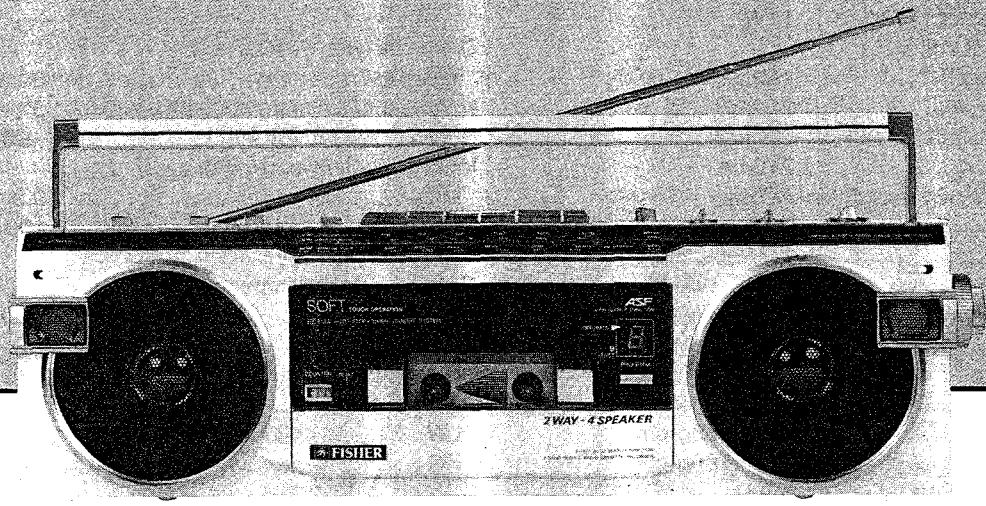
SERVICE MANUAL

FISHER

PH865L

Stereo Radio Cassette Recorder

(EUROPE)



142 380 24
(White)
142 380 25
(Red)
142 380 26
(Deep Blue)

CONTENTS

SPECIFICATIONS

Power Source
- DC ..... 10.5V (UM-2, HP 11, C Cell, Babyzelle, R 14) x 7

Output Power ..... 5W x 2 (Max.)
Power Consumption 11W
Current Consumption (at Vol. Min.)
- Record mode (with Metal) 260mA
- Playback mode 210mA
- Fast Forward mode 210mA
- Rewind mode 210mA

Recording System ..... AC Bias
Erasing System ..... AC Erasing
Tape Speed ..... 1-7/8ips. ±3%
Wow & Flutter ..... 0.15%, WRMS
Fast Forward Time ..... 135sec. (with C-60)
Rewind Time ..... 135sec. (with C-60)
Torque
- Playback ..... 30 ~ 65g-cm
- Fast Forward ..... 55 ~ 180g-cm
- Rewind ..... 55 ~ 180g-cm

Erase Ratio (Overall, with Fe_2O_3) 60dB
Signal to Noise Ratio (with Fe_2O_3) 45dB
Channel Separation (with Fe_2O_3) 45dB

Frequency Response (Overall)
- Fe_2O_3 ..... 40Hz ~ 13,000Hz
- CrO_2 ..... 40Hz ~ 14,000Hz
- Metal ..... 40Hz ~ 16,000Hz

Crosstalk (with Fe_2O_3)
- Track to Track 60dB

Harmonic Distortion (K3, with Fe_2O_3) .. 3%
Hum & Noise (at Vol. Min.) ..... −65dBs
Input Sensitivity and Impedance
- MIC. 0.3mV/3.3kΩ
- LINE IN 100mV/100kΩ

Output Level and Impedance
- Headphone 32Ω

Frequency Range
- MW ..... 525 ~ 1,605kHz
- SW ..... 6 ~ 18MHz
- LW ..... 150 ~ 350kHz
- FM ..... 87.5 ~ 108MHz

Dimentions ..... 430(W) x 129(H) x 89(D)mm
Weight 2.2kg

–Specifications subject to change without notice.–

DISASSEMBLY INSTRUCTIONS

GENERAL REMARKS

‡ Before disassembling the unit, spread a soft cloth or rubber mat on the work bench to avoid scratches and graease spots.

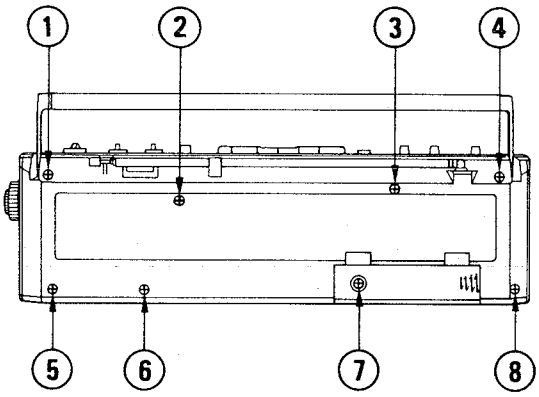
‡ As static electricity is likely to damage transistors and ICs, spread a cloth of the like which does not cause static electricity.

‡ Reassemble the unit correctly noting the kinds of fastening screws and leads. Please refer to the circuit diagrams and exploded views.

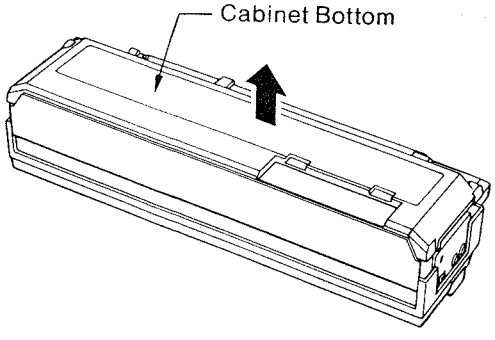
CABINET BOTTOM REMOVAL

1. Open the cassette compartment lid by pressing the STOP/EJECT button and take out the cassette tape from the compartment.

2. Remove the battery compartment lid and take out the seven batteries from the compartment. Then, remove the eight screws (1 ~ 8) securing the cabinet bottom.

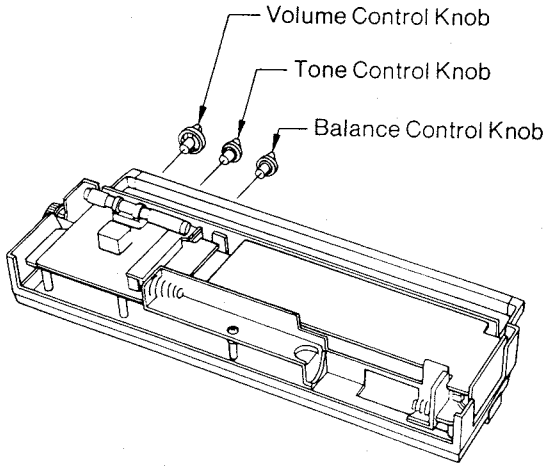


3. Detach the cabinet bottom by lifting it vertically as illustrated. Disconnect the antennaconnector from the Radio Tuner P.C.Board.



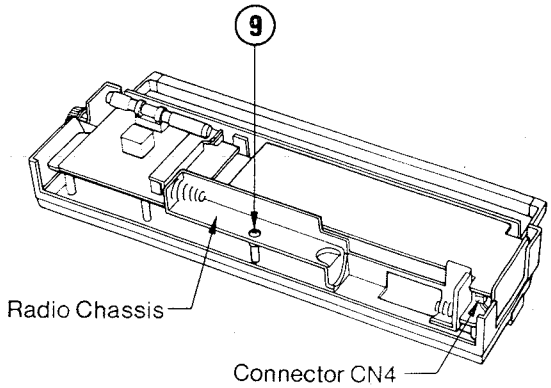
RADIO CHASSIS REMOVAL

1. After the removal of the cabinet bottom, pull out the volume control, the tone control, and the balance control knobs from the unit.



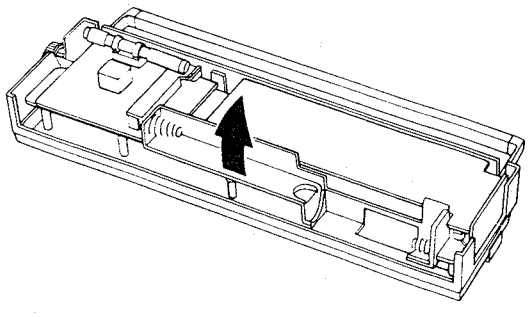
2. Disconnect the connector CN4 from the Amplifier P.C.Board.

3. Remove the screw (9) securing the radio chassis.



4. Detach the radio chassis by lifting it in the direction of the arrow as illustrated. At this time, care should be taken because there is a little interruption.

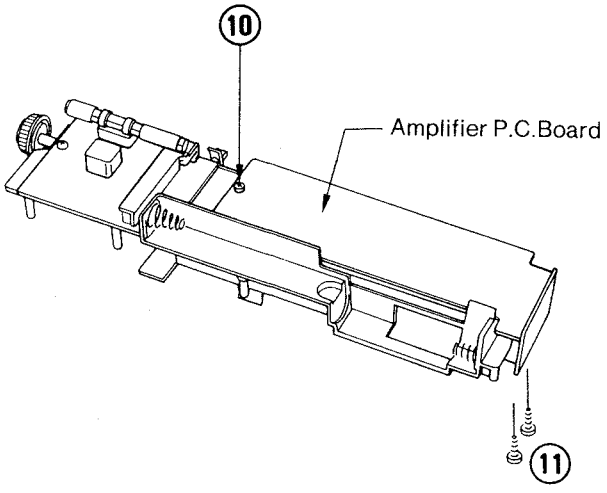
   Note: With the lid being ejected, the radio chassis will be easily reassembled.



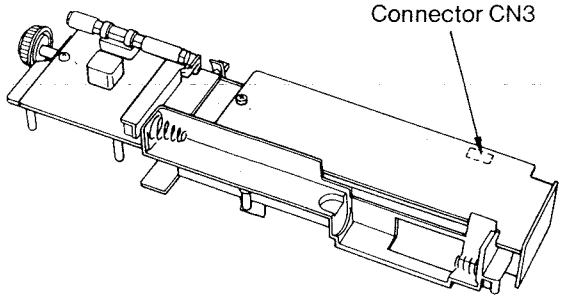
DISASSEMBLY INSTRUCTIONS (Continued)

AMPLIFIER P.C.BOARD REMOVAL

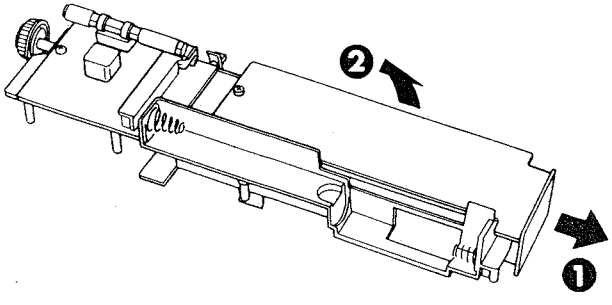
1. After the removal of the radio chassis, remove the screw (10) securing the Amplifier P.C.Board and the two screws (11) securing the Jack P.C.Board.



2. Pullout the connector CN3 from the Amplifier P.C.Board. Remove the clamp wire for the leads running from the Volume Control P.C.Board.



3. Detach the Amplifier P.C.Board noting the leads by lifting it in the indicated order and the direction of the arrows.

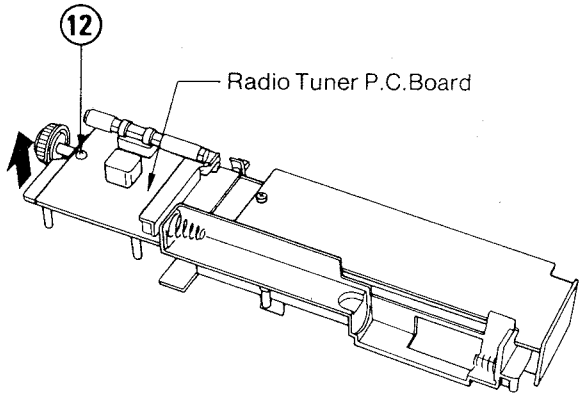


RADIO TUNER P.C.BOARD REMOVAL

1. Detach the radio chassis and turn the tuning knob fully in the arbitrary direction.

2. Remove the screw (12) securing the Radio Tuner P.C.Board.

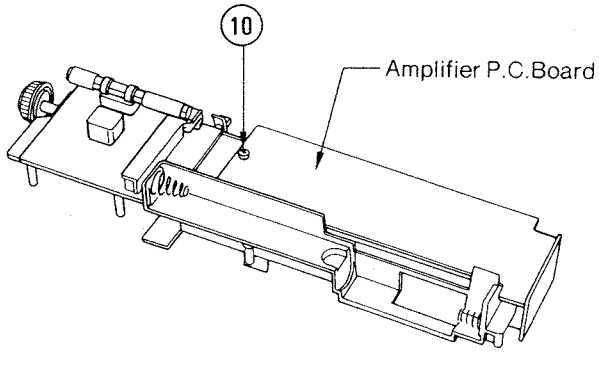
3. Remove the Radio Tuner P.C.Board by lifting it in the direction of the arrow, noting the leads. At this time, apply a little force in lifing it because the shaft of the variable capacitor is engaged with the drum.



Note: Do not turn the tuning knob before the Radio Tuner P.C.Board is mounted.
When the Radio Tuner P.C.Board is mounted, insert the shaft of the variable capacitor into the hole onto the drum and check that the correct indications of the tuning dial are obtained.

MECHANISM CHASSIS REMOVAL

1. After the removal of the radio chassis, remove the screw (10) securing the Amplifier P.C.Board



2. Remove the two screws (13 and 14) securing the ASF Program P.C.Board and detach the P.C.Board.

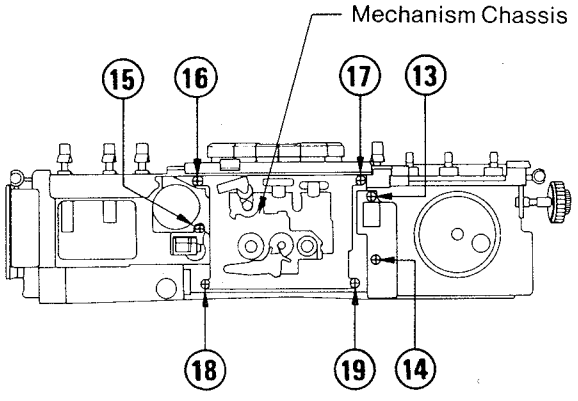
3. Remove the clamp wire for the leads running from the Amplfier P.C.Board.

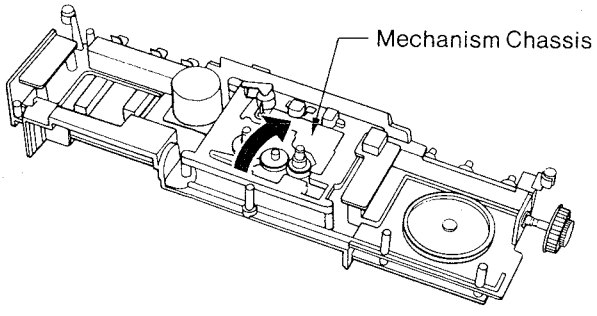
4. Remove the screw (15) securing the counter.

DISASSEMBLY INSTRUCTIONS(Continued)

5. Remove the four screws (16 ~ 19) securing the chassis and disconnect the two leads (red and black ones) running from the motor.

6. Detach the mechanism chassis by lifting it in the direction of the arrow, noting the leads.

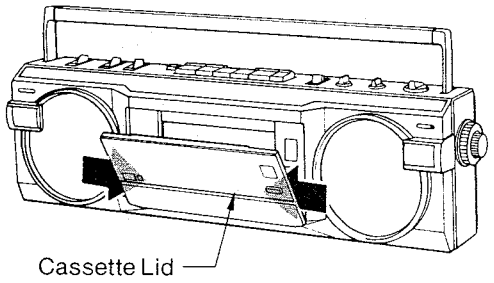




CASSETTE LID REMOVAL

1. Open the cassette lid by pressing the STOP/EJECT button.

2. Detach the clicks of the lid from the cabinet top by forcibly pushing both sides of the cassette lid in the direction of the arrows. After that, the cassette lid is easily separated from the unit.



NOTES ON REASSEMBLY

1. Re-connect the leads, referring to the wiring diagram.

2. Be sure to re-arrange the leads with the clpams. Refer to the exploded views for the arrangement.

3. After the reassembly, the leads and the electrical components should not touch the mechanism parts which move.

MECHANICAL ADJUSTMENTS

EQUIPMENT REQUIRED

- Cassette-type Torquemeter (100g-cm/160g-cm)
- Round-nose Pliers
- Plus Screwdriver
- A Pair of Tweezers
- Paint or Glue

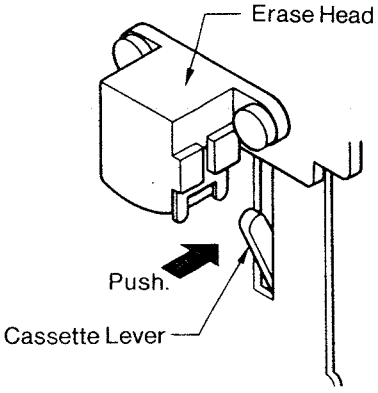
GENERAL REMARKS

1. When a repair or an adjustment work on the mechanism is performed, remove the Mechanism Chassis from the unit and supply 12V DC from the constant-voltage regulator to the Ext. Power Jack on the Amplifier P.C.Board.

2. Before and after the mechanism adjustment, clean the tape contacting surfaces with a soft cloth soaked in alcohol.
   Trouble may occur because of oil and grease stains.
   The belts must be kept clean while the adjustments are performed.

3. If the Pinch Roller or Belt has quality deterioration such as scratches, replace it with a new one.

4. When the cassette tape is inserted into the cassette holder, the Play button can not be pressed.
   If the Mechanism is required to function under this condition, push the Cassette Lever as illustrated, so that the Button is released and the mechanism functions normally.



5. This Mechanism does not function when power is not supplied and any one of the buttons is pressed.
   When the batteries are almost used up and the Play button is pressed, the Slide Base stops halfway, making it difficult to remove the cassette tape from the compartment. To avoid this, replace the batteries with new ones beforehand.

Position Adjustment of Leaf Switches

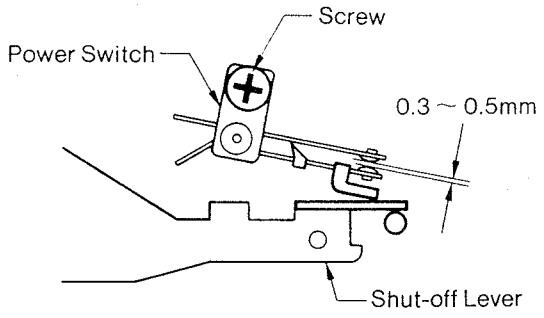
This model has the following three leaf switches. Checking and adjustment for each switch must be conducted in accordance with each adjustment item.
The unit should be set in the stop mode at each adjustment.

‡ Power Switch
‡ Play Mute Switch
‡ ASF Switch

1. Power Switch

When one of the select buttons (except for the Pause and Stop/Eject buttons) is pressed, this Swich is turned on by the Shut-off Lever, so that the Motor starts rotating. The driving motor rotates the flywheel and the rotational force transfered by the actuate gear makes the mechanism function.

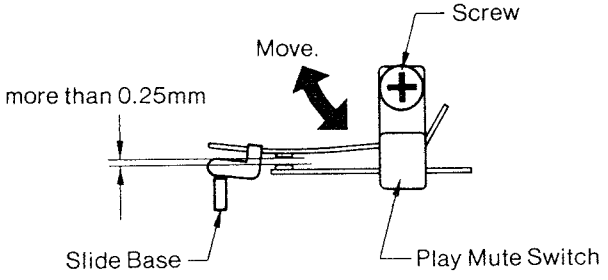
‡ Check that the clearance of the switch contacts is 0.3 ~ 0.5mm with the Power Switch in contact with Shut-off Lever as illustrated.



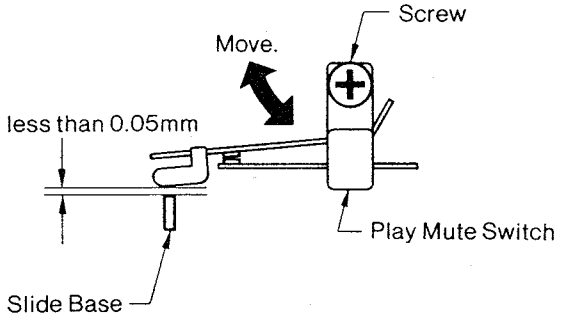
2. Play Mute Switch

This switch is normally closed and it is turned off by the Slide Base when the Play button is pressed.

‡ Set the unit in the playback mode and check that the clearance between the switch contacts is more the 0.25mm as illustrated.



‡ Press the Pause button and check that the clearance between the switch and the Slide Base is as illustrated.
The clearance should be less than 0.05mm.

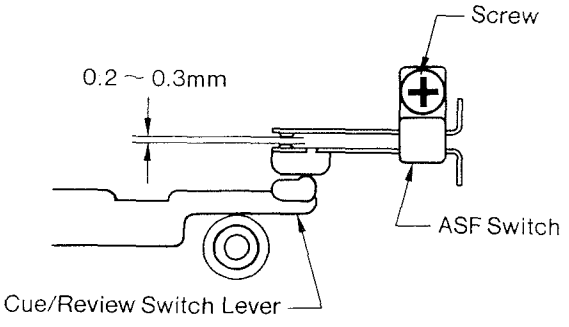


MECHANICAL ADJUSTMENTS (Continued)

3. ASF Switch

This Switch is turned on by the Cue/Review Switch Lever when the unit is set in the cue or review mode by pressing the F.FWD or Rewind button in the playback mode. Then, the ASF circuit is functioning.

‡ Set the unit in the stop mode and check that the clearance between the switch contacts is 0.2 ~ 0.3mm with the ASF Swtich in contact with the Cue/Review Switch Lever as illustrated.



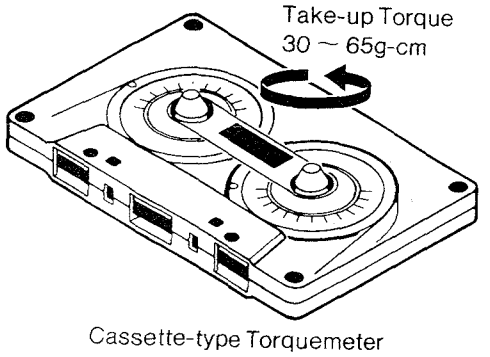
Switch Adjustment

Loosen the screws fastening each switch and move the switches to the specified positions if position adjustments are required.

After the adjustment, tighten the screws and secure the switches with paint or glue.

TAKE-UP TORQUE

1. Insert a cassette-type torquemeter (100g-cm) into the cassette compartment and set the unit in the playback mode. Then, check that the take-up torque is 30 ~ 65g-cm.

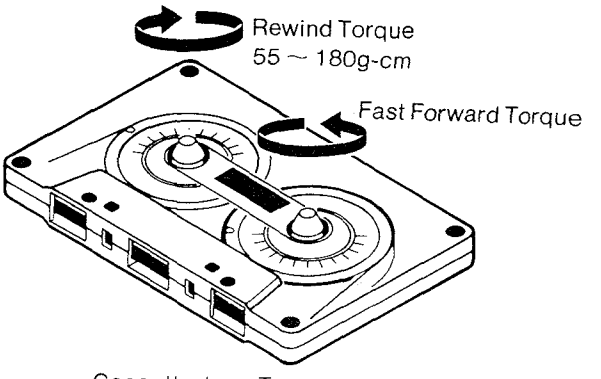


Cassette-type Torquemeter

2. If not, replace the Friction Assembly with a new one.

F.FWD AND REWIND TORQUES

1. Insert a cassette-type torquemeter (160g-cm) into the cassette compartment and measure the fast forward and rewind torque. Check that each torque is 55 ~ 180g-cm.



Cassette-type Torquemeter

2. If not, replace the Friction Assembly with a new one.

ASF SOLENOID ADJUSTMENT

ASF (Automatic Search Function) detects a silent space (unrecorded portion) between each selection on a music tape and automatically plays back a desired selection from the start.

The unrecorded portion should last for more than approximately 4 seconds.

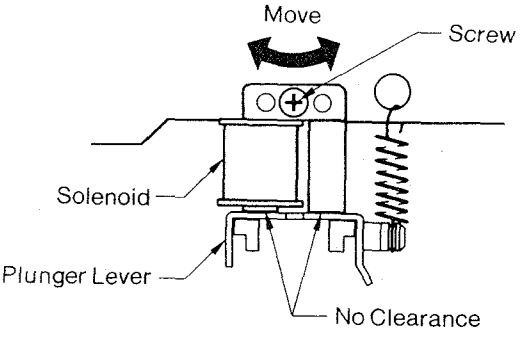
It may not operate correctly in the following cases:

‡ When the recorded sound is often interrupted as in a speech tape.
‡ When the silent space does not last long enough (less than 4 seconds).
‡ When there is an appreciable noise in the silent space between two adjacent programs.
‡ When the unit is placed on a television set, ASF may not operate correctly due to an adverse effect from the TV signal. In this case, move the unit away from the television set.

In cases where the ASF Solenoid is not correctly positioned, the ASF Switch does not function correctly, the F.FWD or Rewind button releases while ASF is working, or a button cannot be locked, perform the adjustment as follows:

1. Remove the Mechanism Chassis from the unit by following its removal instructions.

2. Loosen the screw fastening the Solenoid and adjust the Solenoid by moving it in the direction of the arrow, so that the Plunger Lever is tightly attached to the two absorption surfaces of the Solenoid as illustrated.



MECHANICAL ADJUSTMENTS (Continued)

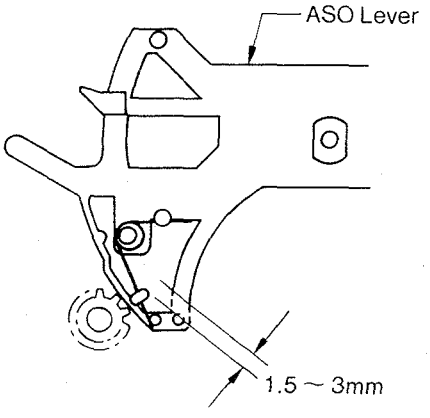
3. *After the adjustment, tighten the screw.*
   Set the unit in the playback mode and check that ASF mechanism functions correctly as follows:
   ‡ Check if F.FWD button can be locked by pressing it.
   ‡ Check if Rewind button can be locked by pressing it.

4. Readjust the solenoid position if either F.FWD or Rewind button cannot be locked or is released too soon.

5. After the confirmation, secure the screw with paint or glue.

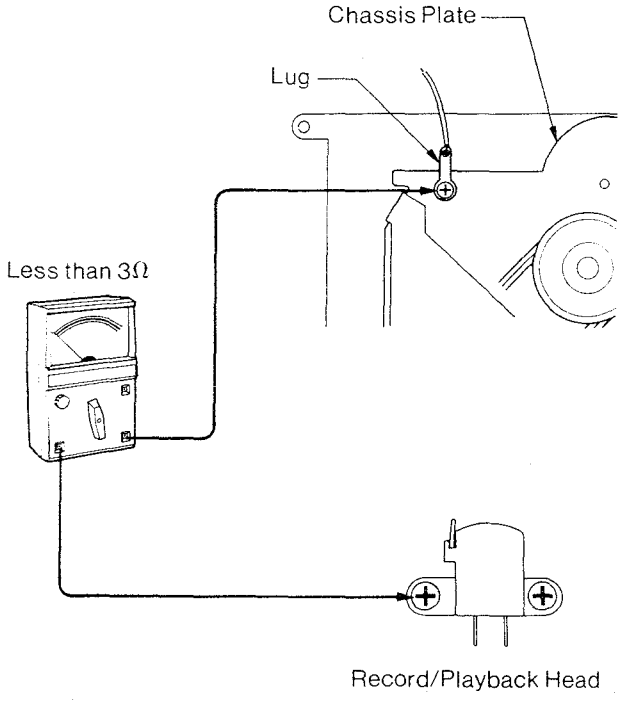
ASO LEVER

The service part of the ASO lever is not cut to avoid deforming, as illustrated.
When replacing, cut 1.5 ~ 3mm of the part indicated in the illustration.



NOTICE ON REASSEMBLY

When reassembling the mechanism, check if the resistance between the screw fastening the Record/Playback Head and the Lug attached to the Chassis Plate is less than 3Ω.
When the resistance is more, there will be noise during recording or playback of the cassette tape.



ELECTRICAL ADJUSTMENTS

EQUIPMENT REQUIRED

- VTVM (2 sets)
- Frequency Counter
- Dummy Load (32Ω)
- Dualtrace Oscilloscope
- DC Constant-voltage Regulator
- Test Tapes
  ‡ 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  ‡ 8kHz Test Tape (Example: TEAC MTT-113C) for Head Azimuth Adjustment
- *Alignment Tool*

Unless especially specified, set the switches and controls as follows:

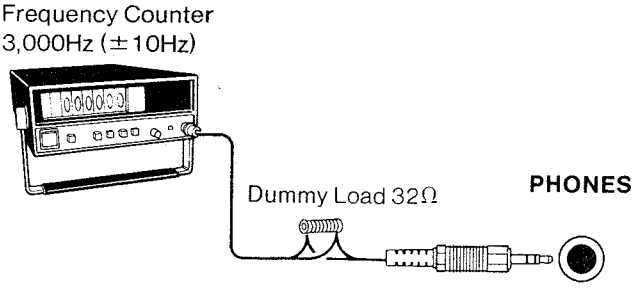
- Function Switch ..... TAPE
- Balance Control ..... Center (click position)
- Tone Control ..... High
- Volume Control ..... Arbitrary

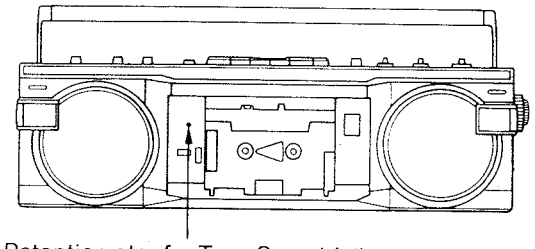
NOTE:
‡ Obtain the output from the headphone jack when the adjustment is performed.

ELECTRICAL ADJUSTMENTS (Continued)

TAPE SPEED ADJUSTMENT

1. Detach the Cassette Compartment lid and connect a frequency counter to the left or right channel output of the headphone jack as illustrated. Then, insert a 3kHz test tape (Example: TEAC MTT-111) into the cassette compartment.

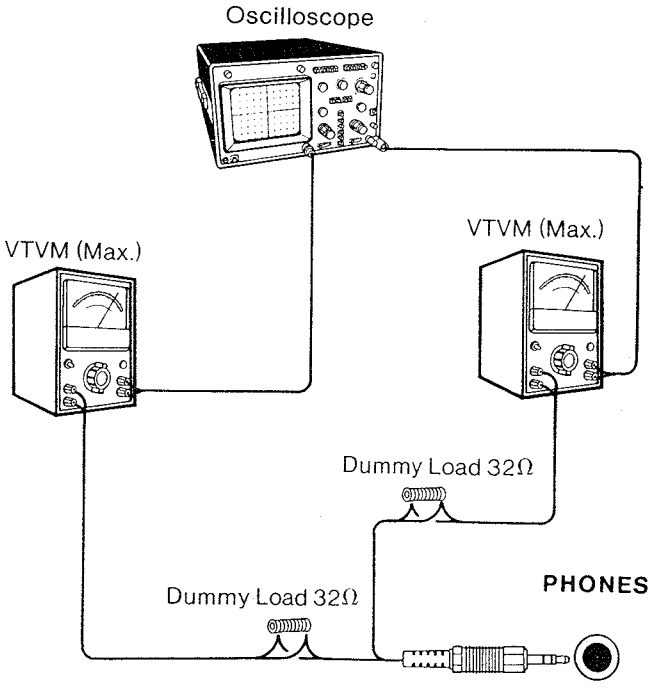




2. Adjust the tape speed by slowly turning the potentiometer inside the Motor with an alignment tool until the frequency counter reads 3,000Hz (±10Hz).

HEAD AZIMUTH ADJUSTMENT

Detach the cassette compartment lid from the unit and connect a dualtrace oscilloscope and a VTVM to both channel outputs of the headphone jack as illustrated.



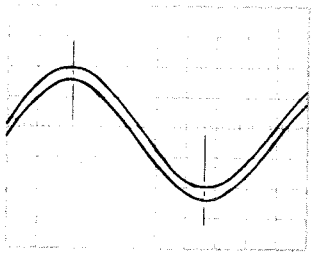
Then, set the dualtrace oscilloscope as follows:

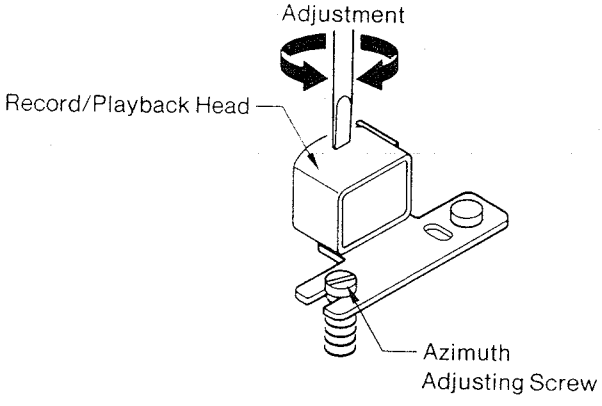
- MODE ..... CHOP (chopped)
- SOURCE ..... INT (internal), CH1 or CH2
- SWEEP MODE ..... AUTO (automatic)

NOTE:
Adjust the field on the oscilloscope with the VOLT. ADJ. and TIME ADJ.

1. Insert a 8kHz test tape (Example: TEAC MTT-113C) into the cassette compartment.

2. While playing back the test tape, turn the azimuth adjusting screw until the wave forms of the right and left channels are superimposed and set to optimum at maximum reading on the VTVM.





3. After the adjustment, secure the adjusting screw with paint or glue.

DIAL CORD STRINGING

1 Mount the Drum on the Radio Chassis as illustrated and fully turn the shaft of the variable capacitor on the Radio Tuner P.C.Board counterclockwise.

2. Mount the Radio Tuner P.C.Board on the Radio Chassis and then, insert the shaft of the variable capacitor into the Drum.

3. Tie the Dial Cord of length 1,200mm (effective length: 1,010mm) and diameter ϕ0.5 to the Spring and hook the Spring to the illustrated position of the drum.

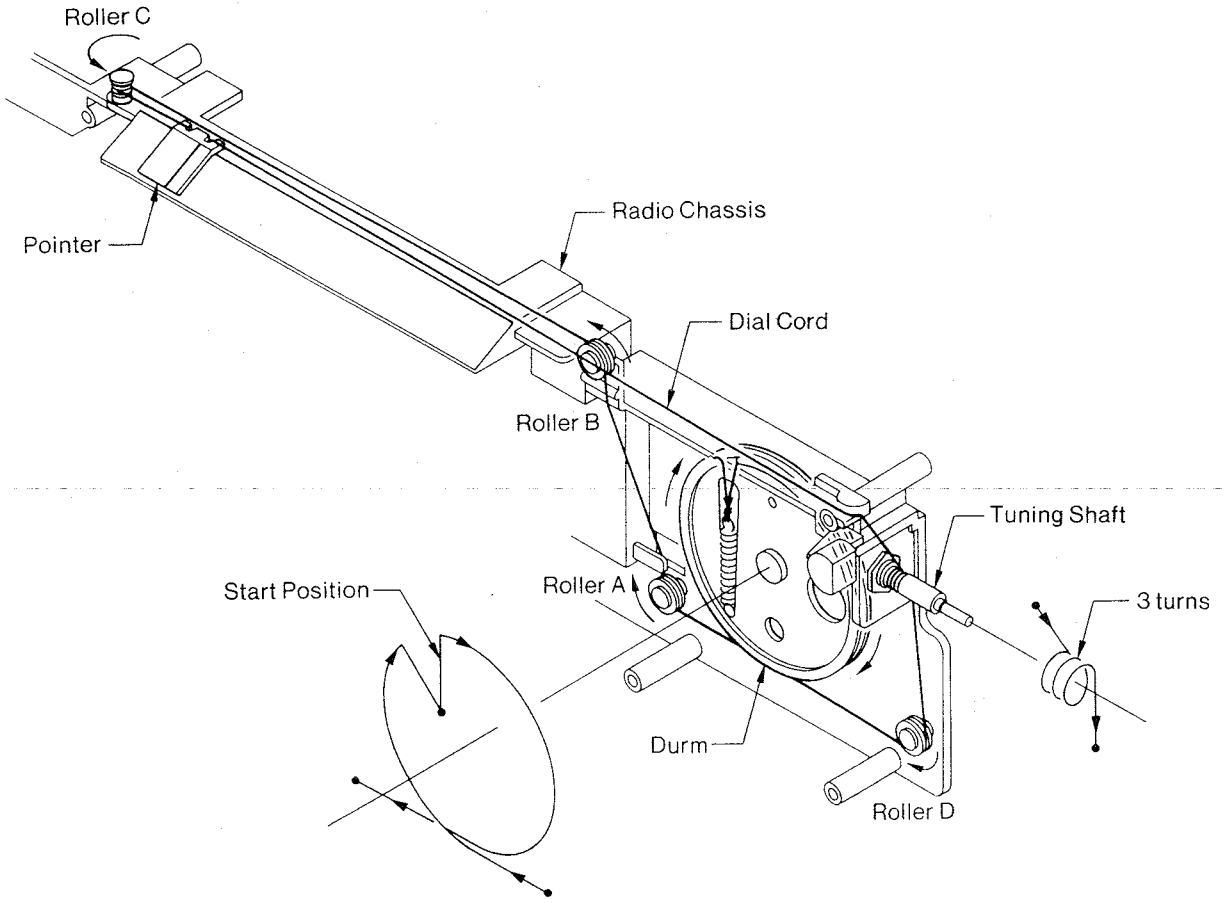
4. Engage the Dial Cord as illustrated in the following order.
Spring → Drum → Roller A → Roller B → Roller C → Tuning Shaft (3 turns) → Roller D → Drum → Spring

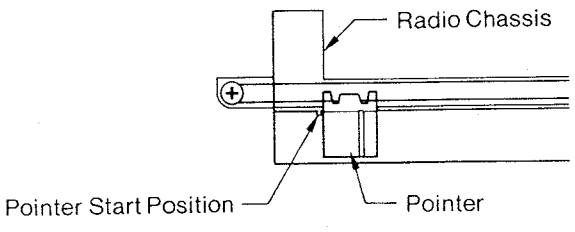
5. Hook the Dial Cord to the Spring and tie the Cord where the spring tip expands to the mark on the Drum as illustrated.

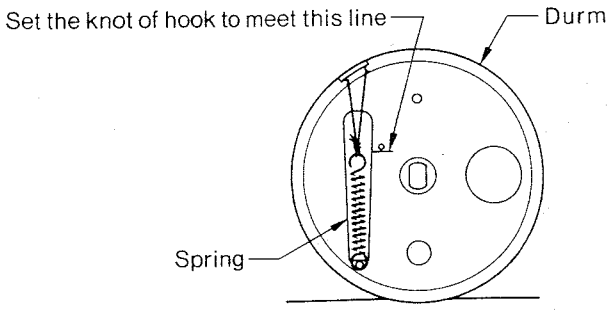
6. Secure the place where the Spring is hooked to the Drum and knot in the dial cord with paint or glue.

7. Turn the Tuning Shaft counterclockwise until it stops. Then, set the Pointer on the Radio Chassis as illustrated and attach the Pointer to the Dial Cord.

8. Secure the Pointer with paint or glue.







TUNER ADJUSTMENT

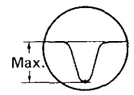
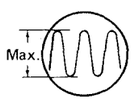
EQUIPMENT REQUIRED

- AM Standard Signal Generator
- FM Standard Signal Generator
- Generator Scope
- Loop Antenna
- Dummy Antenna (30Ω/10pF) for SW
- Ceramic Capacitor (10pF)
- Dummy Antenna (75Ω, unbalanced type) for FM
- Carbon Resistor (100kΩ)
- VTVM
- Oscilloscope
- Frequency Counter
- Dummy Load (32Ω)
- Alignment Tool
- Before performing the adjustment, set the switches and controls as follows:
  - ‡ Function Switch ..... RADIO
  - ‡ Mode Switch ..... MONO
  - ‡ Tone Controls ..... Max.
  - ‡ Balance Control ..... Center(click position)
  - ‡ Volume Control ..... Center

NOTE:
Use an alignment tool with plastic grip for all adjustments.

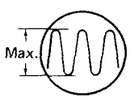
MW ALIGNMENT

Standard Test Frequency 400Hz and Modulation 30% at AM

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF for AM	Connect loop antenna to output terminal of gene-scope. Place loop antenna by bar anttenna.	Connect input terminal of gene-scope to detector output terminal (TP6).	460kHz	Low End	T3	Obtain symmetrical curve and maximum amplitude. 
2	Calibration of Tuning Range	Connect loop antenna to output of AM signal generator. Place loop antenna 60cm away from bar antenna.	Connect VTVM with 32Ω dummy load and oscilloscope to PHONES Jack.	510kHz		T6	Obtain sine-wave of 400Hz and maximum amplitude. 
3				1,670kHz	High End	TC4	
4	Adjustment of Tracking			600kHz	600kHz	L4-1 (bar ant. coil)	
5				1,400kHz	1,400kHz	TC3 (PVC)	
6	Repeat the above steps until no further change is noted in any of the adjustments.						

LW ALIGNMENT

Standard Test Frequency 400Hz and Modulation 30% at AM

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of Tuning Range	Connect loop antenna to output of AM signal generator. Place loop antenna 60cm away from bar antenna.	Connect VTVM with 32Ω dummy load and oscilloscope to PHONES jack.	145kHz	Low End	T7	Obtain sine-wave of 400Hz and maximum amplitude. 
2				365kHz	High End	TC5	
3	Adjustment of Tracking			170kHz	170kHz	L4-2 (bar ant. coil)	
4				310kHz	310kHz	TC2	
5	Repeat the above steps until no further change is noted in any of the adjustments.						

TUNER ADJUSTMENT (Continued)

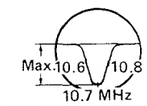
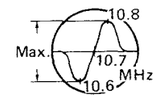
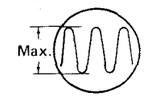
SW ALIGNMENT

Standard Test Frequency 400Hz and Modulation 30% at AM

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of Tuning Range	Connect AM signal generator to antenna terminals (TP1 and TP2) through dummy antenna (30Ω/10pF).	Connect VTVM with 32Ω dummy load and oscilloscope to PHONES jack.	5.7MHz	Low End	T5	Obtain sine-wave of 400Hz and maximum amplitude. 
2				18.7MHz	High End	TC3	
3	Adjustment of Tracking			6.5MHz	6.5MHz	T4	
4				17.0MHz	17.0MHz	TC1	
5	Repeat the above steps until no further change is noted in any of the adjustments.						

FM ALIGNMENT

Standard test frequency 400Hz and deviation 22.5kHz

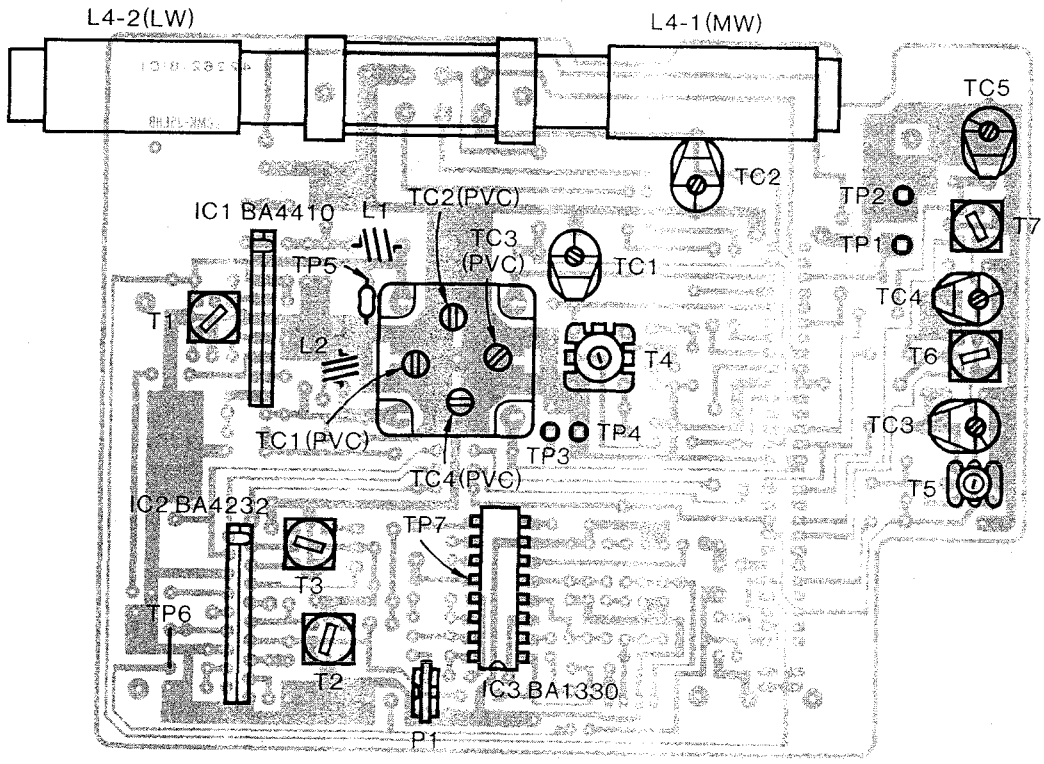
Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF	Place output of gene-scope to TP5 through capacitor (10pF).	Connect input terminal of gene-scope to detector output terminals (TP6).	10.7MHz	Low End	Turn T2 (blue core) fully counter-clockwise and then, adjust T1.	Obtain symmetrical curve and maximum amplitude. 
2						T2 (blue core)	Obtain **S** curve and maximum amplitude. 
3	Calibration of Tuning Range	Connect FM signal generator to antenna terminals (TP1 and TP2) through dummy antenna (75Ω, unbalanced type).	Connect VTVM with 32Ω dummy load and oscilloscope to PHONES jack.	87.35MHz		L2	Obtain sine-curve and maximum amplitude. 
4				108.25MHz	High End	TC2 (PVC)	
5	Adjustment of Tracking			90MHz	90MHz	L1	
6				106MHz	106MHz	TC1 (PVC)	
7	Repeat the above steps until no further change is noted in any of the adjustments.						

FM MPX (Multiplex) ADJUSTMENT

19kHz (V.C.O.) ADJUSTMENT

1. Before the adjustment, set the switches as follows:
   - FM Mode Switch ..... STEREO
   - Band Select Switch ..... FM
2. Connect a flequency counter to TP7 through a resistor 100kΩ.
3. Adjust the potentiometer (P1) until the oscillation frequency of IC3 becomes 19kHz (±20Hz).

TUNER P.C.BOARD LAYOUT ALIGNMENT POINTS



PARTS LIST

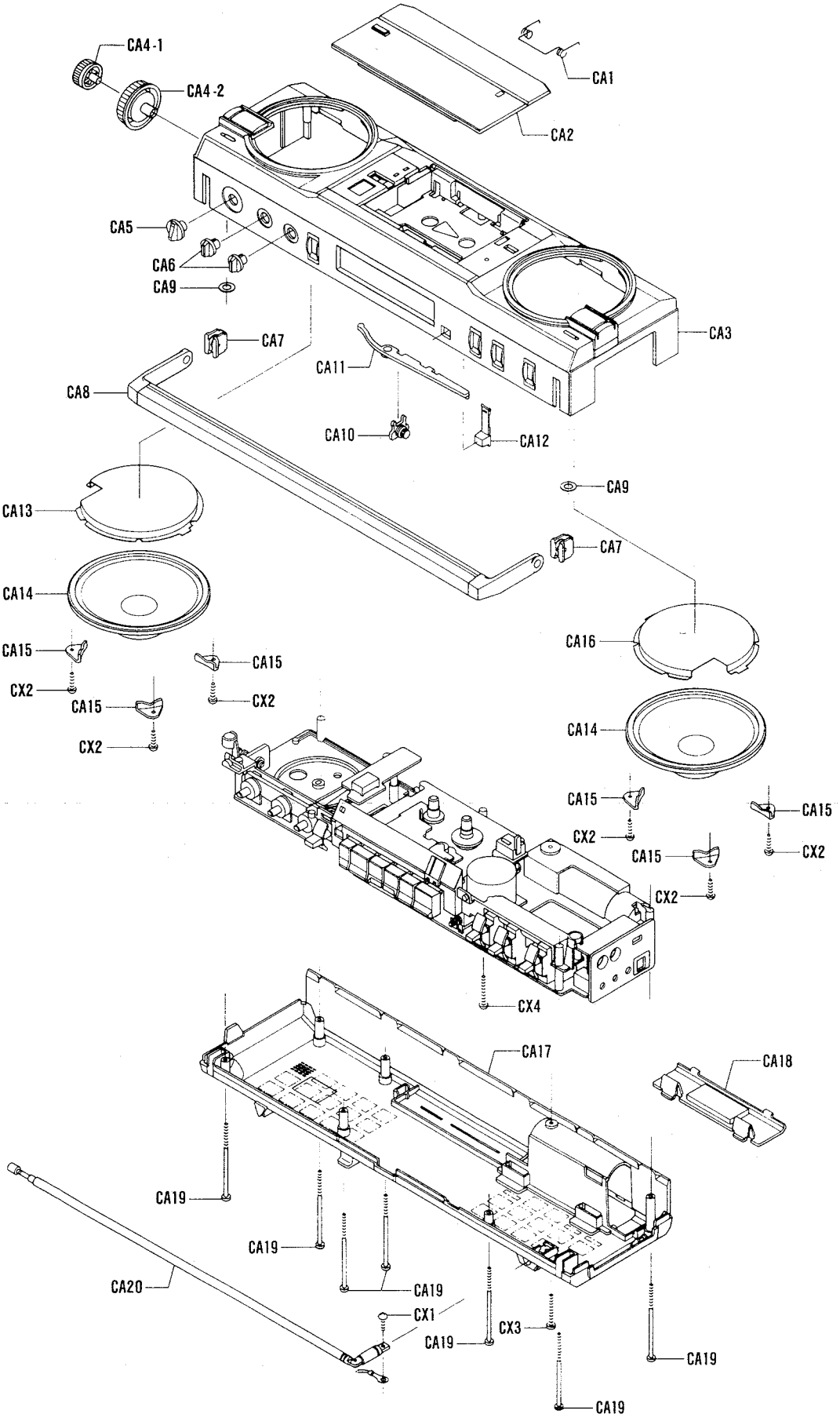
Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141 2 1719 20300	Handle	1
	141 6 1419 65021	Individual Carton	1
	141 6 1449 95300	Case Styrofoam R	1
	141 6 1449 95400	Case Styrofoam L	1
	141 6 2519 15290	Poly Cover	1
	141 6 2519 25035	Poly Cover 250 x 350	1
	141 6 3119 19300	Reinforce Handle	1
	141 6 4559 03952	Label Color W (White)	2
	141 6 4559 03954	Label Color R (Red)	2
	141 6 4559 03955	Label Color DB (Deep Blue)	2
	141 6 4559 03201	Serial No. Sheet	4
	ACCESSORIES		
	4 1919 71830	AC Adaptor AC-105E	1
	4 2419 74052	Cassette	1
	131 6 4159 35802	Notes	1
	131 6 4519 15700	Guarantee Cert	1
	142 6 4119 32266	Instruction Manual	1
	CABINET		
	4 2359 77362	Connector 3P Assy [CN4]	1
	4 2379 70650	Ring Terminal	1
	4 2359 76370	Receptacle	1
C328	CD1 0 6160 0001V	Electrolytic 10μF 16V	1
	141 2 4729 05300	Wire Band	1
CA1	141 2 8529 06202	Spring Lid Cassette	1
CA2	141 0 1249 28511	Completed Cassette Lid (White)	1
CA2	141 0 1249 28512	Completed Cassette Lid (Red)	1
CA2	141 0 1249 28513	Completed Cassette Lid (Deep Blue)	1
CA3	141 0 1129 02011	Cabinet Top Assy (White)	1
	Following Speaker are included in Cabinet Top.		
	4 1519 71211	Speaker (300Ω) [SP102 & SP202]	2
CA3	141 0 1129 02012	Cabinet Top Assy (Red)	1
	Following Speaker are included in Cabinet Top.		
	4 1519 71211	Speaker (300Ω) [SP102 & SP202]	2
CA3	141 0 1129 02013	Cabinet Top Assy (Deep Blue)	1
	Following Speaker are included in Cabinet Top.		
	4 1519 71211	Speaker (300Ω) [SP102 & SP202]	2
CA4-1	141 2 1639 44300	Knob Fine Tuning	1
CA4-2	141 2 1639 44200	Knob Tuning	1
CA5	141 2 1639 57400	Knob Volume	1
CA6	141 2 1639 57500	Knob Tone	2
CA7	141 2 2719 18500	Holder Handle	2
CA8	141 0 1719 10400	Handle Assy (White)	1
CA8	141 0 1719 10401	Handle Assy (Red)	1
CA8	141 0 1719 10403	Handle Assy (Deep Blue)	1
CA9	141 2 4469 31700	Cushion MIC	2
CA10	141 0 5519 08501	Gear Eject Assy	1
CA11	141 2 7419 77200	Lock Lid Cassette	1
CA12	141 2 1659 29400	Knob REC Mute	1
CA13	141 2 1149 37100	Screen Speaker L	1
CA14	4 1519 71481	Speaker (3Ω) [SP101 & SP201]	2
CA15	141 2 3729 00700	Bracket Fix Speaker	6
CA16	141 2 1149 37000	Screen Speaker R	1
CA17	141 2 1129 03611	Cabinet Bottom (White)	1
CA17	141 2 1129 03612	Cabinet Bottom (Red)	1
CA17	141 2 1129 03613	Cabinet Bottom (Deep Blue)	1
CA18	141 0 1339 11000	Lid Battery Assy (White)	1
CA18	141 0 1339 11002	Lid Battery Assy (Red)	1
CA18	141 0 1339 11001	Lid Battery Assy (Deep Blue)	1
CA19	141 2 4219 09801	Screw	7
CA20	4 2449 70330	Rod Antenna	1

Ref. No.	Part No.	Description	Q'ty
CX1	101 3 1302 60813	Screw, Pan Hd., +M2.6x8	1
CX2	102 3 1303 01011	Screw, Pan Hd. Tapping-1, +M3.0x10	6
CX3	143 3 1303 01811	Screw, Pan Hd. Tapping-B, +M3.0x18	1
	RADIO CHASSIS		
	4 2359 76398	Connector 4P Assy [CN3]	1
DC1	141 2 3119 21701	Chassis Radio	1
DC2	141 2 8259 04700	Roller Dial	1
DC3	141 2 4219 14000	Screw	4
DC4	141 2 1449 59900	Plate Dial	1
DC5	141 2 5119 10400	Pointer	1
DC6	141 2 6219 06300	Lever Band Switch	1
DC7	141 2 1629 08400	Knob Band Select	1
DC8	141 2 4729 03400	Lug	1
DC9	4 1539 70661	Microphone [BM101 & BM201]	2
DC10	141 2 5519 03300	Roller Dial A	3
DC11	141 2 5389 03400	Drum	1
DC12	141 2 8519 78000	Spring Stop	1
DC13	141 2 5649 23900	Belt Counter	1
DC14	141 2 8119 13700	Counter	1
DC15	141 2 8139 11600	Bracket Counter	1
DC16	141 2 3679 32103	Plate Jack (White)	1
DC16	141 2 3679 32107	Plate Jack (Red)	1
DC16	141 2 3679 32108	Plate Jack (Deep Blue)	1
DC17	4 2249 70300	Fine Tuner [FT1]	1
DC18	141 2 3829 20800	Spring, Battery	1
DC19	141 2 3829 06700	Terminal Battery Anode	1
DC20	141 2 3829 18000	Spring, Terminal	1
DC21	141 2 1629 08500	Knob Function	3
DC22	141 2 4459 33800	Cushion	1
DC23	141 2 7319 64100	Plate Band Switch	1
DC24	141 2 4219 29700	Screw	2
DY1	628 3 0912 00000	String, 0.5φ	1
DY2	101 3 1302 60611	Screw, Pan Hd., +M2.6x6	1
DY3	102 3 1302 60811	Screw, Pan Hd. Tapping-1, +M2.6x8	8
DY4	102 3 1303 01011	Screw, Pan Hd. Tapping-1, +M3.0x10	1
DY5	102 3 1303 01611	Screw, Pan Hd. Tapping-1, +M3.0x16	4
DY6	143 3 1303 03013	Screw, Pan Hd. Tapping-B, +M3.0x30	1
PCB1	141 0 1939 03922	Amplifier P.C.B. Assy	1
PCB2	141 0 1939 08440	Radio Tuner P.C.B. Assy	1
PCB3	141 0 1939 03930	Volume Control P.C.B. Assy	1
PCB4	141 0 1939 03951	Jack P.C.B. Assy	1
PCB5	141 0 1939 03940	ASF Control P.C.B. Assy	1
PCB6	141 0 1939 03890	LED P.C.B. Assy	1

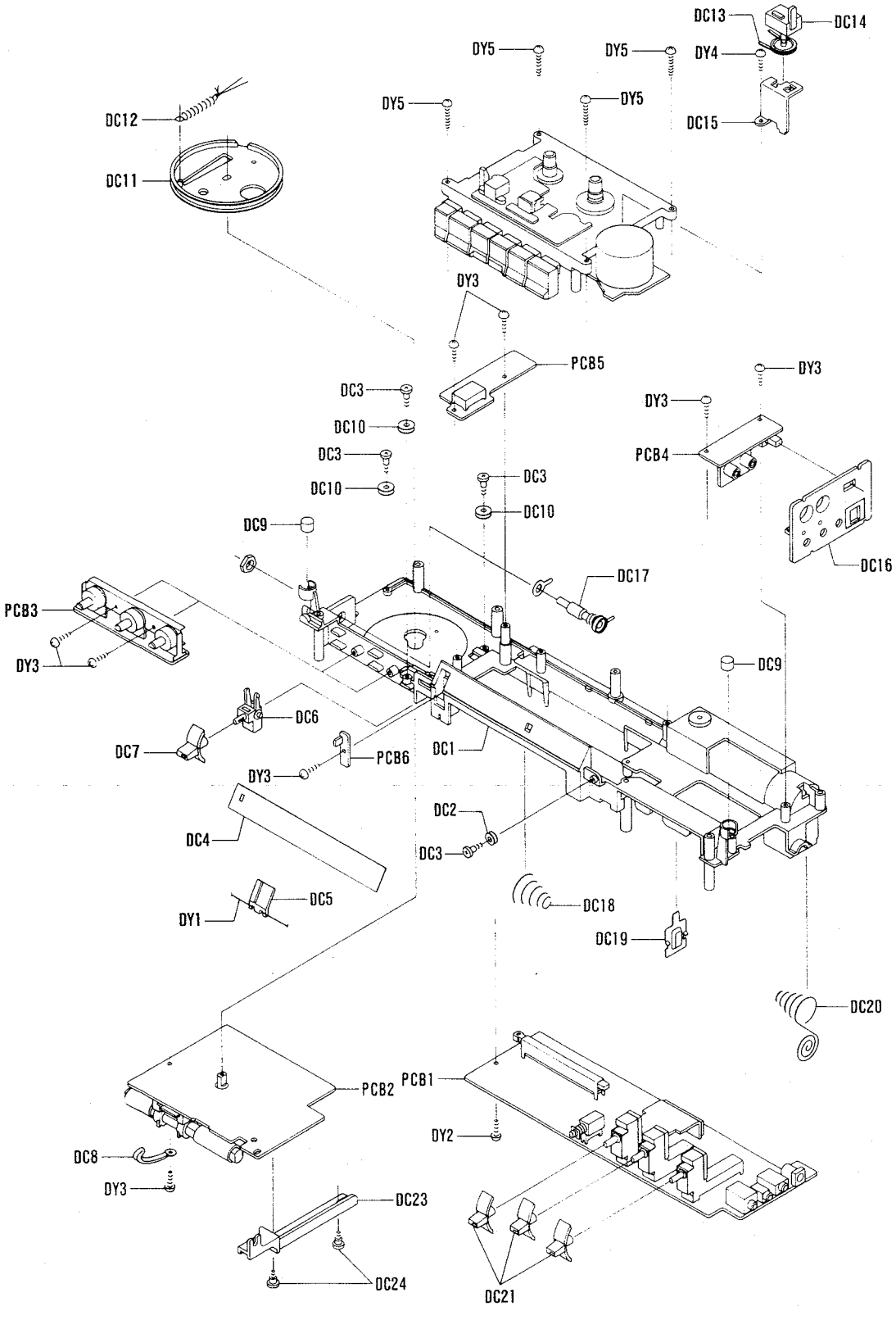
NOTE:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CABINET EXPLODED VIEW



RADIO CHASSIS EXPLODED VIEW



MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	MECHANISM		
	4 2379 70650	Ring Terminal	2
MC1	141 0 3119 21900	Chassis Assy	1
MC2	141 2 4729 04100	Lug	1
MC3	141 2 7419 81300	Lever Cassette	1
MC4	141 2 8419 11700	Interlock Lever	1
MC5	141 2 7419 80700	Lever Base Slide	1
MC6	141 2 8549 05500	Spring Lever Stop	1
MC7	141 2 4539 17500	Washer	1
MC8	141 2 8259 11100	Roller REC	1
MC9	141 0 7419 36900	Lever REC Base Assy	1
MC10	141 2 7319 52800	Base Slide	1
MC11	141 2 4219 13201	Screw Washer	2
MC12	141 2 3529 35900	Speacer Head	1
MC13	4 2429 72560	Erase Head [HD2]	1
MC14	141 2 4219 30300	Screw, Bind Hd., +M2.0x6	4
MC15	141 2 8549 18700	Spring Slide Base	2
MC16	4 2429 72550	R/P Head [HD1]	1
MC17	141 2 8559 00201	Spring Head	1
MC18	141 0 5419 02201	Pinchroller Assy	1
MC19	141 2 8529 12500	Spring Pinchroller	1
MC20	141 2 7149 05600	Brake Supply Reel	1
MC21	141 2 7149 05700	Brake Take-up Reel	1
MC22	141 2 8529 13200	Spring Sensor	1
MC23	141 2 7419 80100	Lever ASO	1
MC24	141 2 7439 30100	Arm Take-up	1
MC25	141 2 5519 45300	Gear Take-up	1
MC26	141 2 8539 52300	Spring Cassette	1
MC27	141 2 4219 05400	Screw Washer	1
MC28	141 2 7319 53900	Plate Eject	1
MC29	141 2 7419 81100	Lever Stop Eject	1
MC30	141 2 8549 18500	Spring Eject	1
MC31	141 2 7419 92300	Lever Eject	1
MC32	141 2 4539 20900	Washer	1
MC33	141 2 5519 45200	Gear Flywheel	1
MC34	141 2 5219 14500	Flywheel Capstan	1
MC35	141 2 5649 21300	Belt Drive	1
MC36	141 2 5649 21200	Belt Wind	1
MC37	141 2 5739 06300	Thrust Flywheel	1
MC38	4 5279 71221	Motor [M1]	1
MC39	141 2 3519 70600	Support Flywheel	1
MC40	141 2 4459 11800	Cushion Motor	3
MC41	141 2 4219 30100	Screw	3
MC42	4 2649 70630	Solenoid [SL1]	1
MC43	141 2 7539 55300	Post Lever R/P Switch	1
MC44	141 2 8419 14500	Lever R/P Switch	1
MC45	141 2 8549 19600	Spring Record	1
MC46	141 2 7419 81400	Arm Record	1
MC47	141 2 7419 81200	Lever REC Select	1
MC48	141 2 4219 23000	Screw	1
MC49	141 2 4219 03000	Screw	1
MC50	141 2 3529 36100	Spacer Lever	1
MC51	141 2 7419 82800	Lever Shut Off Switch	1
MC52	141 2 8519 61100	Spring Slide	1
MC53	141 2 5519 45700	Pulley Friction	1
MC54	141 2 4539 27601	Washer	4
MC55	141 2 8559 04700	Spring Pulley	1
MC56	141 2 4729 01900	Lug	1
MC57	141 0 3119 21800	Plate Chassis Assy	1
MC58	4 2319 74362	Leaf Switch (Power) [S10]	1
MC59	141 2 8529 12700	Spring Arm FF	1
MC60	141 0 5519 09600	Friction Assy	1
MC61	141 2 5519 45600	Gear ASO	1
MC62	141 2 4539 28001	Washer	1

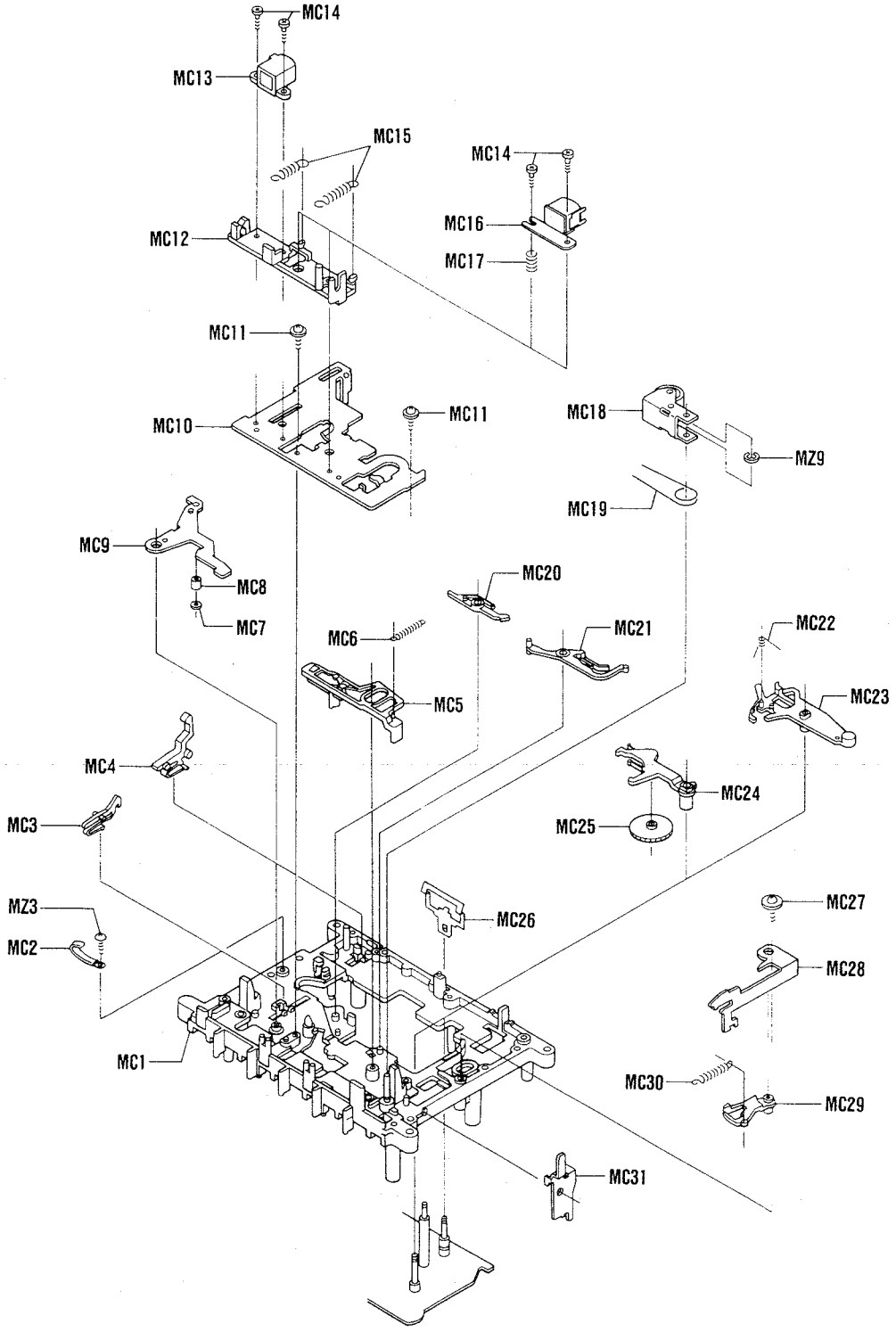
Ref. No.	Part No.	Description	Q'ty
MC63	141 2 7419 80200	Lever Rewind	1
MC64	141 2 5319 11600	Gear Reel Supply	1
MC65	141 2 8519 67900	Spring Reel	1
MC66	141 2 8559 00100	Spring Supply	2
MC67	141 2 5319 11700	Fin Reel Supply	1
MC68	141 2 4539 15700	Washer	2
MC69	141 2 8519 64900	Spring Arm Gear	1
MC70	141 2 7439 30000	Arm Fastwind	1
MC71	141 2 5519 45100	Gear Fastwind	1
MC72	141 2 5319 11500	Gear Reel Take-up	1
MC73	141 2 4539 17600	Washer	1
MC74	141 2 7319 53600	Plate Lock	1
MC75	141 2 8529 12600	Spring Gear ACT Play	1
MC76	141 2 4219 21800	Screw	12
MC77	141 2 1659 28600	Button Record	1
MC78	141 2 1659 28700	Button Play	1
MC79	141 2 1659 28800	Button Rewind	1
MC80	141 2 1659 28900	Button FF	1
MC81	141 2 1659 29000	Button Pause	1
MC82	141 2 1659 29100	Button Stop	1
MC83	141 2 7319 53000	Rod Stop	1
MC84	141 2 7319 53100	Rod Pause	1
MC85	141 2 7319 53200	Rod Fastwind	1
MC86	141 2 7319 53300	Rod Rewind	1
MC87	141 2 7319 53400	Rod Play	1
MC88	141 2 7319 53500	Rod Record	1
MC89	141 2 7419 80400	Lever Lock Record	1
MC90	141 2 5519 45900	Gear Actuate Play	1
MC91	141 2 7319 52900	Rod Switch	1
MC92	141 2 7319 54900	Rod ASO	1
MC93	141 2 5519 45800	Gear Actuate Pause	1
MC94	141 2 8549 04400	Spring Interlock	1
MC95	141 2 7419 81500	Lever Lock Button	1
MC96	141 2 7419 82700	Lever Plunger	1
MC97	141 2 6139 14300	Frame Rod	1
MC98	141 2 8529 12800	Spring Pause Latch	1
MC99	141 2 8529 12401	Spring Rod FF	3
MC100	141 2 8539 46700	Spring Plate Lock	1
MC101	141 2 5529 17000	Spindle Lever	1
MC102	141 2 8529 13300	Spring Lever Pause	1
MC103	141 2 7419 80600	Lever Pause Start	1
MC104	141 2 7419 80500	Lever Play Start	1
MC105	141 2 7419 80800	Lever Switch Cue Review	1
MC106	141 2 8529 14200	Spring Stop Record	1
MC107	141 2 7419 80900	Lever Spring Stop REC	1
MC108	141 2 7419 81000	Lever Stop Record	1
MC109	4 2319 74550	Leaf Switch (Muting) [S12]	1
MC110	4 2319 71863	Leaf Switch (ASF) [S11]	1
MZ1	101 3 1302 00811	Screw, Pan Hd., +M2.0x8	1
MZ2	101 3 1702 00811	Screw, Bind Hd., +M2.0x8	1
MZ3	102 3 1302 60811	Screw, Pan Hd. Tapping-1, +M2.6x8	1
MZ4	143 3 1202 00818	Screw, Flat Hd. Tapping-B, +M2.0x8	1
MZ5	143 3 1702 00618	Screw, Bind Hd. Tapping-B, +M2.0x6	6
MZ6	143 3 1702 00818	Screw, Bind Hd. Tapping-B, +M2.0x8	2
MZ7	143 3 1702 60818	Screw, Bind Hd. Tapping-B, +M2.6x8	3
MZ8	112 3 1301 20082	E Ring, M1.2	1
MZ9	112 3 1302 00082	E Ring, M2.0	1
MZ10	112 3 1303 00082	E Ring, M3.0	1

NOTE:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

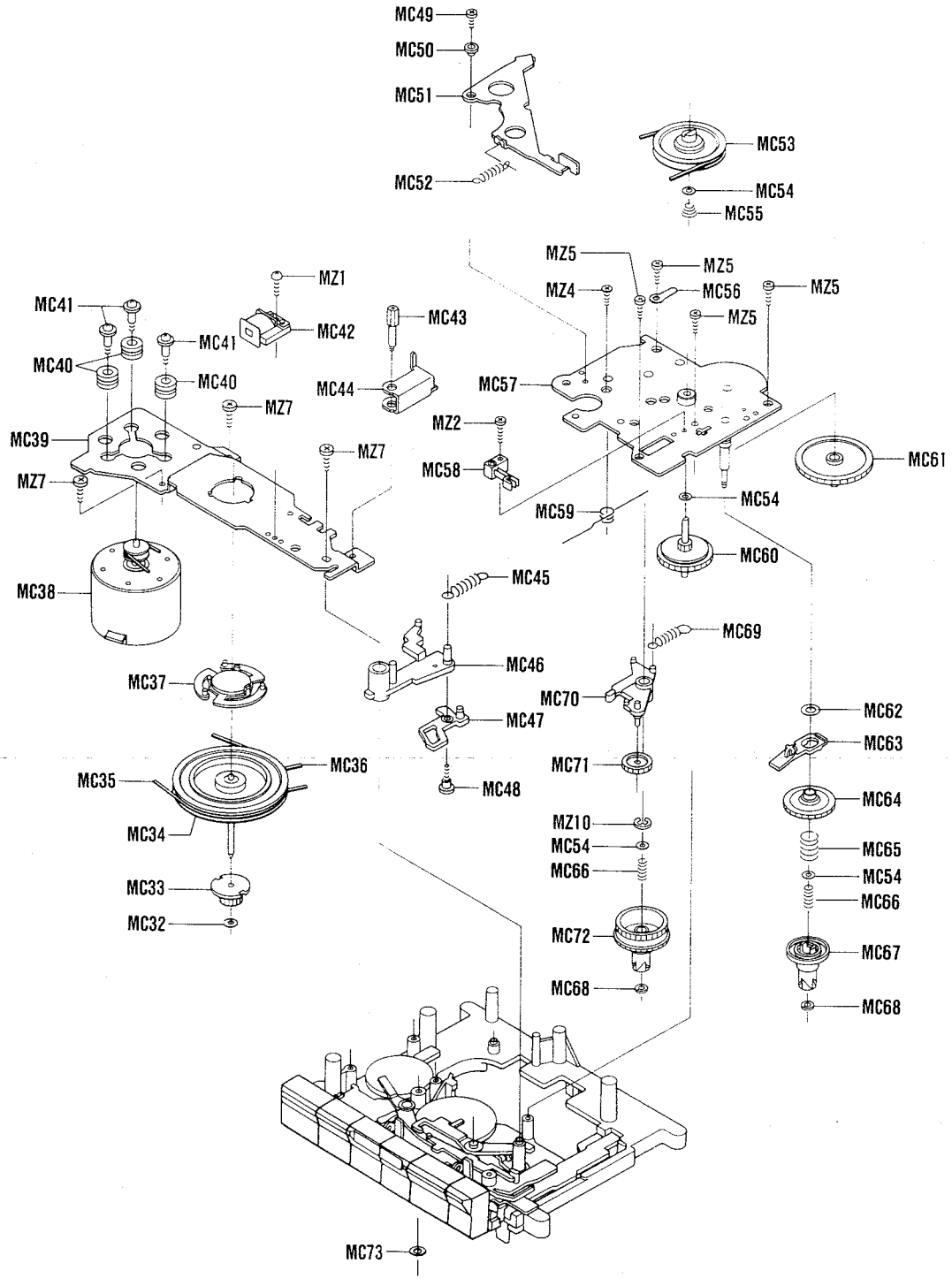
MECHANISM EXPLODED VIEW

(Chassis Top)



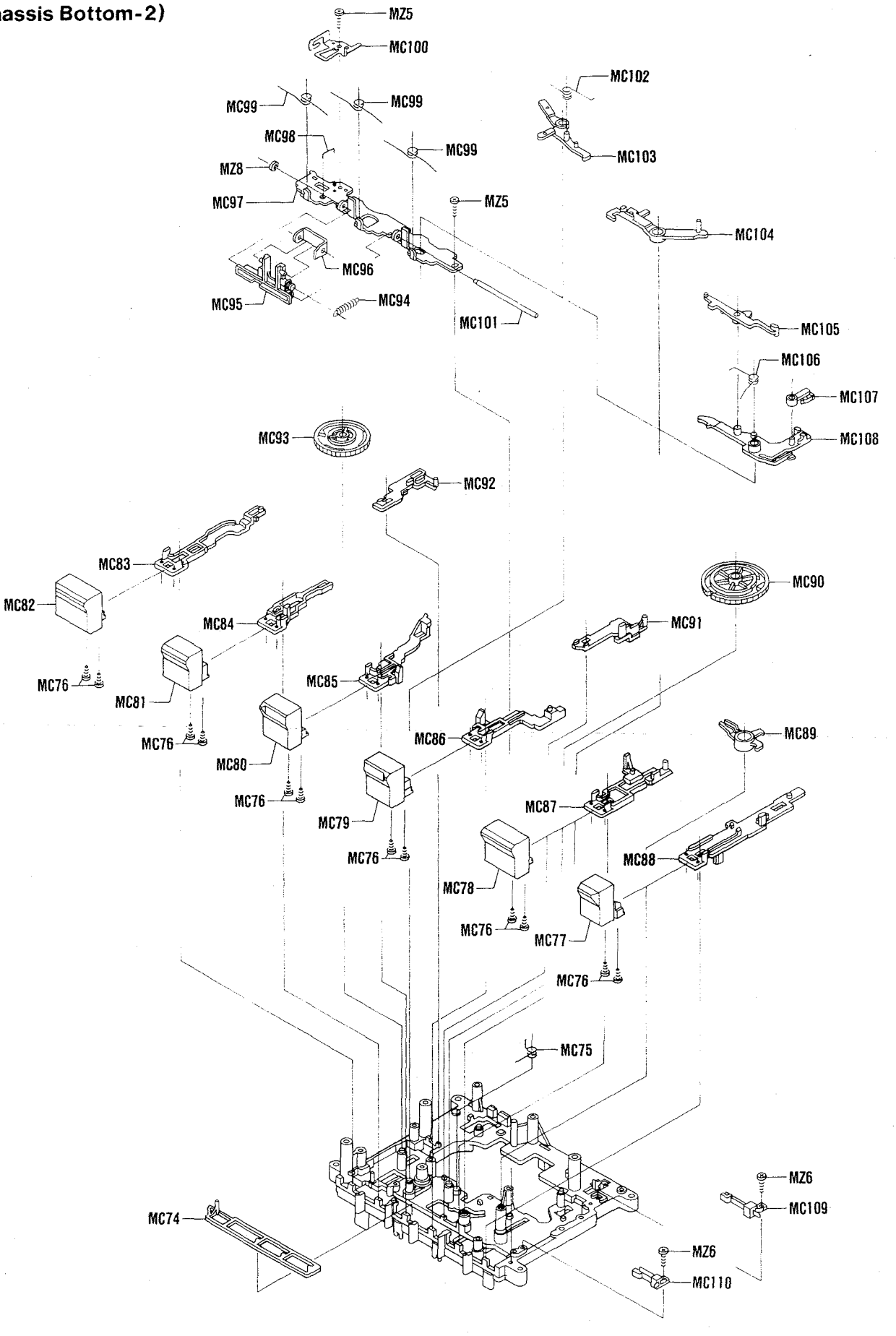
MECHANISM EXPLODED VIEW(Continued)

(Chassis Bottom-1)



MECHANISM EXPLODED VIEW(Continued)

(Chassis Bottom-2)



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description				Q'ty
	AMPLIFIER P.C.B. ASSY					
PCB1	141 0 1939 03922	Amplifier P.C.B. Assy				1
	4 2439 72300	Flat Wire 5				1
	141 2 3689 12100	Radiator IC (for IC302)				1
	143 3 1702 60811	Screw, Bind Hd. Tapping-B, +M2.6x8				2
CN1	4 2359 76399	Connector 4P Assy				1
CN2	4 2369 74480	Plug 5P				1
CN3	4 2369 73370	Connector 4P				1
CN4	4 2369 73360	Connector 3P				1
S2	4 2319 71805	Slide Switch (Record/Play)				1
S3	4 2319 75710	Push Switch (REC MUTE)				1
S4	4 2319 75341	Lever Switch (TAPE SELECT)				1
S5	4 2319 72462	Lever Switch (MODE)				1
S6	4 2319 75341	Lever Switch (FUNCTION)				1
J2	4 2359 71780	Jack 1P				1
J3	4 2359 73470	1P Jack				1
J4	4 2359 75701	Jack 5P With Switch				1
J5	4 2359 76360	Ext. Power Socket				1
L101	4 2729 70480	Coil (33mH)				1
L201	4 2729 70480	Coil (33mH)				1
L302	4 2539 70301	Micro Inductor (100μH)				1
T301	4 2589 72220	OSC Trans				1
IC301	4 2069 71710	IC. M 51544 L				1
IC302	207 5 1634 50710	IC. LA 4507				1
Q300	203 5 5083 33165	Transistor, 2SC 3331				1
Q301	203 5 5083 33165	Transistor, 2SC 3331				1
Q302	203 5 6900 40060	Transistor, 2SD 400				1
Q303	203 5 5083 33165	Transistor, 2SC 3331				1
Q304	203 5 5083 33165	Transistor, 2SC 3331				1
D101	202 5 2810 44210	Diode, DS 442				1
D102	202 5 1420 00128	Diode, GMA 01				1
D201	202 5 2810 44210	Diode, DS 442				1
D202	202 5 1420 00128	Diode, GMA 01				1
D301	4 2029 72212	Zener Diode, MTZ6.8C				1
D302	202 5 1420 00128	Diode, GMA 01				1
D303	202 5 1420 00128	Diode, GMA 01				1
D304	202 5 1420 00128	Diode, GMA 01				1
C101	CD1 0 4500 0001V	Electrolytic	0.1μF	50V		1
C102	CC4 7 2500 KE00C	Ceramic	0.0047μF	50V	±10%	1
C103	CC2 2 1500 KE01R	Ceramic	220pF	50V	±10%	1
C104	CC1 0 2500 KE01R	Ceramic	0.001μF	50V	±10%	1
C105	CC3 3 1500 KE01R	Ceramic	330pF	50V	±10%	1
C106	CC3 3 1500 KE01R	Ceramic	330pF	50V	±10%	1
C107	CC2 2 0500 JD01R	Ceramic	22pF	50V	±5%	1
C108	CD1 0 7100 0001V	Electrolytic	100μF	10V		1
C109	CC1 0 2500 KE01R	Ceramic	0.001μF	50V	±10%	1
C110	CD4 7 5100 0001V	Electrolytic	4.7μF	10V		1
C111	CM3 3 3500 K00SV	Mylar	0.033μF	50V	±10%	1
C112	CC1 8 2500 KE00C	Ceramic	0.0018μF	50V	±10%	1
C113	CD1 0 4500 0001V	Electrolytic	0.1μF	50V		1
C117	CD1 0 5500 0001V	Electrolytic	1μF	50V		1
C118	CC4 7 1500 KE01R	Ceramic	470pF	50V	±10%	1
C119	CD4 7 6100 0001V	Electrolytic	47μF	10V		1
C120	4 2239 70650	Capacitor	2200μF	10V		1
C121	CM1 5 4500 J00TV	Mylar	0.15μF	50V	±5%	1
C122	CD3 3 6100 0001V	Electrolytic	33μF	10V		1
C123	CC3 3 1500 KE01R	Ceramic	330pF	50V	±10%	1
C124	CI6 8 2250 KF00C	Boundary	0.0068μF	25V	±10%	1
C201	CD1 0 4500 0001V	Electrolytic	0.1μF	50V		1
C202	CC4 7 2500 KE00C	Ceramic	0.0047μF	50V	±10%	1
C203	CC2 2 1500 KE00C	Ceramic	220pF	50V	±10%	1
C204	CC1 0 2500 KE01R	Ceramic	0.001μF	50V	±10%	1
C205	CC3 3 1500 KE01R	Ceramic	330pF	50V	±10%	1
C206	CC3 3 1500 KE01R	Ceramic	330pF	50V	±10%	1

Ref. No.	Part No.	Description				Q'ty
C207	CC2 2 0500 JD01R	Ceramic	22pF	50V	±5%	1
C208	CD1 0 7100 0001V	Electrolytic	100μF	10V		1
C209	CC1 0 2500 KE01R	Ceramic	0.001μF	50V	±10%	1
C210	CD4 7 5100 0001V	Electrolytic	4.7μF	10V		1
C211	CM3 3 3500 K00SV	Mylar	0.033μF	50V	±10%	1
C212	CC1 8 2500 KE00C	Ceramic	0.0018μF	50V	±10%	1
C213	CD1 0 4500 0001V	Electrolytic	0.1μF	50V		1
C217	CD1 0 5500 0001V	Electrolytic	1μF	50V		1
C218	CC4 7 1500 KE01R	Ceramic	470pF	50V	±10%	1
C219	CD4 7 6100 0001V	Electrolytic	47μF	10V		1
C220	4 2239 70650	Capacitor	2200μF	10V		1
C221	CM1 5 4500 J00TV	Mylar	0.15μF	50V	±5%	1
C222	CD3 3 6100 0001V	Electrolytic	33μF	10V		1
C223	CC3 3 1500 KE01R	Ceramic	330pF	50V	±10%	1
C224	CI6 8 2250 KF00C	Boundary	0.0068μF	25V	±10%	1
C300	CP6 8 2101 J000V	Polypropylen	0.0068μF	100V	±5%	1
C303	CM2 2 3500 K00SV	Mylar	0.022μF	50V	±10%	1
C304	CM3 3 2500 K00SV	Mylar	0.0033μF	50V	±10%	1
C305	CM3 3 2500 K00SV	Mylar	0.0033μF	50V	±10%	1
C306	CM6 8 2500 K00SV	Mylar	0.0068μF	50V	±10%	1
C307	CD4 7 5250 0001V	Electrolytic	4.7μF	25V		1
C308	CD4 7 7100 0001V	Electrolytic	470μF	10V		1
C309	CD2 2 7100 0001V	Electrolytic	220μF	10V		1
C310	CD4 7 4500 0001V	Electrolytic	0.47μF	50V		1
C311	CC4 7 1500 KE01R	Ceramic	470pF	50V	±10%	1
C312	CD4 7 5250 0001V	Electrolytic	4.7μF	25V		1
C313	CD2 2 7100 0001V	Electrolytic	220μF	10V		1
C314	CD3 3 5250 0001V	Electrolytic	3.3μF	25V		1
C315	CD4 7 4500 0001V	Electrolytic	0.47μF	50V		1
C318	4 2239 70421	Capacitor	1000μF	16V		1
C319	CD1 0 7100 0001V	Electrolytic	100μF	10V		1
C320	CD1 0 7100 0001V	Electrolytic	100μF	10V		1
C321	CD3 3 7160 0003V	Electrolytic	330μF	16V		1
C322	CC1 0 1500 KE01R	Ceramic	100pF	50V	±10%	1
C323	CD2 2 6100 0001V	Electrolytic	22μF	10V		1
C324	CD3 3 6100 0001V	Electrolytic	33μF	10V		1
C326	CC1 0 2500 KE01R	Ceramic	0.001μF	50V	±10%	1
C327	CC1 0 2500 KE01R	Ceramic	0.001μF	50V	±10%	1
C330	CC2 2 3500 ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
R101	RP1 0 2121 JH000	Carbon	1kΩ	1/8W	±5%	1
R102	RP4 7 2121 JH000	Carbon	4.7kΩ	1/8W	±5%	1
R104	RP2 2 2121 JH000	Carbon	2.2kΩ	1/8W	±5%	1
R105	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R106	RP7 5 2121 JH000	Carbon	7.5kΩ	1/8W	±5%	1
R107	RP2 7 3121 JH000	Carbon	27kΩ	1/8W	±5%	1
R108	RP2 7 3121 JH000	Carbon	27kΩ	1/8W	±5%	1
R109	RD3 9 0251 JM000	Carbon	39Ω	1/4W	±5%	1
R110	RD2 7 2251 JM000	Carbon	2.7kΩ	1/4W	±5%	1
R111	RP1 8 2121 JH000	Carbon	1.8kΩ	1/8W	±5%	1
R112	RP1 0 3121 JH000	Carbon	10kΩ	1/8W	±5%	1
R113	RP3 9 2121 JH000	Carbon	3.9kΩ	1/8W	±5%	1
R114	RP4 7 2121 JH000	Carbon	4.7kΩ	1/8W	±5%	1
R115	RP2 2 3121 JH000	Carbon	22kΩ	1/8W	±5%	1
R116	RP8 2 2121 JH000	Carbon	8.2kΩ	1/8W	±5%	1
R117	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R118	RP1 0 3121 JH000	Carbon	10kΩ	1/8W	±5%	1
R119	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R120	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R121	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R122	RD6 8 3251 JM000	Carbon	68kΩ	1/4W	±5%	1
R123	RP1 0 4121 JH000	Carbon	100kΩ	1/8W	±5%	1
R124	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	±5%	1
R126	RP2 7 0121 JH000	Carbon	27Ω	1/8W	±5%	1
R127	RD1 5 3251 JM000	Carbon	15kΩ	1/4W	±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
R128	RD6 8 0251 JM000	Carbon	68Ω	1/4W	±5%	1
R129	RP2 2 3121 JH000	Carbon	22kΩ	1/8W	±5%	1
R130	RP1 8 2121 JH000	Carbon	1.8kΩ	1/8W	±5%	1
R201	RP1 0 2121 JH000	Carbon	1kΩ	1/8W	±5%	1
R202	RP4 7 2121 JH000	Carbon	4.7kΩ	1/8W	±5%	1
R204	RP2 2 2121 JH000	Carbon	2.2kΩ	1/8W	±5%	1
R205	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R206	RP7 5 2121 JH000	Carbon	7.5kΩ	1/8W	±5%	1
R207	RP2 7 3121 JH000	Carbon	27kΩ	1/8W	±5%	1
R208	RP2 7 3121 JH000	Carbon	27kΩ	1/8W	±5%	1
R209	RP3 9 0121 JH000	Carbon	39Ω	1/8W	±5%	1
R210	RD2 7 2251 JM000	Carbon	2.7kΩ	1/4W	±5%	1
R211	RP1 8 2121 JH000	Carbon	1.8kΩ	1/8W	±5%	1
R212	RP1 0 3121 JH000	Carbon	10kΩ	1/8W	±5%	1
R213	RP3 9 2121 JH000	Carbon	3.9kΩ	1/8W	±5%	1
R214	RP4 7 2121 JH000	Carbon	4.7kΩ	1/8W	±5%	1
R215	RP2 2 3121 JH000	Carbon	22kΩ	1/8W	±5%	1
R216	RP8 2 2121 JH000	Carbon	8.2kΩ	1/8W	±5%	1
R217	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R218	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R219	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R220	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R221	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R222	RD6 8 3251 JM000	Carbon	68kΩ	1/4W	±5%	1
R223	RP1 0 4121 JH000	Carbon	100kΩ	1/8W	±5%	1
R224	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	±5%	1
R226	RP2 7 0121 JH000	Carbon	27Ω	1/8W	±5%	1
R227	RD1 5 3251 JM000	Carbon	15kΩ	1/4W	±5%	1
R228	RD6 8 0251 JM000	Carbon	68Ω	1/4W	±5%	1
R229	RP2 2 3121 JH000	Carbon	22kΩ	1/8W	±5%	1
R230	RP1 8 2121 JH000	Carbon	1.8kΩ	1/8W	±5%	1
R300	RP3 3 A121 JH000	Carbon	3.3Ω	1/8W	±5%	1
R301	RP2 2 3121 JH000	Carbon	22kΩ	1/8W	±5%	1
R302	RP2 2 3121 JH000	Carbon	22kΩ	1/8W	±5%	1
R303	RP3 3 A121 JH000	Carbon	3.3Ω	1/8W	±5%	1
R304	RD1 2 1251 JM000	Carbon	120Ω	1/4W	±5%	1
R305	RD4 7 0251 JM000	Carbon	47Ω	1/4W	±5%	1
R306	RP5 6 A121 JH000	Carbon	5.6Ω	1/8W	±5%	1
R307	RP4 7 1121 JH000	Carbon	470Ω	1/8W	±5%	1
R308	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	±5%	1
R309	RP4 7 4121 JH000	Carbon	470kΩ	1/8W	±5%	1
R310	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R311	RD6 8 0251 JM000	Carbon	68Ω	1/4W	±5%	1
R312	RD1 0 1251 JM000	Carbon	100Ω	1/4W	±5%	1
R313	RP2 7 4121 JH000	Carbon	270kΩ	1/8W	±5%	1
R314	RD4 7 0251 JM000	Carbon	47Ω	1/4W	±5%	1
R316	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	±5%	1
R318	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R319	RP2 2 2121 JH000	Carbon	2.2kΩ	1/8W	±5%	1
R320	RP2 2 2121 JH000	Carbon	2.2kΩ	1/8W	±5%	1
R321	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	±5%	1

RADIO TUNER P.C.B. ASSY

PCB2	141 0 1939 08440	Radio Tuner P.C.B. Assy	1
	4 2359 76370	Receptacle	2
	4 2369 73781	Pin 1P	4
CN1	4 2369 73370	Connector 4P	1
S1	4 2319 75800	Slide Switch (BAND SELECT)	1
L1	4 2599 70810	RF Coil	1
L2	4 2589 71960	FM OSC Trans	1
L3	4 2659 70240	Loading Coil	1
L4	4 2579 71481	Bar Antenna	1
T1	4 2569 71631	IFT FM	1
T2	4 2569 71340	IFT FM	1
T3	4 2569 71353	IFT AM	1
T4	4 2579 70723	Antenna Coil SW	1
T5	4 2589 71422	OSC Trans SW	1
T6	4 2589 71413	OSC Trans MW	1
T7	4 2589 71400	OSC Trans	1
P1	4 2229 73620	Potentiometer (B-10kΩ)	1
CF1	4 2539 70881	Ceramic Filter	1
CF2	4 2539 70682	Mechanical Filter	1
CF3	4 2539 70881	Ceramic Filter	1
PVC1	4 2249 70791	Variable Condenser	1
BPF1	4 2539 71021	Band Pass Filter	1
TC1	4 2249 70290	Trimmer Condenser	1
TC2	4 2249 70350	Trimmer	1
TC3	4 2249 70290	Trimmer Condenser	1
TC4	4 2249 70290	Trimmer Condenser	1
TC5	4 2249 70350	Trimmer	1
IC1	4 2069 73770	IC BA4410	1
IC2	4 2069 72962	IC BA4232AL	1
IC3	4 2069 72803	IC BA1330	1
Q1	4 2039 71200	Transistor, 2SC 2063	1
D1	4 2029 71440	Diode, 1SS 95	1
C1	CC5 6 A500 KD01R	Ceramic	5.6pF 50V ±10%	1
C2	CC1 8 0500 JD01R	Ceramic	18pF 50V ±5%	1
C3	CI1 0 3160 NG01R	Boundary	0.01μF 16V ±30%	1
C4	CC1 0 2500 KE01R	Ceramic	0.001μF 50V ±10%	1
C5	CI1 0 3160 NG01R	Boundary	0.01μF 16V ±30%	1
C6	CC2 2 0500 JCH0C	Ceramic	22pF 50V ±5%	1
C7	CC1 0 0500 JD01R	Ceramic	10pF 50V ±5%	1
C8	CC4 7 A500 KD01R	Ceramic	4.7pF 50V ±10%	1
C9	CI1 0 3160 NG01R	Boundary	0.01μF 16V ±30%	1
C10	CI2 2 3160 XG00R	Boundary	0.022μF 16V +40,-20%	1
C11	CD4 7 5500 0001V	Electrolytic	4.7μF 50V	1
C12	CI2 2 3160 XG00R	Boundary	0.022μF 16V +40,-20%	1
C13	CI1 0 3160 NG01R	Boundary	0.01μF 16V ±30%	1
C14	CI4 7 3250 KF00C	Boundary	0.047μF 25V ±10%	1
C15	CI2 2 3160 XG00R	Boundary	0.022μF 16V +40,-20%	1
C16	CC1 5 0500 JD01R	Ceramic	15pF 50V ±5%	1
C17	CI2 2 3160 XG00R	Boundary	0.022μF 16V +40,-20%	1
C18	CC1 0 0500 JD01R	Ceramic	10pF 50V ±5%	1
C19	CC2 0 0500 JD01R	Ceramic	20pF 50V ±5%	1
C20	CI2 2 3160 XG00R	Boundary	0.022μF 16V +40,-20%	1
C21	CC8 2 A500 KD01R	Ceramic	8.2pF 50V ±10%	1
C22	CC2 7 0500 JD01R	Ceramic	27pF 50V ±5%	1
C23	CS3 1 2500 J010V	Polystyroul	0.0031μF 50V ±5%	1
C24	CS3 6 1500 J010V	Polystyroul	360pF 50V ±5%	1
C25	CS2 0 1500 J010V	Polystyroul	200pF 50V ±5%	1
C26	CC1 2 0500 JD01R	Ceramic	12pF 50V ±5%	1
C27	CC1 5 0500 JD01R	Ceramic	15pF 50V ±5%	1
C28	CC1 0 1500 KE01R	Ceramic	100pF 50V ±10%	1
C29	CC4 7 A500 KD01R	Ceramic	4.7pF 50V ±10%	1
C30	CI2 2 3160 XG00R	Boundary	0.022μF 16V +40,-20%	1
C31	CD1 0 5500 0001V	Electrolytic	1μF 50V	1
C32	CI4 7 3250 KF00C	Boundary	0.047μF 25V ±10%	1
C33	CP6 8 1101 J002V	Polypropylen	680pF 100V ±5%	1
C34	CD2 2 4500 0001V	Electrolytic	0.22μF 50V	1
C35	CD4 7 4500 0001V	Electrolytic	0.47μF 50V	1
C36	CD1 0 5500 0001V	Electrolytic	1μF 50V	1
C37	CI1 0 3160 NG01R	Boundary	0.01μF 16V ±30%	1
C38	CI1 0 3160 NG01R	Boundary	0.01μF 16V ±30%	1
C39	CD1 0 4500 0001V	Electrolytic	0.1μF 50V	1
C40	CD1 0 4500 0001V	Electrolytic	0.1μF 50V	1
C41	CI1 0 3160 NG01R	Boundary	0.01μF 16V ±30%	1
C42	CI1 0 3160 NG01R	Boundary	0.01μF 16V ±30%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C43	CD1 0 7100 0001V	Electrolytic	100μF	10V		1
C44	CI2 2 3160 XG00R	Boundary	0.022μF	16V	+40 -20%	1
C45	CD4 7 7100 0006V	Electrolytic	470μF	10V		1
R1	RP1 0 0121 JH000	Carbon	10Ω	1/8W	±5%	1
R2	RP3 3 4121 JH000	Carbon	330kΩ	1/8W	±5%	1
R3	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R4	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R5	RP4 7 3121 JH000	Carbon	47kΩ	1/8W	±5%	1
R6	RP3 9 2121 JH000	Carbon	3.9kΩ	1/8W	±5%	1
R7	RP1 0 5121 JH000	Carbon	1MΩ	1/8W	±5%	1
R8	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	±5%	1
R9	RP1 0 0121 JH000	Carbon	10Ω	1/8W	±5%	1
R10	RP4 7 A121 JH000	Carbon	4.7Ω	1/8W	±5%	1
R11	RP1 5 3121 JH000	Carbon	15kΩ	1/8W	±5%	1
R12	RP1 0 2121 JH000	Carbon	1kΩ	1/8W	±5%	1
R13	RP4 7 1121 JH000	Carbon	470Ω	1/8W	±5%	1
R14	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R15	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R16	RP2 2 2121 JH000	Carbon	2.2kΩ	1/8W	±5%	1
R17	RP2 2 2121 JH000	Carbon	2.2kΩ	1/8W	±5%	1
R18	RP3 3 3121 JH000	Carbon	33kΩ	1/8W	±5%	1
R19	RP3 3 3121 JH000	Carbon	33kΩ	1/8W	±5%	1
R20	RP5 6 1121 JH000	Carbon	560Ω	1/8W	±5%	1
R21	RP1 0 1121 JH000	Carbon	100Ω	1/8W	±5%	1
R22	RP4 7 0121 JH000	Carbon	47Ω	1/8W	±5%	1
R23	RP1 0 2121 JH000	Carbon	1kΩ	1/8W	±5%	1
R24	RP1 0 3121 JH000	Carbon	10kΩ	1/8W	±5%	1
R25	RP5 6 2121 JH000	Carbon	5.6kΩ	1/8W	±5%	1
R26	RP6 8 1121 JH000	Carbon	680Ω	1/8W	±5%	1
R27	RP1 0 2121 JH000	Carbon	1kΩ	1/8W	±5%	1
R28	RP8 2 1121 JH000	Carbon	820Ω	1/8W	±5%	1

VOLUME CONTROL P.C.B. ASSY

PCB3	141 0 1939 03930	Volume Control P.C.B. Assy				1
VR1	4 2229 73921	Rotary Volume Unit				1
C114	CI4 7 3250 KF00C	Boundary	0.047μF	25V	±10%	1
C115	CC3 3 2500 KE00C	Ceramic	0.0033μF	50V	±10%	1
C116	CI4 7 3250 KF00C	Boundary	0.047μF	25V	±10%	1
C214	CI4 7 3250 KF00C	Boundary	0.047μF	25V	±10%	1
C215	CC3 3 2500 KE00C	Ceramic	0.0033μF	50V	±10%	1
C216	CI4 7 3250 KF00C	Boundary	0.047μF	25V	±10%	1
R125	RP3 9 2121 JH000	Carbon	3.9kΩ	1/8W	±5%	1
R225	RP3 9 2121 JH000	Carbon	3.9kΩ	1/8W	±5%	1

JACK P.C.B. ASSY

PCB4	141 0 1939 03951	Jack P.C.B. Assy				1
S8	4 2319 75590	Slide Switch (BEAT CANCEL)				1
J1	4 2352 01950	Pin Jack 2P (LINE IN)				1
C301	CM1 0 2500 J00BV	Mylar	0.001μF	50V	±5%	1
C302	CM4 7 2500 J00SV	Mylar	0.0047μF	50V	±5%	1

ASF CONTROL P.C.B. ASSY

PCB5	141 0 1939 03940	ASF Control P.C.B. Assy				1
	4 2369 73781	Pin 1P				3
CN2	4 2359 76475	Connector 5P Assy				1
S9	4 2319 75560	Touch Switch (ASF PROGRAM)				1
IC401	4 2069 72970	IC, TC9167P				1
Q401	4 2039 70992	Transistor, 2SA 937				1
Q402	4 2039 70620	Transistor, 2SC 2021				1
Q403	4 2039 70620	Transistor, 2SC 2021				1
D401	202 5 1420 00128	Diode, GMA 01				1

Ref. No.	Part No.	Description				Q'ty
D402	202 5 9600 44610	Diode, DS 446				1
D403	DYY - LA-4 01VP-	LED, LA 401 VP				1
C401	CI2 2 2250 KF00C	Boundary	0.0022μF	25V	±10%	1
C402	CD2 2 4500 0002V	Electrolytic	0.22μF	50V		1
C403	CD4 7 4500 0002V	Electrolytic	0.47μF	50V		1
C404	CI1 0 3250 KF00C	Boundary	0.01μF	25V	±10%	1
C405	CD1 0 6160 0002V	Electrolytic	10μF	16V		1
R401	RP1 5 2121 JH000	Carbon	1.5kΩ	1/8W	±5%	1
R402	RP1 5 2121 JH000	Carbon	1.5kΩ	1/8W	±5%	1
R403	RP1 5 2121 JH000	Carbon	1.5kΩ	1/8W	±5%	1
R404	RP1 5 2121 JH000	Carbon	1.5kΩ	1/8W	±5%	1
R405	RP1 5 2121 JH000	Carbon	1.5kΩ	1/8W	±5%	1
R406	RP1 5 2121 JH000	Carbon	1.5kΩ	1/8W	±5%	1
R407	RP1 5 2121 JH000	Carbon	1.5kΩ	1/8W	±5%	1
R408	RP4 7 3121 JH000	Carbon	47kΩ	1/8W	±5%	1
R409	RP1 8 4121 JH000	Carbon	180kΩ	1/8W	±5%	1
R411	RP1 0 2121 JH000	Carbon	1kΩ	1/8W	±5%	1
R412	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R413	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R414	RP3 3 2121 JH000	Carbon	3.3kΩ	1/8W	±5%	1
R415	RP1 0 3121 JH000	Carbon	10kΩ	1/8W	±5%	1
R416	RP1 0 3121 JH000	Carbon	10kΩ	1/8W	±5%	1
R417	RP2 7 1121 JH000	Carbon	270Ω	1/8W	±5%	1
R418	RP3 9 3121 JH000	Carbon	39kΩ	1/8W	±5%	1
R419	RP2 7 1121 JH000	Carbon	270Ω	1/8W	±5%	1

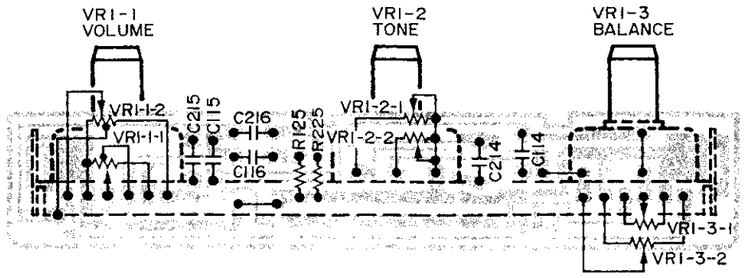
LED P.C.B. ASSY

PCB6	141 0 1939 03890	LED P.C.B. Assy	1
D8	4 2029 71420	LED, SLP 155 B (FM STEREO)	1

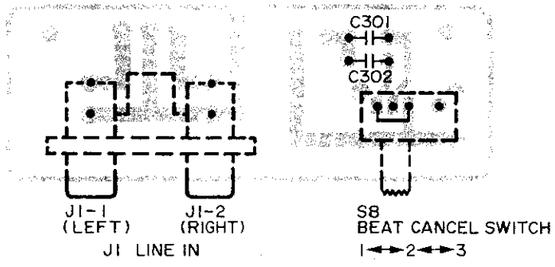
NOTE:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

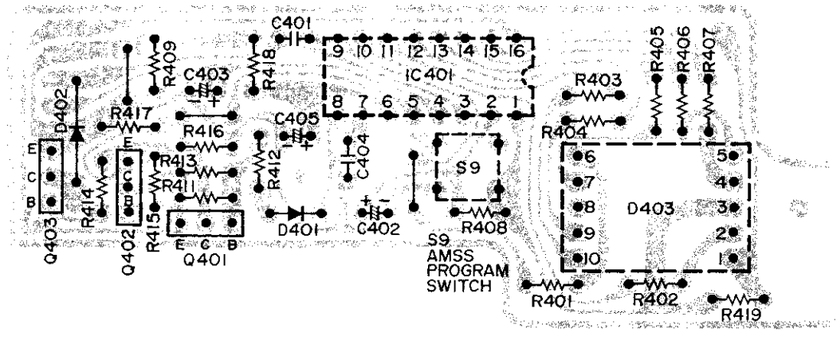
VOLUME CONTROL P.C.BOARD



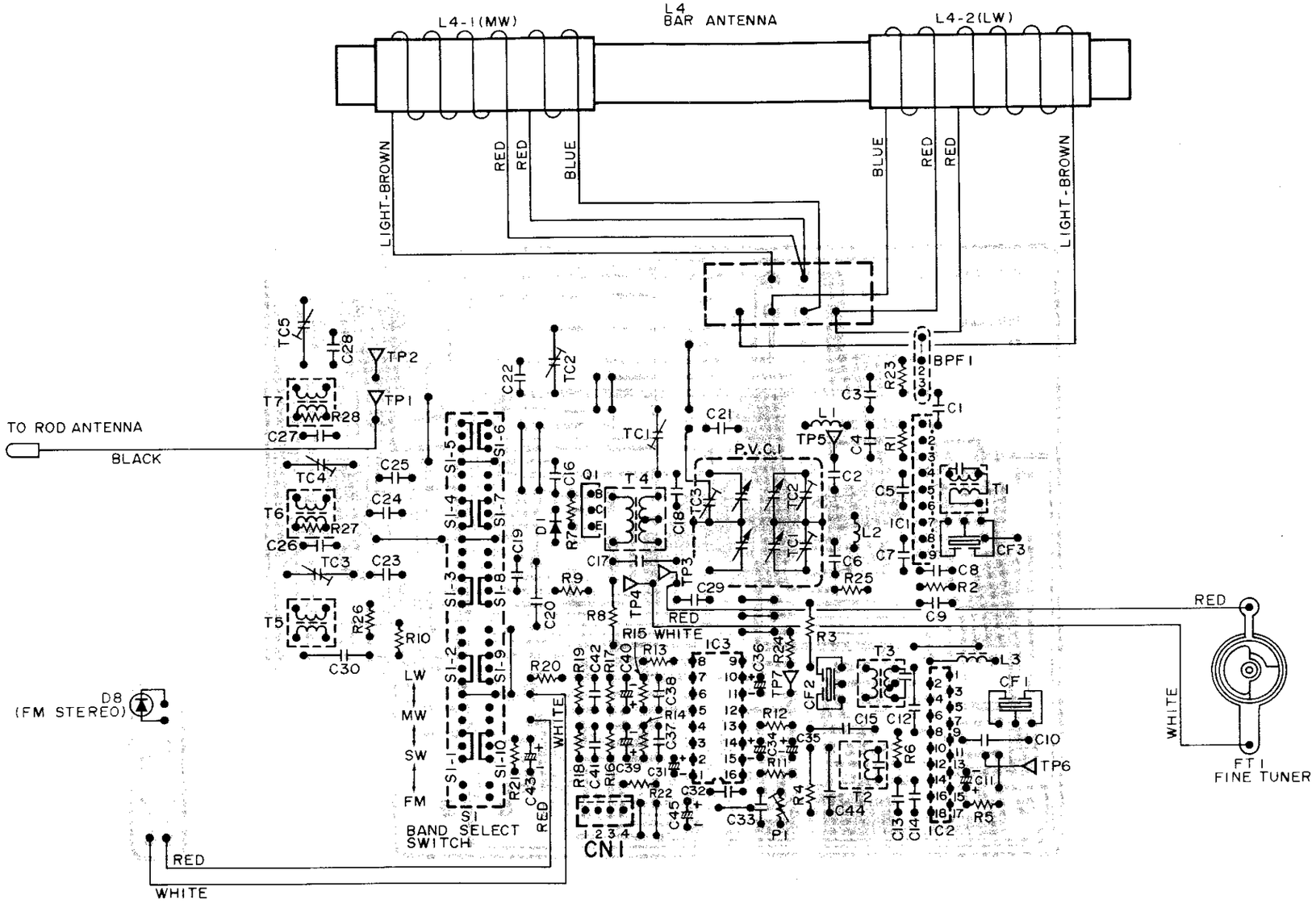
JACK P.C.BOARD



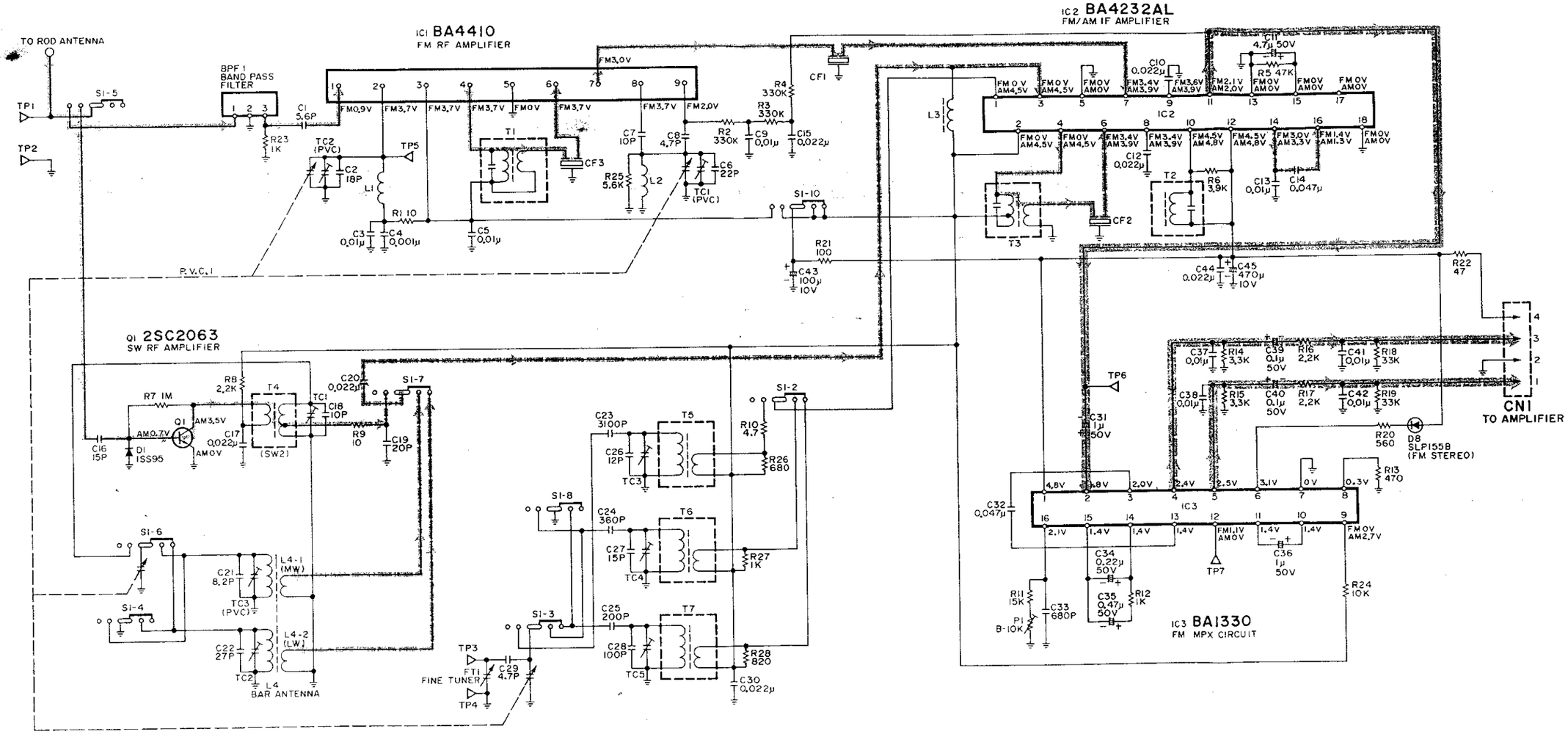
ASF CONTROL P.C.BOARD



RADIO TUNER P.C.BOARD



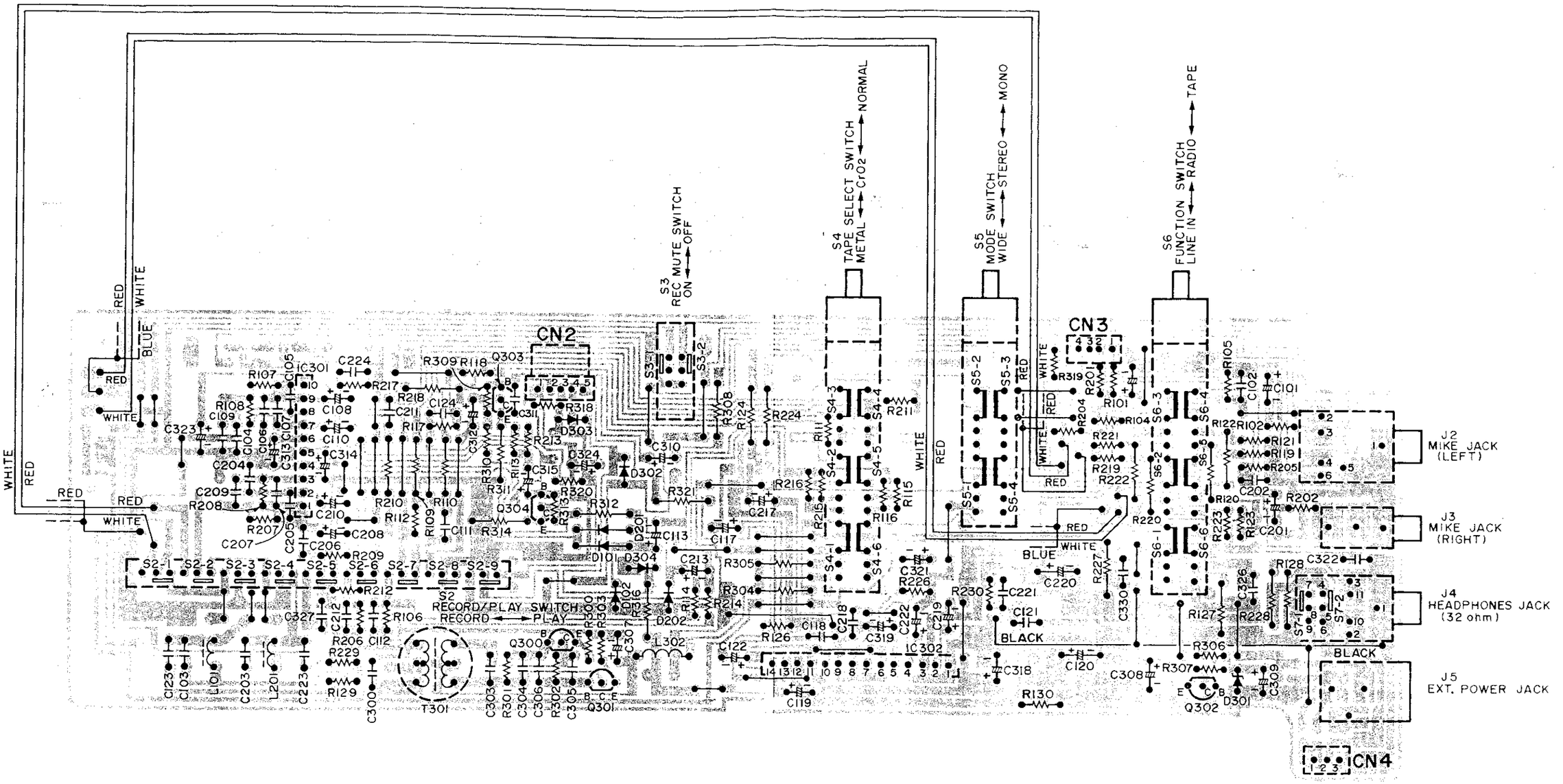
SCHEMATIC DIAGRAM (Tuner)



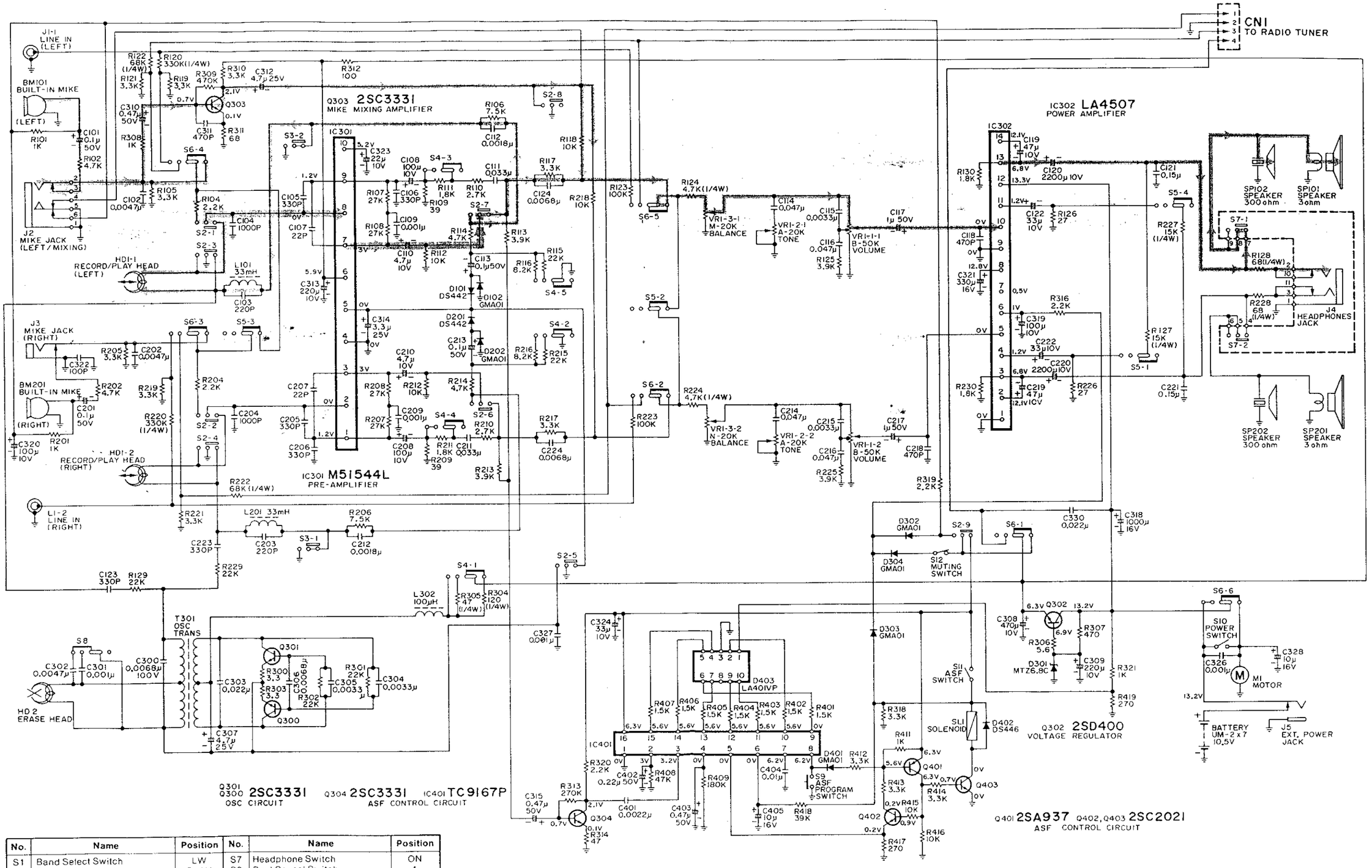
Signal flow of **FM**

Signal flow of **AM**

AMPLIFIER P.C.BOARD

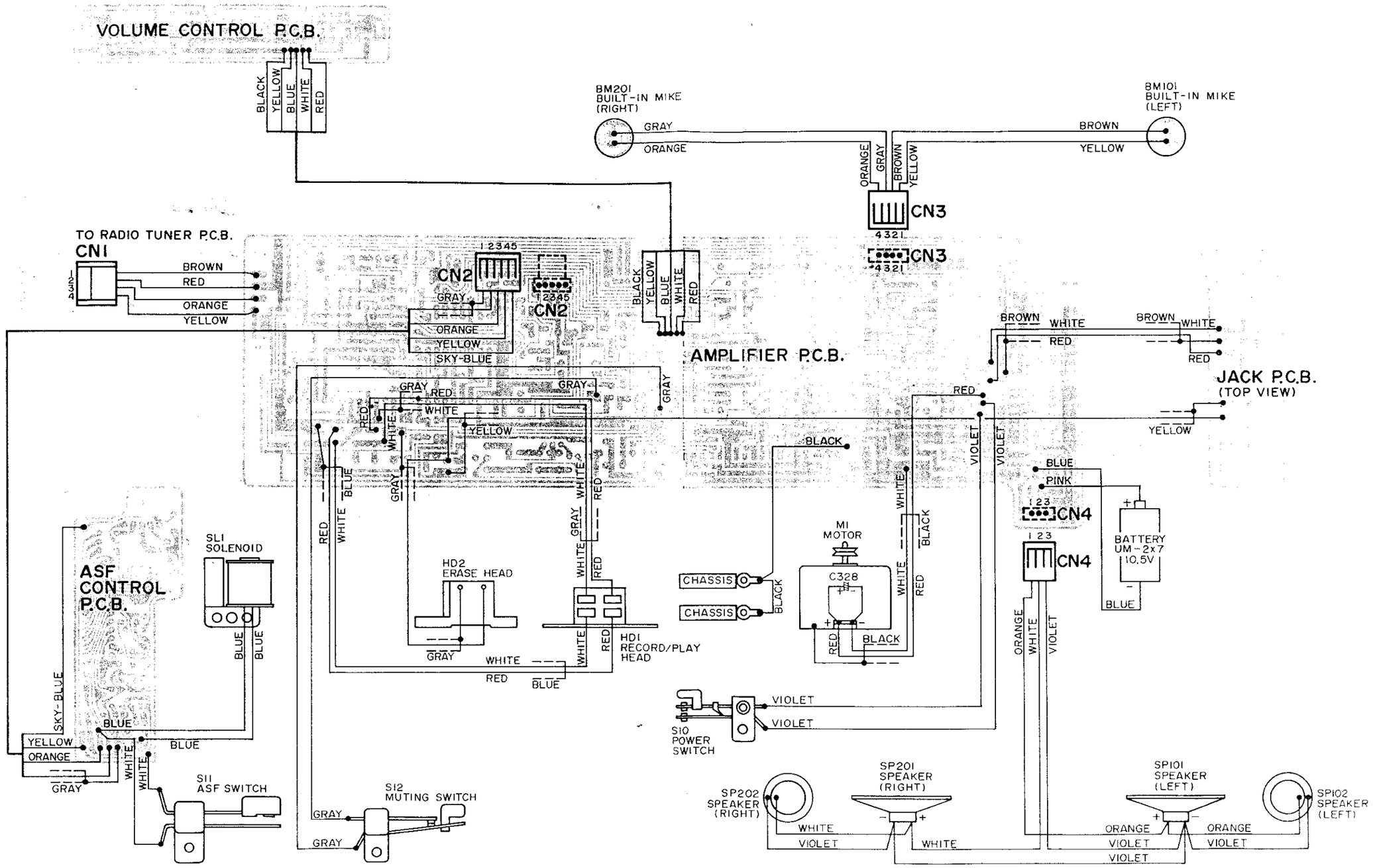


SCHEMATIC DIAGRAM (Amplifier)

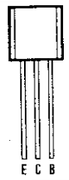
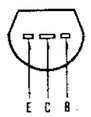
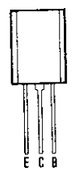
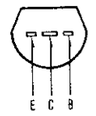
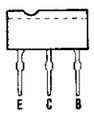


No.	Name	Position	No.	Name	Position
S1	Band Select Switch	LW	S7	Headphone Switch	ON
S2	Record/ Play Switch	PLAY	S8	Beat Cancel Switch	1
S3	Rec. Mute Switch	OFF	S9	ASF Program Switch	OFF
S4	Tape Select Switch	NORMAL	S10	Power Swtch	OFF
S5	Mode Switch	MONO	S11	ASF Switch	OFF
S6	Function Switch	TAPE	S12	Muting Switch	OFF

WIRING DIAGRAM



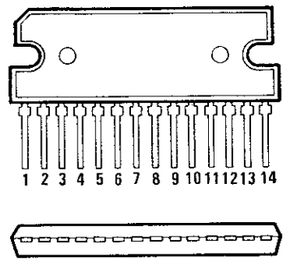
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SC3331 2SD734		
2SD400		
2SA937 2SC2021 2SC2063		

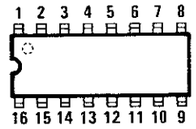
TERMINAL NAME

B → BASE
C → COLLECTOR
E → EMITTER

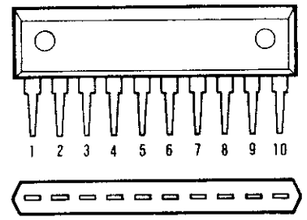
LA4507 FRONT/BOTTOM VIEWS



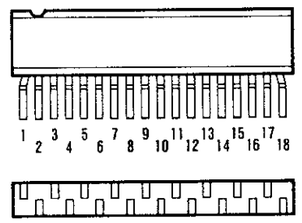
TC9167P BOTTOM VIEW



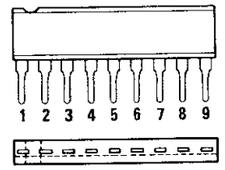
M51544L FRONT/BOTTOM VIEWS



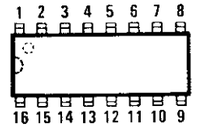
BA4232AL FRONT/BOTTOM VIEWS



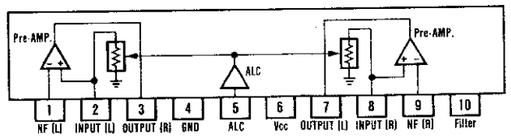
BA4410 FRONT/BOTTOM VIEWS



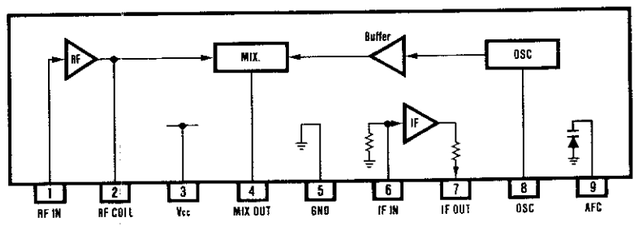
BA1330 BOTTOM VIEW



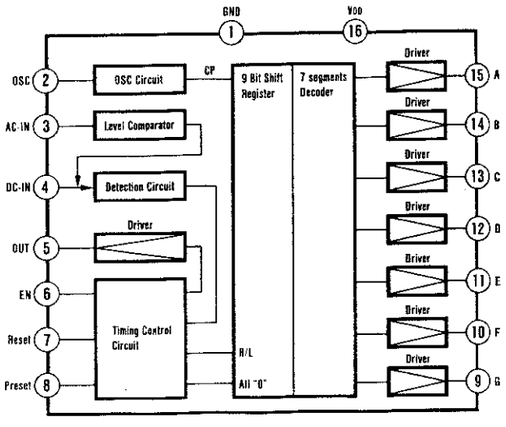
M51544L BLOCK DIAGRAM



BA4410 BLOCK DIAGRAM



TC9167P BLOCK DIAGRAM



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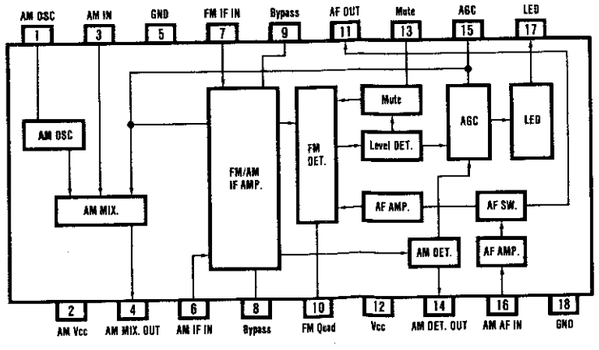

BA1330 BLOCK DIAGRAM