Lloyd's D620, D651, D680, M146, M679, M745, M751, M764, M777, M788, M796, M869, M943, 2D40, 2M78, 3M18 (Ch. B620-37A, B651-37A, 2B40-37A)

Pages 49-58 Courtesy of LLOYD'S ELECTRONICS, INC.

ALIGNMENT INSTRUCTIONS

EQUIPMENT NEEDED

1. AM SIGNAL GENERATOR
2. FM SIGNAL GENERATOR
3. IF SWEEP GENERATOR
4. FM STEREO SIGNAL GENERATOR

GENERAL

1. For AM alignment, apply 1000Hz modulation on the signal generator and radiate signal via a loop.
2. Connect a VTVM and oscilloscope across the speaker output terminals. Adjust as in the tables below. When necessary, reduce the oscillator output so that meter reading does not exceed 0.5V.
3. Use only non-metallic alignment tools to insure proper alignment.

AM SECTION

Control Setting

Function Switch.....AM Volume Control.....Max.

Circuit Alignment	Equipment Connection	Step	Gen. Freq.	Dial Setting	Adjustments
IF	AM SIGNAL GENERATOR Radiated Signal via a loop. OUTPUT METER (VTVM) Connect across speaker voice coil.	1	455KHz (Mod.)	Tuning gang fully open	T5 (Black & T4 (Orange) Adjust for maximum output.
		2	"	"	Repeat until no further improvement can be made.
OSCILLATOR	"	3	525KHz (Mod.)	Tuning gang fully closed	L6 (AM Osc. coil-Red) Adjust for maximum output.
		4	1650KHz (Mod.)	Tuning gang fully open	TC4 (AM Osc. Trimmer) Adjust for maximum output.
		5	-	-	Repeat steps 3 & 4.
RF TRACKING	"	6	600KHz (Mod.)	Tune to Signal	L5 (AM Ant. coil) Adjust coil on ferrite core for maximum output.
		7	1400KHz (Mod.)	Tune to Signal	TC3 (AM Ant. Trimmer) Adjust for maximum output.
		8	-	-	Repeat steps 6 & 7.

OSCILLATOR	FM SIGNAL GENERATOR to FM ANT terminal and GROUND. Disconnect JUMPER for LINE ANT connection. OUTPUT METER (VTVM) across speaker JACK shunted with 8 ohm resistor.	5	87MHz (Mod.)	Tuning gang fully closed	L4 (FM Osc. coil) Adjust for maximum output.
		6	110MHz (Mod.)	Tuning gang fully open	TC2 (FM Osc. Trimmer) Adjust for maximum output.
		7	–	–	Repeat steps 5 & 6.
RF TRACKING		8	90MHz (Mod.)	Tune to Signal	L1 (FM RF Coil) Adjust for maximum output.
		9	106MHz (Mod.)	Tune to Signal	TC1 (FM, RF, Trimmer) Adjust for maximum output.
		10	–	–	Repeat steps 8 & 9 to obtain maximum sensitivity at 90MHz and 106MHz.

FM SECTION

Control Setting

Function Switch·····FM

Volume Control·····Adjust as necessary to keep output below 3V

Circuit Alignment	Equipment Connection	Step	Gen. Freq.	Dial Setting	Adjustments
IF	IF SWEEP GENERATOR High side through 10PF to Base of Q1, low side to ground. MARKER GENERATOR The same as Sweep Generator. OSCILLOSCOPE Across input of L7 & GND.	1	10.7MHz 100-200KHz Sweep	Tuning gang fully closed	TC2 (Blue) & T1 (Yellow) Adjust for maximum gain and symmetrical pattern on scope centered at 10.7MHz marker.
		2	–	–	Repeat step 1.
RATIO DET.		3	10.7MHz (Mod.)	Tuning gang fully closed	T3 (Pink) Adjust for Linear 'S' curve centered at 10.7MHz on scope.
		4	–	–	Repeat step 3.

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CONTROL SETTING

Function Switch·····FM MPX

FM STEREO SIGNAL GENERATOR to FM ANT terminal (Disconnect JUMPER for FM LINE antenna)

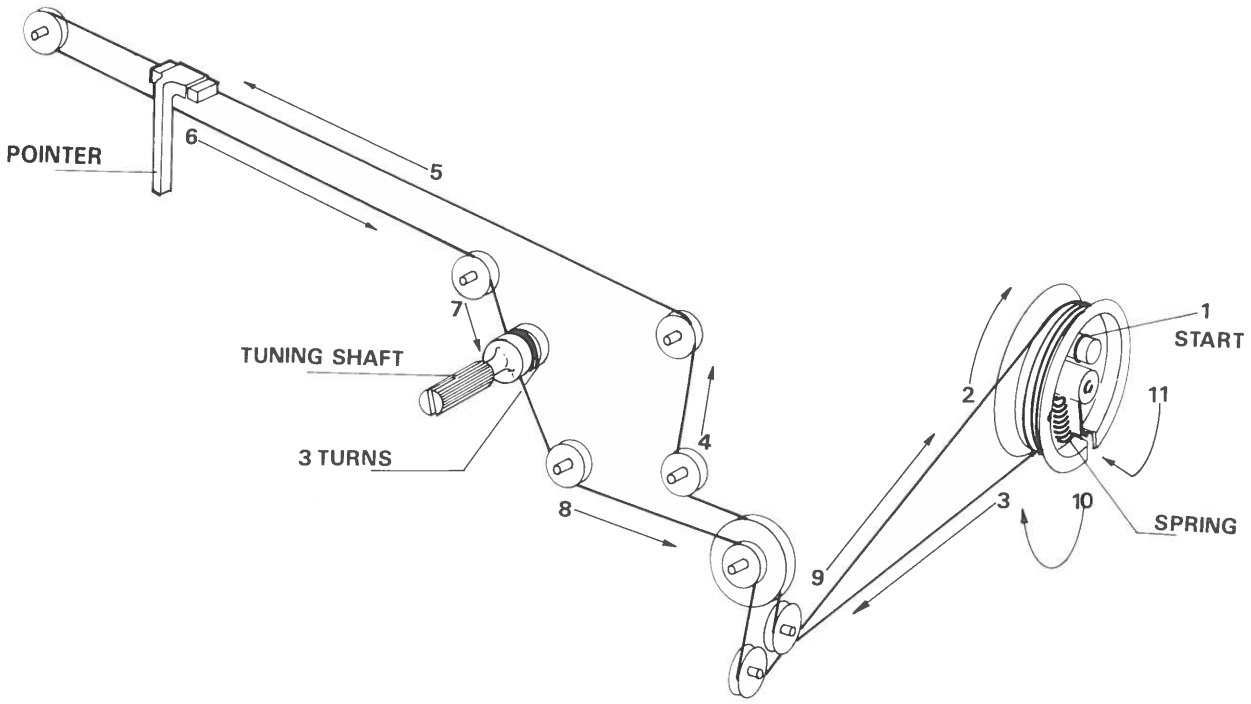
BALANCE control setting·····at center point

VOLUME control setting·····at maximum output

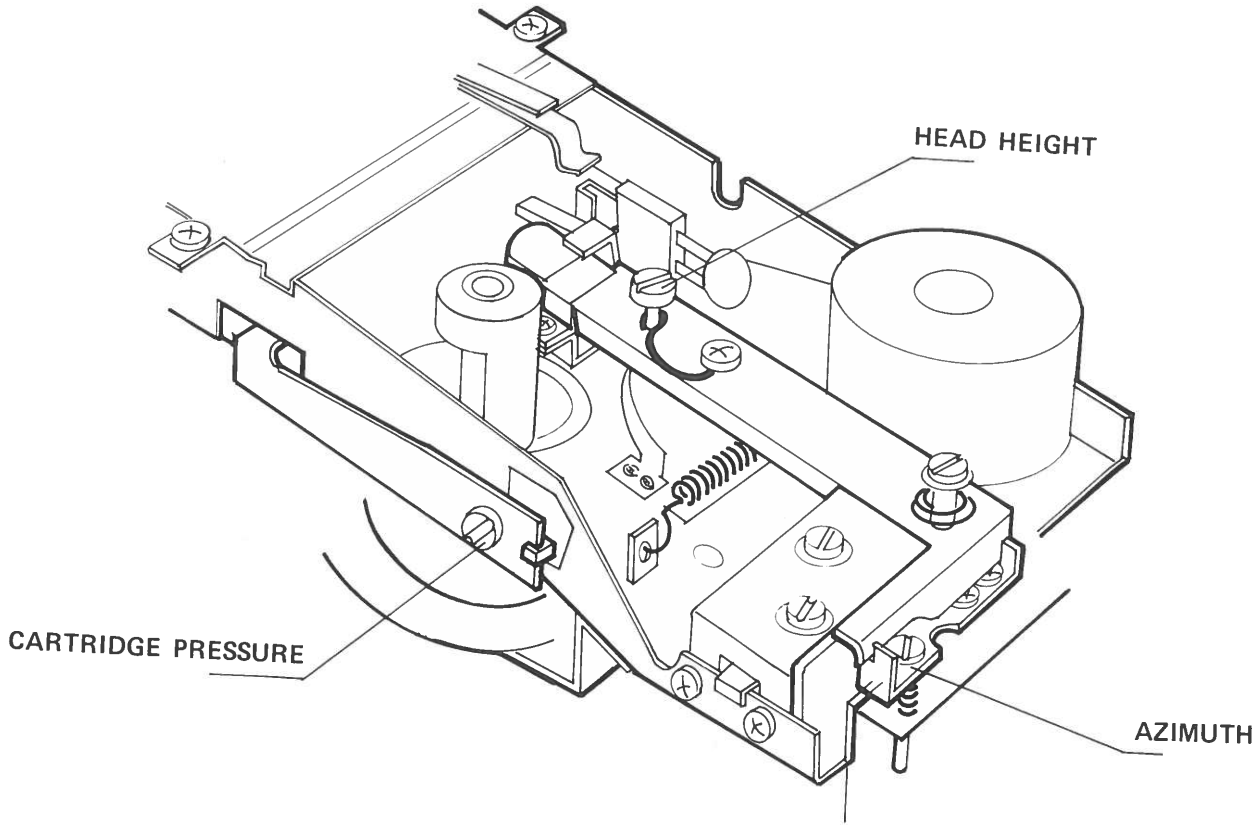
TREBLE & BASS control settings·····at mid-point

Tune the radio to 98MHz of STEREO SIGNAL GENERATOR

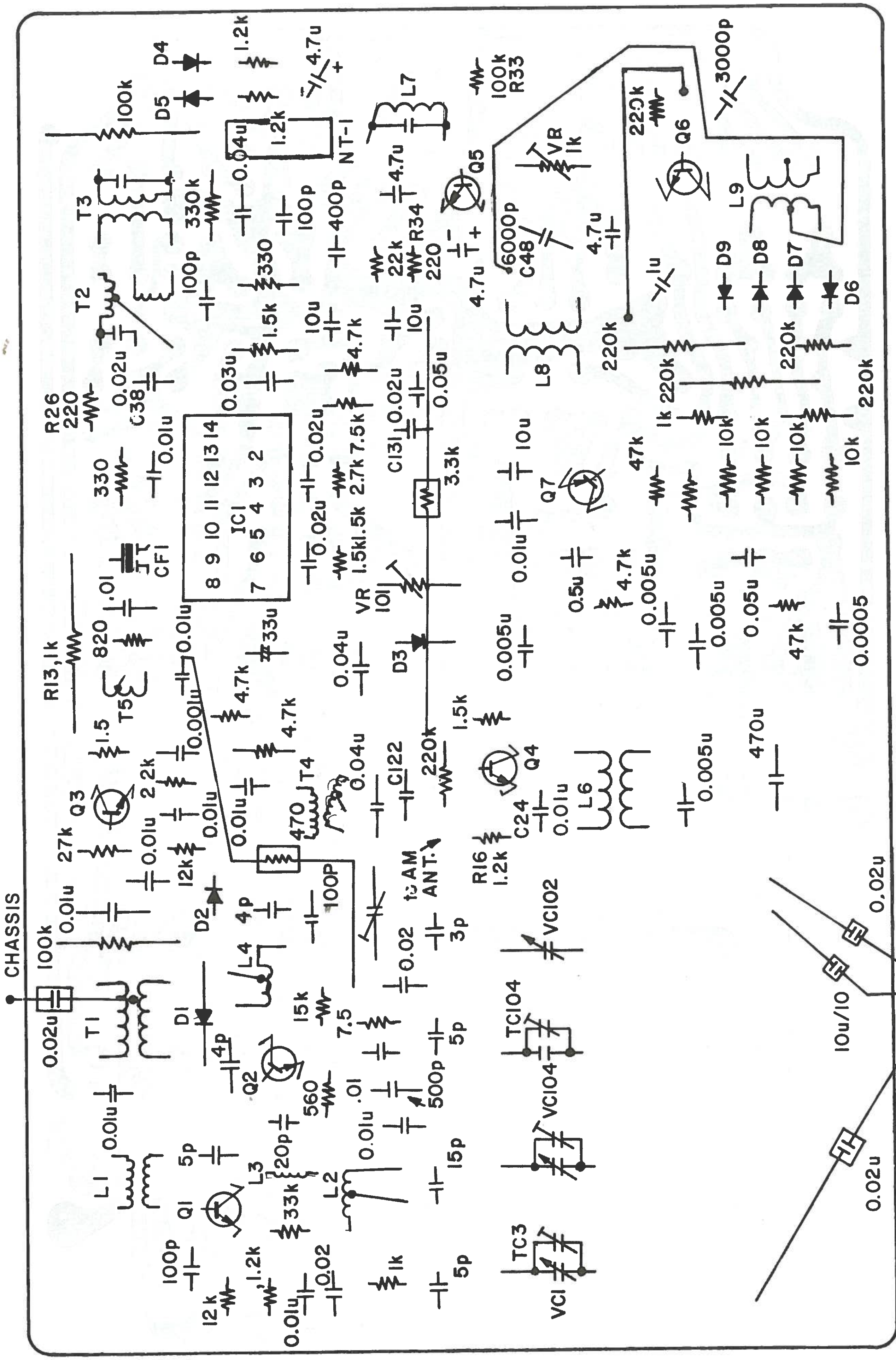
Step	FM STEREO SIGNAL GENERATOR			Connect Scope to	Adjust for
	Modulation	Function	Signal Level		
1	19KHz	Stereo LEFT	Start from high level, finally 20 to 30uV.	R36, 220 ohm	Adjust L8 for max. on scope; finally, PL9 must shine for signal level of 20 to 30uV.
2	"	"	1mV	R37, 220K ohm	L9 for maximum on scope.
3	400Hz	FM Stereo RIGHT	1mV	Across 'L' channel speaker output shunted with 8 ohm resistor	VR6, 1K ohm, for minimum on scope.
4	"	Stereo LEFT	1mV	Across 'R' channel speaker output shunted with 8 ohm resistor	VR6 for minimum on scope.
5	Repeat step 3 & 4 for minimum and equal on scope; If required re-adjust L9 very slightly				

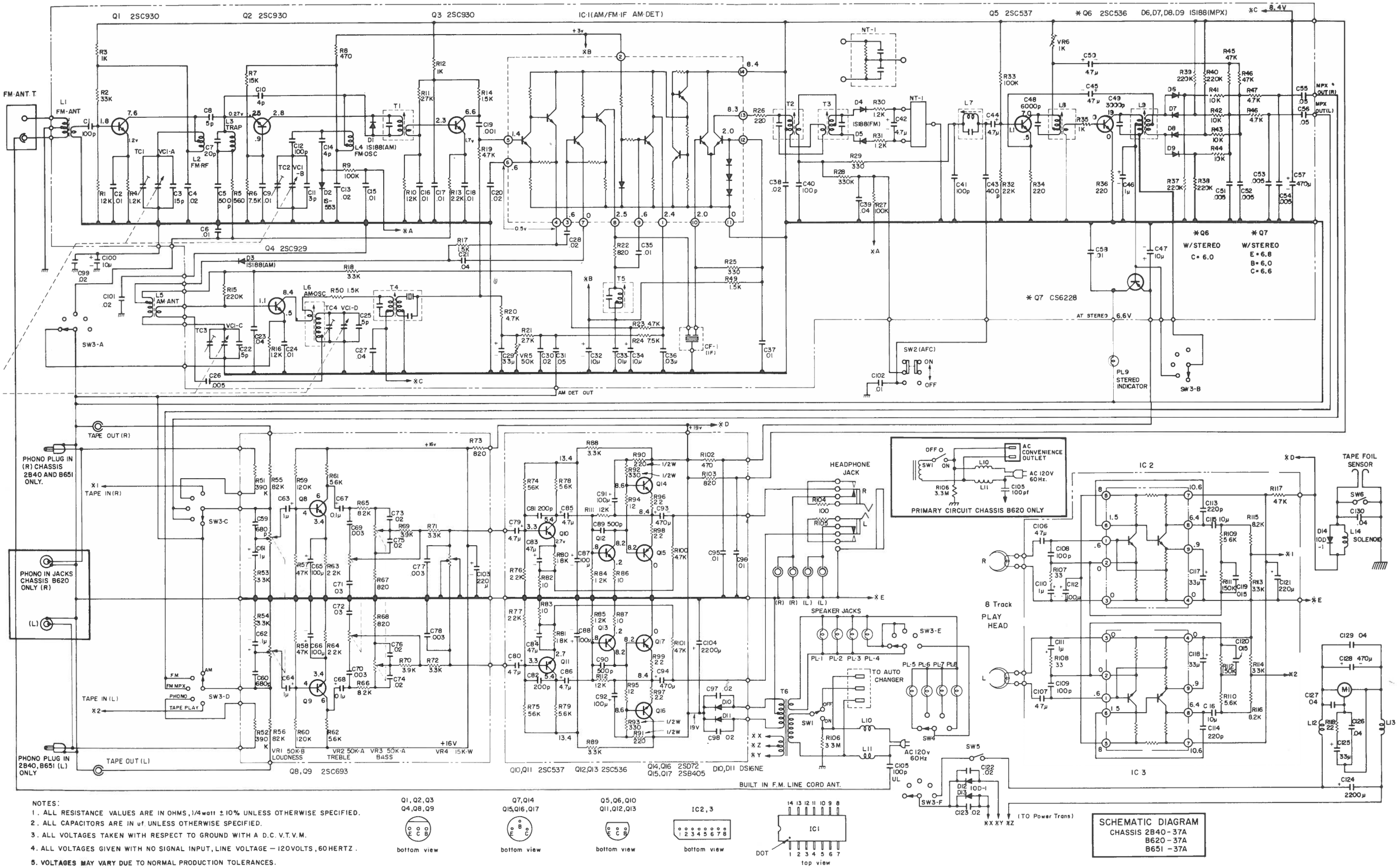


DIAL STRINGING DIAGRAM



CARTRIDGE MECHANISM


CHASSIS
Q1
Q2
Q3
Q4
Q5
Q6
Q7
T1
T2
T3
T4
T5
L1
L2
L3
L4
L6
L7
L8
L9
D1
D2
D3
D4
D5
D6
D7
D8
D9
IC1
CF1
NT-1
VC1
TC3
VC104
TC104
VC102
R13, 1k
R16
R26
R33
R34
C24
C38
C48
C122
C131
VR
to AM ANT.
10u/10



NOTES:

1. ALL RESISTANCE VALUES ARE IN OHMS, 1/4watt ±10% UNLESS OTHERWISE SPECIFIED.
2. ALL CAPACITORS ARE IN uf. UNLESS OTHERWISE SPECIFIED.
3. ALL VOLTAGES TAKEN WITH RESPECT TO GROUND WITH A D.C. V.T.V.M.
4. ALL VOLTAGES GIVEN WITH NO SIGNAL INPUT, LINE VOLTAGE — 120VOLTS, 60HERTZ.
5. VOLTAGES MAY VARY DUE TO NORMAL PRODUCTION TOLERANCES.

Q1, Q2, Q3
Q4, Q8, Q9

bottom view

Q7, Q14
Q15, Q16, Q17

bottom view

Q5, Q6, Q10
Q11, Q12, Q13

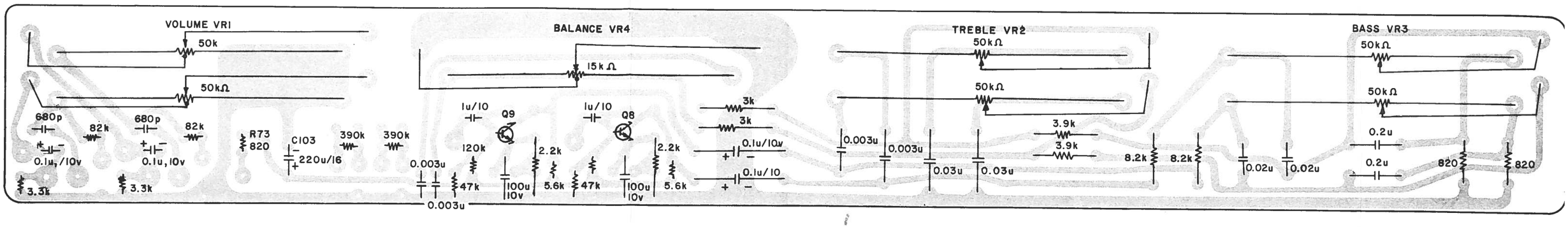
bottom view

IC2, 3

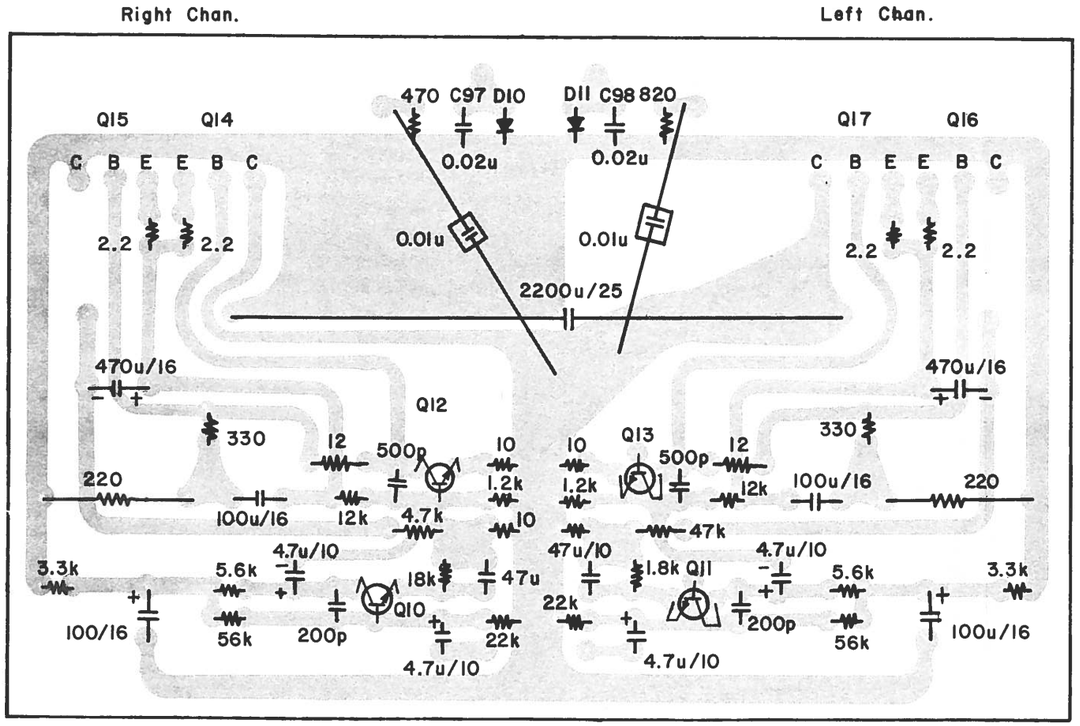
bottom view

top view

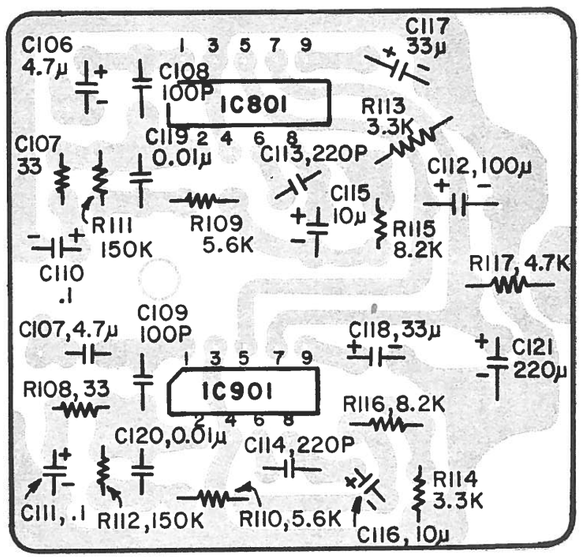
SCHEMATIC DIAGRAM
CHASSIS 2B40-37A
B620-37A
B651-37A



AUDIO PREAMP P C BOARD



AUDIO AMP P C BOARD



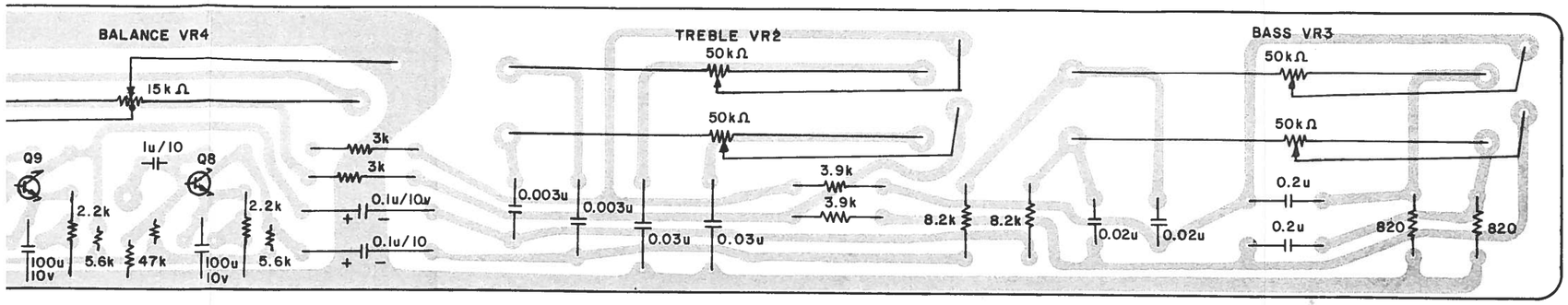
TAPE PREAMP PCB

SEMICONDUC

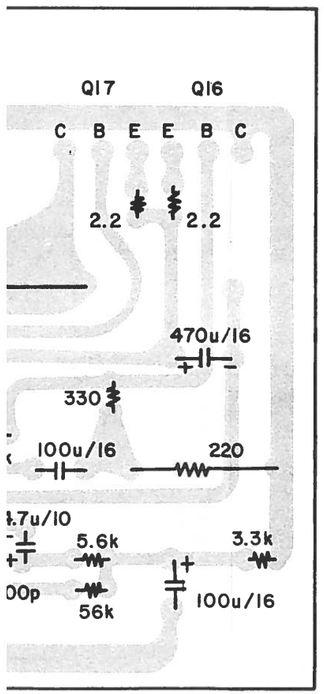
ITEM	PAR
D1	HE-
D2	HF-
D3	HE-
D4	HE-
D5	HE-
D6	HE-
D7	HE-
D8	HE-
D9	HE-
D10	JC-
D11	JC-
D12	JC-
D13	JC-
D14	JC-
IC1	PC-
IC2	PC-
IC3	PC-
Q1	HC-
Q2	HC-
Q3	HC-
Q4	HC-
Q5	HC-
Q6	HC-
Q7	HS-
Q8	HC-
Q9	HC-
Q10	HC-
Q11	HC-
Q12	HC-
Q13	HC-
Q14	HD-
Q15	HB-
Q16	HD-
Q17	HB-

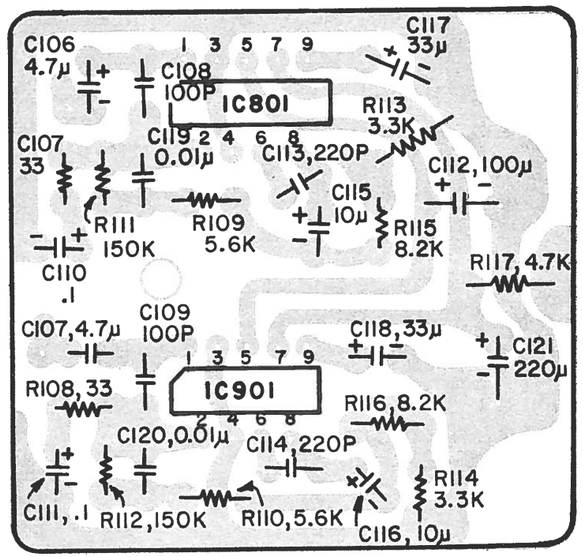
ELECTROLYT

ITEM	PAI
C29	BJ
C32	BJ
C34	BJ
C42	BJ
C44	BJ
C45	BJ
C46	BJ
C47	BJ
C48	BG
C50	BJ
C57	BJ
C61	BJ
C62	BJ
C63	BJ
C64	BJ
C65	BJ
C66	BJ
C67	BJ
C68	BJ
C79	BJ
C80	BJ
C83	BJ
C84	BJ
C85	BJ
C86	BJ
C87	BJ
C88	BJ
C91	BJ
C92	BJ
C93	BJ
C94	BJ
C100	BJ
C103	BJ
C104	BI
C106	BJ
C107	BJ
C110	BJ
C111	BJ



AUDIO PREAMP P C BOARD





TAPE PREAMP PCB

SEMICONDUCTORS

ITEM	PART NO.	TYPE
D1	HE-10003	1S188(AM)
D2	HF-20007	1S553
D3	HE-10003	1S188(AM)
D4	HE-10003	1S188(FM)
D5	HE-10003	1S188(FM)
D6	HE-10003	1S188(MPX)
D7	HE-10003	1S188(MPX)
D8	HE-10003	1S188(MPX)
D9	HE-10003	1S188(MPX)
D10	JC-00014	DS16NE
D11	JC-00014	DS16NE
D12	JC-00012	10D1
D13	JC-00012	10D1
D14	JC-00012	10D1
IC1	PC-20003	LA-1201B
IC2	PC-20004	LD-3150C
IC3	PC-20004	LD-3150C
Q1	HC-00930	2SC930
Q2	HC-00930	2SC930
Q3	HC-00930	2SC930
Q4	HC-00929	2SC929
Q5	HC-00537	2SC537
Q6	HC-00536	2SC536
Q7	HS-40031	CS6228
Q8	HC-00693	2SC693
Q9	HC-00693	2SC693
Q10	HC-00537	2SC537
Q11	HC-00537	2SC537
Q12	HC-00536	2SC536
Q13	HC-00536	2SC536
Q14	HD-00072	2SD72
Q15	HB-00405	2SB405
Q16	HD-00072	2SD72
Q17	HB-00405	2SB405

ELECTROLYTIC/VARIABLE CAPS

ITEM	PART NO.	VALUE	
C29	BJ-23337	33 uF	10 V
C32	BJ-23107	10 uF	10 V
C34	BJ-23107	10 uF	10 V
C42	BJ-23476	4.7 uF	10 V
C44	BJ-23476	4.7 uF	10 V
C45	BJ-23476	4.7 uF	10 V
C46	BJ-24106	1 uF	25 V
C47	BJ-24107	1 uF	25 V
C48	BG-24603	10 uF	25 V
C50	BJ-23476	4.7 uF	10 V
C57	BJ-23478	470 uF	10 V
C61	BJ-23105	.1 uF	10 V
C62	BJ-23105	.1 uF	10 V
C63	BJ-23106	1 uF	10 V
C64	BJ-23106	1 uF	10 V
C65	BJ-23108	100 uF	10 V
C66	BJ-23108	100 uF	10 V
C67	BJ-23105	.1 uF	10 V
C68	BJ-23105	.1 uF	10 V
C79	BJ-23476	4.7 uF	10 V
C80	BJ-23476	4.7 uF	10 V
C83	BJ-23447	47 uF	10 V
C84	BJ-23447	47 uF	10 V
C85	BJ-23476	4.7 uF	10 V
C86	BJ-23476	4.7 uF	10 V
C87	BJ-42108	10 uF	16 V
C88	BJ-42108	10 uF	16 V
C91	BJ-42108	10 uF	16 V
C92	BJ-42108	10 uF	16 V
C93	BJ-42478	470 uF	16 V
C94	BJ-42478	470 uF	16 V
C100	BJ-23107	10 uF	10 V
C103	BJ-42228	220 uF	16 V
C104	BI-24229	2200 uF	25 V
C106	BJ-42476	4.7 uF	16 V
C107	BJ-42476	4.7 uF	16 V
C110	BJ-23105	.1 uF	10 V
C111	BJ-23105	.1 uF	10 V
C112	BJ-23108	100 uF	10 V
C115	BJ-23107	10 uF	10 V
C116	BJ-23107	10 uF	10 V
C117	BJ-22337	33 uF	6.3 V
C118	BJ-22337	33 uF	6.3 V
C121	BJ-42228	220 uF	16 V
C124	BJ-42229	2200 uF	16 V
C125	BJ-22337	33 uF	6.3 V
C129	BJ-42478	470 uF	16 V
TC2	BM-00099	8 pF Trimmer	
VC1	BT-20001	Tuning Gang	

CONTROLS/SPECIAL RESISTORS

ITEM	PART NO.	DESCRIPTION
R96	AA-08220	2.2 ohms 1/2W
R97	AA-08220	2.2 ohms 1/2W
R98	AA-08220	2.2 ohms 1/2W
R99	AA-08220	2.2 ohms 1/2W
VR1	AX-32001	50 K Dual Loudness
VR2	AX-32002	50 K Dual Treble
VR3	AX-32002	50 K Dual Bass
VR4	AW-31001	15 K Balance
VR5	AR-32001	50 K Level
VR6	AR-31003	1000 ohms Separation

COILS/TRANSFORMERS

ITEM	PART NO.
L1	DK-00631
L2	DK-00632
L3	DX-00633
L4	DK-00632
L5	DI-00634
L6	DM-00635
L7	DW-00637
L8	DW-00638
L9	DW-00639
L10	DR-00640
L11	DR-00640
L12	DQ-00650
L13	DQ-00650
T1	EN-00547
T2	EN-00603
T3	EN-00604
T4	DV-00636
T5	EM-00602
T6	EJ-00534

MISCELLANEOUS

ITEM	NAME	PART NO.
(COMMON)		
CF-1	Filter, Ceramic	BZ-00001
L14	Solenoid, Track Change	QH-80014
SW1	Switch, Power	FB-72015
SW3	Switch, Function	FA-71312
SW5	Switch, Motor Power	FB-72932
	Belt, Tape Drive	FK-05480
	Motor, Tape Drive	QD-40076
(CHASSIS 2B40-37A)		
	Assembly, Record Changer	(BSR) C129
(CHASSIS B651-37A)		
	Assembly, Record Changer	(BSR) C141

CABINET PARTS

NAME	PART NO.
(COMMON)	
Base, Cabinet	LA-02036
Button, Power	LH-01950
Knob, Selector	LH-01953
Knob, Tuning	LH-01954
Plate, Control	LK-02037
(CHASSIS 2B40-37A)	
Assembly, Cabinet	LA-02036
Cover, Dust	LB-9001
(CHASSIS B620-37A)	
Assembly, Cabinet	LA-02065
Lid, Rear	LF-02066
(CHASSIS B651-37A)	
Assembly, Cabinet	LA-02160
Cover, Dust	LB-9004
Case, Tape Storage	LB-02130