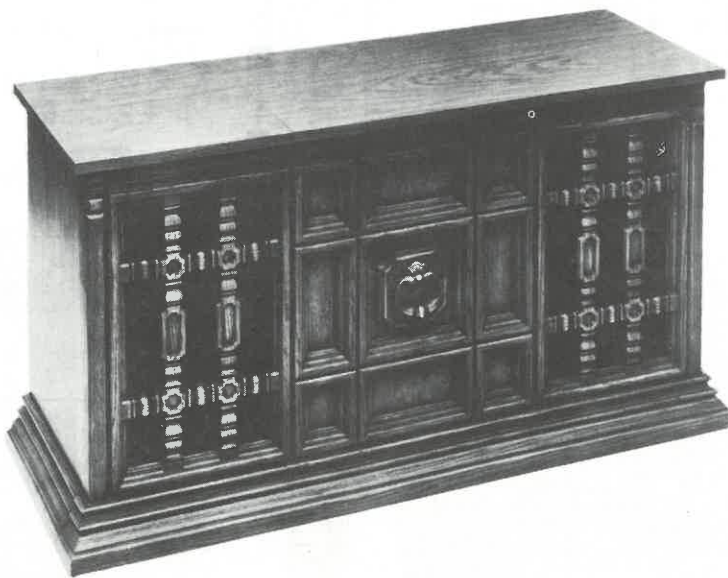


For Supplier Address See PHOTOFACT Index

BRADFORD MODELS 1353A13/A14/B24/B25
(WTG-80556/556A/580/580A)

MODEL 1353A13 (WTG-80556)

RECORD CHANGER SERVICING

RECORD CHANGER BSR C-129R-B-1

ADJUSTMENTS

TONE ARM SETDOWN

Adjust screw B1 so the needle sets down in the center of the lead-in groove on a 12-inch record. Turning the screw clockwise moves the set-down point outward.

TONE ARM HEIGHT

Adjust B2 so the top of the tone arm clears a 12-inch record on the center spindle shelf during the change cycle. Turning B2 clockwise decreases the lift-up height.

CLEANING

Use a cloth dampened with isopropyl alcohol to clean the driving surfaces of the idler wheel, motor shaft and inside rim of the turntable.

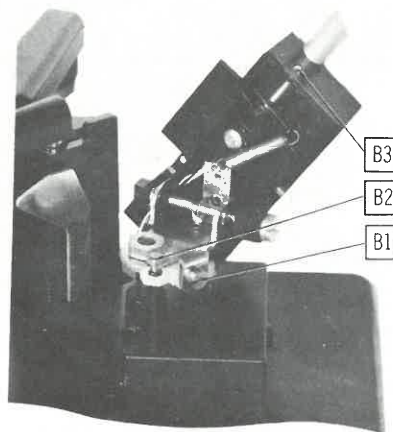
LUBRICATION

Apply light nonhardening grease to sliding cam surfaces and pivot points, light machine oil on the tone arm lift rod, idler wheel bearings, and motor bearings.

DO NOT lubricate turntable driving surface, the teeth on cycling gear or turntable hub.

NEEDLE PRESSURE

Nominal pressure 3 grams. Adjust B3 to obtain correct needle pressure. Turning B3 clockwise decreases needle pressure.



TAPE DECK IDENTIFICATION

CP-808SW

Model 1353A13 (WTG-80556) and

Model 1353B24 (WTG-80580)

CP103P

Model 1353A14 (WTG-80556A) and

Model 1353B25 (WTG-80580A)

BRADFORD MODELS 1353A13/A14/B24/B25
(WTG-80556/556A/580/580A)**HOWARD W. SAMs & CO., INC.** Indianapolis, Indiana 46206

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. SPL1210R

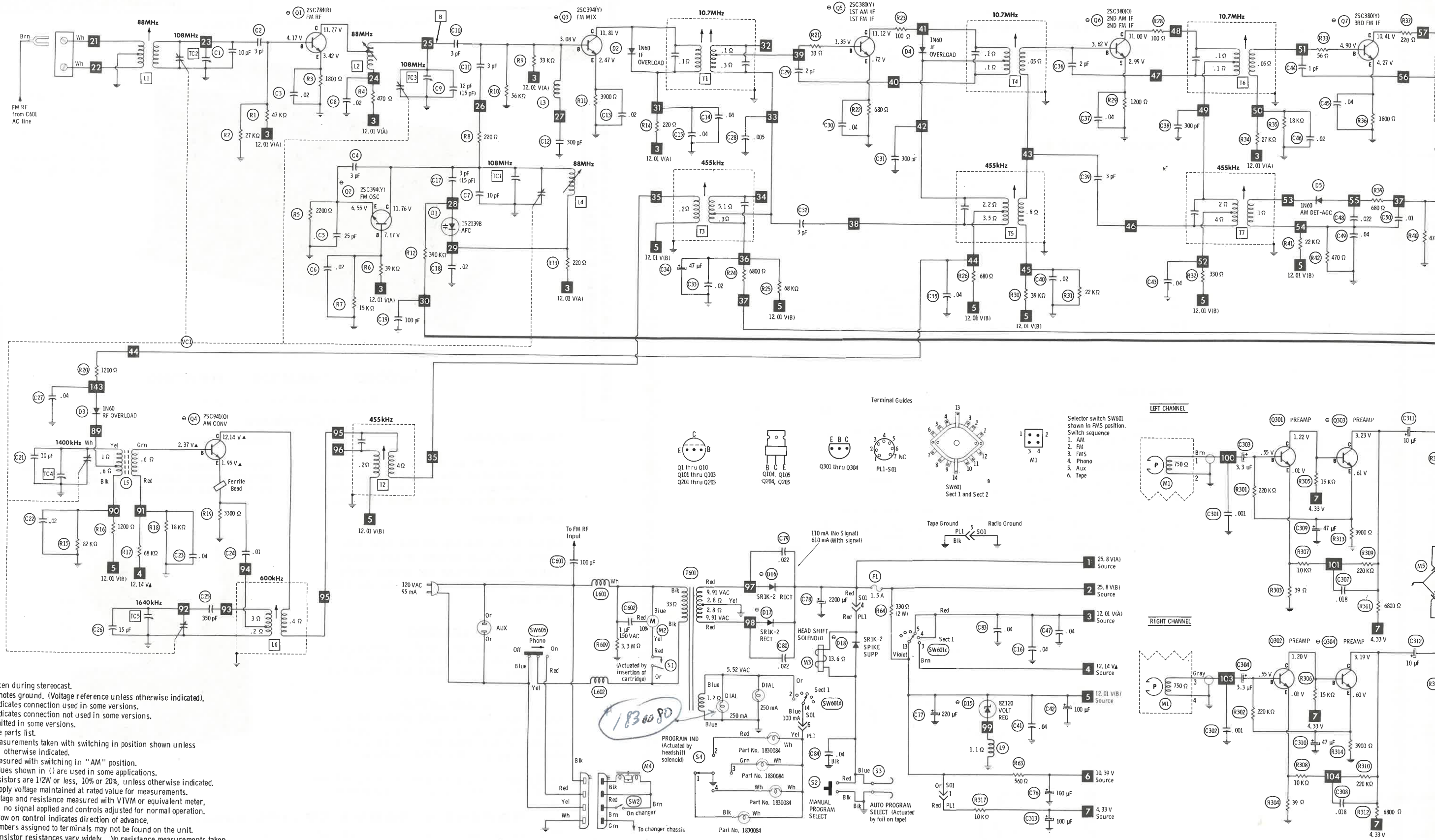
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DATE 4-75

SET 1475 FOLDER 4



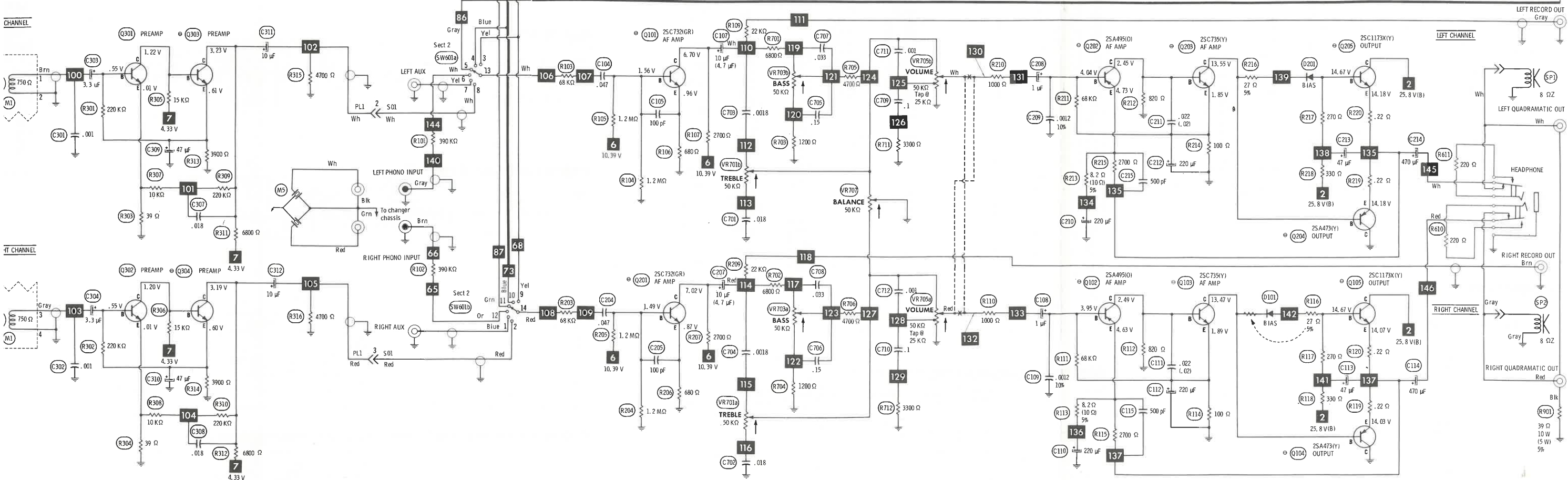
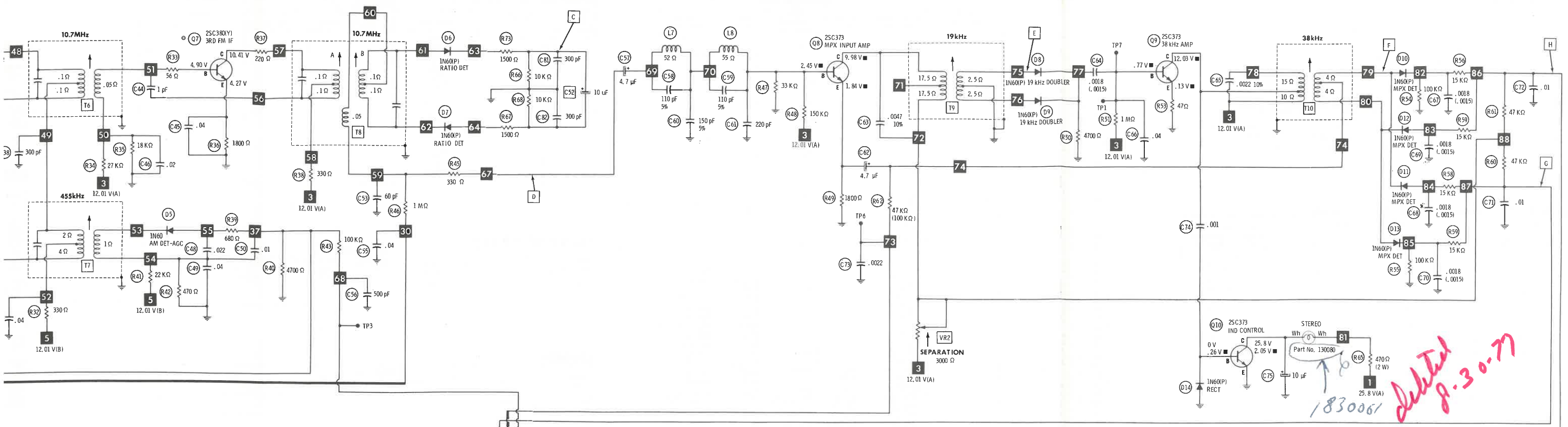
NOTE: DEMAGNETIZE HEADS AFTER SERVICING



- Taken during stereocast.
- ⊥ Denotes ground. (Voltage reference unless otherwise indicated).
- Indicates connection used in some versions.
- ✗ Indicates connection not used in some versions.
- * Omitted in some versions.
- ⊙ See parts list.
- Measurements taken with switching in position shown unless otherwise indicated.
- ▲ Measured with switching in "AM" position.
- Values shown in () are used in some applications.
- Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated.
- Supply voltage maintained at rated value for measurements.
- Voltage and resistance measured with VTVM or equivalent meter, no signal applied and controls adjusted for normal operation.
- Arrow on control indicates direction of advance.
- Numbers assigned to terminals may not be found on the unit.
- Transistor resistances vary widely. No resistance measurements taken.

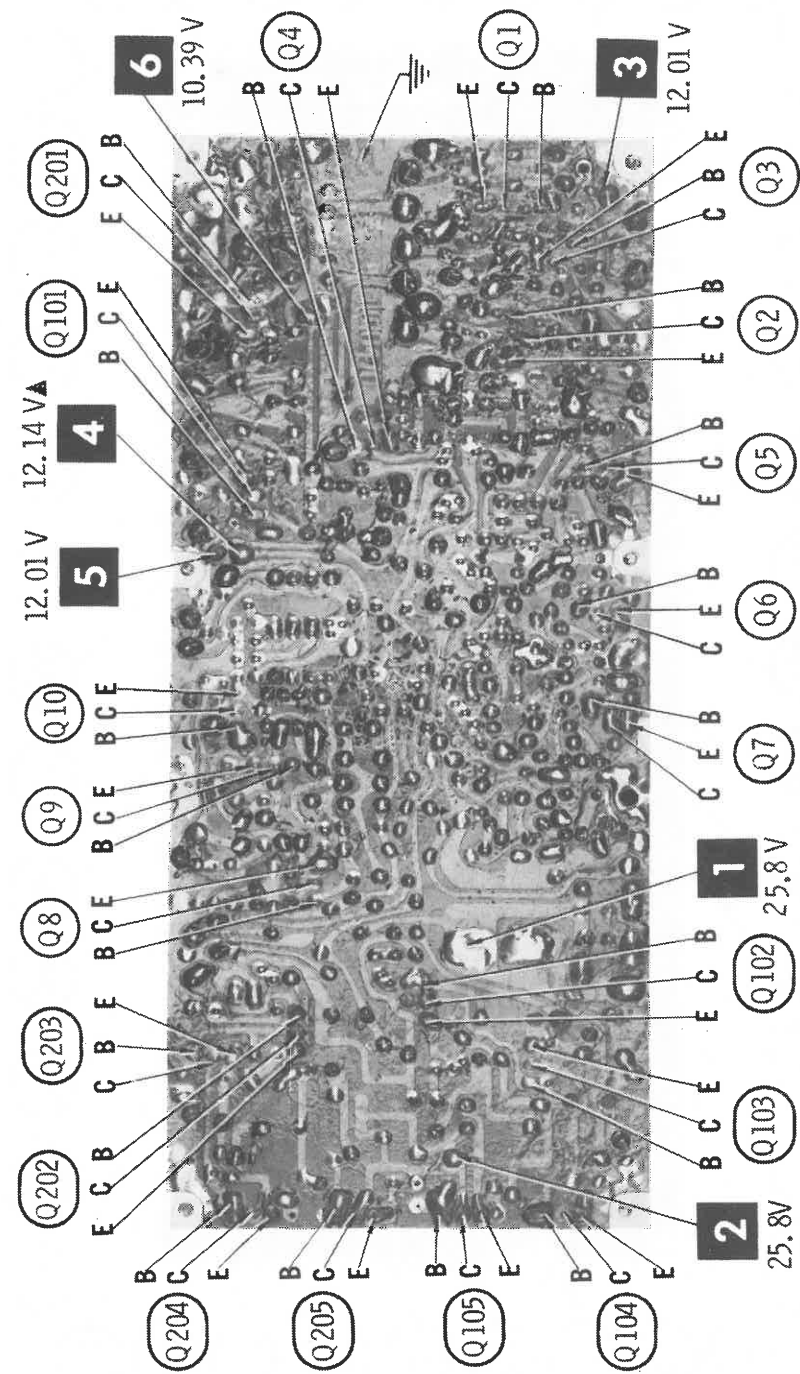
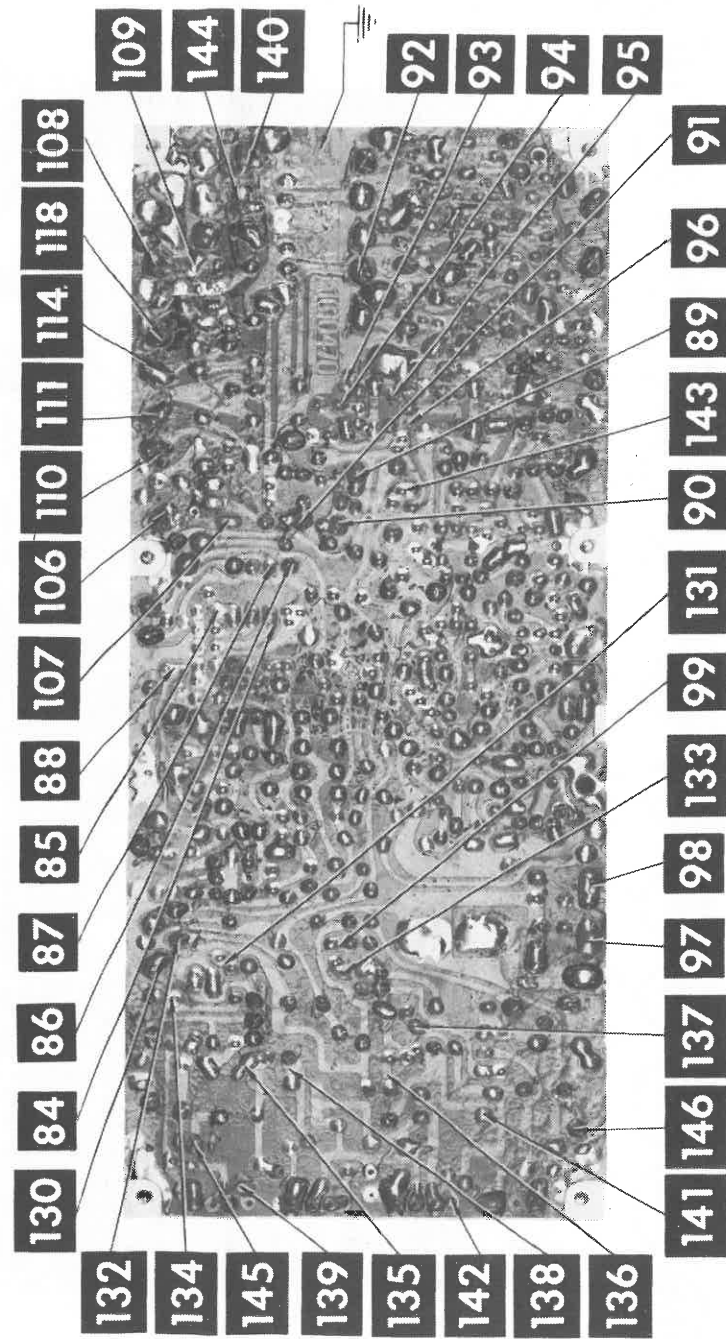
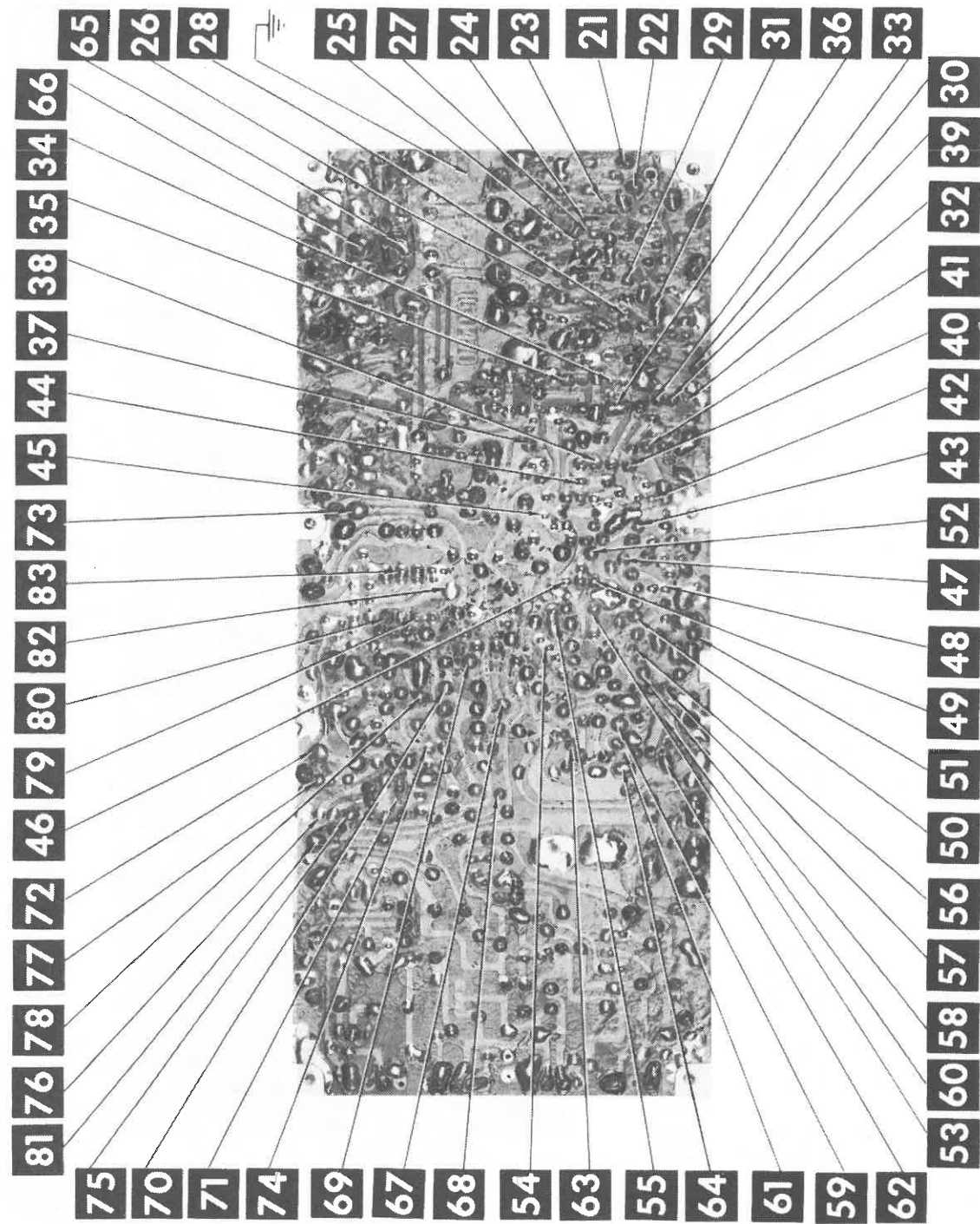
A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE
© Howard W. Sams & Co., Inc. 1975

NOTE: DEMAGNETIZE HEADS AFTER SERVICING



AGNETIZE HEADS AFTER SERVICING

BRADFORD MODELS 1353A13/A14/B24/B25
(WTG-80556/556A/580/580A)

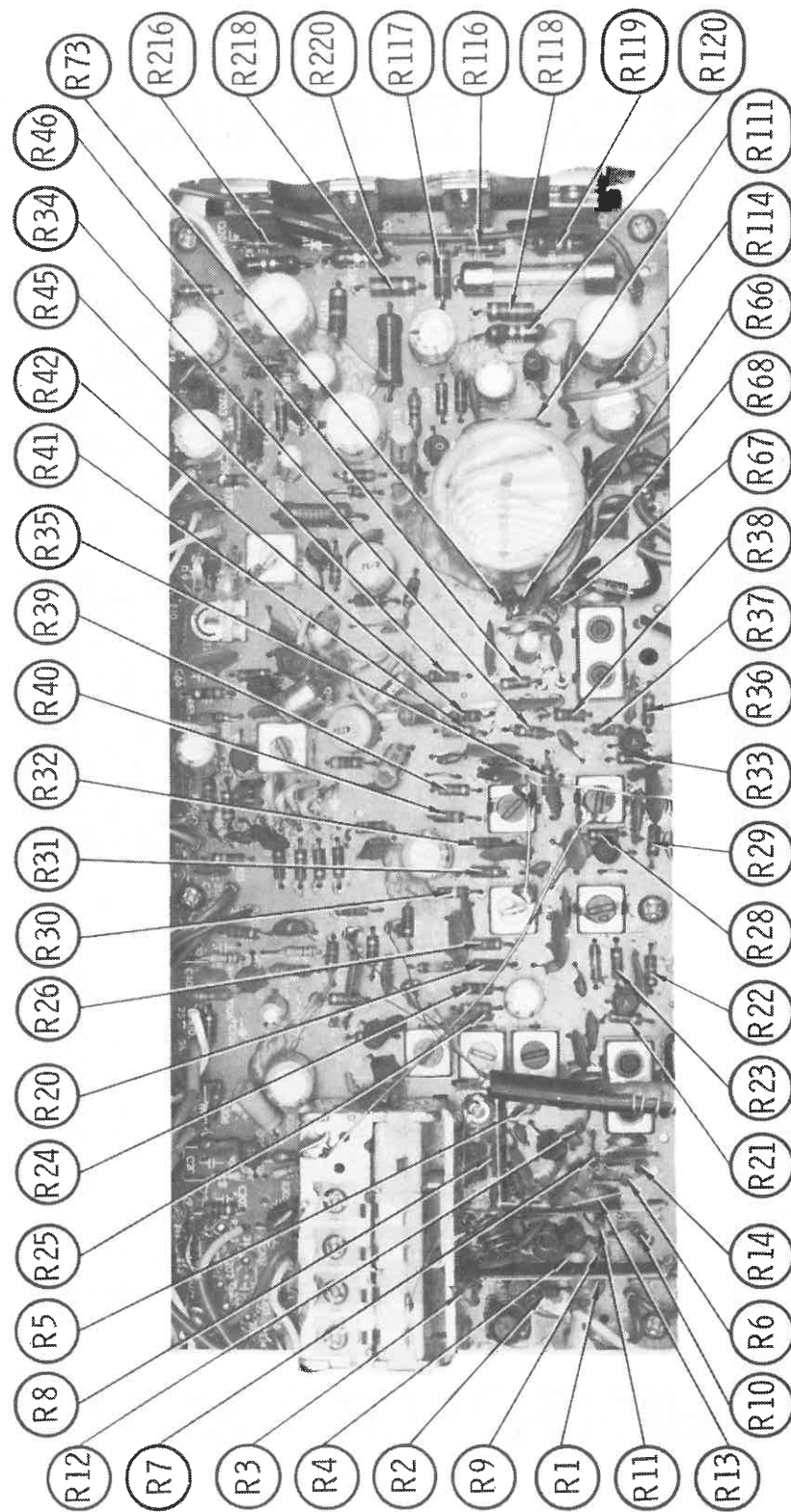
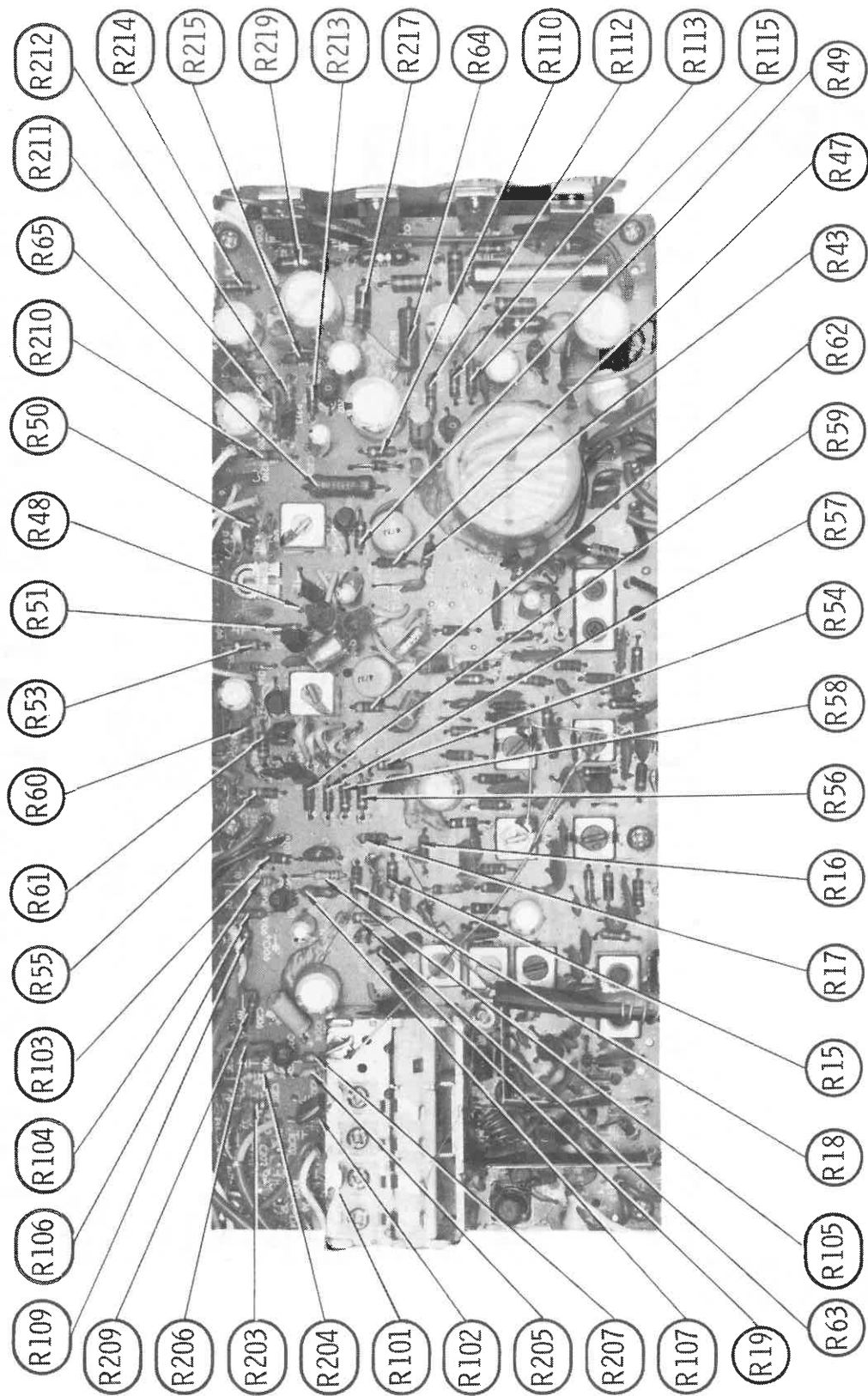
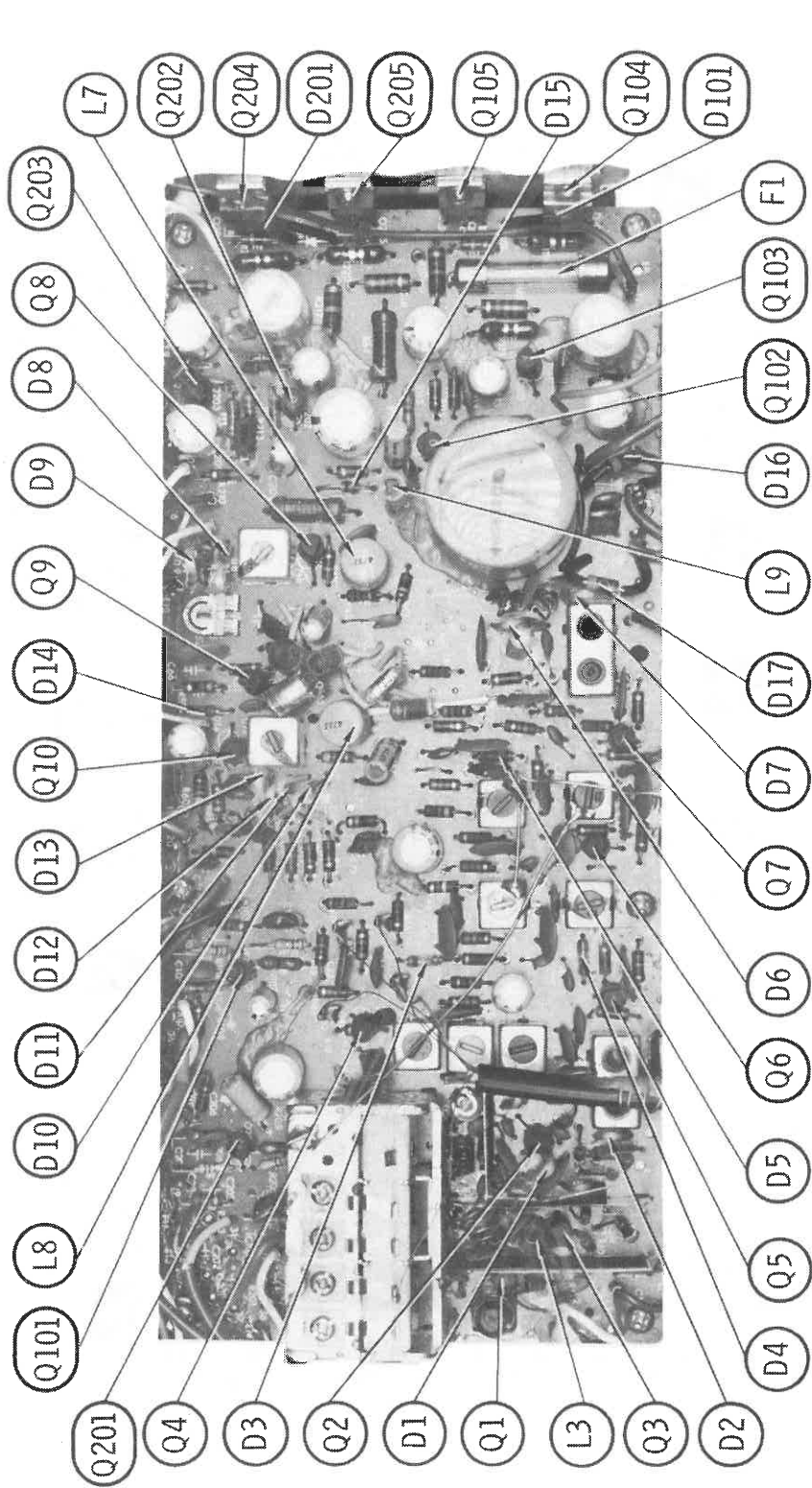


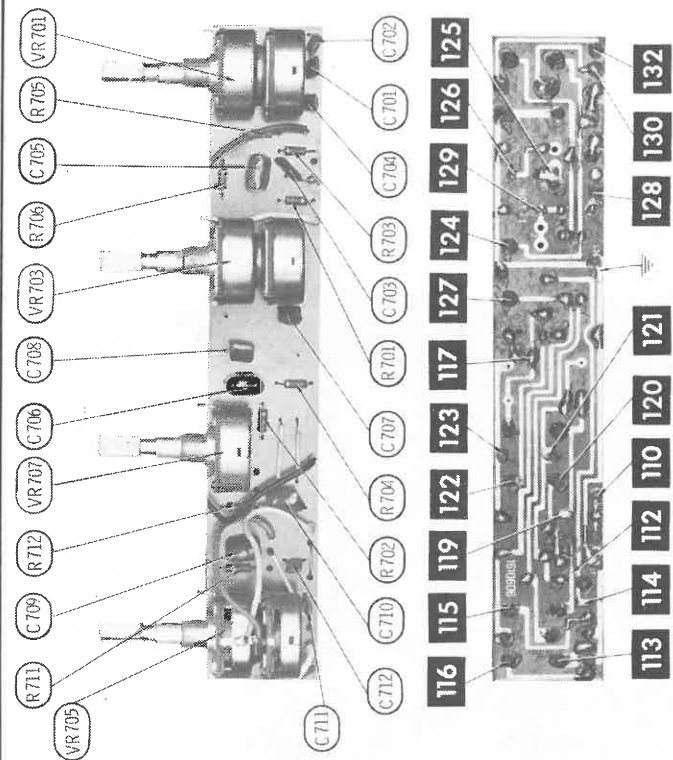
▲ Measured in AM Position

RF-IF-AUDIO BOARD

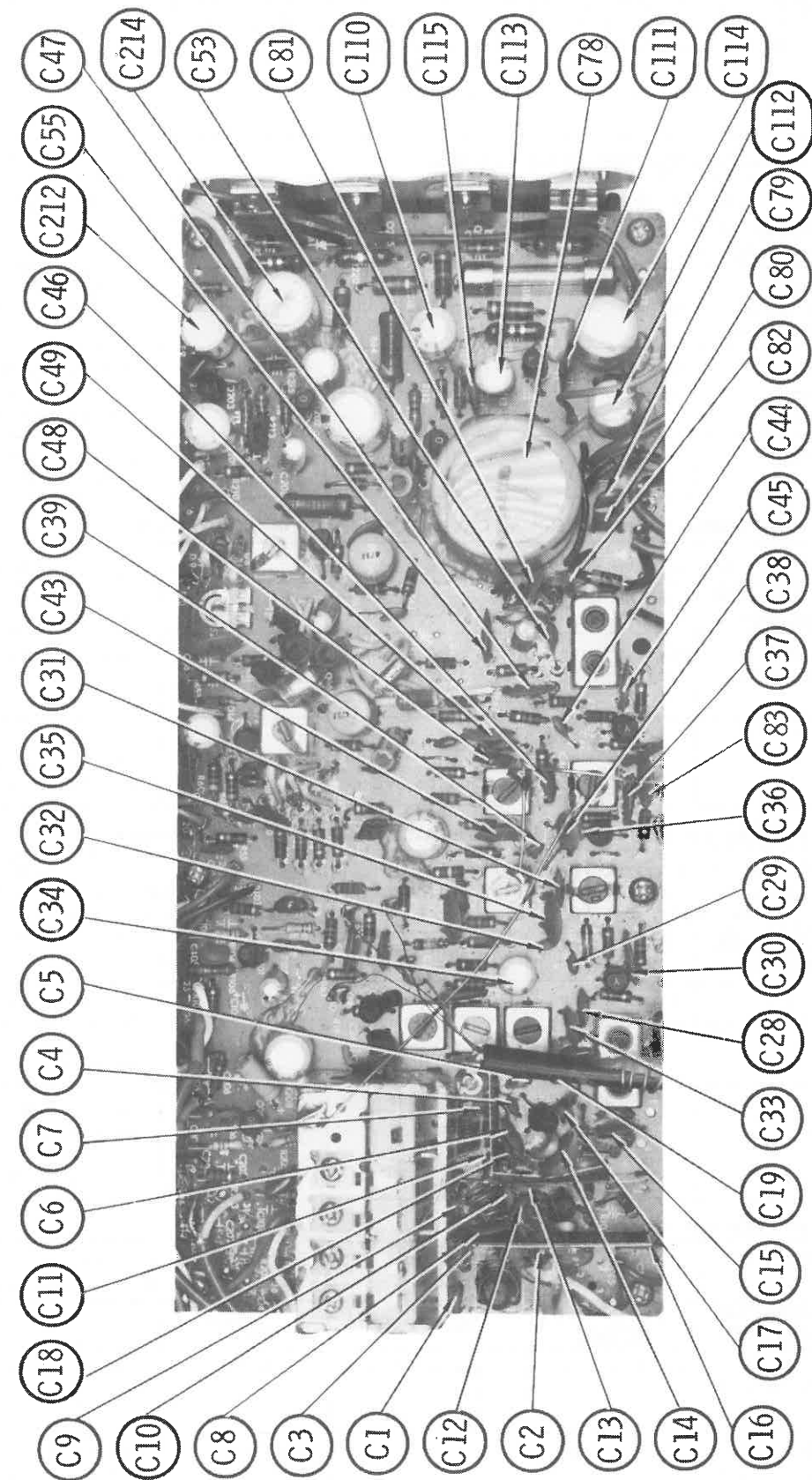
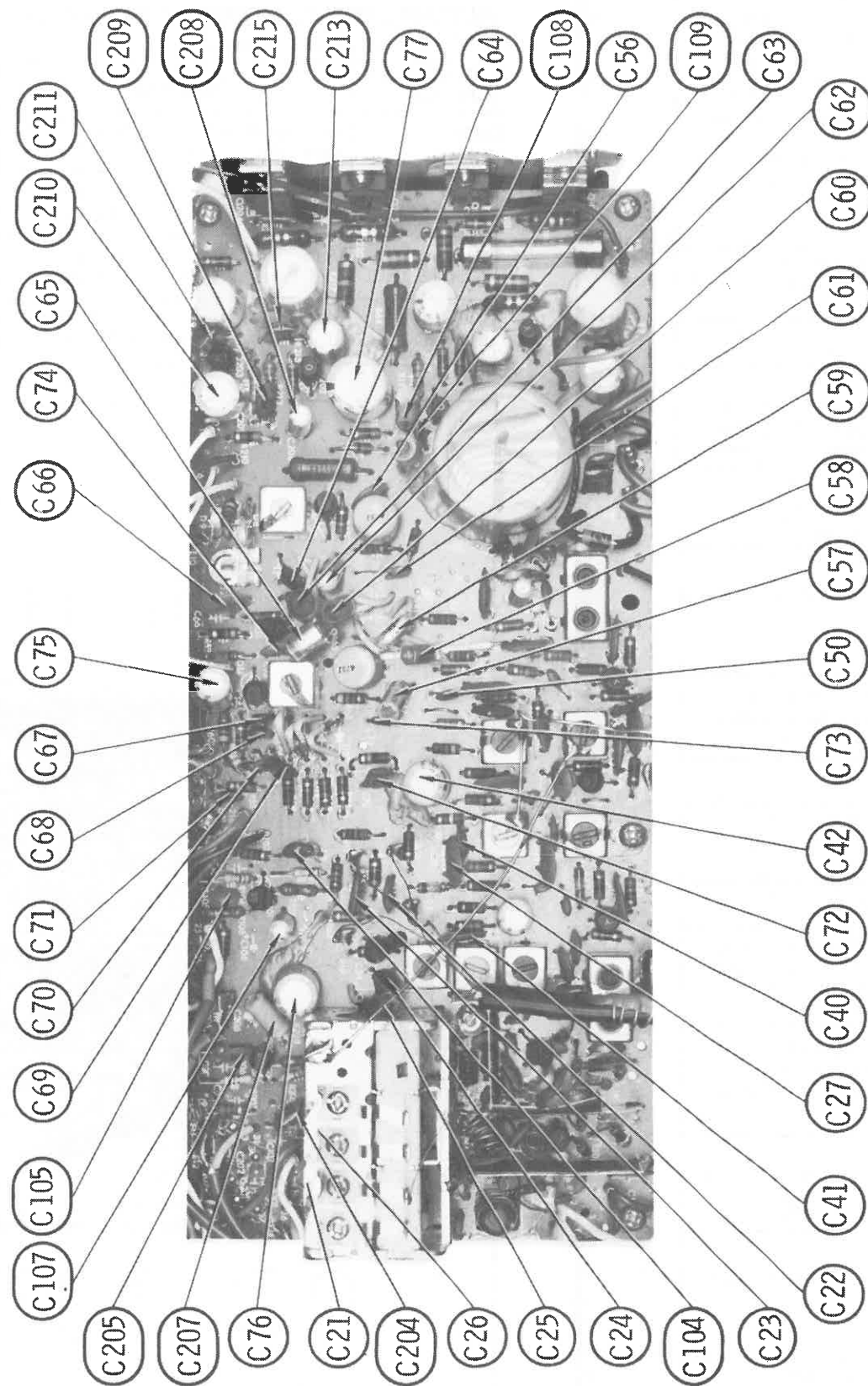
A Howard W. Sams CIRCUITRACE® Photo

RF-IF-AUDIO BOARD





A Howard W. Sams CIRCUITRACE® Photo
AUDIO CONTROL BOARD



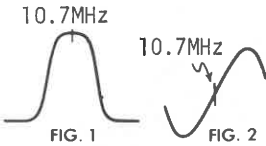
RF-IF-AUDIO BOARD

BRADFORD MODELS 1353A13/A14/B24/B25
(WTG-80556/556A/580/580A)

FOLDER 4

ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 120VAC. Allow a 15-minute warm-up period. Use only enough generator output to obtain a suitable indication. Suggested Alignment Tools: GC ELECTRONICS L1, T1, T8A, T8B 9440 L6, T2 thru T7, T9, T10 .. 8728



AM ALIGNMENT—SELECTOR IN AM POSITION

Connect generator across loop fashioned of several turns of wire. Set volume at maximum.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
455kHz 400-hertz Modulation	Tuning gang fully open	Output meter across voice coil	T7,T5, T3,T2	Adjust for maximum. Repeat until no further improvement is noted.
600kHz	Tune to signal	"	L6	Adjust for maximum.
1640kHz	"	"	TC5	Adjust for maximum.
1400kHz	"	"	TC4	Adjust for maximum. Repeat AM alignment until no further improvement is noted.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001mfd to point B, low side to ground.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz Unmodulated	Point of non- interference	DC probe of VTVM to point C, common to ground.	T1,T4, T6,T8A	Adjust for maximum.
"	"	DC probe of VTVM to point D, common to ground.	T8B	Adjust for zero reading. A positive or negative reading will be obtained on either side of correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001mfd to point B, low side to ground. Use only enough marker signal for indication. Use 60-hertz frequency modulated signal with 450kHz sweep. Use 60-hertz sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz 450kHz Sweep	Point of non- interference	Vert input of scope to point C, low side to ground.	T1,T4, T6,T8A	Disconnect stabilizing capacitor C ₅₂ . Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C ₅₂ .
"	"	Vert input of scope to point D, low side to ground.	T8B	Adjust T8B to place marker at center of S curve similar to Fig. 2. Readjust T8A for maximum amplitude and straightness of line.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead. Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.

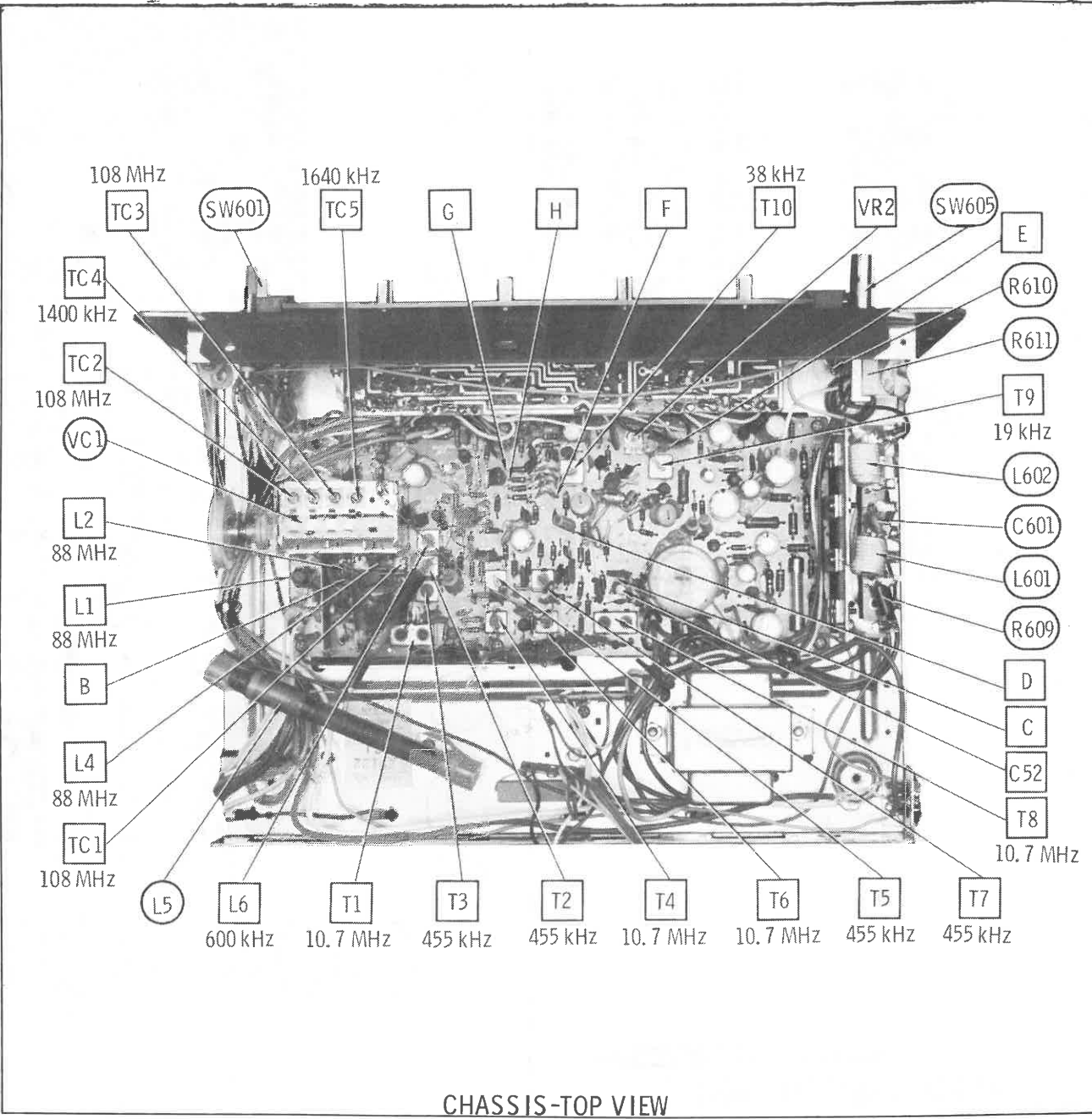
GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
88MHz Unmodulated	Low freq end	DC probe of VTVM to point C, common to ground.	L1,L4,L2	Adjust for maximum.
108MHz Unmodulated	Tune to signal	"	TC1,TC2, TC3	Adjust for maximum. Repeat FM RF steps until no further improvement is noted.

ALIGNMENT INSTRUCTIONS (Continued)

FM STEREO MULTIPLEX ALIGNMENT USING FM STEREO SIGNAL GENERATOR (±.0001% ACCURACY)

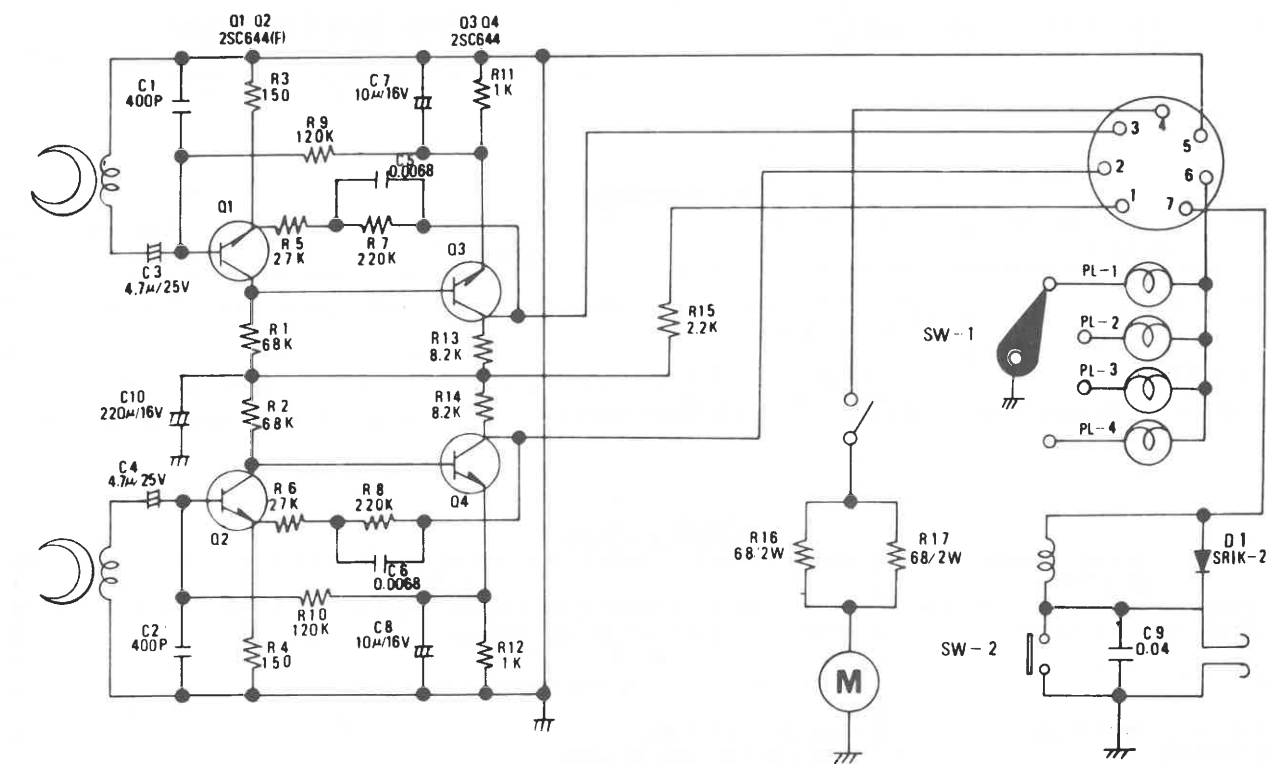
High side of generator thru 47K to point D, low side to ground.

GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
19kHz	Vert input of scope thru 47K to point E, low side to ground.	T9	Adjust for maximum.
19kHz	Vert input of scope thru 47K to point F, low side to ground.	T10	Adjust for maximum 38kHz response.
Modulated Left Channel	Vert input of scope to point G, low side to ground.	VR2	Adjust for MINIMUM. This step should require only slight adjustment.
Modulated Right Channel	Vert input of scope to point H, low side to ground.		Check for MINIMUM. If necessary, make compromise adjustment of VR2.



CHASSIS-TOP VIEW

schematic diagram — models 80556A & 80580A
8-track deck CP103P



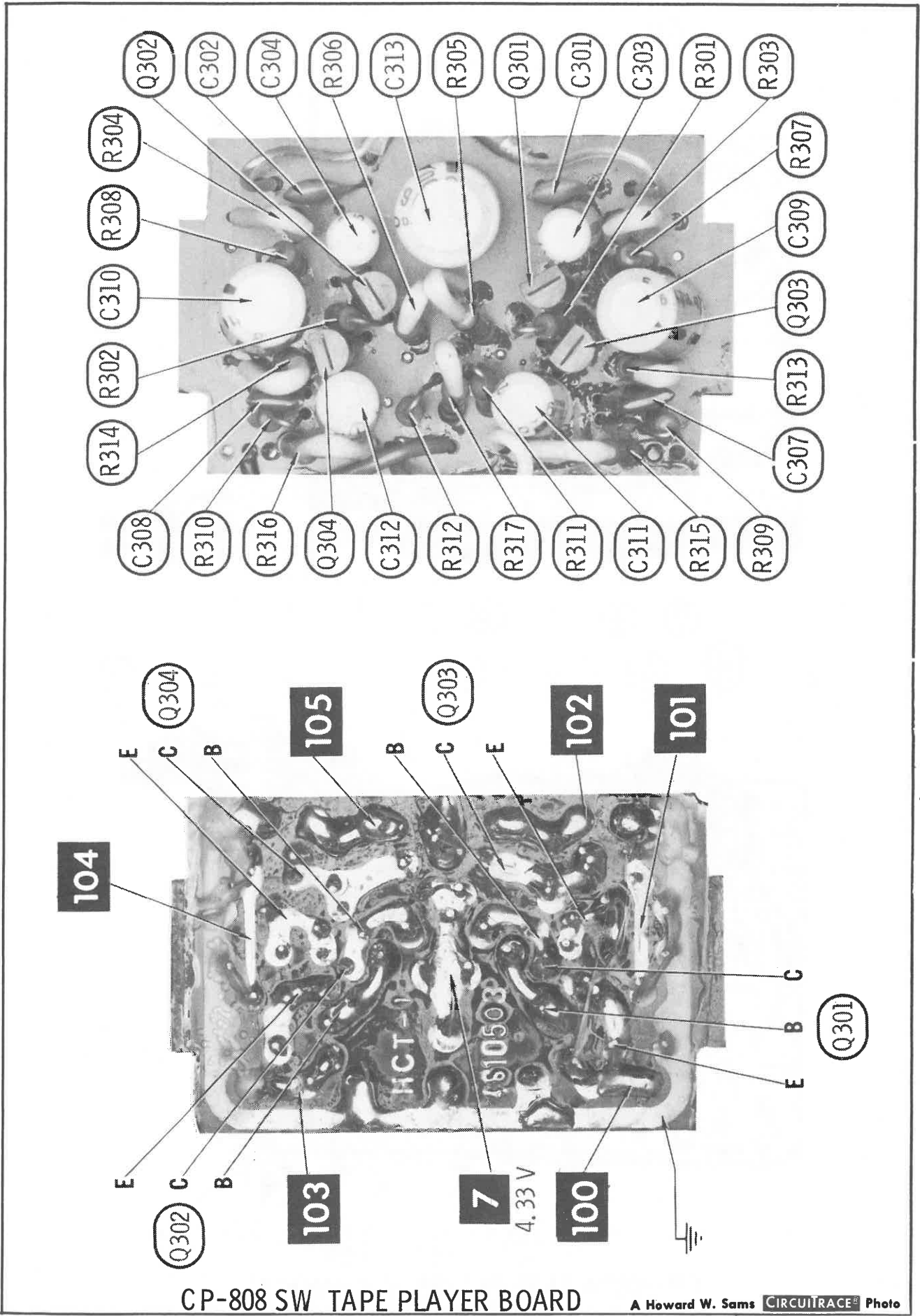
electrical parts list — 8-track deck CP103P

CAPACITORS		
Ref. No.	Part No.	Type/Value
C1, 2	1252682	400 pf Mylar
C3, 4	1204475	4.7 mf 25 V
C5, 6	1252682	0.0068 mf Mylar
C7, 8	1203106	10 mf 16 V
C9	1273403	0.04 mf Ceramic
C10	1203227	220 mf 16 V
RESISTORS — all 1/4W ± 10% unless otherwise stated		
Ref. No.	Type/Value	
R1, 2	68K	
R3, 4	150 ohm	
R5, 6	27K	
R7, 8	220K	
R9, 10	120K	
R11, 12	1K	
R13, 14	802K	
R15	2.2K	
R16, 17	68 ohm 2W	

TRANSISTORS		
Ref. No.	Type	
Q1, 2 Q3, 4	2SC644(F) 2SC644	
DIODES		
D1	SR1K-2	
MISCELLANEOUS		
Ref. No.	Part No.	Description
SW1 SW2 —	27W7054 21N7170 1650046	Motor Switch (B40) Tape Switch (B33) Playback Head
ADDITIONAL PARTS ON RADIO CHASSIS		
C84 D18, 19	Capacitor , Elect. Diode	470 mf 35 V 10D-1

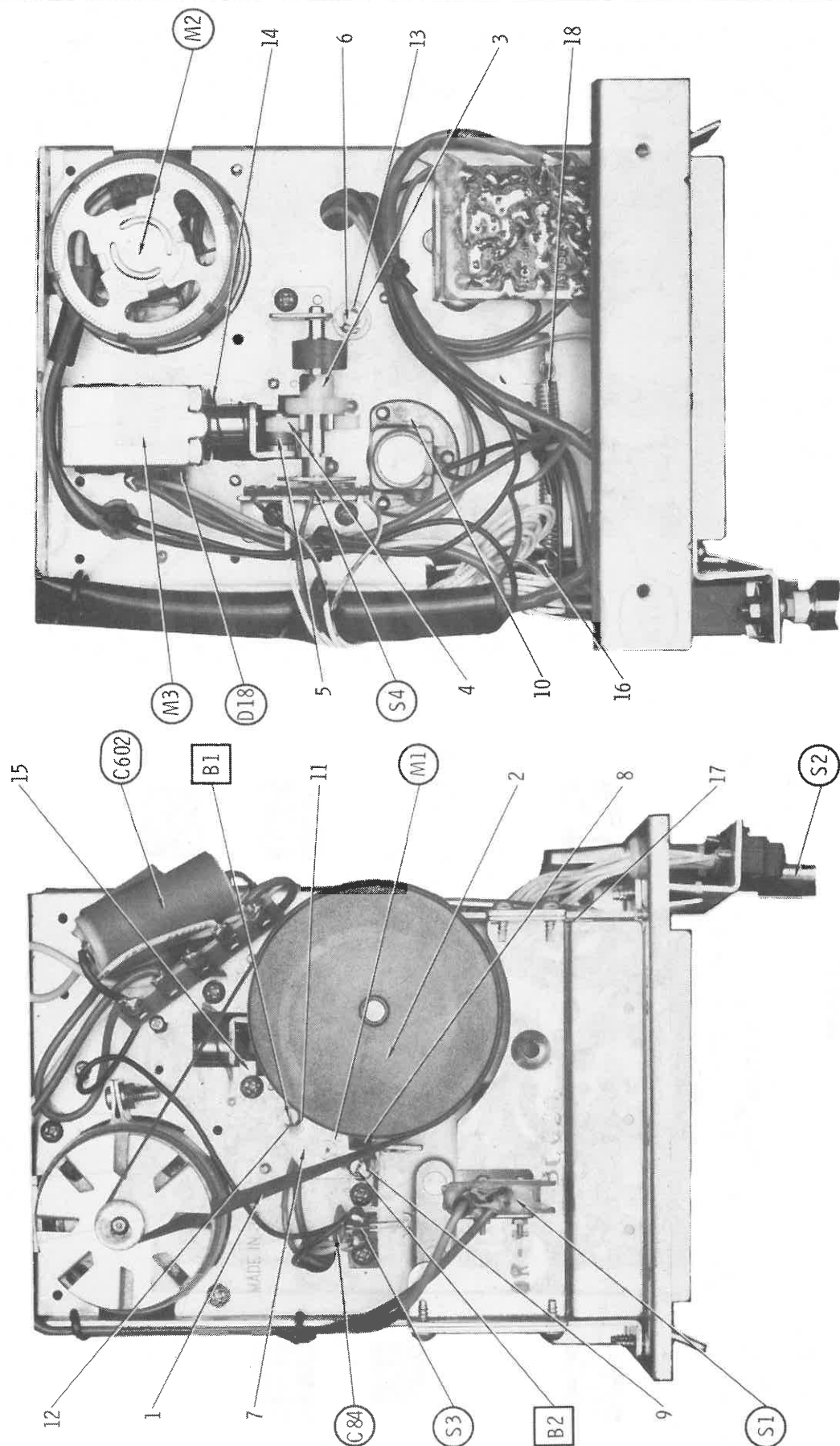
CP103P TAPE DECK

Courtesy of the Manufacturer



BRADFORD MODELS 1353A13/A14/B24/B25
(WTG-80556/556A/580/580A)

FOLDER 4



CP-808SW TAPE PLAYER MECHANICAL

CLEANING CP-808SW TAPE DECK

Clean all tape contact surfaces with a soft, lint-free material and head cleaner or methyl alcohol. Use alcohol to remove oil and grease from all driving surfaces.

CAUTION: Avoid getting head cleaner on any plastic surface.

LUBRICATING

Bearings are oil-less type and do not need lubrication. Lubricate bushings lightly with #20 machine oil. Use a light film of nonhardening grease on cam surfaces.

HEAD DEMAGNETIZING

Demagnetize head when unit is serviced. Avoid using magnetic materials near head.

ADJUSTMENTS

ADJUST	REMARKS
Head Height	Play a test cartridge, follow instructions with cartridge, and adjust B1 for proper response.
Head Azimuth	Connect an AC VTVM across right output. Play a test cartridge and adjust B2 for maximum.

TROUBLE CHART

SYMPTOM	REMARKS
Capstan does not rotate.	Belt (1) dirty, worn, or broken. Assembly (10) binding. Motor defective or not supplied with power.
Track-shift mechanism inoperative.	Switch (S3) dirty. Cam (3) binding or worn. Pawl (4) worn. Arm (6) binding. Solenoid (M3) defective or not supplied with power. Cartridge defective.
Wow or Flutter.	Belt (1) dirty or worn. Capstan dirty or binding. Cartridge defective. Motor defective.
Sound weak or distorted.	Head dirty, misaligned, or defective. Cartridge defective. Amplifiers defective.
Tape is pulled from cartridge.	Cartridge defective. Capstan dirty or scored.

MECHANICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1 *	21V7008 *	Flywheel Belt *	10	22R7012	Capstan Bearing Assembly
2	25R7033	Flywheel	11	26W7171	Height Adjust Spring
3	22R7028	Head Shifting Cam	12	25W7460	Height Shaft
4	21W0191	Pawl	13	26W7136	Head Lift Spring
5	26W0185	Pawl Spring	14	26W7079	Solenoid Spring
6	25W7459	Head Mounting Arm (Shaft)	15	23W7837	Stopper Pawl
7	23W7834	Head Mounting Plate	16	23W1145	Cartridge Detent Arm
8	(1)	Azimuth Plate	17	21W0054	Cartridge Detent Roller
9	26W7006	Azimuth Spring	18	26W0111	Cartridge Detent Spring

* Flywheel Belt - E-V/GAME Replacement Number 1407-71
WALSCO Replacement Number 1424-21

(1) Part of Head M1

BRADFORD MODELS 1353A13/A14/B24/B25
(WTG-80556/556A/580/580A)

RADIO PARTS LIST AND DESCRIPTION
(When ordering parts, state Model, Part Number, and Description.)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Power Cord	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Feet
Low-loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401 or 8421

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE / MFR. No./PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1	1S2139B (8)	GE-90 (8)	D201 (8)	PTC206	HEPR2503(8)	SK3126 (8)		
D2	1N60	1N60	1N60	PTC206	HEP135	SK3088		ECG 109
D3	1N60	1N60	1N60	PTC206	HEP135	SK3088		ECG 109
D4	1N60	1N60	1N60	PTC206	HEP135	SK3088		ECG 109
D5	1N60	1N60	1N60	PTC206	HEP135	SK3088		ECG 110 (6)
D6	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D7	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D8	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D9	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D10	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D11	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D12	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D13	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D14	1N60(P)	1N60 (7)	1N60 (7)	PTC206 (7)	HEP135 (7)	SK3088 (7)		ECG 110 (6)
D15	BZ-120	GE-120	Z-1212	PTC507	HEP135	SK3088		ECG 142
D16	12V Zener SR1K-2	GE-504A	8D4 or 5A4D	PTC201 or PTC507	HEPR0052	SK3030 or SK3062	RT243	ECG 116 or ECG 117
D17	100-1 (1)	GE-504A	8D4 or 5A4D	PTC201 or PTC202	HEPR0052	SK3030 or SK3031		ECG 116 or ECG 117
D17	SR1K-2	GE-504A	8D4 or 5A4D	PTC201 or PTC202	HEPR0052	SK3030 or SK3031		ECG 116 or ECG 117
D17	100-1 (1)	GE-504A	8D4 or 5A4D	PTC201 or PTC202	HEPR0052	SK3030 or SK3031		ECG 116 or ECG 117
D101	KB162	GE-300	D200	PTC214	HEPR0602	SK3100		ECG 177
D201	KB162	GE-300	D200	PTC214	HEPR0602	SK3100		ECG 177
D201	S3016R (1)	GE-300	D200	PTC214	HEPR0602	SK3100		ECG 177
Q1	25C784(R)	GE-20	TR-21	PTC132	HEP56	SK3018		ECG 107
Q2	25C394(Y)	GE-17	TR-33	PTC121	HEP53	SK3018		ECG 107
Q3	25C394(Y)	GE-17	TR-33	PTC121	HEP53	SK3018		ECG 107
Q4	25C460(B) (1)	GE-20	TR-21	PTC139	HEP56	SK3122		ECG 199
Q5	25C380(Y)	GE-20	TR-24	PTC121	HEP56	SK3018		ECG 107
Q6	25C380(Y)	GE-20	TR-24	PTC121	HEP56	SK3018		ECG 107
Q7	25C380(Y)	GE-20	TR-24	PTC121	HEP56	SK3018		ECG 107
Q8	25C373	GE-62	(1R)25C373	PTC139	HEP55	SK3122		ECG 199
Q9	25C373	GE-62	(1R)25C373	PTC139	HEP55	SK3122		ECG 199
Q10	25C373	GE-62	(1R)25C373	PTC139	HEP55	SK3122		ECG 199
Q101	25C732(GR)	GE-20	TR-21	PTC139	HEP736	SK3122		ECG 199
Q102	25A495(O)	GE-21	TR-30	PTC103	HEP52	SK3114		ECG 159
Q103	25A495(O)	GE-21	TR-30	PTC103	HEP52	SK3114		ECG 159
Q104	25C735(Y)	GE-10	TR-21	PTC136	HEPS0003	SK3124		ECG 123A
Q104	25A473(Y) (9)	GE-69	TR-77	PTC111	HEPS3027	SK3083		ECG 152
Q105	25C1173X(Y) (9)	GE-66	TR-76	PTC139	HEP737	SK3122		ECG 199
Q201	25C732(GR)	GE-20	TR-21	PTC139	HEP736	SK3122		ECG 199
Q202	25A495(O)	GE-21	TR-30	PTC103	HEP52	SK3114		ECG 159
Q203	25C735(Y)	GE-10	TR-21	PTC136	HEPS0003	SK3124		ECG 123A
Q204	25A473(Y) (9)	GE-69	TR-77	PTC111	HEPS3027	SK3083		ECG 152
Q205	25C1173X(Y) (9)	GE-66	TR-76	PTC139	HEP737	SK3122		ECG 199

- (1) Used in some versions.
(6) Matched Pair
(7) Two required - select matched pair.
(8) Varactor
(9) Half of Complementary Pair (Q104 and Q105, Q204 and Q205).

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		MFR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C34	47 16V	1203476	RME-E-E-050	EP15-50	PC50-16	MTV50CB15	EV-1226	
C42	100 16V	1203107	RME-E-E-100	EP15-100	PC100-16	MTV100CB15	EV-1230	
C52	10 16V	1203106	RME-A-G-010	EP30-5	PC10-25	VTT4R7A50	EV-1319	
C57	4.7 25V	1203475	RME-A-E-005	EP15-5	PC5-50	VTT4R7A50	EV-1319	
C62	4.7 16V	1203475	RME-A-G-005	EP30-5	PC5-50	VTT4R7A50	EV-1319	
C75	10 50V	1221106	RME-A-E-005	EP15-5	PC5-50	VTT4R7A50	EV-1319	
C76	100 16V	1203107	RME-E-E-100	EP15-100	PC100-16	MTV100CB15	EV-1230	
C77	220 25V	1203227	ME-G200	EP30-250	PC200-35	MTV200DE25	EV-1340	
C78	220 35V	1220057			AA0145A (1)	FP070A (2)	TVLP-1342 (1)	
C107	10 16V	1203106	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222	
C108	1 50V	1203105	RME-A-G-001	EP30-1	PC1-50	MTV1CB50	EV-1315	
C110	220 10V	1202227	ME-6-D-200	EP15-250	PC200-10	MTV200DB10	EV-1140	
C112	220 10V	1202227	ME-6-D-200	EP15-250	PC200-10	MTV200DB10	EV-1140	
C113	47 16V	1203476	RME-A-E-050	EP15-50	PC50-16	MTV50CB15	EV-1226	
C114	470 16V	1203477	RME-E-E-010	EP15-500	PC500-16	MTV500DB15	EV-1250	
C207	10 16V	1203106	RME-B-E-010	EP15-10	PC10-25	VTT10A25	EV-1222	
C208	1 50V	1203105	RME-A-J-001	EP50-1	PC1-50	MTV1CB50	EV-1615	
C210	220 10V	1202227	RME-A-G-001	EP30-1	PC1-50	MTV1CB50	EV-1315	
C212	220 16V	1202227	ME-6-D-200	EP15-250	PC200-10	MTV200DB10	EV-1140	
C213	220 10V	1202227	ME-6-D-200	EP15-250	PC200-10	MTV200DB10	EV-1140	
C214	470 16V	1203476	RME-E-E-050	EP15-50	PC50-16	MTV50CB15	EV-1226	
C214	470 16V	1203477	RME-L-E-500	EP15-500	PC500-16	MTV500DB15	EV-1250	

- (1) Use printed circuit board adapter kit.
(2) Use printed circuit board adapter kit FPA.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCOPART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	10		CCT0-100	DTZ-10	NP010	CN0410	10TCC-Q10
C2	3		CCT0-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C3	.02		CCD-203			GP120	56A-S20
C4	3		CCT0-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C5	.25			DTZ-25	NP025	CN0425	10TCC-Q25
C6	.02		CCD-203			GP120	56A-S20
C7	10		CCT0-100	DTZ-10	NP010	CN0410	10TCC-Q10
C8	.02		CCD-203			GP120	56A-S20
C9	12		CCT0-120			CN0412	10TCC-Q12
C10	3		CCT0-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C11	3		CCT0-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C12	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C13	.02		CCD-203			GP120	56A-S20
C14	.04		CCD-403			GP140	56A-S40
C15	.04		CCD-403			GP140	56A-S40
C16	.04		CCD-403			GP140	56A-S40
C17	3		CCT0-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C18	.02		CCD-203			GP120	56A-S20
C19	100		CCD-101	DD-101	GP100	GP310	10T5-T10
C21	10		CCT0-100	DTZ-10	NP010	CN0410	10TCC-Q10
C22	.02		CCD-203			GP120	56A-S20
C23	.04	50V	CCD-403			GP140	56A-S40
C24	.01	50V	1MDF-1-103	CPJ-103	DPMS4S1	EPW1A110	1PB-S10
C25	350	50V	DM15-361J	CPJ-360J	DPMS4S1	CP15FD361J03	424HE3600J501
C26	15		CCT0-150	DTZ-15	NP015	CN0415	10TCC-Q15
C27	.04		CCD-403			GP140	56A-S40
C28	.005		CCD-502				10T5-D50
C29	2		CCT0-2R2	DTZ-2R2	NP02P2	CN0522	10TCC-V22
C30	.04		CCD-403			GP140	56A-S40
C31	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C32	3		CCT0-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C33	.02		CCD-203			GP120	56A-S20
C34	.04		CCD-403			GP140	56A-S40
C35	.04		CCT0-2R2	DTZ-2R2	NP02P2	CN0522	10TCC-V22
C36	2		CCD-403			GP140	56A-S40
C37	.04		CCD-403			GP140	56A-S40
C38	300		CCD-301	DD-301	GP300	CN0533	10TCC-V33
C39	3		CCT0-3R3	DTZ-3R3	NP03P3	GP120	56A-S20
C40	.02		CCD-203			GP140	56A-S40
C41	.04		CCD-403			GP140	56A-S40
C43	.04		CCD-403			GP140	56A-S40
C44	1					CN0510	10TCC-V10
C45	.04		CCD-403			GP120	56A-S20
C46	.02		CCD-203			GP140	56A-S40
C47	.04		CCD-403			GP140	56A-S40
C48	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EPW1A122	1PB-S22
C49	.04		CCD-403			EPW1A110	1PB-S10
C50	.01	50V	1MDF-1-103	CPJ-103	DPMS4S1	GP456	10T5-Q56
C53	60		CCD-560	DD-560		GP140	56A-S40
C55	.04		CCD-501	DD-501	GP500	GP350	10T5-T50
C58	110	50V 5%	DM10-111J	CPJ-110J		CD10FD111J03	424M01100J501
C59	110	50V 5%	DM10-111J	CPJ-110J		CD10FD111J03	424M01100J501
C60	150	50V 5%	DM10-151J	CPJ-150J		CD7FD151J03	424M01500J501
C61	220		CCD-221	DD-221		GP322	10T5-T22
C63	.0047	50V 10%	DM19-472J	CPJ-4700J		CD19FD472J03	424M4701J501
C64	.0018		DM1F-1-182	CPR-1800J		EPW1A218	1PB-D18
C65	.0022	50V 10%	DM19-222J	CPR-2200J		CD19FD222J03	424M2201J501
C66	.04		CCD-403			GP140	56A-S40
C67	.0018		1MDF-1-182	CPR-1800J		EPW1A218	1PB-D18
C68	.0018		1MDF-1-182	CPR-1800J		EPW1A218	1PB-D18
C69	.0018	50V	1MDF-1-182	CPR-1800J		EPW1A218	1PB-D18
C70	.0018	50V	1MDF-1-182	CPR-1800J		EPW1A218	1PB-D18
C71	.01	50V	1MDF-1-103	CPJ-103	DPMS4S1	EPW1A110	1PB-S10
C72	.01	50V	1MDF-1-103	CPJ-103	DPMS4S1	EPW1A110	1PB-S10
C73	.0022		6DP-1-222	CPR-2200J	DPMS6D22	EPW6222	6PS-D22
C74	.001		CCD-102	DD-102		GP210	10T5-D10
C79	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EPW1A122	1PB-S22
C80	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EPW1A122	1PB-S22
C81	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C82	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C83	.04		CCD-403			GP140	56A-S40
C104	.047	50V	1MDF-2-473			EPW1A147	1PB-S47
C105	100			DTZ-100	NP0100	CN0310	10TCC-T10
C109	.0012	50V	6DP-1-122	CPR-1200J	DPMS6D12	PV6212	6PS-D12
C111	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EPW1A122	1PB-S22
C115	500		CCD-501	DD-501	GP500	GP350	10T5-T50
C204	.047	50V	1MDF-2-473			EPW1A147	1PB-S47
C205	100			DTZ-100	NP0100	CN0310	10TCC-T10
C209	.0012		6DP-1-122	CPR-1200J	DPMS6D12	PV6212	6PS-D12
C211	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EPW1A122	1PB-S22
C215	500		CCD-501	DD-501	GP500	GP350	10T5-T50
C275	1.4KV		3CCD-101	DD30-101	HV3-100	ZHY310	305A-T10
C701	.018		1MDF-1-183			EPW1A118	1PB-S18
C702	.018		1MDF-1-183			EPW1A118	1PB-S18
C703	.0018		1MDF-1-182	CPR-1800J		EPW1A218	1PB-D18
C704	.0018		1MDF-1-182	CPR-1800J		EPW1A218	1PB-D18
C705	.15	50V	1MDF-3-154		DPMS2P15	EPW1A015	1PB-P15
C706	.15	50V	1MDF-3-154		DPMS2P15	EPW1A015	1PB-P15
C707	.033	50V	6DP-3-333		DPMS6G33	EPW6133	6PS-S33
C708	.033	50V	6DP-3-333		DPMS6G33	EPW6133	6PS-S33
C709	.1	50V	1MDF-3-104		DPMS2P1	EPW1A010	1PB-P10
C710	.1	50V	1MDF-3-104		DPMS2P1	EPW1A010	1PB-P10
C711	.001		1MDF-1-102	CPJ-102	DPMS6D1	EPW1A210	1PB-D10
C712	.001		1MDF-1-102	CPJ-102	DPMS6D1	EPW1A210	1PB-D10
TC1	Trimmer	1280027					
TC2	Trimmer	(1)					
TC3	Trimmer	(1)					
TC4	Trimmer	(1)					
TC5	Trimmer	(1)					
VC1	Tuning Gang	1291141					

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	10		CCT0-100	DTZ-10	NP010	CNO410	10TCC-Q10
C2	3		CCT0-3R3	DTZ-3R3	NP03P3	CNO533	10TCC-V33
C3	.02		CCD-203			GP120	5GA-S20
C4	3		CCT0-3R3	DTZ-25	NP03P3	CNO533	10TCC-V33
C5	25			DTZ-25	NP025	CNO425	10TCC-Q25
C6	.02		CCD-203			GP120	5GA-S20
C7	10		CCT0-100	DTZ-10	NP010	CNO410	10TCC-Q10
C8	.02		CCD-203			GP120	5GA-S20
C9	12		CCT0-120			CNO412	10TCC-Q12
C10	3		CCT0-3R3	DTZ-3R3	NP03P3	CNO533	10TCC-V33
C11	3		CCT0-3R3	DTZ-3R3	NP03P3	CNO533	10TCC-V33
C12	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C13	.02		CCD-203			GP120	5GA-S20
C14	.04		CCD-403			GP140	5GA-S40
C15	.04		CCD-403			GP140	5GA-S40
C16	.04		CCD-403			GP140	5GA-S40
C17	3		CCT0-3R3	DTZ-3R3	NP03P3	CNO533	10TCC-V33
C18	.02		CCD-203			GP120	5GA-S20
C19	100		CCD-101	DD-101	GP100	GP310	10T5-T10
C21	10		CCT0-100	DTZ-10	NP010	CNO410	10TCC-Q10
C22	.02		CCD-203			GP120	5GA-S20
C23	.04		CCD-403			GP140	5GA-S40
C24	.01	50V	1MDF-1-103	CPJ-103	DPMS4S1	EWFA1A110	1PB-S10
C25	350	50V	DM15-361J	CPR-360J	CD15FD361J03	SX336	424ME3600J501
C26	15		CCT0-150	DTZ-15	NP015	CNO415	10TCC-Q15
C27	.04		CCD-403			GP140	5GA-S40
C28	.005		CCD-502			GP140	10T5-D50
C29	2		CCT0-2R2	DTZ-2R2	NP02P2	CNO522	10TCC-V22
C30	.04		CCD-403			GP140	5GA-S40
C31	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C32	3		CCT0-3R3	DTZ-3R3	NP03P3	CNO533	10TCC-V33
C33	.02		CCD-203			GP120	5GA-S20
C35	.04		CCD-403			GP140	5GA-S40
C36	2		CCT0-2R2	DTZ-2R2	NP02P2	CNO522	10TCC-V22
C37	.04		CCD-403			GP140	5GA-S40
C38	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C39	3		CCT0-3R3	DTZ-3R3	NP03P3	CNO533	10TCC-V33
C40	.02		CCD-203			GP120	5GA-S20
C41	.04		CCD-403			GP140	5GA-S40
C43	.04		CCD-403			GP140	5GA-S40
C44	1					CNO510	10TCC-V10
C45	.04		CCD-403			GP140	5GA-S40
C46	.02		CCD-203			GP120	5GA-S20
C47	.04		CCD-403			GP140	5GA-S40
C48	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EWFA1A122	1PB-S22
C49	.04		CCD-403			GP140	5GA-S40
C50	.01	50V	1MDF-1-103	CPJ-103	DPMS4S1	EWFA1A110	1PB-S10
C53	60		CCD-560	DD-560	GP455	GP455	10T5-Q56
C55	.04		CCD-403			GP140	5GA-S40
C56	50		CCD-501	DD-501	GP500	GP350	10T5-T50
C58	110	50V 5%	DM10-111J	CPR-110J	CD10FD111J03	SX311	424MC1100J501
C59	110	50V 5%	DM10-111J	CPR-110J	CD10FD111J03	SX311	424MC1100J501
C60	150	50V 5%	DM10-151J	CPR-150J	CD17FD151J03	SX315	424MC1500J501
C61	220		CCD-221	DD-221	GP322	GP322	10T5-T22
C63	.0047	50V 10%	DM19-472J	CPR-4700J	CD19FD472J03	SX247	424ME4701J501
C64	.0018		1MDF-1-182	CPR-1800J		EWFA1A218	1PB-D18
C65	.0022	50V 10%	DM19-222J	CPR-2200J	CD19FD222J03	SX222	424ME2201J501
C66	.04		CCD-403			GP140	5GA-S40
C67	.0018		1MDF-1-182	CPR-1800J		EWFA1A218	1PB-D18
C68	.0018		1MDF-1-182	CPR-1800J		EWFA1A218	1PB-D18
C69	.0018	50V	1MDF-1-182	CPR-1800J		EWFA1A218	1PB-D18
C70	.0018	50V	1MDF-1-182	CPR-1800J		EWFA1A218	1PB-D18
C71	.01	50V	1MDF-1-103	CPJ-103	DPMS4S1	EWFA1A110	1PB-S10
C72	.01	50V	1MDF-1-103	CPJ-103	DPMS4S1	EWFA1A110	1PB-S10
C73	.0022		6DP-1-222	CPR-2200J	EWFA1A110	EWFA1A110	1PB-S10
C74	.001		CCD-102	DD-102	DPMS2S22	GP210	6PS-D22
C79	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EWFA1A122	1PB-S22
C80	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EWFA1A122	1PB-S22
C81	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C82	300		CCD-301	DD-301	GP300	GP330	10T5-T30
C83	.04		CCD-403			GP140	5GA-S40
C104	.047	50V	1MDF-2-473			GP140	5GA-S40
C105	100					GP140	5GA-S40
C109	.0012	50V	6DP-1-122	CPR-1200J	DPMS2S22	EWFA1A122	1PB-S22
C111	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EWFA1A122	1PB-S22
C115	500		CCD-501	DD-501	GP500	GP350	10T5-T50
C204	.047	50V	1MDF-2-473			GP140	5GA-S40
C205	100					GP140	5GA-S40
C209	.0012		6DP-1-122	CPR-1200J	DPMS2S22	EWFA1A122	1PB-S22
C211	.022	50V	1MDF-1-223	CPJ-223	DPMS2S22	EWFA1A122	1PB-S22
C215	500		CCD-501	DD-501	GP500	GP350	10T5-T50
C601	100	1.4KV	3CCD-101	DD30-101	GP500	GP350	10T5-T50
C701	.018		1MD-1-183			EWFA1A118	1PB-S18
C702	.018		1MD-1-183			EWFA1A118	1PB-S18
C703	.0018		1MDF-1-182	CPR-1800J		EWFA1A218	1PB-D18
C704	.0018		1MDF-1-182	CPR-1800J		EWFA1A218	1PB-D18
C705	.15	50V	1MDF-3-154			EWFA1A015	1PB-P15
C706	.15	50V	1MDF-3-154			EWFA1A015	1PB-P15
C707	.033	50V	6DP-3-333			DPMS6S33	6PS-S33
C708	.033	50V	6DP-3-333			DPMS6S33	6PS-S33
C709	.1	50V	1MDF-3-104			EWFA1A010	1PB-P10
C710	.1	50V	1MDF-3-104			EWFA1A010	1PB-P10
C711	.001		1MDF-1-102	CPJ-102	DPMS6D1	EWFA1A210	1PB-D10
C712	.001		1MDF-1-102	CPJ-102	DPMS6D1	EWFA1A210	1PB-D10
TC1	Trimmer						
TC2	Trimmer						
TC3	Trimmer						
TC4	Trimmer						
TC5	Trimmer						
VC1	Tuning Gang						

(1) Part of Tuning Gang VC1.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
VR2	Separation	3000	1390252	TSV-5K (3) or T-5000 (3)	C-502 (3)	X201R302B (3)	MTC33L1 (3)
VR701a	Treble (Right)	50K	139N244	F1-50K (1), R1-50K,	NP-50K-S (1), NP-50K-S,	BU1 (1), CF12, CR7, SS1,	P54L, 3014 (1), RU54L, CS3500
VR701b	Treble (Left)	50K		SSK104, CPL-2	UP-C-400, DC-2	SS7A, DC1	P54L, 3014 (1), RU54L, CS3500
VR703a	Bass (Right)	50K	139N244	F1-50K (1), R1-50K,	NP-50K-S (1), NP-50K-S,	BU1 (1), CF12, CR7, SS1,	P54L, 3014 (1), RU54L, CS3500
VR703b	Bass (Left)	50K		SSK104, CPL-2	UP-C-400, DC-2		
VR705a	Volume (Right)	50K, Tap @ 25K	139N442				
VR705b	Volume (Left)	50K, Tap @ 25K					
VR707	Balance	50K	139N134	F1-50K (1), SSK104	A47-50K-S (1), KSS-3 or [NP-50K-S, UP-C-400]	BU1 (1), CF12, SS1, DC1	RU54L, SL36, SL1500 or [UA54L (1), SK3500] or U35 (1)

(1) Enlarge mounting hole.

(3) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC board.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	FM Antenna	1118416			
L2	FM RF	112B016			
L3	RF Choke	1118077			
L4	FM Oscillator	1118160			
L5	Loopstick	1118461			
L6	AM Oscillator	113M146			
L7	RF Choke	1170015			
L8	RF Choke	1170015			
L9	RF Choke	1178049			
L601	Line Choke	1620119			
L602	Line Choke	1620119			
T1	FM Input IF	11JM120			
T2	AM Input IF (Pri.)	11FM085			
T3	AM Input IF (Sec.)	11FM102			
T4	FM Interstage	11LM105			
T5	AM Interstage	11BM004			
T6	FM Interstage	11LM105			
T7	AM Output	11CM004			
T8	Ratio Detector	11DM003			
T9	19kHz Input	11PN001			
T10	38kHz Output	11QN001			

TRANSFORMER (Power)

ITEM No.	RATING			REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	MFR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T601	120VAC 0.21A AC	.19, 81VAC CT 0 .61A DC	5.52VAC 0.6A AC	118W09NEW				

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFR. PART No.	QUAM PART No.	
SP1	8" PM 8 ohms	L100		
SP2	8" PM 8 ohms	L100		

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
F1	1.5A @ 125V, Quick Acting, Pigtail	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER
		1790040		GVJ 1-1/2			

PHONO CARTRIDGE & NEEDLES

ITEM No.	REPLACEMENT DATA						NOTES
	MFRG. PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		
	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M5	SC8H2		419d	N164-sd	5573D	2428DS	
M6		ST17		N164-sd			

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M4	Motor		Changer
SW2	Switch	P210	Changer
	45 RPM Adapter		
	Idle Wheel		
SW601	Switch	1620119	E-V/GAME Replacement Number 1492-03 (Changer)
SW605	Switch	1622118	WALSCO Replacement Number 1492-03
	Printed Circuit Board	1610606	Function (AM/FM/FM-S/Phono/Aux/Tape)
	Printed Circuit Board	1610470	Phone On/Off
	AC Power Cord	4750506	Audio Control
			RF-Audio

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	PART No.	PART No.	PART No.	PART No.
	MODEL 1353A13 (WTG-80556)	MODEL 1353A14 (WTG-80556A)	MODEL 1353B24 (WTG-805580)	MODEL 1353B25 (WTG-80580A)	
Dial Pointer	23PE002		23PE002		
Knob, Power	P203-P		P203-P		
Knob, Channel Selector	P203-C		P203-C		
Knob, Tuning	P203-T		P203-T		
Knob, Program Selector, Volume, Balance, Bass, Treble	P203-F		P203-F		
Decorative Handle	G903	6903	G906	6906	

(1) Not used with Tape Deck CP103P.

TAPE PLAYER PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS (Select replacement transistor for best results)

		REPLACEMENT DATA							
ITEM No.	TYPE / MFR. No./PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	
Q302	SRK-2	GE-300	D200	PTC214	HEP736	SK3100	RT218	ECG 177	
	100-1 (1)	GE-300	D200	PTC121	HEP736	SK3100	RT218	ECG 177	
	LM1117	GE-20	TR-24	PTC121	HEP736	SK3018	RT102	ECG 123A	
	LM1117	GE-20	TR-24	PTC121	HEP736	SK3018	RT102	ECG 123A	
Q304	1540	GE-20	TR-24	PTC121	HEP736	SK3018	RT102	ECG 123A	
	LM1117 (1)	GE-20	TR-24	PTC121	HEP736	SK3018	RT102	ECG 123A	
	1540	GE-20	TR-24	PTC121	HEP736	SK3018	RT102	ECG 123A	
	LM1117 (1)	GE-20	TR-24	PTC121	HEP736	SK3018	RT102	ECG 123A	