



MECHANICAL PARTS LIST		
Ref. No.	Part No.	Description
1	P122	Control Knob
2		Set Screw for Control Knob
3		Plate Mounting Screws
4	M101	Front Plate
5	R320	Plate Spacer
6		Plate Mounting Screw
7	M102	Rear Plate
8		Pressure Arm Stop Screw
9	A105	Tape Guide Assembly
10	A108	Record and Erase Head Mounting Assembly
	A107	Erase Head
	P128	Erase Head Lamination
10A	A106	Record Head
	P127	Record Head Lamination
11	A116	Rewind Shaft Assembly
12		Main Base Plate
13		Mounting Screw for Head Bracket
14		Mounting Screw
15	M116	Head Bracket
16	M104	Pressure Arm
17	P114	Pressure Arm Spring
18	S102	Hairpin Clip
19		Flat Washer
20	A183	Pressure Roller
21	P113	Take-up Drive Belt
22	A115	Take-up Shaft Assembly
23		Flat Washer
24		Flat Washer
25	S103	Hairpin Clip
26	A114	Brake Assembly
27		Spacer
28		Rubber Mounting Grommet
29	P116	Brake Spring
30		Sub-Mounting Plate
31		Flat Washer
32		Lock Washer
33		Mounting Screw
34	R306	Roller Stud
35	P115	Detent Spring
36	M103	Roller Plate
37	M107	Detent Slide
38	R419	Shouldered Nut
39	A101	Fly-Wheel Assembly
40		Mounting Plate
41	P110	Felt Washer
42	P119	Stack Switch Motor
43	P120	Stack Switch Erase
44	R437	Rewind Pulley
45	P112	Rewind Drive Belt
46	M111	Rewind Arm
47	R348	Rewind Drive Pulley
	A111	Rewind Pulley Assembly
48	A113	Pressure Lever Assembly
	A109	Detent Lever Assembly
49	A110	Motor Transfer Assembly
50		Flat Washer
51	A102	Motor Swing Plate Assembly
52	P111	Felt Washer
53	S101	Cotter Pin
54	P125	Motor
55	P123	Rubber Grommets
56	A181	Rubber Drive
57	M109	Motor Stop Lug
58	M105	Arm Adjusting Plate
ELECTRICAL PARTS LIST		
Item No.	Description	
V1	Pre-amp. 12AX7	
V2	AF Amplifier, 6C4	
V3	Oscillator, 6C4	
V4	Power Output, 50L6GT	
V5	Power Output, 50L6GT	
C1	Voltage Doubler Cap. (Electrolytic), 40 MFD. @ 250 V.	
C2A	Filter (Electrolytic), 30 MFD. @ 350 V.	
C2B	Filter (Electrolytic), 10 MFD. @ 350 V.	
C2C	Filter (Electrolytic), 10 MFD. @ 350 V.	
C3	Voltage Doubler Cap. (Electrolytic), 40 MFD. @ 250 V.	
C4A	Filter (Electrolytic), 30 MFD. @ 350 V.	
C4B	Filter (Electrolytic), 10 MFD. @ 350 V.	
C4C	Decoupling (Electrolytic), 10 MFD. @ 350 V.	
C5	Pre-amp. Cathode Bypass (Electrolytic), 25 MFD. @ 50 V.	
C6	Tone Compensation, .02 MFD. @ 400 V.	
C7	Audio Coupling, .05 MFD. @ 400 V.	
C8	Audio Coupling, .01 MFD. @ 400 V.	
C9	AF Plate Bypass, 500 MMFD. @ 500 V.	
C10	Audio Coupling, .05 MFD. @ 400 V.	
C11	Tone Compensation, .01 MFD. @ 400 V.	
C12	Audio Coupling, .05 MFD. @ 400 V.	
C13	Voltage Divider, 500 MFD. @ 500 V.	
C14	Bias Oscillator Grid Cap., .003 MFD. @ 600 V.	
C15	Fixed Trimmer, 3000 MMFD. @ 500 V.	
C16	Bias Oscillator Coupling, 500 MMFD. @ 500 V.	
C17	Voltage Divider, 250 MMFD. @ 500 V.	
C18	Line Isolation, .1 MFD. @ 200 V.	
C19	Line Filter, .05 MFD. @ 400 V.	
R1	Volume Control and Switch, 500K Ohm	
R2	Tone Control, 500K Ohm	
R3	Indicator Lamp Flash Control, 500K Ohm	
R4	Pre-Amp. Grid, 1 Meg., 1/2 Watt	
R5	Pre-Amp. Cathode, 2700 Ohm, 1/2 Watt	
R6	Pre-Amp. Plate, 220K Ohm, 1/2 Watt	
R7	Tone Compensation, 18K Ohm, 1/2 Watt	
R8	Pre-Amp. Cathode, 2700 Ohm, 1/2 Watt	
R9	Pre-Amp. Plate, 220K Ohm, 1/2 Watt	
R10	Filter, 22K Ohm, 1/2 Watt	
R11	AF Grid, 1 Meg., 1/2 Watt	
R12	AF Cathode, 1500 Ohm, 1/2 Watt	
R13	AF Plate, 100K Ohm, 1/2 Watt	
R14	Voltage Divider, 270K Ohm, 1/2 Watt	
R15	Oscillator Grid, 6800 Ohm, 1/2 Watt	
R16	Series Neon Lamp, 1 Meg., 1/2 Watt	
R17	Series Neon Lamp, 27K Ohm, 1 Watt	
R18	Voltage Divider, 470K Ohm, 1/2 Watt	
R19	Filter, 1000 Ohm, 1 Watt	
R20	Series Phono Jack, 33K Ohm, 1/2 Watt	
R21	Output Grid, 33K Ohm, 1/2 Watt	
R22	Output Grid, 33K Ohm, 1/2 Watt	
R23	Output Cathode, 75 Ohm, 1 Watt	
R24	Bleeder, 15K Ohm, 1 Watt	
R25	Filter, 6800 Ohm, 2 Watt	
R26	Filter (Wire Wound), 350 Ohm, 5 Watt	
R27	Surge Limiter (Wire Wound), 50 Ohm, 5 Watt	
R28	Filament String, 56 Ohm, 1 Watt	
R29	Filament String, 56 Ohm, 1 Watt	
R30	Filament String, 56 Ohm, 1 Watt	
T1	Power Transformer	
T2	Driver Transformer	
T3	Output Transformer	
SP1	PM Speaker	
SP2	Cone, 3.2 Ohm Voice Coil	
L1	Bias Oscillator Coil	
M1	Record-Playback Switch	
M2	Selenium Rectifier	
M3	Selenium Rectifier	
M4	Selenium Rectifier	
M5	Selenium Rectifier	
M6	Neon Indicator	
M7	Neon Indicator	

CRESTWOOD  
MODEL CP-201



Figure 1

GENERAL INFORMATION

The Crestwood Tape Recorder, Model CP-201, is designed to magnetically record on a standard 7-inch reel of 1/4" wide tape, two tracks instead of one, which doubles the playing time with no loss in frequency response or quality.

Erasing, in the Model CP-201, is obtained by a 35 KC frequency at approximately 175 volts through the erase head coil. The erase head is so placed on the recorder that the tape passes through it before the recording head. Erasure takes place automatically as recording occurs, so that no special step is necessary.

Power supply is from 105-120 volts, 60 cyclesAC. Do not connect the unit to DC power source.

Manufactured by:

Crestwood Recorder Corporation  
218 South Wabash Avenue  
Chicago 4, Illinois

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HOWARD W. SAMS & CO., INC., INDIANAPOLIS, INDIANA

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CRESTWOOD  
MODEL CP-201

## OPERATING INSTRUCTIONS

### Preparing the Crestwood for Recording -

1. Insert line cord in a convenient wall receptacle of the proper rating.
2. Turn the volume control knob to the right - pilot light will light up.
3. Place a full reel of tape on the right hand spindle (11). Make sure the magnetic coating (dull side) is on the right spindle (11). Make sure the magnetic coating (dull side) is on the outside of the reel.
4. Place an empty reel on the left-hand spindle (22), and feed the end of the tape in the slot located between the two reels and then through one of the radial slots in the empty reel. Hold the end of the tape and rotate the reel, in a clockwise direction, four or five revolutions. The tape should now be firmly fastened to the takeup reel. The dull side of the tape should face outward on the supply reel and on the takeup reel.

5. Turn the "Record-Play" knob to the "Record" position.

6. If a microphone recording is to be made, connect the microphone to the "Mike" jack.

7. If a recording from a radio is desired, it is recommended that the connector cord be connected to the speaker voice coil, by means of the alligator clips, and the other end of the cord plugged into the microphone jack. It is also possible to make a connection to the plate side of the detector tube. This kind of connection may be desirable in some cases, because any circuit deficiencies in the amplifier of the radio will not be included in the recording.

8. Adjust the volume control so the neon light level indicator flashes intermittently. Care should be taken to adjust the input signal to such a level that, with a setting of 4 on the volume control, the neon level indicating light will flash intermittently. If the volume control setting for intermittent flashing of the neon light is 3, or below, the input signal level to the microphone jack is too low. A too high level input signal will cause an overload in the 12AX7 amplifier tube, and, when played back, the recording will be distorted. (Setting of the tone control is immaterial. It is not in the circuit on "Record.")

9. Turn the control knob (1) to the "Forward" position. This engages the drive mechanism and begins the recording.

10. To stop the recording, turn the control knob (1) to the "Stop" position.

The Crestwood is designed for two-channel recordings; therefore, when the full reel has been recorded, the two reels should then be interchanged, without rewinding, and the procedure, as outlined in steps 3 to 10, repeated.

### To Rewind -

To rewind a recording, merely turn the control knob (1) to the "Rewind" position.

### To Play a Recording -

1. Insert the line cord plug into a convenient wall receptacle of the proper rating.

2. Turn the "Volume" control knob to the right - pilot light will light up.

3. Place the full reel of the tape on the right-hand spindle (11). Make sure the dull-coated side is on the outside of the reel.

4. Place an empty reel on the left-hand spindle (22) and feed the end of the tape in the slot located between the two reels and then through one of the radial slots in the empty reel. Hold the end of the tape and rotate the reel, in a clockwise direction, four or five revolutions. The tape should now be firmly fastened to the takeup reel. The dull side of the tape should face outward on the supply reel and the takeup reel.

5. Turn the "Record-Play" switch to the "Play" position.

6. Turn the control knob (1) to "Forward" position. This engages the drive mechanism and begins the play-back.

7. Adjust the Volume and Tone controls to suit.

### ADJUSTMENTS

An open Record Head (10A) or Erase Head (10) must be replaced completely; however, a worn-out, or damaged Record Head or Erase Head lamination can be replaced as follows:

Remove entire head and bracket assembly (15) without disturbing the individual heads. On record head (10A), remove record head laminations by prying out with a screw driver. Press in new laminations with your fingers until laminations are seated in the yoke. The erase head lamination can be replaced in the same way.

#### Identification of the laminations follows:

**Record Head Lamination - Small Gap (.0005")** with narrow steel and wide brass strip.

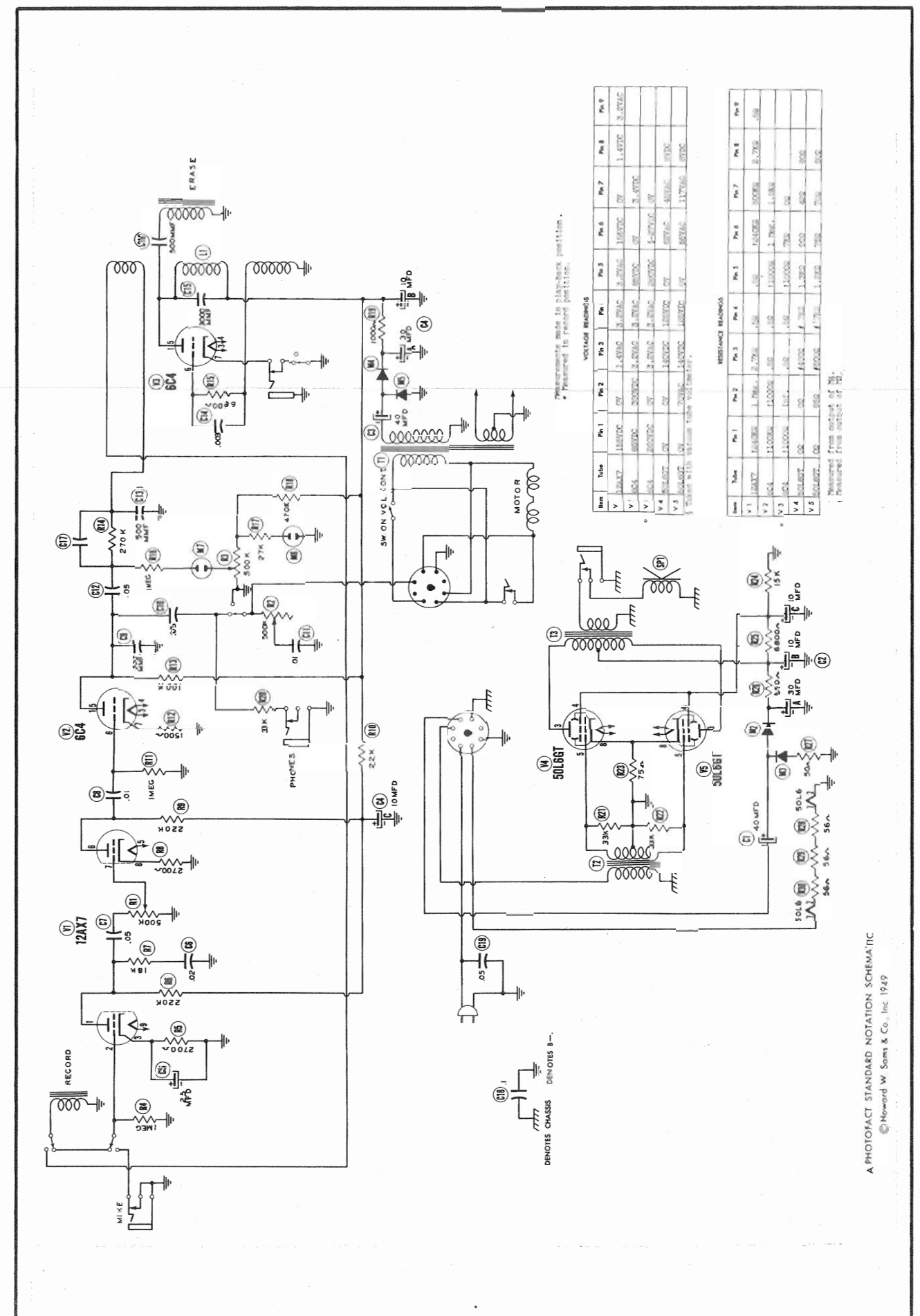
**Erase Head Lamination - Wide Gap (.010")** with wide steel and narrow brass strip.

Overall width on Erase Head (10) is greater than Record Head. Since the Crestwood is a two-channel machine, it is important to replace laminations with the steel sections uppermost in the Tape Guide.

### Motor Power and Erase Switch -

The motor power switch (42) is set with the motor in the "Stop" position so that the contacts are open by the brazing action of the switch blade against the bakelite pin in the motor swing plate.

The Erase "Safety" switch (43) is mounted in the neutral "Stop" position so that the contacts are open and a gap of approximately 1/16" appears between motor mounting assembly (51) and the insulating busking on the switch. The switch is so adjusted that



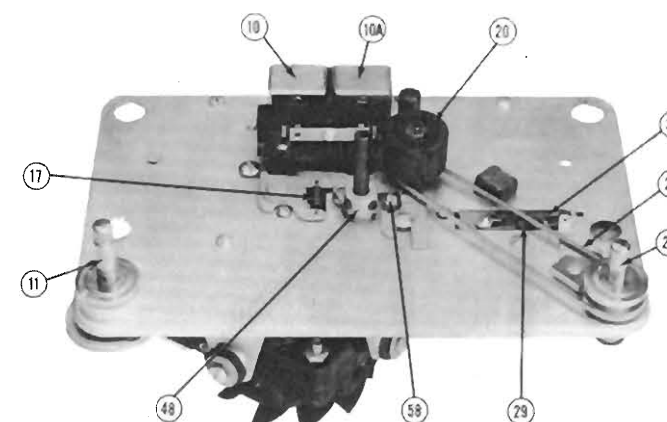
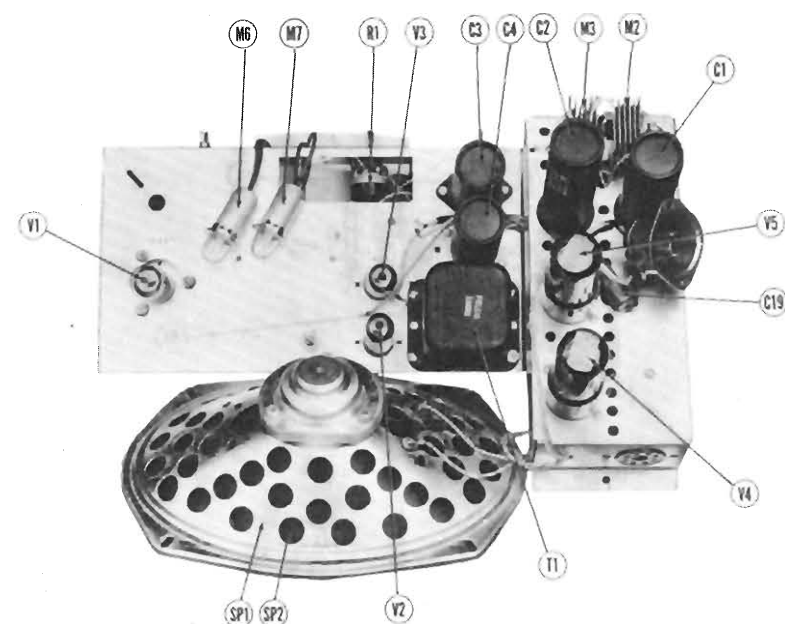
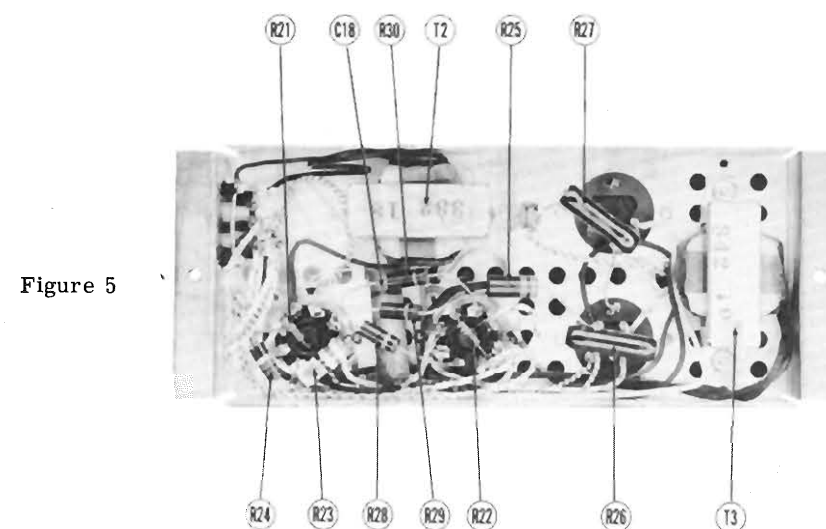
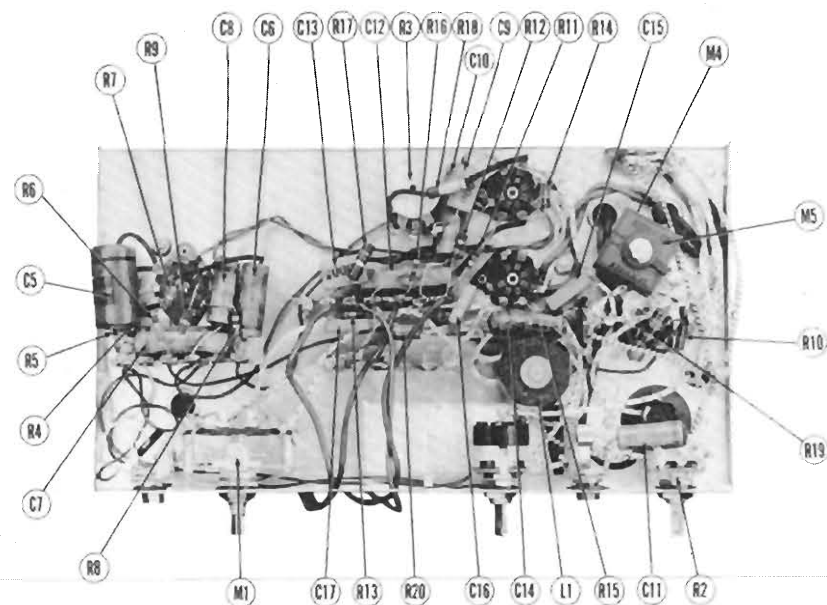


Figure 2

it makes a firm contact when the control knob is set in the "Forward" position. (This switch prevents accidental erasure while rewinding.)

### The Forward Stop Lug -

The forward stop lug (57), Figure 3, should be set so the motor mounting assembly (51) comes to a rest position against it as soon as the drive roller (56) makes firm contact with the flywheel (39). Excessive pressure against the flywheel will prevent the motor from starting when the control lever is pressed quickly into the "Forward" position. Insufficient pressure will result in a slippage and "Wow." The best setting is to adjust the forward stop lug (57), Figure 3, 1/16" from the edge of the swing plate (51) at the point when the drive roller begins to touch the flywheel.

There is no rewind stop adjustment; however, the rewind drive pulley is located in a hanger whose position is adjusted by bending the stop lug (46A) against the swing plate bushing in a manner that will allow a clearance between the drive roller (56) and the rewind pulley (47) in the "Stop" position. This will also allow the drive roller to engage the drive pulley in the "Rewind" position. In this position, the rewind drive pulley hanger (46) is away from the stop, pressing the drive roller by means of the torsion spring that needs no adjustment.

### Pressure Lever and Arm Adjusting Plate -

Set the pressure lever (16) so that it is vertical when the control knob is in the "Forward" or "Record-Playback" position. Also adjust the arm adjusting plate (58), Figure 2, so it will clear the pressure arm (16) by 1/64" when in this position. With normal adjustments, the tape guide (9) will move very slightly, or not at all, when the control is turned from the "Off" to the "Rewind" position.

## Brake Spring -

The brake spring (29) should be adjusted so that the brake (26) clears the takeup pulley (44) and allows it to turn freely in either the "Forward" or "Rewind" position. The pressure in the "Off" or "Stop" position should be sufficient to prevent "coasting" of the reel. If the brake clearance is not equal in the "Forward" and "Rewind" positions, then the ad-

justment on the motor transfer lever (49) is incorrect.

## Transfer Lever -

The transfer lever (49) should be adjusted when the control is in the "Off" or "Stop" position. Move the transfer lever (49) slightly and tighten the set screws of the transfer lever (49) when the drive roller (56) is midway between the rewind drive pulley (47) and the flywheel (39).

## Head Pressure -

The head pressure is adjusted by means of two screws in the slotted holes in the head bracket (15). Both the Record Head (10A) and the Erase Head (10) should be adjusted into the tape guide block until the pressure pads on the reverse side show a movement of slightly less than 1/32". This adjustment gives the necessary 30 grams head pressure against the shoe for each head. "Wow" will result if too much pressure is used at this point.

## Head Alignment -

The lateral movement of each head is done by moving the heads in the required direction by means of the screws in the slotted holes that hold the heads to the head bracket (15). The position should be such that there is no hanging up of the tape pressure guide when the control lever is turned to the "Stop" position.

The Record Head (11A) should be adjusted so that the air gap in the lamination is at right angles to the direction of the tape travel.

## TROUBLES

### Irregular Speed ‘Wow’ -

1. Felt pressure pads in tape guide assembly (9) worn.
2. Oil or grease on drive roller (56) or pressure roller (20).
3. Head pressure too great (see adjustment on head pressure). Be careful not to disturb the head alignment.

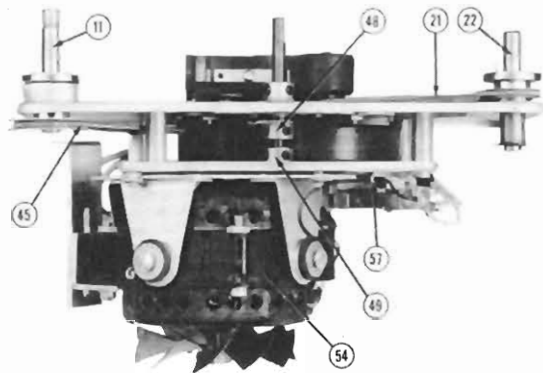


Figure 3

4. Insufficient pressure on pressure roller (20). Tighten spring (17) or replace roller (20).

5. Drive roller (56) or pressure roller (26) eccentric. Allow mechanism to run for 20 minutes. If after this time the rollers are still eccentric, replace with new rollers.

6. Motor shaft binding. Motor shaft should turn freely when the control knob is in the "Off" position. If necessary, realign bearings by tapping motor lightly with wooden mallet.

Motor Runs but Mechanism Will not Operate -

1. Motor Stop is adjusted incorrectly (see adjustment on "Pressure Lever and Arm Adjusting Plate").

2. Drive roller (56) defective. Replace.

Mechanism Runs Forward but Will not Rewind, or Vice Versa -

1. Check rewind belt (45) or take-up belt (21) for being broken or loose. Replace.

2. Motor Stop not adjusted properly (see adjustment on "Pressure Lever and Arm Adjusting Plate").

3. Pressure roller (20) interferes with panel in rewind position. Remove pressure roller (20) and chamfer bottom edge of roller 1/16" x 45°.

Control Knob Turns but Motor Assembly Does not Swing -

1. Motor transfer lever (49) set screws loose. Tighten the set screws with the mechanism in the "Stop" or "Neutral" position.

2. Transfer lever (49) loose at hub. Replace.

No Positive Detent Position for Motor Assembly -

1. Detent lever (48) loose. Tighten set screws.

2. Check detent lever (48) to see if it is loose at the hub. If so, replace.

Slow Speed -

1. Low-operating temperature.

2. Pressure arm spring (17).

3. Head pressure too great (see adjustment on "Head Pressure").

4. Flywheel (39) shaft binding. Check to see that the screws holding front and rear plates are tight and that plates are not warped.

5. Motor shaft binding. Realign bearings by tapping lightly on the motor.

Machine Will Play Back but Does not Record -

1. Defective microphone.

2. Microphone plugged in speaker outlet.

3. Defective amplifier.

High Background Noise (Hiss) -

1. Defective bias oscillator tube or circuit.

2. Defective tape.

3. Defective Record-Playback Head.

4. Record head magnetized. Demagnetize with 60-cycle AC air core coil.

Incomplete Erase -

1. Erase Voltage power too low.

2. Defective 6C4 oscillator.

3. Erase head open. Replace.

4. Poor contact on Record-Play switch.

Poor Recording -

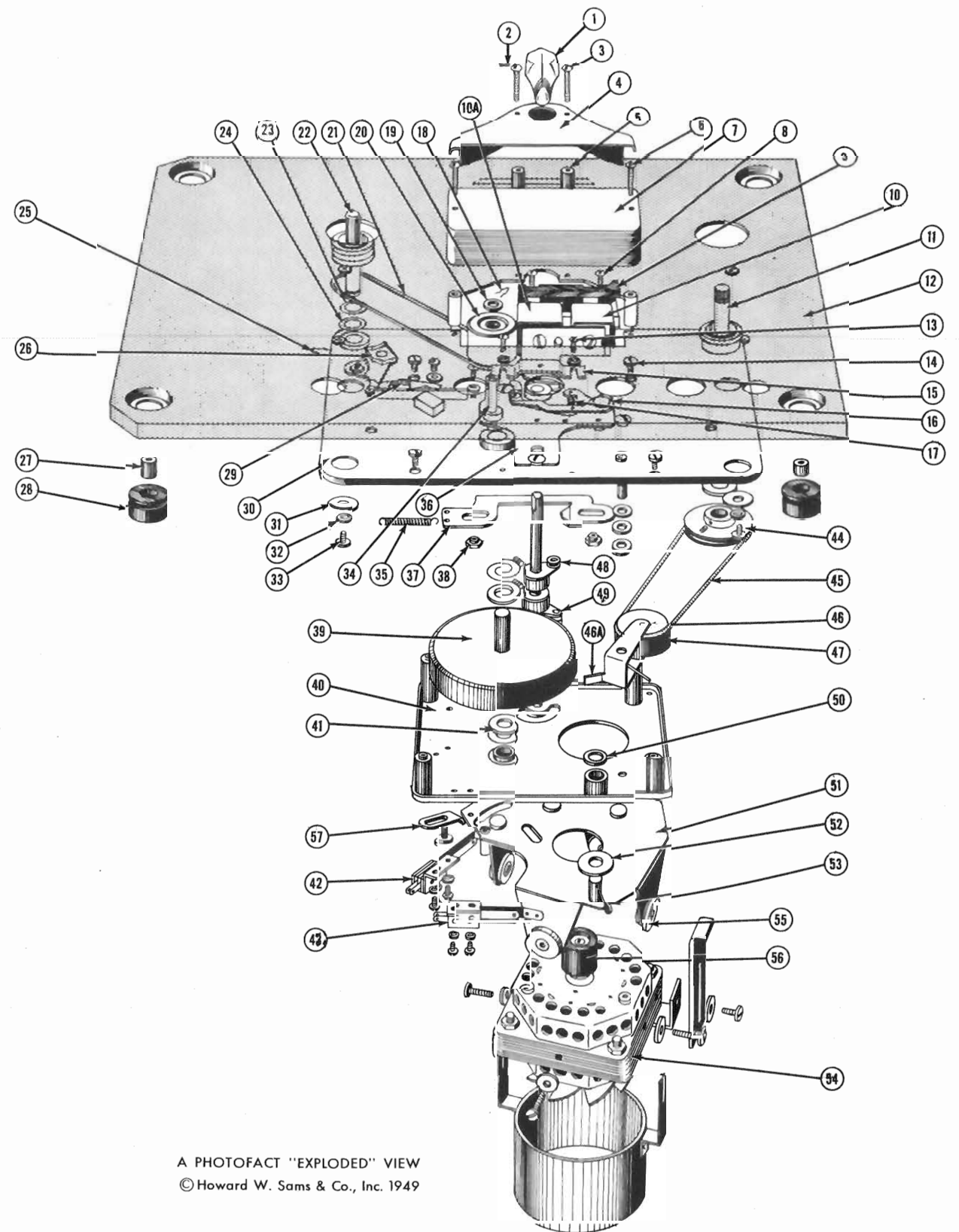
1. Head gap not at right angles to tape (see adjustment on "Head Alignment").

2. Overloading.

3. Defective, or damaged, head.

4. Head lamination damaged or worn.

5. Poor contact of head to tape caused by worn felt pressure pad.



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