590J02705	LIFT-UP-LEVER	A–3
138	630J00201	COLLAR (L)	C–3
139	630J00102	COLLAR (R)	B–3
140	630J00103	EJECTOR-GUIDE-ROLLER	A–4
141	630J00104	SP-PACK-ROLLER	B–2
142	641J00101	SWITCH-CAM	D–3
143	641J00102	TAPE-GUIDE	F–5
144	641J00103	HEAD-BASE-ROLLER	E–6
145	641J00104	EJECTOR-COLLAR	D–4
146	765J00101	RUBBER-CUSHION	B–5
147	891J00201	UNIT-MAIN-BASE	D–5
148	891J00203	ASSY-PLUNGER	D–3
149	891J00204	UNIT-BASE-PLATE	E–3
150	891J00205	UNIT-CAM-SW-LEVER	E–2
151	891J00206	UNIT-HEAD-BASE	E–6

Ref. No.	Part No.	Description	Index
152	891J00207	UNIT-PINCH-ROLLER-ACT-BASE	E–5
153	891J00208	UNIT-MAIN-SLIDE-LINK	D–5
154	891J00209	UNIT-CHANGE-LEVER	E–4
155	891J00301	UNIT-RACK-PLATE	D–5
156	891J00302	ASSY-GEAR-PLATE	B–3
157	891J00303	UNIT-PULLEY-GEAR	C–3
158	891J00304	UNIT-CENTER-GEAR	B–3
159	891J00305	UNIT-LEAD-PLATE	B–3
160	891J00306	ASSY-REEL	C–4
			B–4
161	891J00307	ASSY-PINCH-ROLLER (L)	C–5
162	891J00308	ASSY-PINCH-ROLLER (R)	A–5
163	891J00309	UNIT-HEAD-ARM-LEVER	A–6
164	891J00401	UNIT-LEVER-RWD	E–2
165	891J00402	ASSY-RELEASE	E–6
166	891J00403	UNIT-EJECTOR	B–4
167	891J00404	UNIT-P-SPRING-PACK	B–2
168			
169	640J00101	CUT-WASHER-P (1.2φx3φx0.25t)	
170	640J00102	CUT-WASHER-P (1.6φx3.8φx0.3t)	
171	640J00103	CUT-WASHER-P (2.1φx5φx0.4t)	
172	640J00104	WASHER-P (2.1φx5φx0.13t)	
173	640J00105	WASHER-P (2.1φx5φx0.3t)	
174	640J00106	WASHER-P (1.5φx3.2φx0.2t)	
175	640J00107	WASHER-P (2φx3.5φx0.5t)	
176	680M00201	WASHER (2.1φx5.0φx0.4t)	
177	680M00202	WASHER (2.1φx5.0φx0.2t)	
178	669J00101	CAMERA-SCREW (M2x1.6)	
179	669J00102	CAMERA-SCREW (M2x2)	
180	669J00103	CAMERA-SCREW (M2x3)	
181	669J00104	CAMERA-SCREW (M2.6x3)	
182	669J00105	TAPPING-CAMERA-SCREW (M2x3)	
183	669J00106	TAPPING-CAMERA-SCREW (M2x4)	
184	669J00107	TAPPING-CAMERA-SCREW (M2.3x5)	
185	669J00108	TAPPING-CAMERA-SCREW (M2.6x4)	
186	669J00109	TAPPING-CAMERA-SCREW (M2.6x5)	
187	669J00201	SCREW ⊕ ⊖ (M2x4)	
188	669J00202	SEMS-SCREW (M2x11)	
189	685L02101	RETANING-RING (E1.5)	
190	685L02102	RETANING-RING-S (E1.5)	
191	685L02103	RETANING-RING (E2.0)	
192	685L02104	RETANING-RING (E3.0)	

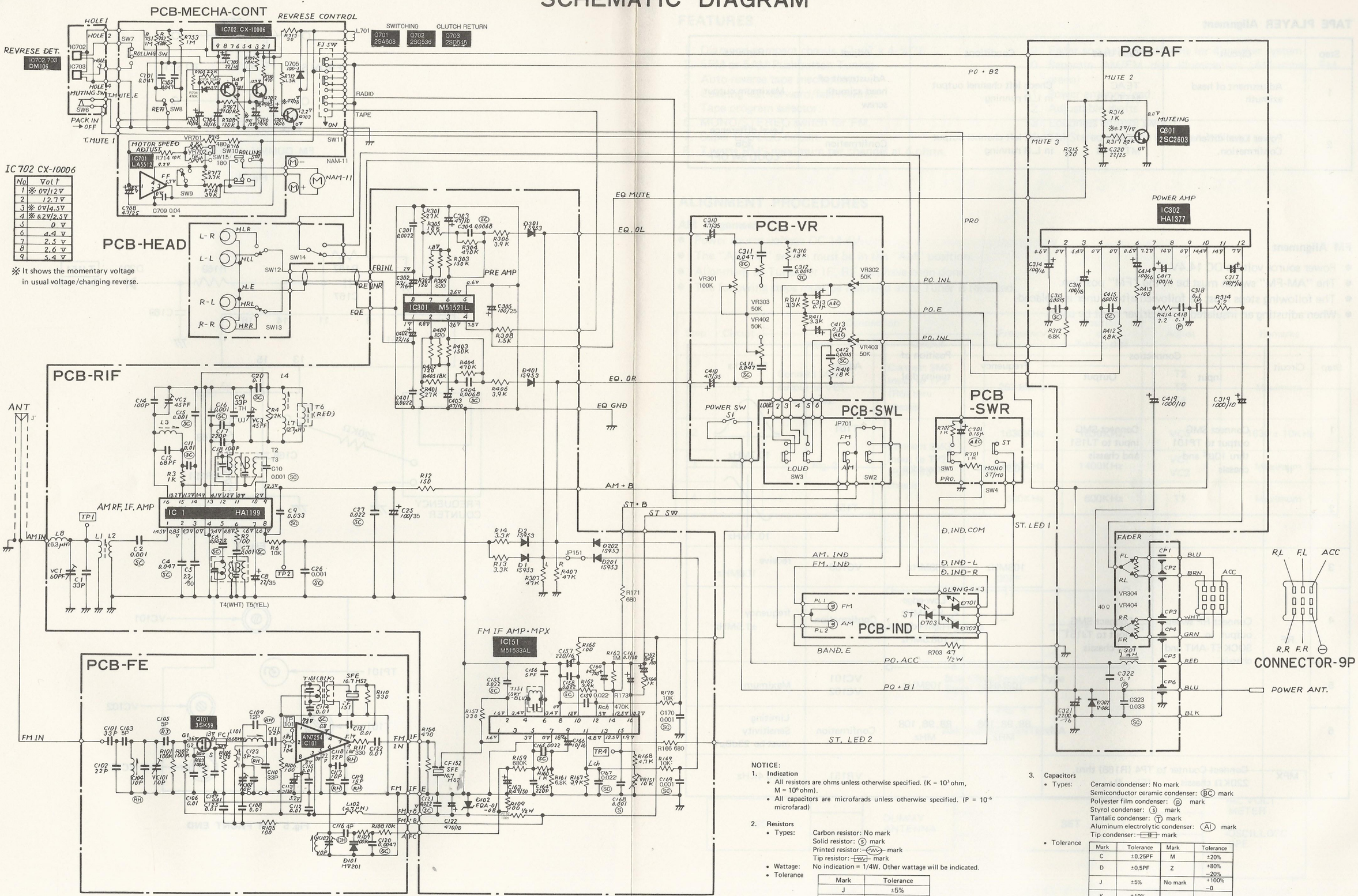
NT-891K134A1

ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
RESISTORS & CAPACITORS		
R714	103M02801	R-CARBON-NT 10KΩ
R715	103M02802	R-CARBON-NT 320Ω
VR151	127L00204	VR-SEMIFIXED 10KΩ
VR701	127M00301	VR-SEMIFIXED 5KΩ
VR702	127M00302	VR-SEMIFIXED 5KΩ
VR304, 404	129L11604	VR-FADER 40Ω x 2
VR301, 302, 303, 402, 403	129L14402	VR-DOUBLE-SHAFT 100K 50K
CP1~6	141P02001	C-CERAMIC 1000PF
VC101~103	202P10901	C-TRIMMER 10PF
VC2, 3	202P10904	C-TRIMMER 45PF
VC1	202P20601	C-TRIMMER 60PF
SEMICONDUCTORS		
Q301	260P33802	TR 2SC2603-E
Q701	260L01001	TR 2SA608SP
Q702	260L01003	TR 2SC536SP
Q703	260L01005	TR 2SD545
Q101	260P23801	FET 3SK59-Y
D1,2,201, 202, 301, 401	269M01201	DIODE 1S2473/1S2076/ 1S953
D705	264L02001	DIODE 10D-1
D101	264P05502	DIODE MV201
D302	264P08801	DIODE V-06C
D102	264P10305	DIODE EQA01-08T
D701~703	264P30501	LED GL-9NG-4
IC701	266M01601	IC LA5512K
IC702	266M01602	IC CX-1006
IC702, 703	266M01603	HOLL-IC DM-106
IC301	266P31601	IC M51521L
IC1	266P33301	IC HA1199
IC302	266P35901	IC HA1377A
IC151	266P37002	IC M51533AL
IC101	266P37901	IC AN7254

Ref. No.	Part No.	Description
COILS & TRANSFORMERS		
	295K07601	TUNER
L102	321P00106	COIL-CHOKE (4.7μH)
L8	351L00103	COIL-CHOKE (6.3μH)
L101	351M00601	COIL-CHOKE (0.68μH)
L7	351M00604	COIL-CHOKE (2.7μH)
L301	351M01401	TRANS-CHOKE (1mH)
T6	373M00201	TRANS-OSC (RED)
T101	374L00203	TRANS-IF (BLK)
T2	374L02301	TRANS-IF (GRN)
T3	374L02302	TRANS-IF (BLK)
T4	374L02801	TRANS-IF (WHT)
T151	374L02901	TRANS-IF (SKY-BLU)
OTHERS		
POWER, SP CONNEC-TOR	242L25701	LEAD-9P
POWER-ANT	242M14703	LEAD-1P (BLU)
PL1	253L02302	LAMP (GRN)
PL2	253L02309	LAMP (YEL)
CF151, 152	296P02203	CERAMIC-FILTER
FC1	411D00502	CORE-FERRITE
SW3-1~3-4	431L05304	SW-SLIDE (DECK)
SW4	431L05305	SW-SLIDE (DECK)
SW5-1~5-3	431L05306	SW-SLIDE (DECK)
SW2, 4	432L06301	SW-PUSH (AM/FM, MONO/ST)
SW3	432L06302	SW-PUSH (LOUD)
SW5	432L06303	SW-PUSH (PRO)
SW1	435L02801	SW-LEAF (REW)
SW2	435L02802	SW-LEAF (FF)
SW6	435L02803	SW-LEAF (MUTE)
J1	449L04501	SOCKET-ANT
M	288L02001	MOTOR
	460L02401	HEAD
L1	891J00203	ASSY-PLUNGER

SCHEMATIC DIAGRAM



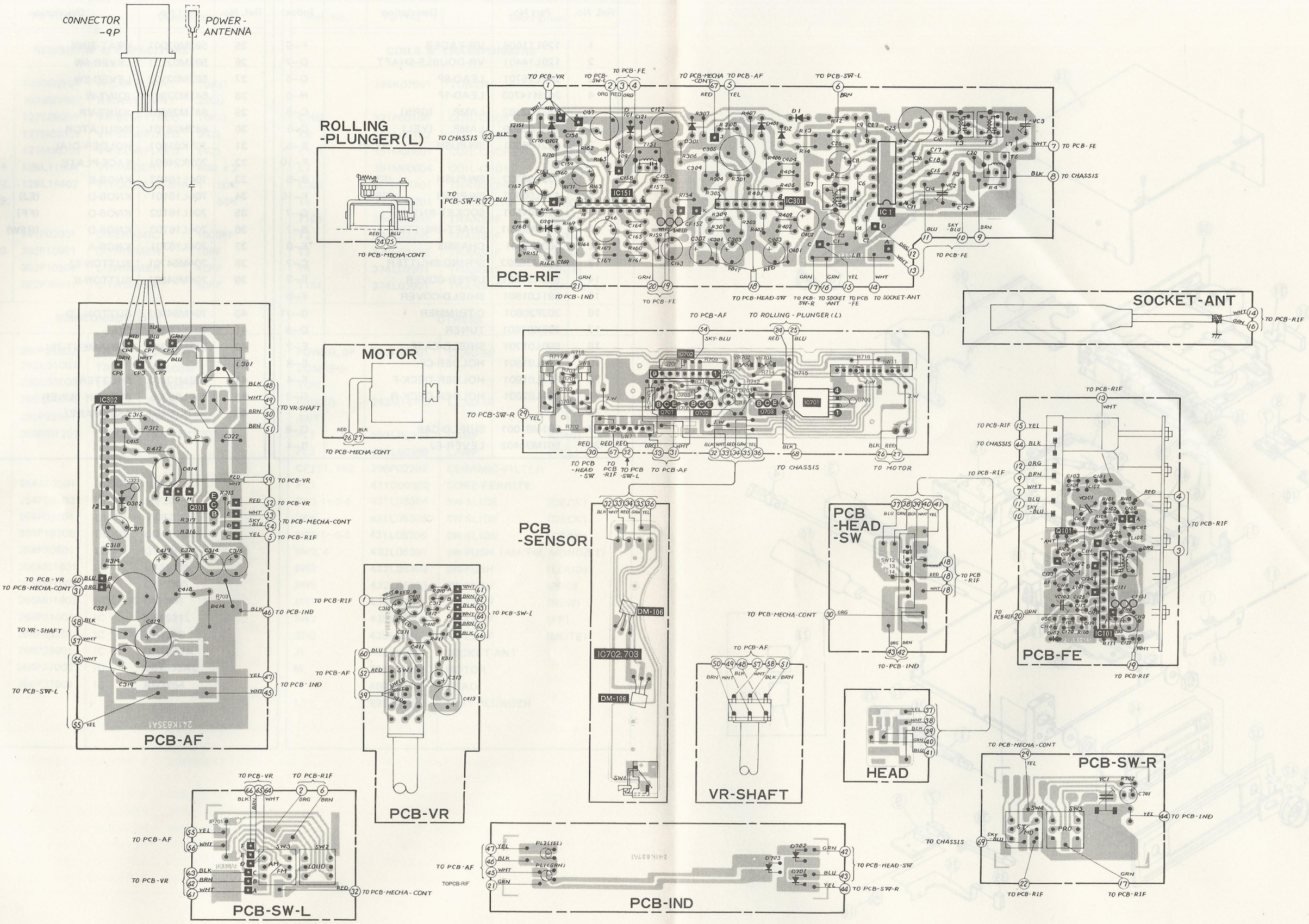
NOTICE:

1. **Indication**
   - All resistors are ohms unless otherwise specified. (K = 10^3 ohm, M = 10^6 ohm).
   - All capacitors are microfarads unless otherwise specified. (P = 10^{-6} microfarad)
2. **Resistors**
   - Types: Carbon resistor: No mark
     Solid resistor: (S) mark
     Printed resistor: mark
     Tip resistor: mark
   - Wattage: No indication = 1/4W. Other wattage will be indicated.
   - Tolerance

Mark	Tolerance
J	±5%
K	±10%

3. **Capacitors**
   - Types: Ceramic condenser: No mark
     Semiconductor ceramic condenser: (BC) mark
     Polyester film condenser: (D) mark
     Styrol condenser: (S) mark
     Tantalic condenser: (T) mark
     Aluminum electrolytic condenser: (Al) mark
     Tip condenser: mark
   - Tolerance

Mark	Tolerance	Mark	Tolerance
C	±0.25PF	M	±20%
D	±0.5PF	Z	+80% −20%
J	±5%	No mark	+100% −0
K	±10%		

4. **Voltage Measurements**
   Voltage measurment made with D.C. voltmeter (20 KΩ/V DC) to chassis ground with no signal input (Source voltage 14.4V).
5. **This circuit is subject to change for improvement without prior notice.**

PRINTED CIRCUIT BOARD (Pattern Side)