

**Radio Shack®**

# Service Manual

60-2398

## **ROBIE SR.**

Catalog Number: 60-2398



CUSTOM MANUFACTURED FOR RADIO SHACK, A DIVISION OF TANDY CORPORATION

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## SPECIFICATIONS

### MAIN BODY

| ITEM   | NOMINAL                               | LIMIT                        |
|--|---------------------------------------|------------------------------|
| POWER REQUIREMENT  | DC 6V RECHARGEABLE BATTERY            |                              |
| BATTERY LIFE   | 4 HOURS AFTER RECHARGING OF 14 HOURS. |                              |
| CURRENT DRAIN (AT 6.0V)                                      |                                       |                              |
| STAND-BY   | 80 mA                                 | 115 mA                       |
| GOING FORWARD AND LIGHT ON TAPE PLAY BACK (ON RADIO CONTROL) | 860 mA                                | 1.2 A                        |
| MINIMUM OPERATING VOLTAGE (REMARK 1)                         | 5.0 V                                 | 5.5 V                        |
| 6 FEET RUNNING TOLERANCE FORWARD                             | 0°                                    | ± 15°                        |
| 6 FEET RUNNING TOLERANCE BACKWARD                            | 0°                                    | ± 15°                        |
| STORAGE TEMPERATURE  | -                                     | -40F~159.8F<br>(-40°C~+71°C) |
| OPERATING TEMPERATURE  | -                                     | 23F~107.6F<br>(-5°C~+42°C)   |

**(REMARK 1)**

In case under 4.9V, the voltage on the motor-driver is to drive a motor. The lowest voltage of motor-driver should be over 5.0 V.

## CASSETTE PART

| ITEM  |             | NOMINAL   | LIMIT      |
|---|-------------|-----------|------------|
| 10% T.H.D. OUTPUT POWER   |             | 229 mW    | 170mW      |
| MIC INPUT VOLTAGE REC/PLAY<br>THE INPUT dB WHICH IS NECESSARY TO MAKE<br>RECORDING AS SAME dB AS TEAC MTT-118.<br>0dB = 0.775 V |             | -54 dB    | ± 4 dB     |
| ERASE RATIO   |             | 31 dB     | 27 dB      |
| S/N RATIO   |             | 32 dB     | 27 dB      |
| WOW & FLUTTER   |             | WRMS 0.3% | WRMS 0.4%  |
| TAPE SPEED  | 4.75 cm/sec | —         | ± 4%       |
| TORQUE  | PLAY        | 50 g-cm   | 30~75 g-cm |
|   | FF          | 70 g-cm   | 50 g-cm    |
|   | REW         | 70 g-cm   | 50 g-cm    |
| (MEASURE WITH A CASSETTE TORQUE METER)  |             |           |            |
| WINDING TIME  | FF          | 120 sec   | 140 sec    |
|   | REW         | 120 sec   | 140 sec    |
| (MEASURE WITH A STOP WATCH USING C-60 TAPE)   |             |           |            |
| FREQUENCY RESPONSE [1kHz = 0dB]   | 0.2 kHz     | -1.5 dB   | ± 3.0 dB   |
|   | 6.0 kHz     | +1.0 dB   | ± 5.0 dB   |

NOTE: Current drain at 6.0 V.

## REMOTE CONTROL

| ITEM                                 |  | NOMINAL   | LIMIT                        |
|--------------------------------------|--|---|------------------------------|
| POWER REQUIREMENT                    |  | DC 6V FOUR AA CELLS   |                              |
| BATTERY LIFE                         |  | 20 HOURS  |                              |
| STAND-BY                             |  | 35 mA   | 50 mA<br>(40 mA FOR TAL)     |
| FORWARD KEY ON                       |  | 30 mA   | 42 mA<br>(35 mA FOR TAL)     |
| MINIMUM VOLTAGE                      |  | 4.2 V   | 4.6 V                        |
| STORAGE TEMPERATURE                  |  | —   | -40F~159.8F<br>(-40°C~+71°C) |
| OPERATING TEMPERATURE                |  | —   | 23F~107.6F<br>(-5°~+42°C)    |
| CONTROL RANGE (IN DOOR)              |  | 9 m*  | 5 m*                         |
| TRANSMITTING DEVICE                  |  | RADIO FREQUENCY<br>AM 49,860 MHz FOR USA, CANADA<br>AM 40,680 MHz FOR TAL<br>AM 27,145 MHz FOR EC |                              |
| MIC INPUT LEVEL 1 kHz MODULATION 50% |  | -40.0 dB  | ± 5.0 dB                     |

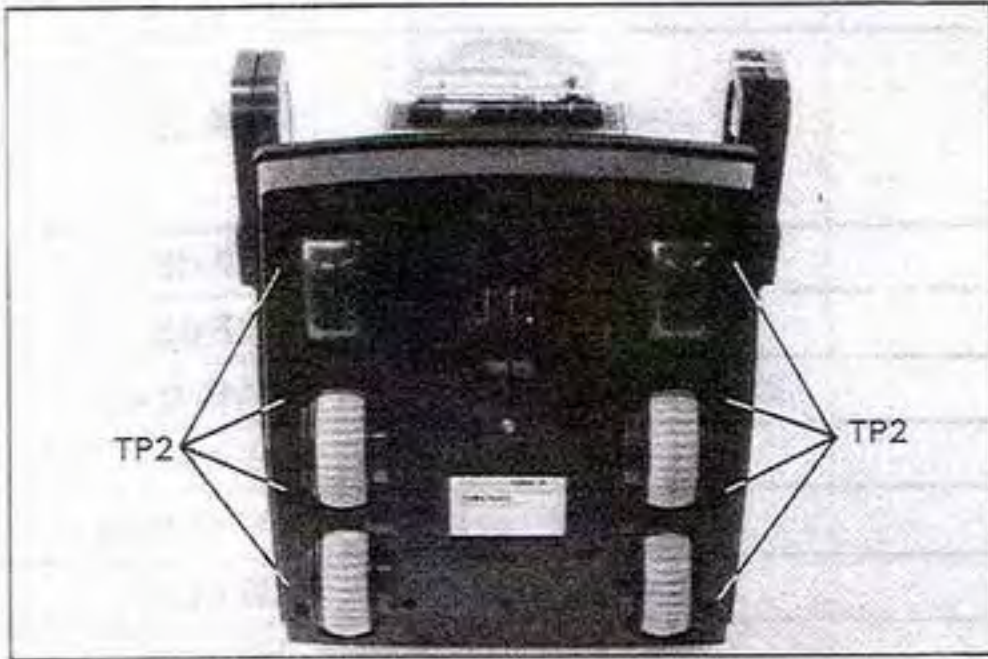
\* ANY DATA HAS BEEN NOT RECORDED AT THE OUTDOOR DUE TO DAMAGE OF GEAR BOX BY USING IT OUTDOOR. (UNAVAILABLE TO USE IT OUTDOOR)

NOTE: [0 dB = 0.775 V]

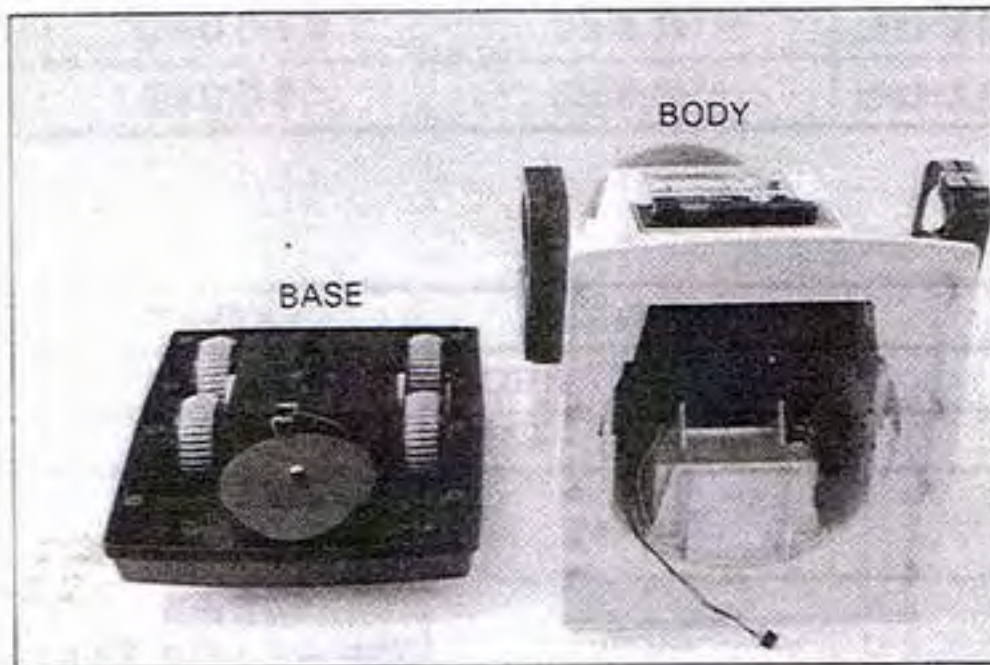
NOTE: Nominal specs represent the design specs; all units should be able to approximate these — some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; in no case should a unit perform to less than within any limit spec.

## DISASSEMBLY

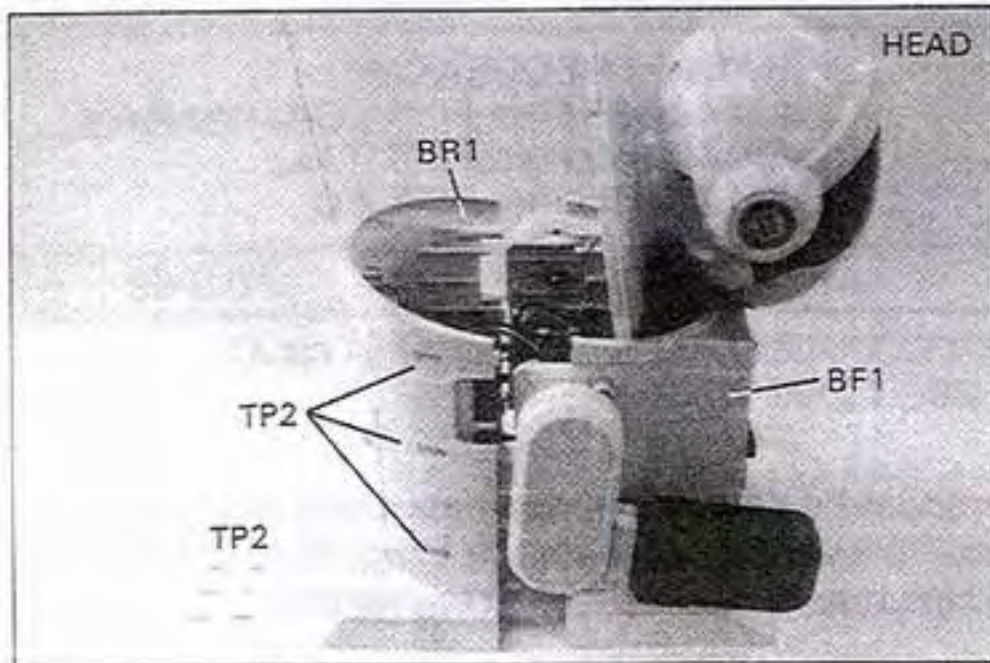
[Figure 1]  
Remove 8 screws (TP2) from the base.



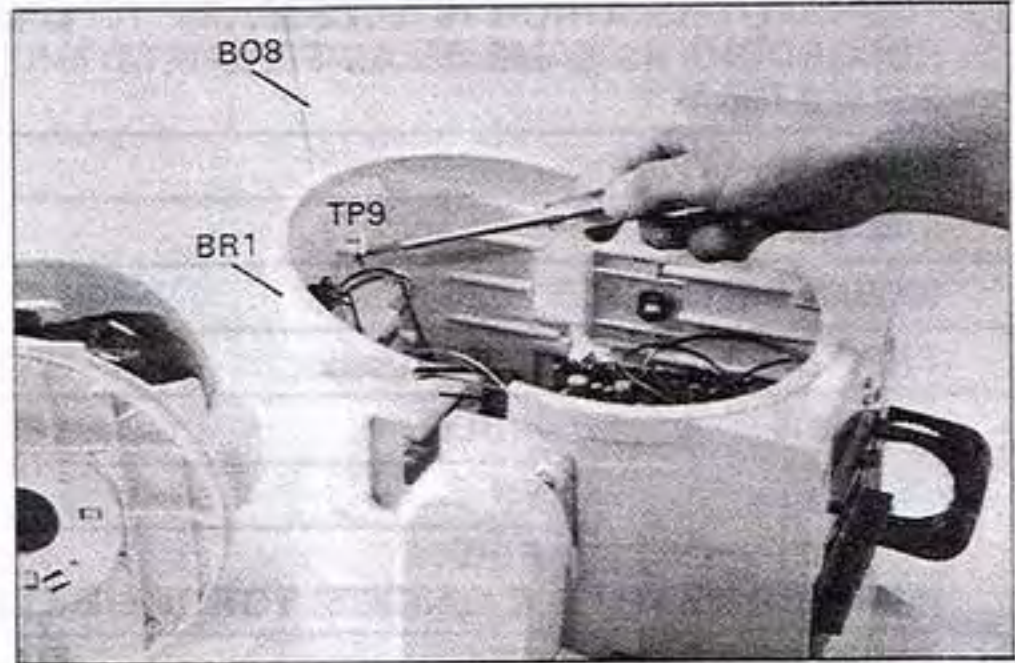
[Figure 2]  
Separate the body from the base by detaching the connector mounted on the base.



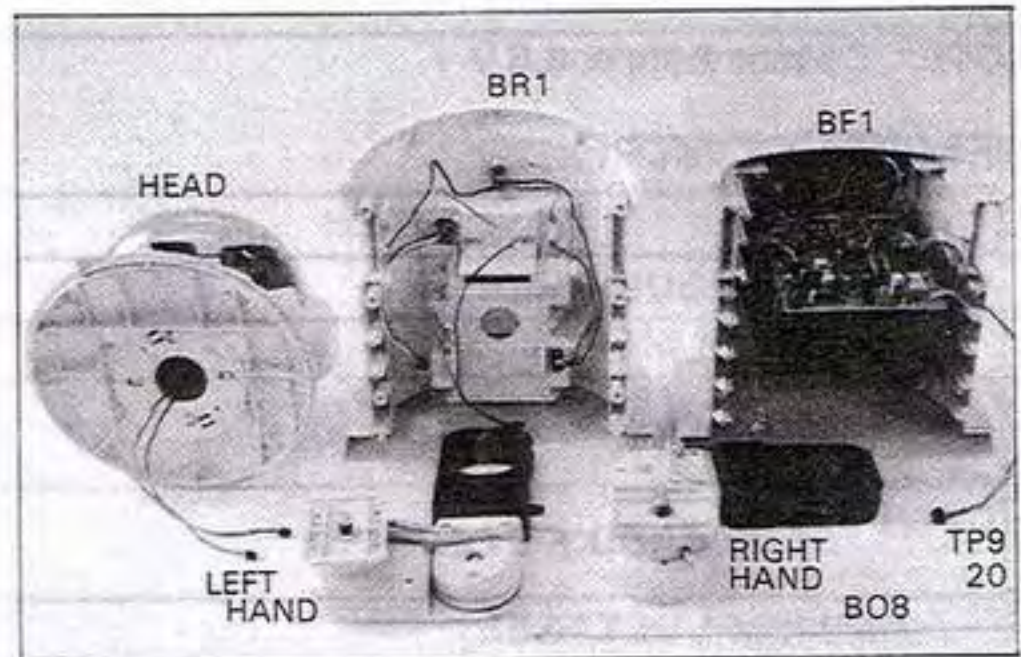
[Figure 3]  
Remove 6 screws (TP2) from the Rear Body (BR1), and separate the Front Body (BF1), Rear Body (BR1), and Head. Remove the connectors from the head and the body.



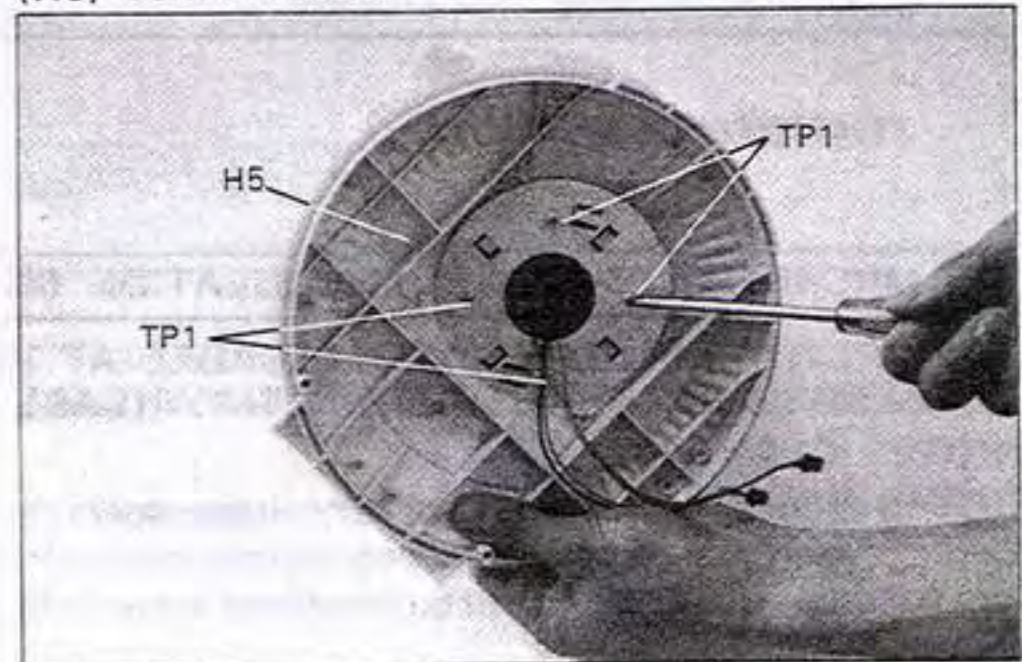
[Figure 4]  
Remove one screw (TP9) that connects the Receiving Antenna (BO8) to Rear Body (BR1), and separate the antenna.



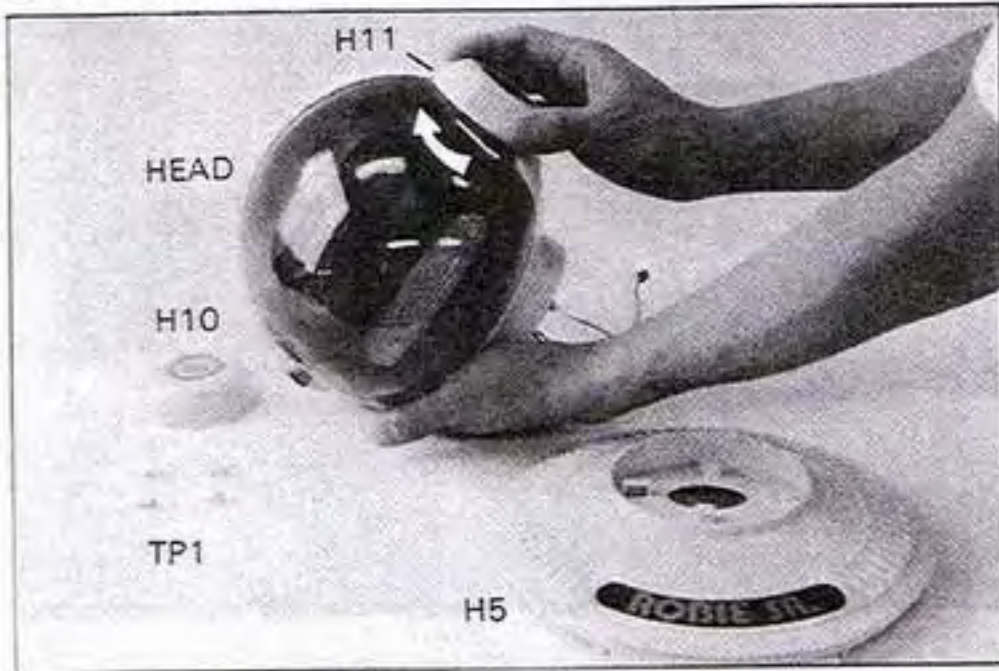
[Figure 5]  
The base is now separated into Front Body (BF1), Rear Body (BR1), head, right hand, left hand, and Receiving Antenna (BO8).



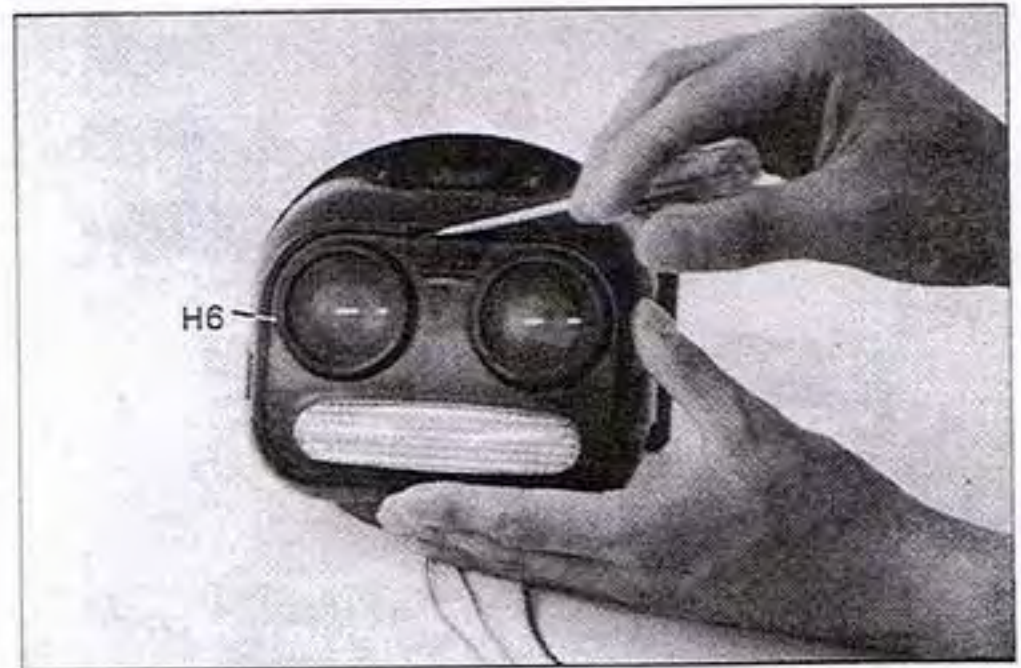
[Figure 6]  
The Breast is attached to the head. Remove 4 screws (TP1) from the bottom of Breast (H5) and lift up the 2 hooks with a screwdriver to separate Breast (H5) from the head.



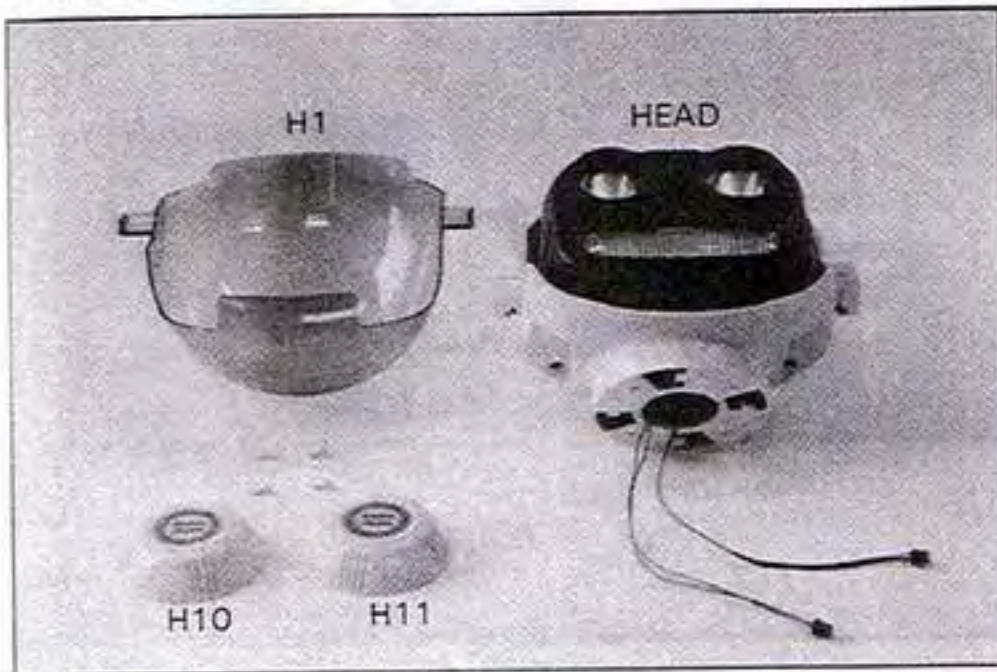
[Figure 7]  
Remove the Right Ear (H10) and Left Ear (H11) from the head by turning them 45 degree toward back of the head.



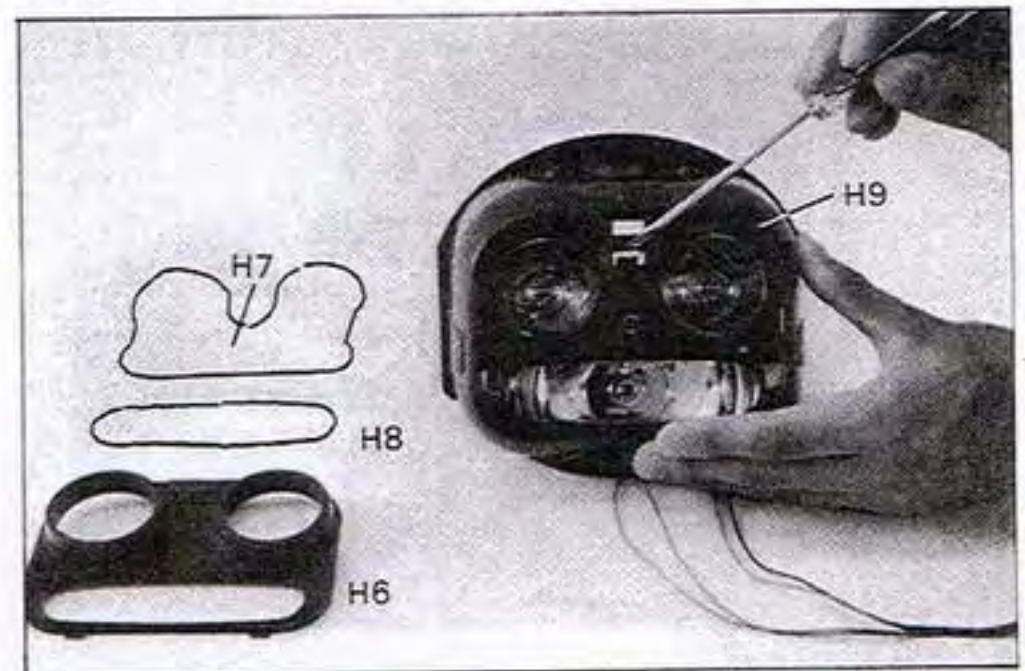
[Figure 10]  
Remove the Face Front (H6) with a screwdriver.



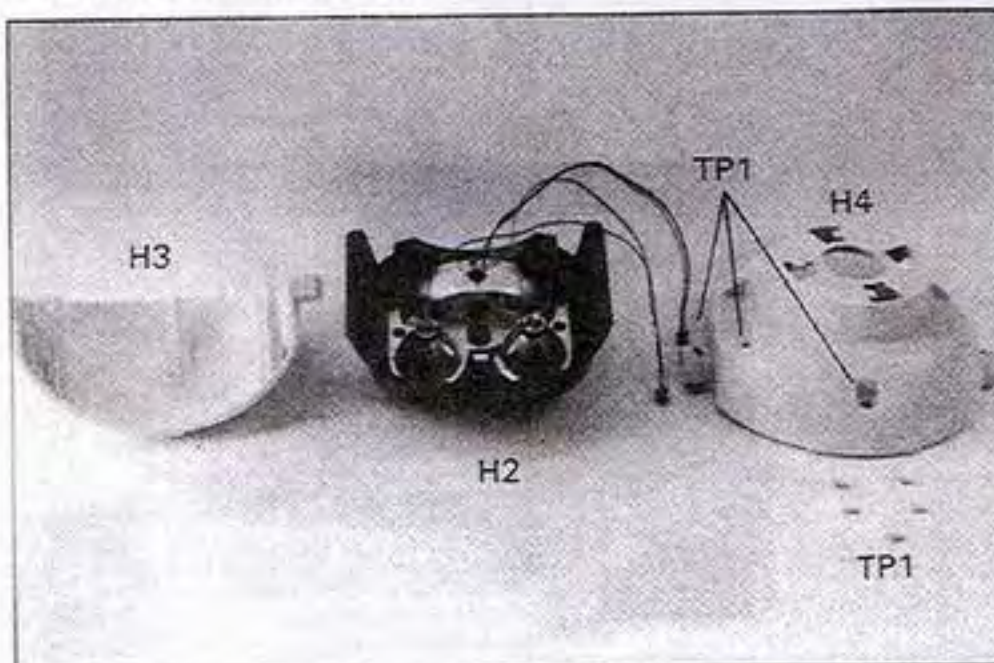
[Figure 8]  
Remove Face Cover (H1) from the head.



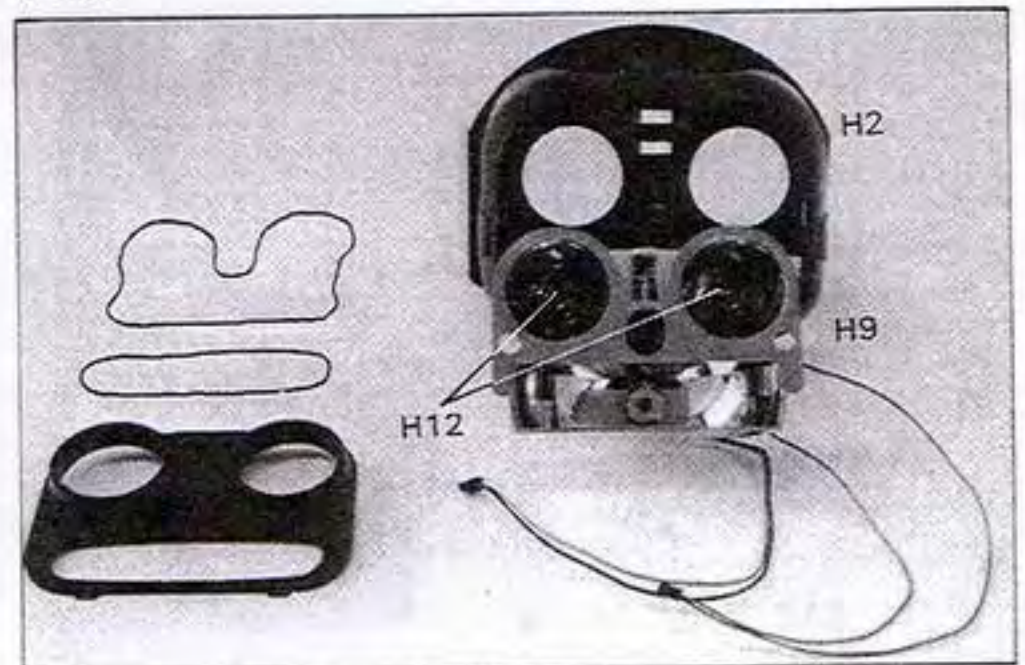
[Figure 11]  
Remove Reflector (H9) from Face (H2) with a screwdriver. It separates into the Face Front (H6), Lens (H7), and Light Diffuser (H8).



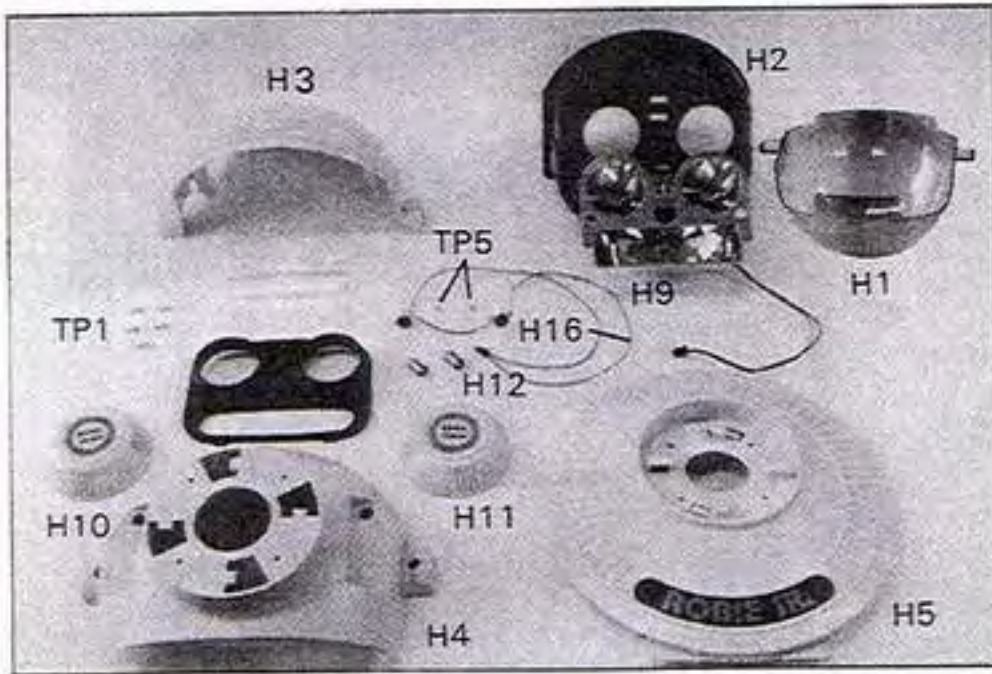
[Figure 9]  
Remove 5 screws (TP1) from the bottom of the head. It separates into the Face (H2), Upper Head (H3), and Lower Head (H4).



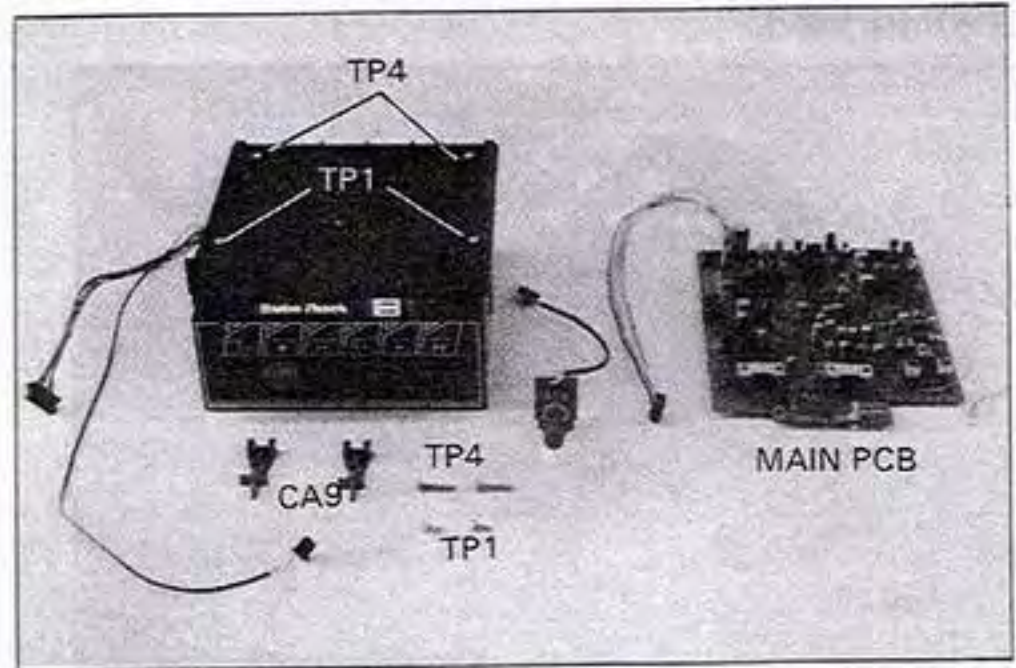
[Figure 12]  
Remove 2 Small Lamps (H12) from the Reflector (H9).



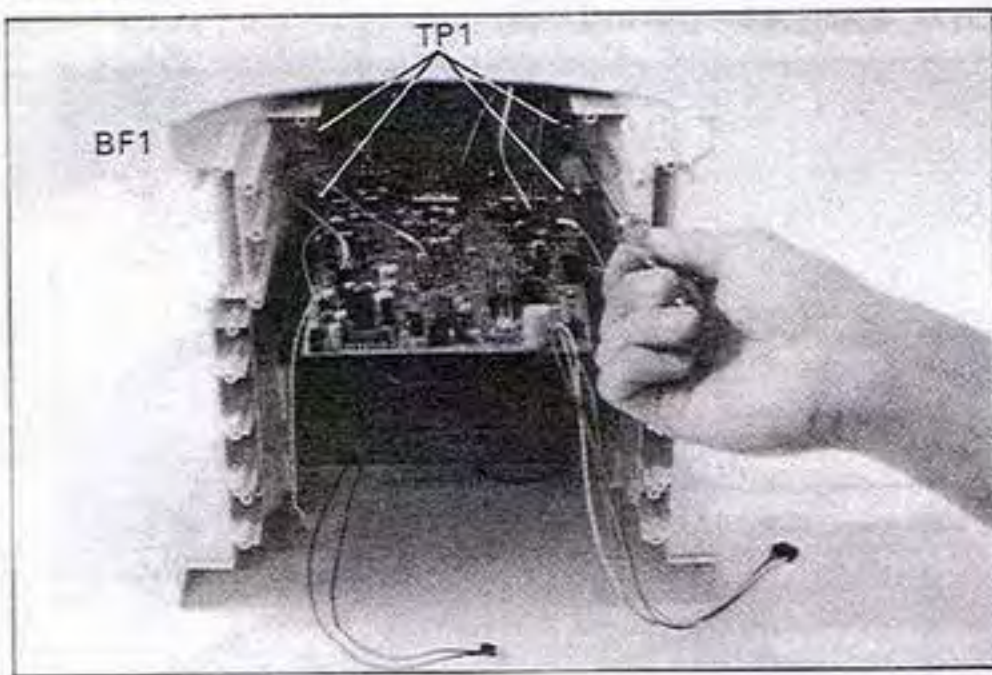
[Figure 13]  
Head parts.



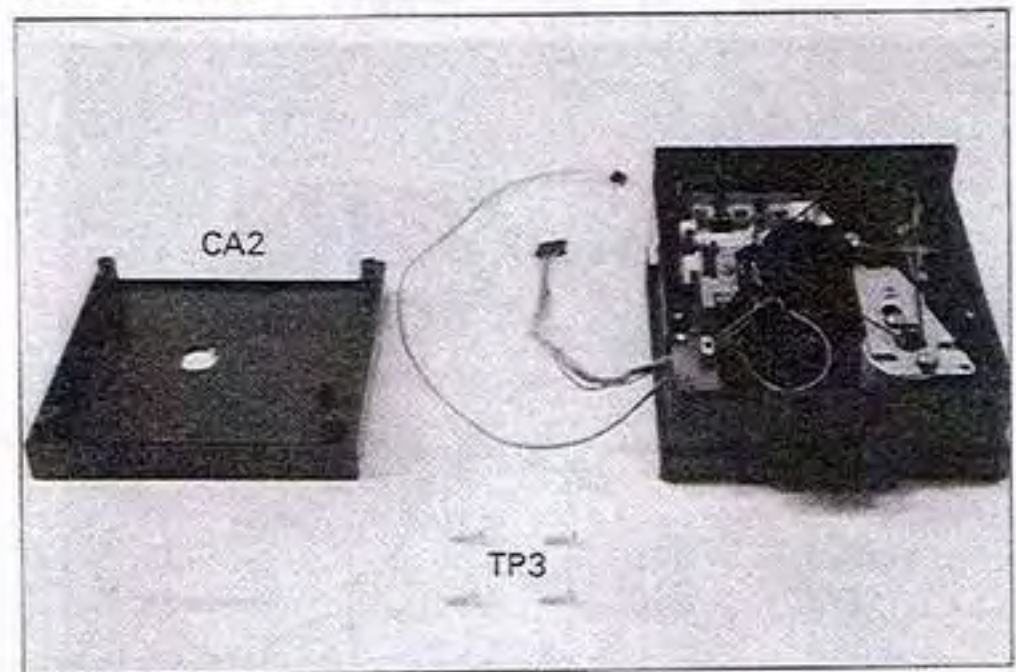
[Figure 16]  
Separate the Main PCB from the cassette by removing 2 screws (TP1) and the other 2 screws (TP4).



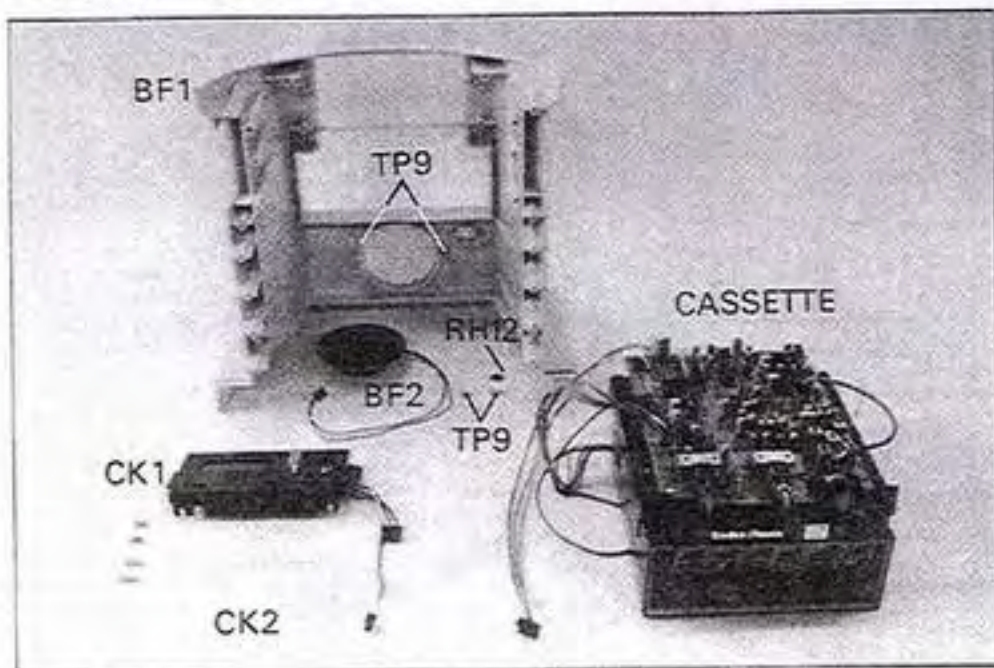
[Figure 14]  
Remove 4 screws (TP1) from the inside of Front Body (BF1) to detach the clock, Main PCB, and the cassette sections.



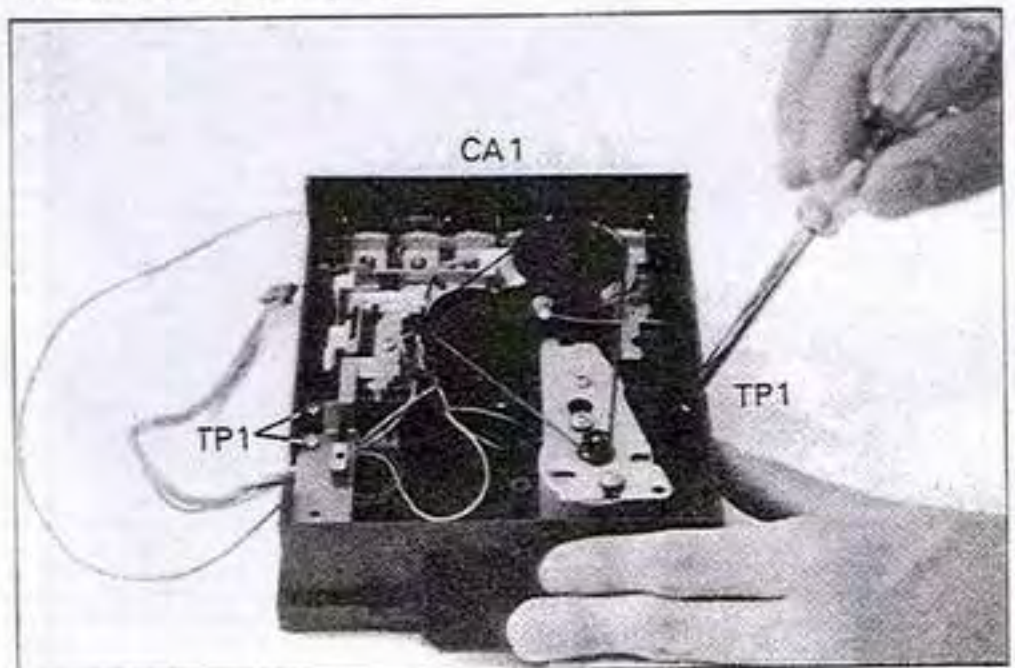
[Figure 17]  
Remove 4 screws (TP3) from the bottom of the cassette case, and detach Case Bottom (CA2).



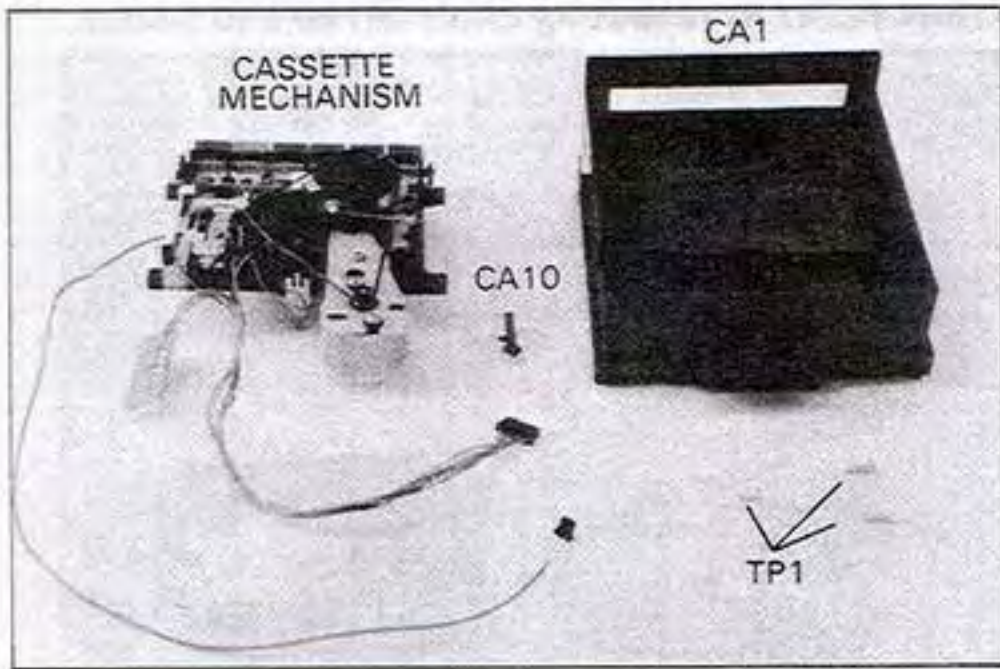
[Figure 15]  
Remove 2 screws (TP9) from the inside of Front Body (BF1) to detach Speaker (BF2).



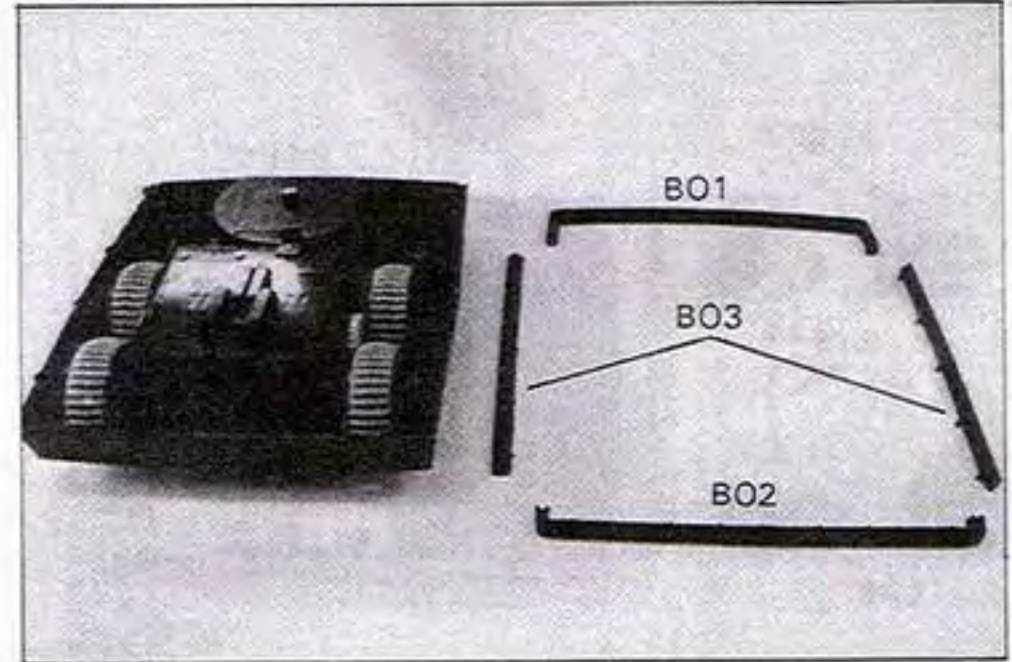
[Figure 18]  
Remove 3 screws (TP1) mounting the cassette mechanism to the case.



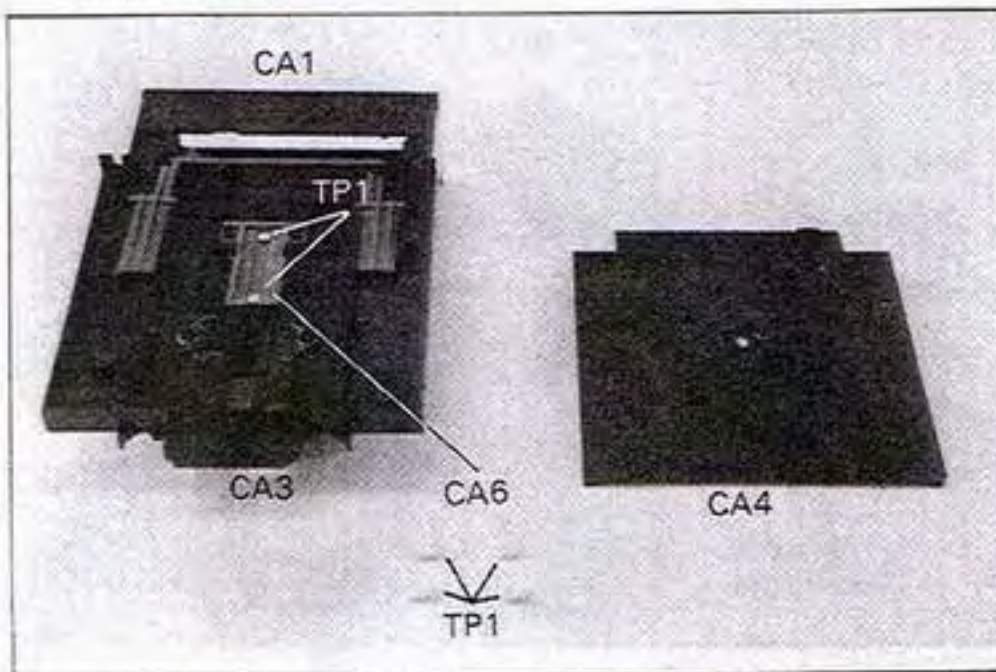
[Figure 19]  
Take out the cassette mechanism and Eject Cam (CA10).



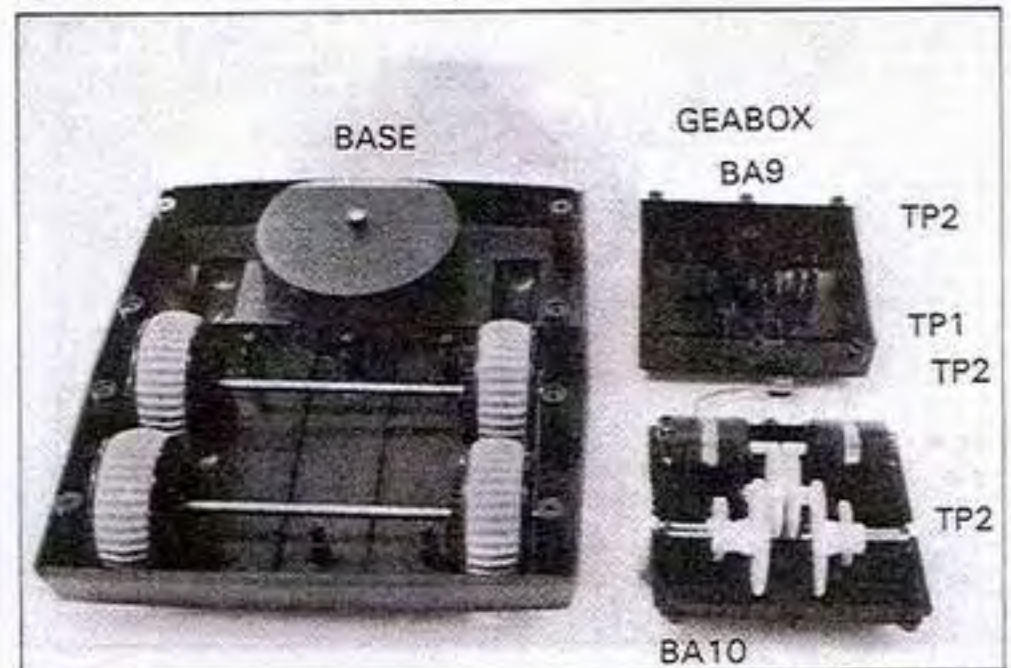
[Figure 22]  
Remove the 4 Bumpers (BO1) (BO2) (BO3) from the Base.



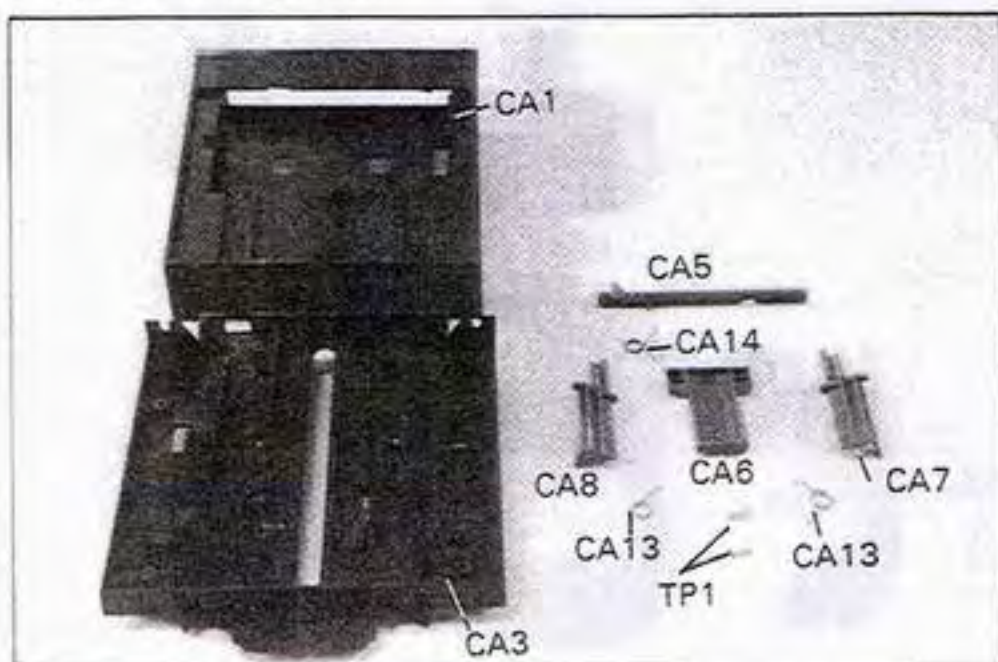
[Figure 20]  
Detach Tape Recorder Cover (CA4) by removing 4 screws (TP1). Remove 2 screws (TP1) mounting Trolley (CA6).



[Figure 23]  
Remove 6 screws (TP2) and 1 screw (TP1) from the base, and take out the gear box.



[Figure 21]  
Tape recorder parts.



[Figure 24]  
Gear box parts.

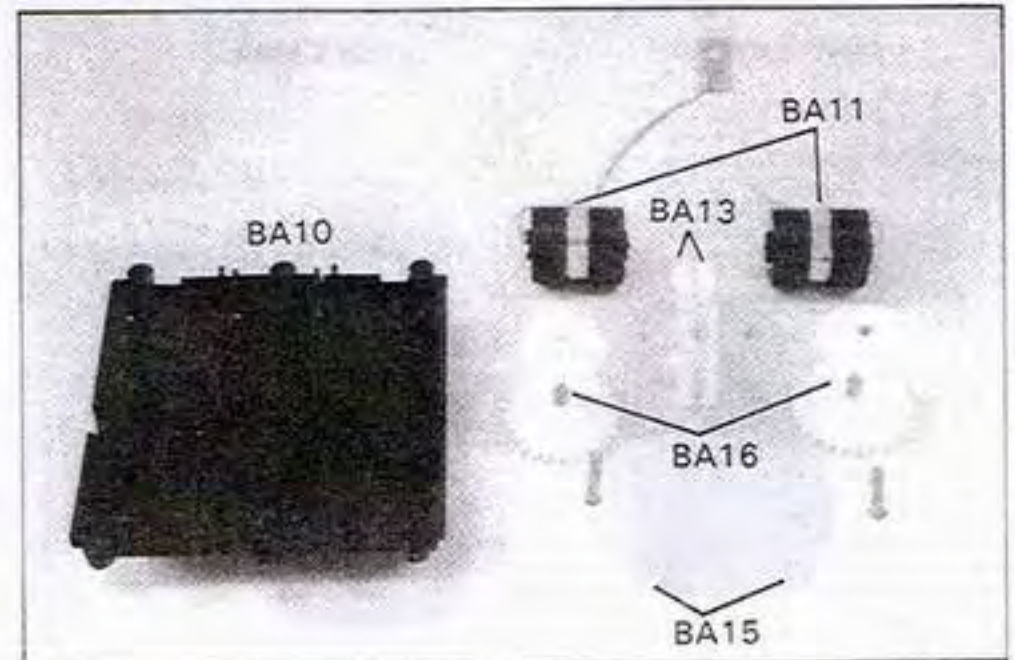
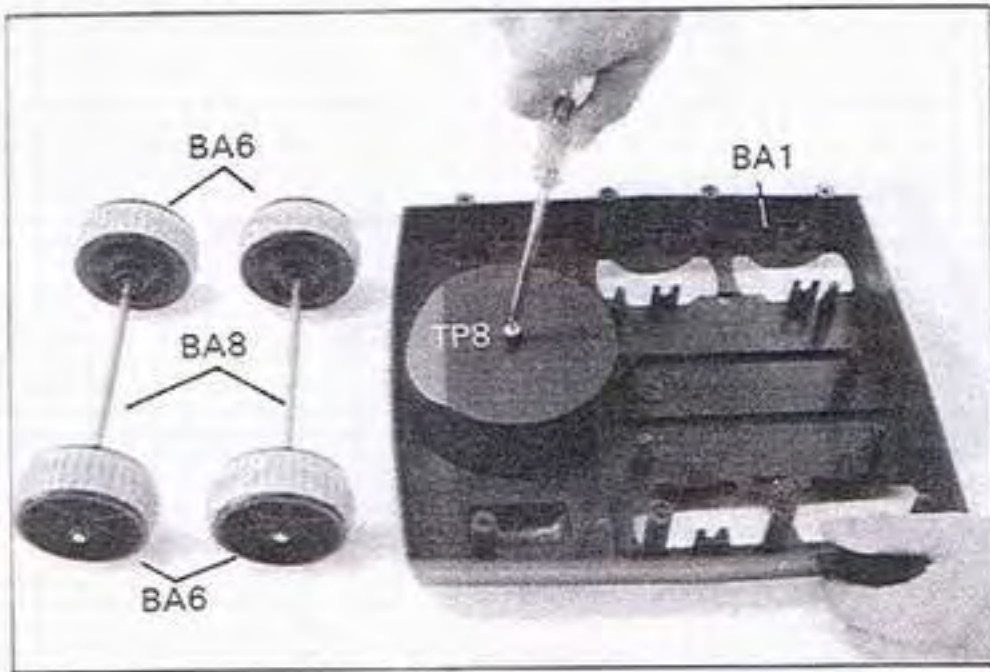
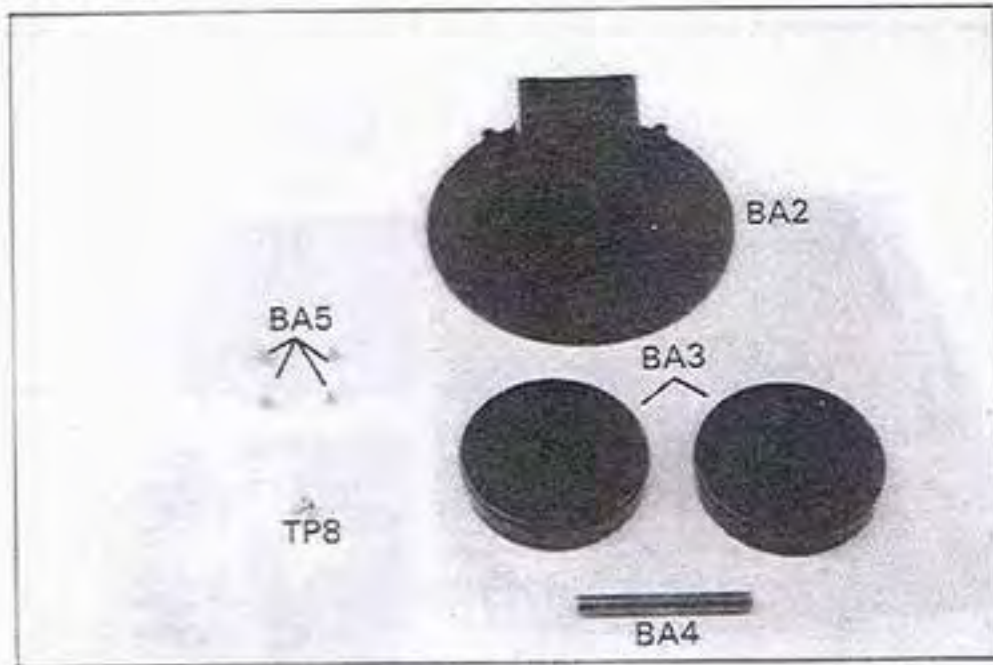


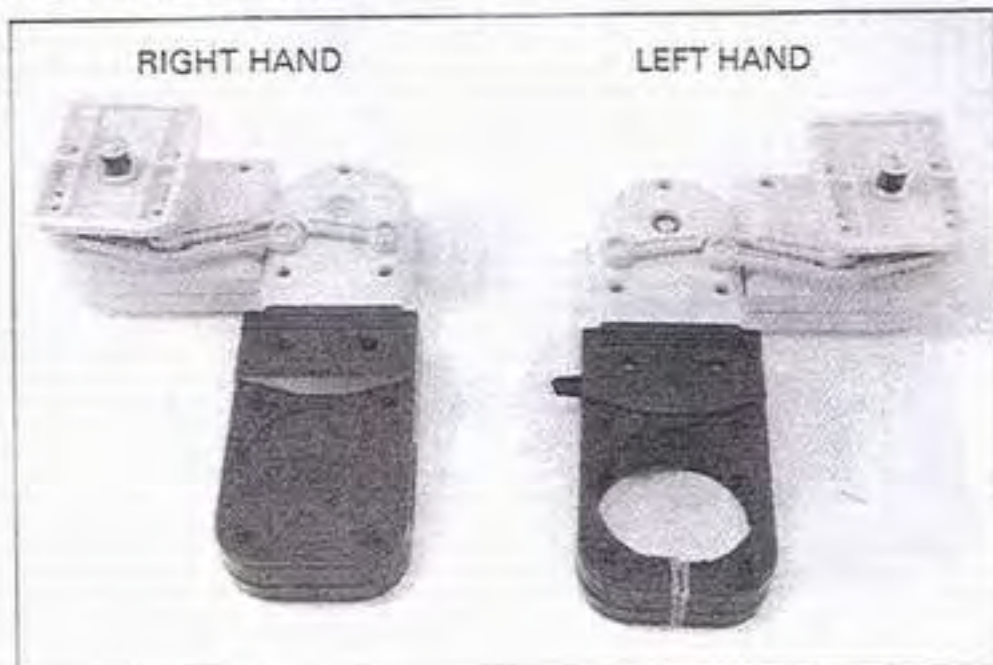
Figure 25]  
Remove 1 screw (TP8) from Base (BA1) and remove  
Caster (BA2).



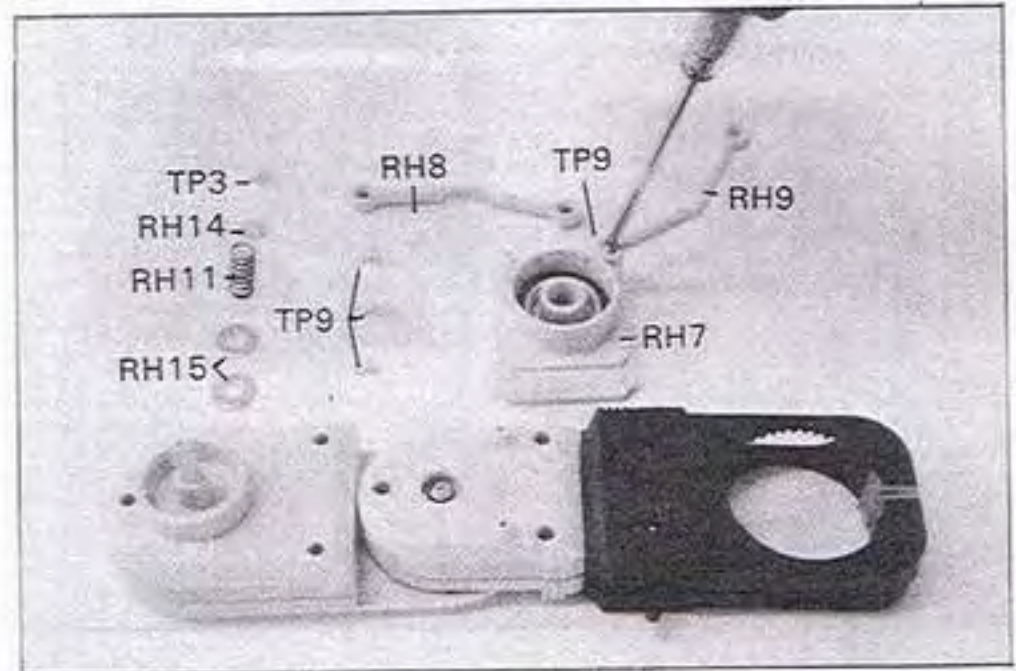
[Figure 26]  
Caster parts.



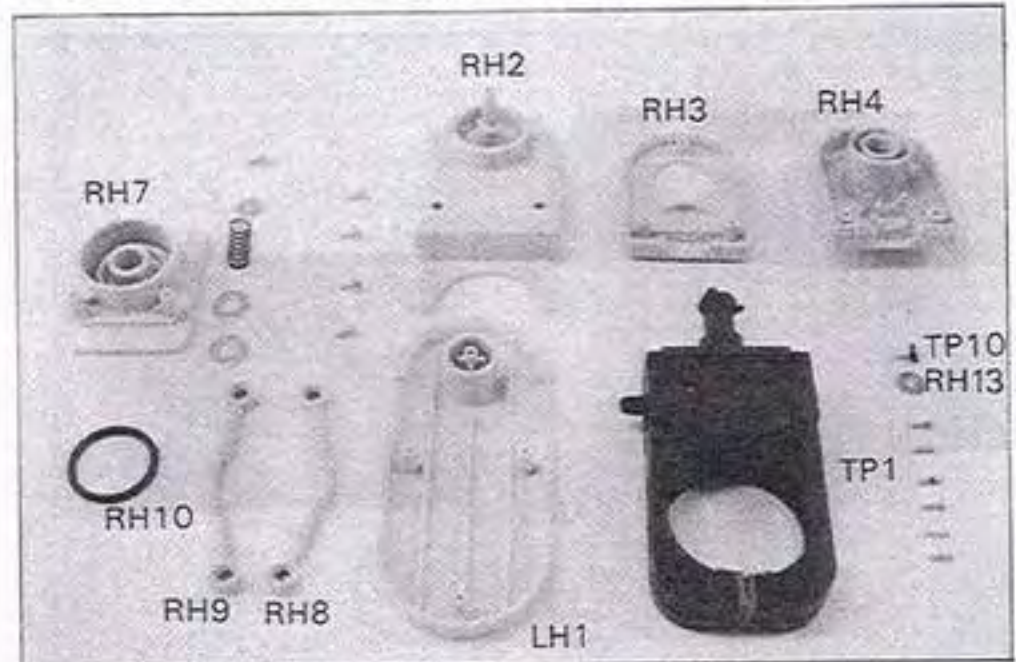
[Figure 27]  
Right and left hands.



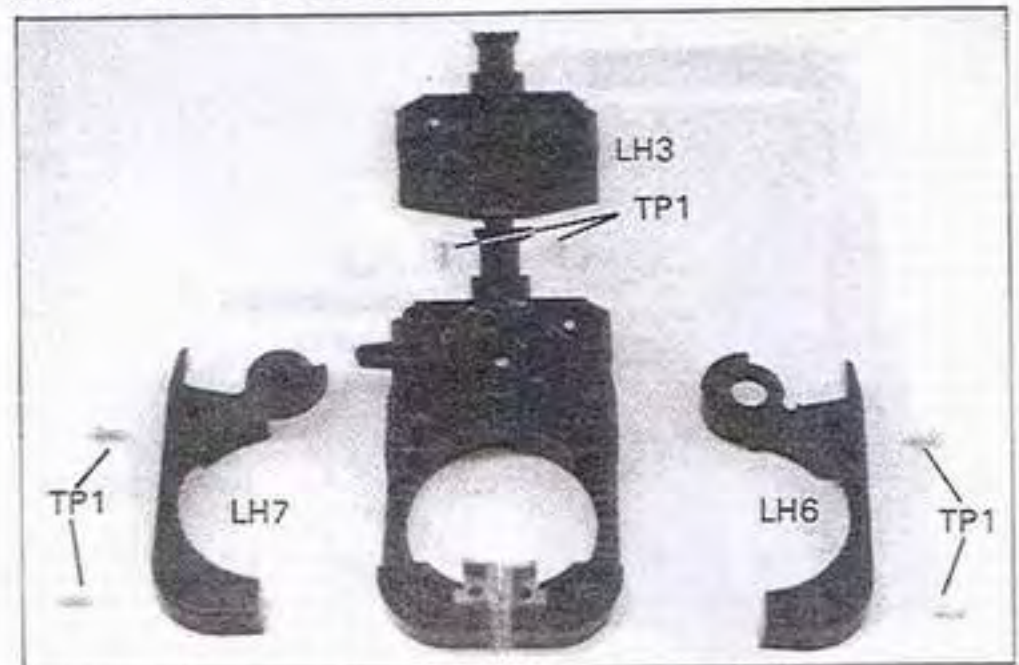
[Figure 28]  
Detach the Shoulder (RH7) by removing 1 screw  
(TP3) and 2 screws (TP9). Then, remove the other  
2 screws (TP9) mounting Links (RH8) and (RH9).



[Figure 29]  
Remove 1 screw (TP9), 6 screws (TP1), and (TP10)  
from Left Hand, and separate into these parts.

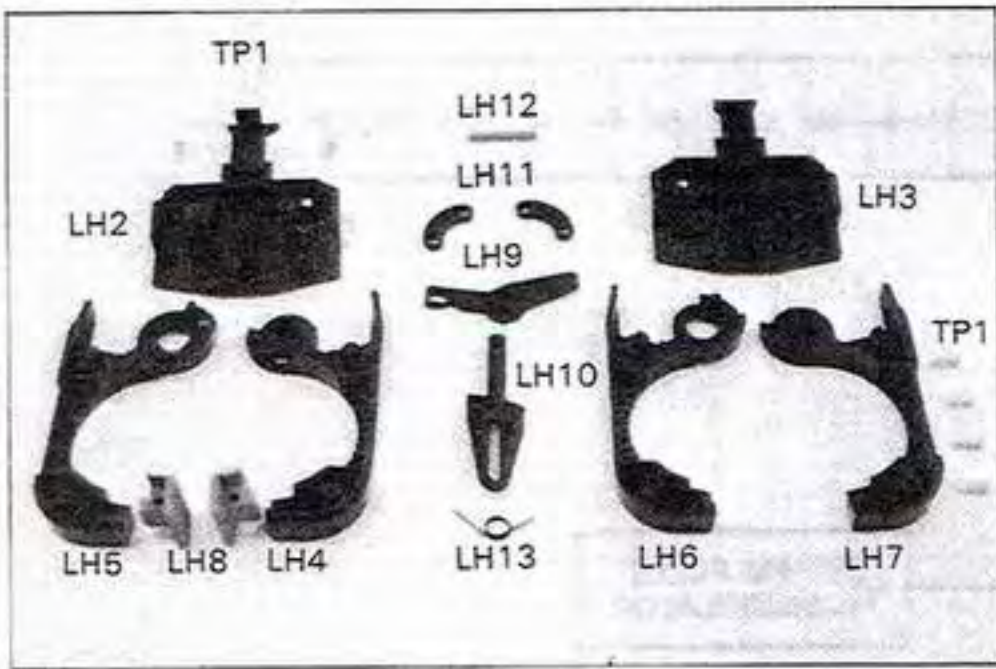


[Figure 30]  
Remove 6 screws (TP1) from Left Finger, and  
separate into these parts.

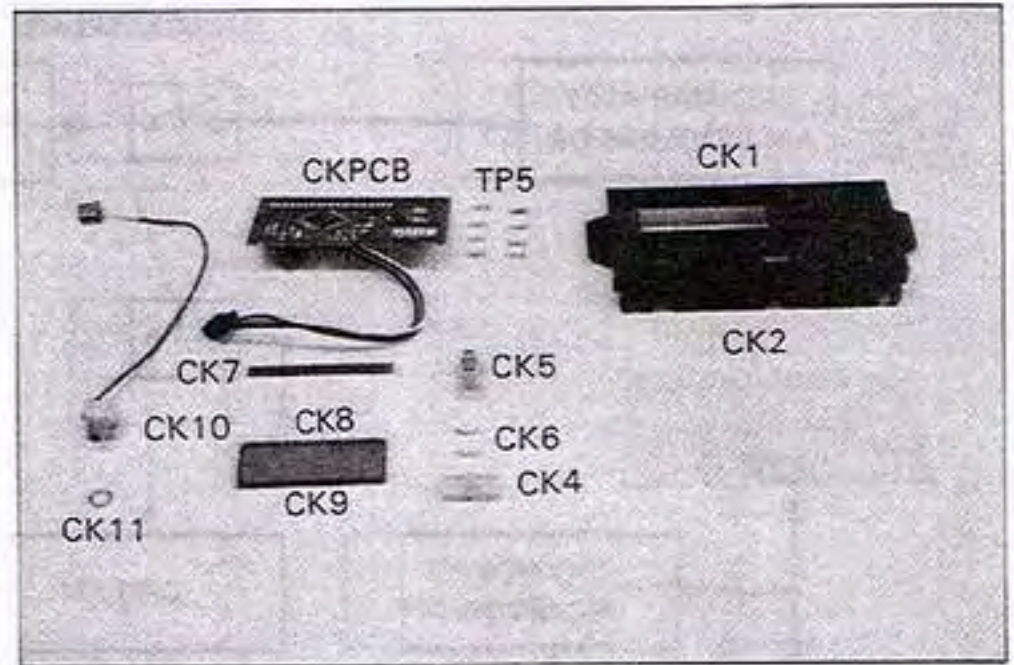




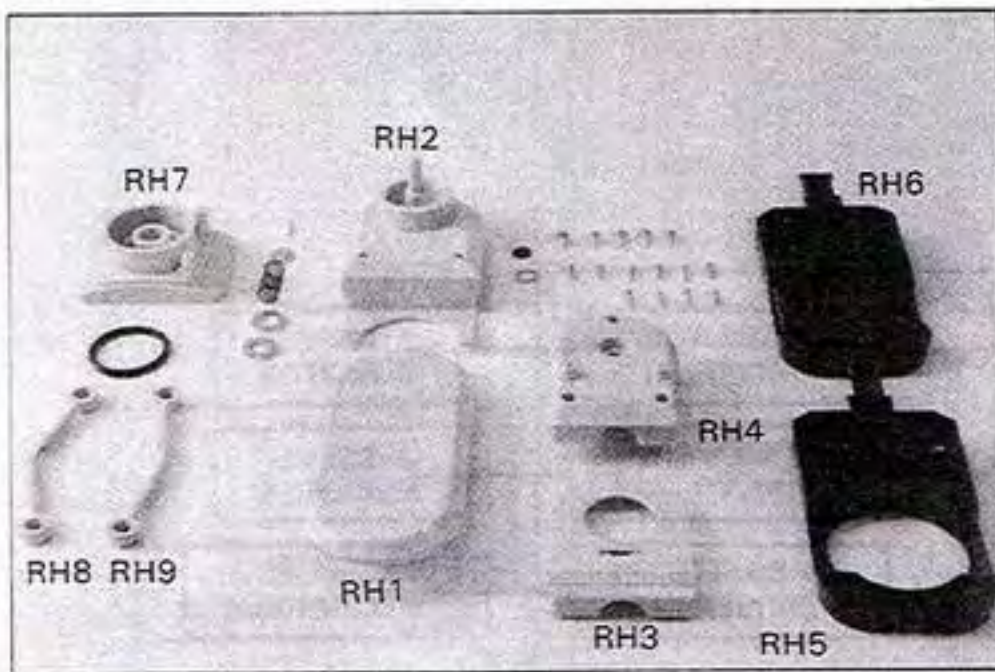
[Figure 31]  
Left finger parts.



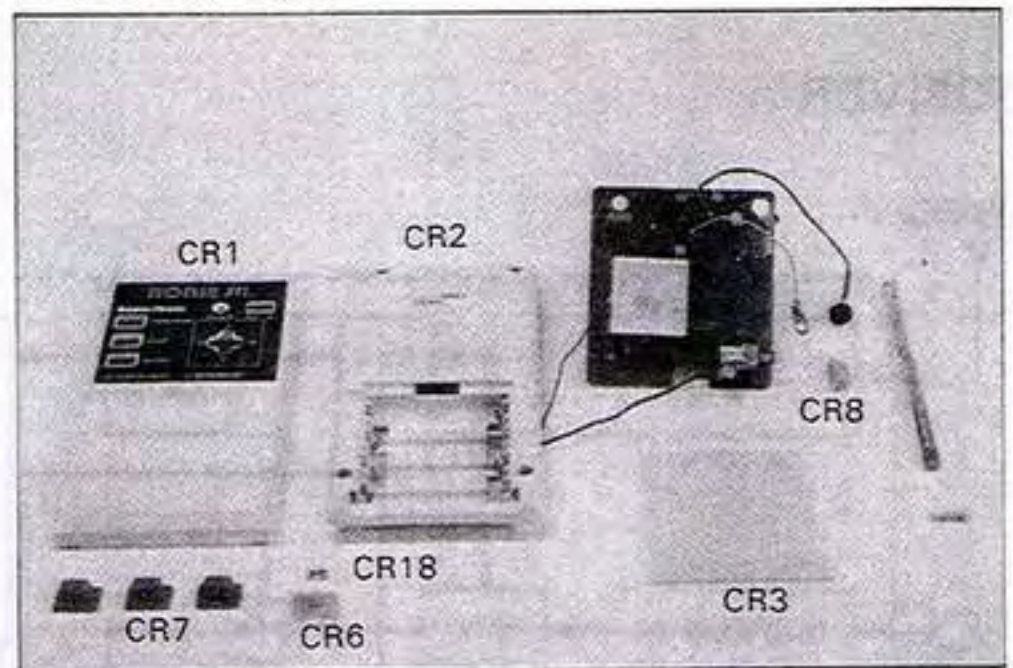
[Figure 34]  
Clock parts.



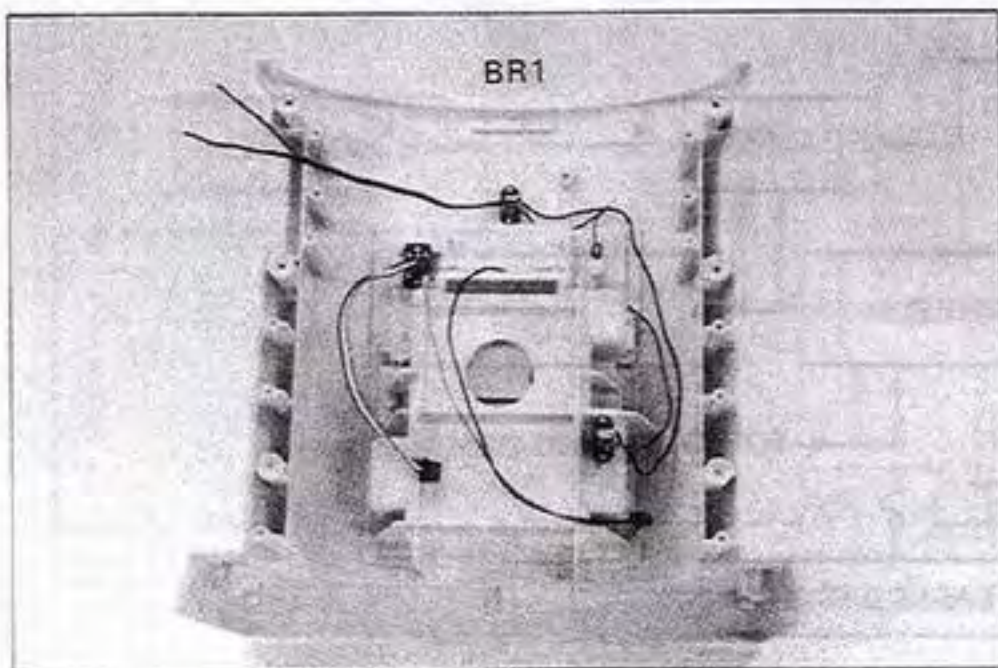
[Figure 32]  
Right hand parts.



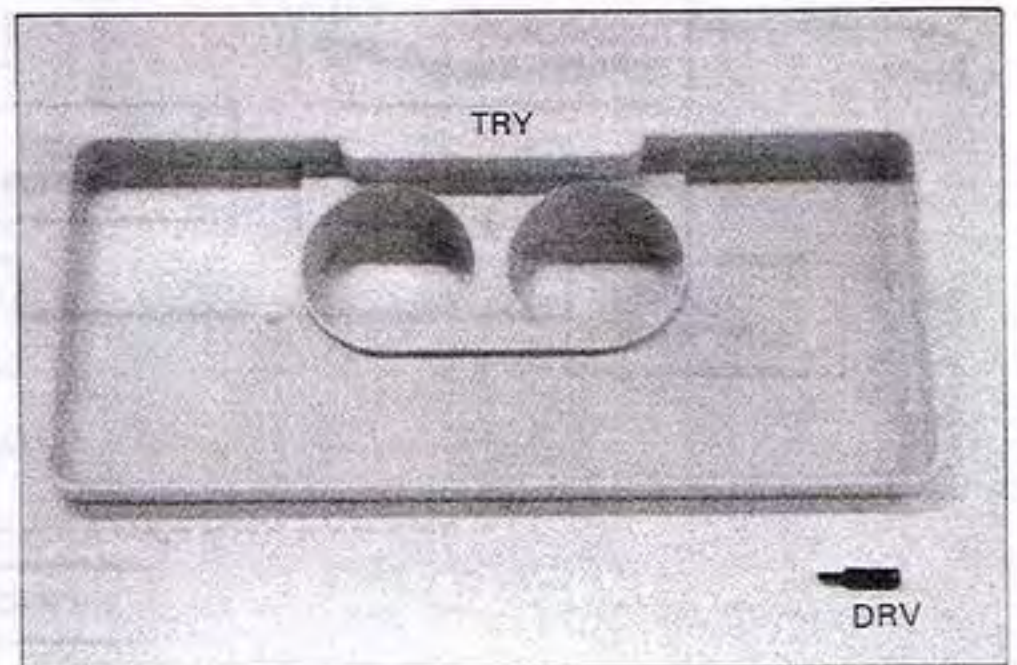
[Figure 35]  
Transmitter parts.



[Figure 33]  
Rear Body (BR1).

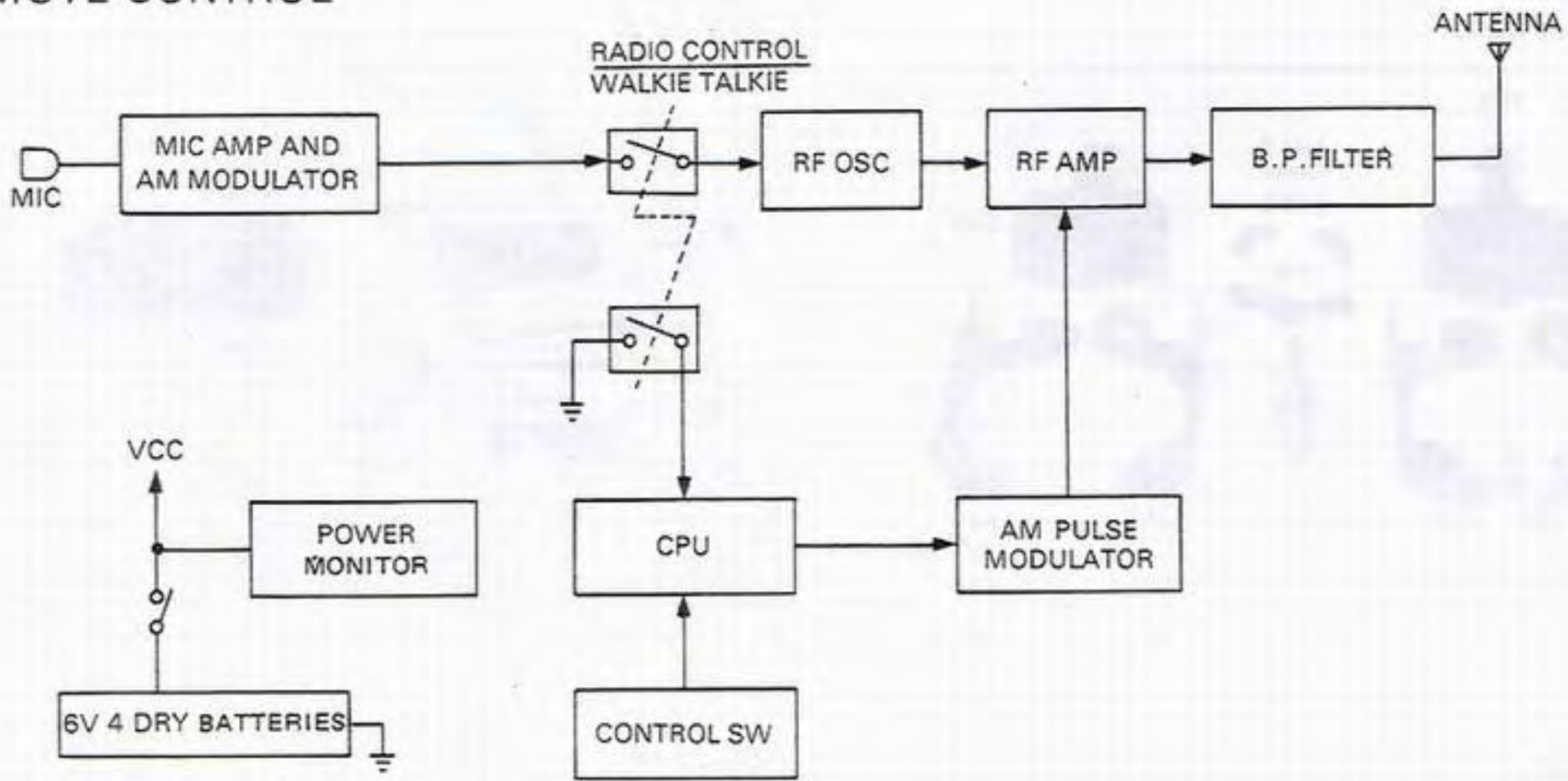


[Figure 36]  
Tray (TRY) and Driver (DRV).

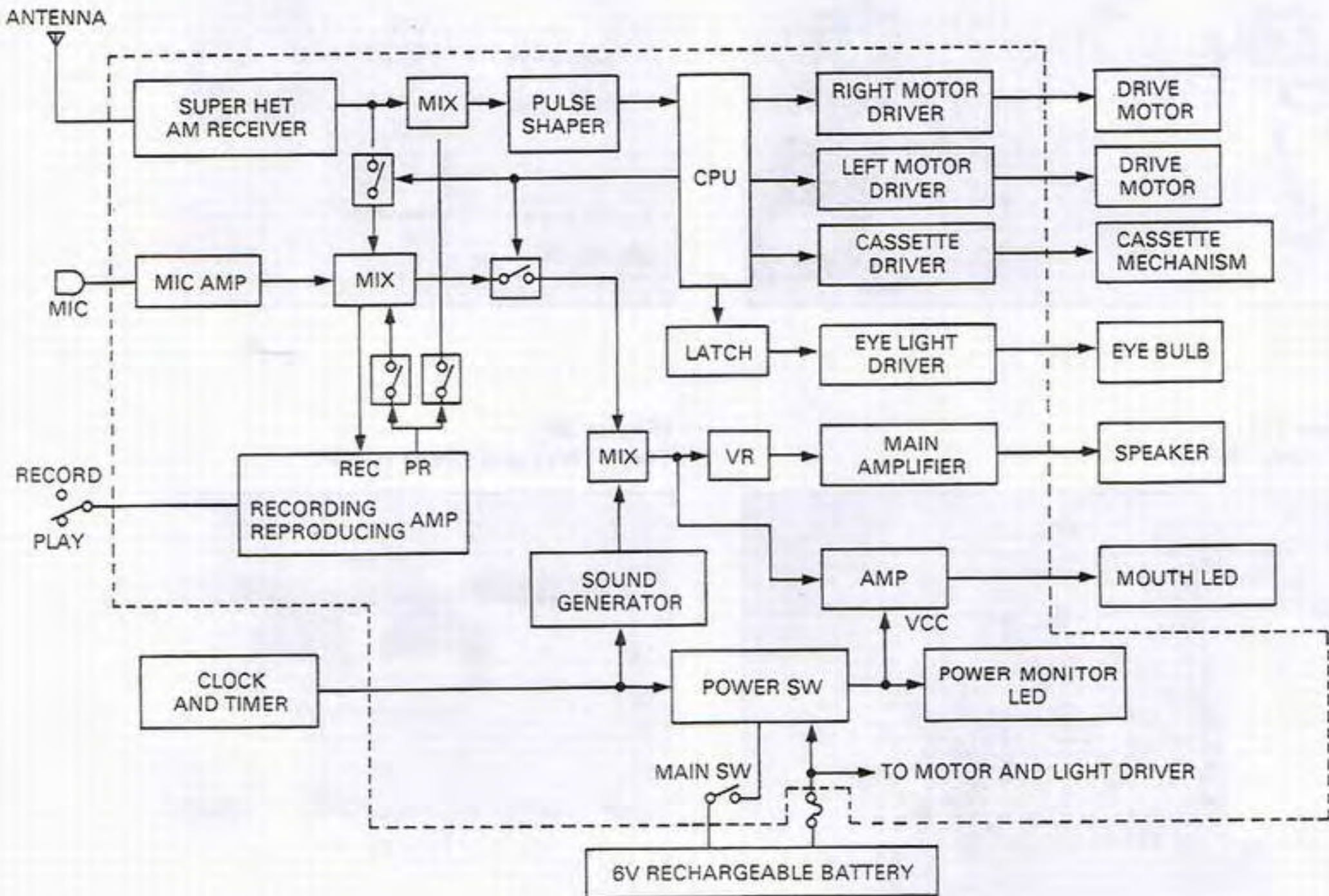


# BLOCK DIAGRAM

## REMOTE CONTROL



## RECEIVER



## TROUBLESHOOTING

| SYMPTOM   | CAUSE   | REMEDY  |
|---|---|---|
| <b>CLOCK PART</b><br>Does not function.   |   | Change clock unit   |
| <b>CASSETTE PART</b><br>Tape does not run.<br>(Twisted cassette mechanism)<br>No microphone sound during tracing<br>No sound from speaker<br><br>Tape cannot be recorded or played back.<br><br>Sound volume adjusting knob cannot be adjusted.<br>Noise<br>Cassette section unit does not eject externally | Damaged motor driver (Q16, Q17)<br>Loose screw<br>Damaged microprocessor (IC3)<br><br>Shielded wire solder is removed.<br>Damaged amplifier<br>Stained head<br>Head life<br>Broken recording lever<br>Damaged RECORD/PALYBACK switch<br>Damaged sound volume adjusting knob.<br>ditto<br>Slipped spring | Change main PC board.<br>Tighten screw.<br>Change main PC board.<br><br>Resolder<br>Change main PC board.<br>Clean head .<br>Change mechanical parts.<br>Change lever.<br>Change switch board (CA17, CA19)<br><br>Change sound volume adjusting knob.<br>ditto<br>Replace |
| <b>BASE ASSEMBLY</b><br>Does not run.<br>Curves<br>Caster is not smooth.  | Damaged motor<br>Damaged motor<br>Wear, low oil, dust   | Change gear box.<br>Change gear box<br>Supply oil, clean or change base caster.   |
| <b>REMOTE CONTROL ASSEMBLY</b><br>Wireless microphone is not functioning.<br>Power cannot be fed.<br>LED does not light.<br>Cannot be operated  | Damaged talk switch<br><br>Damaged main switch<br>Damaged LED<br>Damaged joy stick  | Change transmitter set<br><br>ditto<br>ditto<br>ditto   |
| <b>BATTERY CHARGER</b><br>Cannot be recharged.  | Damaged connector<br>Damaged adapter<br>Battery life  | Change battery charger.<br>ditto<br>Change battery  |
| <b>ARM ASSEMBLY (Right and left)</b><br>Article cannot be lifted.<br><br>Left arm cannot lift article.  | Damaged link<br>Loose tapping screw<br>Worn O-ring<br>Damaged spring  | Change link.<br>Tighten<br>Change O-ring.<br>Change left arm.   |

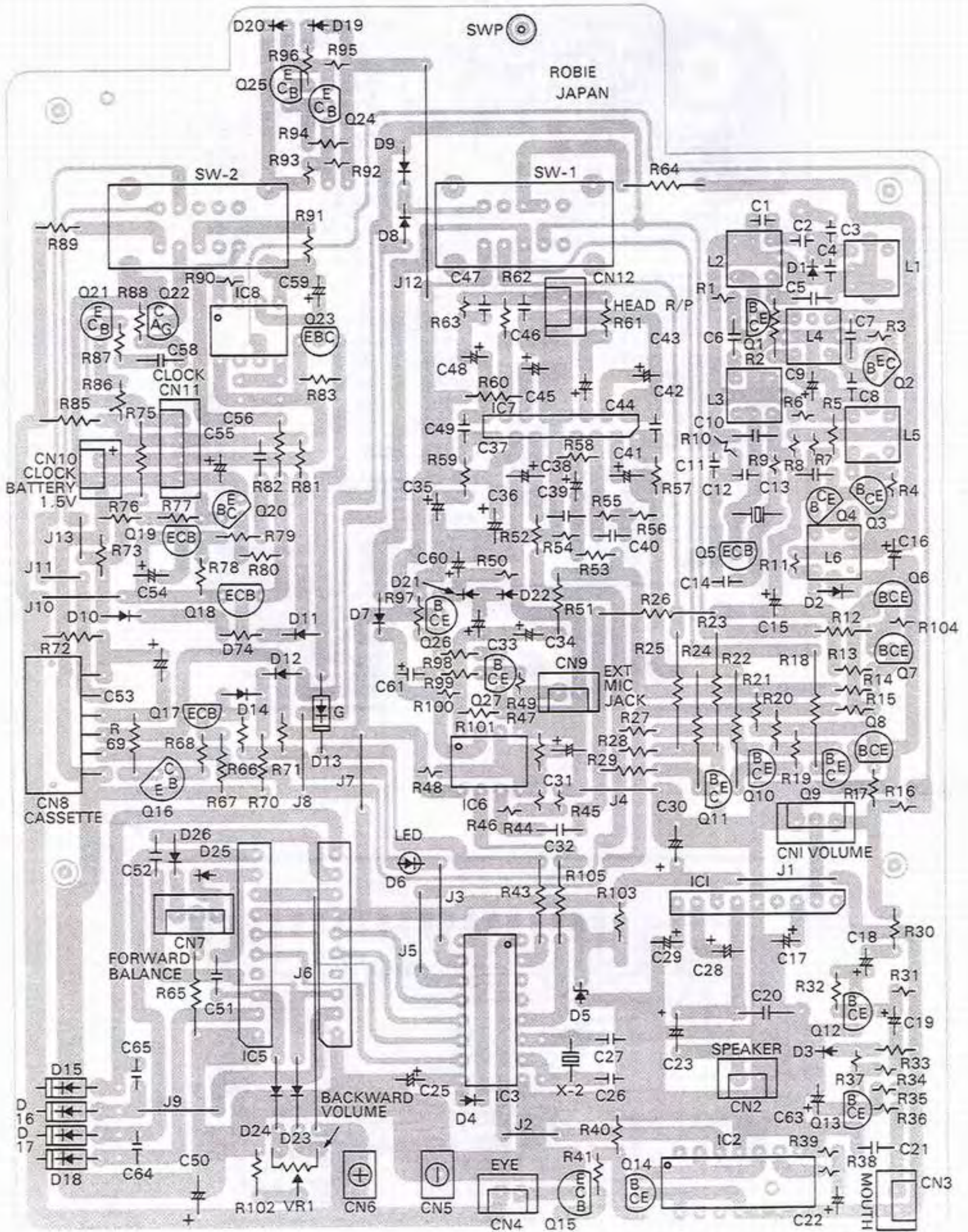
### Pre-cautions for rechargeable battery

When the battery is over discharged (when the voltage between battery terminals becomes under 2V), charge the battery by following method. Please note, however, that the included battery charger can not be used for this purpose.

Charge the battery for 10~20 hours under the power supply of 30V, 0.2A. (Use the power supply which has current limiter.) and then charge the battery for 14~16 hours by the battery charger included.

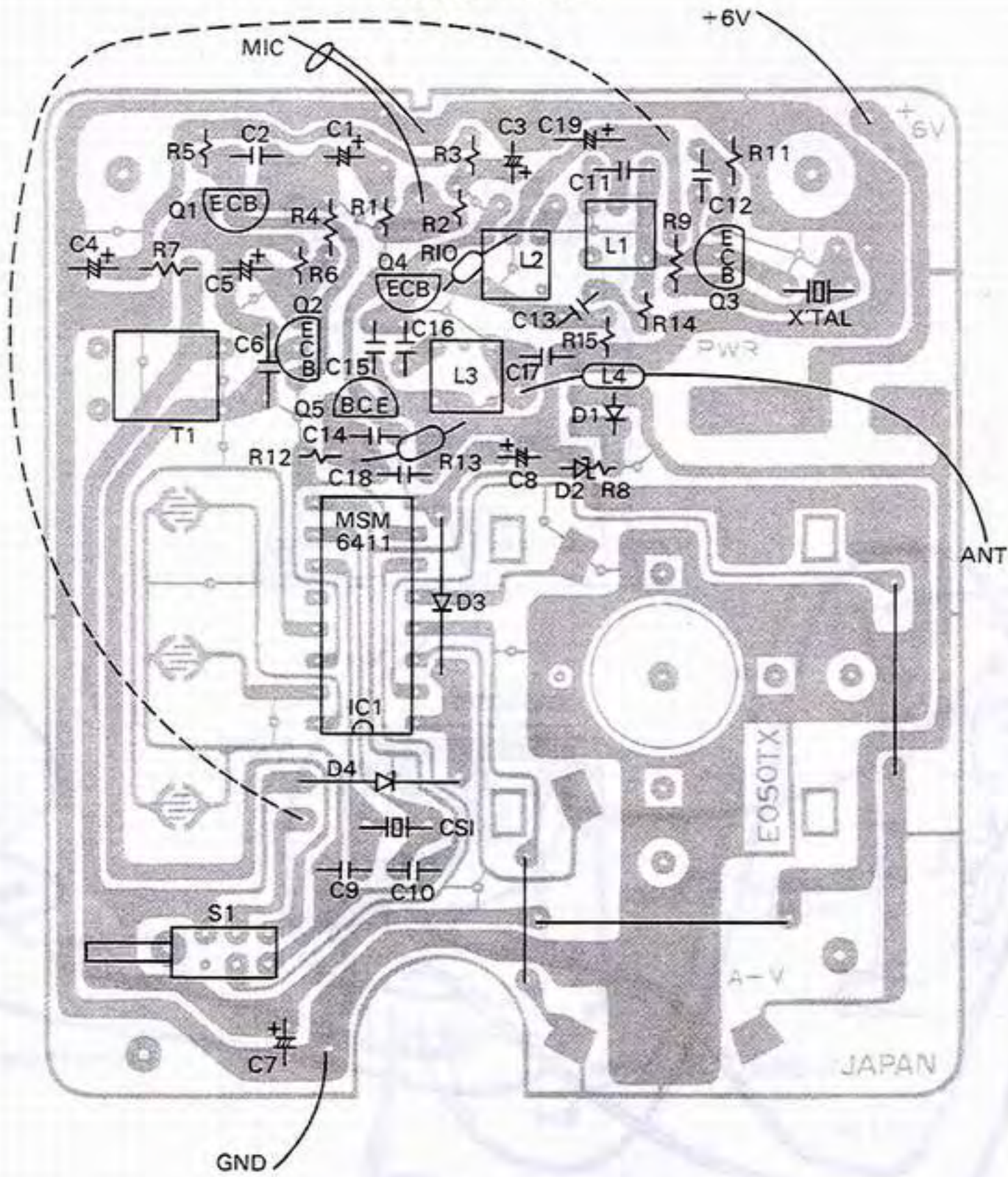


# Bottom View

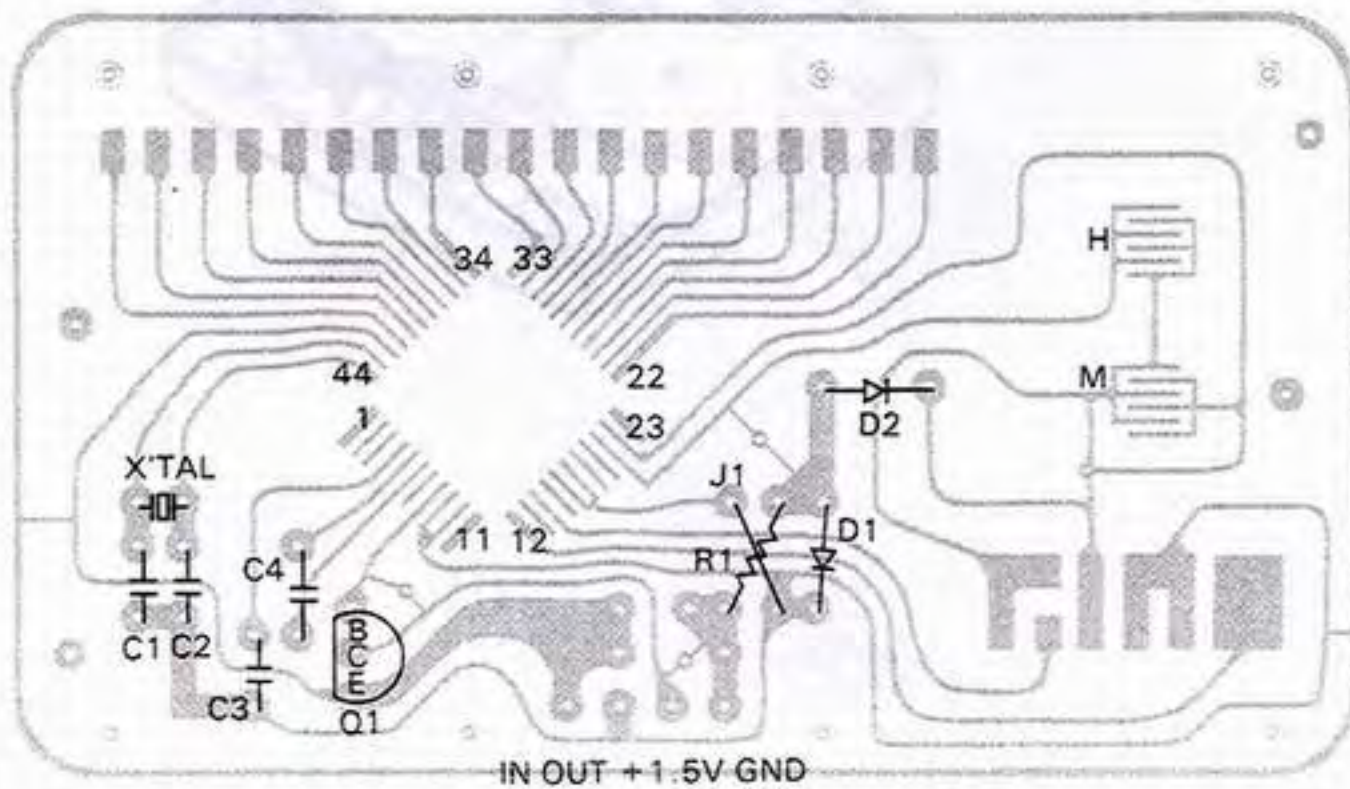




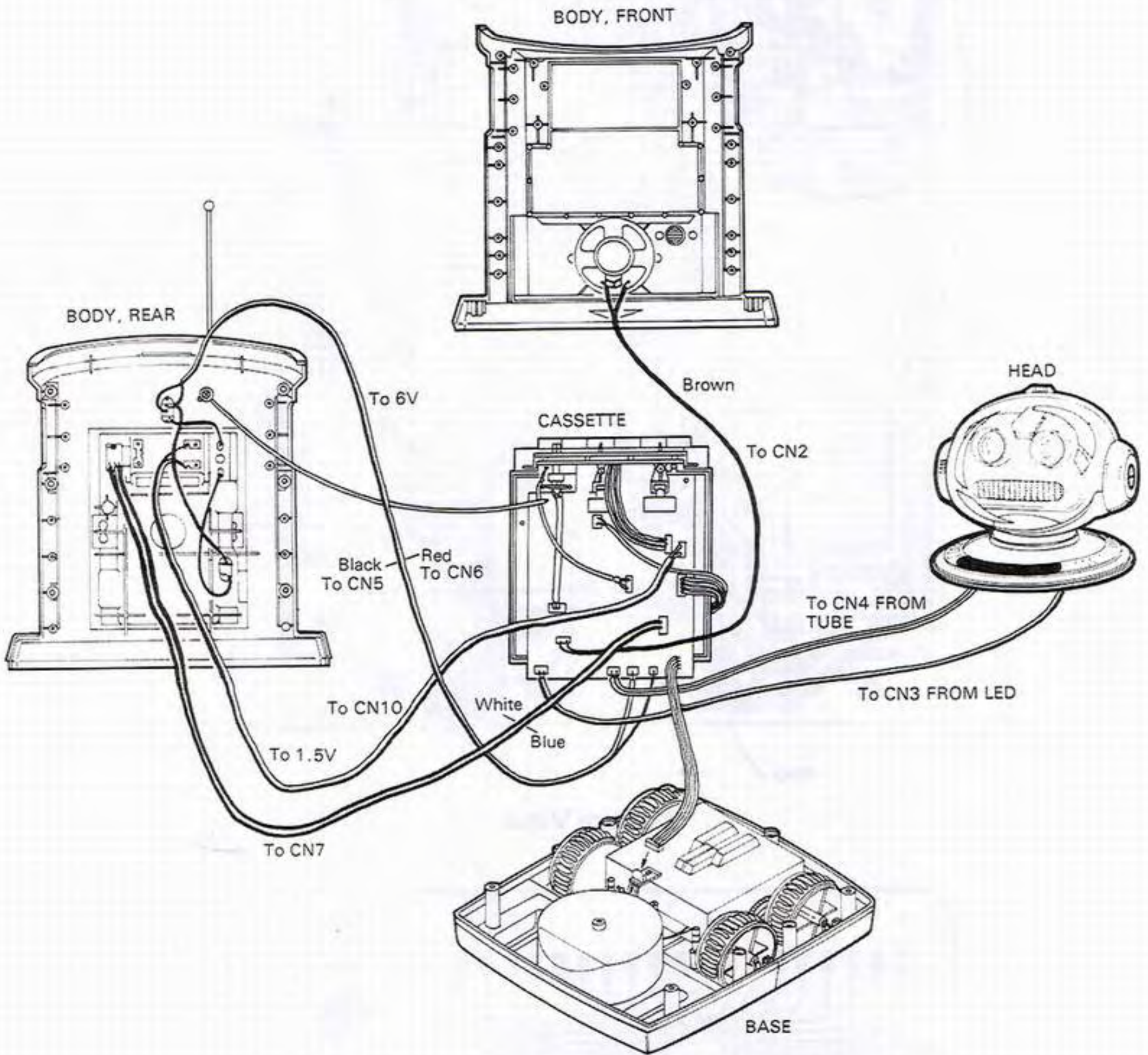
Bottom View



Bottom View



# WIRING DIAGRAM





REMOTE CONTROL

**ELECTRICAL PARTS LIST**

| REF. NO.           | DESCRIPTION  | RS PART NO.   | MFR. PART NO.                           |
|--------------------|--|---|---|
|                    | PCB ASSY, TRANSMITTER                                    |   | 2398-1                                  |
| Capacitors         |  |   |   |
| C1                 | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%   | CC-105MJBA 2397-72                      |
| C2                 | Capacitor, Ceramic                                       | 330pF (B), 50V, $\pm$ 10%   | CC-331JJBC 2398-19                      |
| C3                 | Capacitor, Electrolytic                                  | 33 $\mu$ F, 16V, $\pm$ 20%  | CC-336MDCA 2184-18                      |
| C4                 | Capacitor, Electrolytic                                  | 47 $\mu$ F, 16V, $\pm$ 20%  | CC-476MDCA 2180-16                      |
| C5                 | Capacitor, Electrolytic                                  | 47 $\mu$ F, 16V, $\pm$ 20%  | CC-476MDCA 2180-16                      |
| C6                 | Capacitor, Ceramic                                       | 0.01 $\mu$ F (Z), 50V, +80%, -20%   | CC-103KJBC 2397-16                      |
| C7                 | Capacitor, Electrolytic                                  | 47 $\mu$ F, 16V, $\pm$ 20%  | CC-476MDCA 2180-16                      |
| C8                 | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%   | CC-105MJBA 2397-72                      |
| C9                 | Capacitor, Ceramic                                       | 22pF (CH), 50V, $\pm$ 5%  | CF-1245 2398-20                         |
| C10                | Capacitor, Ceramic                                       | 22pF (CH), 50V, $\pm$ 5%  | CF-1245 2398-20                         |
| C11                | Capacitor, Ceramic (for USA, CA)<br>(for EC, AU)         | 22pF (CH), 50V, $\pm$ 5%<br>33pF (CH), 50V, $\pm$ 5%                            | CF-1245 2398-20<br>2397-13              |
| C12                | Capacitor, Ceramic                                       | 82pF (CH), 50V, $\pm$ 5%  | CF-1395 2398-21                         |
| C13                | Capacitor, Ceramic                                       | 47pF (CH), 50V, $\pm$ 5%  | CF-1360 2398-22                         |
| C14                | Capacitor, Mylar   | 6800pF 50V, $\pm$ 10%   | CC-682MJBC 2398-23                      |
| C15                | Capacitor, Ceramic (for USA, CA)<br>(for EC, AU)         | 100pF (B), 50V, $\pm$ 10%<br>180pF (B), 50V, $\pm$ 10%                          | CC-101JJBC 2398-24<br>2398-603          |
| C16                | Capacitor, Ceramic (for USA, CA)<br>(for EC)<br>(for AU) | 33pF (B), 50V, $\pm$ 5%<br>15pF (CH), 50V, $\pm$ 5%<br>39pF (CH), 50V, $\pm$ 5% | CF-1300 2397-13<br>2398-86<br>2398-608  |
| C17                | Capacitor, Ceramic (for USA, CA, EC)<br>(for AU)         | 150pF (B), 50V, $\pm$ 10%<br>100pF (B), 50V, $\pm$ 10%                          | CC-151KJBC 2398-25<br>2398-24           |
| C18                | Capacitor, Ceramic                                       | 0.1 $\mu$ F (Z), 25V, +80%, -20%  | CC-104MFBC 2195-7                       |
| C19                | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%   | CC-105MJBA 2397-72                      |
| Diodes             |  |   |   |
| D1                 | LED  | GL-3AR1, Power Indicator (RED)  | L-2024 2398-3                           |
| D2                 | Diode, Zener   | HZ4C1 or<br>TOSO5Z4, 7Y   | DX-0861 2398-4A<br>2398-4B              |
| D3                 | Diode  | IS1588, Silicon or<br>ISS 53, Silicon   | 2397-19                                 |
| D4                 | Diode  | IS1588, Silicon or<br>ISS53, Silicon  | 2397-19                                 |
| Resistors          |  |   |   |
| R1                 | Resistor, Carbon   | 47k $\Omega$ , 1/4W, $\pm$ 5%   | N-0340EEC 2184-24                       |
| R2                 | Resistor, Carbon   | 1k $\Omega$ , 1/4W, $\pm$ 5%  | N-0196EEC 2184-23                       |
| R3                 | Resistor, Carbon   | 10k $\Omega$ , 1/4W, $\pm$ 5%   | N-0271EEC 2398-12                       |
| R4                 | Resistor, Carbon   | 180k $\Omega$ , 1/4W, $\pm$ 5%  | N-0387EEC 2195-8                        |
| R5                 | Resistor, Carbon   | 5.6k $\Omega$ , 1/4W, $\pm$ 5%  | N-0257EEC 2398-13                       |
| R6                 | Resistor, Carbon   | 100 $\Omega$ , 1/4W, $\pm$ 5%   | N-0132EEC 2184-21                       |
| R7                 | Resistor, Carbon   | 470 $\Omega$ , 1/4W, $\pm$ 5%   | N-0169EEC 2398-14                       |
| R8                 | Resistor, Carbon   | 100 $\Omega$ , 1/4W, $\pm$ 5%   | N-0132EEC 2184-21                       |
| R9                 | Resistor, Carbon   | 47k $\Omega$ , 1/4W, $\pm$ 5%   | N-0340EEC 2184-24                       |
| R10                | Resistor, Carbon   | 6.8k $\Omega$ , 1/4W, $\pm$ 5%  | N-0262EEC 2398-15                       |
| R11                | Resistor, Carbon   | 68 $\Omega$ , 1/4W, $\pm$ 5%  | N-0111EEC 2398-16                       |
| R12                | Resistor, Carbon   | 12k $\Omega$ , 1/4W, $\pm$ 5%   | N-0288EEC 2397-38                       |
| R13                | Resistor, Carbon   | 12k $\Omega$ , 1/4W, $\pm$ 5%   | N-0288EEC 2397-38                       |
| R14                | Resistor, Carbon   | 47 $\Omega$ , 1/4W, $\pm$ 5%  | N-0099EEC 2398-17                       |
| R15                | Resistor, Carbon   | 820 $\Omega$ , 1/4W, $\pm$ 5%   | N-0187EEC 2398-18                       |
| R16                | Resistor, Carbon (for AU)                                | 27 $\Omega$ , 1/4W, $\pm$ 5%  | 2398-311                                |
| Transformers/Coils |  |   |   |
| L1                 | RF Transformer (for USA, CA, AU)<br>(for EC)             | 3T:3T<br>3T:7T  | CA-9998 2398-8<br>2398-600              |
| L2                 | RF Transformer   | 5T  | CA-9999 2398-9                          |
| L3                 | RF Transformer (for USA, CA, AU)<br>(for EC)             | 6.3/4T<br>163/4T  | CA-8030 2398-10<br>2398-601             |
| L4                 | Coil (for USA, CA)<br>(for EC)<br>(for AU)               | 1.0 $\mu$ H<br>2.7 $\mu$ H<br>1.2 $\mu$ H                                       | CA-8031 2398-11<br>2398-602<br>2398-610 |
| T1                 | Audio Transformer  | Primary 600 $\Omega$  | TB-0077 2398-7                          |

| REF. NO.      | DESCRIPTION   |  | RS PART NO. | MFR. PART NO.                |
|---------------|---|--|-------------|------------------------------|
| Transistors   |   |  |             |                              |
| Q1            | Transistor  | 2SC945-Q.T. Silicon, NPN   | 2SC-1815Y   | 2185-5                       |
| Q2            | Transistor  | 2SC945-Q.T. Silicon, NPN   | 2SC-945     | 2184-5                       |
| Q3            | Transistor  | 2SC945-Q.T. Silicon, NPN   | 2SC-945     | 2184-5                       |
| Q4            | Transistor  | 2SC945-Q.T. Silicon, NPN   | 2SC-945     | 2184-5                       |
| Q5            | Transistor  | 2SC945-Q.T. Silicon, NPN   | 2SC-945     | 2184-5                       |
| Miscellaneous |   |  |             |                              |
| CR5           | Antenna Rod   |  | A-0070      | 2398-44                      |
| CS1           | Resonator   | 2MHz, Microprocessor OSC   | C-0018      | 2398-6                       |
| IC1           | LSI   | MSM6411B-11 Microprocessor   | MX-7303     | 2398-2                       |
| MIC           | Microphone  | WM 034CY   | M-1022      | 2398-57                      |
| S1            | Switch  |  | S-3558      | 2398-302                     |
| W1            | Wire, Red, 120mm  |  |             | 2398-26                      |
| W2            | Wire, Orange, 140mm                                     |  |             | 2398-27                      |
| W3            | Wire, Gray, Sealed, 120mm                               |  |             | 2398-28                      |
| W4            | Wire, Orange, 90mm                                      |  |             | 2398-29                      |
| W5            | Wire, Green, Jumper, 90mm                               |  |             | 2398-30                      |
| X'TAL1        | Crystal, Transmit (for USA, CA)<br>(for EC)<br>(for AU) | 49,860MHz, 18/ $\mu$<br>27,145MHz, HC-18/ $\mu$<br>40,680MHz, HC-18/ $\mu$ | MX-1351     | 2398-5<br>11-604<br>2398-611 |

## MAIN BODY

| REF. NO.   | DESCRIPTION  |  | RS PART NO. | MFR. PART NO.                   |
|------------|--|--|-------------|---------------------------------|
|            | PCB ASSY, RECEIVER MAIN BODY                             |  | XB-1391     | 2398-500                        |
| Capacitors |  |  |             |                                 |
| C1         | Capacitor, Ceramic (for USA, CA)<br>(for EC)<br>(for AU) | 15pF (CH), 50V, $\pm$ 5%<br>39pF (CH), 50V, $\pm$ 5%<br>39pF (CH), 50V, $\pm$ 5% | CF-1188     | 2398-86<br>2398-608<br>2398-608 |
| C2         | Capacitor, Ceramic                                       | 1pF (CH), 50V, $\pm$ 5%  | CF-1214     | 2398-35                         |
| C3         | Capacitor, Ceramic                                       | 100pF (CH), 50V, $\pm$ 5%  | CF-2156     | 2184-14                         |
| C4         | Capacitor, Ceramic (for USA, CA)<br>(for EC)<br>(for AU) | 15pF (CH), 50V, $\pm$ 5%<br>39pF (CH), 50V, $\pm$ 5%<br>39pF (CH), 50V, $\pm$ 5% | CF-1188     | 2398-86<br>2398-608<br>2398-608 |
| C5         | Capacitor, Ceramic                                       | 0.01 $\mu$ F (Z), 50V, +80%, -20%  | CC-103KJBC  | 2397-16                         |
| C6         | Capacitor, Ceramic                                       | 0.01 $\mu$ F (Z), 50V, +80%, -20%  | CC-103KJBC  | 2397-16                         |
| C7         | Capacitor, Ceramic                                       | 0.01 $\mu$ F (Z), 50V, +80%, -20%  | CC-103KJBC  | 2397-16                         |
| C8         | Capacitor, Ceramic                                       | 1000pF (B), 50V, $\pm$ 10%   | CC-102KJBC  | 2398-87                         |
| C9         | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%  | CC-105MJBA  | 2397-72                         |
| C10        | Capacitor, Ceramic                                       | 0.01 $\mu$ F (Z), 50V, +80%, -20%  | CC-103KJBC  | 2397-16                         |
| C11        | Capacitor, Ceramic                                       | 1000pF (B), 50V, $\pm$ 10%   | CC-102KJBC  | 2398-87                         |
| C12        | Capacitor, Ceramic (for USA, CA)<br>(for EC)<br>(for AU) | 27pF (CH), 50V, $\pm$ 5%<br>47pF (CH), 50V, $\pm$ 5%<br>47pF (CH), 50V, $\pm$ 5% | CF-1265     | 2398-84<br>2398-22<br>2398-22   |
| C13        | Capacitor, Ceramic                                       | 0.047 $\mu$ F (Z), 50V, +80%, -20%   | CC-473MJBC  | 2398-88                         |
| C14        | Capacitor, Ceramic                                       | 22pF (CH), 50V, $\pm$ 5%   | CF-1245     | 2398-20                         |
| C15        | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%  | CC-105MJBA  | 2397-72                         |
| C16        | Capacitor, Electrolytic                                  | 100 $\mu$ F, 10V, +50%, -10%   | CC-107KCBA  | 2398-89                         |
| C17        | Capacitor, Electrolytic                                  | 47 $\mu$ F, 10V, +50%, -10%  | CC-476MCBA  | 2398-90                         |
| C18        | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%  | CC-105MJBA  | 2397-72                         |
| C19        | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%  | CC-105MJBA  | 2397-72                         |
| C20        | Capacitor, Mylar   | 0.15 $\mu$ F (K), 50V, $\pm$ 10%   | CC-154JJB   | 2398-91                         |
| C21        | Capacitor, Ceramic                                       | 0.01 $\mu$ F (Z), 50V, +80%, -20%  | CC-103KJBC  | 2397-16                         |
| C22        | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%  | CC-105MJBA  | 2397-72                         |
| C23        | Capacitor, Electrolytic                                  | 470 $\mu$ F, 10V, +50%, -10%   | CC-477KCBA  | 2398-92                         |
| C25        | Capacitor, Electrolytic                                  | 1 $\mu$ F, 50V, $\pm$ 20%  | CC-105MJBA  | 2397-72                         |
| C26        | Capacitor, Ceramic                                       | 22pF (CH), 50V, $\pm$ 5%   | CC-1245     | 2398-20                         |
| C27        | Capacitor, Ceramic                                       | 22pF (CH), 50V, $\pm$ 5%   | CC-1245     | 2398-20                         |
| C28        | Capacitor, Electrolytic                                  | 100 $\mu$ F, 10V, +50%, -10%   | CC-107KCBA  | 2398-89                         |
| C29        | Capacitor, Electrolytic                                  | 47 $\mu$ F, 10V, +50%, -10%  | CC-476MCBA  | 2398-90                         |
| C30        | Capacitor, Electrolytic                                  | 470 $\mu$ F, 10V, +50%, -10%   | CC-477KCBA  | 2398-92                         |
| C31        | Capacitor, Electrolytic                                  | 47 $\mu$ F, 10V, +50%, -10%  | CC-476MCBA  | 2398-90                         |

| REF. NO.  | DESCRIPTION             |                                   | RS PART NO. | MFR. PART NO. |
|-----------|-------------------------|-----------------------------------|-------------|---------------|
| C32       | Capacitor, Ceramic      | 0.01 $\mu$ F (Z), 50V, +80%, -20% | CC-103KJBC  | 2397-16       |
| C33       | Capacitor, Electrolytic | 1 $\mu$ F, 50V, +20%              | CC-105MJBA  | 2396-72       |
| C34       | Capacitor, Electrolytic | 1 $\mu$ F, 50V, $\pm$ 20%         | CC-105MJBA  | 2397-72       |
| C35       | Capacitor, Electrolytic | 4.7 $\mu$ F, 50V, $\pm$ 20%       | CC-475MJBA  | 2184-19       |
| C36       | Capacitor, Electrolytic | 10 $\mu$ F, 10V, +50%, -10%       |             | 2398-93       |
| C37       | Capacitor, Electrolytic | 47 $\mu$ F, 10V, +50%, -10%       | CC-476MCBA  | 2398-90       |
| C38       | Capacitor, Electrolytic | 10 $\mu$ F, 10V, +50%, -10%       | CC-106KCBA  | 2398-93       |
| C39       | Capacitor, Ceramic      | 1000pF (B), 50V, $\pm$ 10%        | CC-102KJBC  | 2398-87       |
| C40       | Capacitor, Ceramic      | 0.01 $\mu$ F (Z), 50V, +80%, -20% | CC-103KJBC  | 2397-16       |
| C41       | Capacitor, Electrolytic | 1 $\mu$ F, 50V, $\pm$ 20%         | CC-105MJBA  | 2397-72       |
| C42       | Capacitor, Ceramic      | 470pF (B), 50V, $\pm$ 10%         | CC-471KJBC  | 2186-15       |
| C43       | Capacitor, Electrolytic | 10 $\mu$ F, 10V, +50%, -10%       | CC-106KCBA  | 2398-93       |
| C44       | Capacitor, Electrolytic | 10 $\mu$ F, 10V, +50%, -10%       | CC-106KCBA  | 2398-93       |
| C45       | Capacitor, Electrolytic | 47 $\mu$ F, 10V, +50%, -10%       | CC-476MCBA  | 2398-90       |
| C46       | Capacitor, Ceramic      | 680pF (B), 50V, $\pm$ 10%         | CC-681KJBC  | 2398-94       |
| C47       | Capacitor, Ceramic      | 3300pF (B), 50V, $\pm$ 10%        | CC-332KJBC  | 2398-95       |
| C48       | Capacitor, Electrolytic | 1 $\mu$ F, 50V, $\pm$ 20%         | CC-105MJBA  | 2397-72       |
| C49       | Capacitor, Ceramic      | 100pF (CH), 50V, $\pm$ 5%         | CF-2156     | 2184-14       |
| C50       | Capacitor, Electrolytic | 1000 $\mu$ F, 10V, +50%, -10%     | CC-108KCBA  | 2398-96       |
| C53       | Capacitor, Electrolytic | 220 $\mu$ F, 10V, +50%, -10%      | CC-227KCBA  | 2398-97       |
| C54       | Capacitor, Electrolytic | 47 $\mu$ F, 10V, +50%, -10%       | CC-476MCBA  | 2398-90       |
| C55       | Capacitor, Electrolytic | 33 $\mu$ F, 10V, +50%, -10%       | CC-336KCBA  | 2398-98       |
| C56       | Capacitor, Ceramic      | 0.1 $\mu$ F (Z), 12V, +80%, -20%  | CC-104MCCC  | 2398-99       |
| C58       | Capacitor, Ceramic      | 0.01 $\mu$ F (Z), 50V, +80%, -20% | CC-103KJBC  | 2397-16       |
| C59       | Capacitor, Electrolytic | 1 $\mu$ F, 50V, $\pm$ 20%         | CC-105MJBA  | 2397-72       |
| C60       | Capacitor, Electrolytic | 22 $\mu$ F, 50V, +50%, -10%       | CC-226KCBA  | 2398-100      |
| C61       | Capacitor, Electrolytic | 1 $\mu$ F, 50V, $\pm$ 20%         | CC-105MJBA  | 2397-72       |
| C63       | Capacitor, Electrolytic | 33 $\mu$ F, 10V, +50%, -10%       | CC-336KCBA  | 2398-98       |
| C64       | Capacitor, Ceramic      | 4700pF (B), 50V, $\pm$ 10%        |             | 2398-613      |
| C65       | Capacitor, Ceramic      | 4700pF (B), 50V, $\pm$ 10%        |             | 2398-613      |
| Diodes    |                         |                                   |             |               |
| D1        | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D2        | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D3        | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D4        | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D5        | Diode, Zener            | TOS05Z4, 7Y, or HZ4CL             | DX-0094     | 2186-9        |
| D6        | LED                     | GL-3AR1                           | DX-0094     | 2186-9        |
| D7        | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D8        | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D9        | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D10       | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D11       | Diode                   | 1S188, Germanium                  | DX-0094     | 2398-71       |
| D12       | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D13       | Diode                   | 1S188, Germanium                  | DX-0241     | 2398-71       |
| D14       | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D15       | Diode, DS135B           | Rectifier                         | DX-0863     | 2398-72       |
| D16       | Diode, DS135B           | Rectifier                         | DX-0863     | 2398-72       |
| D17       | Diode, DS135B           | Rectifier                         | DX-0863     | 2398-72       |
| D18       | Diode, DS135B           | Rectifier                         | DX-0863     | 2398-72       |
| D19       | LED, GL-3AR1            | Charge Indicator (Red)            | L-2025      | 2398-73       |
| D20       | LED, GL-3AG1            | Power Indicator (Green)           | L-2026      | 2398-74       |
| D21       | Diode                   | DS442, Silicon                    |             | 2398-74       |
| D22       | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D23       | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D24       | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D25       | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| D26       | Diode                   | DS442, Silicon                    | DX-0094     | 2186-9        |
| Resistors |                         |                                   |             |               |
| R1        | Resistor, Carbon        | 1k $\Omega$ , 1/4W, $\pm$ 5%      | N-0196EEC   | 2184-23       |
| R2        | Resistor, Carbon        | 180k $\Omega$ , 1/4W, $\pm$ 5%    | N-0387EEC   | 2195-8        |
| R3        | Resistor, Carbon        | 150 $\Omega$ , 1/4W, $\pm$ 5%     | N-0142EEC   | 2398-101      |
| R4        | Resistor, Carbon        | 150 $\Omega$ , 1/4W, $\pm$ 5%     | N-0142EEC   | 2398-101      |
| R5        | Resistor, Carbon        | 240k $\Omega$ , 1/4W, $\pm$ 5%    | N-0398EEC   | 2398-102      |
| R6        | Resistor, Carbon        | 100k $\Omega$ , 1/4W, $\pm$ 5%    | N-0371EEC   | 2186-24       |
| R7        | Resistor, Carbon        | 680 $\Omega$ , 1/4W, $\pm$ 5%     | N-0183EEC   | 2398-103      |

| REF. NO. | DESCRIPTION      | RS PART NO. | MFR. PART NO. |
|----------|------------------|-------------|---------------|
| R8       | Resistor, Carbon |             | 2186-28       |
| R9       | Resistor, Carbon | N-0371EEC   | 2186-24       |
| R10      | Resistor, Carbon | N-0196EEC   | 2184-23       |
| R11      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R12      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R13      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R14      | Resistor, Carbon | N-0371EEC   | 2186-24       |
| R15      | Resistor, Carbon | N-0340EEC   | 2186-24       |
| R16      | Resistor, Carbon | N-0414EEC   | 2398-105      |
| R17      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R18      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R19      | Resistor, Carbon | N-0340EEC   | 2186-24       |
| R20      | Resistor, Carbon | N-0340EEC   | 2186-24       |
| R21      | Resistor, Carbon | N-0529EEC   | 2398-106      |
| R22      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R23      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R24      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R25      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R26      | Resistor, Carbon | N-0371EEC   | 2186-24       |
| R27      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R28      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R29      | Resistor, Carbon |             | 2398-400      |
| R30      | Resistor, Carbon | N-0196EEC   | 2184-23       |
| R31      | Resistor, Carbon | N-0247EEC   | 2186-28       |
| R32      | Resistor, Carbon | N-0445EEC   | 2397-7        |
| R33      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R34      | Resistor, Carbon | N-0169EEC   | 2398-14       |
| R35      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R36      | Resistor, Carbon | N-0111EEC   | 2398-16       |
| R37      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R38      | Resistor, Carbon | N-0371EEC   | 2186-24       |
| R39      | Resistor, Carbon |             | 2186-27       |
| R40      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R41      | Resistor, Carbon | N-0132EEC   | 2184-21       |
| R43      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R44      | Resistor, Carbon |             | 2398-15       |
| R45      | Resistor, Carbon | N-0445EEC   | 2397-7        |
| R46      | Resistor, Carbon | N-0371EEC   | 2186-24       |
| R47      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R48      | Resistor, Carbon | N-0328EEC   | 2398-109      |
| R49      | Resistor, Carbon | N-0247EEC   | 2186-28       |
| R50      | Resistor, Carbon |             | 2186-28       |
| R51      | Resistor, Carbon |             | 2397-7        |
| R52      | Resistor, Carbon |             | 2186-24       |
| R53      | Resistor, Carbon | N-0371EEC   | 2186-24       |
| R54      | Resistor, Carbon | N-0187EEC   | 2398-18       |
| R55      | Resistor, Carbon | N-0384EEC   | 2398-110      |
| R56      | Resistor, Carbon | N-0288EEC   | 2397-38       |
| R57      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R58      | Resistor, Carbon | N-0144EEC   | 2398-111      |
| R59      | Resistor, Carbon | N-0216EEC   | 2186-26       |
| R60      | Resistor, Carbon | N-0247EEC   | 2186-28       |
| R61      | Resistor, Carbon | N-0199EEC   | 2398-112      |
| R62      | Resistor, Carbon | N-0316EEC   | 2398-113      |
| R63      | Resistor, Carbon | N-0297EEC   | 2186-22       |
| R64      | Resistor, Carbon | N-0169EEC   | 2398-14       |
| R65      | Resistor, Carbon | N-0262EEC   | 2398-15       |
| R66      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R67      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R68      | Resistor, Carbon | N-0149EEC   | 2397-59       |
| R69      | Resistor, Carbon | N-0028EEC   | 2398-114      |
| R70      | Resistor, Carbon | N-0311EEC   | 2398-104      |
| R71      | Resistor, Carbon |             | 2186-27       |
| R72      | Resistor, Carbon | N-0028EEC   | 2398-114      |
| R73      | Resistor, Carbon | N-0281EEC   | 2186-27       |
| R74      | Resistor, Carbon | N-0324EEC   | 2397-60       |
| R75      | Resistor, Carbon | N-0247EEC   | 2186-28       |

| REF. NO.     | DESCRIPTION   |                                | RS PART NO. | MFR. PART NO.       |
|--------------|---|--------------------------------|-------------|---------------------|
| R76          | Resistor, Carbon                                      | 100k $\Omega$ , 1/4W, $\pm$ 5% | N-0371EEC   | 2186-24             |
| R77          | Resistor, Carbon                                      | 22k $\Omega$ , 1/4W, $\pm$ 5%  | N-0311EEC   | 2398-104            |
| R78          | Resistor, Carbon                                      | 22k $\Omega$ , 1/4W, $\pm$ 5%  | N-0311EEC   | 2398-104            |
| R79          | Resistor, Carbon                                      | 10k $\Omega$ , 1/4W, $\pm$ 5%  | N-0281EEC   | 2186-27             |
| R80          | Resistor, Carbon                                      | 220 $\Omega$ , 1/4W, $\pm$ 5%  | N-0149EEC   | 2397-59             |
| R81          | Resistor, Carbon                                      | 10k $\Omega$ , 1/4W, $\pm$ 5%  | N-0281EEC   | 2186-27             |
| R82          | Resistor, Carbon                                      | 150 $\Omega$ , 1/4W, $\pm$ 5%  | N-0142EEC   | 2398-101            |
| R83          | Resistor, Carbon                                      | 100k $\Omega$ , 1/4W, $\pm$ 5% | N-0371EEC   | 2186-24             |
| R85          | Resistor, Carbon                                      | 22k $\Omega$ , 1/4W, $\pm$ 5%  | N-0311EEC   | 2398-104            |
| R86          | Resistor, Carbon                                      | 22k $\Omega$ , 1/4W, $\pm$ 5%  | N-0311EEC   | 2398-104            |
| R87          | Resistor, Carbon                                      | 1k $\Omega$ , 1/4W, $\pm$ 5%   | N-0196EEC   | 2184-23             |
| R88          | Resistor, Carbon                                      | 1k $\Omega$ , 1/4W, $\pm$ 5%   | N-0196EEC   | 2184-23             |
| R89          | Resistor, Carbon                                      | 1k $\Omega$ , 1/4W, $\pm$ 5%   | N-0196EEC   | 2184-23             |
| R90          | Resistor, Carbon                                      | 910k $\Omega$ , 1/4W, $\pm$ 5% | N-0524EEC   | 2398-115            |
| R91          | Resistor, Carbon                                      | 68 $\Omega$ , 1/4W, $\pm$ 5%   | N-0111EEC   | 2398-16             |
| R92          | Resistor, Carbon                                      | 39k $\Omega$ , 1/4W, $\pm$ 5%  | N-0330EEC   | 2398-116            |
| R93          | Resistor, Carbon                                      | 36k $\Omega$ , 1/4W, $\pm$ 5%  | N-0328EEC   | 2398-109            |
| R94          | Resistor, Carbon                                      | 33k $\Omega$ , 1/4W, $\pm$ 5%  | N-0324EEC   | 2397-60             |
| R95          | Resistor, Carbon                                      | 390 $\Omega$ , 1/4W, $\pm$ 5%  | N-0162EEC   | 2397-6              |
| R96          | Resistor, Carbon                                      | 270 $\Omega$ , 1/4W, $\pm$ 5%  | N-0155EEC   | 2398-17             |
| R97          | Resistor, Carbon                                      | 10k $\Omega$ , 1/4W, $\pm$ 5%  | N-0281EEC   | 2186-27             |
| R98          | Resistor, Carbon                                      | 100 $\Omega$ , 1/4W, $\pm$ 5%  | N-0132EEC   | 2184-21             |
| R99          | Resistor, Carbon                                      | 2.2k $\Omega$ , 1/4W, $\pm$ 5% | N-0216EEC   | 2186-26             |
| R100         | Resistor, Carbon                                      | 1M $\Omega$ , 1/4W, $\pm$ 5%   | N-0445EEC   | 2397-7              |
| R101         | Resistor, Carbon                                      | 1k $\Omega$ , 1/4W, $\pm$ 5%   | N-0196EEC   | 2184-23             |
| R102         | Resistor, Carbon                                      | 6.8k $\Omega$ , 1/4W, $\pm$ 5% | N-0262EEC   | 2398-15             |
| R103         | Resistor, Carbon                                      | 100 $\Omega$ , 1/4W, $\pm$ 5%  |             | 2184-21             |
| R104         | Resistor, Carbon                                      | 22k $\Omega$ , 1/4W, $\pm$ 5%  |             | 2398-104            |
| R105         | Resistor, Carbon                                      | 10k $\Omega$ , 1/4W, $\pm$ 5%  |             | 2186-27             |
| Transformers |   |                                |             |                     |
| L1           | Antenna Transformer (for USA, CA, AU)<br>(for EC)     | 6T<br>9T                       | CA-1070     | 2398-77<br>2398-605 |
| L2           | Mixer Transformer (for USA, CA, AU)<br>(for EC)       | 6T:2T<br>9T:2T                 | CA-1071     | 2398-73<br>2398-606 |
| L3           | Oscillation Transformer (for USA, CA, AU)<br>(for EC) | 8T:1T<br>10T:1T                | CA-1072     | 2398-79<br>2398-607 |
| L4           | I.F.T.  | Yellow 455kHz                  | CA-1073     | 2398-80             |
| L5           | I.F.T.  | White 455kHz                   | CA-1074     | 2398-81             |
| L6           | I.F.T.  | Black 455kHz                   | CA-1075     | 2398-82             |
| Connectors   |   |                                |             |                     |
| CN1          | Connector-Terminal                                    | 3P, Vertical                   |             | 2398-118            |
| CN2          | Connector-Terminal                                    | 2P, Vertical                   |             | 2398-119            |
| CN3          | Connector-Terminal                                    | 2P, Vertical                   |             | 2398-119            |
| CN4          | Connector-Terminal                                    | 2P, Vertical                   |             | 2398-119            |
| CN5          | Connector-Terminal                                    | 1P, Black                      |             | 2398-120            |
| CN6          | Connector-Terminal                                    | 1P, Red                        |             | 2398-121            |
| CN7          | Connector-Terminal                                    | 3P, Vertical                   |             | 2398-118            |
| CN8          | Connector-Terminal                                    | 6P, Right Angle                |             | 2398-122            |
| CN9          | Connector-Terminal                                    | 2P, Vertical                   |             | 2398-119            |
| CN10         | Connector-Terminal                                    | 2P, Vertical                   |             | 2398-119            |
| CN11         | Connector-Terminal                                    | 4P, Vertical                   |             | 2398-123            |
| CN12         | Connector-Terminal                                    | 2P, Vertical                   |             | 2398-119            |
| Transistors  |   |                                |             |                     |
| Q1           | Transistor  | 2SC2999D-SP, Silicon, NPN      | 2SC-2999    | 2398-64             |
| Q2           | Transistor  | 2SC2999D-SP, Silicon, NPN      | 2SC-2999    | 2398-64             |
| Q3           | Transistor  | 2SC2999D-SP, Silicon, NPN      | 2SC-2999    | 2398-64             |
| Q4           | Transistor  | 2SC536E-SP, Silicon, NPN       | 2SC-536E    | 2398-65             |
| Q5           | Transistor  | 2SC2999D-SP, Silicon, NPN      | 2SC-2999    | 2398-64             |
| Q6           | Transistor  | 2SC536E-SP, Silicon, NPN       | 2SC-536E    | 2398-65             |
| Q7           | Transistor  | 2SC536E-SP, Silicon, NPN       | 2SC-536E    | 2398-65             |
| Q8           | Transistor  | 2SC536E-SP, Silicon, NPN       | 2SC-536E    | 2398-65             |
| Q9           | Transistor  | 2SC536E-SP, Silicon, NPN       | 2SC-536E    | 2398-65             |
| Q10          | Transistor  | 2SC536E-SP, Silicon, NPN       | 2SC-536E    | 2398-65             |
| Q11          | Transistor  | 2SC536E-SP, Silicon, NPN       | 2SC-536E    | 2398-65             |

| REF. NO.      | DESCRIPTION                                   |   | RS PART NO. | MFR. PART NO.                    |
|---------------|---|---|-------------|----------------------------------|
| Q12           | Transistor                                    | 2SC536H-SP, Silicon, NPN  | 2SC-536H    | 2398-66                          |
| Q13           | Transistor                                    | 2SC536H-SP, Silicon, NPN  | 2SC-536H    | 2398-66                          |
| Q14           | Transistor                                    | 2SC536H-SP, Silicon, NPN  | 2SC-536H    | 2398-66                          |
| Q15           | Transistor                                    | 2SD400F, Silicon, NPN   | 2SD-400F    | 2398-67                          |
| Q16           | Transistor                                    | 2SD400F, Silicon, NPN   | 2SD-400F    | 2398-67                          |
| Q17           | Transistor                                    | 2SA608E-SP, Silicon, PNP  | 2SA-608E    | 2398-68                          |
| Q18           | Transistor                                    | 2SB544E, Silicon, PNP   | 2SB-544E    | 2398-69                          |
| Q19           | Transistor                                    | 2SA608E-SP, Silicon, PNP  | 2SA-608E    | 2398-68                          |
| Q20           | Transistor                                    | 2SC536E-SP, Silicon, NPN  | 2SC536E     | 2398-65                          |
| Q21           | Transistor                                    | 2SC536E-SP, Silicon, NPN  | 2SC-536E    | 2398-65                          |
| Q22           | Transistor                                    | DRA01B  | RX-0231     | 2398-70                          |
| Q23           | Transistor                                    | 2SA608E-SP, Silicon, PNP  | 2SA-608E    | 2398-68                          |
| Q24           | Transistor                                    | 2SC536E-SP, Silicon, NPN  | 2SC-536E    | 2398-65                          |
| Q25           | Transistor                                    | 2SC536E-SP, Silicon, NPN  | 2SC-536E    | 2398-65                          |
| Q26           | Transistor                                    | 2SC536E-SP, Silicon, NPN  | 2SC-536E    | 2398-65                          |
| Q27           | Transistor                                    | 2SC536E-SP, Silicon, NPN  | 2SC-536E    | 2398-65                          |
| IC            |   |   |             |                                  |
| IC1           | LSI, LA4145                                   | Power Amplifier   | MX-7304     | 2398-58                          |
| IC2           | LSI, LC4013B                                  | C-MOS, FLIP-FLOP  | MX-7305     | 2398-59                          |
| IC3           | LSI, MSM6411-B-11                             | Microprocessor  | MX-7303     | 2398-2                           |
| IC4           | LSI, LB1645N                                  | Motor Driver  | MX-4076     | 2398-60                          |
| IC5           | LSI, LB1645N                                  | Motor Driver  | MX-4076     | 2398-60                          |
| IC6           | LSI, TA75358P                                 | Operational Amplifier   | MX-3071     | 2398-61                          |
| IC7           | LSI, BA5101                                   | DOF Amplifier   | MX-5803     | 2398-62                          |
| IC8           | LSI, SVM7920CG                                | Melody IC   | MX-7307     | 2398-63                          |
| Jumpers       |   |   |             |                                  |
| J1            | Wire, Jumper, 0.6mm Diameter                  | Form, Width 12.5mm  |             | 2398-124                         |
| J2            | Wire, Jumper, 0.6mm Diameter                  | Form, Width 7mm   |             | 2398-15                          |
| J3            | Wire, Jumper, 0.6mm Diameter                  | Form, Width 10mm  |             | 2398-126                         |
| J4            | Wire, Jumper, 0.6mm Diameter                  | Form, Width 10mm  |             | 2398-126                         |
| J5            | Wire, Jumper, 0.6mm Diameter                  | Form, Width 10mm  |             | 2398-127                         |
| J6            | Wire 50mm                                     |   |             | 2398-126                         |
| J7            | Wire, Jumper, 0.6mm Diameter                  | Form, Width 10mm  |             | 2398-126                         |
| J8            | Wire, Jumper, 0.6mm Diameter                  | Form, Width 10mm  |             | 2398-126                         |
| J9            | Wire, Jumper, 0.6mm Diameter                  | Form, Width 10mm  |             | 2398-126                         |
| J10           | Wire, Jumper, 0.6mm Diameter                  | Form, Width 10mm  |             | 2398-126                         |
| J11           | Wire, Jumper, 0.6mm                           | Form, Width 5mm   |             | 2398-128                         |
| J12           | Wire, 50mm                                    |   |             | 2398-127                         |
| J13           | Wire, Jumper, 0.6mm                           | Diameter Form, Width 5mm  |             | 2398-128                         |
| Miscellaneous |   |   |             |                                  |
| BA11          | Motor Assy (See Mechanical Parts List)        |   | M-4116      | 2398-259                         |
| SW-1          | Switch, Slide                                 | Power, Mode   | S-3542      | 2398-76                          |
| SW-2          | Switch, Slide                                 | Power, Mode   | S-3542      | 2398-76                          |
| SWP           | Switch, Pin Pole                              |   | S-3556      | 2398-129                         |
| SWPN          | Switch, Pin Nuts                              |   | S-3557      | 2398-130                         |
| VR1           | Potentiometer 10k $\Omega$ B Balance          |   | S-7949      | 2398-134                         |
| W100          | Harness, Black, 4P                            | W/Wire, Brown, Red, Orange,<br>Yellow, 300mm                              |             | 2398-132                         |
| W101          | Wire, Antenna                                 | Orange, 220mm   |             | 2398-133                         |
| W102          | LUG Washer                                    |   |             | 2398-49                          |
| X1            | Crystal (for USA, CA)<br>(for EC)<br>(for AU) | Receiver, 49,406MHz<br>26,690MHz, HC-18/ $\mu$<br>40,225MHz, HC-18/ $\mu$ | MX-1352     | 2398-131<br>2398-609<br>2398-612 |
| X2            | Resonator, 2.0MHz                             | Micro Processor OSC   | C-0019      | 2398-6                           |

REMOTE CONTROL

MECHANICAL PARTS LIST

| REF. NO. | DESCRIPTION                       | RS PART NO. | MFR. PART NO. |
|----------|-----------------------------------|-------------|---------------|
| CR1      | Controller Case, Upper with Label | Z-1164      | 2398-41       |
| CR2      | Controller Case, Lower with Belts | Z-1166      | 2398-42       |
| CR3      | Cover, Battery Box                | DB-0704     | 2398-43       |
| CR4      | Stick, Cover                      | HC-4311     | 2398-31       |
| CR5      | Antenna Rod                       | A-0070      | 2398-44       |
| CR6      | Power Switch Lever                |             | 2398-45       |
| CR7      | Pushbutton, Rubber                | HC-4315     | 2398-46       |
| CR8      | Mic Push Button                   | K-0864      | 2398-47       |
| CR9      | Stick, Pad                        |             | 2398-32       |
| CR10     | Stick, Receiver, Lower            | HC-4312     | 2398-33       |
| CR11     | Spring, Controller                | RB-9359     | 2398-34       |
| CR12     | Star Washer                       |             | 2398-48       |
| CR13     | Lug Washer                        |             | 2398-49       |
| CR14     | Battery Terminal "AA" Right       | B-0968      | 2398-50       |
| CR15     | Battery Terminal "AA" (+)         | B-0971      | 2398-51       |
| CR16     | Battery Terminal "AA" (-)         | B-0972      | 2398-52       |
| CR17     | Battery Terminal "AA" Left        | B-0973      | 2398-53       |
| CR18     | Power Switch Leaf                 |             | 2398-54       |
| CR19     | Stick Ball                        | HC-4313     | 2398-35       |
| CR20     | Stick                             |             | 2398-36       |
| CR21     | Stick Receiver, Upper             | HC-4314     | 2398-37       |
| CR22     | Switch-Leaf, Rivet                |             | 2398-38       |
| CR23     | Switch-Leaf, F/B                  |             | 2398-39       |
| CR24     | Switch-Leaf, L/R                  |             | 2398-40       |
| TP0      | Screw, Tapping Pan Head 3x6       | HD-2385     | 2398-55       |
| TP3      | Screw, Tapping Pan Head 3x12      | HD-2413     | 2398-56       |

MAIN BODY

| REF. NO. | DESCRIPTION                          | RS PART NO.                  | MFR. PART NO.     |
|----------|--------------------------------------|------------------------------|-------------------|
| BA1      | Base                                 | Z-1191                       | 2398-249          |
| BA2      | Caster                               | HC-4319                      | 2398-250          |
| BA3      | Caster, Wheel                        | HC-4320                      | 2398-251          |
| BA4      | Shaft, Caster, Wheel                 |                              | 2398-252          |
| BA5      | Caster, Bearing                      | HC-4321                      | 2398-253          |
| BA6      | Wheel                                | HC-4322                      | 2398-254          |
| BA7      | Tire                                 | HC-4323                      | 2398-255          |
| BA8      | Shaft, Wheel                         |                              | 2398-256          |
| BA9      | Gear, Box, Upper                     | RA-0983                      | 2398-257          |
| BA10     | Gear, Box, Lower                     | RA-0984                      | 2398-258          |
| BA11     | Motor Assy.                          | M-4116                       | 2398-259          |
| BA11-1   | Motor, 2732-110-GH                   |                              |                   |
| BA11-2   | Gear, Pinion                         |                              |                   |
| BA12     | Capacitor, Ceramic                   | 0.1 $\mu$ F, 25V, +80%, -20% | CC-104MFBC 2195-7 |
| BA13     | No. 1 Gear                           | RA-0985                      | 2398-262          |
| BA14     | No. 1 Shaft, $\phi$ 3x39             | RT-3081                      | 2398-263          |
| BA15     | Gear Assy (1)                        | RA-0986                      | 2398-264          |
| BA15-1   | Gear, Spur W/Pinion                  |                              |                   |
| BA15-2   | No. 2 Shaft $\phi$ 4x48              |                              |                   |
| BA15-3   | E-Ring 3                             |                              |                   |
| BA16     | Gear Assy (2)                        | RA-0987                      | 2398-265          |
| BA16-1   | No. 3 Gear, Large                    |                              |                   |
| BA16-2   | No. 3 Gear, Small                    |                              |                   |
| BA16-3   | No. 3 Shaft, 4x44.4                  |                              |                   |
| BA17     | P.C.B. Gear Box Assy                 | XB-1394                      | 2398-266          |
| BA18     | Connector-Terminal 4P, Vertical      |                              |                   |
| BA19     | Wire, Brown, Red 140mm               |                              |                   |
| BA20     | Wire, Drange, Yellow 140mm           |                              |                   |
| BA21     | Motor, Rubber, Cover                 | HC-4324                      | 2398-268          |
| BF1      | Body, Front                          | Z-1187                       | 2398-198          |
| BF2      | Speaker 0.3W, 8 $\Omega$ , $\phi$ 66 | SP-5349                      | 2398-199          |
| BF3      | Harness, Black                       | 2P W/Wire Brown, Brown 280mm | 2398-200          |
| BO1      | Bumper, Front                        | Z-1192                       | 2398-272          |
| BO2      | Bumper, Rear                         | Z-1193                       | 2398-273          |
| BO3      | Bumper, Side                         | Z-1194                       | 2398-274          |
| BO4      | Rubber Washer                        | HD-8663                      | 2398-201          |

| REF. NO. | DESCRIPTION                                   | RS PART NO.   | MFR. PART NO. |
|----------|---|---|---------------|
| BO5      | Battery Plate                                 | RT-3082   | 2398-275      |
| BO6      | Back Panel                                    | Z-1195  | 2398-276      |
| BO7      | Battery                                       | CS-0188   | 2398-277      |
| BO8      | Receiving Antenna                             | A-0071  | 2398-278      |
| BO9      | Dodge Nuts, 5x11                              |   | 2398-217      |
| BR1      | Body, Rear                                    | Z-1188  | 2398-202      |
| BR2      | Eyelet, $\phi$ 2.5x4                          |   | 2398-203      |
| BR3      | Combination Plate                             | UM-3 "AA" (+) (-)   | 2398-204      |
| BR4      | Charge Connector                              | J-1799  | 2398-205      |
| BR5      | Fuse Holder GF Type                           | F-1024  | 2398-206      |
| BR6      | Fuse, 5A, GF Type                             | HF-0068   | 2398-207      |
| BR7      | Semi-Fixed VR                                 | P-6198  | 2398-208      |
| BR8      | Semi-Fixed Board                              |   | 2398-209      |
| BR9      | Harness, Black                                | 2P W/Wire Red, Black, 260mm   | 2398-210      |
| BR10     | Wire  | Red, Black, 200mm   | 2398-211      |
| BR11     | Wire  | Red, 100mm  | 2398-212      |
| BR12     | Wire  | Red, 150mm  | 2398-213      |
| BR13     | Harness, Black 3P W/Wire                      | Blue, White, Red, 160mm   | 2398-214      |
| BR14     | Wire  | Black, 250mm  | 2398-215      |
| CA1      | Tape, Recorder, Case Printed                  | Top   | Z-1167        |
| CA2      | Tape, Recorder, Case                          | Bottom  | Z-1168        |
| CA3      | Tape, Recorder, Holder with Label             |   | RT-3073       |
| CA4      | Tape, Recorder, Cover                         |   | Z-1186        |
| CA5      | Stopper, KNOB                                 |   | RT-3074       |
| CA6      | Trolley                                       |   | RT-3075       |
| CA7      | Lever   | Left  | RT-3076       |
| CA8      | Lever   | Right   | RT-3077       |
| CA9      | Main Switch                                   |   | RT-3078       |
| CA10     | Eject Cam                                     |   | RT-3079       |
| CA11     | Cassette, KNOB                                | Black   | K-0867        |
| CA12     | Cassette, KNOB                                | Red   | K-0868        |
| CA13     | Cassette, Spring                              | Trolley   | RB-9360       |
| CA14     | Cassette, Spring                              | Stopper   | RB-9361       |
| CA15     | Harness, Black                                | 2P W/Wire, 550mm  | 2398-187      |
| CA16     | Harness, Black                                | 6P W/Wire, Green, Yellow,<br>Orange 300mm, Red 380mm,<br>Brown, Black 300mm | 2398-188      |
| CA17     | PCB   | Switch  | XB-1393       |
| CA18     | Switch Knob                                   |   | RT-3080       |
| CA19     | Switch  |   | 2398-191      |
| CA20     | Wire, Black                                   | 100mm   | 2398-192      |
| CA21     | Wire, Black                                   | 180mm   | 2398-193      |
|          | Cassette, Mechanism Ass'y<br>(Non-Repairable) |   |               |
| CAM-1    | LUG   |   |               |
| CAM-2    | R/P Head                                      |   |               |
| CAM-3    | Auto Stop Lever                               |   |               |
| CAM-4    | Arm Spring                                    |   |               |
| CAM-5    | Pinch Arm Ass'y                               |   |               |
| CAM-6    | Erase Head Base Ass'y                         |   |               |
| CAM-6-1  | Magnet  |   |               |
| CAM-6-2  | Erase Head Base                               |   |               |
| CAM-7    | Coil Spring (Head)                            |   |               |
| CAM-8    | Head Base                                     |   |               |
| CAM-9    | Hexagon Nut                                   |   |               |
| CAM-11   | Interlock                                     |   |               |
| CAM-12   | Door Lock                                     |   |               |
| CAM-13   | Coil Spring (Back Tension)                    |   |               |
| CAM-14   | Supply Reel                                   |   |               |
| CAM-15   | Takeup Reel Ass'y                             |   |               |
| CAM-16   | Play Arm                                      |   |               |
| CAM-17   | Play Gear                                     |   |               |
| CAM-18   | Fast-F Gear                                   |   |               |
| CAM-19   | Chassis Ass'y                                 |   |               |
| CAM-20   | Coil Spring (Head Base)                       |   |               |
| CAM-24   | Cassette Holder                               |   |               |
| CAM-27   | Ground Lug                                    |   |               |



| REF. NO. | DESCRIPTION                  | RS PART NO.                       | MFR. PART NO. |
|----------|------------------------------|-----------------------------------|---------------|
| CAM-30   | Belt                         |                                   |               |
| CAM-31   | Capstan Support              |                                   |               |
| CAM-32   | Idler                        |                                   |               |
| CAM-33   | Flywheel Ass'y               |                                   |               |
| CAM-34   | Bind Screw                   |                                   |               |
| CAM-35   | Rubber Cushion               |                                   |               |
| CAM-36   | Motor Bracket                |                                   |               |
| CAM-37   | Motor Ass'y                  |                                   |               |
| CAM-37-1 | Motor Pulley                 |                                   |               |
| CAM-37-2 | Motor                        |                                   |               |
| CAM-39   | Left Switch                  |                                   |               |
| CAM-40   | F-F Rewind Lever             |                                   |               |
| CAM-41   | Lever Holder                 |                                   |               |
| CAM-42   | Coil Spring                  |                                   |               |
| CAM-43   | Coil Spring                  |                                   |               |
| CAM-44   | Lever Lock                   |                                   |               |
| CAM-45   | Acting Plate                 |                                   |               |
| CAM-46   | Cross Arm Plate              |                                   |               |
| CAM-47   | Pause Arm                    |                                   |               |
| CAM-48   | Coil Spring                  |                                   |               |
| CAM-49   | Coil Spring (Record Lever)   |                                   |               |
| CAM-50   | Pause Lever                  |                                   |               |
| CAM-51   | Play Lever                   |                                   |               |
| CAM-52   | Fast-F Lever                 |                                   |               |
| CAM-53   | Rewind Lever                 |                                   |               |
| CAM-54   | Record Lever                 |                                   |               |
| CAM-55   | Stop/Eject Lever             |                                   |               |
| CAM-56   | Coil Spring                  |                                   |               |
| CAM-57   | Washer (For Oil Cut)         |                                   |               |
| CAM-58   | Coil Spring                  |                                   |               |
| CAM-69   | Earth Lug                    |                                   |               |
| CAM-101  | Tapping Screw                |                                   |               |
| CAM-102  | Binding Screw 2x10           |                                   |               |
| CAM-103  | Ring CS-2                    |                                   |               |
| CAM-104  | Tapping Screw 2.6x10         |                                   |               |
| CAM-105  | Tapping Screw 3x8            |                                   |               |
| CAM-108  | Tapping Screw 2.6x6          |                                   |               |
| H1       | Cover, Face                  | Z-1171 -                          | 2398-157      |
| H2       | Face                         | Z-1172 -                          | 2398-158      |
| H3       | Upper, Head                  | Z-1174 -                          | 2398-159      |
| H4       | Lower, Head                  | Z-1175 -                          | 2398-160      |
| H5       | Breast with Label            | Z-1176 -                          | 2398-161      |
| H6       | Face, Front                  | Z-1178 -                          | 2398-162      |
| H7       | Lens                         | G-0100 -                          | 2398-163      |
| H8       | Light Diffuser               | G-0105 -                          | 2398-164      |
| H9       | Reflector                    | D-1042                            | 2398-165      |
| H10      | Right Ear W/Label            | Z-1183 -                          | 2398-166      |
| H11      | Left Ear W/Label             | Z-1184 -                          | 2398-167      |
| H12      | Small Lamp 3V, 200mA         | L-2028 -                          | 2398-168      |
| H13      | LED SLP-936B-50              | L-2003 -                          | 2397-91       |
| H14      | Capacitor, Ceramic           | 0.01 $\mu$ F (Z), 50V, +80%, -20% | 2397-16       |
| H15      | Socket                       | J-7177                            | 2398-169      |
| H16      | Harness, Black 2P            | W/Wire Green, Green 300mm         | 2398-170      |
| H17      | Harness, Black, 2P           | W/Wire Black, Red 260mm           | 2398-171      |
| H18      | Wire, Green 80mm             |                                   | 2398-172      |
| CK PCB   | PCB Assy<br>(Non-Repairable) | Clock, W/Wire                     | XB-1392       |
| C1       | Capacitor, Ceramic           | 15pF, CH, 50V, $\pm$ 5%           |               |
| C2       | Capacitor, Ceramic           | 30pF, CH, 50V, $\pm$ 5%           |               |
| C3       | Capacitor, Ceramic           | 0.1pF, Z, 50V, +80%, -20%         |               |
| C4       | Capacitor, Ceramic           | 0.1pF, Z, 50V, +80%, -20%         |               |
| CK1      | Clock Frame, Printed         |                                   | HC-4318       |
| CK2      | Clock Clear, Part            |                                   | G-0099        |
| CK3      | Volume Knob                  |                                   | K-0865        |
| CK4      | Alarm Switch Lever           |                                   | RT-3071       |
| CK5      | Clock Push Button            |                                   | K-0866        |
| CK6      | Contact Plate                |                                   | RT-3072       |

| REF. NO. | DESCRIPTION                              | RS PART NO.                             | MFR. PART NO. |
|----------|--|---|---------------|
| CK7      | Interconnector                           | HC-4316                                 |               |
| CK8      | Spacer                                   | HC-4317                                 |               |
| CK9      | LCD                                      | L-2027                                  |               |
| CK10     | Earphone Jack                            | J-2070                                  |               |
| CK11     | Earphone Jack Nut                        | HD-7190                                 |               |
| CK12     | Harness 2P                               | W/Wire 150mm                            |               |
| CK13     | Potentionmeter                           | 10k $\Omega$ B, Volume                  | P-7950        |
| CK14     | Volume PCB                               |   | P-7951        |
| CK15     | Harness, 3P                              | 140mm                                   |               |
| CK16     | Harness, 4P                              | W/Wire, 130mm                           | W-3479        |
| D1       | Diode                                    | 1S1588, Silicon                         |               |
| D2       | Diode                                    | 1S1588, Silicon                         |               |
| IC       | LSI, TC8215UF                            |   | MX-7308       |
| Q1       | Transistor, Carbon                       | 2SC1815Y silicon, NPN                   |               |
| R1       | Resistor, Carbon                         | 47k $\Omega$ , 1/4W, $\pm$ 5%, Vertical |               |
| TP5      | Screw, Tapping Pan Head 2x6              |   |               |
| X'TAL    | Crystal, PT-38                           | 32,768kHz                               | MX-1353       |
|          | Left Hand Ass'y<br>(Non-Repairable)      | Z-1190                                  | 2398-235      |
| LH1      | Arm, Outer                               |   |               |
| LH2      | Finger, Cover, Outer                     |   |               |
| LH3      | Finger, Cover, Inner                     |   |               |
| LH4      | Finger, Outer W/Pole                     |   |               |
| LH5      | Finger, Outer W/Hole                     |   |               |
| LH6      | Finger, Inner W/Hole                     |   |               |
| LH7      | Finger, Inner W/Pole                     |   |               |
| LH8      | Rubber, Nail                             |   |               |
| LH9      | Finger, Lever                            |   |               |
| LH10     | Finger, Arm                              |   |               |
| LH11     | Finger, Link                             |   |               |
| LH12     | Finger, Shaft $\phi$ 3.9x28.1            |   |               |
| LH13     | Spring, Finger                           |   |               |
| RH2      | Arm, Inner                               |   |               |
| RH3      | Wrist, Outer                             |   |               |
| RH4      | Wrist, Inner                             |   |               |
| RH7      | Shoulder                                 |   |               |
| RH8      | Link (Large)                             |   |               |
| RH9      | Link (Small)                             |   |               |
| RH10     | O-Ring                                   |   |               |
| RH11     | Spring, Hand                             |   |               |
| RH12     | Rubber, Washer                           |   |               |
| RH13     | Washer, No. 1 $\phi$ 6                   |   |               |
| RH14     | Washer, No. 2 3x12.5x0.18                |   |               |
| RH15     | Washer, No. 3 $\phi$ 8                   |   |               |
| TP1      | Screw, Tapping, Pan Head 3x8             | HD-2415                                 |               |
| TP3      | Screw, Tapping, Pan Head 3x12            | HD-2413                                 |               |
| TP9      | Screw, Tapping, Pan Head W/Flange 8x3x8  | HD-6016                                 |               |
| TP10     | Screw, Tapping, Pan Head W/Flange 8x3x10 | HD-0221                                 |               |
|          | Right Hand Ass'y<br>(Non-Repairable)     | Z-1189                                  | 2398-218      |
| RH1      | Arm, Outer                               |   |               |
| RH2      | Arm, Inner                               |   |               |
| RH3      | Wrist, Outer                             |   |               |
| RH4      | Wrist, Inner                             |   |               |
| RH5      | Finger, Outer                            |   |               |
| RH6      | Finger, Inner                            |   |               |
| RH7      | Shoulder                                 |   |               |
| RH8      | Link (Large)                             |   |               |
| RH9      | Link (Small)                             |   |               |
| RH10     | O-Ring                                   |   |               |
| RH11     | Spring, Hand                             |   |               |
| RH12     | Rubber, Washer                           |   |               |
| RH13     | Washer, No. 1 $\phi$ 6                   |   |               |
| RH14     | Washer, No. 2 3x12.5x0.8                 |   |               |
| RH15     | Washer, No. 3 $\phi$ 8                   |   |               |
| TP1      | Screw, Tapping, Pan Head 3x8             | HD-2415                                 |               |
| TP3      | Screw, Tapping, Pan Head 3x12            | HD-2413                                 |               |

| REF. NO. | DESCRIPTION                              | RS PART NO. | MFR. PART NO. |
|----------|--|-------------|---------------|
| TP9      | Screw, Tapping, Pan Head W/Flange 8x3x8  | HD-6016     |               |
| TP10     | Screw, Tapping, Pan Head W/Flange 8x3x10 | HD-0221     |               |
| RH12     | Rubber Washer                            | HD-8663     | 2398-201      |
| TP1      | Screw, Tapping                           | HD-2415     | 2364-TP1      |
| TP2      | Screw, Tapping                           | HD-2419     | 2398-270      |
| TP3      | Screw, Tapping                           | HD-2413     | 2398-56       |
| TP4      | Screw, Tapping                           | HD-2417     | 2398-195      |
| TP5      | Screw, Tapping                           | HD-2414     | 2195-35       |
| TP6      | Screw, Tapping                           | HD-2418     | 2398-216      |
| TP7      | Screw, Tapping                           | HD-3019     | 2398-196      |
| TP8      | Screw, Tapping W/Flange                  | HD-2420     | 2398-271      |
| TP9      | Screw, Tapping                           | HD-6016     | 2397-96       |
| TP10     | Screw, Tapping W/Flange                  | HD-2385     | 2398-234      |
| TP11     | Truss Screw, 5x15                        | HD-2421     | 2398-279      |

#### HARDWARE KIT

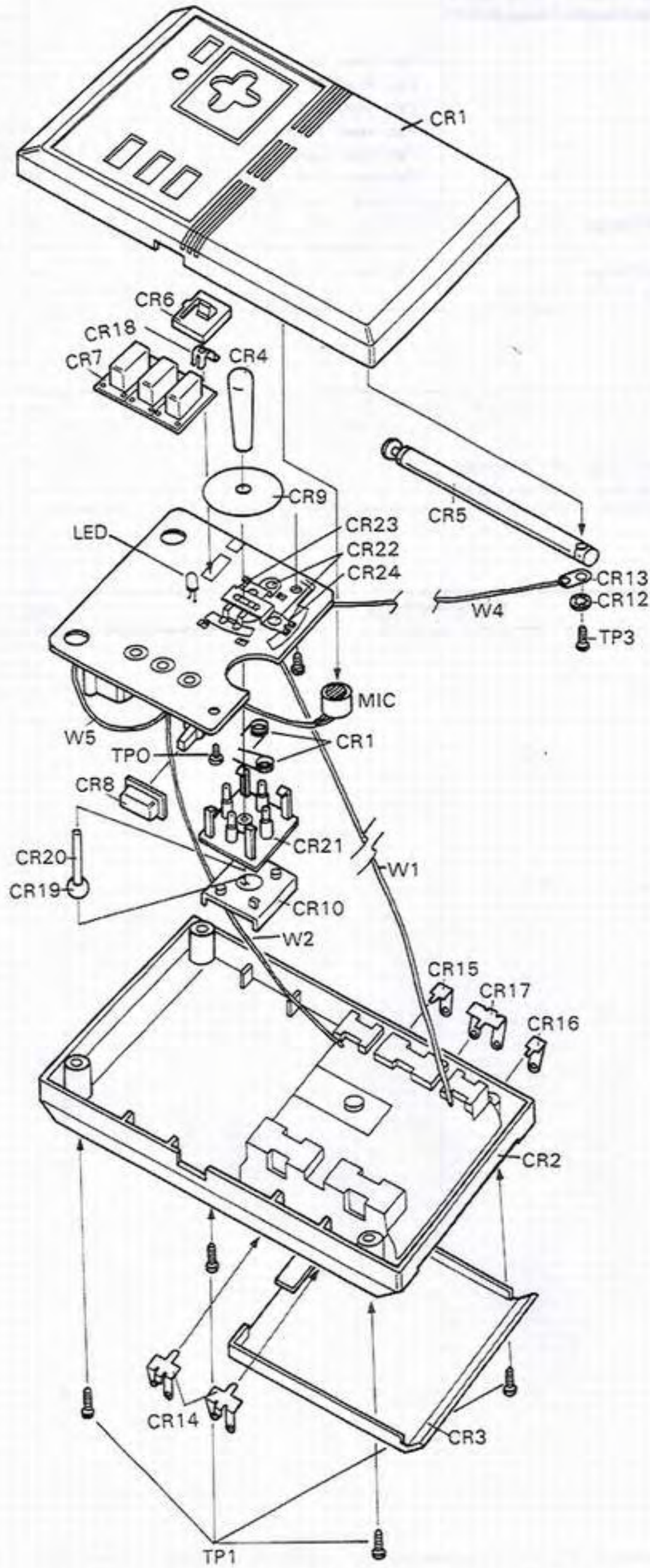
| REF. NO. | DESCRIPTION                             | RS PART NO. | MFR. PART NO. |
|----------|---|-------------|---------------|
| HW1      | Hardware Kit                            | HW-6002398  | 2398-280      |
| TP1      | Screw, Tapping, Pan Head 3x8 Controller | HD-2415     |               |
| TP2      | Screw, Tapping, Pan Head 3x10 Main Body | HD-2419     |               |

#### ACCESSORIES

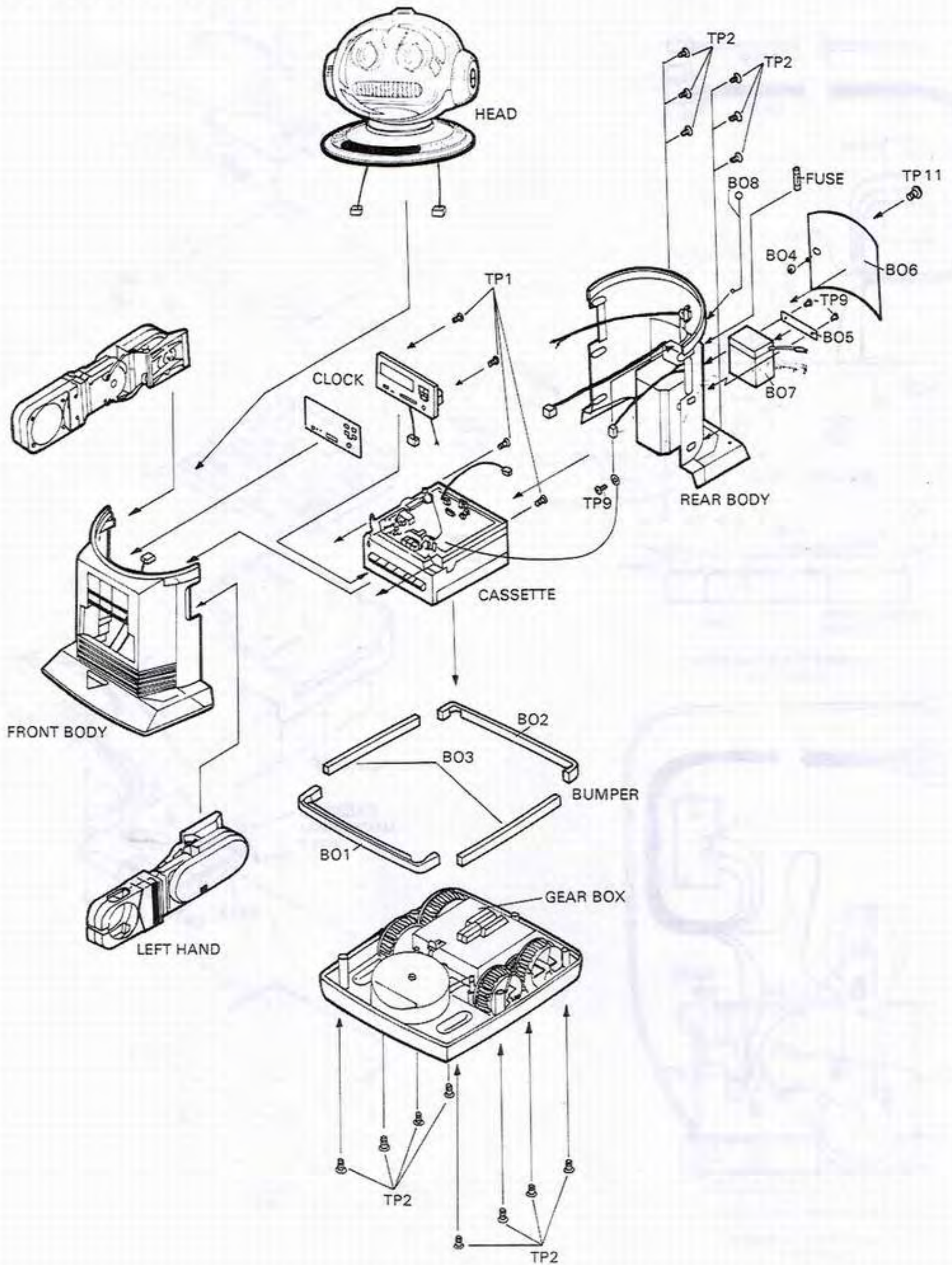
| REF. NO. | DESCRIPTION   | RS PART NO. | MFR. PART NO. |
|----------|---------------|-------------|---------------|
| CHG      | Charger       | W03480      | 2398-281      |
| CTP      | Cassette Tape | CT-0031     | 2398-284      |
| DRY      | Driver        | HC-4325     | 2398-283      |
| TRY      | Tray          | Z-1196      | 2398-282      |

# REMOTE CONTROL UNIT

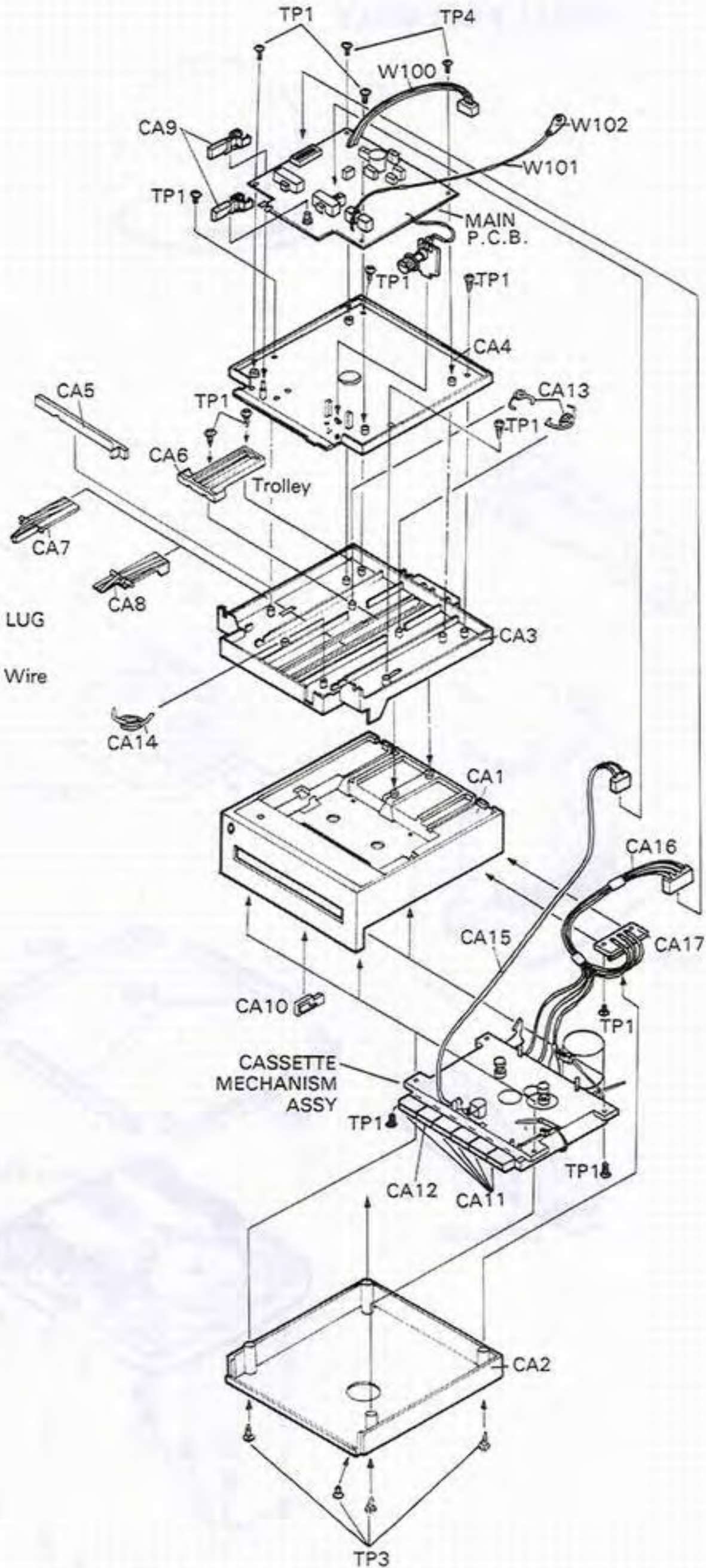
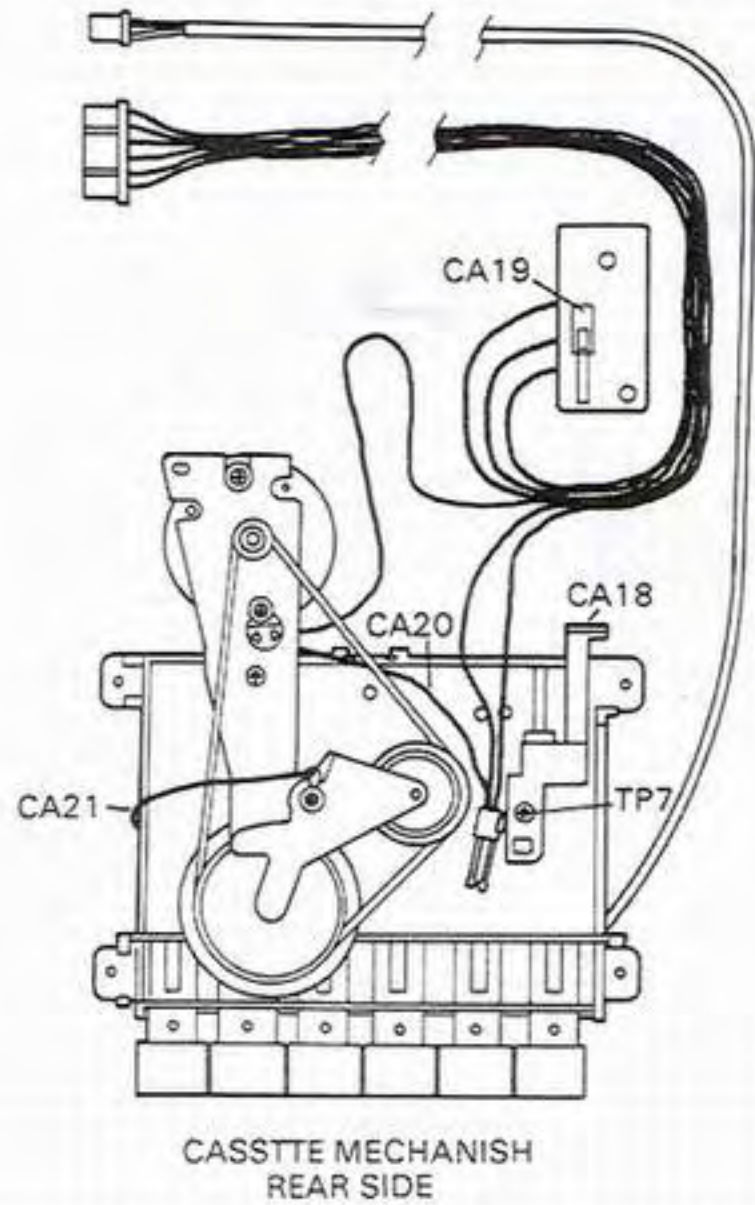
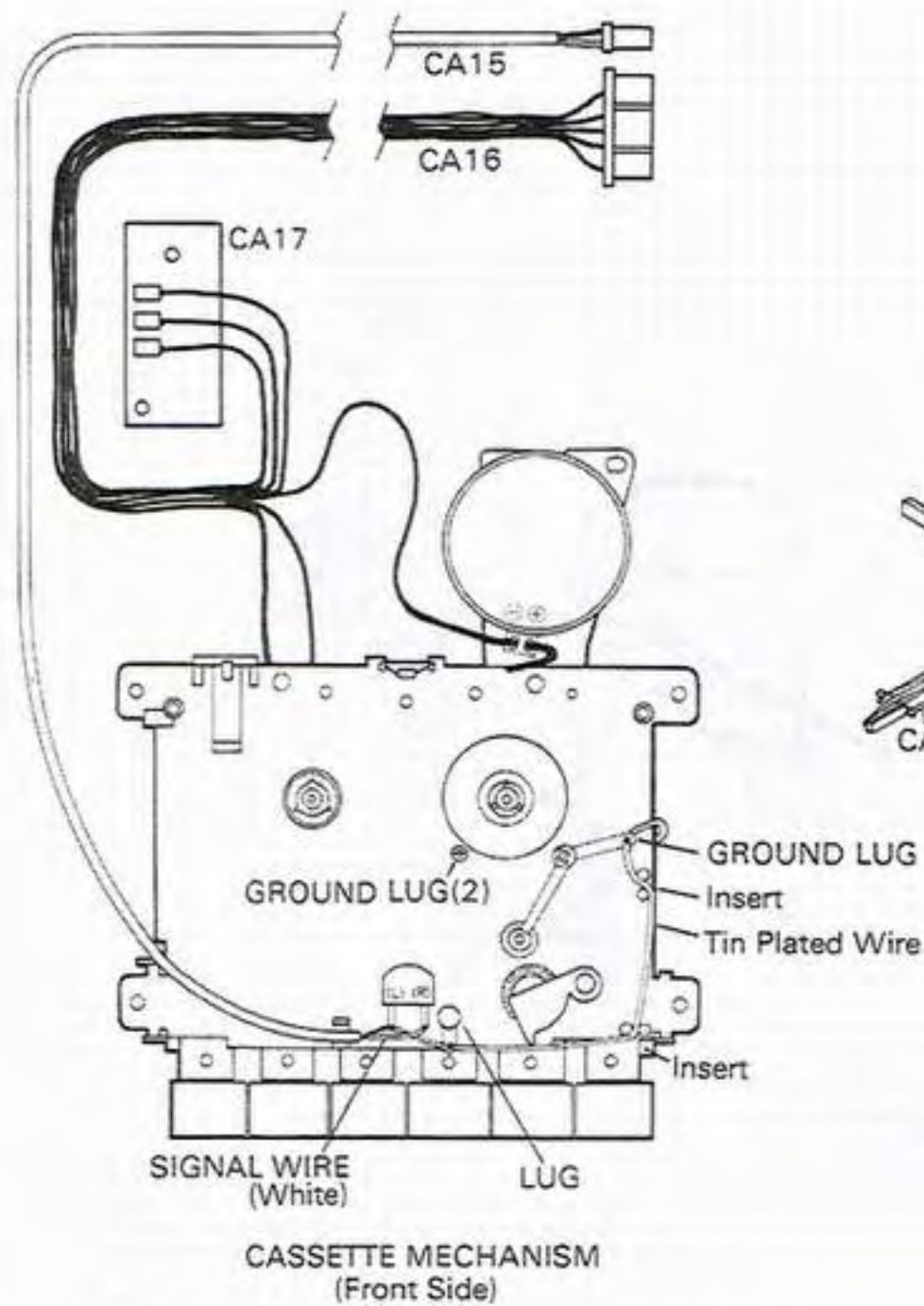
## EXPLODED VIEW



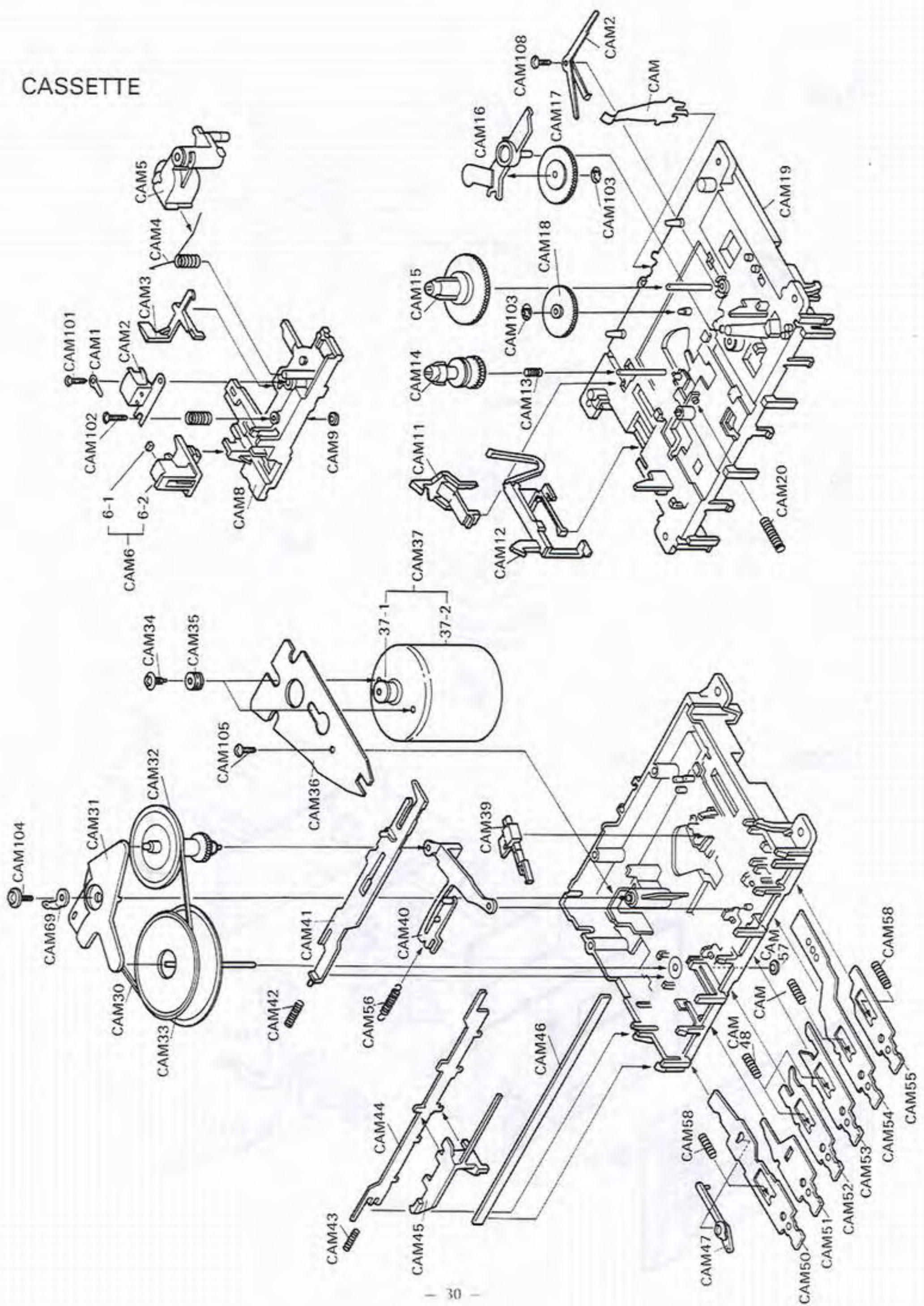
# BODY OVERALL ASSEMBLY



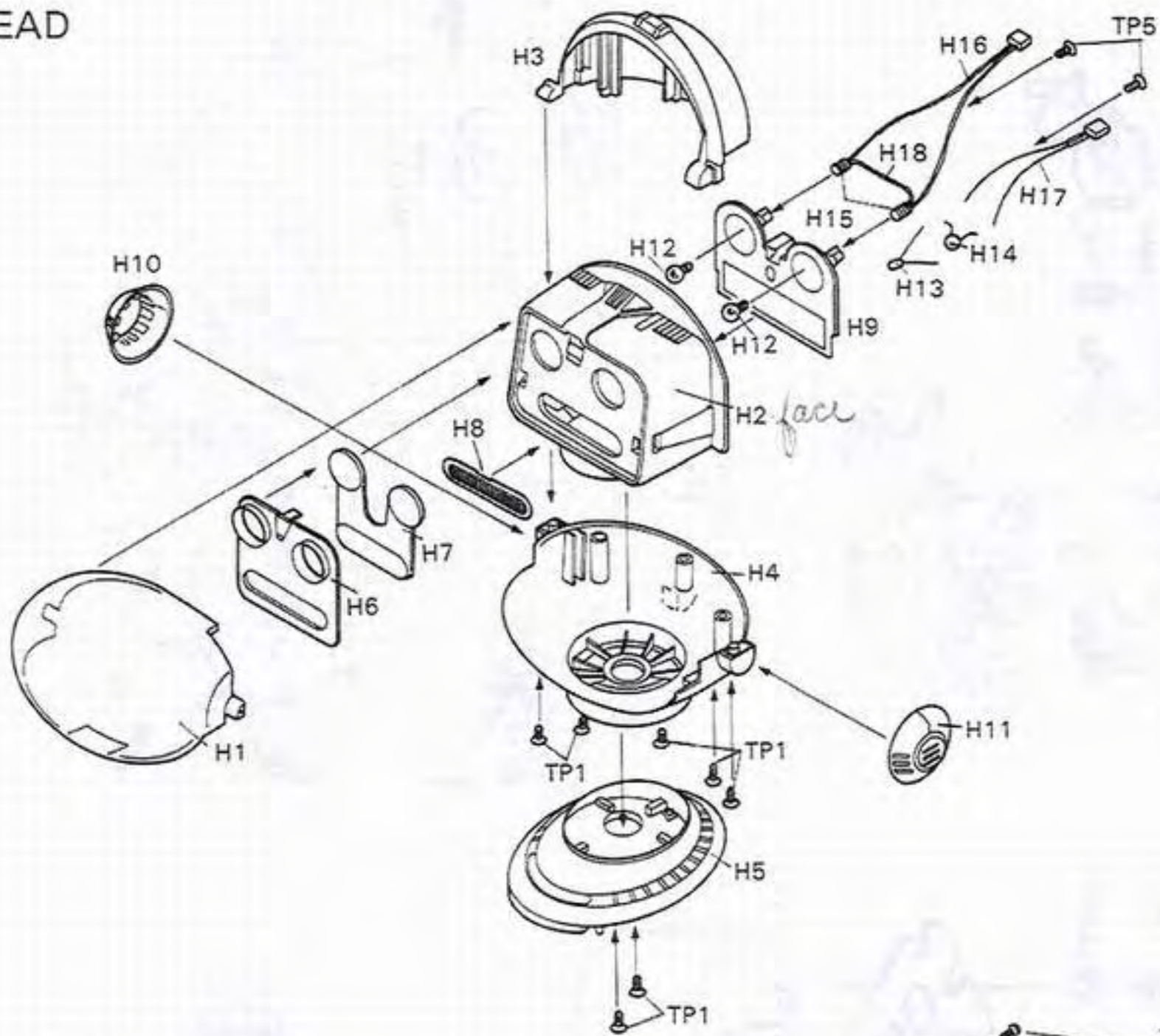
# CASSETTE



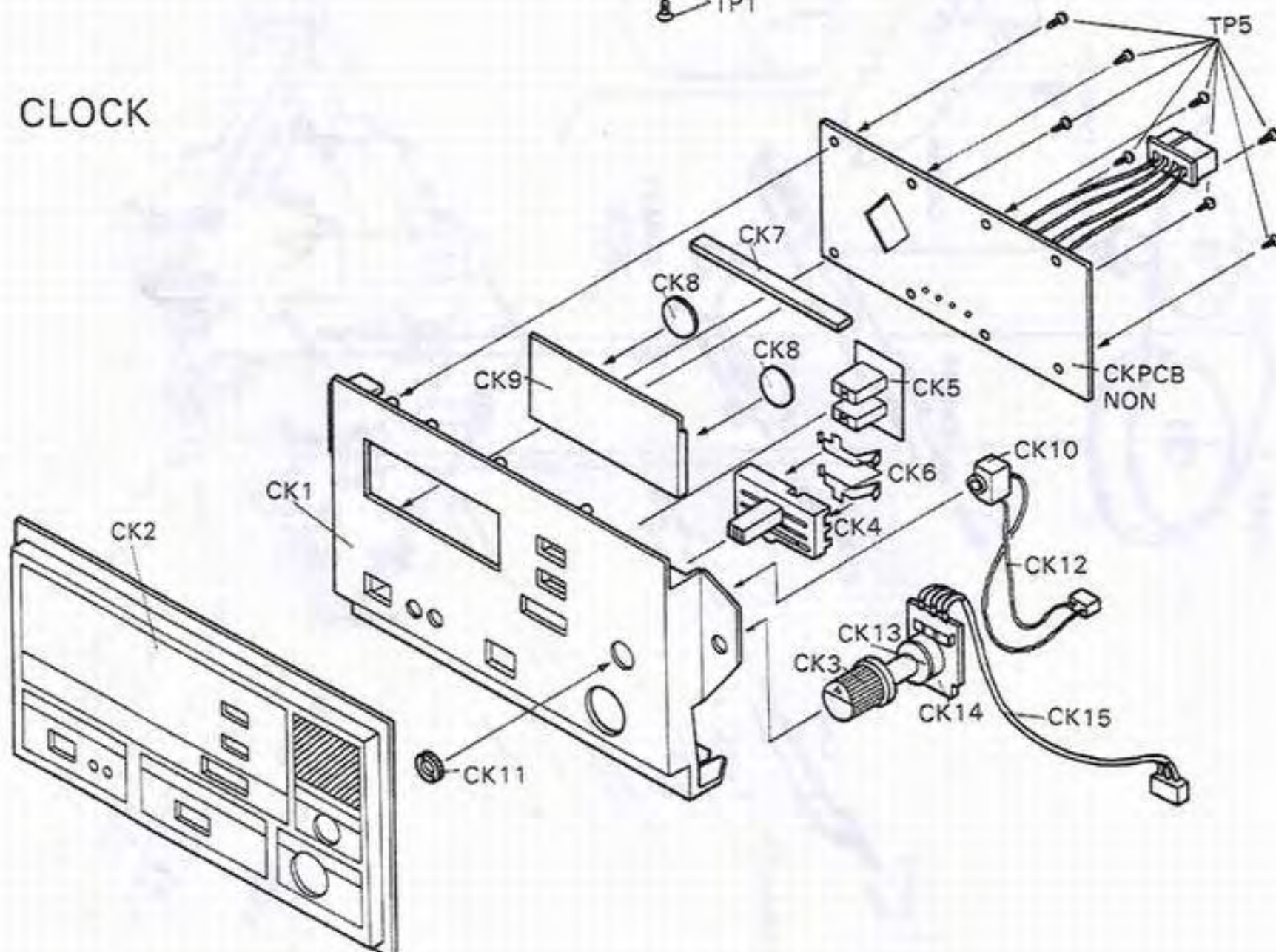
# CASSETTE



# HEAD

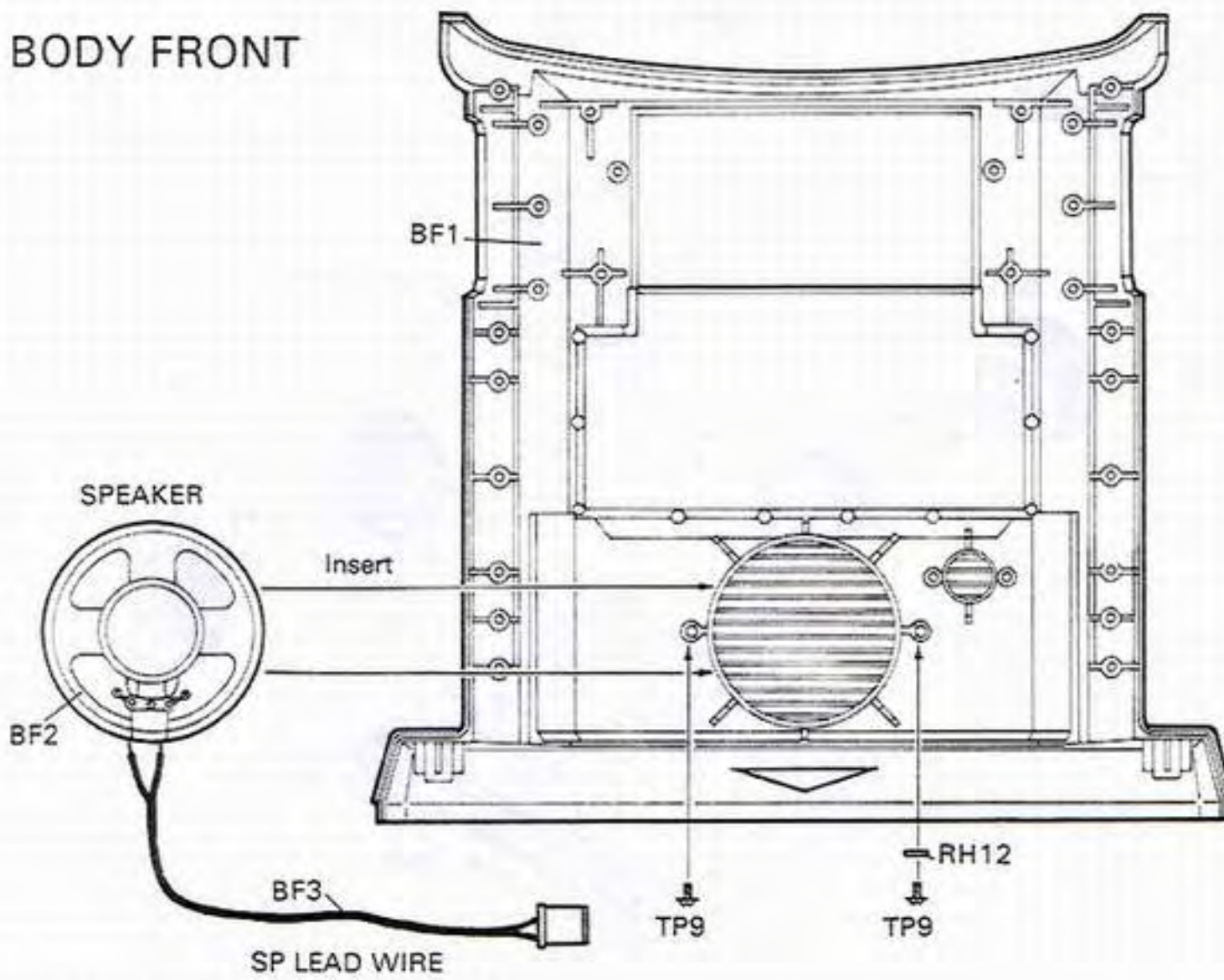


# CLOCK

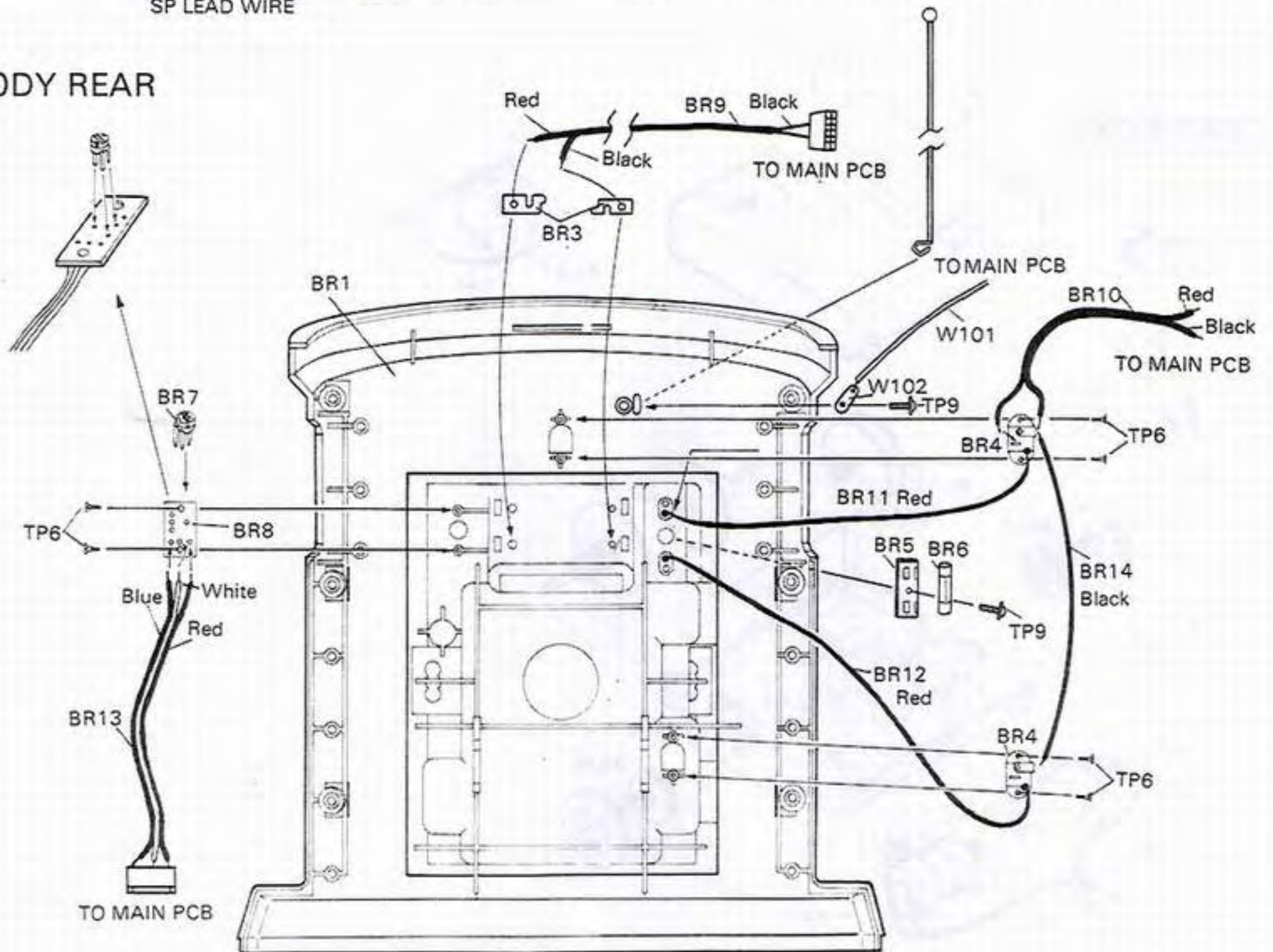


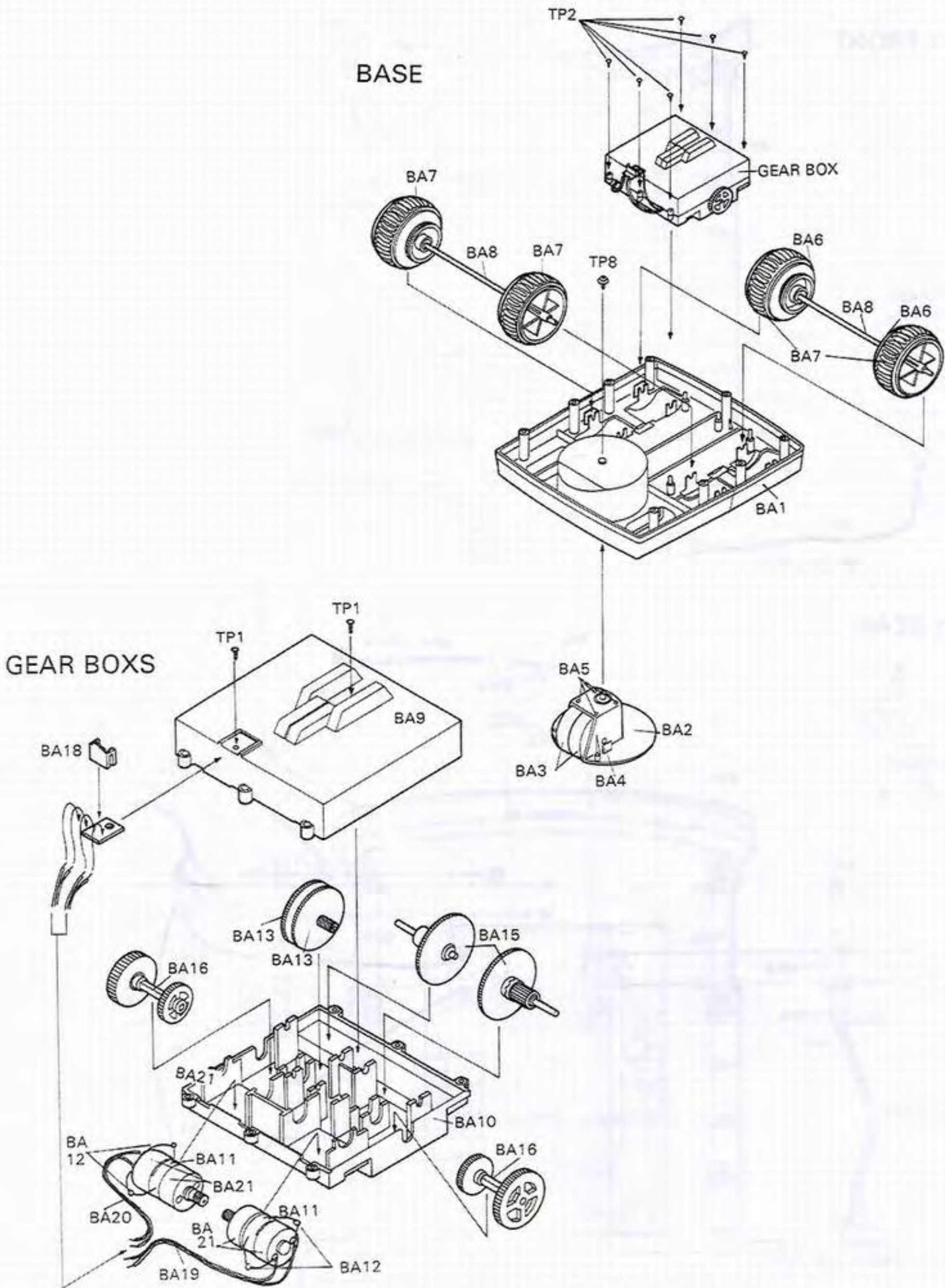


# BODY FRONT

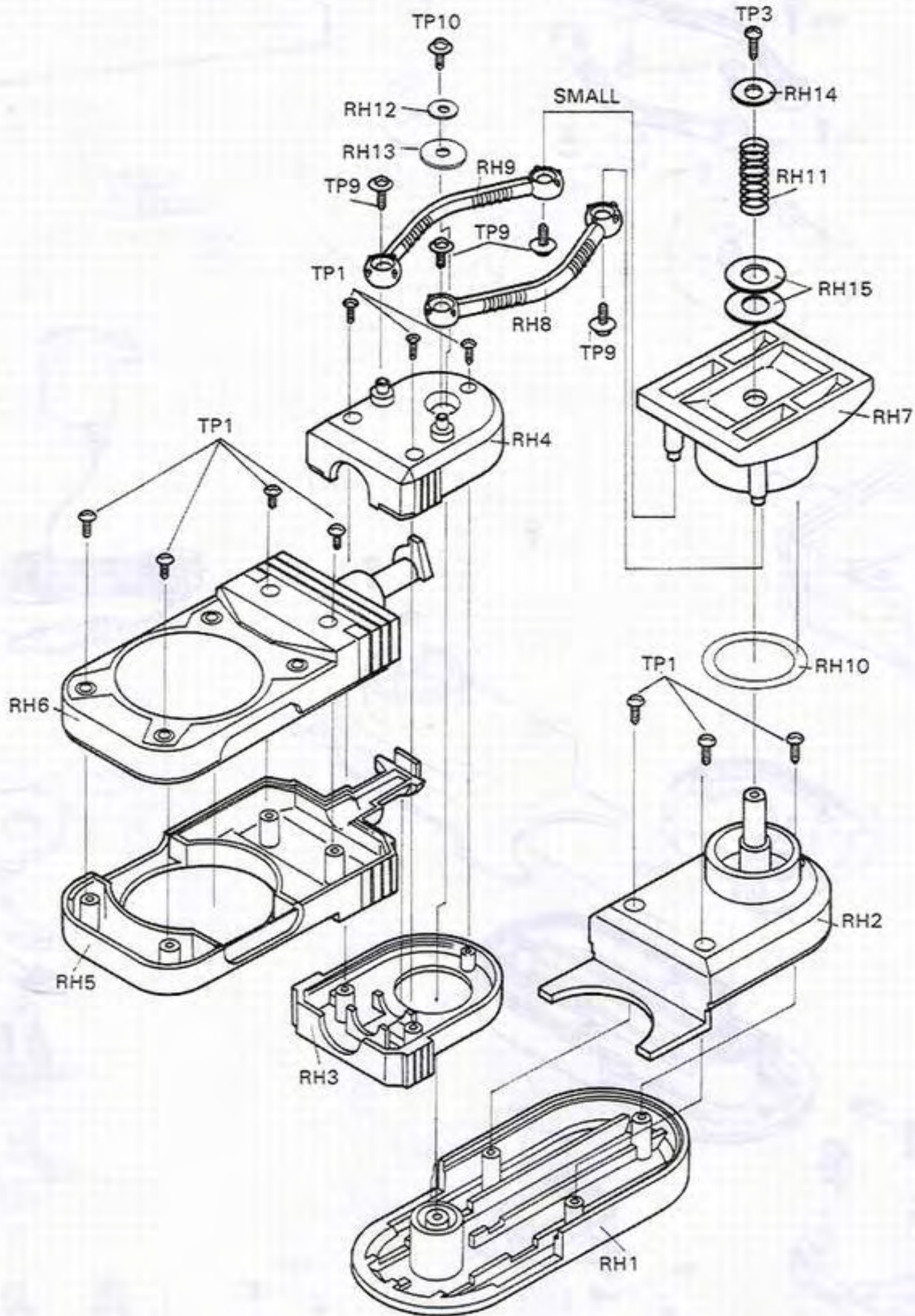


# BODY REAR



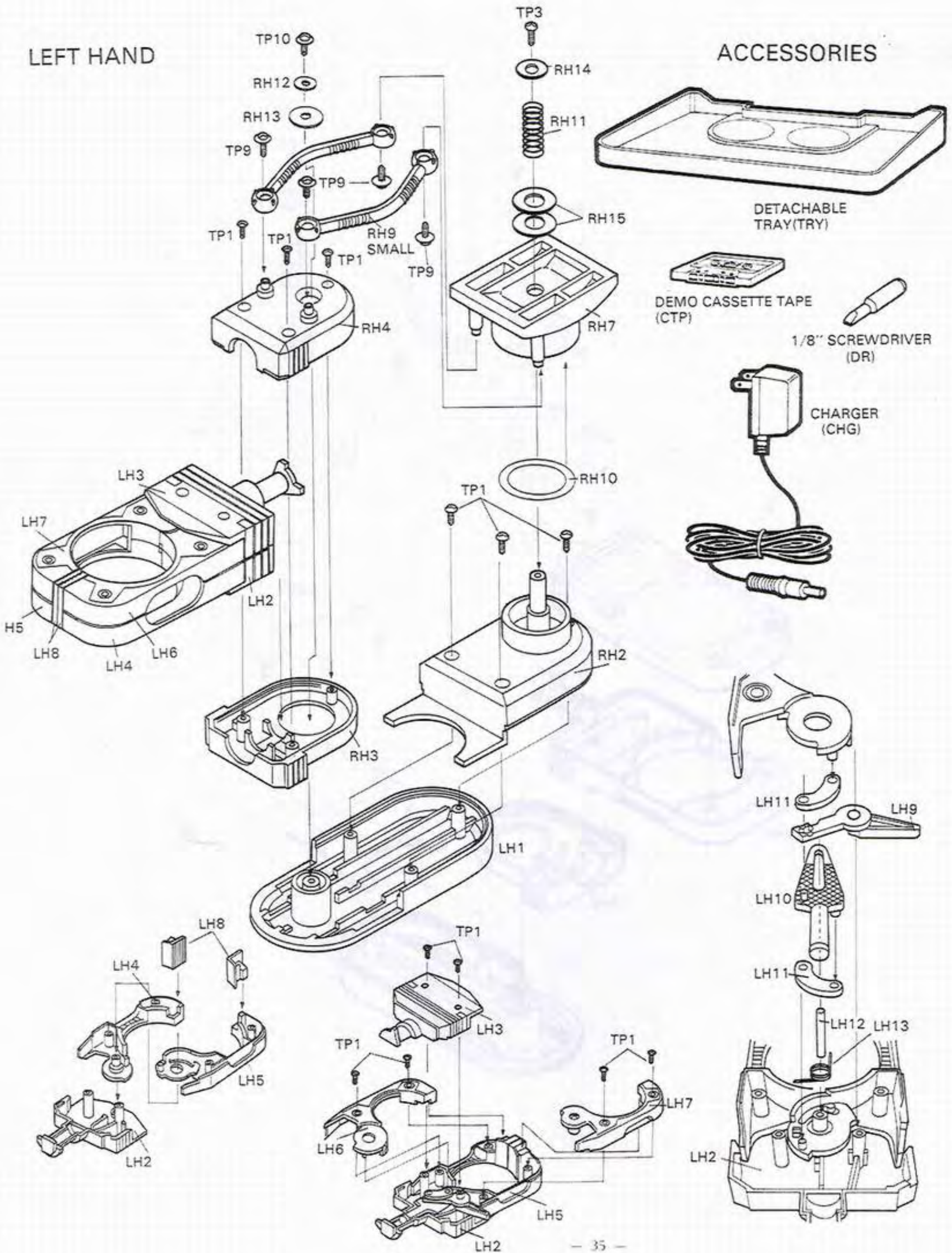


# RIGHT HAND



LEFT HAND

ACCESSORIES



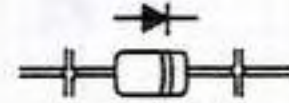
# LEAD IDENTIFICATION



DS442  
1SS53  
1S1588  
1S188



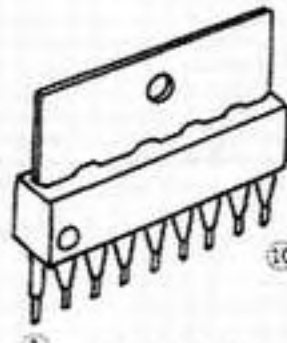
HZ4C1  
TOSO5Z4.7Y



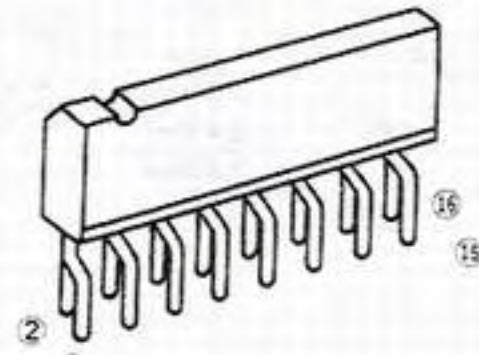
DS135B



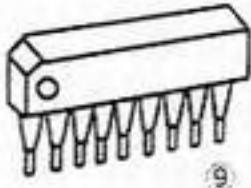
G A C  
DRA01B  
G: Gate  
A: Anode  
C: Cathode



LB1645N



BA5101



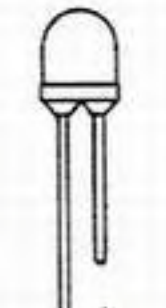
LA4145



ECB  
2SA608  
2SC536  
2SC2999

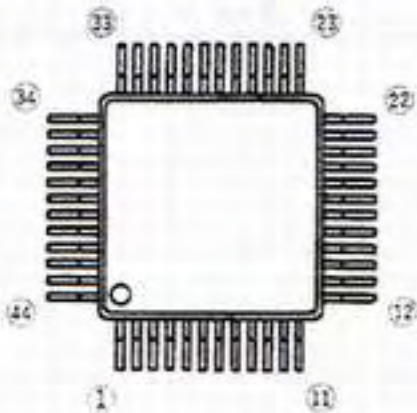


B C E  
2SB544  
2SC1815  
2SD400  
2SC945

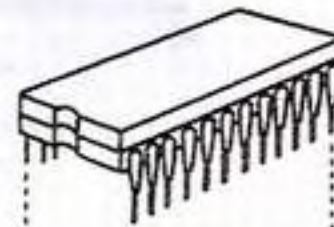


GL3AR1  
GL3AG1  
SLP-936B-50

B: Base  
C: Collector  
E: Emitter



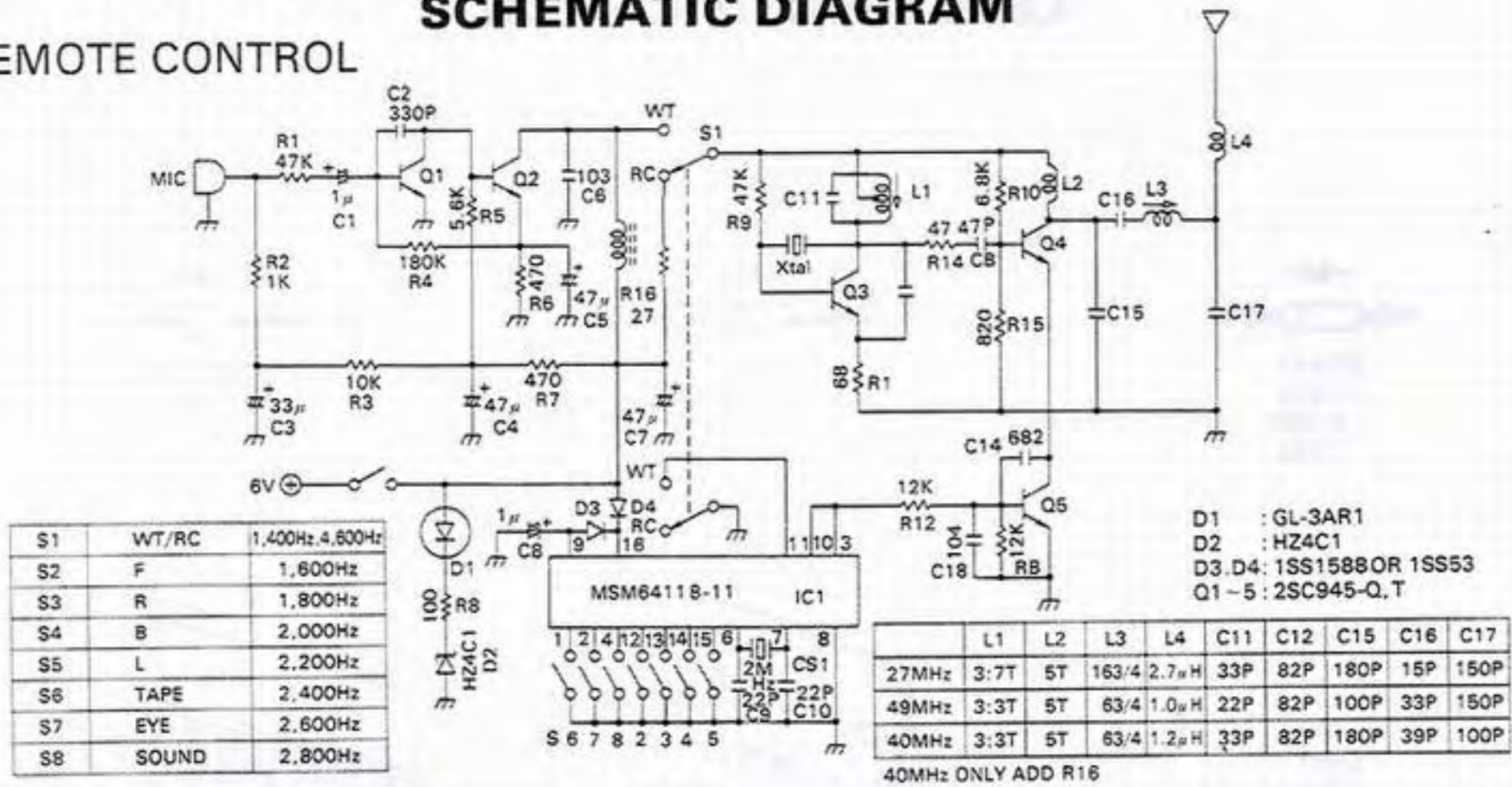
TC8215UF



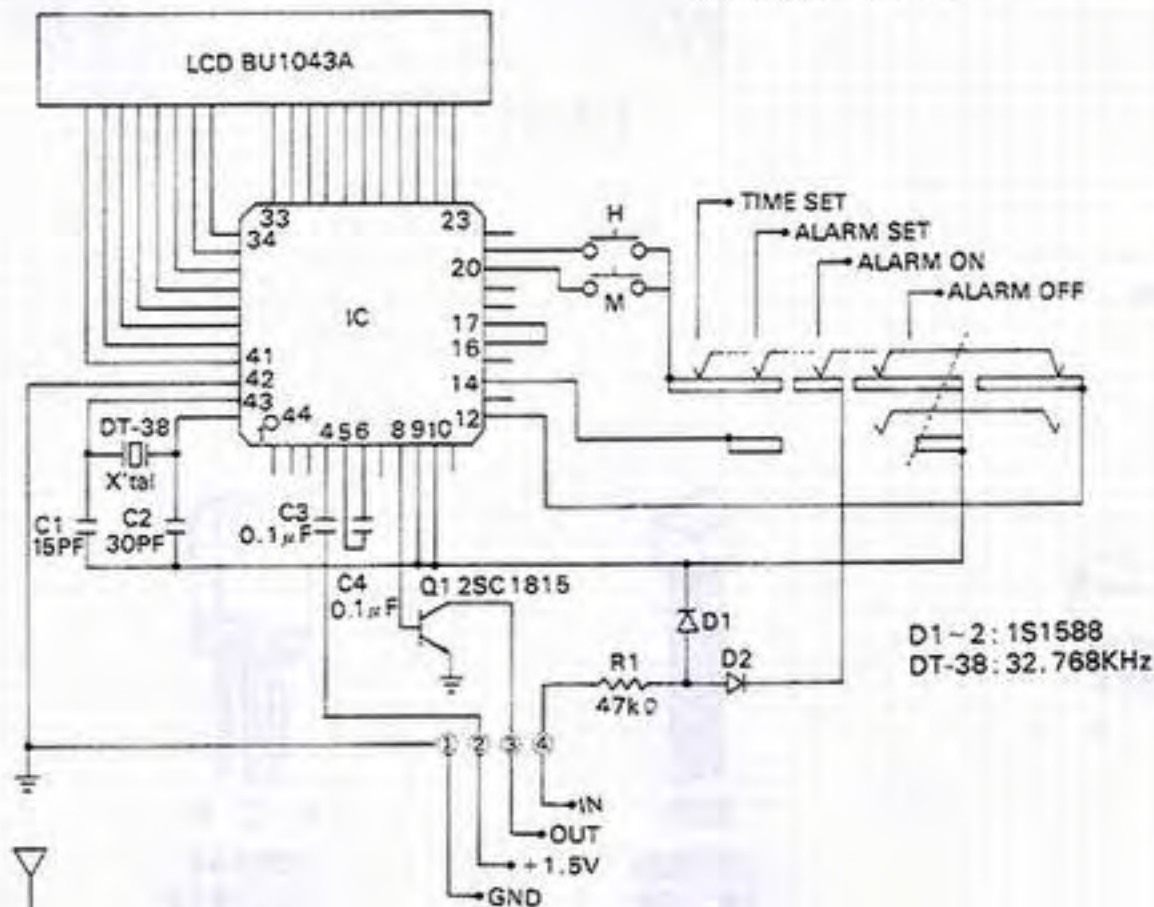
|             |    |   |   |
|-------------|----|---|---|
| MSM6411B-11 | 16 | 1 | 8 |
| TA75358P    | 8  | 1 | 4 |
| LC4013B     | 14 | 1 | 7 |
| SVM7920CG   | 8  | 1 | 4 |

# SCHEMATIC DIAGRAM

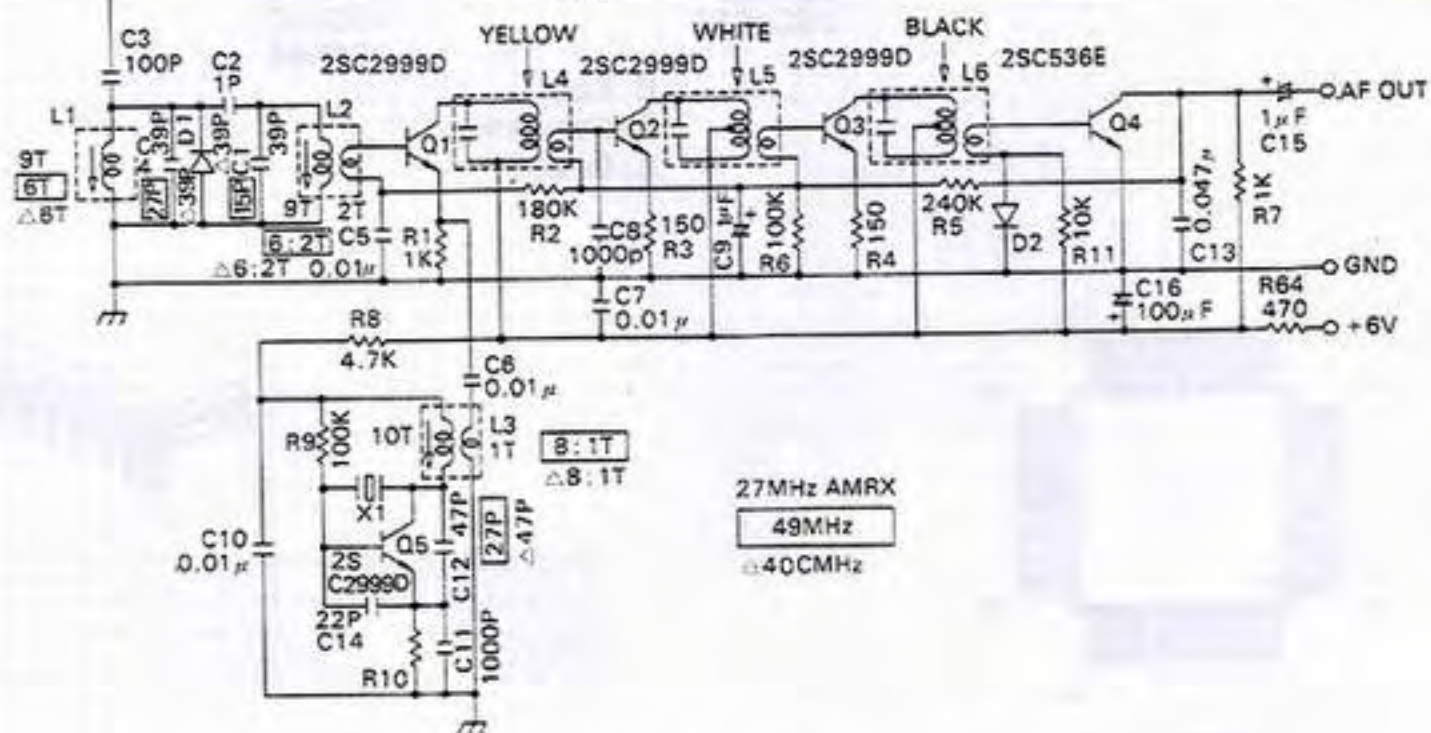
## AM REMOTE CONTROL



## CLOCK

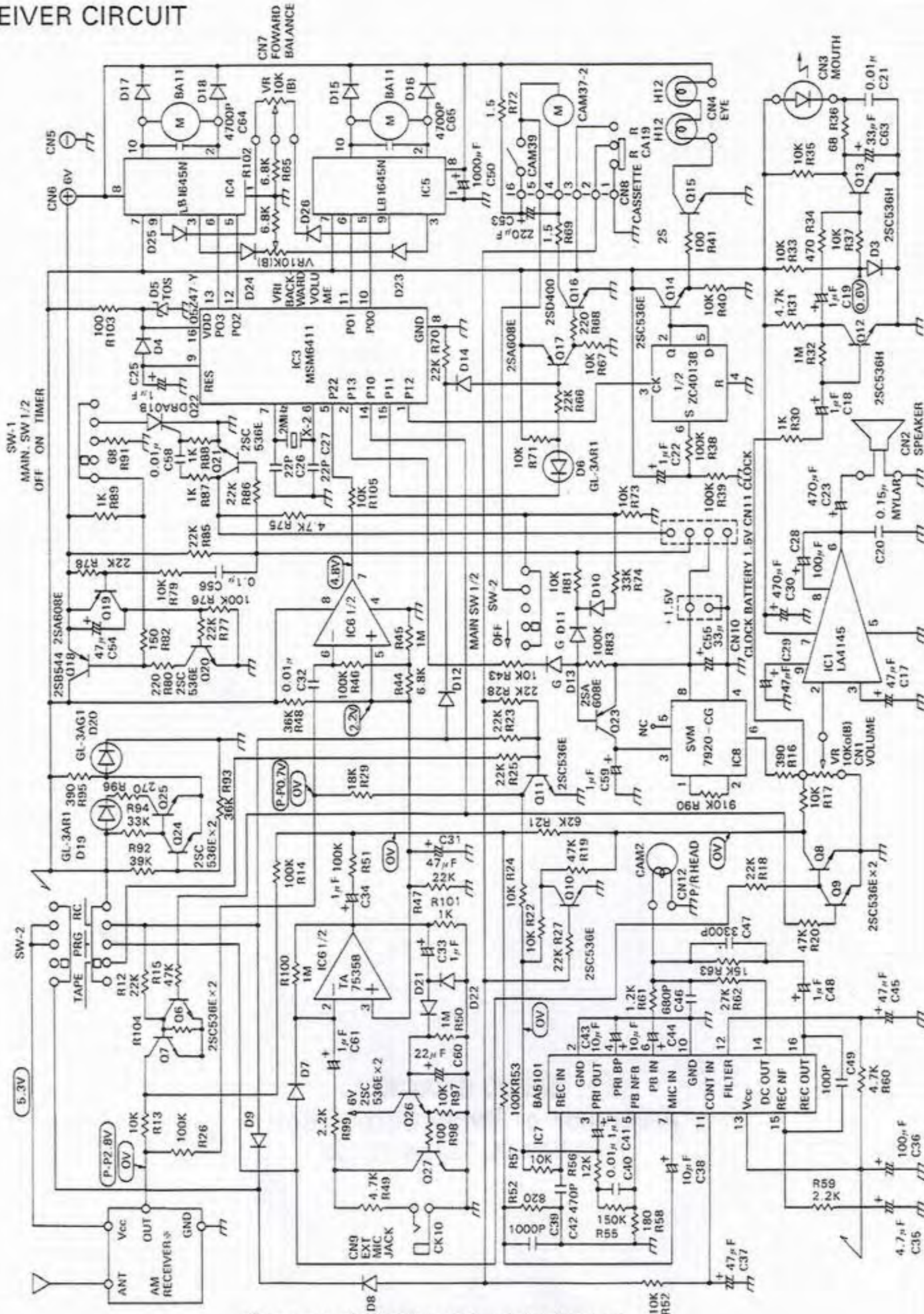


## AM RECEIVER



NOTES : (1) Capacitance values are indicated in  $\mu F$  ( $P=10^{-6}\mu F$ ).  
 (2) Resistans values are indicated in ohm ( $K=10^3$  ohm).

# RECEIVER CIRCUIT



※ See page 37 for this schematic diagram.

- NOTES : (1) Capacitance values are indicated in  $\mu$  F ( $P = 10^{-6} \mu$  F).  
 (2) Resistans values are indicated in ohm ( $K = 10^3$  ohm).



**RADIO SHACK**  
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 Fort Worth, Texas 76102