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Technical Document Distribution

Brand:	Market Electronics
Model	EP-1 Echoplex #5000
Product:	Echo Unit (old grey case tube echo)
Description:	Service Manual Dated: none

Musicparts Document Number: 39985

TechTips: 0

Pages: 8

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Market Electronics EP-1 Echoplex Service Manual

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INSTRUCTIONS FOR HEAD ALIGNMENT ON ECHOPLEX UNITS

Equipment needed;

Oscilloscope,
Audio signal generator,
V.U. meter or AC voltmeter.

Bridge alignment;

Loosen screws holding bridge, and tighten them while spacing bridge approximately $\frac{1}{8}$ inch from cover studs located near each end of bridge.

Head alignment;

A- Using your eyesight as your judge, adjust the sliding record/erase head until it is level, and the tape passes the head evenly and smoothly.

B- Make sure tape is flat against the head.

Playback head - left head, looking at front of machine.

A- Set signal generator to 1000 HZ, sine wave. Connect to input jack. Connect oscilloscope to output jack.

B- Using needle-nose pliers, gently bend playback head mounting bracket up and down until the maximum sine wave can be obtained, using caution not to break metal bracket loose from bridge.

C- Using trimpot adjusting tool, turn trimmer pot on the oscillator board, until maximum sine wave is obtained.

D- Set signal generator to 6000HZ.

E- Using pliers, turn head horizontally until maximum wave is obtained.

F- Slide record head along bridge, stopping at each numbered delay position, and check oscilloscope to see that the 6000HZ wave holds maximum heights as much as possible. Make any re-adjustments needed if wave drops considerably. Slide head next to playback head and check wave, this is necessary for echoing effect.

G- Return generator to 1000HZ. Turn echo sustain control to position 1. Turn echo volume control to position 9.

Using small screwdriver, adjust record level by matching sine waves on echo volume control in positions 1 and 9.

H- Remove input plug enough to stop incoming signal.

I- Turn echo volume to any desired position between 6 and 8, turn echo sustain control to approximately 6 or 7.

J- Quickly push and pull input plug in far enough to record a signal and pull plug out, and listen or watch for the echoing effect. If unit is set and aligned properly, there should not be any problems. If echo begins but fades away, turn echo sustain to a higher position 7 or 8.

K- Slide record head away from present position and test for echo once again.

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SOUND ON SOUND HEAD ALIGNMENT

A- Record approximately one minute of 1000HZ, no echoing, and approximately one minute of 6000HZ, no echoing.

Connect VU meter to unused connection terminal on record board, next to orange voltage wire. Set VU meter to 100%.

B- Place footswitch in playback jack, and shut off when record time is complete.

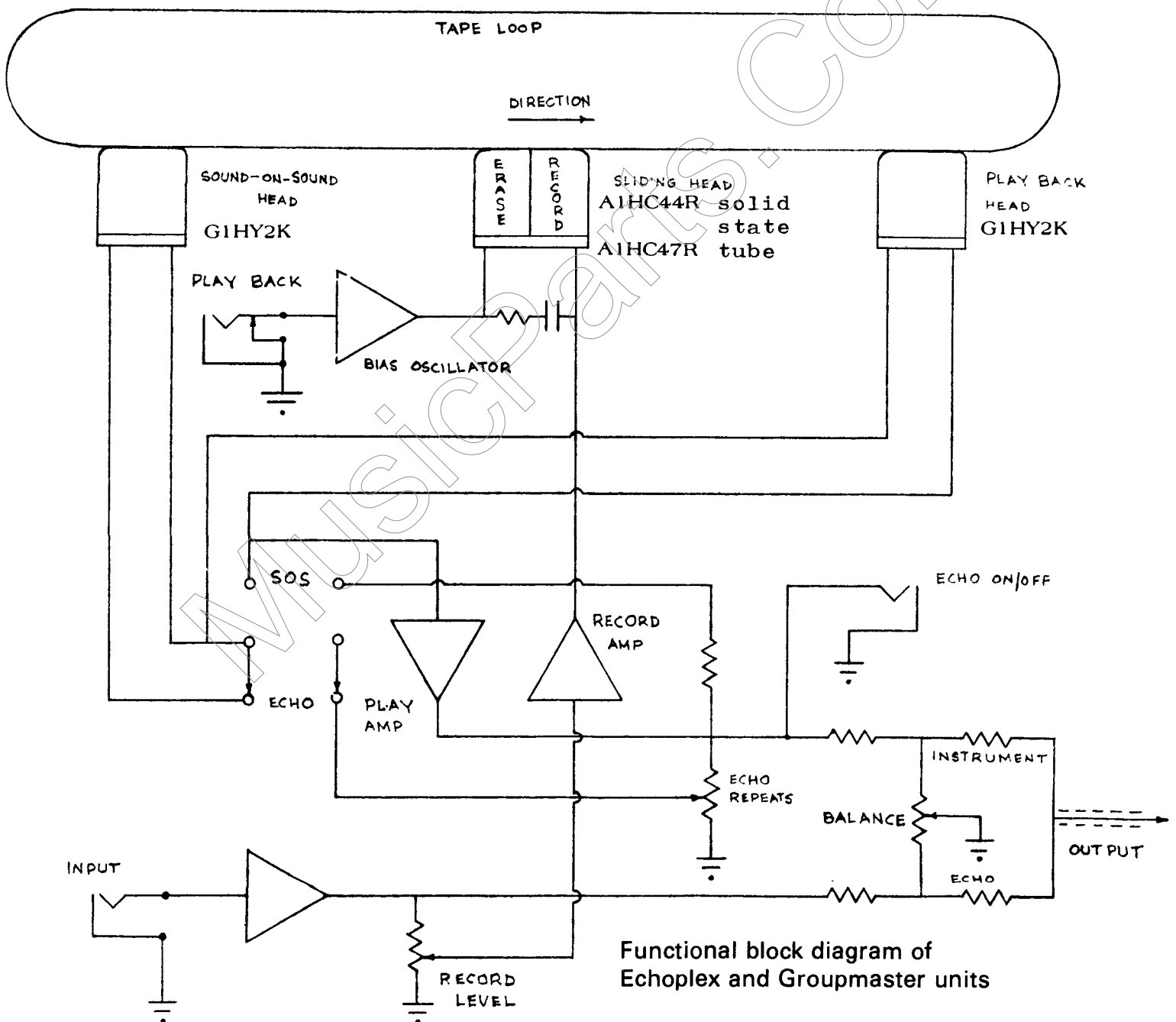
C- Adjust S.O.S. head same as playback, and flip Echo-S.O.S. switch, until both heads produce approximately the same wave amplitude, on both frequencies.

D- Turn footswitch on.

During 1000HZ playback, with switch in S.O.S. position adjust trimmer-pot on playback board until VU meter reads 95%.

E- Each time the 1000HZ passes, the VU meter should drop approximately 1 db, if it doesn't, turn the trimm-pot a little more, until the desired results are obtained.

F- Glue heads in this position, to maintain setup.



INSTALLING NEW CARTRIDGE ON ECHOPLEX

1. Remove Old Cartridge--

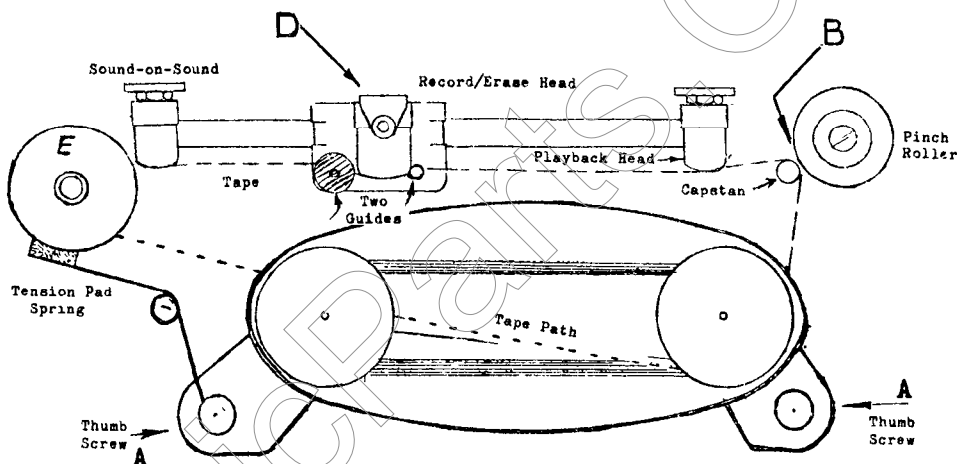
Turn Power off.

Remove 2 thumbscrews and remove the plastic cover over the tape deck.

Observe the present path of the tape and the manner in which tension pad is now installed. Remove tension pad.

Remove the tape from between the capstan "B" and the pinch roller, then remove tape from the sliding head "D" and the plastic roller spool "E".

Remove the 2 thumbscrews "A". This will unfasten old cartridge. Remove old tape cartridge. NOTE--this is a good time to clean heads, rollers and capstan. Use a cotton cue stick dipped in tape head cleaning fluid, alcohol or lighting fluid. Do NOT use any metallic object to scrape heads, as the slightest scratch on the head surface will seriously affect performance and permanently damage the head.



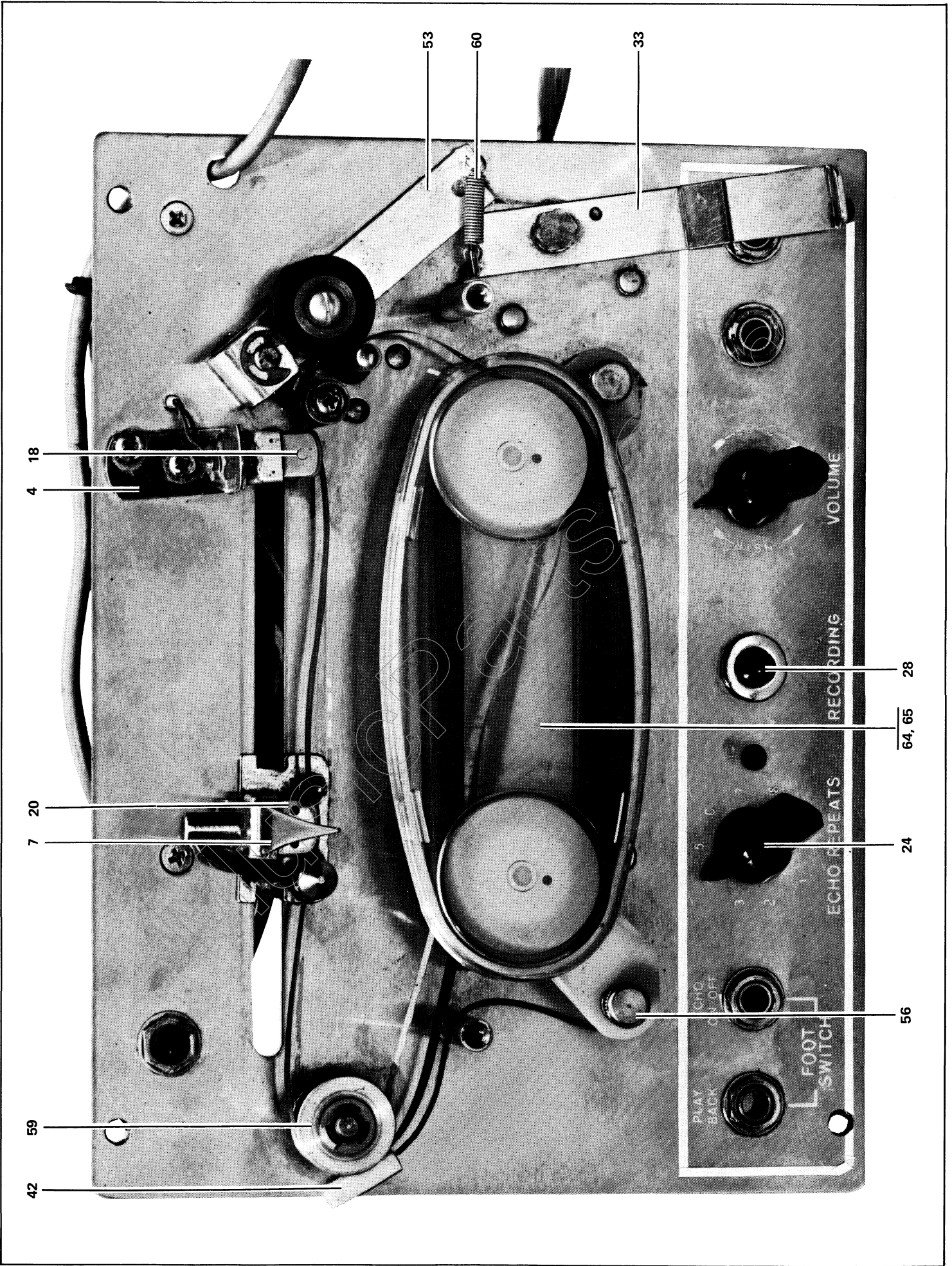
2. Install New Cartridge--

with the two thumbscrews and thread tape between roller "E" and "Sound on Sound" head. Then thread tape between the sliding record head "D" and its two guides. Now thread tape past playback head between capstan "B" and the pinch roller.

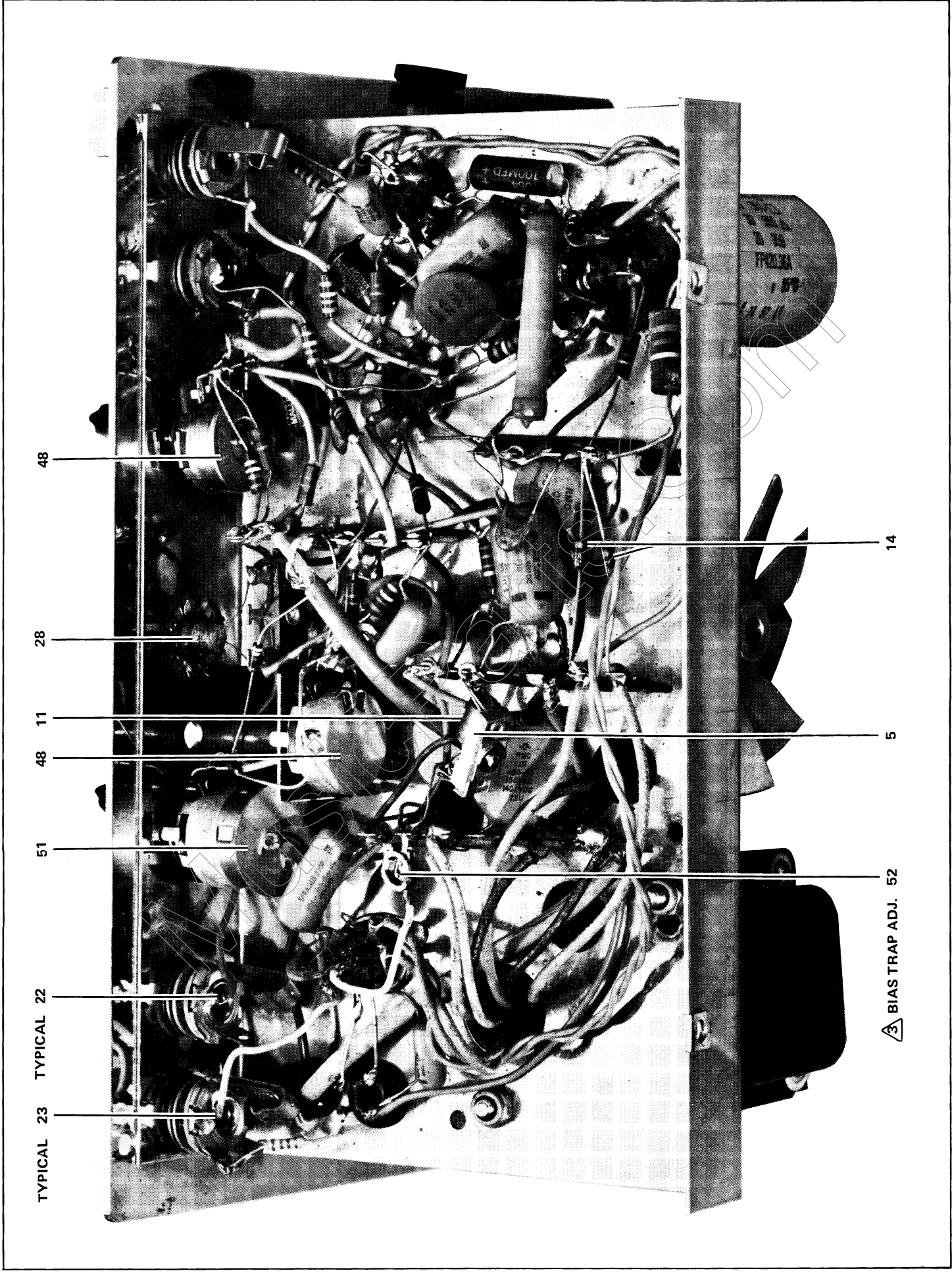
Now hold the tape in the plastic roller spool "E" and install the tension pad spring, as shown, with the felt pad against the tape on the spool. Pull excess tape past the capstan. Now momentarily snap the power on, then off and watch tape flow to make sure it runs properly.

If tape runs satisfactorily replace the plastic cover and install the thumbscrews.

On the older tube type Echoplex, should the tape not return smoothly to the cartridge, it is necessary to raise the low end of the tape cartridge. This can be done by placing washers or cardboard of about 1/8" thickness under the cartridge at the thumb screw A2.



ECHOPLEX EP-1, TOP VIEW



TYPICAL 23 TYPICAL 22

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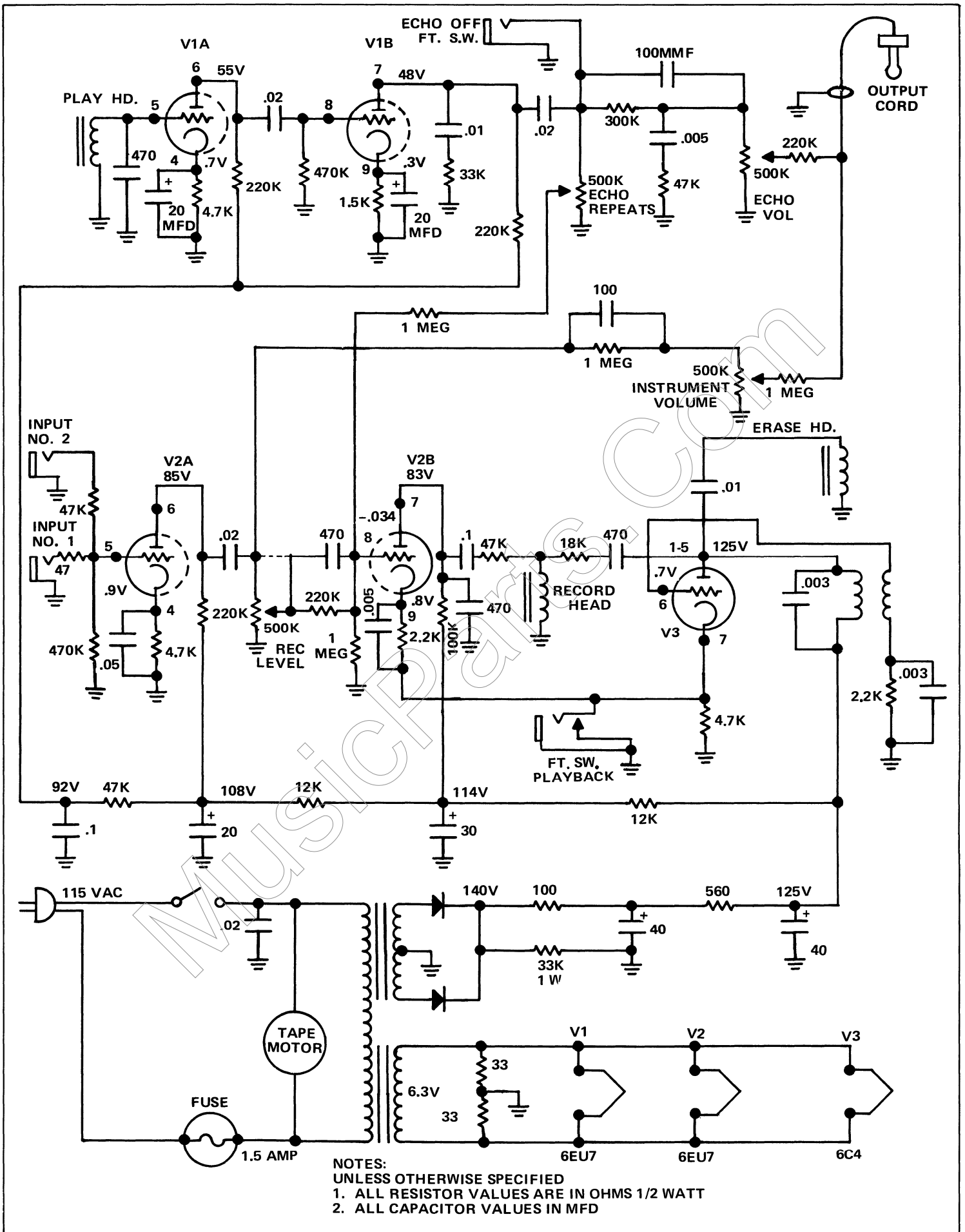
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BIAS TRAP ADJ. 52

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ECHOPLEX EP-1, INSIDE BOTTOM COMPONENT VIEW



ECHOPLEX EP-1 MODEL NO. 5000 SCHEMATIC DIAGRAM