

AMP PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R4	100K				R24	100K			
R5	470Ω				R25	4700Ω			
R6	4300Ω 5%				R26	100K			
R7	150K				R27	100K			
R8	150K				R28	10meg			
R9	220K				R29	360K			
R10	1meg 1W				R30	100K			
R11	2200Ω				R31	68Ω			
R12	270K				R32	330K			
R13	56K				R33	1000Ω			
R14	1meg				R34	1meg			
R15	3.3meg				R35	22K			
R16	10meg				R36	470Ω 1W 5%			
R17	220K				R37	560Ω			
R18	22meg				R38	100K			
R19	270K				R39	100K			
R20	820K				R40	18K			
R21	220K				R41	470K			
R22	10meg				R42	2200Ω			
R23	3.3meg				R43	18K			(12K) *

* Alternate.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		NORELCO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Choke	WT56188					
L2	Bias Osc.	WT56190					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	NORELCO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	117V @ .74A	480VCT @ .042A	6.3VCT @ 2.1A	WT51094					
T1									

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	NORELCO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	6500Ω Tap @ 10%	3-4Ω	WT51096					
T2								

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	NORELCO PART No.	QUAM PART No.	
	4"	PM	3-4Ω	AD1400W *	4A1	
SP1						* Alt. Part #940/AD1400W

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			NORELCO PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M1	Rose Metal								

MISCELLANEOUS

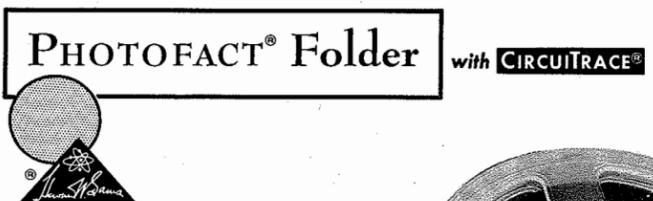
ITEM No.	PART NAME	NORELCO PART No.	NOTES
M2	Head	WT85539	Record-Playback
M3	Head	WT85701	Erase
M4	Switch	PW30610	Play/Record-PA (Spring Loaded, 2 Position Slide Type)
M5	Switch	WT88781	Play/Record (Spring Loaded, 2 Position Slide Type)
M6	Switch	WT88872	Play-Record/PA-Stop (Spring Loaded, 2 Position Slide Type)
M7	Switch	WT88787	Track Selector (Spring Loaded, 2 Position Slide Type)
M8	Switch	WT26201	Super-Impose (Spring Leaf Type)

CABINETS & CABINET PARTS

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

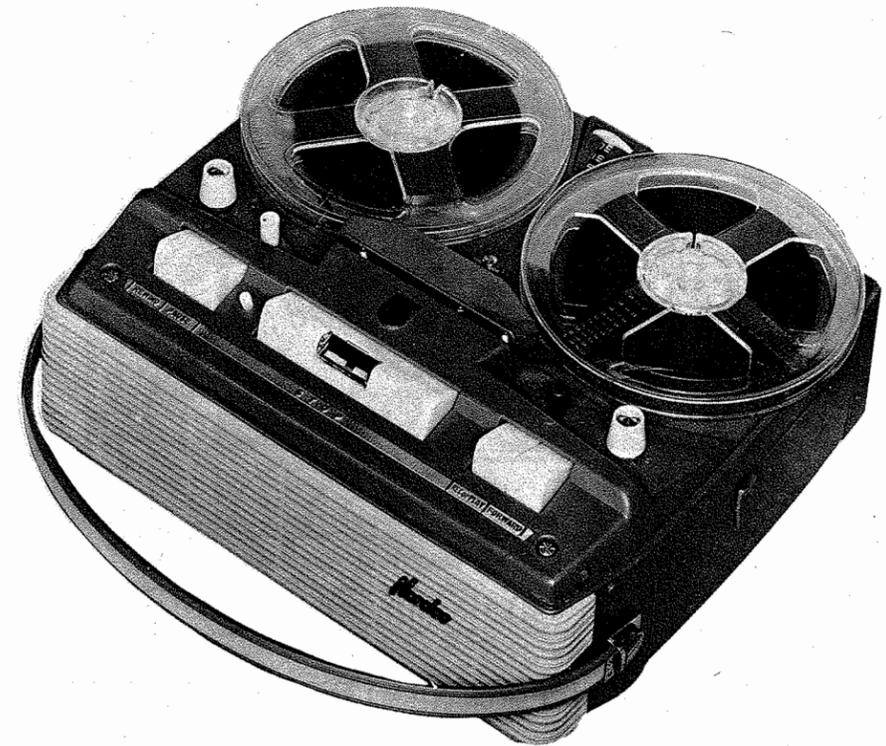
NAME	PART NO.	DESCRIPTION
Knob	WT83289	Volume
Knob	WT26154	Tone
Knob	WT91452	Track Selector
Push Button	WT83249	Record (Red)
Push Button	WT26183	Rewind, Pause, Record-Play, Fast Forward
Push Button	WT26184	Stop
Case	WT85609	

FOLDER 12
SET 602



NORELCO
MODELS EL3541/54B

NORELCO
MODELS EL3541/54B



NORELCO
MODELS EL3541/54B

GENERAL INFORMATION

The Norelco Model EL-3541 is a single-speed tape recorder and can play back both monaural and stereophonic recordings.

Recordings can be made from a microphone, radio, phonograph, tuner or TV set. An external amplifier and speaker may be connected to the recorder to play back stereo recordings.

This model has a tape speed of 3 3/4 ips. Recording time will be as follows:

Tape Length	Time
1200 ft.	2 hours
1800 ft.	3 hours
2400 ft.	4 hours

Operate the recorder on 60 cycles, 110-115 or 220-240 volts AC only.

Supplied By:

North American Philips Company, Inc.
High Fidelity Products Division
230 Duffy Avenue
Hicksville, L. I., New York

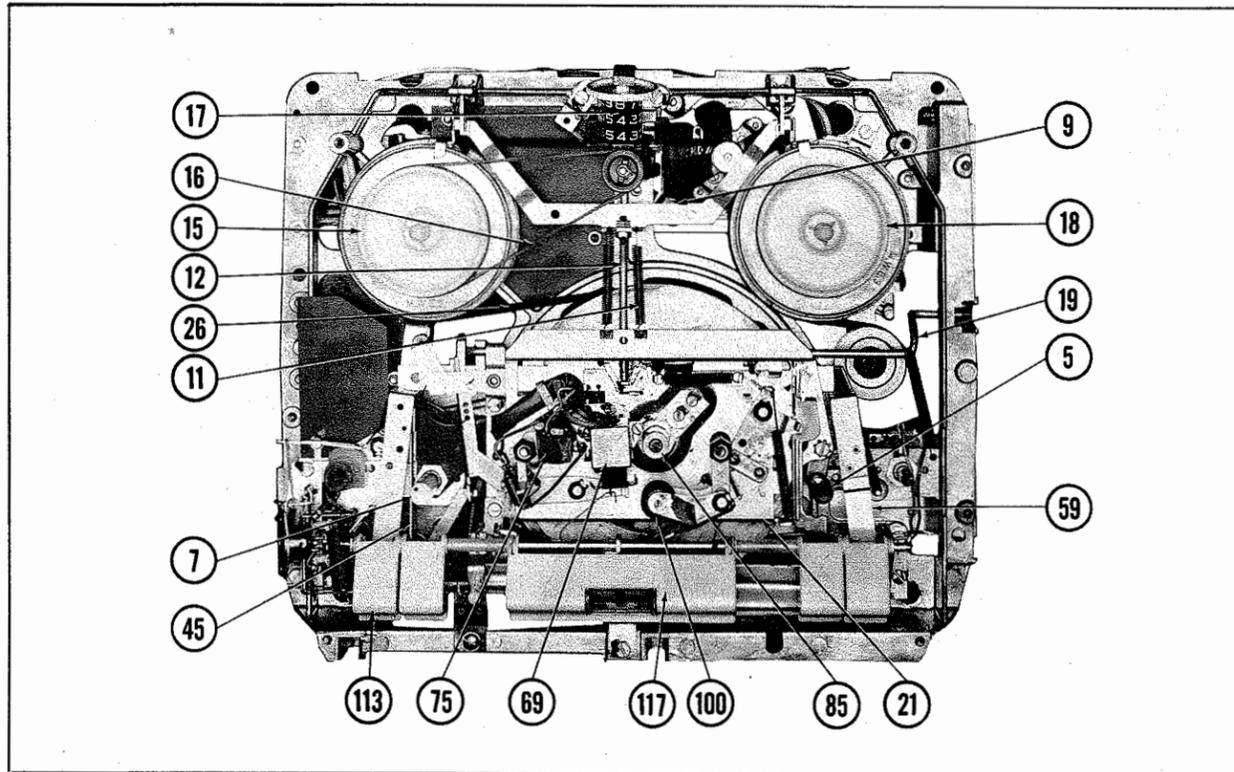
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



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 CQ517

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1962 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

AMP PARTS LIST AND DESCRIPTIONS



TOP VIEW OF MECHANISM (SEE PAGE 4 ALSO)

FUNCTION OF CONTROLS, PUSH BUTTONS AND JACKS

Power On-Off, Volume Control

Turns power on or off for the entire unit. Determines recording level when recording from radio or phono. Controls volume on playback.

Tone Control

Controls bass and treble response on playback. It does not function during record.

Microphone Volume Control

Controls level when recording from microphone.

Stop

Applies brake to both spindles and returns all pushbuttons to Neutral.

Record

Moves play-record switch into record position.

Rewind

Returns tape rapidly to supply reel. Engages wind-rewind pulley, while disengaging take-up pulley, thus turning supply spindle.

Forward

Moves tape rapidly forward in play and record functions. Engages take-up pulley while disengaging wind-rewind pulley, thus turning take-up spindle.

Play

Starts tape moving for playback (or recording, if Record button is depressed simultaneously). Brings pressure roller and pressure pad into position against capstan and record head.

Trick

Depress this button and recordings can be made on previously recorded tape with no erasure.

External Speaker

Used for connecting external speaker for playback.

Headphones

Plug headphones into this jack to monitor during record.

Output

An external amplifier may be plugged into this jack for playback.

Microphone Low Level

Plug microphone into this jack for microphone recordings.

Radio-Phono

A high level input used when recording from radio, phonograph, tuner, etc., by means of a patch cord.

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Power Cord	8524 (Stranded) Available in 12 Colors
	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)
	8428 (Two Conductor-Shielded)
	8418 (Three Conductor-Shielded)

TUBES

ITEM No.	USE	TYPE	REPLACEMENT DATA					
			AMPEREX	GENERAL ELECTRIC	RCA	RAYTHEON	SYLVANIA	
V1	Preamplifier	EF86				V4	Recording Level Indicator	EM84
V2	Radio-Phono Preamp. - AF Amp.	ECC83				V5	Rectifier	EZ80
V3	AF Amp. - Output Bias Oscillator	ECL82						

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		DIODES	NOTES
			RCA PART No.	SARKES TARZIAN PART No.	RAYTHEON PART No.	
XI		OA85			1N126A	Record Indicator Rectifier

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA								
	CAP.	VOLT.	NORELCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.		
C1A	.50	350	AC5483	AFH2-40	B0320	MTI-20	TT25X50	MLV25-25	TVL2630		
C1B	.32	350		PR81660	BR30-350					TT25X15	TVAI510
C2	.64	25		909/C64	PR81490					NLW75-25	TT25X15
C3	.64	25	909/C64	PR81490	NLW75-25	MTI-20	TT25X50	TE-1210			
C4	.25	25	909/C25	PTT82	NLW25-25	MTI-11	TT25X25	TE-1207			

⊙ Part #A6027 used in some versions.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA											
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENC0 PART No.	MALLORY PART No.	SPRAGUE PART No.						
C5	.1 400V 10%	#908/30E	V84C4P1-10%	TCN-220	C10T22U	CCTN-220	CN7-322	10TCU-T22						
C6	.022 400V 10%		V84C4S2-10%						PM4S22	4DP-3-104	GEM-1001	4TM-P10		
C7	.068 125V		P288N-068						CUB4S68	4DP-2-223	GEM-16122	4TM-S22		
C8	.027 400V 10%		P684CM-027						DPM6S27	4DP-3-683	GEM-4168	4TM-S68		
C9	.015 125V		P288N-015						CUB6S15	6DP-3-273	GEM-1613	6PS-S27		
C10	.0033 400V 10%		V84C4D33-10%						PM6D33	4DP-1-153	GEM-4115	4TM-S15		
C11	220 N750 5%								TCN-220	6DP-1-332	GEM-16233	6TM-D33		
C12	.027 400V 10%		P684CM-027						DPMS6S27	6DP-3-273	GEM-1613	6PS-S27		
C13	.0082 400V 10%		P684CM-0082						DPM6D82	6DP-2-622	GEM-16262	6PS-D22		
C14	.0022		SI 2200						BYA10D22	CCD-222	B-222	5HK-D22		
C15	.015 125V		P288N-015						CUB6S15	4DP-1-153	GEM-4115	4TM-S15		
C16	.1 400V 10%		V84C4P1-10%						PM4P1	4DP-3-104	GEM-1001	4TM-P10		
C17	.01 400V 10%		V84C4S1-10%						PM4S1	4DP-1-103	GEM-1611	4TM-S10		
C18	30 (Nominal)		#908/30E											
C19	30 (Nominal)		#908/30E											
C20	220 N750								N750-SI 220	TCN-220	C10T22U	CCTN-220	CN7-322	10TCU-T22
C21	.082 125V 10%										DPM6S82	6DP-4-823		6PS-S82
C22	330 N750								N750-SI 330	TCN-330	C10T33U		CN7-333	10TCU-T33
C23	330 N750		N750-SI 330	TCN-330	C10T33U		CN7-333	10TCU-T33						
C24	.027 125V		P684CM-027		DPM6S27	6DP-3-273	GEM-1613	6PS-S27						
C25	.015 125V		P288N-015	DD-153	CUB6S15	4DP-1-153	GEM-4115	4TM-S15						
C26	.22 125V		P288N-22		CUB2P22	4DP-5-224	GEM-2022	2TM-P22						

Norelco Part Number

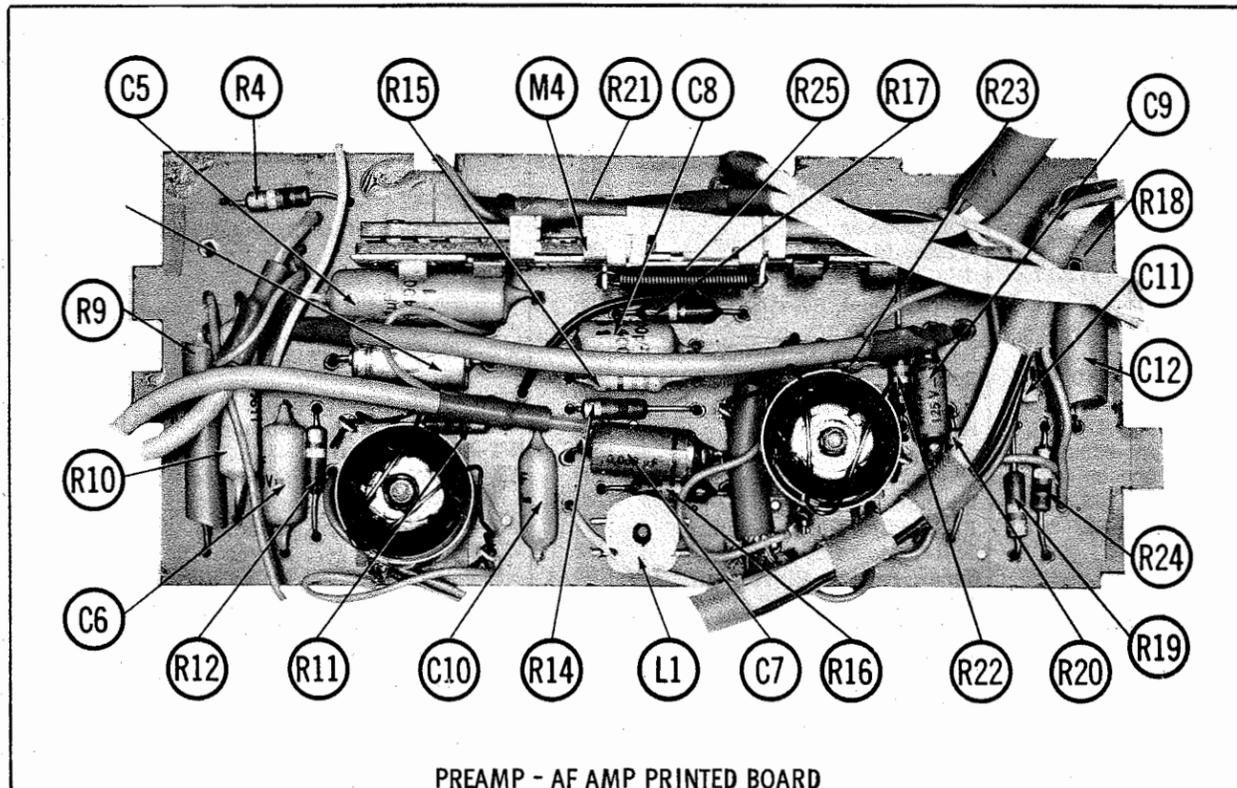
CONTROLS

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

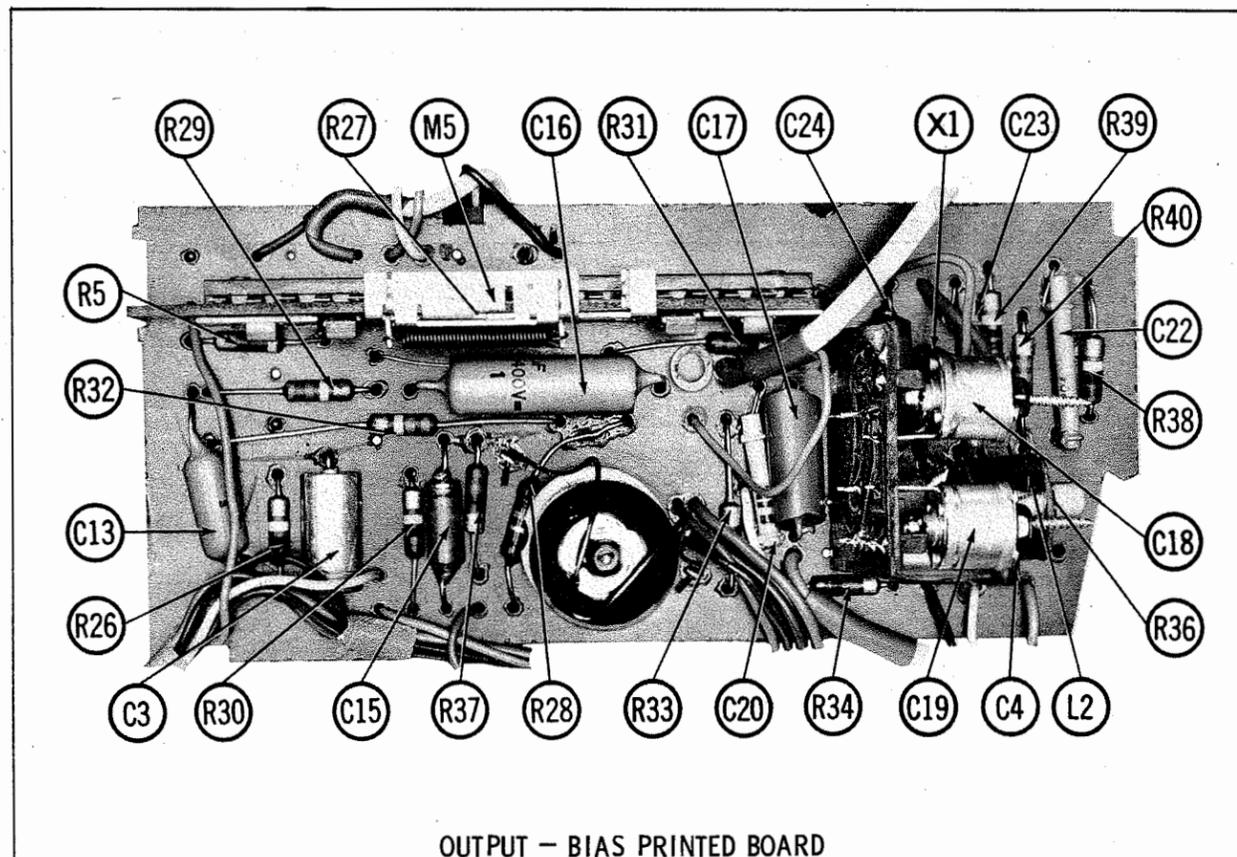
ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			NORELCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	Mic. Volume	200K	9L/GL200K					U42, or (UA154A, SL3500)
R2	Play-Record Volume On-Off	200K	4890000/DL200K					RU25A, SL38, US41, SL3500
R3	Tone	500K		B-60, or (AB-60, AK-7)	A47-500K-Z/FS-3	Q13-133, or (BU1, CF25, SSI, DC1)*		U48, or (UA55A, SF-1000)

* "SNAPTROL"

OPERATING INSTRUCTIONS



PREAMP - AF AMP PRINTED BOARD



OUTPUT - BIAS PRINTED BOARD

Threading the Tape

1. Place reel of tape on left spindle; empty reel on right spindle.
2. Thread tape in slot with shiny side toward the front of recorder.
3. Insert loose end of tape into one of the slots in the empty reel and turn reel counterclockwise to take up slack in the tape.

To Make a Recording

1. Plug microphone into the Low Level input jack.
2. Turn on the power by rotating On-Off Volume control clockwise until a click is heard. Allow sufficient time for the tubes to warm up.
3. Depress the Record button and adjust the microphone level control while observing the Record level indicator. The light beams should fall within the red area of the indicator on the loudest passage.

NOTE: The pushbuttons should be depressed firmly for proper operation. Each time the recorder is changed from one function to another, the Stop button must be depressed. If the Pause button is used, it is not necessary to depress the Stop button.

4. Hold the Record button down and depress the Play button until both are locked in the down position.
5. Hold the microphone approximately eight inches from the mouth when recording voice. Place the microphone two or three feet in front of the loudspeaker when recording from a radio, phonograph, or TV set.
6. Depress the Pause button to interrupt a recording briefly. The recorder will continue to record when the Pause button is again depressed and released.

Four-Track Recording

Four individual monophonic recordings can be made on the same tape. To do this, proceed as follows:

1. Place the Track Selector switch in the 1-4 position.
2. Thread the tape as described under "Threading the Tape".
3. Make a recording in this position. Track #1 will now be recorded.
4. Turn the tape over and make another recording. Track #4 will now be recorded.
5. Place the Track Selector in the 2-3 position. Repeat Steps 3 and 4. All four tracks will now be recorded.

To Record from a Radio, Phonograph, Tuner, or TV Receiver

Connect a patch cord from the speaker terminals of receiver being used to the High Level jack of the recorder. Proceed as outlined in Steps 2 thru 6 under "To Make a Recording".

To Wind or Rewind Tape

1. Depress the Wind button and the tape will transfer rapidly from the supply reel to take-up reel.
2. Depress the Rewind button and the tape will transfer rapidly from take-up reel to supply reel.
3. Depress the Stop button to stop the tape.

To Play Monaural Recordings

1. Thread the tape.
2. Depress the Play button and adjust Volume and Tone controls.

To Play Stereophonic Tapes

1. Thread the tape.
2. Connect an external amplifier to the Stereo output jack.
3. Connect speaker system to the external amplifier output.
4. Depress the Play button. Adjust Volume control on recorder and external amplifier until a balance is maintained between the two channels.

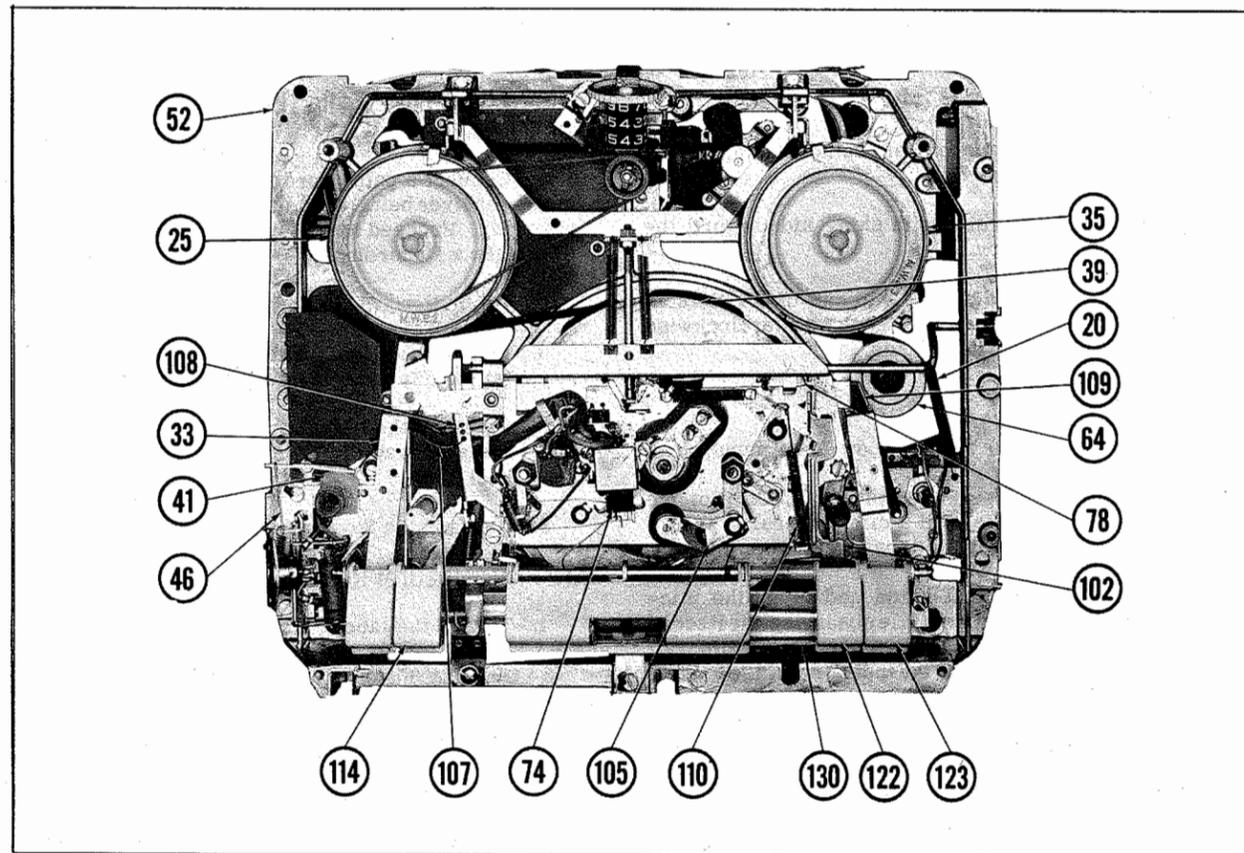
To Edit and Splice Tape

NOTE: Since one track cannot be edited and spliced without affecting the other track, recordings to be edited should be limited to one track only.

1. Tape can be edited by cutting out unwanted portions, or by joining selections into another sequence. Announcements, etc., can be inserted between selections. Unused tape can be spliced for reuse.
2. For best results, cut the tape at a slight diagonal and butt the ends together. Fasten them on the glossy side with splicing tape. Trim off any excess width.

To Use as a Public Address System

1. Plug the microphone into the Microphone jack.
2. Press the Public Address switch (located on right side of recorder) until a click is heard.
3. Advance the Microphone Volume control (on extreme right) to the desired level. Do not point the speaker toward the microphone as feedback will result, causing a howl in the speaker output.



TOP VIEW OF MECHANISM (SEE PAGE 2 ALSO)

DISASSEMBLY

1. Remove cabinet top cover.
2. Remove 3 push-on type control knobs.
3. Remove 1 screw from head cover and remove cover.
4. Remove 4 screws from bottom of case and remove bottom cover.
5. Remove 4 screws from top of cabinet and 2 screws from handle. The cabinet may now be removed from the recorder assembly.

ADJUSTMENT

To Align Erase Head

1. Remove head cover (1).
2. Place a tape on the supply spindle and thread as described under "Threading the Tape".
3. Rotate the three mounting screws (73) so that the top of the head gap lines up with the top of the tape.

To Align Record-Playback Head

1. Remove head cover (1).
2. Thread a prerecorded alignment tape on recorder as described under "Threading the Tape".

CLEANING

Pressure roller (100), capstan (85), and recording head (69) should be cleaned occasionally of dirt and foreign matter with a soft cloth moistened with alcohol.

LUBRICATION

The recorder does not require lubrication under normal use. When disassembled for repair, wipe all bearings and sliding levers with a clean soft cloth and apply a thin coat of oil to their surfaces.

MECHANICAL PARTS LIST (CONT')

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
51	WT-001-97	Screw	92		Tape Guide
52		Plate, Mounting	93		Screw
53		Screw	94	WT-730-62	Spring, Pressure
54		Lockwasher	95	PW-306-73	Bracket, Quick Stop
55		Plate, Mounting	96		Nut
56	WT-277-17	Plate, Bearing	97		Washer
57		Shock Mount, Bearing Plate	98		Sleeving
58	WT-265-28	Bearing	99		Washer
59		Rod, Take-Up Actuating	100	WT-881-66	Pressure Roller
60	WT-740-85	Spring, Tension	101		Washer
61		Cap, Idler Shaft	102	WT-943-15	Bracket, Connecting
62	984-4	Ring, Retaining	103		Ring, Retaining
63	A9-868-95	Washer	104	WT-646-12	Shaft
64	WT-881-87	Idler Wheel	105	A9-869-49	Lever, Pressure Roller
65	A9-868-95	Washer	106		Ring, Retaining
66	WT-882-26	Plate, Idler Wheel Bearing	107	WT-765-45	Spring, Profile
67		Plate, Mounting	108	WT-045-85	Lever, Switch
68		Screw, Record-Playback Head Mounting	109		Lever, Brake Release
69	WT-855-39	Head, Record-Playback	110		Spring, Tension
70		Plate, Head Mounting	111		Spring, Tension
71	WT-730-47	Spring, Pressure	112		Screw
72		Assembly, Pressure Pad	113		Button, Fast Rewind
73		Screw, Erase Head Mounting	114		Button, Pause
74	WT-856-04	Hum Shield and Pad Assembly	115		Assembly, Fast Rewind Actuating
75	WT-857-01	Erase Head	116		Assembly, Pause Actuating
76	WT-730-47	Spring, Pressure	117		Bar, Stop
77		Tie Down, Cable	118		Spacer
78	WT-035-76	Bracket, Locking	119		Assembly, Stop Actuating
79	WT-740-86	Spring, Tension	120		Spring, Stop Bar Return
80	WT-924-52	Nut	121		Spacer
81	WT-458-02	Tape Rest	122		Button, Play-Record
82		Tape Guide	123		Button, Fast Forward
83		Screw	124		Assembly, Fast Forward Actuating
84		Washer	125		Assembly, Play-Record Actuating
85		Capstan	126		Shield, Lever Indicator
86		Set-Screw	127		Bracket, Indicator Retaining
87	PW-307-21	Plate, Bearing	128		Ring, Retaining
88		Mount, Bearing Plate	129		Bracket, Mounting
89	WT-265-28	Bearing	130		Bracket, Locking
90	WT-924-52	Nut	131		Bracket, Mounting
91	WT-458-02	Tape Rest	132		Assembly Rod, Pushbutton

NORELCO
MODELS EL3541/54B

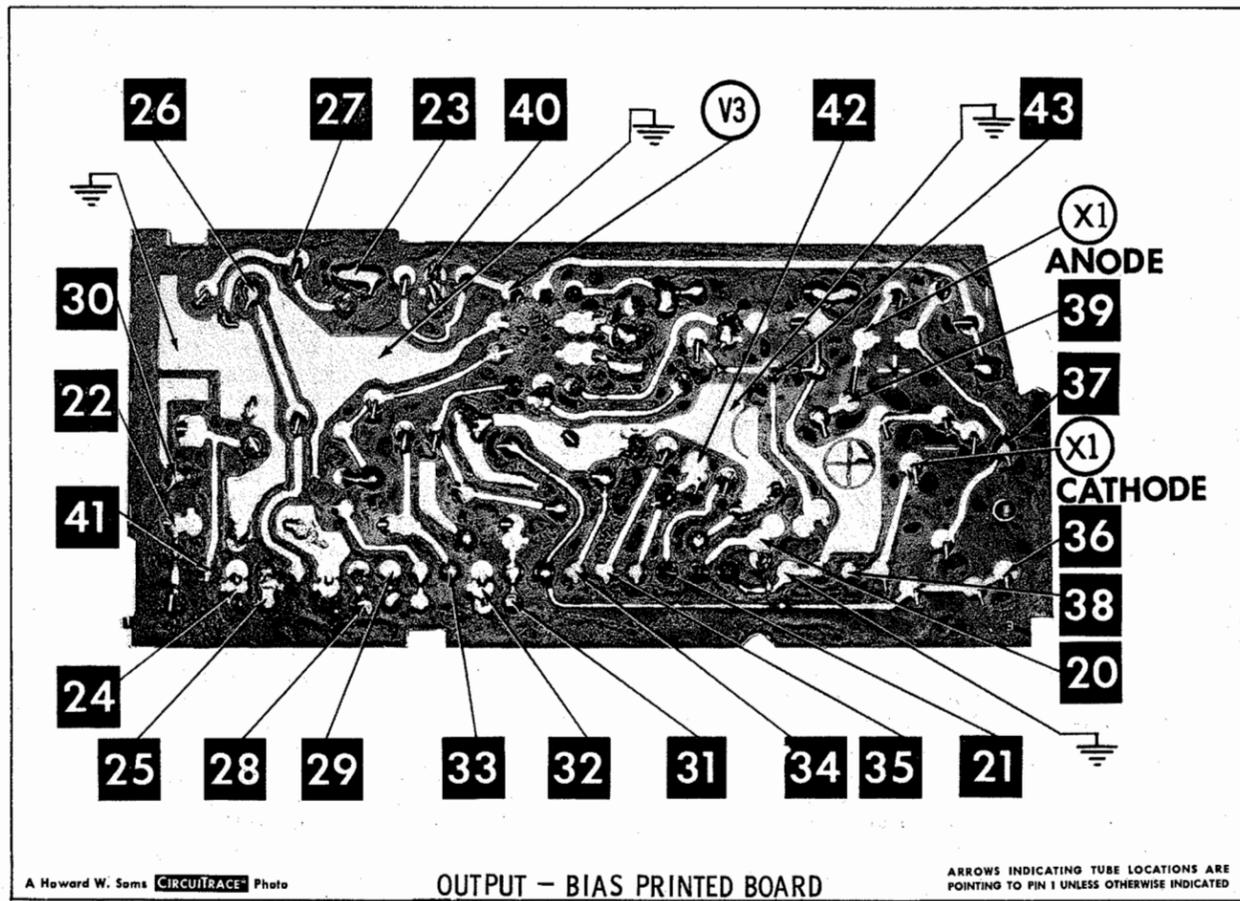
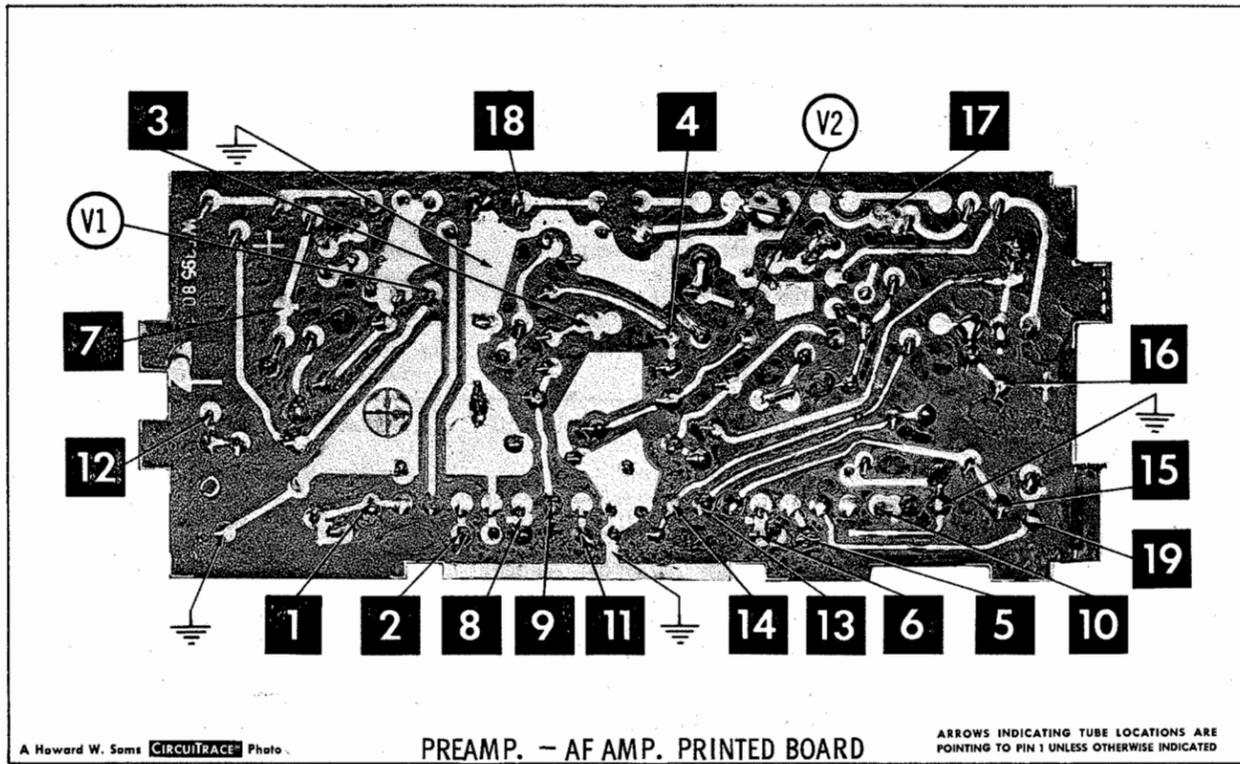
FOLDER 12

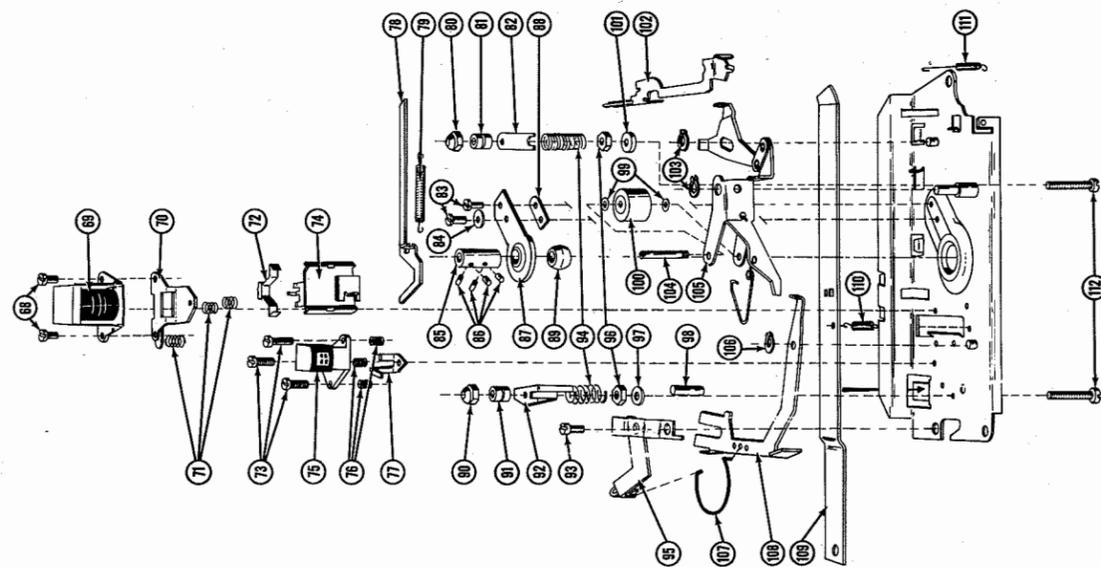
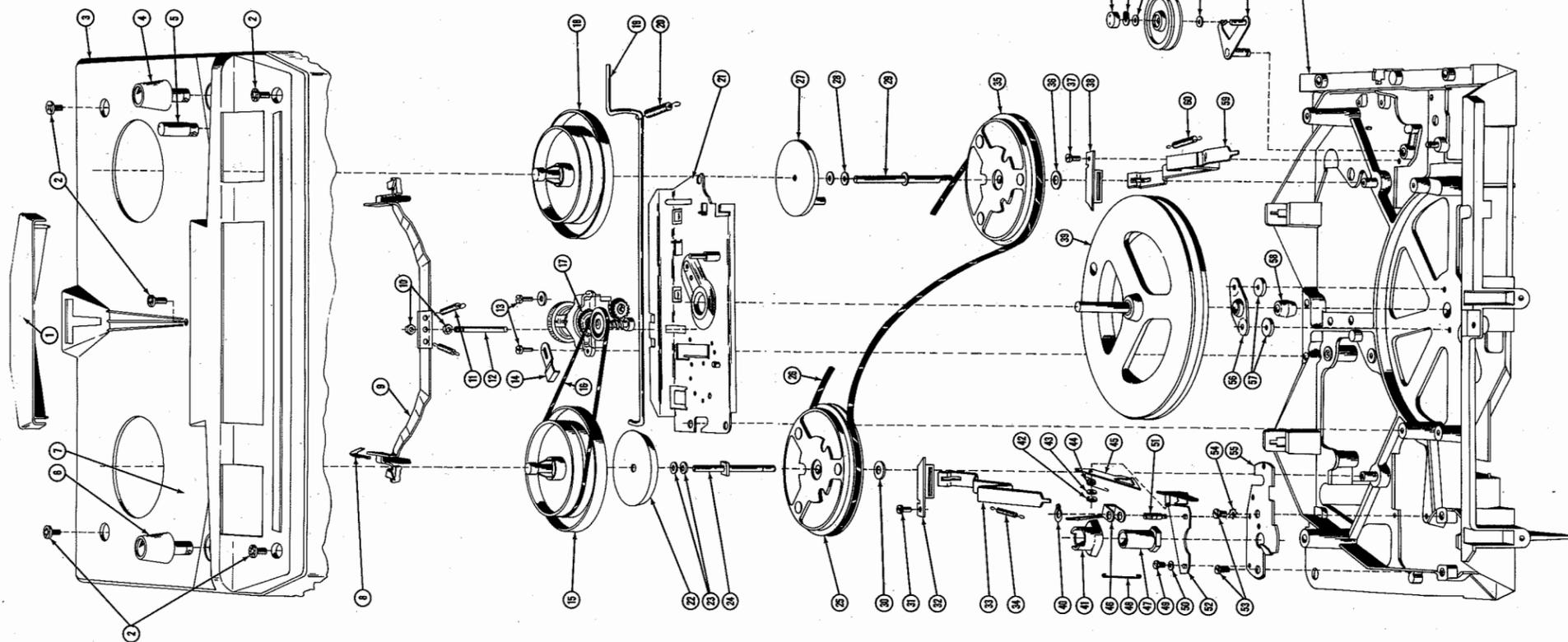
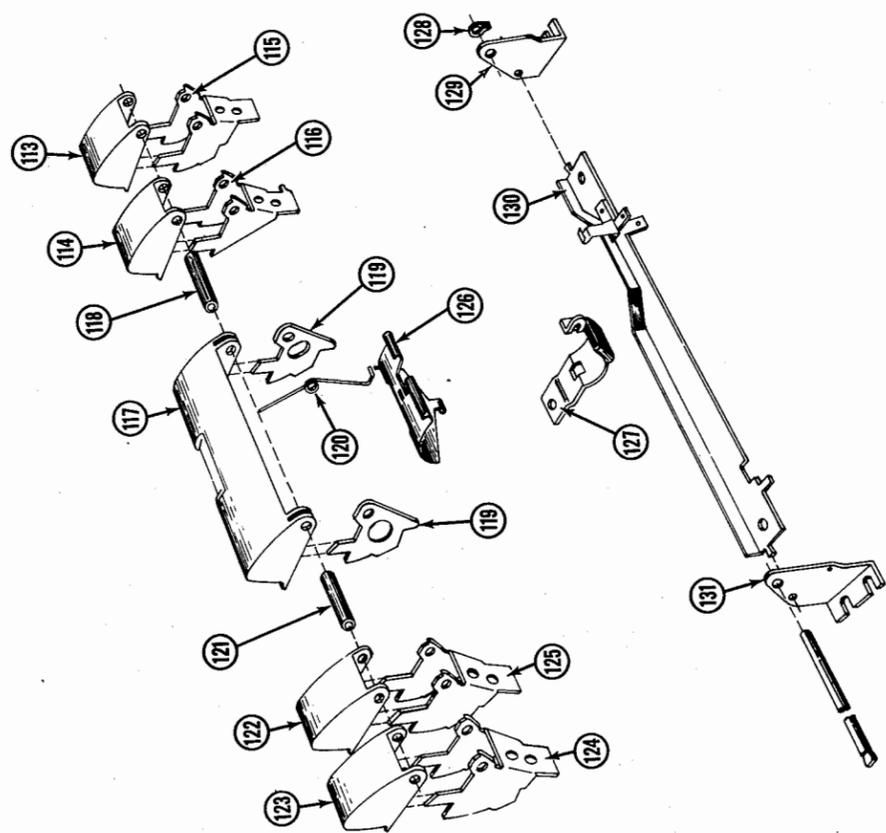
TROUBLE CHART

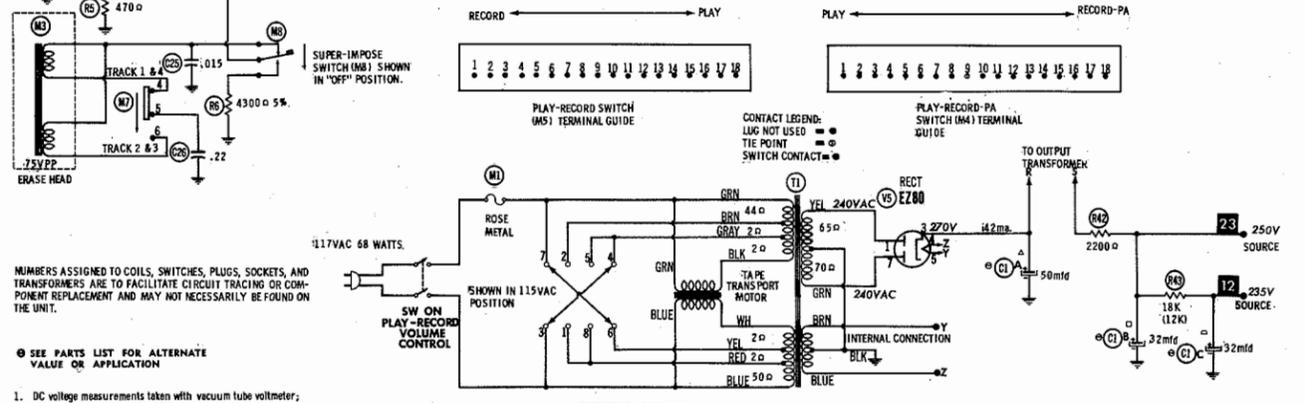
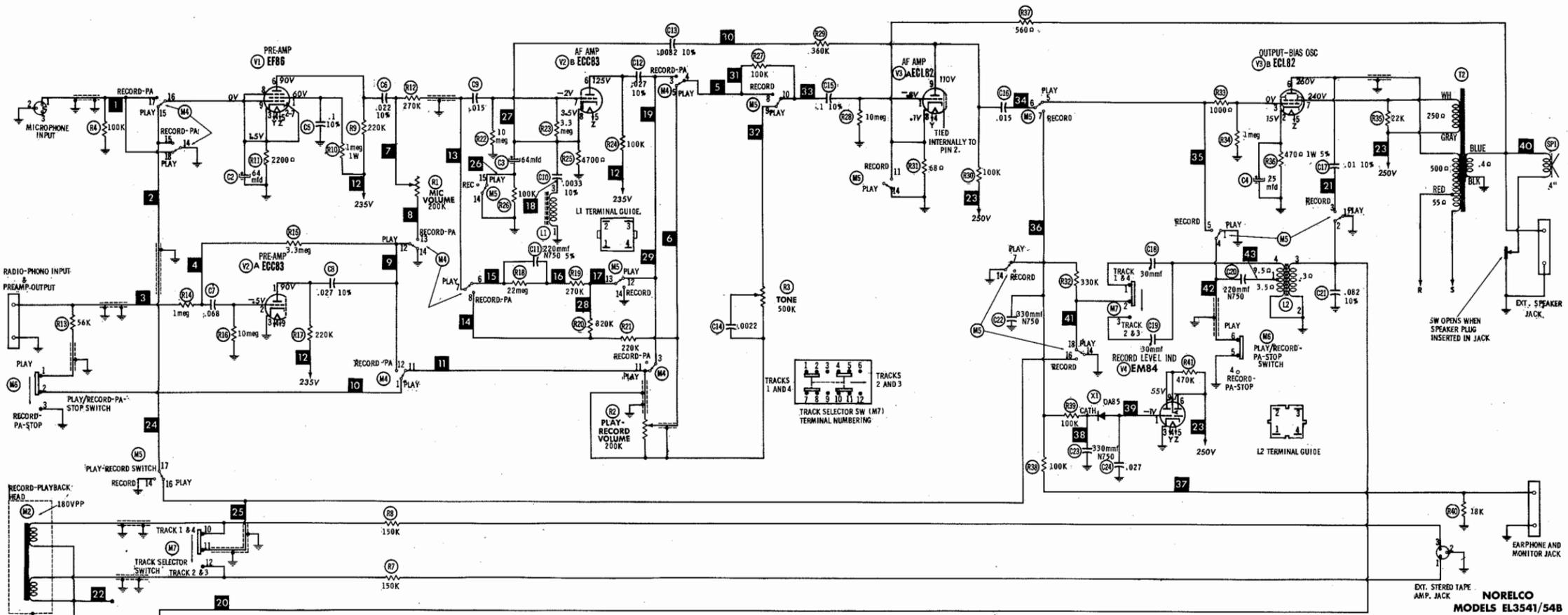
SYMPTOM	CAUSE	REMEDY
Take-up reel does not turn in Play or Record position.	1. Take-up idler spring (60) off or broken. 2. Take-up clutch assembly slipping.	1. Replace take-up idler spring(60). 2. Reposition clutch assembly on shaft.
Take-up reel does not turn in Fast Forward position.	1. Drive belt slipping on pulleys. 2. Idler spring (60) off or broken.	1. Moisten cloth in alcohol and clean pulleys. 2. Replace idler spring (60).
Supply reel does not turn in Rewind position.	1. Oil on idler pulley (64) or main drive pulleys.	1. Moisten cloth in alcohol. Clean idler pulley and drive pulleys.
Reels do not stop when Stop button is depressed.	1. Brake actuating spring (11) off or broken. 2. Brake lining worn.	1. Replace brake actuating spring (11). 2. Replace brake lining.
Counter mechanism does not operate.	1. Defective counter (17). 2. Counter belt (16) off or broken.	1. Check gear teeth in counter for damage. Replace if necessary. 2. Replace counter belt (16).
Wow or flutter.	1. Improper pressure between capstan (85) and pressure roller (100). 2. Pressure roller (100) worn. 3. Counter (17) binding. 4. Dirty pressure pad (74). 5. Pressure roller (100) binding on shaft or damaged.	1. Bend or replace pressure roller tension spring for proper tension. 2. Replace pressure roller (100). 3. Check for dirt or chips in gears. Clean and lubricate. 4. Saturate pad with alcohol. Brush surface of pad in direction of normal tape travel. 5. Remove pressure roller (100) and clean bearing with pipe cleaner dampened with alcohol. Clean roller stud (104); if scarred, polish with crocus cloth. Apply a light coating of nonmelting grease to the stud before reassembling. If damaged, replace.

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1		Cover, Head	26	WT-496-04	Belt, Main Drive
2		Screw	27		Clutch Disc
3		Dress Plate	28	A9-868-66	Washer
4		Knob, Volume Control	29		Driveshaft, Take-Up
5		Button, Record	30	A9-868-66	Washer
6		Knob, Volume Control	31		Screw
7		Knob, Treble Control	32		Plate, Rewind Actuating
8		Spring, Brake Guide	33		Rod, Rewind Actuating
9	PW-307-40	Bracket, Brake Assembly	34	WT-740-85	Spring, Tension
10		Nut, Brake Adjust	35	WT-882-24	Pulley, Take-Up
11	WT-740-89	Spring, Brake Tension	36	A9-868-65	Washer
12		Rod, Brake	37		Screw
13		Screw, Retaining	38		Plate, Take-Up Actuating
14		Bracket, Belt Brush	39	WT-886-94	Flywheel
15	WT-961-50	Spindle, Supply	40		Ring, Retaining
16	WT-496-08	Belt, Counter Drive	41	WT-937-53	Cam, Switching
17	PW-306-00	Assembly, Counter	42		Ring, Retaining
18	WT-961-53	Spindle, Take-Up	43		Washer
19		Rod, Foot Switch Actuating	44	WT-765-56	Spring, Torsion
20	WT-740-90	Spring, Tension	45	WT-306-98	Bar, Pause Locking
21		Bracket, Head Assembly	46		Rod, Switch Actuating
22	WT-477-97	Clutch Disc	47	WT-598-33	Nut, Nylon
23	A9-868-66	Washer	48		Rod, Connecting
24		Driveshaft, Supply Pulley	49		Screw
25	WT-882-24	Pulley, Supply	50		Washer







NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

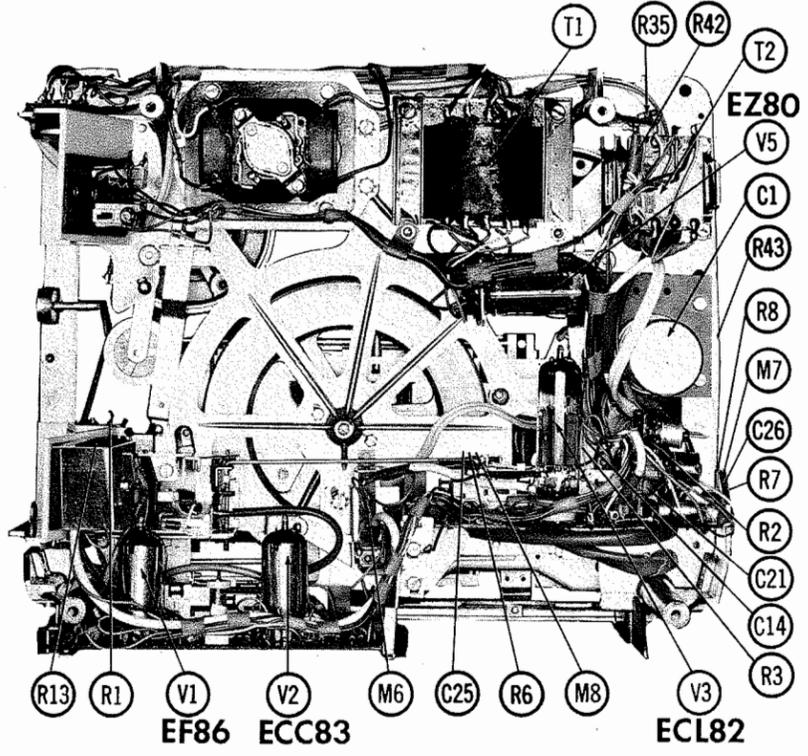
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

- DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common ground.
- Line voltage maintained at 117 volts for voltage readings.
- Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
- All controls at minimum, proper output load connected.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	EF86	1meg	2200Ω	2200Ω	FIL	FIL	+234K	2200Ω	2200Ω	2200Ω
V2	ECC82	+234K	10meg	0Ω	FIL	FIL	+114K	2.5meg	4700Ω	FIL
V3	ECL82	10meg	470Ω	1meg	FIL	FIL	+500Ω	12500Ω	68Ω	1100K
V4	EM84	120K	NC	0Ω	FIL	FIL	12200Ω	1470K	NC	1470K
V5	EZ80	65Ω	NC	1	FIL	FIL	NC	70Ω	NC	NC

ALL MEASUREMENTS TAKEN IN "PLAY" POSITION UNLESS OTHERWISE DESIGNATED.
 MEASURED IN "RECORD" POSITION.
 † MEASURED FROM PIN 3 OF VS.
 ‡ THIS READING WILL VARY DEPENDING ON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
 NC NO CONNECTION.



BOTTOM VIEW OF MECHANISM