

ELECT. PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			WEBCOR PART No.	QUAM PART No.	
	SIZE	FIELD	V. C. IMP.		
SP1	6" x 9"	PM	7-83	76P051 ①	① CH. 14X270-4, 14X272-4, & 14X277-1
SP2	4"	PM	223	76P050 ①	
SP3	4"	PM	223	76P050 ①	
	6" x 9"	PM		76P083	
	4"	PM		76P077-1	

SPEAKER

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA		NOTES
		WEBCOR PART No.	FEDERAL PART No.	
		65P124-2	K1616	
M1				① 2 Required

RECTIFIERS

ITEM No.	PART NAME	WEBCOR PART No.	NOTES
M2	Record-Playback Head Stereo	65P139	
M3	Erase Head	11X1956	
M4	Switch	32X117	
M5	Switch	32P130	
M6	Switch	32P131	
M7	Solenoid	65X132-3	
	Microphone	62P014-4	
	Printed Board		Record-Playback Equalizing Muting

MISCELLANEOUS

NAME	PART NO.	DESCRIPTION
Cabinet	92X084-1	Grey, Models 2910 & 2919
Cabinet	92X087-1	Mahogany, Model 2955
Cabinet	92X087-2	Limed Oak, Model 2955
Cabinet	92X087-3	Maple, Model 2955
Cabinet	92X087-4	Walnut, Model 2955
Cabinet	92X078-1	Mahogany, Model 2923
Cabinet	92X078-2	Blood, Model 2923
Cabinet	92X078-3	Cherry, Model 2923
Legs	40P345-1	Mahogany, Model 2923
Legs	40P345-2	Blood, Model 2923
Legs	110X114	Cherry, Model 2923

CABINETS & CABINET PARTS
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
Power Cord Use BELDEN No. 8524 (Stranded) Available in Ten Colors
Low-Loss Shielded Lead (Interconnecting) Use BELDEN No. 1765-B (6 Ft. Length)
Photo Pick-up Arm Cable Use BELDEN No. 1725-K (7½ Ft. Length)
 Use BELDEN No. 8401
 Use BELDEN No. 8430 (Two Conductor - Twisted)

WEBCOR MODELS 2810, 2819, 2820, 2820-1C, 2910, 2919, 2923, 2950, 2955

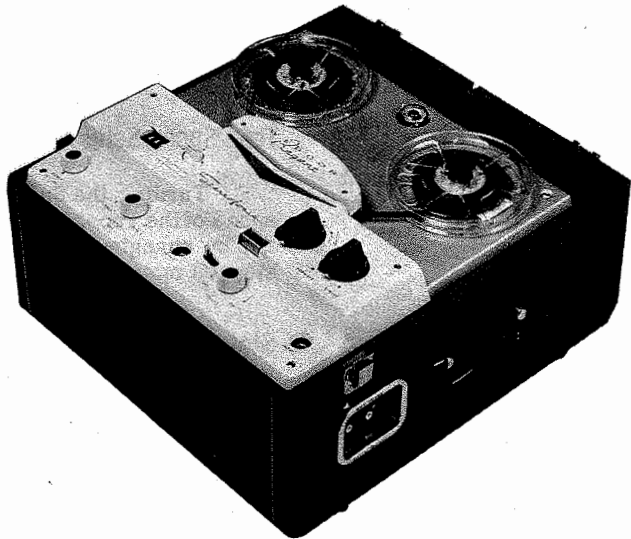
FOLDER 17
SET 458

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with CIRCUITRACE*



WEBCOR MODELS 2810, 2819, 2820, 2820-1C, 2910, 2919, 2923, 2950, 2955



GENERAL INFORMATION

Webcor Models 2810, 2819, 2820, 2820-1C, 2910, 2919, 2923, 2950, and 2955 tape transports are mechanically similar. The main difference between them is in their head arrangements.

Models 2810 and 2910 are monaural tape recorders.

Models 2819 and 2919 are remote-control monaural tape recorders.

Models 2820 and 2955 are stereo tape recorders with co-linear heads.

The Model 2820-1C is a stereo tape recorder with two receptacles for External Channels 1 and 2, in place of the Output jack.

Model 2950 is a stereo tape deck only.

Model 2923 is a stereo tape recorder.

These tape transports will record and play back two tracks of recorded material monaurally. The stereo models will play back stereo recordings, but will not record them.

All models have three tape speeds — 7 1/2, 3 3/4, and 1 7/8 ips.

The Webcor models listed above operate on 117 volts AC only.

Manufactured by:
Webcor, Inc.
Chicago, Illinois

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C398

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DATE 10-59

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WEBCOR MODELS 2810, 2819, 2820, 2820-1C, 2910, 2919, 2923, 2950, 2955

SET 458 FOLDER 17

PREPARING FOR OPERATION

1. Remove lid.

2. Remove all accessories from storage compartment.
3. On stereo models, connect external speaker and amplifier to Ext. Amp jack on right side of cabinet.

4. Plug AC cord into a 110-120 volt AC source.

FUNCTION OF CONTROLS

Off-On-Volume

Turning this control clockwise turns on the AC power to the unit. Further rotation increases the volume.

Monitor-Tone

The Monitor control permits the operator to listen while making a recording. Monitor Off is in the extreme clockwise position. The Tone control governs the amount of bass and treble response during playback, but has no effect on recording being made.

Stereo Volume

On units with a Stereo Volume control, rotation of this control regulates the audio level in the external sound system. The external sound system reproduces the second channel of a stereophonic tape.

Edit Key

Moving this control to the right disengages the pressure roller and increases the pressure on the pressure arm and pad assembly. This action stops the tape instantaneously in the Record or Playback position.

OPERATING INSTRUCTIONS

Threading Tape

1. Place a reel of tape on left (supply) reel spindle (21).

2. Unwind approximately 18 inches of tape and thread it through the head tape slot.
3. Place an empty reel on right (take-up) reel spindle (15).

4. Insert the end of the tape into one of the reel slots and turn the reel three or four times, to secure the tape to the reel and to take up all slack.

To Record from a Microphone

1. Insert microphone plug into Input jack on recorder.

2. Turn Off-On-Volume control on and allow unit to warm up.
3. Depress the Record Safety Lock and slide it to the right to lock it in place. Speak into the microphone in a normal tone of voice.

Tape Speed Selector

Turning the Speed Selector control changes the speed of the recorder from 7 1/2 ips to 3 3/4 or 1 7/8 ips by changing the position of the drive belt on the stepped motor pulley.

Stop-Record-Play

The tape is set in motion when this control is turned to the Record-Play position.

Fast Forward-Rewind

To advance the tape, depress this control and turn to the Forward position. To rewind tape, depress the control and turn to the Rewind position.

Record Safety Lock

Depressing the Record Safety Lock and turning the Stop-Record-Play knob to Record puts the unit in the Record position. The lock cannot be depressed when the Stop-Record-Play knob is in the Play position. This prevents accidental erasure of a prerecorded tape.

4. Adjust recording level until the shadow on the recording-level indicator eye barely closes on the loudest sound.

5. To start the tape in order to make a recording, turn the Stop-Record-Play knob to the Record-Play position while holding down the Record Safety Lock.

To Record from a Phonograph or an AM or FM Radio

NOTE: When recording from a phonograph or an AM or FM radio equipped with an output jack, use Webcor Input Cord No. 2925. If the phonograph or radio is not equipped with an output jack, use Webcor Input Cord No. 2934. These input cords have a built-in 22,000-ohm resistor to prevent overloading of the recorder input stages.

1. Insert input cord plug into Input jack on recorder.

2. When using Input Cord No. 2925, insert the small plug into the output jack on the phonograph or radio.

ELECT. PARTS LIST AND DESCRIPTIONS

TUBES

• CBS • GENERAL ELECTRIC • RAYTHEON • SYLVANIA •			
ITEM No.	USE	TYPE	TYPE
V1	Pre-amplifier	7025/12AX7	7025/12AX7
V2	AF Amplifier	12AU7	6AT6
V3	AF Oscillator	12AU7	12AX5
V4	Record Level Indicator	6ES	12X4

ELECTROLYTIC CAPACITORS

REPLACEMENT DATA			
ITEM No.	WEBCOR PART No.	AEROVOX PART No.	CORNEIL DUBIER PART No.
C1A	30P292	AFH3-134	C1080
C1B	30P281	PRS350V16	BR1635
C1C	30P281	PRS350V16	BR1635

RESISTORS

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

ITEM No.	RATING OHMS	WATT	NOTES	WEBCOR PART No.	WEBCOR PART No.	NOTES
R6	1meg	470K	Note 1	29M1052	29M4732	Note 2
R7	470K	10K		29M4742	29M1032	
R8	10K	10K		29M1032	29M1032	
R9	47K	470K		29M4732	29M4742	
R10	3.3meg	150K		29M3352	29M1562	
R11	150K	29M1542		29M1542	29M4542	
R12	2700Ω	29M2722		29M2722	29M4732	
R13	12K	29M1232		29M1232	29M1032	
R14	150K	29M1542		29M1542	29M4542	
R15	150K	29M1542		29M1542	29M4542	
R16	1800Ω	29M1822		29M1822	29M4732	
R17	470K	29M4742		29M4742	29M1533	
R18	47K	29M4732		29M4732	29M1533	
R19	4700Ω	29M4722		29M4722	29P079	
R20	8200Ω	29M8222		29M8222	29M4732	
R21	4700Ω	29M4722		29M4722	29M4732	

Note 1. Preamp. (14X270-4) uses 1meg in this application (Part #29M1052).
Note 2. Preamp. (14X270-4) uses 3.3meg in this application (Part #29M3352).

FIXED CAPACITORS

REPLACEMENT DATA			
ITEM No.	WEBCOR PART No.	AEROVOX PART No.	CORNEIL DUBIER PART No.
C4	30P283	P288N-25	CUB2P25
C5	30P344	BPD-01	5HK-S2
C6	30P283	BPD-01	5HK-S1
C7	30P283	P415N-047	4SE-S47
C8	30P283	NPO-SI 2.2	5TCCB-V2.2
C9	30P286	BPD-01	5HK-S1
C10	30P286	BPD-01	5HK-S1
C11	30P324	BPD-05	5HK-S5
C12	30P336	BPD-05	5HK-S5
C13	30P336	BPD-05	5HK-S5
C14	30P288	DI-470	5GA-T475 10%*
C15	30P288	DI-470	5GA-T475 10%*
C16	30P288	DI-470	5GA-T475 10%*
C17	30P344	BPD-02	5HK-S2
C18	30P344	DI-150	5GA-T155 10%*
C19	30P345	DI-150	5GA-T155 10%*
C20	30P345	DI-150	5GA-T155 10%*
C21	30P286	BPD-01	5HK-S1
C22	30P286	BPD-01	5HK-S1
C23	30P283	P288N-25	4SE-P22
C24	30P283	P415N-047	4SE-S47
C25	30P283	P415N-047	4SE-S47
C26	30P286	BPD-01	5HK-S1
C27	30P283	P288N-25	4SE-S47
C28	30P309	P488N-1	4TM-P1
C29	30P286	BPD-01	5HK-S1

① Preamp. (14X270-4) uses .05mfd 400V in this application (Part #30P283).
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	WEBCOR PART No.	REPLACEMENT DATA
K1	HI Freq. Filter	47mfd, 2200Ω, 2.2meg	62P015	REPLACEMENT DATA
K2	Audio Detector Coupling	10000mfd, 820Ω, 5000Ω, 18K, 27K, 150K, 150K, 220K	62P021	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		WEBCOR PART No.	Granger PART No.	Meissner PART No.	Miller PART No.	
L1	Bias Osc.	65P125				

TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA				Tried PART No.
		WEBCOR PART No.	Hallderson PART No.	Merit PART No.	Rom PART No.	
T1	117V @ .47A 540 VCT 12 VCT 5000Ω 3-40 @ 1.5A	68P052-4				

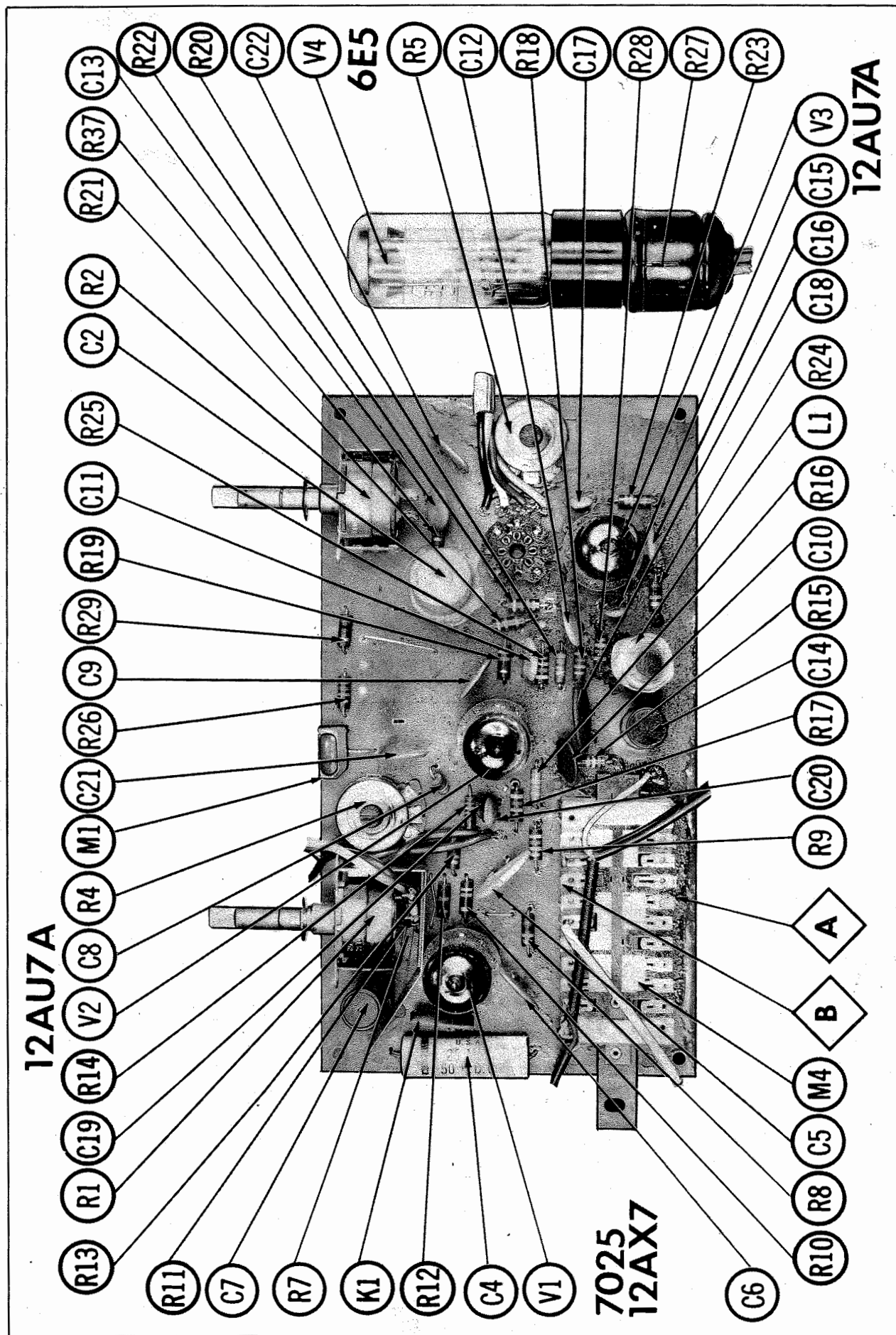
CONTROLS

REPLACEMENT DATA			
ITEM No.	WEBCOR PART No.	CAROSTAT PART No.	IRC PART No.
R1A	31P132		
R2A	31P133		
R3	31P134-1		
R4	31P122		
R5	31P123		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA				NOTES
		WEBCOR PART No.	Hallderson PART No.	Merit PART No.	Rom PART No.	
T2	5000Ω 3-40	67P060-3	26S49	A-3019	A-8092	B-5Z

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AMP CHASSIS - TOP VIEW

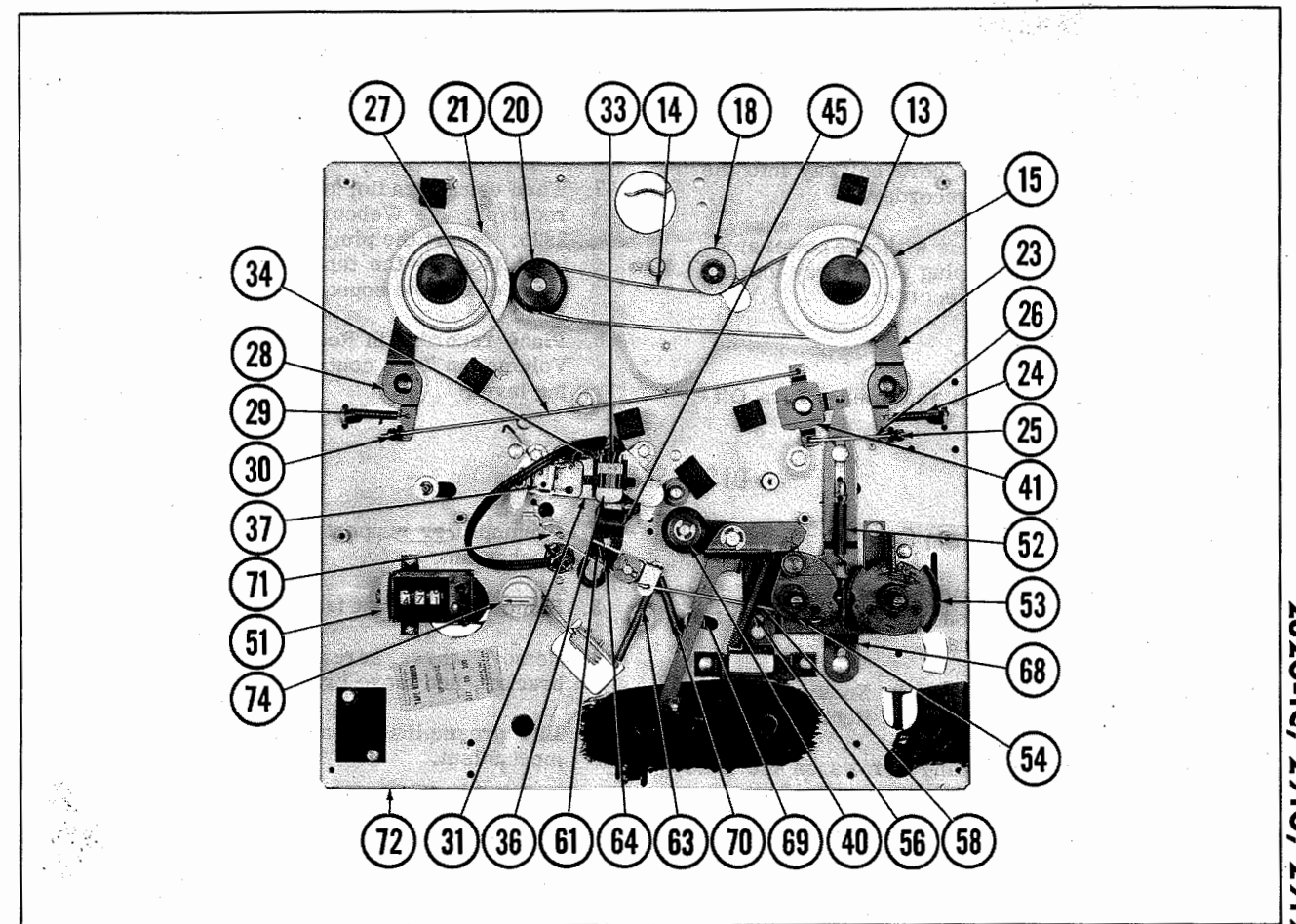


FIG.1 TOP VIEW OF MECHANISM WITH ESCUTCHEON REMOVED

3. When using Input Cord No. 2934, connect the alligator clips to the voice-coil terminals of the speaker.
4. Follow steps under "To Record from a Microphone".

Fast Rewind and Fast Forward

High-speed forward or rewind can be obtained by depressing Forward-Rewind control and turning it to Fast Forward or Rewind. Any portion of a recording can be located in a few seconds with this control.

NOTE: Before turning the recorder off or pulling the AC plug from the wall socket, be sure the Fast Forward-Rewind control is in the neutral position; otherwise, the tape will spill.

To Play Back a Monaural Recording

1. Thread tape as described under "Threading Tape".
2. Turn Stop-Record-Play control to Record-Play position.
3. Adjust Volume and Tone controls for desired listening level.

NOTE: To prevent the co-linear heads from playing

back both tracks of a monaural tape simultaneously, turn the Stereo Volume control down or pull the external speaker jack from the Ext. Amp. jack. This applies only to those recorders set up for stereo playback.

To Play Back a Stereophonic Recording

1. Thread tape as described under "Threading Tape".
2. Turn Stop-Record-Play control to Record-Play position.
3. Adjust Volume control on tape deck to desired listening level.
4. Turn Tone control to Treble position.
5. Adjust Stereo Volume control for the external sound system until the system is in balance with the speaker on the tape recorder.

To Erase a Recording

The erase head is automatically positioned when the unit is in the Record position. To erase a recording without making a new one, follow the normal recording procedure, but leave the Volume control in its minimum position.

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To Use as a Public-Address System

1. Connect tape recorder to an external sound system with a Webcor Output Cord No. 2935.
2. On external sound systems with a power amplifier, insert the output cord halfway into the Output jack on the tape recorder.
3. On external sound systems without a power amplifier, insert the output plug all the way into the Output jack on the tape recorder.
4. Turn Monitor control on.
5. Connect sound source to recorder. Turn Off-On-Volume control on to apply power to the recorder.
6. When using a microphone for the sound source, insert microphone plug into the Input jack on recorder and place recorder in Record position.
7. When using a radio, phonograph, or Television receiver, use Webcor Input Cord No. 2934 or 2925. Insert the plug on the input cord into the Input jack on the tape recorder, and connect other end to the sound source.
8. Place recorder in Record position. Adjust the Volume and Tone controls for the desired listening level.

DISASSEMBLY

To Remove Tape Transport from Case

1. Remove Off-On-Volume, Monitor-Tone, and Ext. Stereo Volume (on models with a stereo amplifier) control knobs.
2. Loosen Bristol set screws in Forward-Rewind and Stop-Record-Play knobs. Remove knobs.
3. Remove the two mounting screws on the head cover. Remove head cover.
4. Remove six front escutcheon and top plate screws. Remove front escutcheon and top plate.
5. Remove four screws from bottom of case. Lift mechanism from case and disconnect the speaker leads.
6. To reassemble, reverse the foregoing procedure.

Preamplifier support bracket to the top of the mechanism.

3. Remove the pal nut from the Input jack.
4. Remove three screws from the reinforcing bracket, and move bracket out of the way.
5. Lift preamplifier and support bracket from mechanism.
6. Remove two screws from support bracket. Lift out preamplifier.
7. To reassemble, reverse the foregoing procedure.

To Remove Stereo Preamplifier

1. Remove mechanism from case.
2. Disconnect the power input plug.
3. Remove two screws from left side plate, and pivot plate out of the way.
4. Remove four screws from support bracket. Remove stereo preamplifier.
5. To reassemble, reverse the foregoing procedure.

To Remove Preamplifier from Tape Transport

1. Remove the retaining rings from the Monitor-Tone and Off-On-Volume controls.
2. Remove the four mounting screws holding the

ADJUSTMENTS

Rewind

1. Place an empty five-inch reel on left-reel spindle (21).
2. Tie a heavy string to the empty reel hub, and wind the string counterclockwise around the hub several turns.
3. Make a loop in the other end of the string and secure the loop to a two-pound spring scale.
4. Hold scale at a right angle to the reel drive, and apply power to the recorder.
5. Turn Fast Forward-Rewind control to the Rewind position.
6. The reading should be 16 ± 2 ounces.

7. If the scale reads less than 14 ounces:

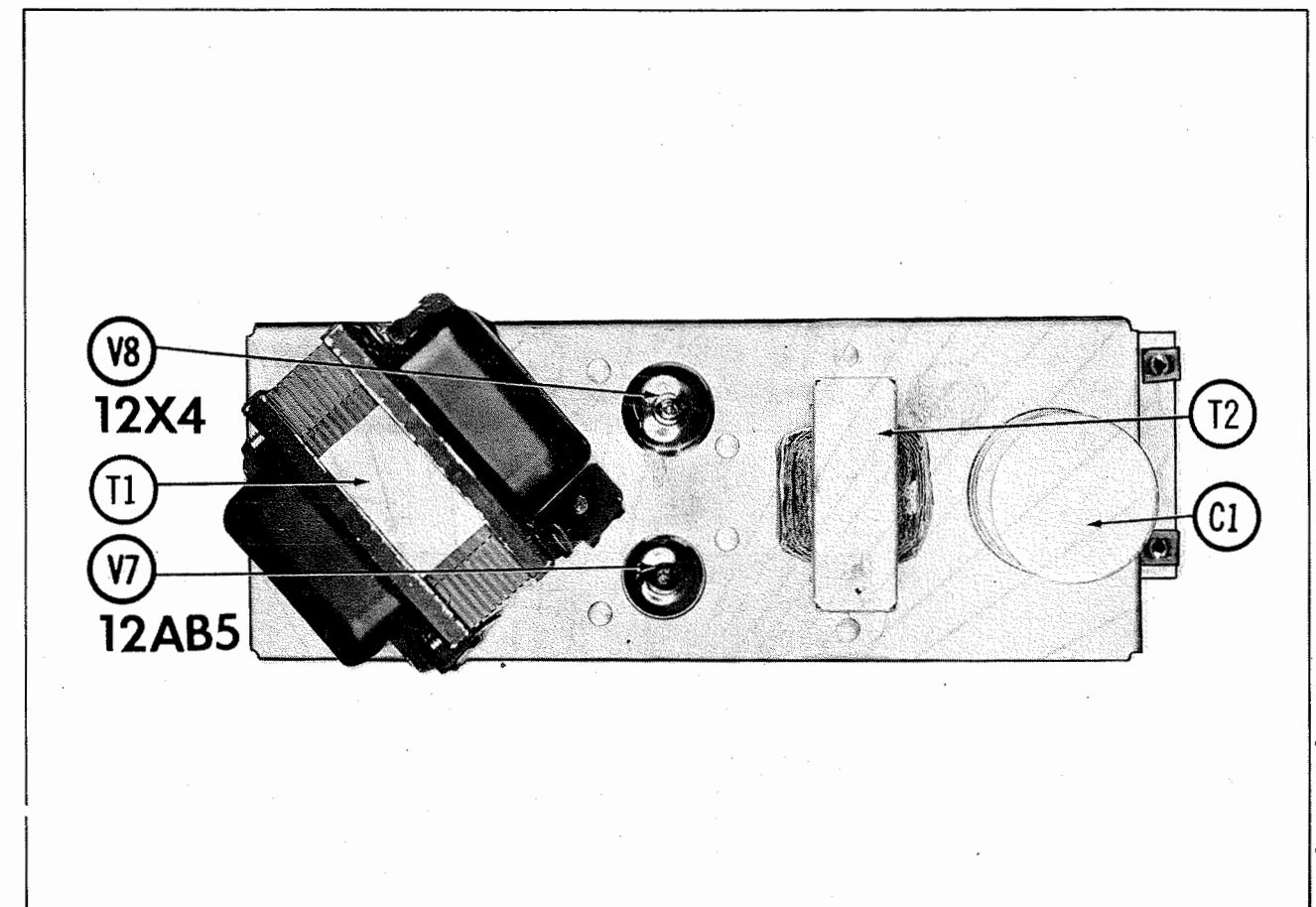
On earlier production models--turn stop nut on end of rewind link (91) clockwise until scale reads 16 ± 2 ounces.

On later production models--check for dirty surfaces or binding.

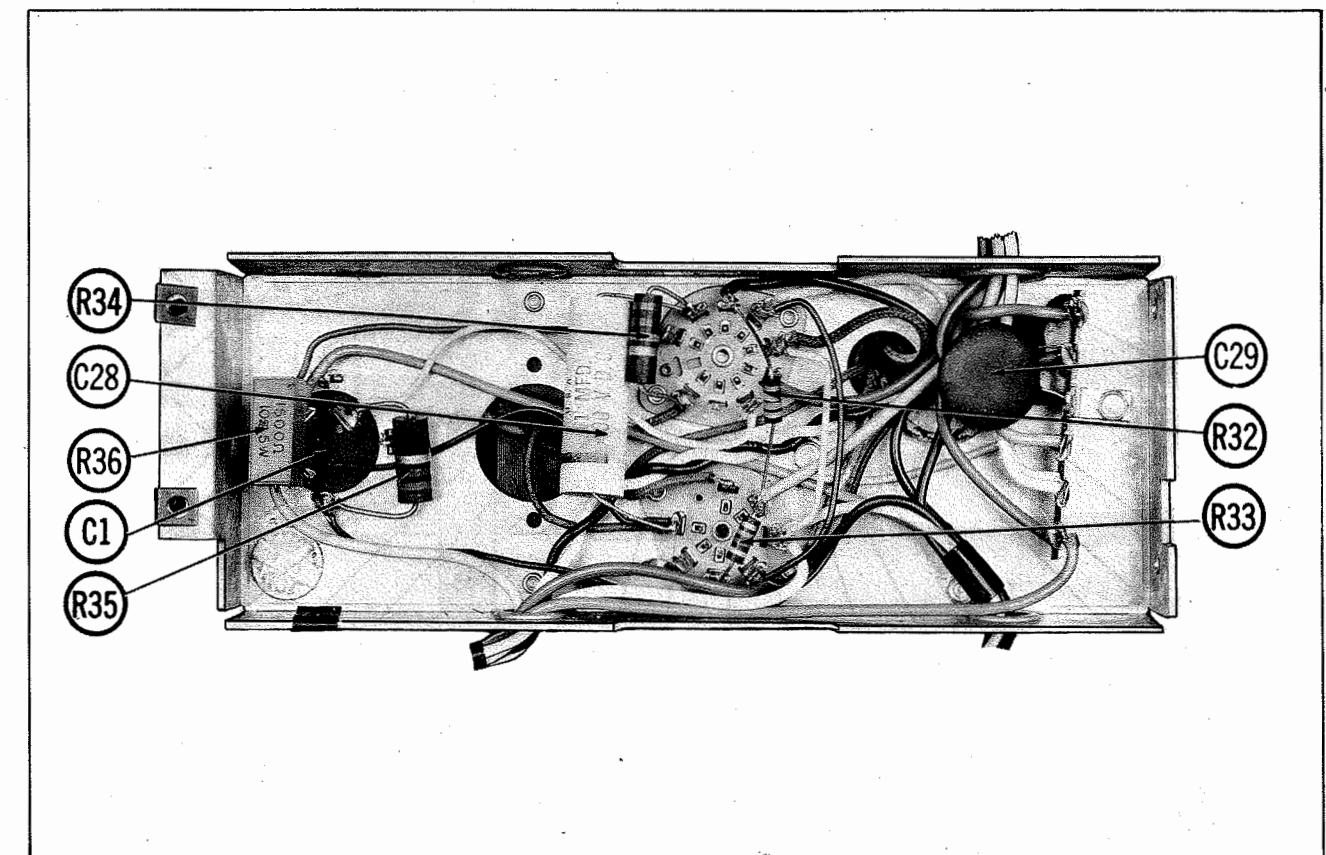
8. If the scale reads more than 18 ounces:

On earlier production models--stop nut may be binding on the spindle lever and bearing assembly.

On later production models--turn stop nut counterclockwise until scale reads 16 ± 2 ounces.



POWER CHASSIS - TOP VIEW



POWER CHASSIS - BOTTOM VIEW

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MECHANICAL PARTS LIST (CON'T)

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
63	46P475	Tension Spring, Early Production	103	25P496	Washer
	46P517	Tension Spring, Late Production	104	50P208	Tube Socket Clamp
64	46P479	Tension Spring	105		Washer
65	23P014	Erase Pad	106	25P574	Retainer Ring
66	46P496	Compression Spring	107	42P408	Speed Change Cam
67	48P083	Ball Bearing	108	26P676	#8-32 x 3/16" Set Screw
68		Stop-Record-Play Slide Plate	109		Spring
69	11X1838	Edit Lever & Pin Ass'y.	110	50P389	"C" Ring
70	46P497	Tension Spring	111	72P011	Capstan Drive Belt
71	11X1909	Erase Arm & Pad Ass'y.	112	46P509	Tension Spring
72	11X1891	Baseplate	113	11X1836	Capstan Bridge Ass'y.
73	45P2410	Record Switch Actuator	114		Belt Shifter
74	11X1859-AF	Speed Change Knob & Shaft	115	41P589	Adjusting Screw
75	32P130	Equalizing Switch	116	26P077	Hex Nut
76	26P1451	#8-32 x 5/16" Slab-Head Set Screw	117		Tension Idler Plate
77	11X1870	Over-Travel Arm Ass'y.	118	46P537	Compression Spring
78	46P503	Tension Spring	119	26P1523	#2-56 Elastic Stop Nut
79		Part of Item #77	120	46P507	Tension Spring
80	25P574	Retainer Ring	121	17X777	Pulley & Set Screw Ass'y. used with Motor 15X243
81	45P2411	Switch Lever		17X790	Pulley & Set Screw Ass'y. used with Motor 15X263
82	26P1450	#8-32 x 5/16" Cup Point Set Screw	122		Set Screw, Part of Item #121
83	11X1837	Fast Rewind Cam Ass'y. (Models 2810, 2819, 2820 with suffix "1" or "1A").	123	46P536	Compression Spring
	11X1974	Fast Rewind Cam Ass'y. (Models 2810, 2819, 2820 with suffix "1B").		46P520	Compression Spring (Model 2923)
84	48P083	Ball Bearing	124	46P493	Tension Spring
85	50P389	"E" Ring		46P483	Tension Spring (Model 2923)
86	11X1834	Shaft & Cam Actuator Ass'y. (Models 2810, 2819, 2820 with suffix "1" or "1A").	125	11X1839	Spindle Lever & Bearing Ass'y.
	11X1975	Shaft & Cam Actuator Ass'y. (Models 2810, 2819, 2820 with suffix "1B").	126	72P011	Belt
87	11X1979	Fast Forward Actuator & Post Ass'y.	127		Washer
88	45P2453	Idler Link, Early Production	128	25P574	Retainer Ring
	45P2562	Idler Link, Late Production	129	41P1663	Reel Counter Pulley
89	50P125	Retaining Clip	130	25P694	Grommet
90	41P1711	Collar, Late Production	131	25P394	Washer
91	45P2452	Rewind Link	132	25P535	"E" Ring
92		Part of Item #72	133	26P365	#12-24 Hex Nut
93	26P838	#8-32 Thumbscrew	134	25P224	Lockwasher
94	11X1823	Capstan & Flywheel Ass'y.	135		Part of Item #139
95	46P497	Tension Spring	136	25P394	Washer
96	46P501	Tension Spring	137	25P535	"E" Ring
97	11X1831	Record-Play Cam Ass'y.	138		Space, Part of Item #139
98		Ball Bearing	139	15X243	Motor Ass'y. Early Production
99	45P2560	Take-up Actuator, Late Production		15X263	Motor Ass'y. Late Production
100	41P1707	Bushing, Late Production	140		Part of Item #139
101		Washer	141	45P2130	Fan, used with Motor 15X243
102	26P1047	#8-32 x 3/8" H. H. Sems Mach. Screw, Early Production		45P2610	Fan, used with Motor 15X263
	26P1548-3	#8-32 x 3/8" H. H. Sems Mach. Screw, Late Production	142	50P244	"C" Washer, used with Motor 15X243
				50P253	"C" Washer, used with Motor 15X263
			143	17X664	Adjusting Screw & Bracket Ass'y.
			144		Adjusting Screw
			145	26P077	Hex Nut
			146	45P2564	Motor Duct, Late Production
			147	26P1070	#8-32 x 5/16" H. H. S. T. Screw
			148	26P1278	#40-40 x 3/16" Bristol Cup Point Set Screw

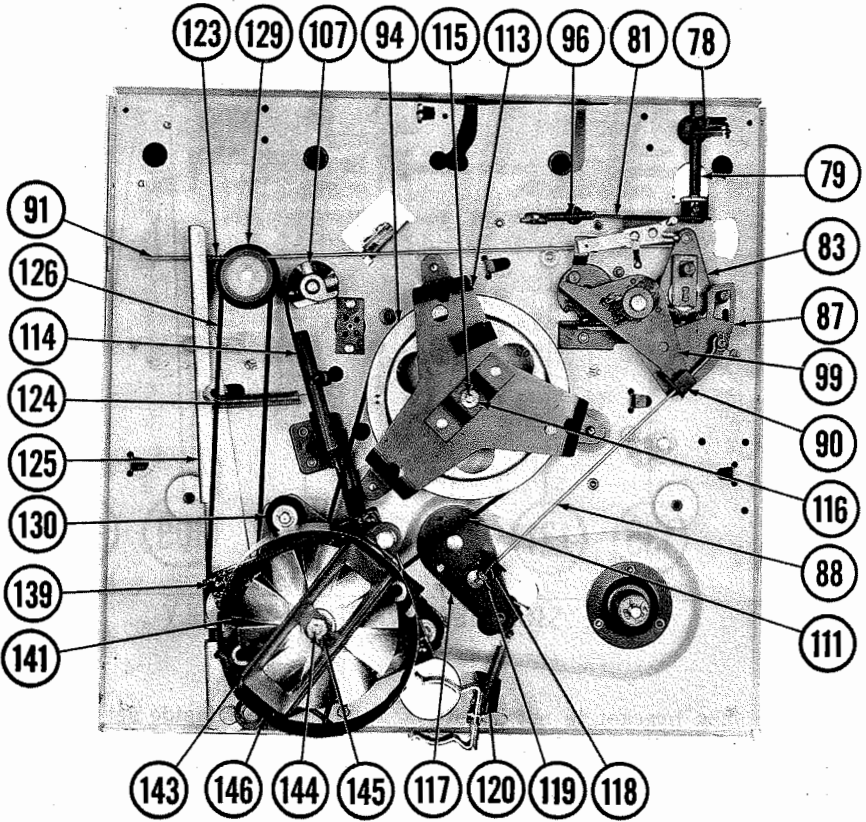


FIG. 2 BOTTOM VIEW OF MECHANISM

Fast Forward on Early Production Models

1. Place empty five-inch reel on right-reel spindle (15).
2. Tie a heavy string to the tape reel hub and wind the string clockwise around the hub several turns.
3. Make a loop in the other end of the string and secure the loop to a spring type scale.
4. Hold scale at a right angle to the reel spindle drive, and turn on the AC power to the recorder.
5. Turn Fast Forward-Rewind control to Forward position.
6. The reading should be 17 ± 1 ounces.
7. If the reading is less than 16 ounces, turn stop nut (119) clockwise until the scale reads 17 ± 1 ounces.
8. If the reading is more than 18 ounces, turn stop nut (119) counterclockwise until the scale reads 17 ± 1 ounces.

Fast Forward on Later Production Models

1. Repeat Steps 1 thru 4 in "Fast Forward on Early Production Models".

2. Scale should read 6 ± 1 ounces when the Stop-Record-Play knob is in the Record-Play position.
3. Return the Stop-Record-Play knob to Stop position if the scale reads less than 5 ounces. Loosen set screw (148), and slide collar (90) toward take-up actuator (99). Tighten set screw (148) and recheck the scale.
4. If scale still reads less than 5 ounces after Step 3 has been done, turn stop nut (119) clockwise until the scale reads 5 ounces.
5. If scale reads over 7 ounces, slide collar (90) away from take-up actuator (99) until the scale reads 6 ± 1 ounces. Tighten set screw.

Brake

1. Clean brake pads (23A), right-reel spindle (15), and left-reel spindle (21).
2. Turn Forward-Rewind knob to Forward position.
3. Adjust stop nuts (25) and (30) between brake pads (23A) and reel spindles (15) and (21) for minimum clearance.

Safety Release

If the top slot on the Record Safety Lock does not engage the record actuator bracket, the angle on

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FOLDER 17

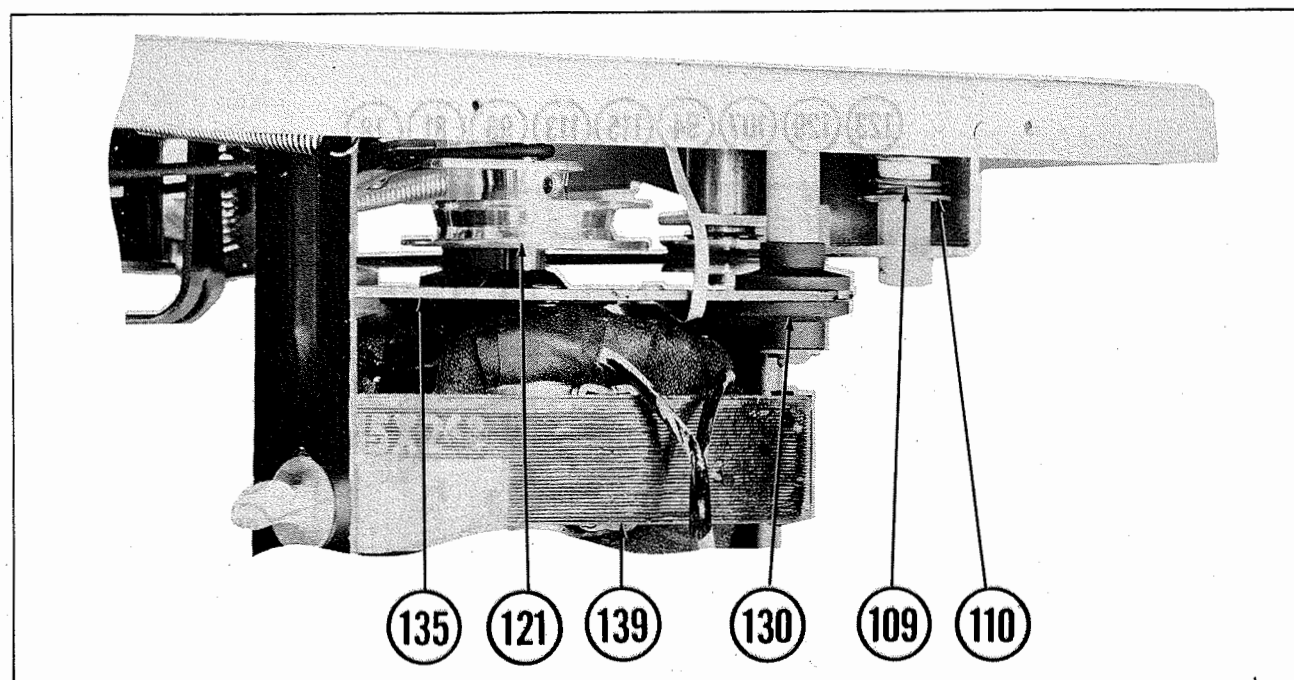


FIG. 3 SIDE VIEW OF MOTOR ASSEMBLY

the record safety lock release bracket is not great enough, and should be formed to the proper angle.

If the Record Safety Lock fails to release from its locked position when another position is selected, the angle on the Record Safety Lock release bracket is too great, and should be formed to the proper angle.

Record-Playback Switch Actuator

1. Be sure recorder is off and Stop-Record-Play control is in Stop position.
2. Check to see if slab-head screw (82) on switch lever and hub assembly is tight.
3. Loosen slab-head set screw (76) and position over-travel assembly so the Stop-Record-Play Knob slides to the extreme right, or playback position.
4. Position the over-travel arm assembly on the shaft for a 1/16-inch clearance between the assembly and the record-playback switch coupler bar, to prevent binding.
5. Tighten slab-head set screw (76), depress the Record Safety Lock, and turn the Stop-Record-Play Knob to the Record-Play position. The Record Safety Lock should lock in the depressed position, and the Stop-Record-Play Knob should slide to the extreme left, or record, position.

Speed Change

1. Connect recorder to a 117-volt AC source.
2. Place recorder in a vertical position.
3. Turn Speed Selector Knob to 1 7/8-ips position.
4. Remove outside set screw on speed-change cam.

5. Loosen inside set screw on speed-change cam.
6. Adjust cam on cam shaft until drive belt just clears top fork straddling the drive belt.
7. Tighten set screw (108) and replace the locking set screw.
8. Turn Speed Selector Knob from 3 3/4 to 7 1/2 ips, and note the speed change.
9. Place recorder in a horizontal position, and observe the belt action through the speed changes.

NOTE: Make sure the straddling forks of belt shifter (114) can clear the motor drive pulley.

Playback-Record Head

1. Remove head cover and clean pole pieces.
2. Place Record-Play Knob in Stop position.
3. Thread an alignment tape on recorder.
4. Turn Speed Selector Knob to 7 1/2 ips.
5. Turn Volume and Tone controls to maximum.
6. Connect AC VTVM to Ext. Amp. in Output jack. (Insert plug halfway into output jack).
7. Turn recorder to Play position.
8. Adjust head retaining bracket until maximum meter reading is obtained.

NOTE: Of the three alignment peaks, adjust head to the one that gives the highest maximum meter reading.

TROUBLE CHART (CON'T)

Symptom	Cause	Remedy
	5. Reel drive belt (14) reversed.	5. Rough side of reel drive belt (14) must contact right - reel spindle and fast transport pulley.
	6. Tension idler plate (117) binding.	6. Clean foreign matter from between baseplate and tension idler plate (117).
Rewind speed incorrect.	1. Spindle lever and bearing assembly (125), fast transport pulley (20) or left-reel spindle (21) dirty or binding.	1. If these parts are dirty, clean with a cloth dampened with alcohol. If binding, be sure they are free from adjacent parts.

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	11X1944-1AN	Forward-Rewind Knob	28		Left Brake
2	11X1944-2AN	Stop-Record-Play Knob	29	46P508	Tension Spring
3	26P1538	#8-32 x 5/16" Bristol Head Set Screw	30	26P1523	#2-56 Elastic Stop Nut
4	39P192-AF	Monitor-Tone and Off-On-Volume Knob	31	11X1907	Head Bridge Casting Ass'y.
5	49P306-1AF	Head Cover	32	26P248	#6-32 x 3/8" H. H. S. T. Screw
6	26P320-6	#4-40 x 5/8" O. H. P. R. Machine Screw	33	45P2539	Head Retaining Spring
7	39P195-1	Stereo Volume Knob	34	45P2545	Record Head Mounting Bracket
8	26P1527-6	#6-32 x 1 1/4" O. H. P. R. Machine Screw	35	46P502	Tension Spring
9	26P1532-6	#6-32 x 3/4" O. H. P. R. Machine Screw	36	11X1690	Record-Playback Head, Monaural
10	11X1945-1AF	Stereophonic Control Panel Escutcheon		65P139	Record-Playback Head, Stereo
11	26P1458-6	#4-40 x 1/4" T. H. P. R. Machine Screw	37	11X1956	Erase Head Ass'y.
12	45P2383-AV	Top Plate	38	25P620	"C" Washer
13		Reel Retainer	39	25P371	Washer
14	72P010	Reel Drive Belt	40	11X673	Pressure Roller
15	11X1824-AV	Right Reel Spindle & Shaft Ass'y.	41		Brake Actuating Cam
16	25P584	Retainer Ring	42		"C" Washer
17		Washer	43	11X1833	Pressure Arm Ass'y.
18	49P310	Tension Idler	44	26P1058	#6-32 x 3/16" R. H. P. R. S. Machine Screw
19	26P676	#8-32 Set Screw	45	45P2413	Head Hum Shield
20	11X1984	Fast Transport Pulley, used with 15X243 Motor, Early Production	46	25P596	"C" Washer
		Fast Transport Pulley, used with 15X243 Motor, Late Production	47	25P608	Washer
	41P1654	Fast Transport Pulley, used with 15X263 Motor	48	25P608	Washer
	41P1733	Fast Transport Pulley, used with 15X263 Motor	49	26P1058	#6-32 x 3/16" R. H. P. R. Sems Machine Screw
21	11X1825-AV	Left Reel Spindle & Shaft Ass'y.	50		Washer
22		Washer	51	74X008-1	Tape Counter
23		Right Brake	52	46P498	Tension Spring
23A		Brake Pads	53	11X1828	Fast Transport Cam
24	46P508	Tension Spring	54	11X1827	Record-Play Cam Ass'y.
25	26P1523	#2-56 Elastic Stop Nut	55	26P1451	#8-32 x 5/16" Slab-Head Set Screw
26	45P2454	Short Brake Release Link	56	46P491	Tension Spring
27	45P2455	Long Brake Release Link	57	25P574	Retainer Ring
			58	45P2556	Link Tape Wrap Guide Arm
			59	50P125	Spring Clip
			60	25P046	Fiber Washer
			61	11X1910	Pressure Arm & Tape Guide Ass'y.
			62	49P299	Tape Guide

TROUBLE CHART (CON'T)

Symptom	Cause	Remedy
	3. Fast forward mechanism overadjusted.	3. See "Fast Forward Adjustment".
Weak recording and playback, or no recording.	1. Record-playback head(36) misaligned. 2. Erase pad (65) worn. 3. Tension spring (63) or (64) missing or broken on pressure arm and pad assembly. 4. Record-playback head(36) faulty. 5. Broken lead at head.	1. See "Head Alignment". 2. Replace erase pad (65). 3. Replace tension spring (63) or (64). 4. Replace record-playback head (36). 5. Repair broken lead.
Wow or flutter	1. Motor binding, or motor end play adjusting screw (144) needs adjusting. 2. Capstan shaft (94) dirty or bent. 3. Pressure roller(40)dirty, pitted, or worn. 4. Erase pad (65) worn or hardened. 5. Roller on record-play cam assembly touches pressure arm assembly when unit is in Record-Play position. 6. Reel drive belt (14) slipping. 7. Tension too great on reel drive belt (14). 8. Excessive capstan and flywheel (94) end play.	1. Lubricate motor bearings and adjust for minimum end play. Replace motor (139) if it is still not free. 2. Replace or clean capstan shaft (94). 3. Clean or replace pressure roller (40). 4. Replace erase pad (65). 5. Loosen slab-head set screw (55), and rotate record-play cam assembly away from pressure arm assembly. 6. Replace reel drive belt (14). 7. See "Fast Forward Adjustment". 8. Replace capstan and flywheel (94) in early production models. On late production models, adjust capstan end play adjusting screw (115) for minimum end play.
Fast forward speed improper.	1. Tension idler (18) binding. 2. Right-reel spindle (15) binding. 3. Dirt or grease on rubber ring of right-reel spindle. 4. Reel drive belt (14) on wrong side of tension idler (18).	1. Replace tension idler (18) if worn. 2. Clean dirt from right-reel spindle (15), or replace spindle if bent. 3. Clean rubber ring with alcohol. 4. Shift reel drive belt (14) to correct side of tension idler (18).

LUBRICATION

Points on the exploded view indicated by a dot (.) should be lubricated with one or two drops of light sewing machine oil when required. Points indicated by a triangle (▲) should be lubricated with a high-tempera-

ture, medium-viscosity grease. Be sure no oil or grease gets on the belts, fast transport pulley, pressure roller, reel spindles or on any parts that may transfer oil or grease to them. Do not overlubricate.

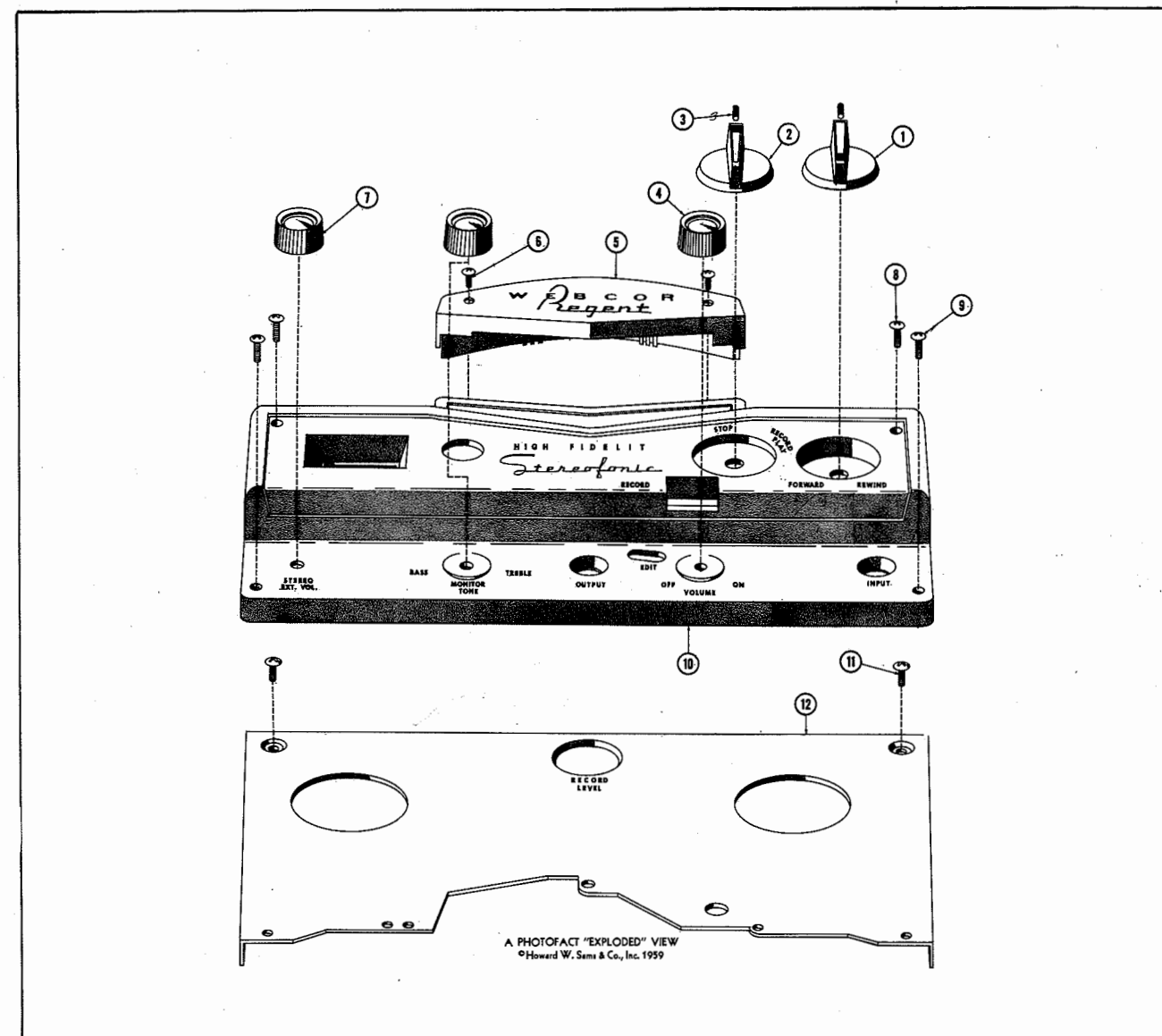
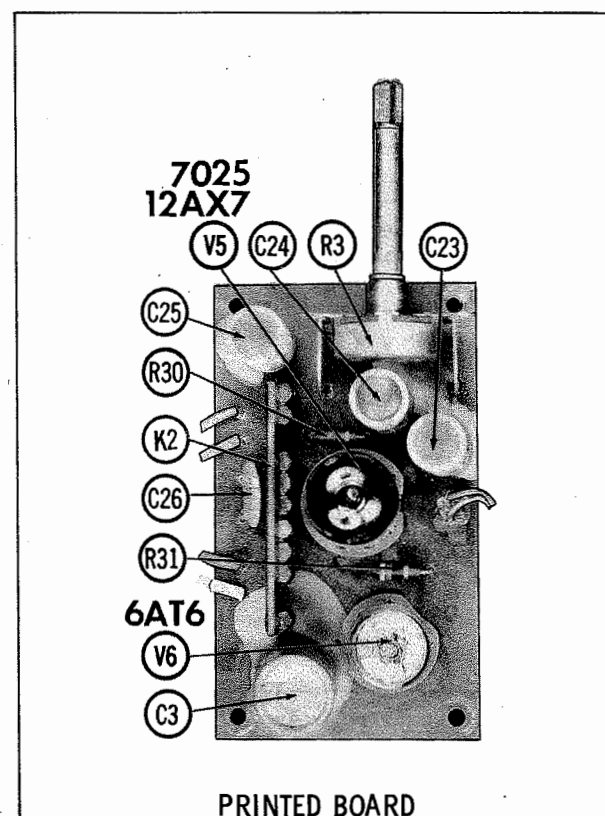
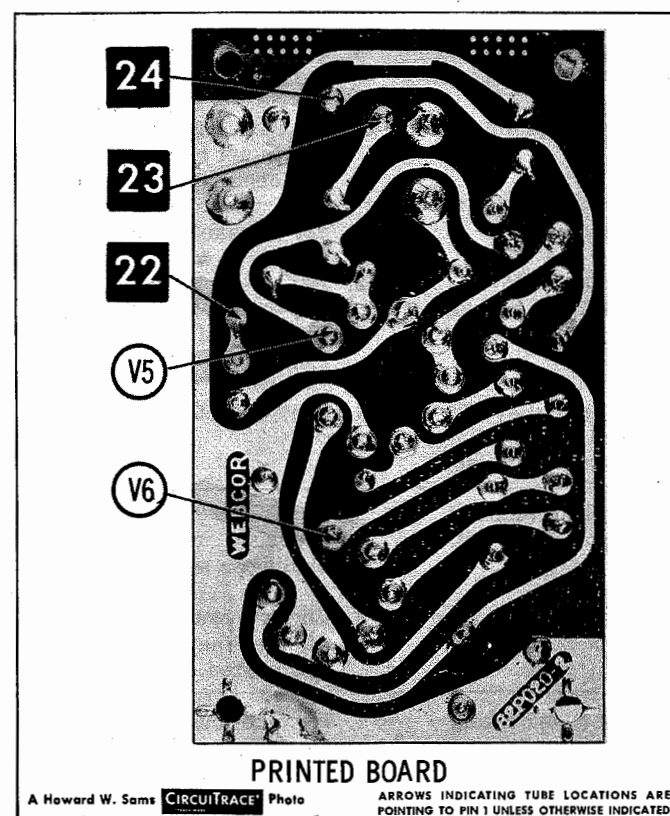
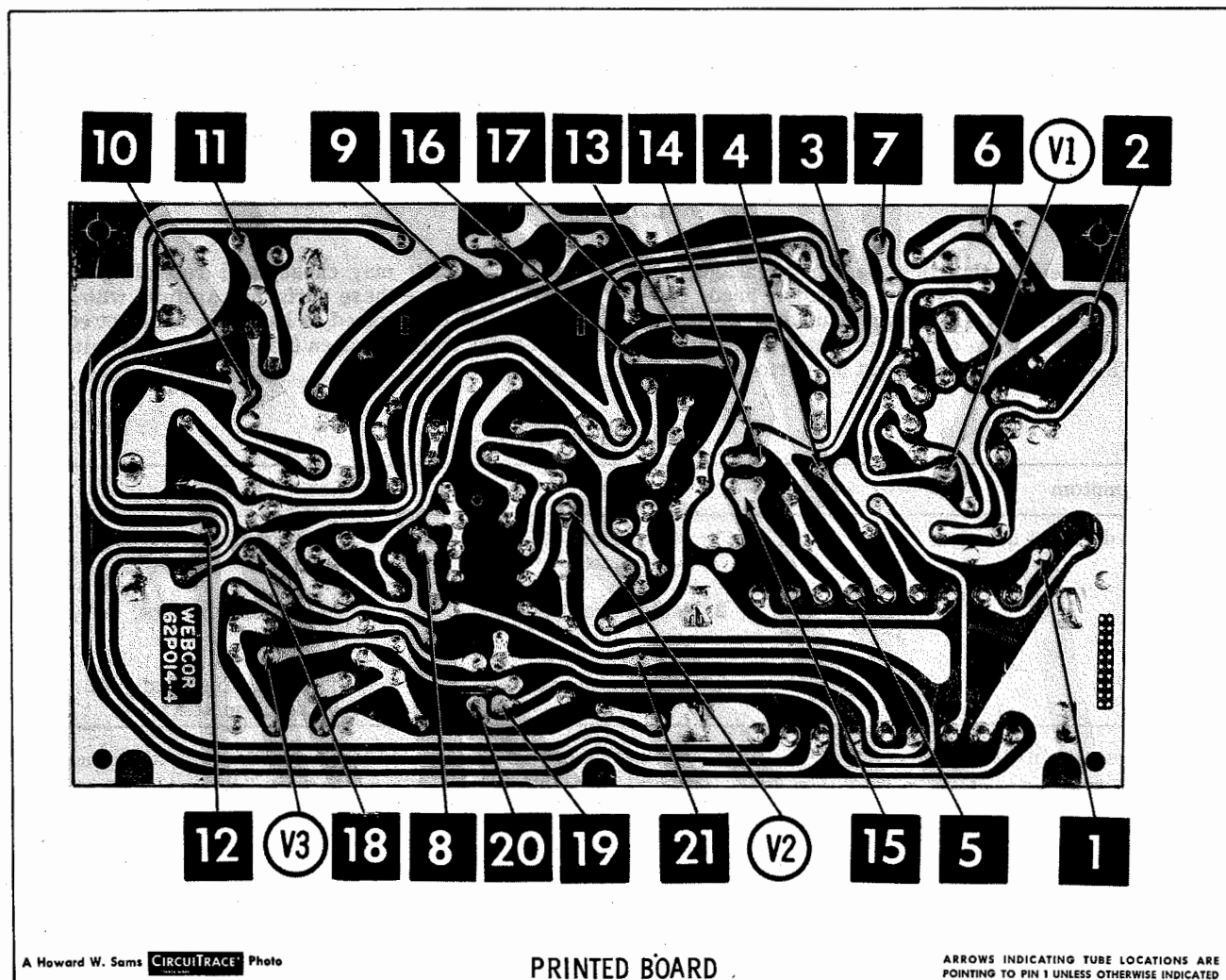
CLEANING

Most defects, other than wear or breakage, can be traced to dirty surfaces. The recording head, capstan, and pressure roller may accumulate tape-coating residue, which is worn off the tape as it passes these parts. This accumulation should be periodically re-

moved, since it may cause faint recording and poor playback. Wipe these surfaces carefully with a clean cloth. If dirt is caked or hard and does not come off with a dry cloth, dampen the cloth slightly with alcohol.

TROUBLE CHART

Symptom	Cause	Remedy
Motor does not operate.	1. Motor (139) windings open or shorted. 2. Motor shaft binding. 3. Motor shaft bent.	1. Replace motor (139). 2. Clean bearings, and lubricate. 3. Straighten shaft, or replace motor.
Motor stalls in Rewind position.	1. Rewind mechanism adjusted too tightly.	1. See "Rewind Adjustment".
Motor runs, but capstan does not rotate.	1. Capstan drive belt (111) loose or broken. 2. Capstan shaft (94) bent. 3. Capstan shaft (94) binding.	1. Replace capstan drive belt (111). 2. Straighten or replace capstan shaft (94). 3. Clean capstan bearings, and lubricate.
Pressure roller does not engage the capstan in Play or Record position.	1. Tension spring (56) disconnected or broken. 2. Pressure roller (40) binding.	1. Connect or replace tension spring (56). 2. Be sure pressure roller (40) is not binding against adjacent parts.
Take-up reel does not turn in Record, Play or Fast Forward positions.	1. Brakes misadjusted. 2. Reel drive belt (14) on right-reel spindle broken or on wrong side of tension idler (18). 3. Fast transport pulley (20) or right-reel spindle (15) slipping because of grease	1. See "Brake Adjustment". 2. Replace reel drive belt (14) or place on the correct side of tension idler (18). 3. See "Cleaning".
Tape will not unwind from supply reel in Record or Play position.	1. Pressure roller (40) not contacting capstan shaft. 2. Left-reel spindle (21) binding.	1. Check to see whether pressure roller (40) is binding on adjacent parts. 2. Check brakes to see whether they are properly adjusted.
Counter does not register.	1. Counter belt (126) broken. 2. Reset wheel is bending.	1. Replace counter belt (126). 2. Check for binding on adjacent parts.



TROUBLE CHART (CON'T)		
Symptom	Cause	Remedy
Erratic tape speed.	1. Oil or grease on motor pulley (121), drum of capstan (94), or pressure roller (40).	1. See "Cleaning".
	2. Brakes improperly adjusted.	2. See "Brake Adjustment".
	3. Capstan (94) binding.	3. Check for foreign matter or bind in shaft.
	4. Left-reel spindle (21) binding.	4. Check for bent shaft or foreign matter.
	5. Motor bearing needs oil.	5. See "Lubrication".
Take-up reel spills tape when going from Record, Play, or Fast Forward to Stop position.	1. Brake pads (23A) worn.	1. Replace brake pads (23A).
	2. Right brake (23) and left brake (28) overadjusted.	2. See "Brake Adjustment".

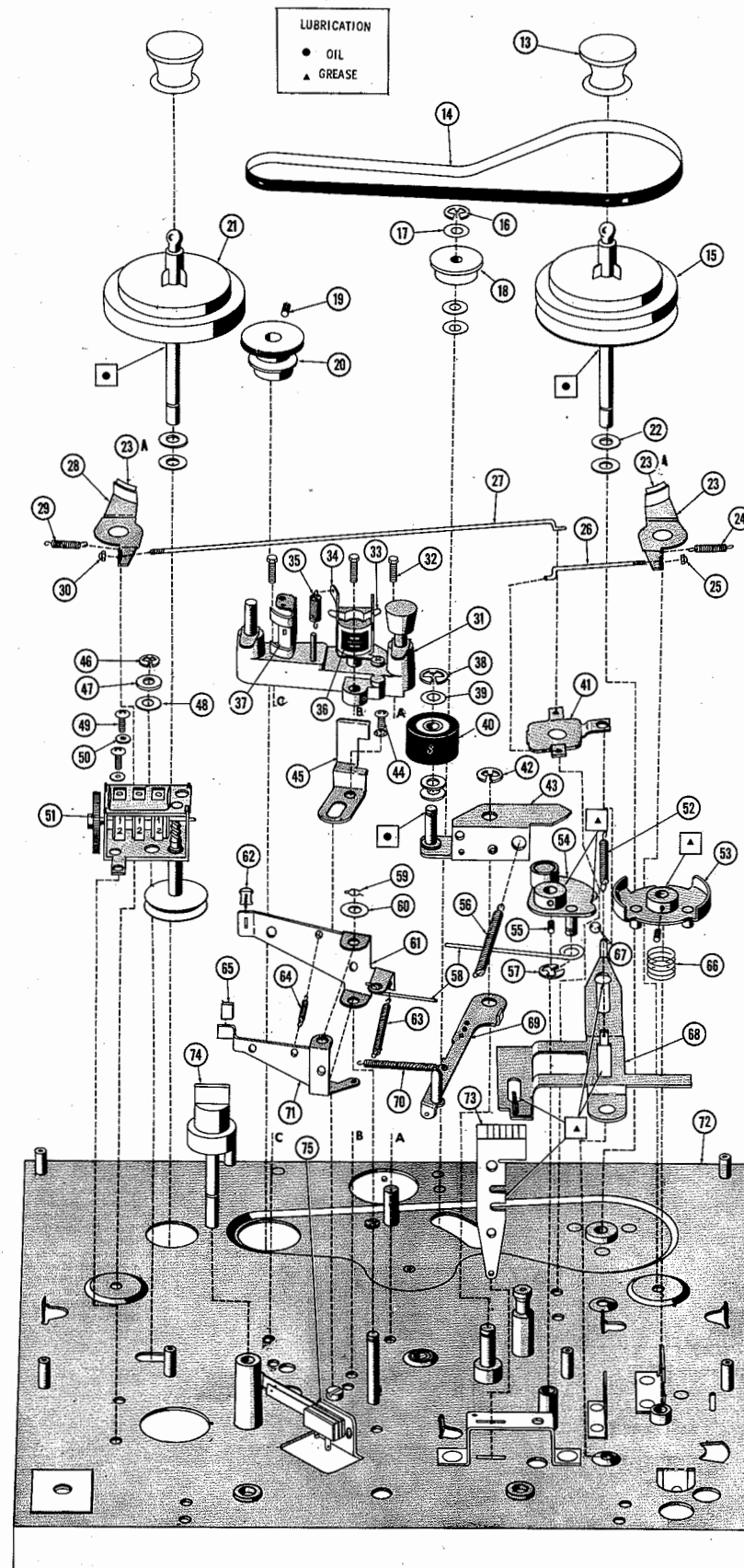


FIG. 4A EXPLODED VIEW OF PARTS ABOVE BASEPLATE

WEBCOR MODELS 2810, 2819, 2820,
 2820-1C, 2910, 2919, 2923, 2950, 2955

FOLDER 17

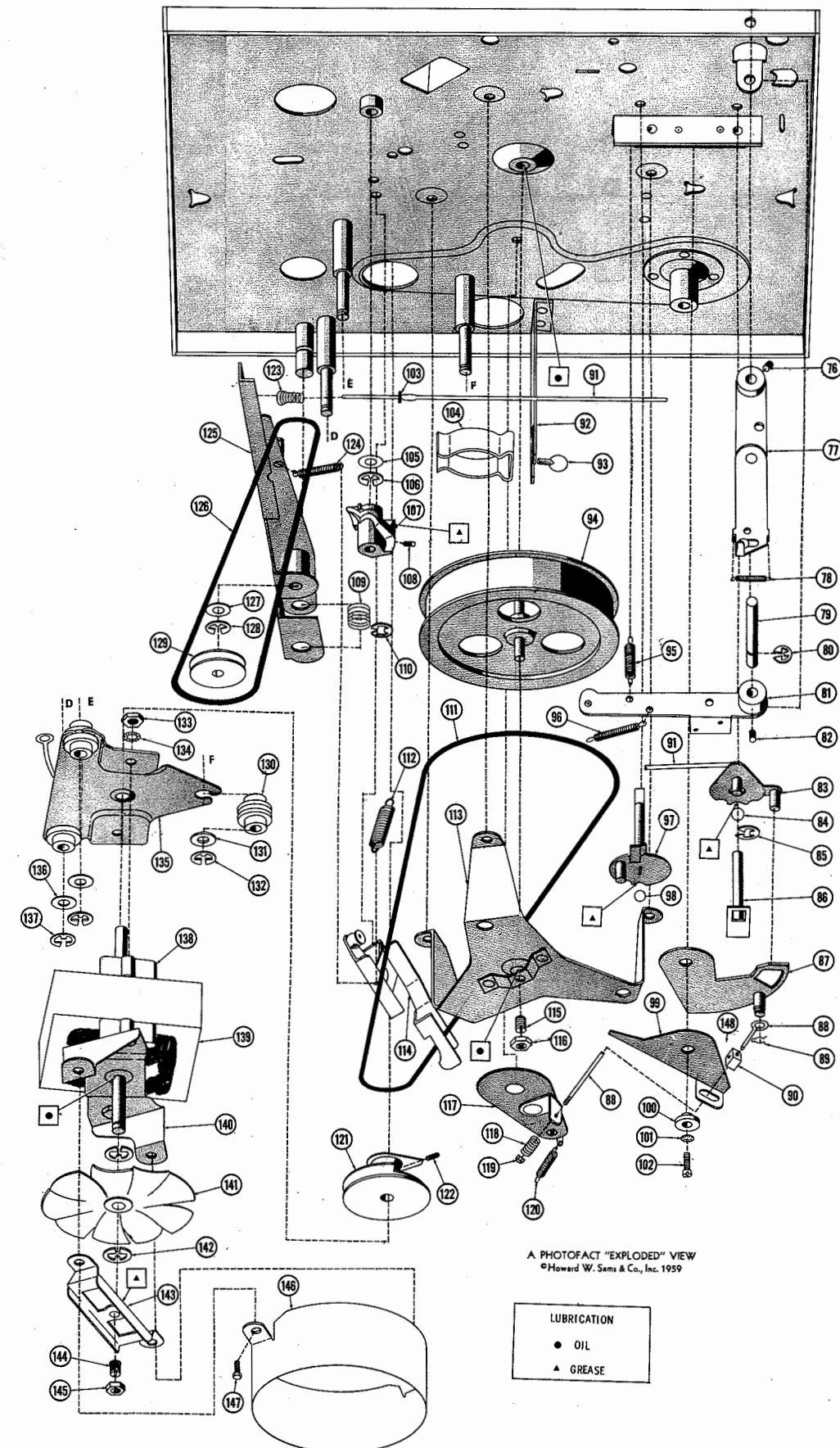


FIG. 4B EXPLODED VIEW OF PARTS BELOW BASEPLATE

