

FUJIYA MODEL
MTR252

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GENERAL INFORMATION

The Fujiya Model MTR-252 is a two-speed, dual-track, battery powered tape recorder. It will take reels up to three inches in diameter.

A level meter is provided for telling the condition of the motor batteries and recording level.

Pushbuttons are provided for each mode of operation; Rewind, Stop, and Play-Record.

Speed change is accomplished by removing the large diameter capstan.

The two tape speeds are 1 7/8 and 3 3/4 ips. The playing or recording time for a 300 ft. reel at 3 3/4 ips is 28 minutes and at 1 7/8 ips is 56 minutes.

Supplied By:

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405 Lexington, Avenue,
New York 17, New York

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



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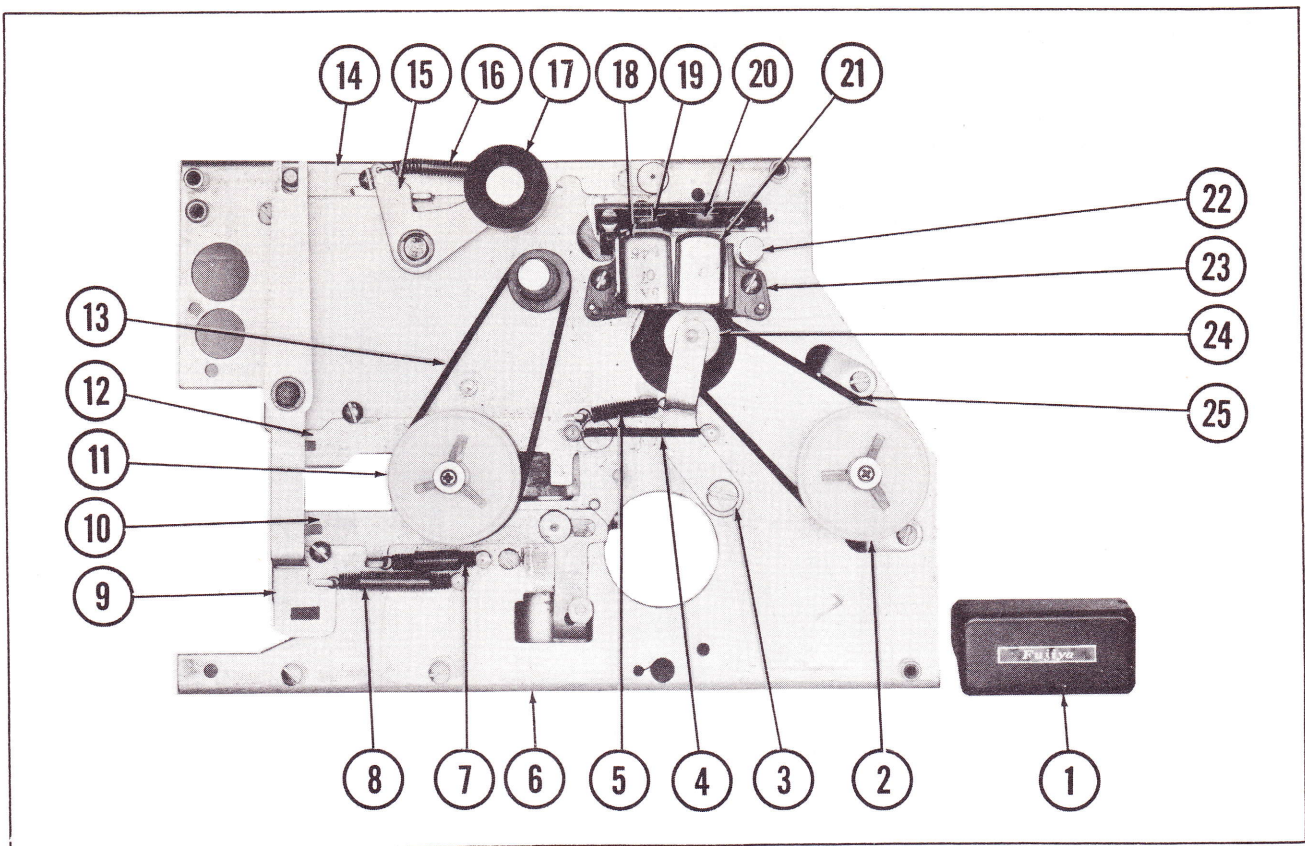


FIG.1 TOP VIEW OF MECHANISM

PREPARING FOR OPERATION

1. Install 6 penlight type batteries in each case in the battery compartment.
2. Remove the accessories from the storage compartment.

FUNCTION OF CONTROLS AND JACKS

Stop

Depressing the Stop button will stop the mode of operation and remove the power to the amplifier and motor.

Rewind

Depressing this button will rewind the tape onto the supply reel.

Play-Record

This control has two functions. Depressing the button with the record button pushed in places the recorder in the record mode. Depressing the button but leaving the record button out, places the recorder in the play mode.

Record

This button must be pushed in and held until the Play-Record button is depressed to make a recording. It serves as a safety lock during playback to prevent accidental erasure.

Volume

Rotating the knob in the direction of the arrow,

increases the volume level. Rotation in the opposite direction, decreases the volume.

Level Meter

The level meter has two functions:

1. It serves as a recording level indicator while recording.
2. It indicates the condition of the batteries.

External Speaker

A patch cord may be plugged into the jack and the other end connected to the voice coil terminals of an external speaker. Earphones may be plugged into this jack also.

Microphone

The mic jack has two functions. The first function is to make a recording. Secondly, the microphone is equipped with a switch so the power to the motor can be cut off or on, at any time, during a recording.

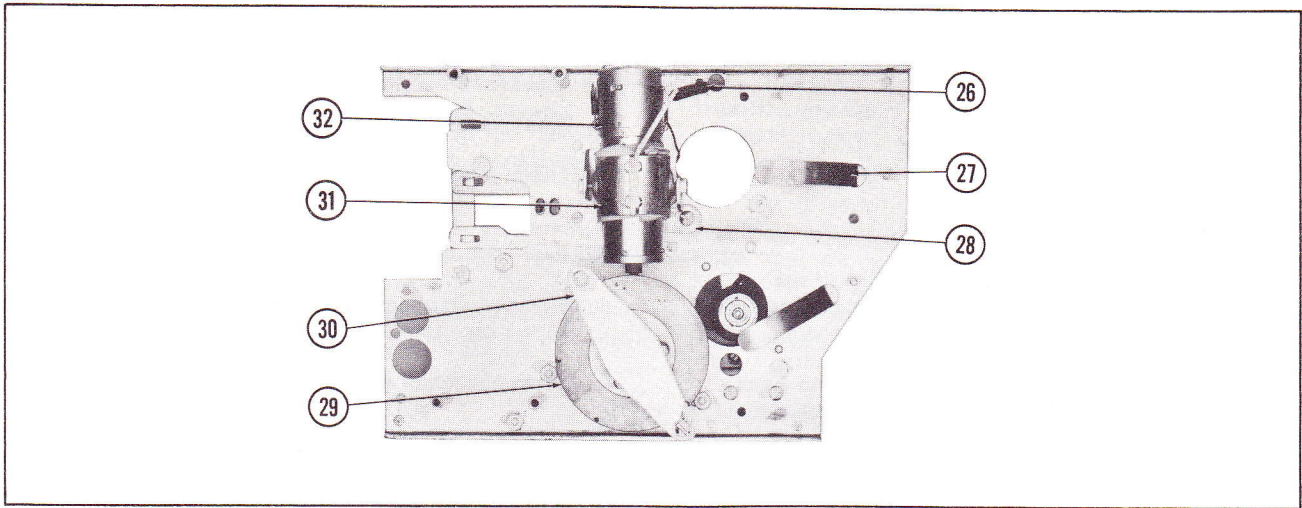


FIG. 2 BOTTOM VIEW OF MECHANISM

OPERATING INSTRUCTIONS

Threading the Tape

1. Depress the stop button.
2. Open the lid.
3. Unwind about 14 inches of tape from a full reel and place the reel on the supply spindle.
4. Place an empty reel on the take-up spindle.
5. Hold a section of tape taut and insert it in the tape slot.
6. Insert the free end of the tape into one of the three slots in the take-up reel. Turn the reel a few turns to secure the tape to the reel and to take up all slack between reels.

Recording

1. Thread the tape, see "Threading the Tape".
2. Plug the microphone into the microphone jack.
3. Make sure the motor control switch on the microphone is in the "Off" position.
4. Depress the record safety button and the play-record button.
5. Depress the motor control switch on the microphone and slide it to the "On" position.
6. Talk into the microphone in a normal manner and adjust the volume control until the needle of the level meter is between the red and white range. This gives the correct volume level for recording.
7. To stop the tape motion temporarily, slide the motor control switch to "Off".
8. To stop the recorder, depress the Stop push-button.

Playback

1. Thread the tape, see "Threading the Tape".

2. Depress the Play-Record button.
3. Adjust the Volume control.
4. If earphones are used, plug them into the external speaker jack. The self-contained speaker is disconnected when the earphones are plugged in.
5. If the microphone is plugged in during playback, the motor control switch can be used to start and stop the tape motion.

To Erase a Recording

The tape is automatically erased when making a recording. If it is desired to erase a tape without putting new material on it, proceed as described under Recording, but, turn the Volume control to its minimum position.

Dual-Track Recording

Dual-track recordings are made on one-half of the tape at a time. After making a recording, and tape is wound onto the take-up reel, remove the reels. Turn the full reel over, place on the supply spindle, rethread the tape, and continue the recording.

External Speaker

Plug a patch cord into the external speaker jack and connect the other end to the voice coil of the external speaker. The self-contained speaker is disconnected when the patch cord is plugged into the external speaker jack.

Speed Change

Speed change is accomplished by changing the capstan diameter. The larger diameter is the 3 3/4 speed. To change to 1 7/8 speed, remove the knurled screw and remove the larger diameter capstan bushing.

DISASSEMBLY

To Remove the Recorder from the Case

1. Remove pressure roller (17).
2. Remove head cover (1).
3. Remove pushbutton escutcheon.
4. Remove two screws holding the top dress plate. Lift top dress plate up, unsolder the speaker wires, and remove the top dress plate.
5. Remove two screws from the front and back of the case and one from the storage compartment.
6. Lift recorder out of case.
7. Disconnect the level meter leads.
8. Reverse the foregoing procedure to reassemble.

To Remove Amplifier from Tape Transport

1. Remove the input and output jacks.
2. Disconnect the play-record and erase heads.
3. Remove one screw and one stud holding the push-button assembly.
4. Remove four screws holding the printed board to the tape transport.
5. Disconnect the motor leads.
6. Remove three screws holding the battery terminals.
7. Remove all clamps holding any leads.
8. To reassemble, reverse the foregoing procedure.

TROUBLE CHART

Symptom	Cause	Remedy
No takeup during record or playback.	<ol style="list-style-type: none"> 1. Takeup drive belt (13) broken. 2. Felt clutch defective. 3. Clutch tension spring weak or broken. 	<ol style="list-style-type: none"> 1. Replace. 2. Replace clutch assembly under takeup reel (11). 3. Replace clutch tension spring.
No rewind.	<ol style="list-style-type: none"> 1. Rewind idler tension spring (5) off or broken. 2. Rewind drive belt (25) off or broken. 	<ol style="list-style-type: none"> 1. Replace rewind idler tension spring (5). 2. Replace rewind drive belt (25).
Pressure roller does not engage the capstan when play-record button is depressed.	<ol style="list-style-type: none"> 1. Pressure roller tension spring (16) off or broken. 	<ol style="list-style-type: none"> 1. Replace pressure roller tension spring (16).
Motor does not disengage the flywheel when the stop button is depressed.	<ol style="list-style-type: none"> 1. Stop lever tension spring (7) off or broken. 	<ol style="list-style-type: none"> 1. Replace stop lever tension spring (7).
No record or playback.	<ol style="list-style-type: none"> 1. Play-record head (19) defective. 2. Defective amplifier. 	<ol style="list-style-type: none"> 1. Replace play-record head (19). 2. Check amplifier for defective components.
Does not erase.	<ol style="list-style-type: none"> 1. Defective erase head (21). 2. Broken wire going to the erase head. 3. Slide switch on printed board defective. 	<ol style="list-style-type: none"> 1. Replace erase head (21). 2. Check wires and replace any broken ones. 3. If switch is defective, replace.
Motor runs but flywheel and capstan does not rotate.	<ol style="list-style-type: none"> 1. Motor tension spring (26) off or broken. 	<ol style="list-style-type: none"> 1. Replace motor tension spring (26).
Motor does not run and amplifier is dead.	<ol style="list-style-type: none"> 1. Batteries are defective. 	<ol style="list-style-type: none"> 1. Replace batteries with ones known to be good.
Pressure pads do not make firm contacts with the heads.	<ol style="list-style-type: none"> 1. Pressure pad tension spring broken. 	<ol style="list-style-type: none"> 1. Replace pressure pad tension spring.

CLEANING

The play-record head (18), erase head (21), pressure roller (17), tape guides, and capstan are subject to tape residue which is worn off the tape as it passes these parts. Use a soft cloth and alcohol to clean these parts.

Use a soft cloth and alcohol to clean oil or grease from the pressure roller (17), rewind idler wheel (24), and drive belts.

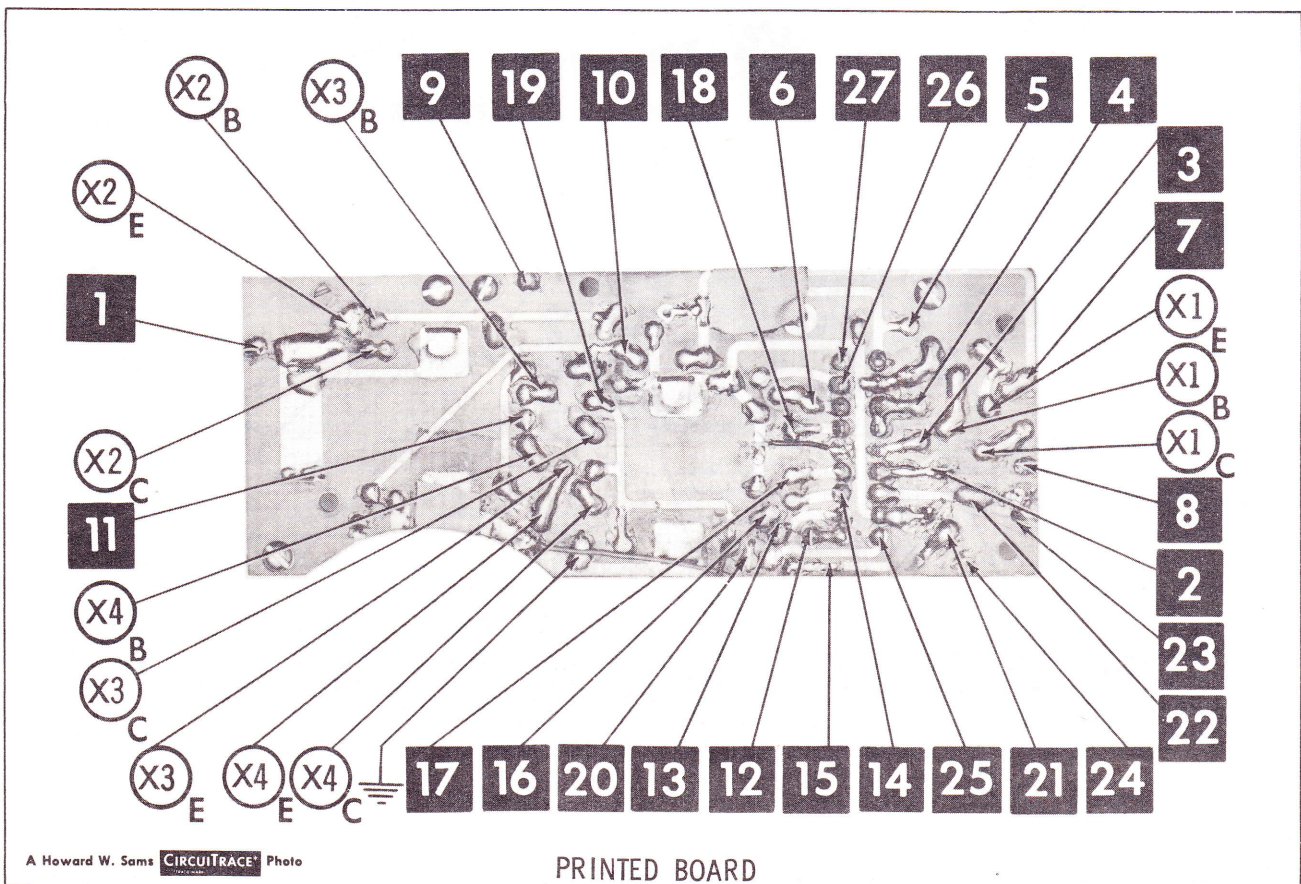
LUBRICATION

All rotating parts are provided with oilite bearings. They are factory lubricated and should require

no further lubrication. If lubrication is required, use light weight oil sparingly.

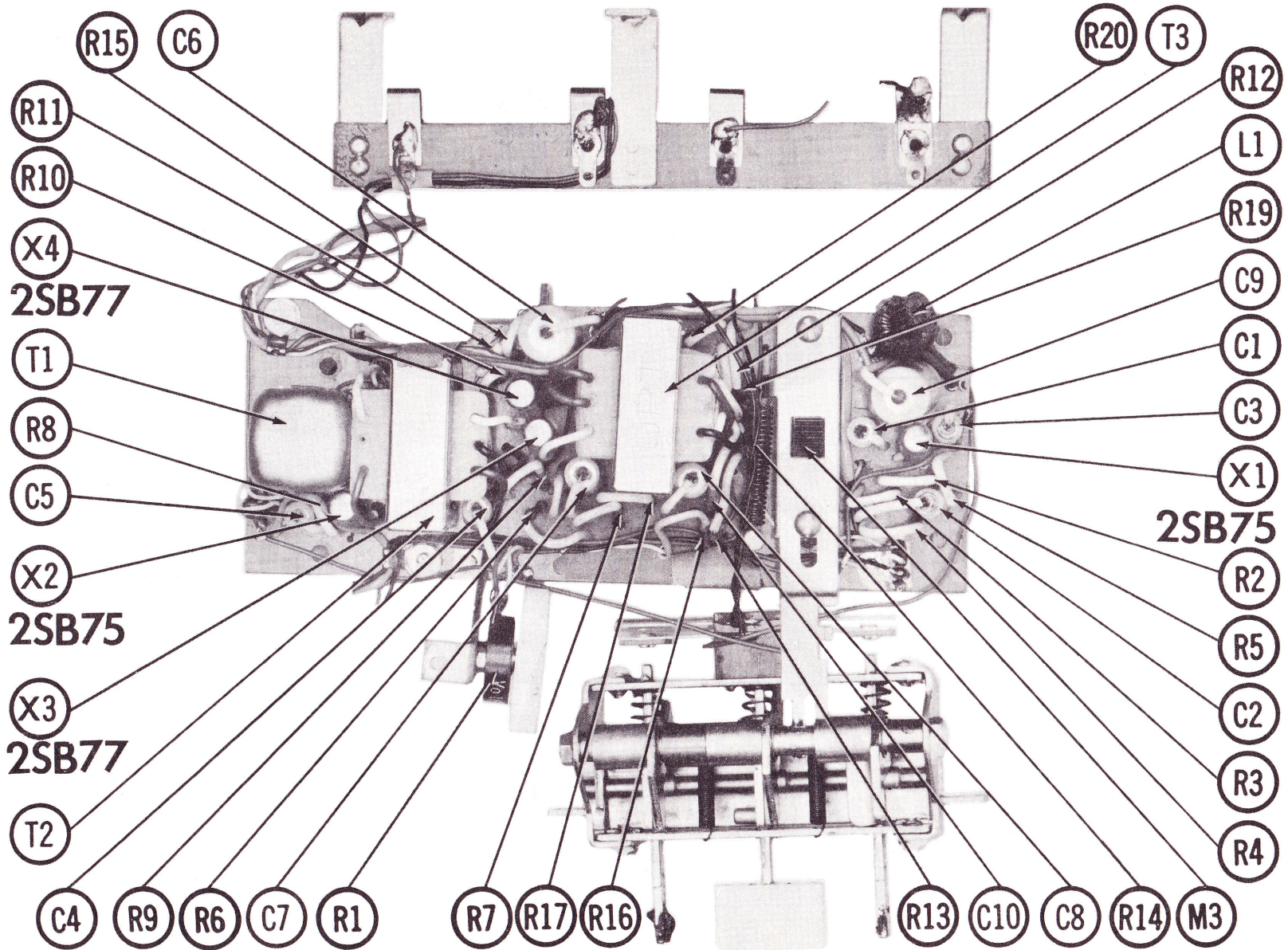
MECHANICAL PARTS LIST

Ref. No.	Description	Ref. No.	Description
1	Head Cover	17	Pressure Roller
2	Supply Reel	18	Play-Record Head
3	Rewind Idler Lever	19	Play-Record Head Pressure Pad
4	Rewind Lever Tension Spring	20	Erase Head Pressure Pad
5	Rewind Idler Lever Tension Spring	21	Erase Head
6	Base Plate	22	Tape Guide
7	Stop Lever Tension Spring	23	Head Mounting Plate
8	Record Lever Tension Spring	24	Rewind Idler Wheel
9	Record Lever	25	Rewind Drive Belt
10	Stop Lever	26	Motor Tension Spring
11	Takeup Reel	27	Battery Holder Tension Spring
12	Rewind Actuating Lever	28	Motor Mounting Bracket
13	Takeup Drive Belt	29	Flywheel and Capstan
14	Pressure Roller Actuating Lever	30	Flywheel and Capstan Mounting Plate
15	Pressure Roller Lever	31	Motor Mounting Housing
16	Pressure Roller Tension Spring	32	Motor



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FOLDER 9



AMP CHASSIS-TOP VIEW

ELECT. PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA		NOTES
			RCA PART No.	RAYTHEON PART No.	
X1	2SB75	AF Amplifier	2N406		PNP
	2N215 *	AF Amplifier			PNP
X2	2SB75	Driver	2N406		PNP
	2N215 *	Driver			PNP
X3	2SB77	Output	2N408		PNP
	2N217 *	Output			PNP
X4	2SB77	Output	2N408		PNP
	2N217 *	Output			PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	FUJIYA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1	30	6		PTT27	NLW30-6	MT1-13	TT6X30	MLV30-6	TE-1092
C2	30	6		PTT27	NLW30-6	MT1-13	TT6X30	MLV30-6	TE-1092
C3	30	6		PTT27	NLW30-6	MT1-13	TT6X30	MLV30-6	TE-1092
C4	30	6		PTT27	NLW30-6	MT1-13	TT6X30	MLV30-6	TE-1092
C5	30	6		PTT27	NLW30-6	MT1-13	TT6X30	MLV30-6	TE-1092
C6	100	10		PTT46	NLW100-12	MT1-19	TT15X100	MLV100-10	TE-1119.3
C7	30	10		PTT43	NLW30-15	MT1-14	TT15X30	MLV25-10	TE-1158
C8	30	10		PTT43	NLW30-15	MT1-14	TT15X30	MLV25-10	TE-1158
C9	100	10		PTT46	NLW100-12	MT1-19	TT15X100	MLV100-10	TE-1119.3

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	.001		SI 1000	D6-102	BYA10DI	CCD-102	B-210	5HK-D10

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			FUJIYA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume	20K					

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 TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	20K				R12	10Ω			
R3	5000Ω				R13	80K			
R4	35K				R14	55K			
R5	5000Ω				R15	10Ω			
R6	17K				R16	16K			
R7	7000Ω				R17	2000Ω			
R8	3000Ω				R18	200Ω			
R9	9500Ω				R19	50K			
R10	370Ω				R20	700Ω			
R11	Thermistor				R21	1000Ω			

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		FUJIYA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Motor Choke						

TRANSFORMER (MIC)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			FUJIYA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	PRI.	SEC.						
T1	1	7.8						

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			FUJIYA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	PRI.	SEC.						
T2	1	1						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			FUJIYA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	PRI.	SEC.1						
T3	750Ω CT	6-8Ω						
		SEC. 2						
		20K						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				FUJIYA PART No.	QUAM PART No.	
	SIZE	FIELD	V. C. IMP.			
SP1	2½"	PM	6-8Ω			

BATTERIES

ITEM No.	VOLTAGE	FUJIYA PART No.	REPLACEMENT DATA				NOTES		
			BURGESS		EVEREADY			MALLORY	
			"A"	"B"	"A"	"B"		"A"	"B"
M1	1½V		930		1015		M-15R	6 Required (Amplifier)	
M2	1½V		930		1015		M-15R	6 Required (Motor Drive)	

MISCELLANEOUS

ITEM No.	PART NAME	FUJIYA PART No.	NOTES
M3	Switch		Record-Playback
M4	Meter		Record Level Indicator

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors