



PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME : General Electric Models M8000B, M8000BB,
M8001B, M8001BB
SUPPLIER : For Current Address, See Annual Index
TYPE SET : 2-Speed, 2-Track Recorders
POWER SUPPLY : 6 Volts DC
RATING : 110ma @ 6VDC

These units are two-track monaural recorders having two speeds: 1 7/8 and 3 3/4 ips.

Jacks are provided for microphone, external power, remote switch, and earphone.

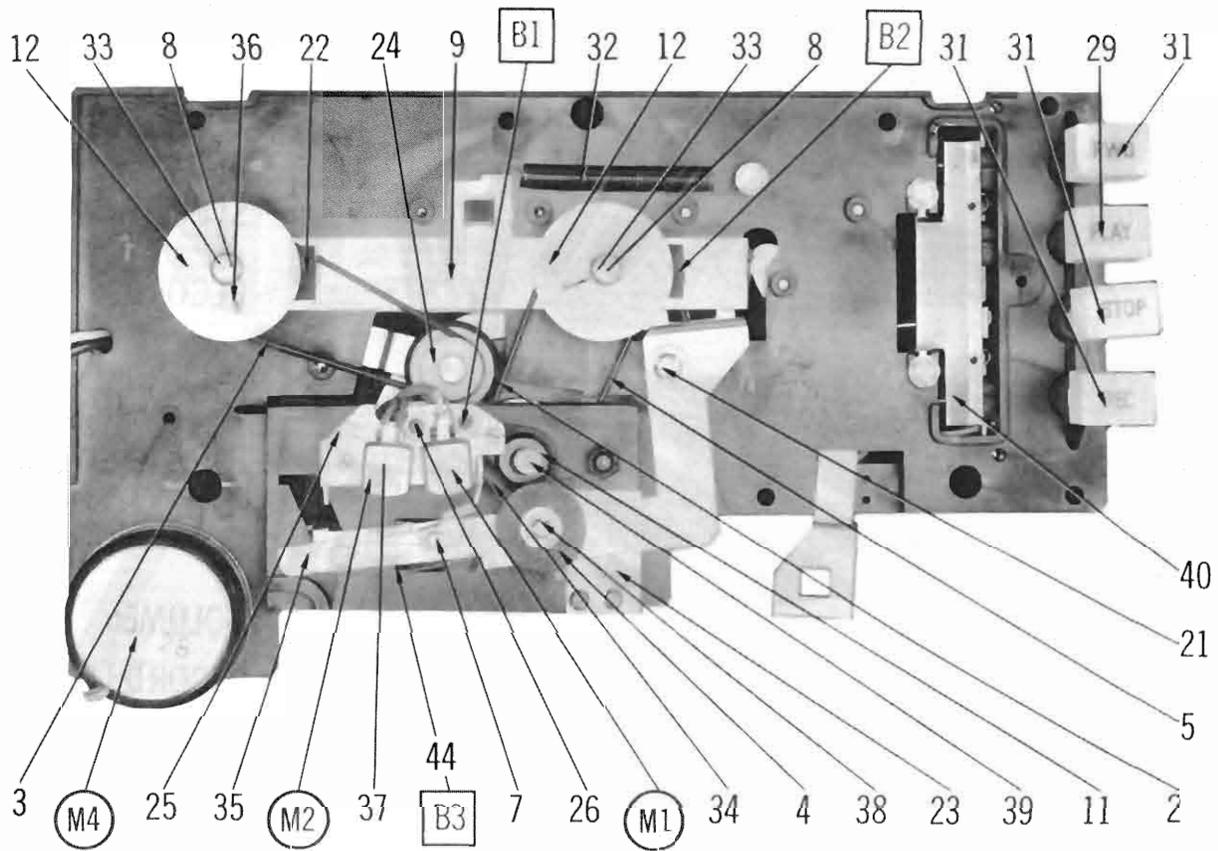
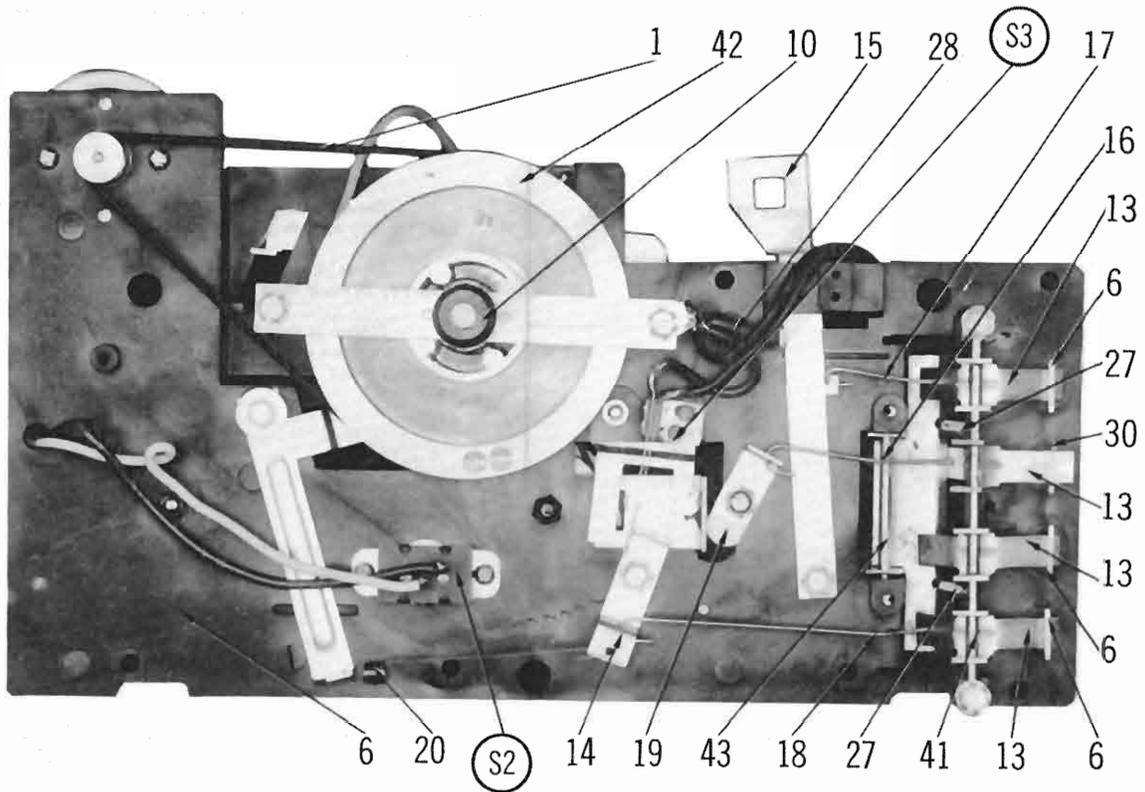
Power is supplied by four, 1 1/2-volt "D" cells. AC power can be used if an AC adapter is connected to the recorder.



GENERAL ELECTRIC MODELS M8000B/BB, M8001B/BB

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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OPERATING INSTRUCTIONS

Record

1. Press Stop button and thread the tape. If you are using the microphone, move the remote switch to Off.
2. Remove the head cover and select the speed by removing or replacing the capstan sleeve. The sleeve may be stored in the storage post behind the heads.
3. Connect a source and press Record button. If using the microphone, move the switch to the on position.

4. After recording the first side, press Stop button, reverse and invert the reels, and repeat steps 1, 2, and 3 to record the second side.

Play

1. Thread the tape and select the speed.
2. Press Play button and adjust Volume control as desired.
3. After playing the first side, press Stop button, reverse and invert the reels, and repeat steps 1 and 2.

DISASSEMBLY

1. Remove top cover, battery cover, and batteries.
2. Remove three screws from bottom of case and remove case.

SEQUENCE OF OPERATION

Play

Pressing the Play button compresses Play Push-button Arm Spring (29) and moves Play Push-button Arm (6) down. This arm moves Play Push-button Switch Lever (13) off Push-button Latch Plate (40). Plate (40) pivots on Latch Plate Shaft (43), pulled by Latch Plate Springs (27), until Plate (40) clears any depressed Push-button Switch Lever (13) and reverses the action of the previously depressed push button.

From the stop position, Stop Push-button Switch Lever (13) is released and is pulled by Stop Link (16) which is pulled by Stop Lever (19). Stop Lever (19) is pivoted by Brake Plate (9) which is pulled by Brake Plate Spring (32). The movement of Brake Plate (9) not only moves Brake Pads (22) from Tape Reel Hubs (12) to allow Pads (22) to rotate but also moves Motor Switch (S1) to the on position.

Also, Brake Plate (9) allows Pinchwheel Arm Assembly (38), pulled by Pinchwheel Arm Spring (34), to pivot. This motion, dampened by Dashpot Plate (23), causes Pinchwheel (5) to press the tape against the capstan on Flywheel (42). The movement of Arm (38) also causes the pads on Head Pad Arm (7) to contact the tape. Head Pad Arm (7) is moved by Pad Tension Arm (35) which is pushed by Tape Wiper Spring (44).

As Brake Plate (9) moves On/Off Switch (S2) to the on position, the motor drives Flywheel Drive Belt (1), rotating Flywheel Assembly (42). The flywheel

assembly drives Take-up Hub Drive Belt (4), driving take-up Tape Reel Hub (12) and rotating the capstan which is the flywheel shaft.

Record

The Record sequence is the same as "Play" except pressing the Record button moves Record Push-button Arm (6) which moves Record Push-button Switch Lever (13). Lever (13) pulls Record Link (17) which pulls Record Lever (15), held by Record Lever Spring (28), to actuate Record Switch (S1).

Rewind

Pressing the Rewind button moves Rewind Push-button Arm (6) which moves Rewind Switch Lever (13) across Latch Plate (40), causing Latch Plate (40) to release any previously depressed push button and reverse its action.

Rewind Link (18) is pulled which pivots Rewind Lever (14) to actuate Mute Switch (S3). This motion also pulls Rewind Pulley Spring (20) which pivots Rewind Pulley Assembly (24) to press Rewind Pulley Belt (2) on the rewind pulley against Flywheel (42). The rewind pulley drives Rewind Drive Belt (3) to rotate the Supply Tape Reel Hub backwards to rewind the tape.

Stop

The Stop sequence is the reverse of the "Play" sequence.

ADJUSTMENTS

IMPORTANT: Before making any adjustments, refer to "General Servicing Information" on page 4.

1. All voltage measurements are made at a tape speed of 3 3/4 ips with an audio VTVM having a flat response to 100KC.
2. All torque measurements are made at a tape speed of 3 3/4 ips with a spring scale applied to a point on an empty tape reel 1 inch from reel center.
3. All pressure measurements are made by using a spring scale to determine that point at which pressure is just removed.

ADJUST	REMARKS
Play Take-up Torque	No adjustment provided. Nominal value 1/8 ounce.
Latch Plate	Push-button levers should clear latch plate by 1/32 inch with push button depressed.
Rewind Torque	No adjustment provided. Nominal value 7 ounces.
Supply Reel Drag	No adjustment provided. Dependent on reel weight.
Take-up Reel Drag	No adjustment provided. Dependent on reel weight.
Pressure Roller Pressure	No adjustment provided. Nominal value 8 ounces.
Brake Shoe Pressure	Bend B2 for equal pressure on both hubs.
Pressure Pad Pressure	Adjust B3 for 3/4 ounce, measured at point of contact.
Erase Head Height	No adjustment provided.
Erase Head Azimuth	No adjustment provided.
Record/ Play Head Height	No adjustment provided.
Record/ Play Head Azimuth	Play an azimuth test tape and monitor the appropriate output. Adjust B1 for maximum output voltage.
Erase Current	No adjustment provided. Nominal current 4ma (3.2V DC) in the erase head.
Record Bias	No adjustment provided. Nominal bias .06V DC (.16ma)
Record Level Indicator Calibration	Apply a 1000-cycle signal to the mic input and adjust the volume for .66V rms, measured across the record/play head.

TROUBLE CHART

IMPORTANT: Before consulting this chart be sure all servicing procedures listed on page 4 have been followed.

SYMPTOM	REMARKS
Take-up reel revolves erratically, or not at all in Play or Record	<ol style="list-style-type: none"> 1. Belt (4) dirty or broken. 2. Hub (12) worn, dirty, or binding on spindle.

TROUBLE CHART (Continued)

SYMPTOM	REMARKS
Supply reel does not revolve in Rewind.	<ol style="list-style-type: none"> 1. Drive Belt (3) dirty, worn, or broken. 2. Hub (12) dirty, worn, or binding on spindle. 3. Rewind Pulley Drive Belt (2) worn or dirty. 4. Rewind Pulley (24) binding. 5. Rewind Spring (20) or Links (18) broken or missing.
Supply reel spills tape in forward positions.	<ol style="list-style-type: none"> 1. Rewind Drive Belt (3) broken.
Take-up reel spills tape in Rewind.	<ol style="list-style-type: none"> 1. Take-up Drive Belt (4) broken.
Reels do not stop immediately when Stop button is pressed.	<ol style="list-style-type: none"> 1. Stop Switch Lever (13) bent. 2. Stop Link (16) defective. 3. Stop Lever (19) defective. 4. Brake Pads (22) worn, dirty, misaligned, or missing.
Capstan does not rotate in Play or Record.	<ol style="list-style-type: none"> 1. Motor defective. 2. Flywheel Drive Belt (1) dirty, worn, or broken. 3. Flywheel Bearings (10, 11) defective.
Tape rides up and down between capstan and pressure roller.	<ol style="list-style-type: none"> 1. Insufficient clearance between Pinchwheel Arm (38) and Brake Plate (9). 2. Pinchwheel Arm Spring (34) weak. 3. Capstan or Pinchwheel Arm (38) bent.
Wow or Flutter.	<ol style="list-style-type: none"> 1. Pinchwheel (5) worn. 2. Head Pads (7) worn. 3. Tape Wiper Spring (44) weak. 4. Flywheel Drive Belt (1) Take-up Drive Belt (4), Take-up Hub (12), and/or Supply Hub (12) dirty or worn.
Prerecorded tapes are weak or distorted.	<ol style="list-style-type: none"> 1. Play/Record Head (M1) dirty or defective. 2. Tape Wiper Spring (44) weak.
Tapes recorded on the machine are weak or distorted.	<ol style="list-style-type: none"> 1. Play/Record Head (M1) dirty or defective. 2. Tape Wiper Spring (44) weak.
Erase weak or inoperative.	<ol style="list-style-type: none"> 1. Erase Head (M2) dirty or defective.

GENERAL ELECTRIC MODELS M8000B/BB, M8001B/BB

CLEANING

LUBRICATING

HEAD DEMAGNETIZING

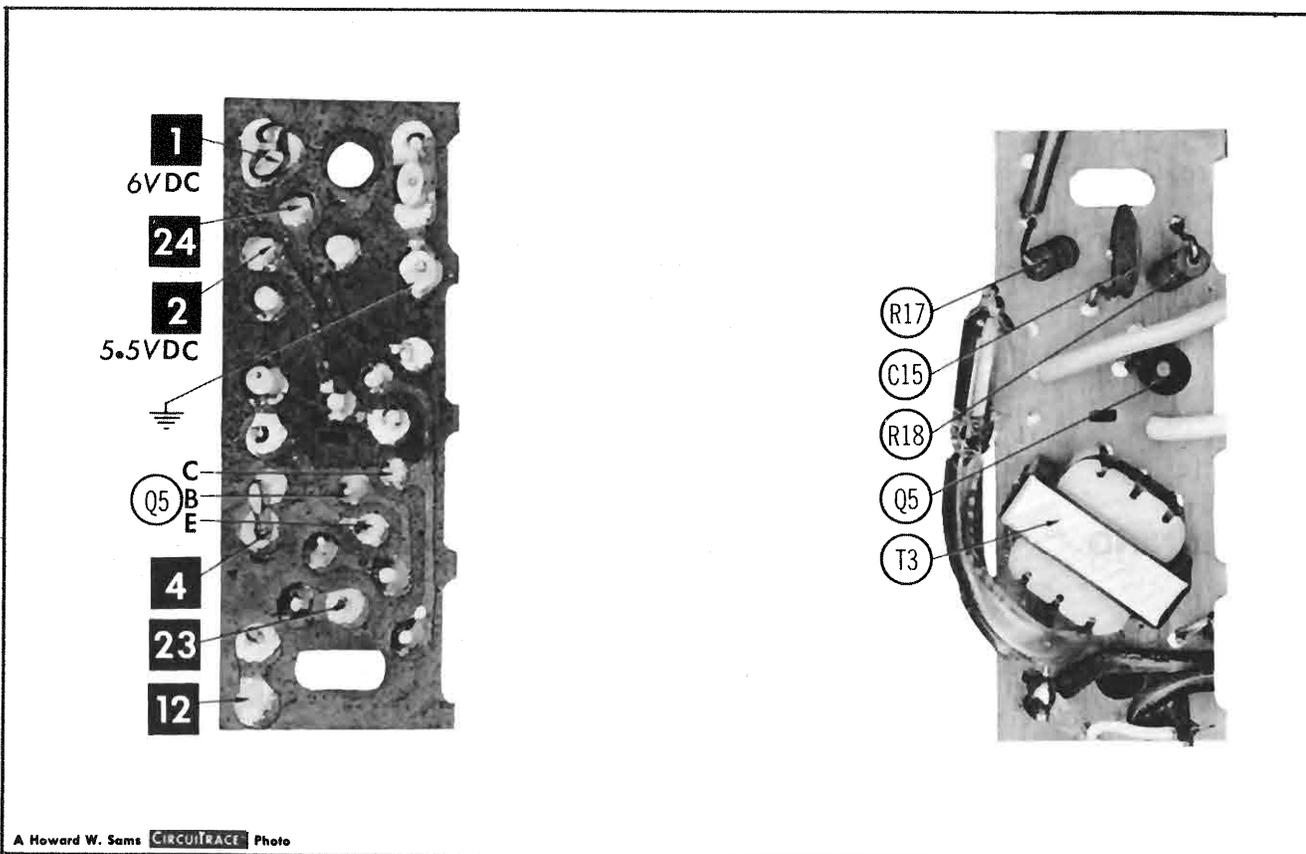
Refer to "General Servicing Information" on page 4.

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1*	*RT-1232	*Flywheel Drive Belt ①	25		Head Plate
2	RT-1233	Rewind Pulley Belt	26	RT-9104	Head Rocker (RT1262, RT1264 Heads only)
3	RT-1234 ②	Rewind Drive Belt		RT-9049	Head Rocker (RT1263, RT1265 Heads only)
4	RT-1235	Take-up Hub Drive Belt	27	RT-1214	Latch Plate Springs
5	RT-1236	Pinchwheel (Pressure Roller)	28	RT-1215	Record Lever Spring
6	RT-1218	Record, Play, and Rewind Push-button Arms	29	RT-1602	Play Push-button Arm Spring
7	RT-1238	Head Pad Arm with Pads	30	RT-1217	Stop Push-button Arm
8	RT-1225	Hub Spindle Bushing	31	RT-1220	Record, Stop & Rewind Arm Spring
9	RT-1222	Brake Plate with Pads	32	RT-1223	Brake Plate Spring
10		Thrust Bearing with Bracket	33	RT-1224	Tape Reel Hub Spindle
11		Upper Bearing Assembly	34	RT-1242	Pinchwheel Arm Spring
12	RT-1227	Tape Reel Hubs (with Spring)	35		Pad Tension Arm
13	RT-1219	Record, Play, Rewind, and Stop Push-button Levers	36		Hub Reel Spring
14	RT-1229	Rewind Lever	37	RT-9135	Head Spacer (RT-1262, RT-1264 Heads only)
15	RT-2337	Record Lever		RT-9134	Head Spacer (RT-1263, RT-1265 Heads only)
	RT-1230	Record Lever (Model M8000A-1)	38		Pinchwheel Arm Assembly
16	RT-1244	Stop Link	39	RT-1231	Capstan Adapter
17	RT-1245	Record Link	40	RT-1221	Push-button Latch Plate
18	RT-1246	Rewind Link	41		Push-button Lever Pivot Shaft
19		Stop Lever	42		Flywheel Assembly
20	RT-1241	Rewind Pulley Spring	43		Latch Plate Shaft
21		Pinchwheel Arm Post	44	RT-1228	Tape Wiper Spring
22		Brake Pads	45	RT-1251	Motor Pulley
23		Dashpot Plate			
24	RT-1240 ③	Rewind Pulley Assembly			

* Flywheel Drive Belt -- WALSCO Part No. 1499-18

- ① Part No. RT-2448 used in BB Versions.
- ② Part No. RT-2449 used in BB Versions.
- ③ Part No. RT-2450 used in BB Versions.



A Howard W. Sams CIRCUITRACE Photo

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 8524 (Stranded) Available in 12 Colors
Power Cord	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft. 17109 (Plastic) or 17129 (Rubber) - 9 Ft.
Power Cord (Interlock Type)	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401 or 8421
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor-Unshielded) 8429 (Two Conductor-Shielded) 8419 (Three Conductor-Shielded)

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	
Q1	RS-7510	AF Amp.	DS-66	GE-10	TR-21	SK-3020	NPN
Q2	RS-7517	Driver	DS-66	GE-10	TR-21	SK-3020	NPN
Q3	RS-7627	Output	DS-66	GE-10	TR-21	SK-3020	NPN
Q4	RS-7627	Output	DS-66	GE-10	TR-21	SK-3020	NPN
Q5	RS-7408	Indicator Amp.	DS-66	GE-10	TR-21	SK-3020	NPN

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1		RT-1106	1N60 or 1N295	1N60			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		G. E. PART No.	REPLACEMENT DATA				
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	200	10	RT-1253 (113A7299-11)	PTT47	NLW200-12	MT1-23	TT10X200	TL-1137
C2	250	6	RS-4533 (113A7617-14)	BCD12250	NLW250-6	MT1-24	MTV250CK6	TL-1105
C3	1	12	RS-3480 (113A7617-7)	BCD15001	NLW1-50	MT1-1	MTV1CB50	TL-1120
C4	2	25	RS-2615	PTT75	NLW2-50	MT1-1	TT25X2	TL-1201
C5	3	12	RS-2984 (113A7617-1)	BCD12003	NLW3-15	MT1-3	MTV3CB50	TL-1122

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMenco PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	.003		DI-3000	DM-302	BYS601ZU302P	CCD-302	GP230	10TS-D30
C11	.01	25V	TTD-01	CK-103	HOY101ZV103P	CCD-103	TA110	TG-S10
C12	.005		TTD-005	CK-502	HOY101ZV502P	CCD-502	TA250	TG-D50
C13	.001		DI-1000	DM-102	JBS601YPI02K	CCD-102	SM210	5GAB-D10
C14	.003		DI-3000	DM-302	BYS601ZU302P	CCD-302	GP230	10TS-D30
C15	.02	25V	TTD-02	CK-203	HOR101ZV203P	CCD 203	TA120	TG-S20

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA					
			G. E. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	Volume	20K	RT-1254 (868B768-8)	F2-25 K, SF100, AK-38			B13-120, TM5	RU24A, SL37, SF1000

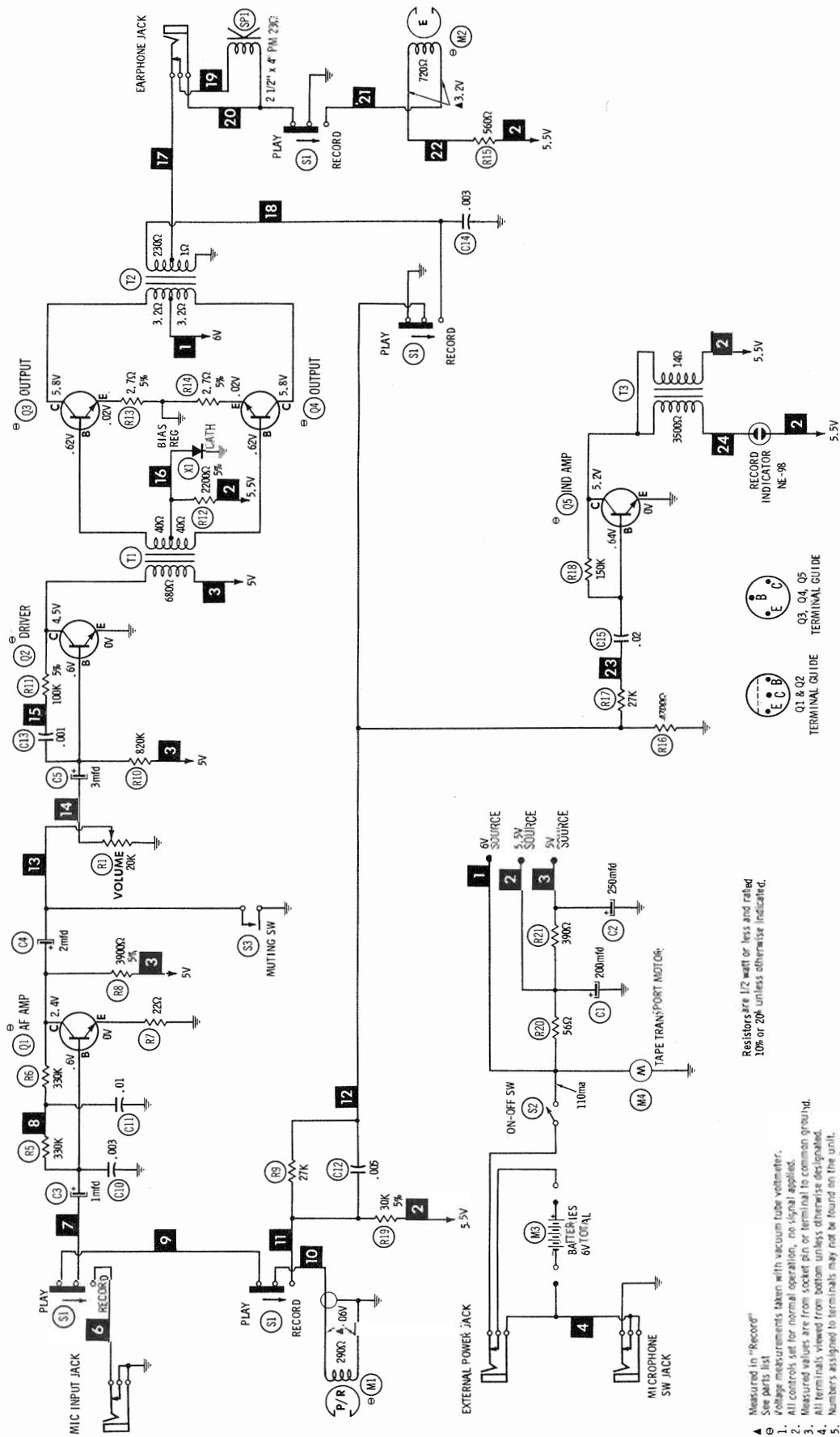
TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	G. E. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	4.8	1/CT		RT-1255 (154A6534)					

(CONTINUED ON PAGE 14)

GENERAL ELECTRIC MODELS M8000B/BB, M8001B/BB

NOTE: DEMAGNETIZE HEADS AFTER SERVICING RECORDER



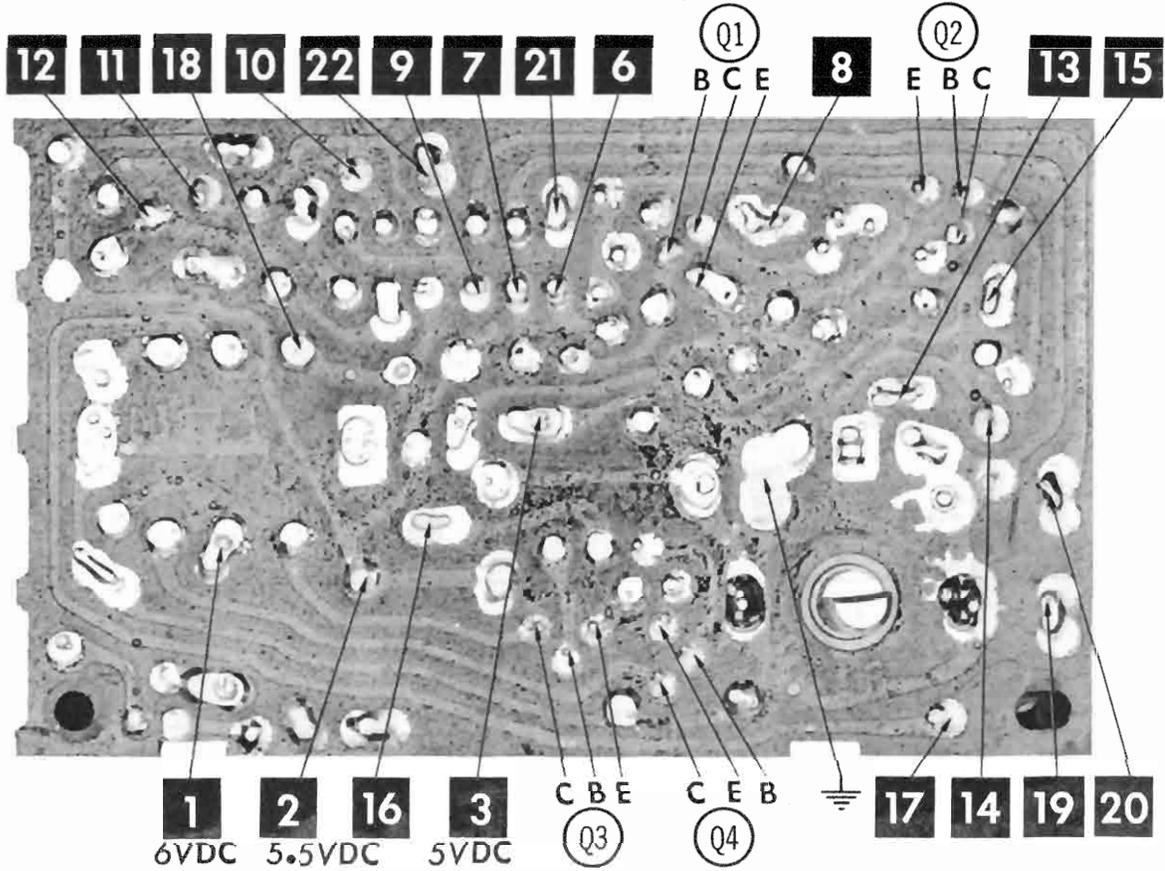
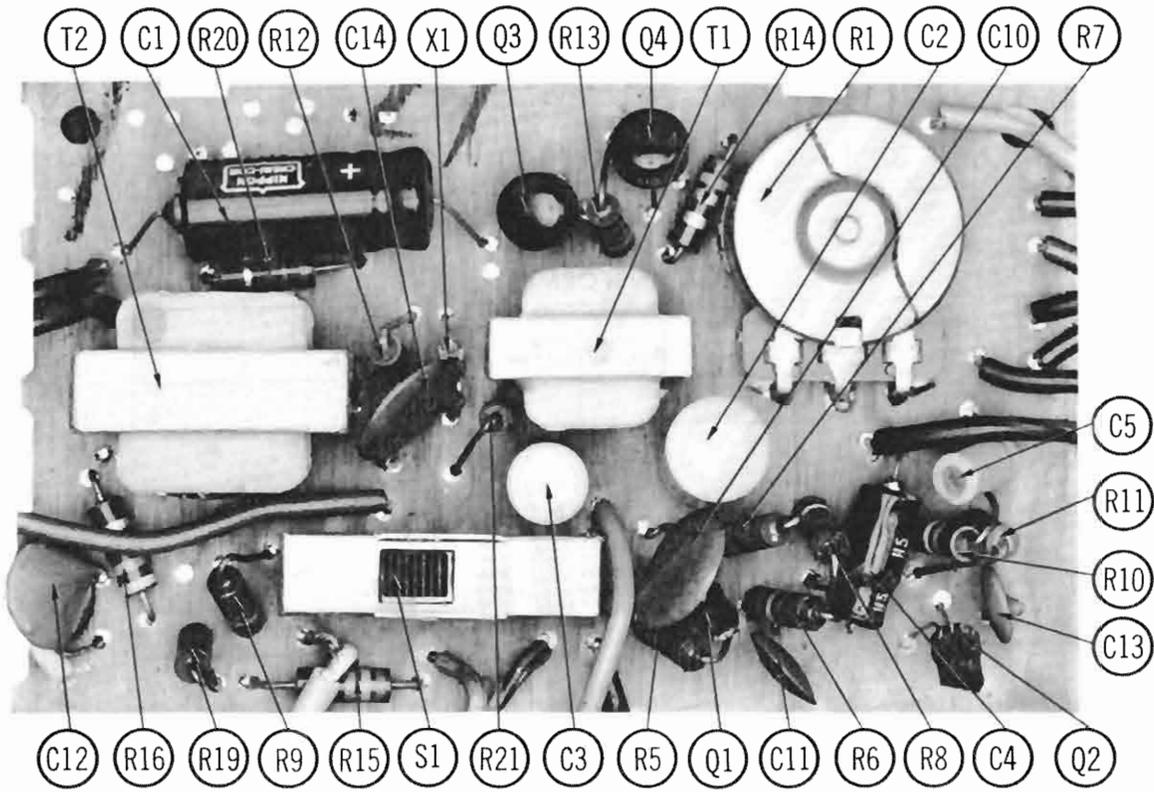
Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

- ▲ Measured in "Record"
- ▲ See PARTS list
- 1. All controls set for normal operation, no signal applied.
- 2. Measured values are from socket pin or terminal to common ground.
- 3. All terminals viewed from bottom unless otherwise designated.
- 4. Numbers assigned to terminals may not be found on the unit.
- 5. Supply voltage maintained at rated value for voltage readings.
- 6. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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GENERAL ELECTRIC MODELS M8000B/BB,
M8001B/BB



PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			G. E. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T2	4500Ω	23Ω	RT-1693 (178A4655)					

TRANSFORMER

ITEM No.	TURNS RATIO			REPLACEMENT DATA					NOTES
				G. E. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC. 1	SEC. 2						
T3	1	23.5		RT-1257 (154A6727)					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		G. E. PART No.	JENSEN PART No.	QUAM PART No.	
SP1	2 1/2" x 4" PM 23Ω	RB-1783 (106C2656-2)			

TAPE HEADS

ITEM NO.	MEASURED			G. E. PART NO.	NORTRONICS PART NO.	DESCRIPTION
	INDUCTANCE	BIAS/ERASE VOLTS (RMS)	BIAS FREQ.			
M1	370mh	.06 VDC	DC	RT1264 ①	3101 ②	2-Track Monaural Record/Play
M2	570mh	3.2VDC	DC	RT1262 ①	3600 & QK-19 ③	2-Track Monaural Erase

- ① Manufacturer has substitution parts for the Record/Play and Erase heads. Replacement heads should be replaced in matched pairs as follows: Record/Play, G. E. Part #RT1265, Erase, G. E. Part #RT1263, also, Head Rocker G. E. Part #RT9049, Head Spacer G. E. Part #RT9134 and Head Plate G. E. Part #RT9050.
- ② Cement head to original mounting plate.
- ③ Select Erase head lead polarity for best recording.

BATTERIES

ITEM No.	VOLTAGE	G. E. PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M3	6 Volts		230 or AL 2	1050 or E95	M13R or MNI300	4 Required

MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M4	Motor	RT-1252	Tape Transport
S1	Switch	RT-1260	Record/Play
S2	Switch	RT-1259	On/Off
S3	Switch	RT-1842	Muting
	Earphone	RS-4520	15 Ohm
	AC Converter	RT-9105	
	Microphone	RT-9185	Model M8000B
	Microphone	RT-9186	Model M8001B

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Cabinet Front, Model M8000B	RB-1781	Button, Play	RT-1199
Cabinet Back, Model M8000B	RB-1782	Button, Record	RT-1200
Cabinet Front, Model M8001B	RB-1899	Microphone Case:	
Cabinet Back, Model M8001B	RB-1899	Front Cover, Model M8000B	RT-1204
Head Cover, Model M8000B	RT-1196	Front Cover, Model M8001B	RT-1540
Head Cover, Model M8001B	RT-1539	Back Cover, Model M8000B	RT-1205
Knob, Volume	RT-1195	Back Cover, Model M8001B	RT-1541
Button, Rewind	RT-1197	Microphone Element (200Ω)	RT-1841
Button, Stop	RT-1198	Microphone Switch (SPST)	RT-1207