



DEJUR MODELS  
TK-820, TMB-820



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GENERAL INFORMATION

The DeJur Dual Professional Tape Recorder Models TK-820 and TMB820 use standard 1/4" magnetic tape and dual track recording. Two sets of erase and record-playback heads are provided thus eliminating the necessity of stopping and reversing the tape reels at the end of each track. Control is by pushbuttons which includes a momentary hold button for temporarily stopping recording or playback. Complete facilities for all types of inputs and outputs are provided as well as remote controls. Reversing time at 7 1/2 i. p. s. is 4 seconds and at 3 3/4 i. p. s. is 1 second.

Using both tracks of the tape the recording time is approximately as follows:

Reel Size	3 3/4" Speed	7 1/2" Speed
5" (600 ft.)	1 hour	1/2 hour
7" (1200 ft.)	2 hours	1 hour

These units are designed to operate on 60 cycle 115 volts AC supply only. Before connecting to a line supply be absolutely certain it agrees with the above specifications.

Supplied By:

DeJur Amsco Corporation  
Northern Blvd. at 45th. St.  
Long Island City 1, New York

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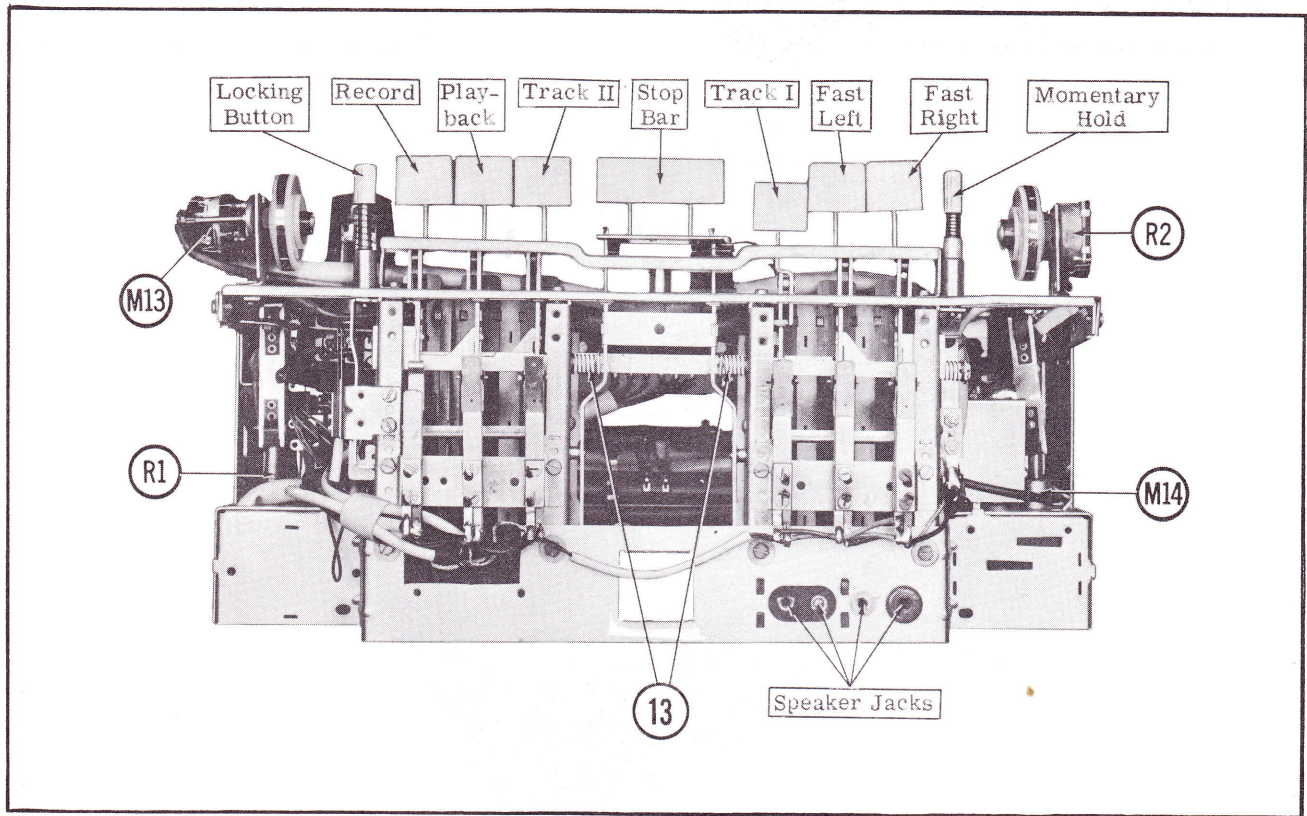


Figure 1

## SPECIFICATIONS

### Reel Capacity:

Up to 7" maximum.

### Speed:

3 3/4 i. p. s. and 7 1/2 i. p. s.

### Fast Rewind Time:

3 3/4 i. p. s. - 2 3/4 minutes.  
7 1/2 i. p. s. - 80 seconds.

### Speakers:

Five

### Oscillator Frequency:

45 KC

### Tube Complement:

EF804, ECC81, EL42, EM71, EL84.

### Inputs:

Tuner; Radio-Phono-TV, Microphone plus remote control (2 high, 1 low impedance).

### Outputs:

Built in speakers, phone-speaker, power amplifier.

### Frequency Response:

3 3/4 i. p. s. - 50 cps to 10,000 cps  $\pm$  2 db  
7 1/2 i. p. s. - 40 cps to 16,000 cps  $\pm$  2 db

### Signal To Noise Ratio:

-55 db

### WOW And Flutter:

3 3/4 i. p. s. - Less than 0.2 %  
7 1/2 i. p. s. - Less than 0.1 %

### Push-Button Controls:

All functions are controlled by relays actuated by push-buttons for easy operation.

### Automatic Stop:

The recorder can be stopped automatically at the end of a reel of tape by the use of metal foil leaders.

## OPERATING INSTRUCTIONS

### Preparation For Operation:

1. Remove the AC power cord, microphone, empty reel and reel of tape from the storage compartment.
2. Depress the stop bar. This releases all buttons except the track buttons. Depress the Track I button.
3. Set speed control switch to the extreme right



or left position, 7 1/2 i.p.s. or 3 3/4 i.p.s. respectively.

4. Plug the AC line cord into the receptacle in the back of the recorder and into a convenient power supply being certain that outlet supply is 110 volts AC.

#### Speed Change Knob:

The speed change knob is an electrical slide switch and must be kept at the end of its slide/either right — 7 1/2 i.p.s., or left — 3 3/4 i.p.s. to insure proper electrical contact.

#### Threading The Tape:

1. Place empty reel on right hand spindle with reel slots engaged on protrusions on reel pan.

2. Place full reel of tape on left hand spindle with glossy side of tape out. Unwind about 14" of tape from reel.

3. Insert section of free tape into tape slot.

4. Insert end of tape into slot in empty reel. Turn reel by hand 2 or 3 turns to secure tape.

#### To Record From Microphone:

1. Insert microphone cable plug into jack marked "Microphone" on back of recorder.

2. Turn "Input Selector Switch" to "Micro".

3. Turn on-off-loudness control clockwise until click is heard and allow about 30 seconds for unit to warm up. Light under tape counter dial will glow when set is turned on.

4. Press Track I button. (Feeds from left to right).

5. Depress "Locking" button, and while holding lock button down, depress "Recording" button.

6. While holding down "Locking" button, set correct recording level by adjusting loudness control until "Magic Eye" just closes on the loudest notes.

7. To start recording release "Locking" button.

NOTE: The tone control does not function during recording.

#### To Record From Radio-TV-Phonograph:

1. Insert the phonograph pickup plug into the "Radio-TV-Phono" input jack.

2. Set selector switch to "Radio".

3. Proceed as described under "To Record From Microphone".

NOTE: On phonographs having a standard pin plug a telephone type plug adapter will be required.

4. For Radio or TV recording, connect patch cord to the voice coil of the radio or TV speaker by means of the alligator clips. Plug into Radio-TV-Phono input jacks.

5. Set selector switch to "Radio".

6. Proceed as described under "To Record From Microphone".

7. Remove patch cord when recording is completed.

#### To Use Second Track:

1. Depress Stop Bar.

2. Depress Track II Button.

3. Proceed as described under "To Record From Microphone".

NOTE: Track II may be used without stopping the motor by merely depressing the Track II button while the unit is operating. The unit takes about 4 seconds to reverse at 7.5 i.p.s. and one second at 3 3/4 i.p.s.

#### To Play Recordings:

1. Turn on unit with "Loudness" control knob. Depress Stop Bar.

3. Set the Speed Control Switch to the speed at which the recording was made.

2. Place tape on left hand reel as described under "Threading The Tape".

4. Depress Track I button.

5. Depress Play button.

6. Adjust Tone and Loudness controls to desired listening level.

#### High Speed Forward Or Reverse:

When it is desirable to play a certain portion of the tape it is not necessary to rewind or play the entire tape. By depressing the "Forward" or "Reverse" button the tape will advance (or reverse) at a rapid speed.

Several minutes of normal recording can be skipped in a few seconds by this procedure.

#### Tape Timer:

The tape timer provides complete selectivity and immediate location of any part of the recorded tape. By setting the tape indicator to zero when beginning each reel, the numerals on the indicator will act as a ready reference to any desired portion of the recorded tape. Permanent records may be kept on the tape box allowing pin-point selection of any recording.

#### To Edit And Splice Tape:

NOTE: Recordings to be edited should be limited to one track because it is impossible to edit one track without affecting the other track.

1. The tape may be edited by cutting out unwanted portions or by joining selections in another sequence. Announcements may be inserted between



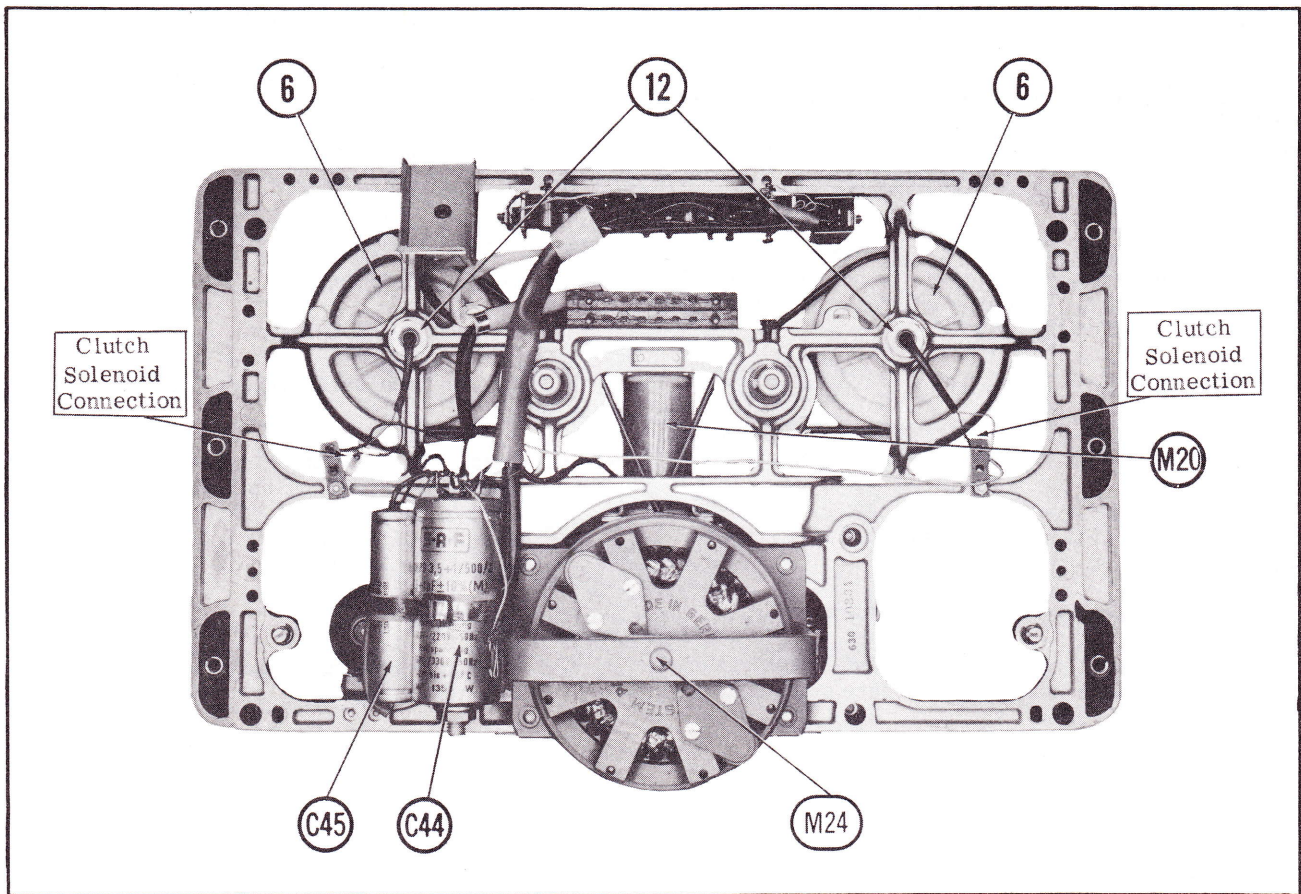


Figure 2

selections, etc. Unused sections of tape may be spliced together for re-use.

2. Best results are obtained by cutting the tape at a slight diagonal. Join ends together with splicing tape on the glossy side, and cutting off any excessive width.

Erasing Recorded Material:

The erase head operates automatically when the "Record" button is depressed erasing any previous recording while a new recording is being made. To erase material without making a new recording depress the "Record" button and turn the loudness control to the minimum position. To erase the second track depress the Track II button and proceed as above.

Motor Drive Circuit Operation:

The motor is an inside-out HYSTERESIS SYNCHRONOUS motor, exceptionally heavy to insure constancy of speed. Reversal is obtained by PHASE SHIFT. The motor contains two pairs of contact blades (G1 and G2) both being closed when the motor is stopped.

With Track I depressed, all other buttons up, switch off, 7 1/2 i.p.s. speed, the motor circuit is as follows:

1. Contact M21-2 closed on 165 V. line.
2. Contact M15-5 closed for clockwise rotation.
3. Contacts M19-1 and M19-2, closed.

4. Contact bridge 2B-1B, 2C-1C, 8I-7I, 8K-7K closed on motor relay circuit.

5. Governor contacts G1 and G2 closed.

6. Contact M19-3 open.

When the unit is turned on motor relay M-19 energizes through bridge contacts, closes contact M19-3, and opens contacts M19-1 and M19-2. This stops motor and releases pressure solenoid.

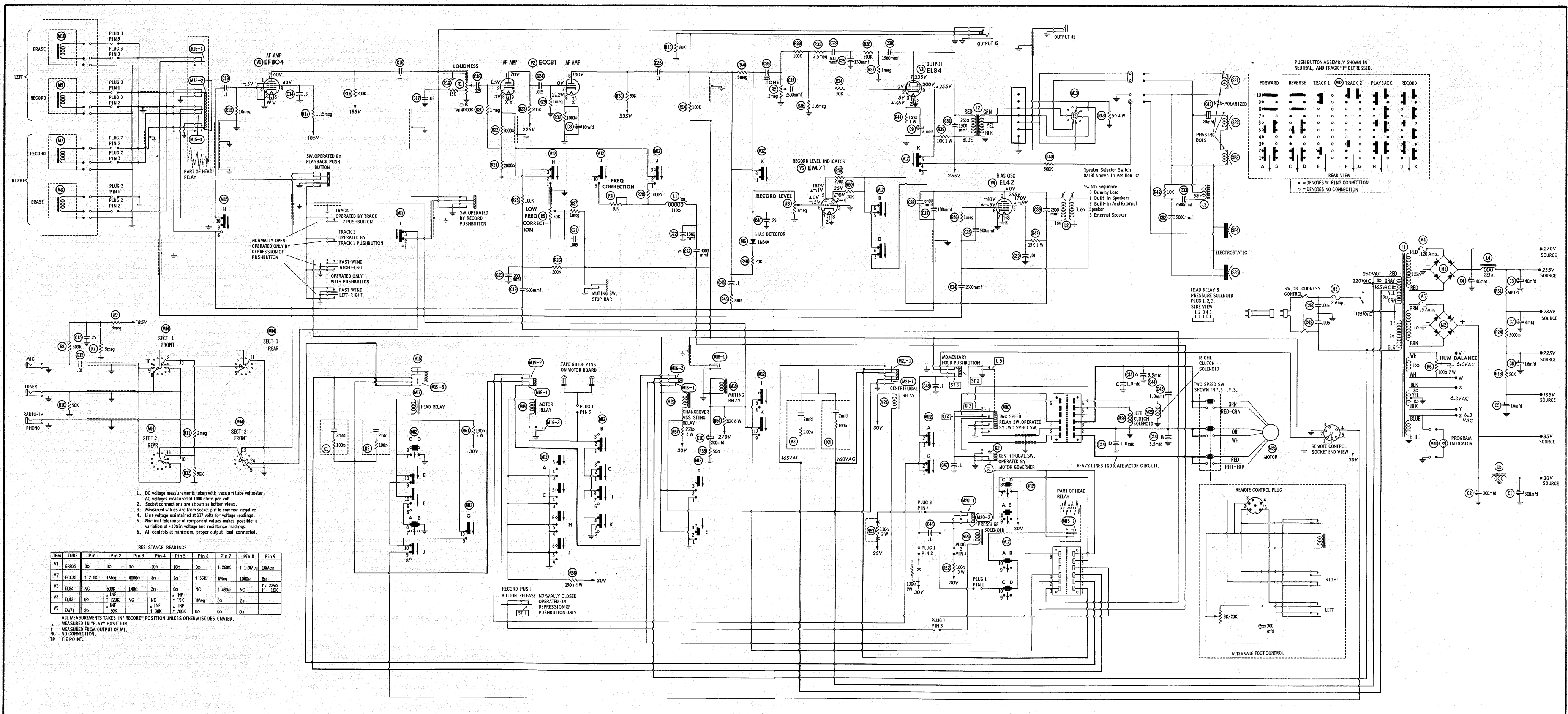
NOTE: Depressing any of the other buttons breaks bridge contact string (4 above) but motor relay remains energized due to contact M19-3 being closed. For this reason buttons must be pressed all the way down to close shorting contacts 4A-3A, 4C-3C, 5H-4H, or 5J-4J. These contacts temporarily short the power to the motor relay opening contact M19-3, and closing contacts M19-1 and M19-2, allowing motor to start.

Recording Button Depressed:

7 1/2 i.p.s.

1. Contacts G1 and UIII closed.
2. Relay M21 energizes shifting contact M21-2 to 260 VAC supply to motor.
3. Just below normal speed centrifugal switch G1 opens, de-energizes relay M21, changes contact





- DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common negative.
- Line voltage maintained at 117 volts for voltage readings.
- Nominal tolerance of component values makes possible a variation of ±1% 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	EF804	0∞	0∞	10∞	10∞	0∞	1.25K	1.3M	10M	10M
V2	ECC81	1.21K	1M	4000∞	8∞	8∞	1.55K	1M	1000∞	8∞
V3	EL84	NC	600K	140∞	2∞	0∞	NC	1.480∞	NC	1.225∞
V4	EL42	0∞	1.22K	NC	1.13K	1M	1M	0∞	2∞	0∞
V5	EM71	2∞	1.30K	1.20K	0∞	0∞	0∞	0∞	0∞	0∞

ALL MEASUREMENTS TAKEN IN "RECORD" POSITION UNLESS OTHERWISE DESIGNATED.  
 \* MEASURED IN "PLAY" POSITION.  
 † MEASURED FROM OUTPUT OF M1.  
 NC NO CONNECTION.  
 TP TIE POINT.

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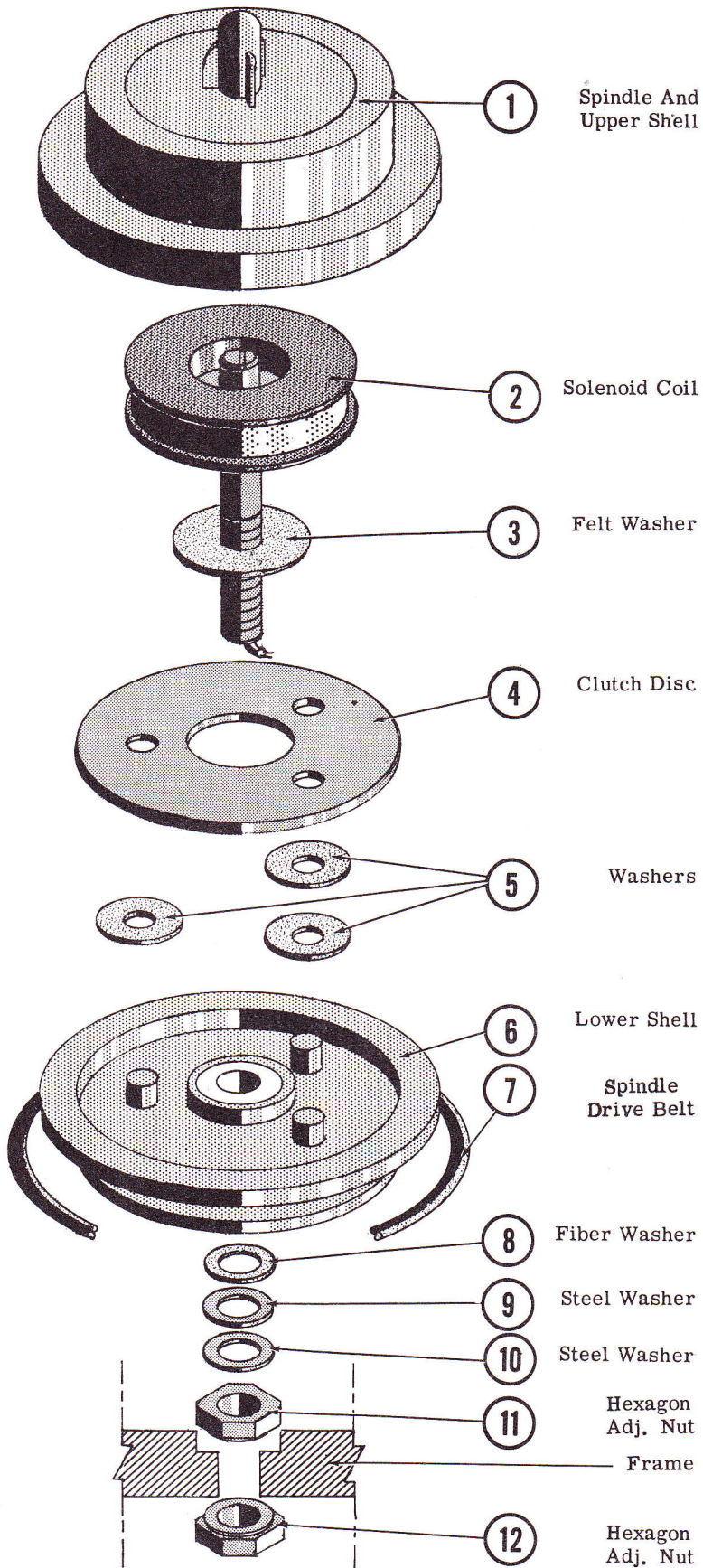
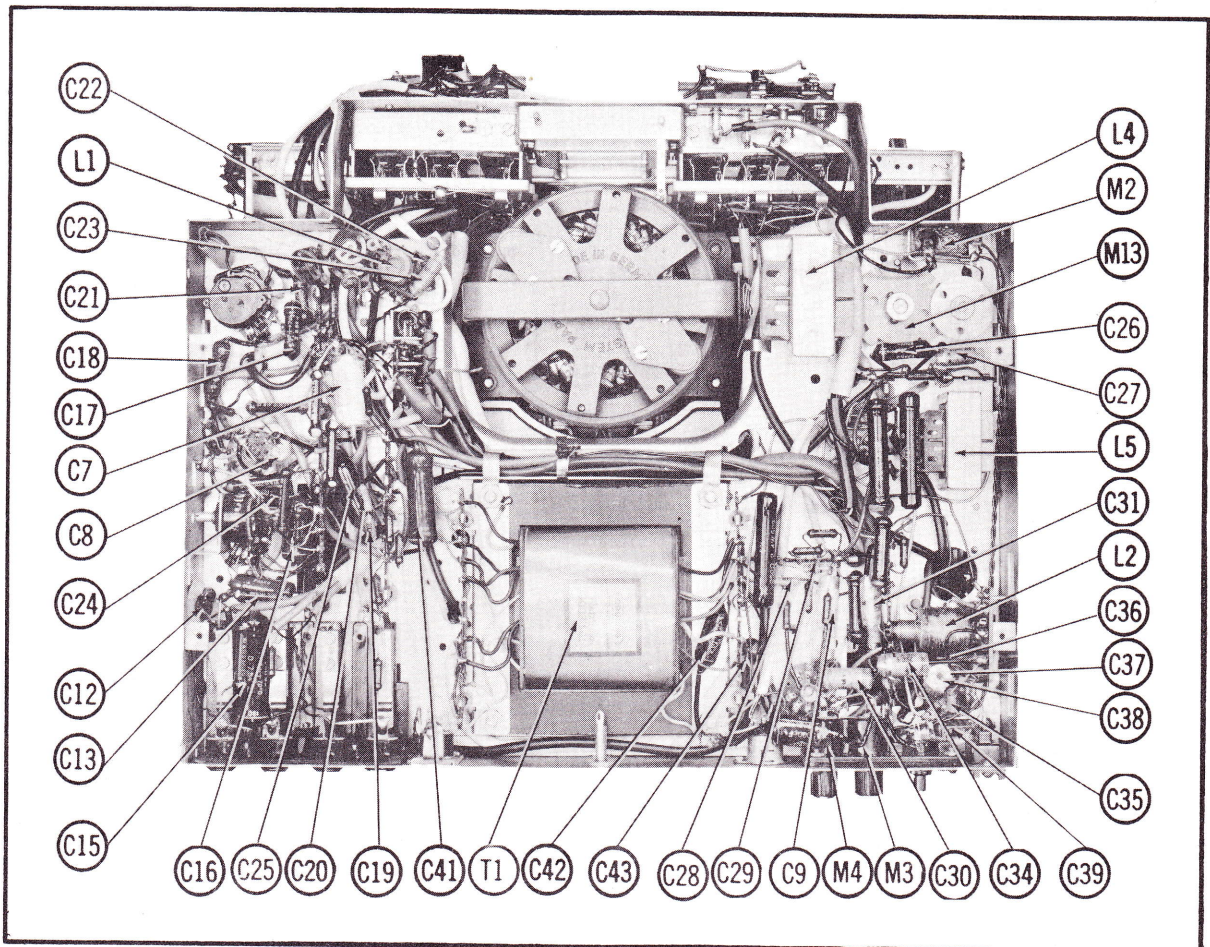


Figure 3





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M21-2 from 260 VAC to 165 VAC supply.

Figure 4

3 3/4 i. p. s.

Relay M21 does not operate at 3 3/4 i. p. s. setting due to contact U3 being open. Motor starts on 165 VAC.

Changing From Track I to Track II Without Stopping Motor:

With Track I depressed head relay M17 is not energized. When Track II is depressed relay (M17) operates switch (M15) as follows:

1. M15-5 changes motor return circuit shifting phase of motor; motor reverses.
2. M15-1 changes power supply from left clutch to right clutch.
3. M15-2, M15-3 and M15-4 change the corresponding ERASE, and RECORD-PLAYBACK heads.
4. Contacts 1F-2F are closed temporarily when Track II button is completely depressed. This energizes changeover assisting relay M22, closing contact M16-1 and opening contact M16-2. This opens motor circuit. (Shown in heavy lines on schematic).
5. When motor stops centrifugal switch closes closing contact G1. This energizes relay M21 which changes contact M21-2 from 165 VAC to 260 VAC motor supply, and closes contact M21-1. Relay M22 falls out closing contact M16-2 completing motor circuit.

6. Motor comes up to speed and shifts to 165 VAC supply as described earlier.

NOTE: To override any previously set operation it is necessary to push the button completely to the bottom.

The unit may be temporarily stopped by depressing the momentary "Stop" button (black top). When this button is released the unit immediately restarts. For permanent stops depress the "Stop Bar".

Fast Forward Or Fast Rewind:

When the "Fast Forward" or "Fast Rewind" button is pressed, current through the pressure solenoid (M20) is interrupted by contacts 2A-1A or 1D-2D respectively. In "Fast Forward" the right clutch magnet is energized through contacts 9A-9B while in "Fast Rewind" the left clutch magnet is energized through contacts 7C-7D. When the clutch magnet is energized a practically solid coupling exists between the upper and lower halves of the clutch assembly. Relay M19 is de-energized by contacts 3A-4A or 3C-4C respectively and completes the motor circuit.

ADJUSTMENTS

Disassembly Instructions:

1. Remove the two control knobs, the speed change knob and four round brass screws from the cover plate. Remove cover plate.



2. Unscrew six small nuts holding chassis to the cabinet.

3. Carefully lift the chassis partially out of the cabinet being careful not to damage fuses on the back of the chassis or contacts on the front of the chassis.

4. Unplug speaker leads and remove chassis completely from cabinet.

NOTE: Do not lift chassis by clutch assemblies as serious damage to the clutches will result.

#### Separation Of The Tape Transport Mechanism And The Amplifier:

1. Unplug three 5 prong plugs leading to the head mounting plate, the 12 prong plug on top of the transformer, and the two prong plug from the program indicator.

2. Unscrew 14 screws along the rim of the top frame.

3. Carefully lift off the top frame being careful not to damage the push button switches.

NOTE: The external cage of the motor rotates — Be absolutely certain that it is well clear of any obstructions before switching on.

#### Clutch Replacements:

1. Unsolder the two leads to the clutch solenoid and remove the upper clutch spindle (1).

2. Insert a screw driver into the slot in the solenoid and unscrew the bottom locking nut (12).

3. Lift out the clutch assembly.

4. Install the new assembly in the order shown in Figure 3, starting with piece 11. The axial play of piece (6) should not exceed 1/64th inch.

5. Tighten the bottom lock nut (12) lightly.

6. Place two gauge washers between the clutch solenoid and the upper clutch shell. Rotate the shell and check the clearance between the felt insert on the upper shell and the top surface of the drive pulley. The upper shell should be just clear of the drive pulley. If so, remove one gauge washer and again check the clearance. The upper shell should just touch the drive pulley causing a smooth friction. Proper spacing can be obtained by turning the solenoid clockwise to decrease the space between the shells and counterclockwise to increase the spacing.

7. Make sure both clutch shells are level with each other.

8. Remove both gauge washers and tighten the lock-nut (12).

9. Install upper clutch shell (1) and replace shell holding bracket. Resolder the solenoid leads.

10. Thread a tape and check the unit for correct mechanical operation of the tape transport mechanism.

#### Record-Playback Head Adjustment:

The position of the Record-Playback and erase

heads is very critical. The adjustment should be made using a tape on which a 6000 c.p.s. note has been recorded on a standard machine. The adjustment is accomplished by altering setting of the three screws mounting the Record-Playback head sockets to the chassis. Use a VTVM connected into the high impedance output. Adjust for maximum output. The heads are then adjusted to bring the gap of the heads in close contact with the coating of the tape.

Adjust the top edge of the LEFT Record-Playback head about 1/64th inch above the top edge of the tape with the tape running. Adjust the bottom edge of the RIGHT Record-Playback head below the bottom edge of the tape. The edge of the pole pieces of the erase heads should line up exactly with the corresponding edge of the tape.

The tape should run between the tape guide posts in an absolutely straight line. This is very important, and correct adjustment of the tape guide posts is therefore critical.

#### Pressure Solenoid, Pressure Roller, And Pressure Slider:

The pressure roller and slider transport the tape over the head assemblies at an even speed and is operated by the pressure solenoid. The pressure roller should exert pressure against the tape equivalent to about one pound pull on the tape.

To adjust loosen the lock-nut on the back of the solenoid and rotate the core until the desired pressure exists. Tighten lock-nut. A screw-driver slot is provided for turning the core.

#### Hum Control Adjustment:

The hum level is adjusted by R6 to a minimum on each "Playback" channel. The level should not exceed 1/100th of a 1000 c.p.s. recording made at full modulation level on both tracks and at both speeds on "Playback" at the maximum setting of the loudness control. This corresponds to a hum level of minus 50 db. R6 is finally adjusted to a compromise setting that does not exceed this level at either speed on either track.

#### Adjustment For Slow Take-Up Reel:

Make adjustment for proper setting of the two shells as outlined under "Clutch Replacement".

#### Bias Adjustment:

Bias current to each recording head is approximately 1 ma. when recording. To check insert a 100 ohm 1/2 W carbon resistor in series with the head to chassis return lead. The voltage drop across the resistor should be 100 mv 10%. Adjust C38 to obtain correct bias.

High frequency current to erase head is approximately 50 ma when recording. Place a 10 ohm 1/2 watt in series with the head to chassis return lead. The voltage drop across the resistor should be 500 mv. The core of the oscillator coil (L-2) is adjusted to obtain this reading.

NOTE: If the erase head current is adjusted the recording bias current will require readjustment.



### Frequency Response And Equalization:

1. To check frequency response, feed a signal of 775 mv (0 db) at 1000 c.p.s. into FM TUNER input (on all TMB-820 models and those TK-820 units bearing serial numbers higher than 630 x 20000. Use RADIO input for all TK-820 units having serial numbers below 630 x 20000), and adjust recording level control.

2. Reduce signal 20 db and record frequencies of 50, 300, 1000, 4000, 8000, and 14000 c.p.s. at tape speed of 7 1/2 i.p.s.

3. Connect a VTVM to the "Power Amplifier Output Jack" and play the recording back. Observe the output level which should be within 2.5 db using 1000 c.p.s. as reference level.

4. Adjust post emphasis controls, R-4 for frequencies above 2000 c.p.s. and R-5 for frequencies below 500 c.p.s., to bring response into the proper range. Repeat the test on opposite track.

5. Repeat the procedure at tape speed of 3 3/4 i.p.s. using frequencies of 60, 300, 1000, 4000 and 9000 c.p.s. On "Playback" the output level should be within 3.5 db using 1000 c.p.s. as reference level.

### Adjustment Of The Resonance Coil:

1. Connect an audio oscillator set at 13000 c.p.s. to the grid of the first stage of the ECC81 (pin 2). Connect a VTVM to the "Output II" socket.

2. Start the unit on 7 1/2 i.p.s. and adjust the core of the resonance coil until maximum deflection is obtained.

3. Reduce audio frequency to 8000 c.p.s. and set speed to 3 3/4 i.p.s. Note the reading on the VTVM.

4. Sweep the signal frequency slightly above and below 8 KC. This should show a peak on the VTVM at 8 KC. If this is not the case repeat the entire procedure using a frequency just above or below 13000 c.p.s.

### WOW And Flutter:

1. Using a WOW meter, the reading should not exceed 0.1% at 7 1/2 i.p.s. tape speed and 0.2% at 3 3/4 i.p.s. tape speed.

2. Alternately, a 5000 c.p.s. signal may be recorded and played back at both speeds. No change in pitch should be audible.

## TROUBLES

### Push Buttons Fail To Lock Into Position:

1. Lock bar spring (13) loose or broken not engaging locking bar when button is depressed.

### Fails To Erase:

1. Erase heads (M8 or M10) defective. Replace heads.

2. Bias oscillator tube (V4) defective. Replace tube.

3. Head Relay (M17) not operating switch (M15)

properly. Adjust or replace.

4. Head Relay (M17) defective. Replace relay.

5. Switch contacts (M15-3 or M15-4) not making contact. Clean and adjust contacts.

### Speed Variation Or "WOW":

1. Check pressure roller (14) pressure against capstan (15). See "Pressure Solenoid, Pressure Roller, and Pressure Slider" adjustment.

### No Fast Forward Or Reverse:

1. Clutch solenoid defective. Replace solenoid. See "Clutch Replacement".

2. Head relay switch contact (M15-1) not making contact. Clean contacts.

3. Motor drive belts (16) broken or slipping. Replace belts.

4. Spindle drive belts (7) broken on slipping. Replace belts.

5. Head relay (M17) defective. Replace relay.

### No Drive On Record Or Playback:

See steps 3, 4 and 5 above.

### Tape Fails To Wind On Take-Up Reel During Record Or Playback:

1. Defective clutch. See "Clutch Replacement" for adjustment.

2. Motor drive belt (16) or spindle drive belt (7) slipping or broken. Replace belt.

### Fails To Record:

1. Record heads (M7 or M9) defective. Replace head.

NOTE: Heads are furnished in matched sets only. When replacing one always replace both.

2. Head relay (M17) defective. Replace relay.

3. Head relay switch contact (M15-2) not making contact. Clean and adjust contact.

4. Head not properly aligned with tape. See "Record-Playback Head Adjustment".

## CLEANING

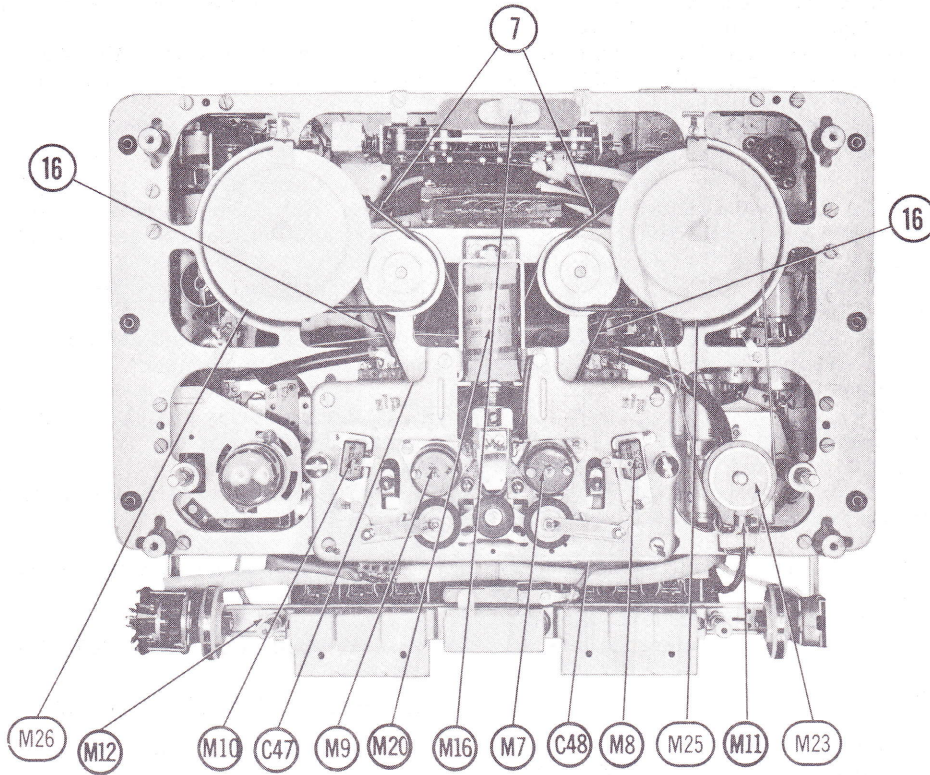
The record heads, capstan and pressure roller are subject to an accumulation of tape coating residue, which is worn off the tape as it passes these parts. Use a soft cloth and alcohol to clean the pressure roller, capstan and head surfaces.

## LUBRICATION

Occasionally clean out foreign matter from the working surfaces and oil with a small drop of oil being careful not to get oil on the electrical contacts or wiring.



# CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS TUBES ( GENERAL ELECTRIC, SYLVANIA )

ITEM No.	USE	TYPE	NOTES
V1	AF Amp.	6F804	
V2	AF Amp.	ECC81	
V3	Audio Output	EL84	

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP. VOLT.	REPLACEMENT DATA				
		DeJur PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	500 30		PRS150V300	BR5005	TC2505	MTH2525 & MTH2525
C2	300 30		PRS350V40	BR2505	TC50025 & TC39	TD-300-150
C3	40 350		PRS350V40	BR4035	TC78	FM-4540
C4	40 350		PRS350V40	BR4035	TC78	FM-4540
C5	16 350		PRS350V16	BR1635	TC64	FM-3516
C6	16 350		PRS350V16	BR1635	TC64	FM-3516
C7	4 350		PRS350V4	BR435	TC60	FM-4504
C8	10 12		XPPI2V10	BBR10-25	TC22	MMT-0210
C9	50 12		SREI2V50	BBR50-25	TC29	MMT-0250
C10	200 70	Note 1	PRS150V200	BR20015	TCDD2174	FM-0250
C11	20 100			BR4015 & †	TC48 †	S-110
					TC48 †	MT-1540 †
					BR4015	MT-1540 †

Note 1. Non-Polarized Unit \* Non Catalog Item † Connect negative leads together.

## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP. VOLT.	REPLACEMENT DATA							NOTES
		DeJur PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERE PART No.	MALLORY PART No.	SPRAGUE PART No.		
C12	.01 250		BPD-01	DD-103	CUB4S1	GP-10000	GEM-411	4TM-SI	
C13	.1 250		P488N-1	DF-104	CUB4P1	GP-10000	GEM-401	4TM-P1	
C14	.5 250		P488N-5	DF-503	CUB4P5	GP-10000	GEM-405	4TM-P5	
C15	.25 250		P488N-25	DF-104	CUB4P25	GP-10000	GEM-4025	4TM-P25	
C16	.1 250		P488N-1	DF-104	CUB4P1	GP-10000	GEM-401	4TM-P1	
C17	.02 250		BPD-02	DD-203	CUB4S2	ED-02	GEM-412	4TM-S2	
C18	.025 250		BPD-0025	DD-201	L76T2	GP-200	UC-532	4TM-S25	
C19	200 200		BPD-0005	DD-501	L76T5	GP-500	UC-535	5GA-T2	
C20	500 250		BPD-0005	DD-501	L76T5	GP-500	UC-535	5GA-T5	
C21	.005 250		BPD-005	DD-502	CUB4D5	GP-5000	GEM-425	4TM-D5	
C22	1300 250		BPD-005	DD-502	L10D13	GP-5000	GEM-425	4TM-D5	
C23	3000 500		BPD-005	DD-302	L76D3	GP-3000	UC-523	5GA-D3	Note 1
C24	.025 500		P688N-1	DF-104	CUB6P1	GP-3000	UC-523	5GA-D3	
C25	.1 500		BPD-0025	DD-252	L76D25	GP-2500	GEM-601	6TM-S25	
C26	.025 250		BPD-0004	D6-401	L76D25	GP-2500	UC-5225	6TM-S25	
C27	2500 500		BPD-00015	D6-181	L76T14	GP-150	UC-5225	5GA-T4	
C28	1500 500		BPD-0015	DD-182	L76T15	GP-150	UC-5315	5GA-T15	
C29	1500 500		BPD-0015	DD-182	L76D15	GP-1500	UC-5245	5GA-D15	
C30	1500 500		BPD-0015	DD-182	L76D15	GP-1500	UC-5245	5GA-D15	
C31	1500 500		BPD-0015	DD-182	L76D15	GP-1500	UC-5245	5GA-D15	
C32	5000 2500		BPD-0025	D6-252	EXA1005	GP-2500	UC-5225	5GA-D25	
C33	2500 2500		BPD-0025	D6-252	L76D25	GP-2500	UC-5225	5GA-D25	
C34	2500 2500		BPD-0025	D6-252	L76D25	GP-2500	UC-5225	5GA-D25	
C35	500 2500		BPD-0005	DD-501	L76T5	GP-500	UC-535	5GA-T5	
C36	2500 2500		BPD-0025	D6-252	L76D25	GP-2500	UC-5225	5GA-D25	
C37	100 500		BPD-0001	DD-101	L76T1	GP-100	UC-531	5GA-T1	
C38	6-60 500		BPD-01	DD-103	CUB6S1	GP-10000	GEM-611	6TM-SI	
C39	.01 125		P288N-25	CUB2P25	CUB2P25	GP-10000	GEM-611	2TM-P25	
C40	.1 500		P688N-1	DF-104	CUB6P1	GP-5000	GEM-601	6TM-P1	
C41	.1 500		BPD-005	D6-502	CUB6D5	GP-5000	GEM-625	6TM-D5	
C42	.005 500		BPD-005	D6-502	CUB6D5	GP-5000	GEM-625	6TM-D5	
C43	.005 500		BPD-005	D6-502	CUB6D5	GP-5000	GEM-625	6TM-D5	
C44A	3.5 500								
C44B	3.5 500								
C45	1.0 500								
C46	.1 250								
C47	.1 250								
C48	.1 250		P488N-1	DF-104	CUB4P1	GP-10000	GEM-401	4TM-P1	
C49	.1 250		P488N-1	DF-104	CUB4P1	GP-10000	GEM-401	4TM-P1	
C50	.1 250		P488N-1	DF-104	CUB4P1	GP-10000	GEM-401	4TM-P1	

Note 1. Some versions may use a 2500 in this application.



# PARTS LIST AND DESCRIPTIONS (Continued)

## CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	DeJur PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	
R1A	650K	1/2					Tap @ 200K (Loudness)  Tone Recording Level Indicator Frequency Correction (Post Emphasis) Low Frequency Correction Hum Level Wirewound
R2	2Meg	1/2					
R3	1Meg	1/2					
R4	10K	1/2					
R5	50K	1/2					
R6	100Ω	2W					

## RESISTORS

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

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DeJur PART No.	IRC PART No.	
R7	5Meg			BTS-5Meg	
R8	500K			BTS-500K	
R9	5Meg			BTS-5Meg	
R10	50K			BTS-50K	
R11	2Meg			BTS-2Meg	
R12	50K			BTS-50K	
R13	20K			BTS-20K	
R14	100K			BTS-100K	
R15	10Meg			BTS-10Meg	
R16	200K			BTS-200K	
R17	1.25Meg			BTS-1.25Meg	
R18	50K			BTS-50K	
R19	15K			BTS-15K	
R20	1Meg			BTS-1Meg	
R21	2000Ω			BTS-2000	
R22	200K			BTS-200K	
R23	200K			BTS-200K	
R24	500K			BTS-500K	
R25	100K			BTS-100K	
R26	200K			BTS-200K	
R27	1Meg			BTS-1Meg	
R28	1000Ω			BTS-1000	
R29	50K			BTS-50K	
R30	5000Ω			BTS-5000	
R31	5000Ω			BTS-5000	
R32	1000Ω			BTS-1000	

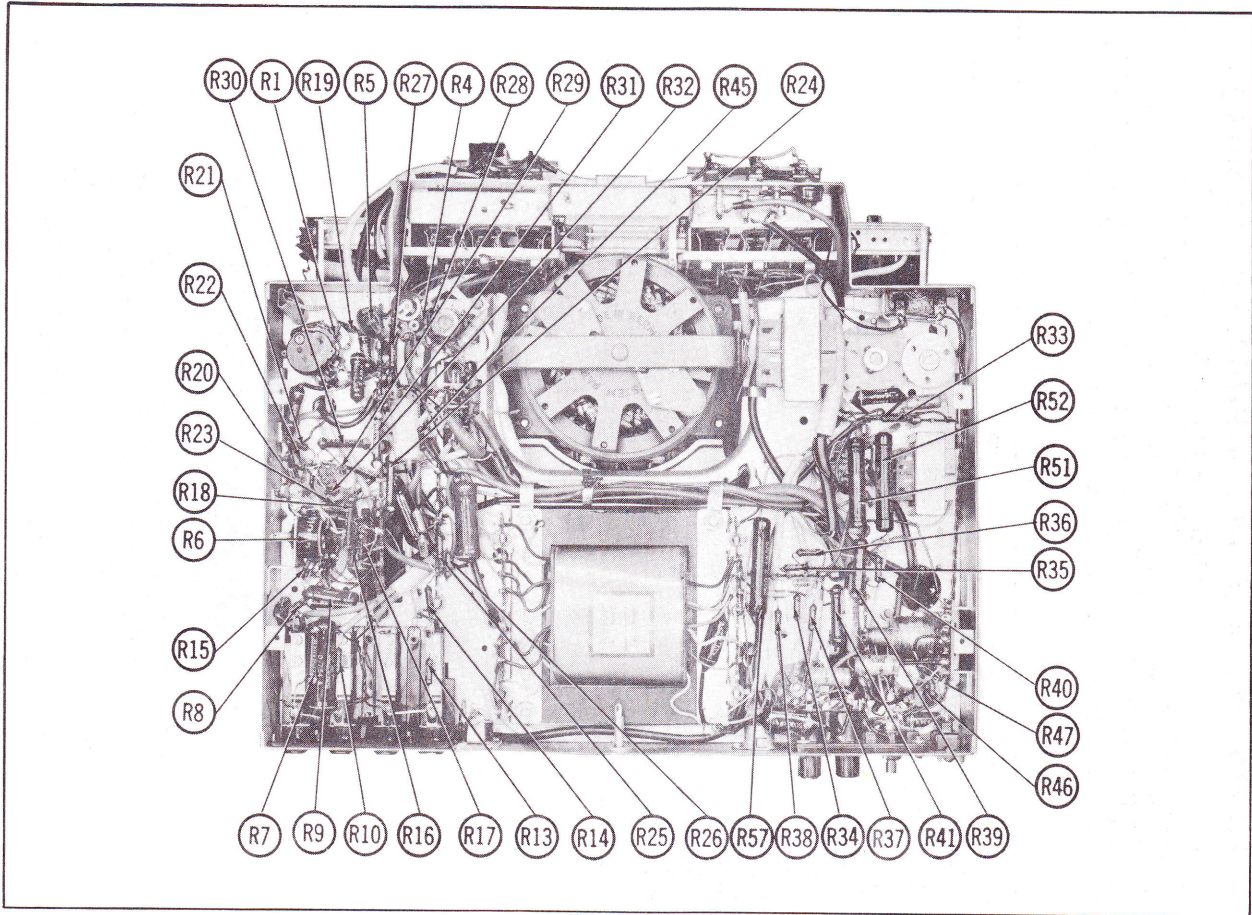
## TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	DeJur PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	265VAC Taps @ 230V, 235V, 180V & 117V @ 1.06A (3/4 I.P.S.)	230V @ .068A	6V @ .2A SEC. 4 @ .3A SEC. 5 @ 1.3A	BV9008-501					

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES	
	PRI.	SEC.	DeJur PART No.	Halldorson PART No.	Stancor PART No.	Thordarson PART No.		Triad PART No.
T2	5500Ω	6-8Ω	BV 9080/500	Z1109 ①		22858 ②		① Tape 16Ω tap on Secondary ② Tape center tap on Primary

## CHASSIS—BOTTOM VIEW





## PARTS LIST AND DESCRIPTIONS (Continued)

### COILS (RF-IF)

ITEM No.	USE	DeJur PART No.	NOTES
L1	Resonance Coll	BV1824	
L2	Bias Osc.	BV1815	

### SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	DeJur PART No.	QUAM PART No.	
SP1	5"X7"	PM	3-4Ω	19/4/100-0.95	3AIR	① Electrostatic Type
SP2	3 1/2"	PM	3-4Ω	16/3/70B	3AIR	
SP3	3 1/2"	PM	3-4Ω	16/3/70B	3AIR	
SP4			①			
SP5			①			

### FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 Hz)	DeJur PART No.	Halldorsen PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triod PART No.
L4	.088A	225Ω	9 Hy.	BV48/46	C5012				
L5	.200A	9Ω	.34 Hy.	BV38.4/23					

### CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		DeJur PART No.	SYLVANIA PART No.	
M6		E05212	1N34A	Bias Detector (Pigtail)

### COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	DeJur PART No.	REPLACEMENT DATA
K1		2.0 MFD 100Ω Resistor		
K2		2.0 MFD 100Ω Resistor		
K3		2.0 MFD 100Ω Resistor		
K4		2.0 MFD 100Ω Resistor		

### FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			DeJur PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M3		2A 250V							
M4		.120A 250V S/B							
M5		.5A 250V S/B							

## PARTS LIST AND DESCRIPTIONS (Continued)

### SELENIUM RECTIFIER

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA					NOTES
		DeJur PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	SARKIS TARZIAN PART No.	
M1	.068A	B250C110	1016 ①	60-9150 ②	B26E ①	3048 ①	① Drill hole for stud mtg. ② 2 Required
M2	.200A	B25C450K		B1B ①			

### MISCELLANEOUS

ITEM No.	PART NAME	DeJur PART No.	NOTES
M7	Record Head	BV1379	Right
M8	Erase Head	BV1380	Right
M9	Record Head	BV1379	Left
M10	Erase Head	BV1380	Left
M11	Pilot Lamp		Program Indicator
M12	Switch		Pushbutton Assy.
M13	Switch		Speaker, Rotary Type
M14	Switch		Input Selector, 2 Gang, Rotary Wafer Type
M15	Switch		Head Relay
M16	Switch		Speed Changeover
M17	Relay	BV008	Head Relay
M18	Relay	BV013	Muting
M19	Relay	BV004	Motor
M20	Solenoid	BV001	Tape Pressure
M21	Relay	BV012	Centrifugal
M22	Relay	BV004	Speed Changeover Assisting
M23	Clutch		Program Indicator
M24	Motor	5KL4.80FQ2	
M25	Clutch	BV002	Magnetic, Right
M26	Clutch	BV002	Magnetic, Left

