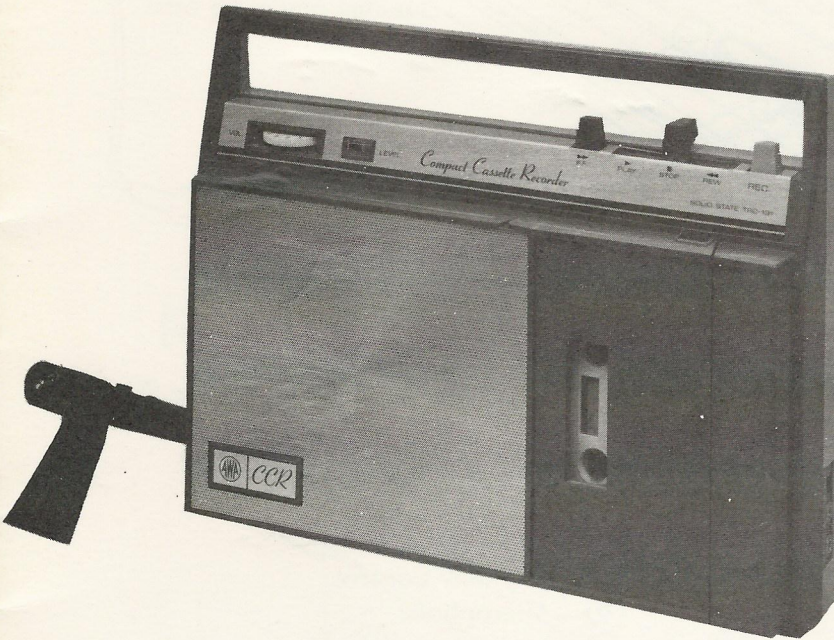


SERVICE MANUAL

A. W. A.

MODEL TRC-131 PORTABLE CASSETTE RECORDER



SPECIFICATIONS

| | | | |
|--------------------|--|------------------------|---|
| Power Source: | 4 "D" Cell Batteries or AC 117V AC Adaptor | Input: | Dynamic Microphone: 200 ohm Line Input: 100 k ohm |
| Power Consumption: | Less than 200mA | Output Power: | Better than 300mW (Distortion 5%) |
| Cartridge: | Cassette C-60, C-90 or C-120 | Signal to Noise Ratio: | Better than 30 db |
| Operation: | Lever Control (REW-STOP-PLAY) PUSH Button Control (F.F., REC.). | Crosstalk: | Better than 50 db |
| Tape Speed: | 1 7/8 ips | Erasure Effect: | Better than 40 db |
| Speed Variation: | ±3% | Frequency Range: | 100 - 6000 Hz |
| Recording Time: | 2 hours on C-120 Cassette | Wow and Flutter: | Less than 1% (WRMS) |
| F.F. Time: | Less than 270 Sec on C-60 Cassette | Dimensions: | 2 3/4" (H) x 10" (W) x 7" (D) |
| Rewind Time: | Less than 90 Sec on C-60 Cassette | Weight: | 3.5 lbs (without BATTERY) |
| Recording System: | AC Biasing, 2-track 1-channel | Accessories: | Instruction manual..... 1 pc Dynamic Microphone with Remote Switch 1 pc |
| Erasing System: | Magnet Erase | | |
| Semiconductors: | 6 transistors and 2 diodes | | |

AMALGAMATED WIRELESS (AUSTRALASIA) LTD.

47 YORK STREET, SYDNEY 2000. AUSTRALIA.

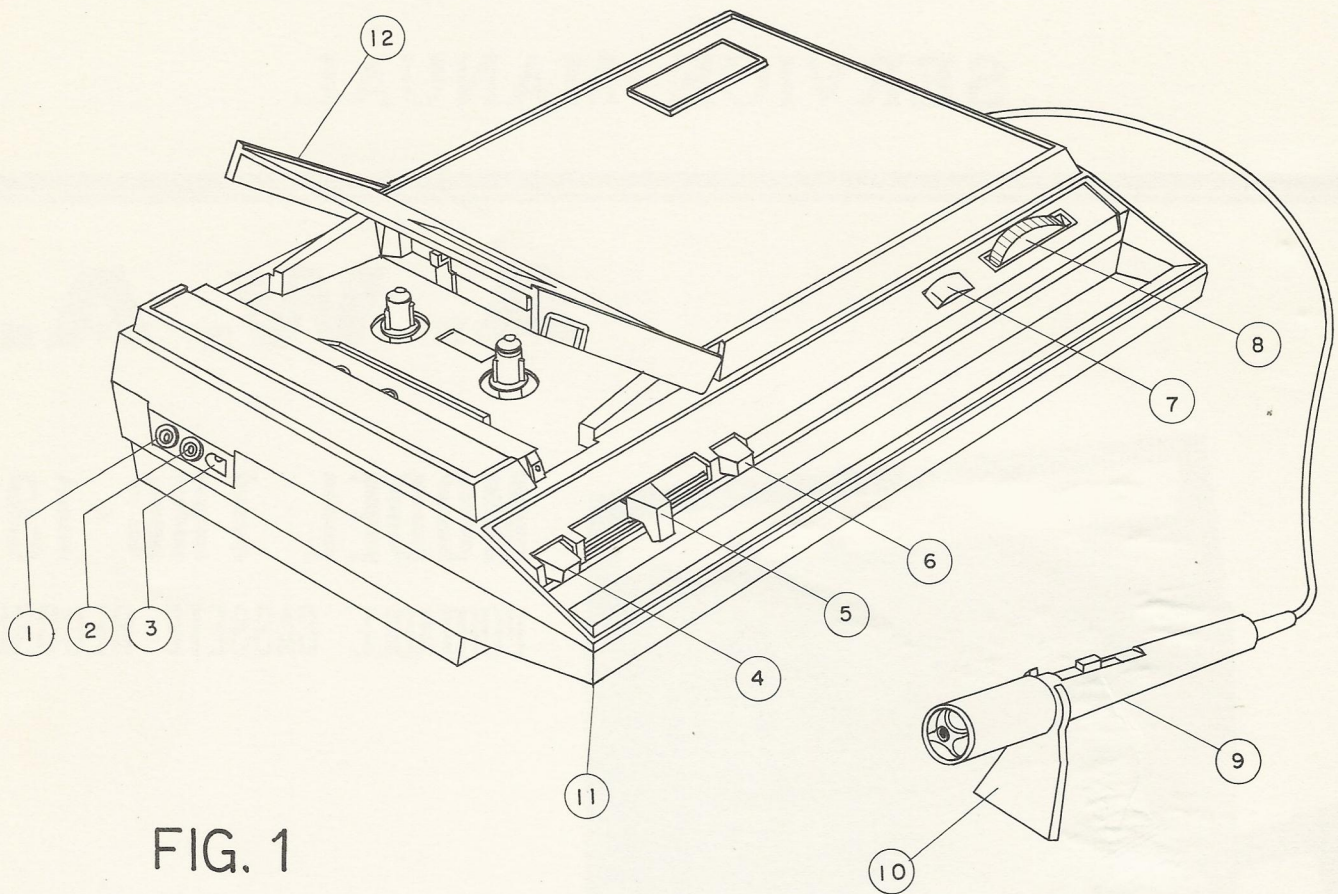


FIG. 1

- | | |
|-----------------------|--------------------|
| ① Earphone Jack | ⑦ REC/Batt Meter |
| ② AUX. Jack | ⑧ Volume Control |
| ③ AC Adaptor | ⑨ Microphone |
| ④ Record Button | ⑩ Microphone Stand |
| ⑤ PLAY/STOP/REW Lever | ⑪ Handle |
| ⑥ FF Button | ⑫ Cassette Cover |

1. DISASSEMBLING OF MECHANISH (Refer figure 2)

Unscrew five screws (54) and three screws (98) on bottom cabinet (81), then pull out the mechanism and disconnect the 3p Jacks (53) from bottom cabinet. After that, cabinet and mechanism can be separated. Pull out three Button (121) (122) (123), unscrew one (25) and five screws (65) on top cabinet (127). Do not cut the speaker lead wires when you disassemble the mechanism.

2. ASSEMBLING OF MECHANISM

Fit screws in reverse procedure as in disassembling, take care of keeping constant space between the base plate and cabinet.

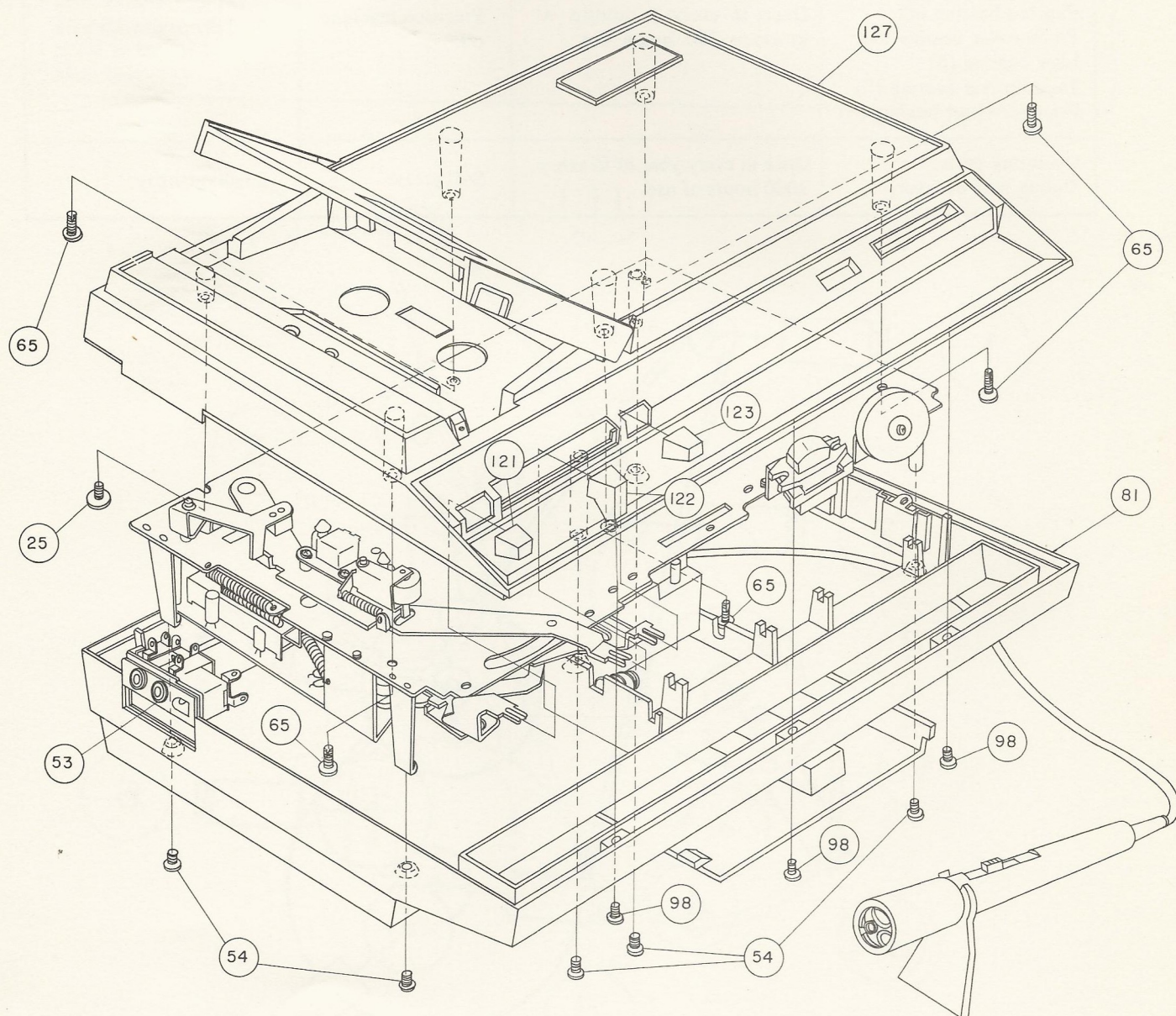


FIG. 2

3. MAINTENANCE

(1) Lubrication (Refer figure 3).

Since oilless metal is used in the revolving parts, lubrication is not required for a long period. However, supplying oil to the parts indicated in figure 3 will keep bearing at the best condition and render mechanism more durable.

It is convenient to use a medical-use injector for oiling.

| Point of lubrication | Frequency | Oil to be used | Quantity |
|--|--|---------------------------|-------------------------|
| Motor bearing (1) REW roller bearing (2) Supply reel bearing (3) Capstan bearing (4) Pinch roller bearing (5) Idler bearing (6) Tape up reel bearing (7) Friction wheel bearing (8) | Once in every 6 months or in every 300 hours use. | Precision machine oil. | 2 3 drops to each part. |
| Operating parts. Sliding part of lever. | Once in every year or in every 2000 hours of use. | Soft grease. | Small quantity. |

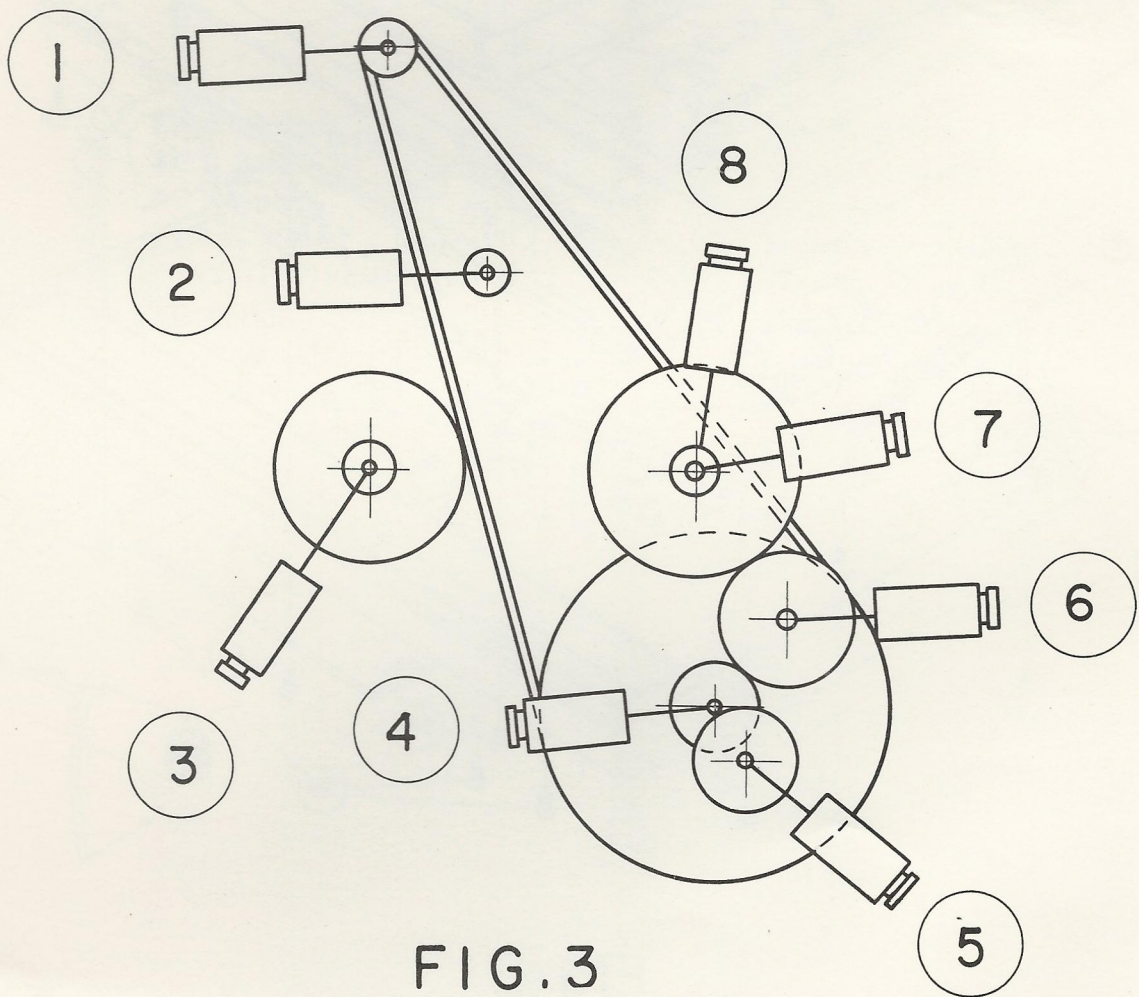


FIG. 3

(2) Cleaning (Refer figure. 4).

After contamination of heads capstan and pinch roller, the set deteriorates, performance, clean those parts frequently.

| Part to be cleaned | Cleaning period | Materials for cleaning |
|--|--|--|
| Motor pulley (1) REW wheel (2) Erase head face (3) R/P head face (4) Flywheel (5) Pinch roller (6) Capstan shaft (7) Idler rubber face (8) Friction wheel (9) REW roller (10) Main belt (11) | Once in every 6 months or everytime markedly contaminated. | Soft clean cloth, alcohol, carbon tetrachloride, tweezers. |

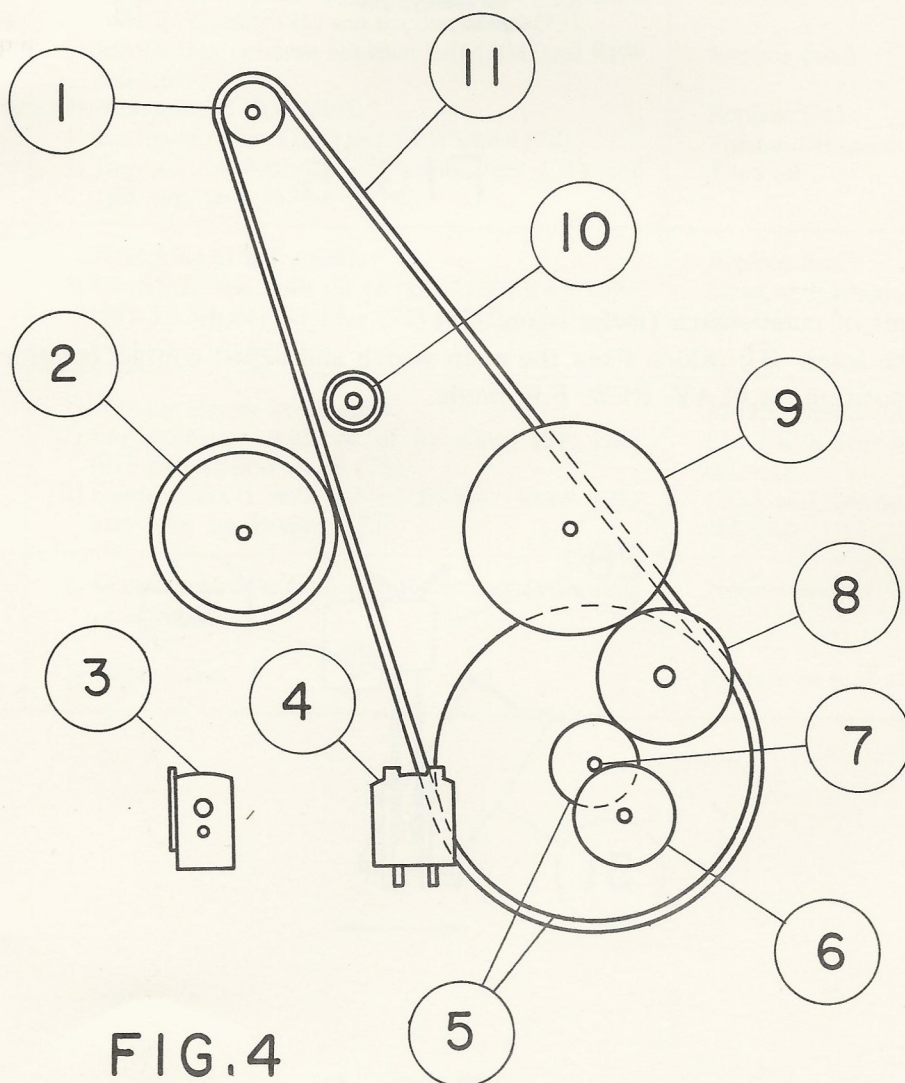


FIG.4

4. ADJUSTMENT

1) Adjustment of pinch roller pressure (Refer figure 5)

When in playback condition the rotation of pinch roller fluctuates in spite of normal rotation of the capstan shaft because of pinch roller pressure is not sufficient.

Adjust pressure force by what bending a small tab of pinch roller arm (9) to left or right. Pinch roller arm shaft (a) must be straight angle during adjustment. (TENSION 220 - 300 g)

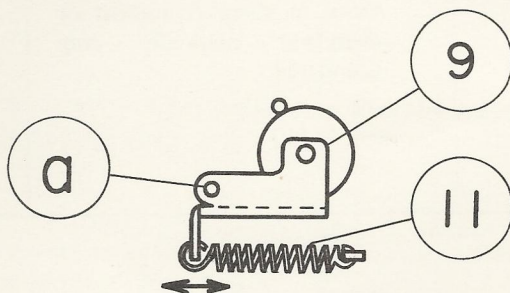


FIG. 5

2) Adjustment of main switch (Refer figure 6)

Loosen the screw (31) which fixes the main switch and adjust contact condition at make position at make position on PLAY. REW. F.F. mode.

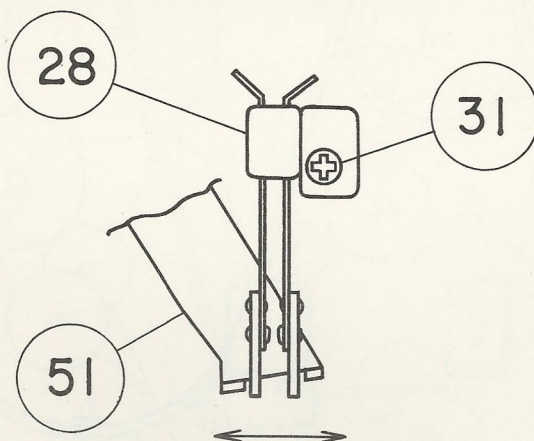


FIG. 6

TROUBLE SHOOTING AND REMEDY

MECHANICAL PORTION (Refer exploded schematic or circuit schematic)

| Trouble | Cause | Remedy |
|--|---|---|
| Motor does not rotate. | <ol style="list-style-type: none"> 1) Incomplete soldering of motor lead wires. 2) Troubles of motor interior such as broken stator coil or burnt shaft bearing. | <p>Repair soldering Replace motor.</p> |
| Rotation is not steady. | <ol style="list-style-type: none"> 1) Motor pulley (106) races. 2) Contamination with oil of motor pulley (106) belt (104), fly-wheel (59) idler (91) and capstan (156). 3) Partial breaking or stretching of belt (104). 4) Dry oil in bearings of pinch roller (9) fly-wheel (59) and friction wheel (73). | <p>Tighten pulley set-screw. Clean with benzine or carbon tetrachloride.</p> <p>Replace belt. Feed oil.</p> |
| Troubles in fast forwarding and rewinding. | <ol style="list-style-type: none"> 1) Slipping due to oil contamination at rubber face of belt (104), pulley (106), REW wheel (78), REW roller (49), idler (91) and friction wheel (73). 2) Insufficient pressure between belt (104) and REW roller (49). 3) Stretching of belt (104). 4) Racing of pulley (106) and REW wheel (78). 5) Dry oil in bearings of supply reel (71) and take up reel (69). | <p>Clean with benzine or carbon tetrachloride.</p> <p>Replace them.</p> <p>Replace belt. Tighten Set-screw. Feed oil</p> |
| Tape slackens (within cassette). | <ol style="list-style-type: none"> 1) Stretching of belt (104). 2) Contamination with oil of bolt (104) REW wheel (78), fly wheel (59), idler (91) and friction wheel (73). | <p>Replace belt. Clean with benzine or carbon tetrachloride.</p> |
| Tape slackens (extruding out of cassette). | <ol style="list-style-type: none"> 1) Winding torque insufficient. 2) Contamination with oil of fly wheel (59) idler (91) and friction wheel (73). 3) Contamination with oil of friction wheel (73) and take up bearing (75). | <p>Readjust(See section of Adjustment). Clean with benzine or carbon tetrachloride. Clean with benzine or carbon tetrachloride.</p> |
| Rotation noise | <ol style="list-style-type: none"> 1) Occasional noise from cassette on fast forwarding or rewinding. 2) Moter noise. | <p>Normal feature</p> <p>Replace or feed oil</p> |

AMPLIFIER PORTION (Refer circuit schematic and exploded schematic)

| Trouble | Cause | Remedy |
|---|---|--|
| The set does not function. | <ol style="list-style-type: none"> 1) Power source cord broken. 2) Main Switch (S1) wiring broken. 3) Worn out power source in the case of DC operation. | <p>Repair the power source by soldering and check voltage.</p> <p>Solder.</p> <p>Replace the batteries.</p> |
| Level meter does not power source indication. | <ol style="list-style-type: none"> 1) Level meter open resistors (R27, R28). 2) Level meter failure. | <p>Replace.</p> <p>Replace.</p> |
| In case batteries warms up. | <ol style="list-style-type: none"> 1) Power source wiring short. | <p>Repair.</p> |
| The set fails to reproduce or play back. | <ol style="list-style-type: none"> 1) Amplifier power source lead wire broken. 2) Transistor failure. 3) Resistor or capacitor failure. 4) Record/Play selector switch (S3) poor contact. 5) Disconnection or short circuit in the volume control (VR1) lead wire. 6) Disconnect speaker lead wire or voice coil. 7) Earphone Jack poor contact or wiring broken. 8) Disconnection or short circuit in the record/play head wire. 9) Record/play head failure. 10) Record/play head slit face contaminated. | <p>Repair the amplifier power source by soldering and check voltage.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Repair the disconnected portion by soldering or replace the parts.</p> <p>Repair the disconnected portion by soldering or replace the parts.</p> <p>Repair the disconnected portion by soldering or replace the parts.</p> <p>Repair the disconnected portion by soldering or replace the parts.</p> <p>Replace.</p> <p>Clean slit face.</p> |
| The set fails to record. | <ol style="list-style-type: none"> I) The set does not record. 1) Amplifier circuit failure. 2) Record/play selector switch (S3) poor contact. 3) Microphone failure. 4) AUX Jack poor contact or wiring broken. | <p>Check wiring and repair it.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> |
| | <ol style="list-style-type: none"> II) Does not record in spite of level meter working. 1) Record/play selector switch (S3) poor contact. 2) Record/play head failure. 3) Record/play head slit face contaminated. 4) Disconnection or short lead wire from record/play head. 5) Resistor (R22 39KΩ) in equalizer circuit open. 6) Transistor fault (Tr6, 2SB135 (E)) in bias oscillator circuit. 7) Bias oscillator coil (13) open or short. 8) Bias capacitor (C15 500FF) failure. 9) Bias oscillator capacitor (C16 0.03μF) failure. 10) Bias adjustment in the semifixed resistor (VR2 2KΩ) failure. | <p>Replace.</p> <p>Replace.</p> <p>Clean slit face.</p> <p>Solder or replace wire.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> |

| Trouble | Cause | Remedy |
|---|--|---|
| | III) Level meter does not function at recording state. 1) Level meter failure. 2) Resistor (R28 120Ω) open. 3) Diode (D1 IN60) failure. 4) Record/play selector switch (S3) poor contact. | Replace. Replace. Replace. Replace. |
| The set fail to erase. | 1) Mis adjustment of erase head or guide hight. 2) Deterioration of magnetization of erase head. | Adjust hight. Replace. |
| Sound volume is insufficient. (Check either play back or record side with pre-recorded tape) | I) In case trouble occurs at recorder play back circuit. 1) Transistor failure (β deterioration) 2) Record/play head slit face contaminated. 3) Inadequate contact between record/play head and tape. 4) Insufficient sensitivity of record/play head. 5) Resistor or capacitor failure. 6) Improper azimuth record/play head. (high frequency lowers) 7) Power source voltage (DC) lowered. | Replace. Clean with alcohol and a soft cloth. Adjust. Replace. Solder or replace the parts. Adjust azimuth. Check power source voltage. Replace batteries. |
| | II) In case trouble occurs at play back. 1) Speaker failure. 2) Wear in the record/play head. | Replace. Replace. |
| | III) In case trouble occurs at record. 1) Microphone failure. 2) Excessive or insufficient bias current (caused by bias circuit defect.) | Replace. Check bias circuit. Adjust bias voltage to 12V by measuring between of record/play head. |
| Tone quality is inferior. | I) In case trouble occurs at play back. 1) Transistor failure. 2) Resistor or capacitor failure. 3) Speaker failure. 4) Power source voltage (DC) lowered. | Replace. Replace. Replace. Check power source voltage or replace batteries. |
| | II) In case deterioration of high frequency response. 1) Head slit face contaminated. 2) Record/play head azimuth inproper. | Clean with alcohol and a soft cloth. Adjust azimuth or replaces. |
| | III) In case trouble occurs at record. 1) Insufficiency is bias. (distortion bass) Capacitor (C15 500FF) failure. 2) Excessive in bias. (high frequency lowers) 3) Microphone failure. | Adjust R31 2KΩ. Replace. Adjust VR2 2KΩ. Replace. |

| Trouble | Cause | Remedy |
|-------------------------|---|--|
| | 4) Deterioration of level meter sensitivity and distortion by reason of inadequate recording level (caused by level meter circuit defect.) 5) Poor tape. 6) Mis adjustment of erase magnet or guide hight. | Check of circuit. Try new tape. Adjust hight or replace. |
| Noise (Scrach noise) | I) In case noise occurs while tape is running. 1) Transistor (Tr1 2SB135 (E)) failure. 2) Volume control (VR1 5K Ω) failure. 3) Record/play selector switch (S3) poor contact. 4) Wiring failure. | Replace. Replace. Replace. Check wiring and repair it. |
| (Hissing noise) | II) In case noise occurs recording or play back. 1) Record/play head magnetized. 2) Moter failure. 3) Moter wiring failure. 4) Unbalance an electric current in bias. III) Hum noise when AC adaptor is used. 1) Ac adaptor failure. (Filter capacitor failure.) | Demagnetize the head by the head eraser. Replace. Change the wiring position. Check oscillator circuit. Replace. |

MECHANICAL PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION |
|----------|-----------|--------------------------|
| 1 | MD-3612-2 | Cover |
| 2 | E-8198 | Cord Holder |
| 3 | | 2 SW |
| 4 | | 2 x 6 CPS (ISO) |
| 5 | | 2 x 8 CPS (ISO) |
| 6 | | 2 W |
| 7 | EP-4892 | R/P Head |
| 8 | | 2 E-Ring |
| 9 | E-8633 | Pinch Roller Arm Ass'y |
| 10 | E-8791 | Head Lever Ass'y |
| 11 | S-2658 | Pinch Roller Spring |
| 12 | E-8632 | Spacer - Head Plate |
| 13 | | 2.6 x 5 CPS (ISO) |
| 14 | S-2657 | Adjust Spring |
| 15 | | 3 TB Lug |
| 16 | TVE-223 | Cord Holder |
| 17 | | 2.6 SW |
| 18 | | 2.6 x 5 CPS (ISO) |
| 19 | E-8198 | Cord Holder |
| 20 | | 26 SW |
| 21 | | 2.6 x 5 CPS (ISO) |
| 22 | S-2661 | Spring - Erase Head |
| 23 | | 2 E-Ring |
| 24 | E-8646 | Erase Head Ass'y |
| 25 | | 3 x 6 CRTS |
| 26 | E-8624 | Roller |
| 27 | | 2.5 E-Ring |
| 28 | EP-4893 | Main SW Ass'y |
| 29 | | 2.6 W |
| 30 | | 2.6 SW |
| 31 | | 2.6 x 5 CPS (ISO) |
| 32 | S-2662 | Spring - Record |
| 33 | E-8649 | Record Stopper |
| 34 | E-8800 | Record Lock Slider |
| 35 | S-2662 | Spring - Record |
| 36 | | 4 E-Ring |
| 37 | S-2664 | Spring - REC. Lock Plate |
| 38 | | 3 E-Ring |
| 39 | WA-579 | Washer |
| 40 | E-8651 | Record Lock Plate |
| 41 | | 3 E-Ring |
| 42 | WA-579 | Washer |
| 43 | E-8639 | F.F. Lever |
| 44 | | 3 E-Ring |
| 45 | E-8623 | Click Plate |
| 46 | S-2656 | Spring - C. Plate |
| 47 | | 3 E-Ring |
| 48 | S-2659 | Spring - REW. Arm |
| 49 | MD-3500 | Rewind Roller |

| REF. NO. | PART NO. | DESCRIPTION |
|----------|-----------|------------------------|
| 50 | | 2.5 E-Ring |
| 51 | E-8635 | REW. Arm Ass'y |
| 52 | | 3 E-Ring |
| 53 | EP-5018 | 3P Jack |
| 54 | | 2.6 x 6 CBS (ISO) |
| 55 | S-2673 | Contact Spring |
| 56 | | 26 x 5 CPS (ISO) |
| 57 | | 2.6 SW |
| 58 | E-8605 | Flywheel Support |
| 59 | E-8601 | Capstan Ass'y |
| 60 | WA-460 | Washer |
| 61 | E-8603 | Flywheel Bearing Ass'y |
| 62 | | 2 SW |
| 63 | | 2 x 4 CPS (ISO) |
| 64 | | 4 E-Ring |
| 65 | | 3 x 14 CBTS |
| 66 | E-8799 | Base Plate Ass'y |
| 67 | | 3 E-Ring |
| 68 | MD-1987 | Reel Flange Cap |
| 69 | MD-3497 | Reel Driver |
| 70 | S-2653 | Take Up Spring |
| 71 | MD-3495 | Supply Reel |
| 72 | WA-576 | Reel Washer |
| 73 | MD-3494 | Friction Wheel |
| 74 | WA-462 | Polywasher - Reel |
| 75 | E-8614 | Take Up Bearing Ass'y |
| 76 | WA-462 | Polywasher - Reel |
| 77 | E-8607 | Reel Plate Ass'y |
| 78 | MD-3496 | REW. Wheel |
| 79 | | 2 x 5 CPS (ISO) |
| 80 | E-6065 | Contact |
| 81 | MD-3613-2 | Bottom Cabinet |
| 82 | PR-4190 | Rating Label |
| 83 | E-8786-2 | Battery Door Ass'y |
| 84 | | 2.6 x 5 CPS (ISO) |
| 85 | | 2.6 W |
| 86 | | AMP. Ass'y |
| 87 | E-8560 | Transistor Holder |
| 88 | | 3 E-Ring |
| 89 | WA-578 | Washer 0.1t |
| 90 | | 2.5 E-Ring |
| 91 | E-8619 | Idler Wheel Complete |
| 92 | WA-579 | Washer 0.3t |
| 93 | E-8620 | Idler Lever Ass'y |
| 94 | S-2655 | Idler Spring |
| 95 | S-2660 | Spring - F.F. Slider |
| 96 | E-8793 | F.F. Slider |
| 97 | | 3 E-Ring |
| 98 | | 2 x 6 CPS |

ELECTRICAL PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | REF. NO. | PART NO. | DESCRIPTION |
|----------|----------|----------------------------------|----------|-----------|----------------------------|
| C1 | EP-4950 | CBSE 0.0047 μ FK | R26 | | RD 1/8 PLS 47 Ω K |
| C2 | | CEMW 1 μ F 25V | R27 | | " 15 K Ω K |
| C3 | | " 100 μ F 6V | R28 | | RD 1/8 PS 120 Ω K |
| C4 | | Electrolytic Capa. 1 μ F 25V | R29 | | RD 1/8 PLS 47 Ω K |
| C5 | | CEMW 33 μ F 6.3V | R30 | | RD 1/8 PS 100 K Ω K |
| C6 | | CKDE 500PFM | R31 | | " 470 Ω K |
| C7 | | CEMW 10 μ F 10V | VR1 | EP-5174 | RV16A2-C5 K Ω |
| C8 | | " 33 μ F 6.3V | VR2 | EP-5004 | RV10P3-B2 K Ω |
| C9 | | CBSE 0.03 μ FK | S1 | EP-4893 | Main Switch Ass'y |
| C10 | | CEMW 10 μ F 10V | S2 | EP-4915-1 | DM-60 Dynamic MIC Ass'y |
| C11 | | " 33 μ F 6.3V | S3 | EP-4162 | Slide SW 6P |
| C12 | | " 220 μ F 6.3V | L1 | LT-688 | Driver Trans |
| C13 | | CBSE 0.01 μ FM | L2 | LT-883H | OUT PUT Trans |
| C14 | | " " | L3 | RT-990 | OSC Coil |
| C15 | | CSTE 500 PFM | TH1 | | Thermistor D22A |
| C16 | | CBSE 0.03 μ FK | D1 | | Diode IN60 |
| C17 | | " 0.0022 μ FM | J1 | EP-5018 | 3P Jack |
| C18 | | CETW 33 μ F 6.3V | J2 | " | " |
| C19 | | CBSE 0.02 μ FM | J3 | " | " |
| Tr1 | | Transistor 2SB135 (E) | | | |
| Tr2 | | " " | | | |
| Tr3 | | " " | | | |
| Tr4 | | " 2SB136 (C) | | | |
| Tr5 | | " " | | | |
| Tr6 | | " 2SB135 (E) | | | |
| R1 | | RD 1/8 PLS 47 K Ω K | | | |
| R2 | | RD 1/8 PS 68 Ω K | | | |
| R3 | | " 1.5 K Ω K | | | |
| R4 | | RD 1/8 PLS 6.8 K Ω K | | | |
| R5 | | " 2.7 K Ω K | | | |
| R6 | | " 1.2 K Ω K | | | |
| R7 | | RD 1/8 PS 1.2 K Ω K | | | |
| R8 | | RD 1/8 PLS 56 K Ω K | | | |
| R9 | | 6.8 K Ω K | | | |
| R10 | | 4.7 K Ω K | | | |
| R11 | | 68 K Ω K | | | |
| R12 | | 10 K Ω K | | | |
| R13 | | 100 Ω K | | | |
| R14 | | RD 1/8 PS 10 Ω K | | | |
| R15 | | RD 1/8 PLS 1.5 K Ω K | | | |
| R16 | | " 56 Ω K | | | |
| R17 | | " 3.9 K Ω K | | | |
| R18 | | RD 1/8 PS 220 Ω K | | | |
| R19 | | RW 1/2 PS 1 Ω K | | | |
| R20 | | RD 1/8 PS 330 Ω K | | | |
| R21 | | 47 Ω K | | | |
| R22 | | 39 K Ω K | | | |
| R23 | | RD 1/8 PLS 100 K Ω K | | | |
| R24 | | " 22 K Ω K | | | |
| R25 | | RD 1/8 PS 10 Ω K | | | |

| REF. NO. | PART NO. | DESCRIPTION |
|----------|-----------|----------------------|
| 99 | | 2 SW |
| 100 | EP-5019-1 | Dynamic MIC. Ass'y |
| 101 | E-9039 | Battery Cushion |
| 102 | | 2.6 x 5 CPS (ISO) |
| 103 | | 2.6 SW |
| 104 | MD-3492 | Main Belt |
| 105 | | 2 x 6 CPS (ISO) |
| 106 | E-8600 | Motor Pulley |
| 107 | 14/120 | D.C. Motor |
| 108 | | 2.6 x 5 CPS (ISO) |
| 109 | | 2.6 SW |
| 110 | E-8794 | V.R. Holder Ass'y |
| 111 | MD-3693-2 | Volume Knob |
| 112 | | 2 x 5 CPS (ISO) |
| 113 | | 2.6 x 5 CPS (ISO) |
| 114 | | 2.6 SW |
| 115 | E-7411 | Meter Sheet |
| 116 | E-8802 | V U Meter Holder |
| 117 | EP-4451 | V U Meter |
| 118 | | 3 x 6 CRTS |
| 119 | E-4860 | Fixing Piece |
| 120 | SP-1364 | 66RG03 Speaker Ass'y |
| 121 | MD-3622-2 | F.F. REC. Button |
| 122 | MD-3623-1 | Control Button |
| 123 | MD-3622-2 | F.F. REC. Button |
| 124 | TVE-223 | Cord Holder |
| 125 | | 2.6 SW |
| 126 | | 2.6 x 5 CPS (ISO) |
| 127 | E-8797 | Top Cabinet Ass'y |

SPEAKER (8 Ω)
SP-1364

J3
EARPHONE JACK
EP-5018

DC MOTOR
14/120 H

J1
AC ADAPTOR JACK
EP-5018

S1
MAIN SW
EP-4893

BATTERY
UM-1 x 4

CIRCUIT BOARD
E-8666

LEVEL / BATTERY
METER
EP-4451

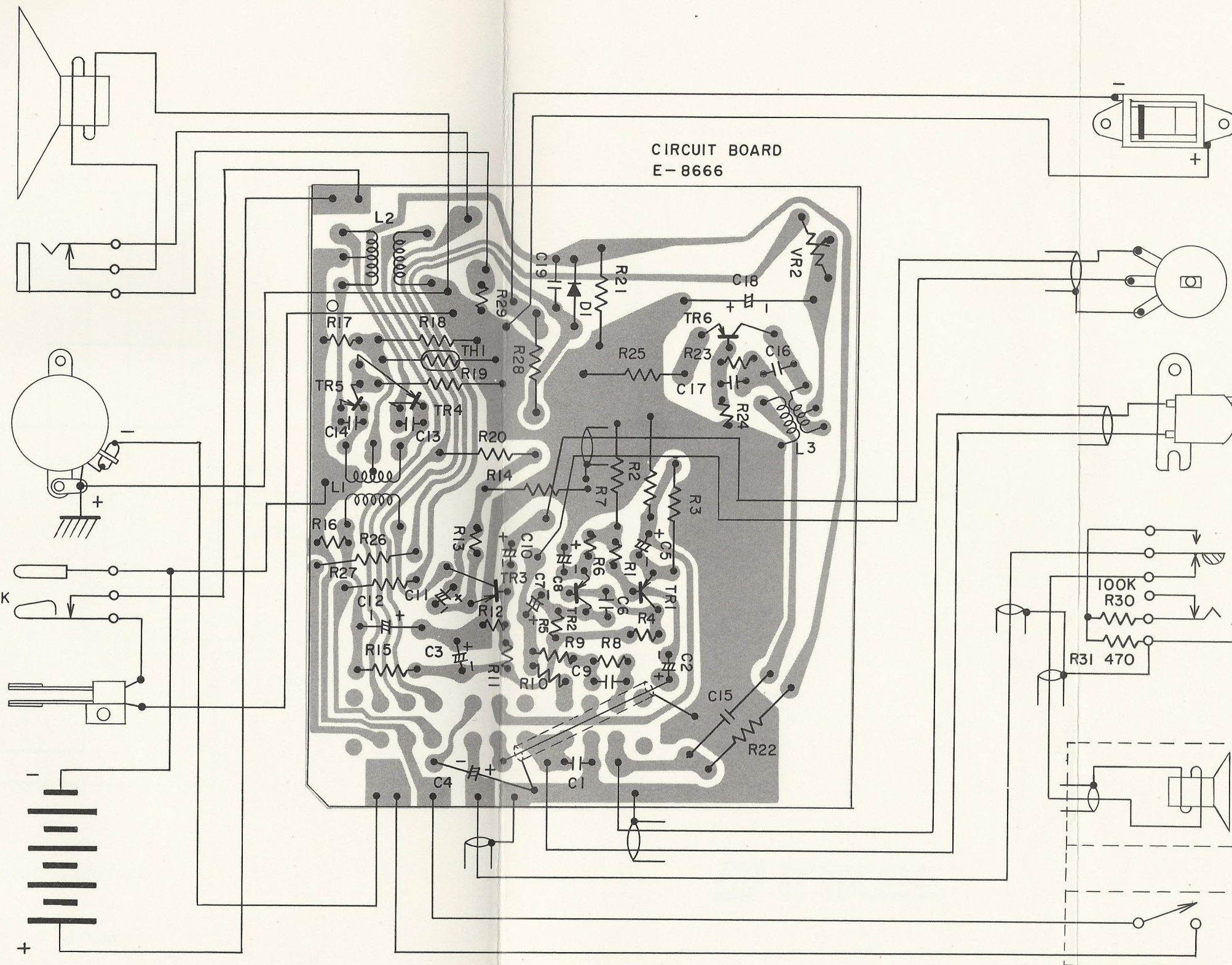
VR1
VOLUME
EP-5174

R/P HEAD
EP-4892

J2
AUX JACK
EP-5018

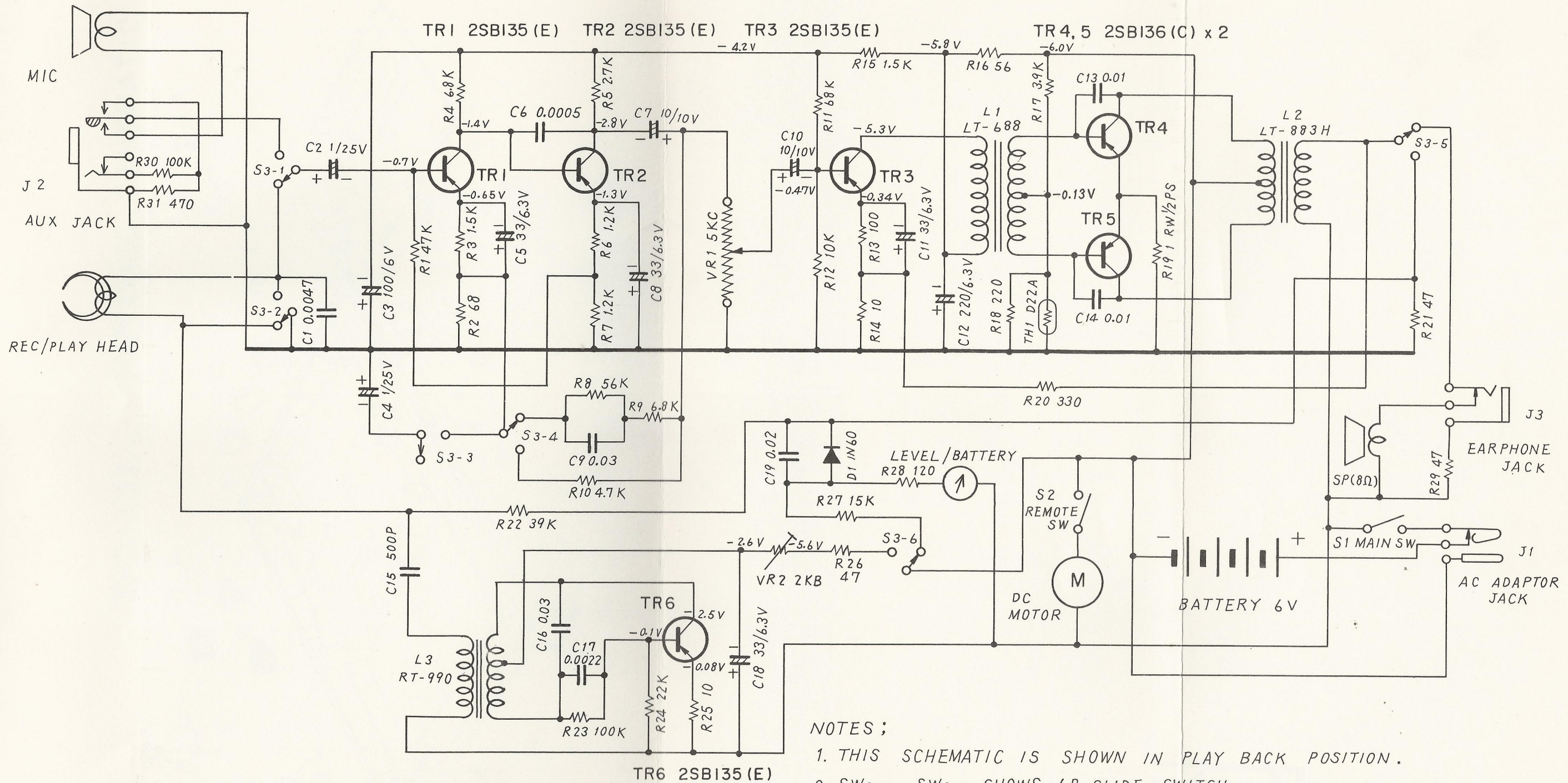
MICROPHONE
(200 Ω)
EP-4915-1

S2
REMOTE SW



MODEL TRC-131

CIRCUIT SCHEMATIC



NOTES ;

1. THIS SCHEMATIC IS SHOWN IN PLAY BACK POSITION.
2. SW3-1 ~ SW3-6 SHOWS 6P SLIDE SWITCH.
3. UNLESS OTHERWISE SPECIFIED: RESISTANCE IN OHMS, RESISTORS 1/8 WATT, CAPACITANCE IN MICROFARADS.
4. CAPACITOR C4 $1\mu F \pm 50\%$

