

SHARP

30558

G-5454H
GF-5454HB
GF-5454E

SERVICE MANUAL / SERVICE-ANLEITUNG / MANUEL DE SERVICE



ATSM282030RCS



GF-5454H
GF-5454HB
GF-5454E

Caution!

Under the employment of latest technologies this set uses leadless parts. Consult pages 22 and 23 without fail before replacing them.

Achtung!

Unter Verwendung neuester Technologie finden in diesem Gerät zuleitungslose Bauelemente Verwendung. Vor Austausch unbedingt Anleitung auf Seiten 24 und 25 beachten.

Precaution!

Par l'emploi des dernières technologies, cet appareil utilise des pieces sans fil. Ne pas oublier de consulter pages 26 et 27 avant de les remplacer.

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.
- Im Interesse der Benutzer-Sicherheit sollte dieses Gerät wieder auf seinen ursprünglichen Zustand eingestellt und nur die vorgeschriebenen Teile verwendet werden.
- Dans l'intérêt de la sécurité de l'utilisateur, l'appareil devra être reconstitué dans sa condition première et seules des pièces identiques à celles spécifiées, doivent être utilisées.

Note for users in UK:

Recording and playback of any material may require consent which SHARP are unable to give. Please refer particularly to the provisions of Copyright Act 1956, the Dramatic and Musical Performers Protection Act 1958, the Performers Protection Acts 1963 and 1972 and to any subsequent statutory enactments and orders.

(GB)

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(D)

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SHARP CORPORATION OSAKA, JAPAN

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT,
PLEASE REFER TO THE OPERATION MANUAL.

SPECIFICATIONS

GENERAL

Power source: AC 110V~120V and 220V~240V,
50/60HZ
DC 9V (UM/SUM-1, R20, HP-2 or
D type x 6)

Speakers: **12cm woofer** x 2
Ceramic type tweeter x 2

Output power:
(DIN 45 324)
(GF-5454H/HB) MPO; 9.6W (4.8W + 4.8W)
(AC operation)
RMS; 5.8W (2.9W + 2.9W)
(DC operation)

Output power:
(GF-5454E) MPO; 12W (6W + 6W) (AC opera-
tion
RMS; 5.8W (2.9W + 2.9W) (DC
operation, 10% distortion)

Semiconductors: **6 ICs**
9 transistors
21 diodes
7 LEDs

Dimensions: Width; 500mm
Depth; **120mm**
Height; 226mm

Weight: 3.9 kg without batteries

TAPE RECORDER

Tape: Compact cassette tape

Frequency response: **50Hz ~ 10,000Hz**

Signal/noise ratio: 50dB

Wow and flutter: 0.28% (DIN 45 511)

(GF-5454H/HB)

Wow and flutter: **0.28% (CCIR)**

(GF-5454E)

Input sensitivity and impedance:

External mic.; 600 ohms

DIN socket; 0.7mV/5.6 ohms

Loaded impedance:

Headphones; 8 ohms ~ 25 ohms

External speakers; 2.4 ohms ~ 8 ohms

RADIO

Frequency range: FM; **87.6MHz – 108MHz**
LW; **150kHz – 285kHz**
MW; **520kHz – 1,620kHz**
SW; **5.95MHz – 18.0MHz**

Specifications for this model are subject to change without
prior notice.

NAMES OF PARTS

1. Built-in Microphone (L-ch)
2. Built-in Microphone (R-ch)
3. Volume Control
4. Balance Control
5. Tone Control
6. Function Selector
7. FM Mode Selector
8. Band Selector
9. Power/Battery Indicator
10. Level Indicator
11. FM Stereo Indicator
12. Cassette Holder
13. Stop/Eject Button
14. Record Button
15. Playback Button
16. Rewind/Reverse APSS Button
17. Fast-forward/Forward APSS Button
18. Pause Button
19. Tuning Control
20. Fine Tuning Control
21. Tape Counter Reset Button
22. Digital Tape Counter
23. FM/SW Telescopic Rod Antenna
24. External Microphone Jacks
25. DIN Socket
26. Beat Cancel Switch
27. Battery Compartment Lid
28. External Speaker Jacks
29. Headphones Jack
30. AC Power Supply Socket

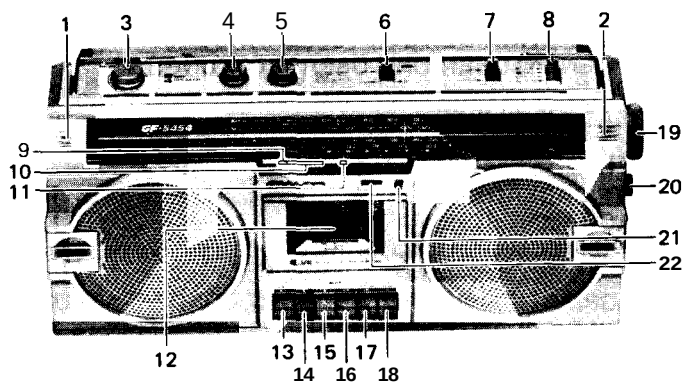


Figure 2-1

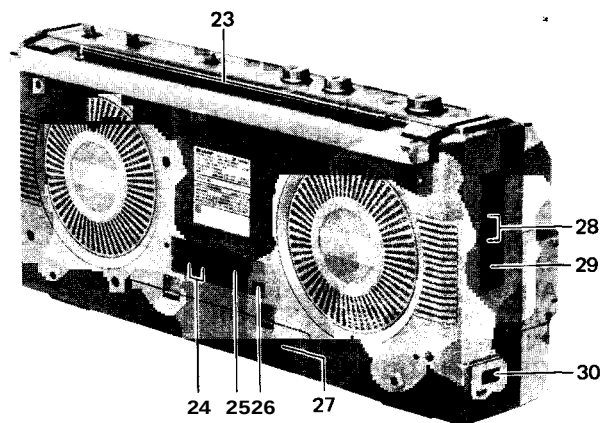


Figure 2-2

DISASSEMBLY

Caution:

Prior to the disassembly, be sure to remove the AC power supply cord, cassette tape and batteries from the unit.

- **FRONT CABINET REMOVAL**

(Refer to Figures 5-1, 5-2 and 5-3)

1. Remove the eight screws ⑧ and the six knobs ⑥.
2. Push the stop/eject Button to open the cassette holder.
3. Pull the front cabinet frontward by holding its upper part and disconnect the speaker socket ③.

- **MECHANISM BLOCK REMOVAL**

(Refer to Figure 5-3)

1. Remove the two screws ③ and the Digital Tape Counter Belt ().
2. Disconnect the three sockets ⑥, then the mechanism block can be removed.

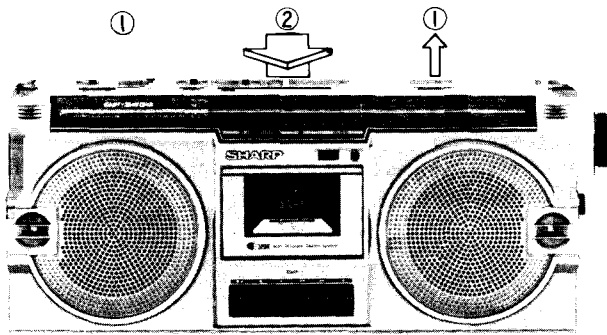


Figure 5-2

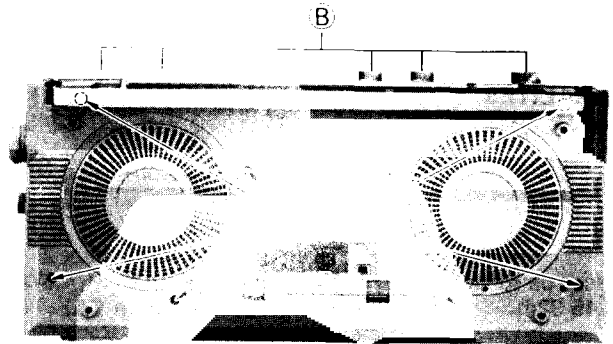


Figure 5-1

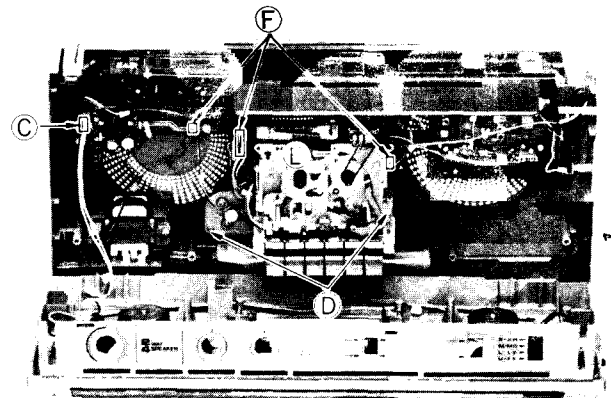


Figure 5-3

- **P.W.B. BLOCK REMOVAL**

(Refer to Figure 5-4)

1. Remove the two knobs ⑦.
2. Disconnect the two tips ⑧.
3. Remove the six screws ①, then amp. and tuner P.W.B. can be removed from the back cabinet.

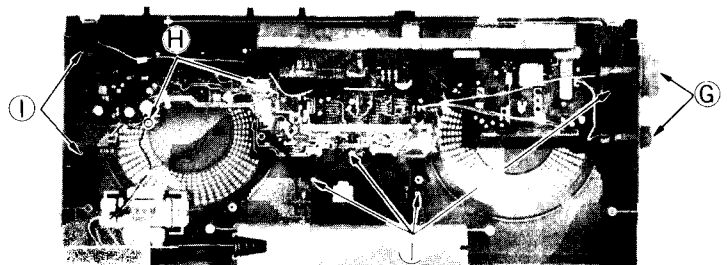


Figure 5-4

VOLTAGE SELECTION

Before operating the unit on mains, check the preset voltage. If the voltage is different from your local voltage, adjust the voltage as follows: Slide the AC power supply socket cover by a little loosening screw to the visible indication of the side of your local voltage. See Figure 5-5.

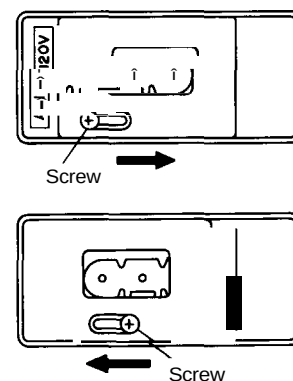


Figure 5-5



TORQUE CHECK AT PLAY, FAST FORWARD AND REWIND MODES

(Refer to Table 8-1 and Figure 8-1.)

Put a torque meter cassette in the cassette holder of the unit, and see that the measured torque in each mode is normal as follows.

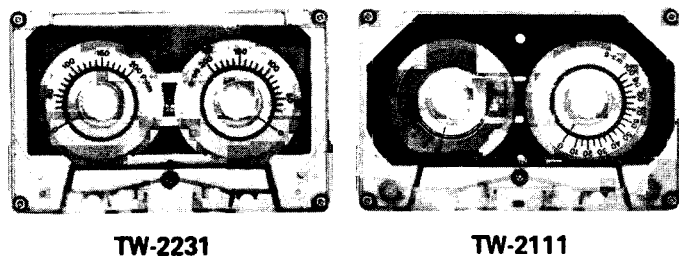


Figure 8-1

POSITIONAL ADJUSTMENT OF PLUNGER AND SOLENOID

(Refer to Figure 8-2)

If the attractive stroke of the plunger is insufficient, adjust it by shifting the solenoid in the direction (g). If the attractive force of the solenoid is insufficient, adjust it by shifting the solenoid in the direction (®).

TIMING ADJUSTMENT OF APSS SWITCH

(Refer to Figure 8-3)

While the unit is in playback mode, bend the part (B) of the sub chassis back lever to such degree that the clearance (®) between the APSS switch and the sub chassis back lever becomes about 1 mm. And check that the APSS switch is turned on when the unit gets in APSS mode.

PINCH ROLLER PRESSURE CHECK

1. Place the unit in playback mode.
2. Push the pinch roller, at the point shown in Figure 8-4, by using a tension gauge (500 g) so that it will come off the capstan. Then, slowly release the tension until the pinch roller hits the capstan again (i.e., the pinch roller is about to rotate again). Check, then, the tension gauge is reading 270 g to 370 g.
3. If the reading is outside the range of 270 g to 370 g, replace the pressure spring of the pinch roller.

Notes:

In **playback** mode, make sure that the clearance (g) and the clearance (g) are more than 0.2 mm and more than 0.1 mm respectively. Next in pause mode, make sure that the clearance © is more than 0.3 mm.

TAPE SPEED ADJUSTMENT

As shown in Figure 8-5, make connection of instrument, put a screwdriver (for high-frequency use) into the hole of the motor, and adjust the variable resistor so that the output frequency is 2960 to 2985 Hz on frequency counter.

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

As shown in Figure 8-6, make connection of instrument, and adjust the head azimuth adjusting screw so that the output signals from both channels will have maximum waveform with the same phase in right and left.

Mode	Torque meter cassette	Measured torque
Play back	TW-2111	35 ~ 60 gram·cm
Fast-forward	TW-2231	85 ~ 120 gram·cm
Rewind	TW-2231	85 ~ 120 gram·cm

Table 8-1

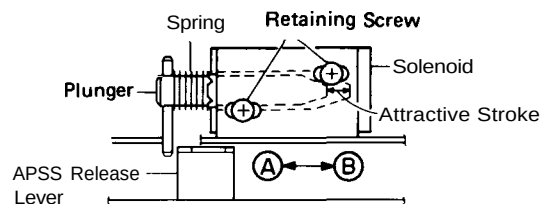


Figure 8-2

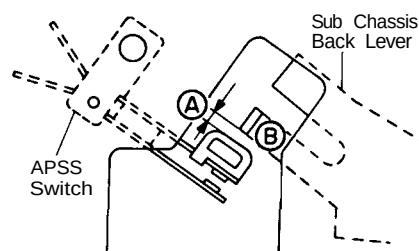


Figure 8-3

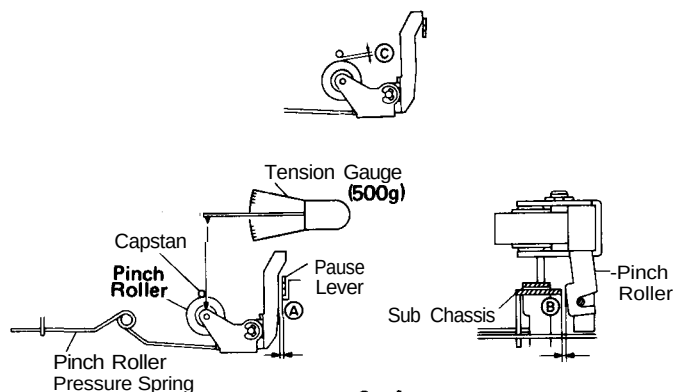


Figure 8-4

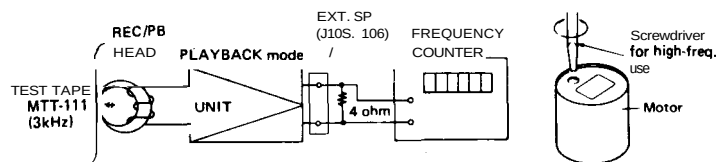


Figure 8-5

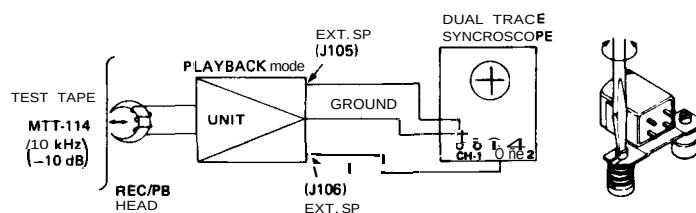


Figure 8-6

PACKING METHOD (GF-5454E Only)

PACKING PROCEDURE

Setting positions of every switch and knob.
 The beat cancel switch is set at A position.
 The volume control knob is set at **min** position.
 The balance control knob is set at center position.
 The tone control knob is set at center position.
 The function selector knob is set at tape position.
 The FM Mode selector knob is set at stereo position.
 The band selector knob is set at LW position.
 The digital tape counter is set at 000 position.
 The tuning control knob is set at start point 0 position.
 The mechanical button are set at disengaged position.

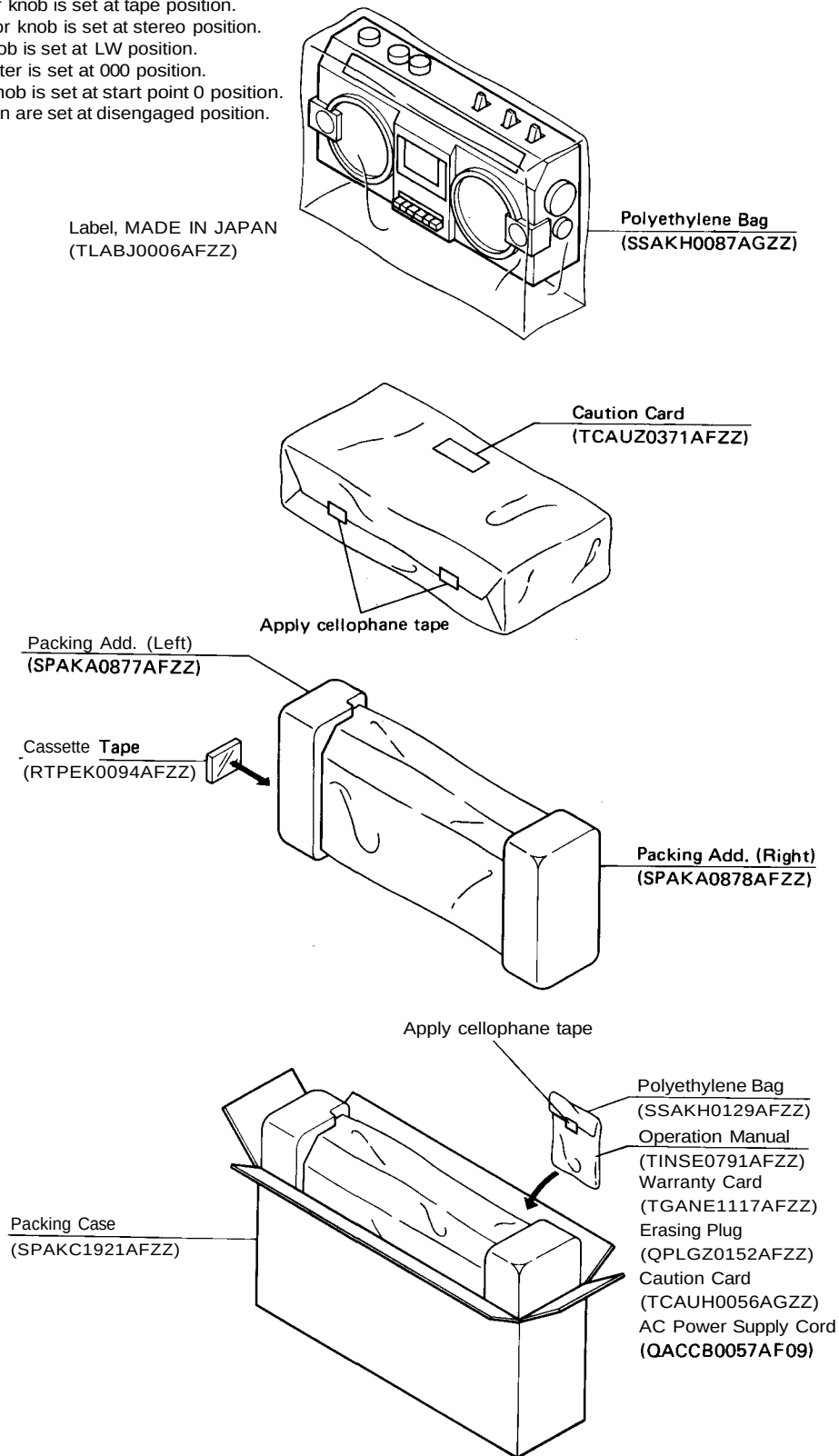


Figure 10

GENERAL ALIGNMENT INSTRUCTION

Should it become necessary at any time to check the alignment of this receiver, proceed as follows;

1. Set the volume control (VR103) to maximum.
2. Attenuate the signals from the generator enough to swing the most sensitive range of the output meter.
3. Use a non-metallic alignment tool.
4. Repeat adjustments to insure good results.
5. Set the Function Selector Switch (SW101) to "radio" position.

AM IF/RF ALIGNMENT

- Set the signal generator to produce a signal of 400Hz, 30%, AM modulated.
- For adjustments in steps 4 and 9, see **Note A**.

STEP	BAND	TEST STAGE	FREQUENCY	DIAL SETTING	ADJUSTMENT	REMARKS
IF (As shown in Figure 11-1, make connection of instrument.)						
1	MW	IF	(H/HB): 455kHz (E): 468 kHz	High end of dial	T3	Adjust for best "IF" curve
RF (As shown in Figure 11-2, make connection of instrument.)						
2	LW	Band coverage	145kHz	Low end of dial	L10	Adjust for maximum output
3	LW		295kHz	High end of dial	TC8	
4	LW	Tracking	170kHz	170k Hz	L7	
5	LW		270kHz	270k Hz	TC5	
6	Repeat steps 2,3,4 and 5 until no further improvement can be made.					
RF (As shown in Figure 11-3, make connection of instrument.)						
7	MW	Band coverage	510kHz	Low end of dial	L9	Adjust for maximum output
8	MW		1650 kHz	High end of dial	TC7	
9	MW	Tracking	600 kHz	600 kHz	L7	
10	MW		1400 kHz	1400 kHz	TC4	
11	Repeat steps 7,8,9 and 10 until no further improvement can be made.					
12	SW	Band coverage	5.85 MHz	Low end of dial	L8	Adjust for maximum output
13	SW		18.5 MHz	High end of dial	TC6	
14	SW	Tracking	6.5 MHz	6.5 MHz	L6	
15	SW		16 MHz	16 MHz	TC3	
16	Repeat steps 12, 13, 14 and 15 until no further improvement can be made.					

Note A Check the alignment of the receiver antenna coil by bringing a piece of ferrite (such as a coil slug) near the antenna loop stick, then a piece of brass. If ferrite increases output, loop requires more inductance. If brass increases output, loop requires less inductance. Change loop inductance by sliding the bobbin toward the center of ferrite core to increase inductance, or away to decrease inductance.

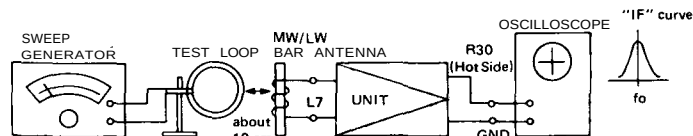


Figure 11-1

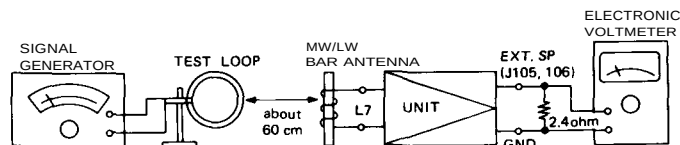


Figure 11-2

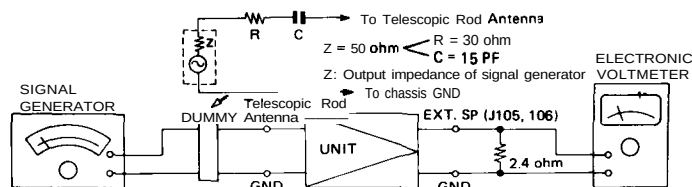


Figure 11-3

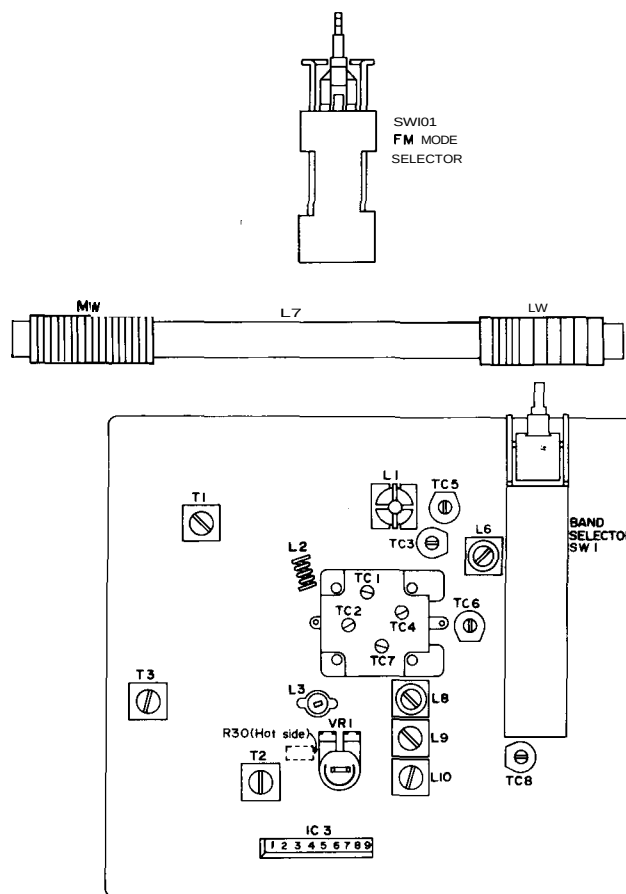


Figure 11-4

FM IF/RF ALIGNMENT

- Set the signal generator to produce a signal of 400Hz, 30%, FM modulated.

STEP	BAND	TEST STAGE	FREQUENCY	DIAL SETTING	ADJUSTMENT	REMARKS
IF(As shown in Figure 13-1, make connection of instrument.)						
1	FM	IF	10.7 MHz	High end of dial	T1 T2	Adjust for best "S" curve
RF(As shown in Figure 13-2, make connection of instrument.)						
2	FM	Band coverage	87.3 MHz	Low end of dial	L3	Adjust for maximum output
3	FM		108.3 MHz	High end of dial	TC2	
4	FM	Tracking	88 MHz	88 MHz	L2	
5	FM		108 MHz	108 MHz	TC1	
6	Repeat steps 2,3,4 and 5 until no further improvement can be made.					

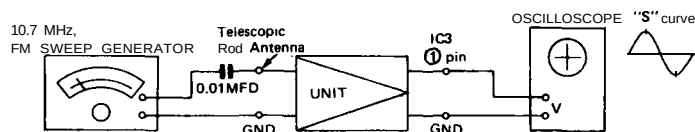


Figure 13-1

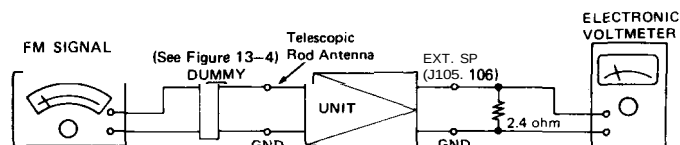


Figure 13-2

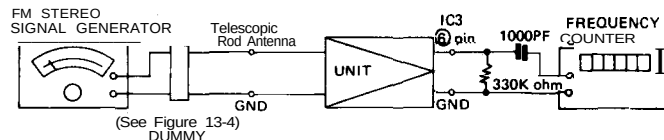


Figure 13-3

- Set the Band Selector Switch (SW1) to "FM" position and FM Mode Selector Switch (SW104) to "stereo" position.
- Before this adjustment, connect the anode side of Stereo Indicator (D111) to GND.
- As shown in Figures 13-3 and 13-4, make connection of instrument.

FREQUENCY	DIAL POINTER	ADJUSTMENT	REMARKS
98MHz (54dB) un modulated	98MHz	VR1	Adjust for $38 \pm 0.15\text{kHz}$

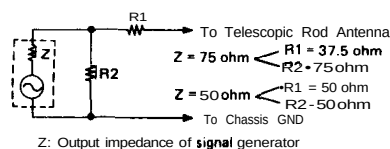


Figure 13-4 FM DUMMY

DIAL CORD STRINGING

- Turn the drum fully clockwise and stretch its cord cover the parts in the numerical order — as shown in Figure 13-5.
- Turn the tuning control shaft fully counterclockwise, and fix it with the pointer aligned with the zero (0) point on the frame. See Figure 13-6.

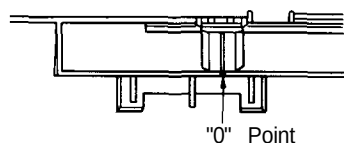


Figure 13-6

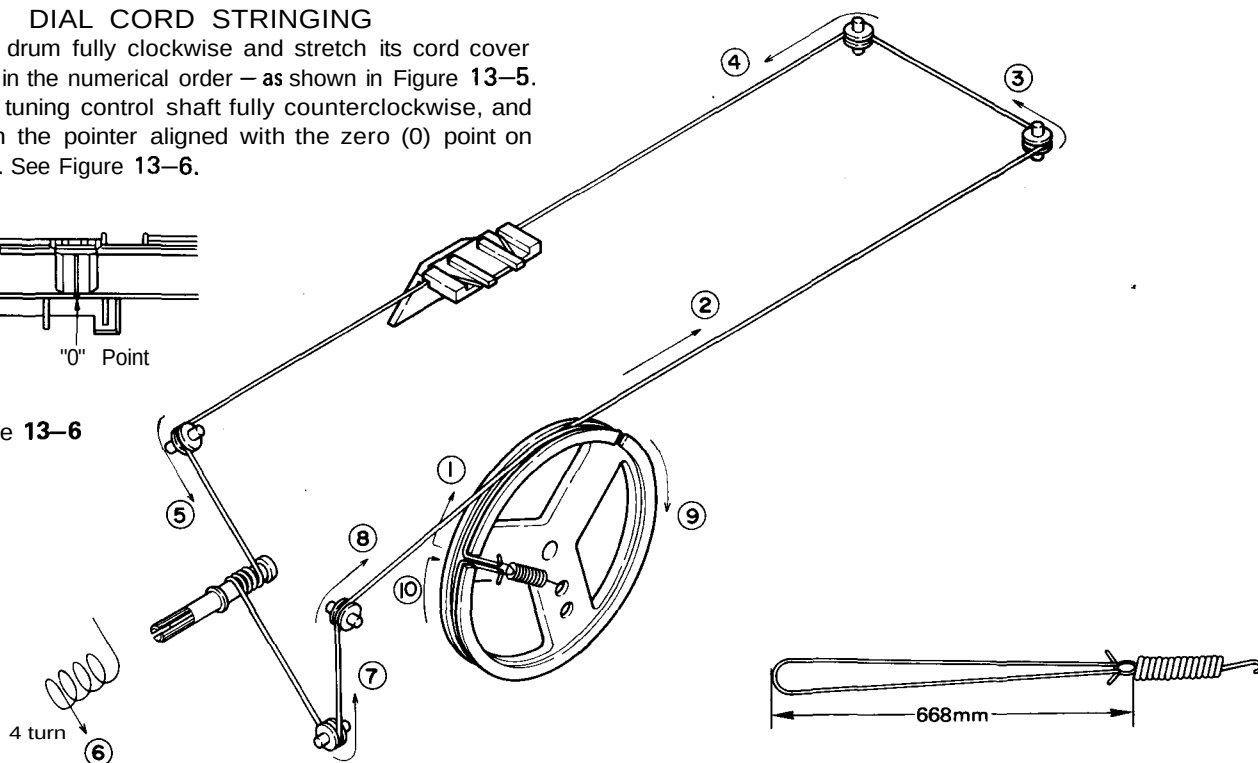


Figure 13-5

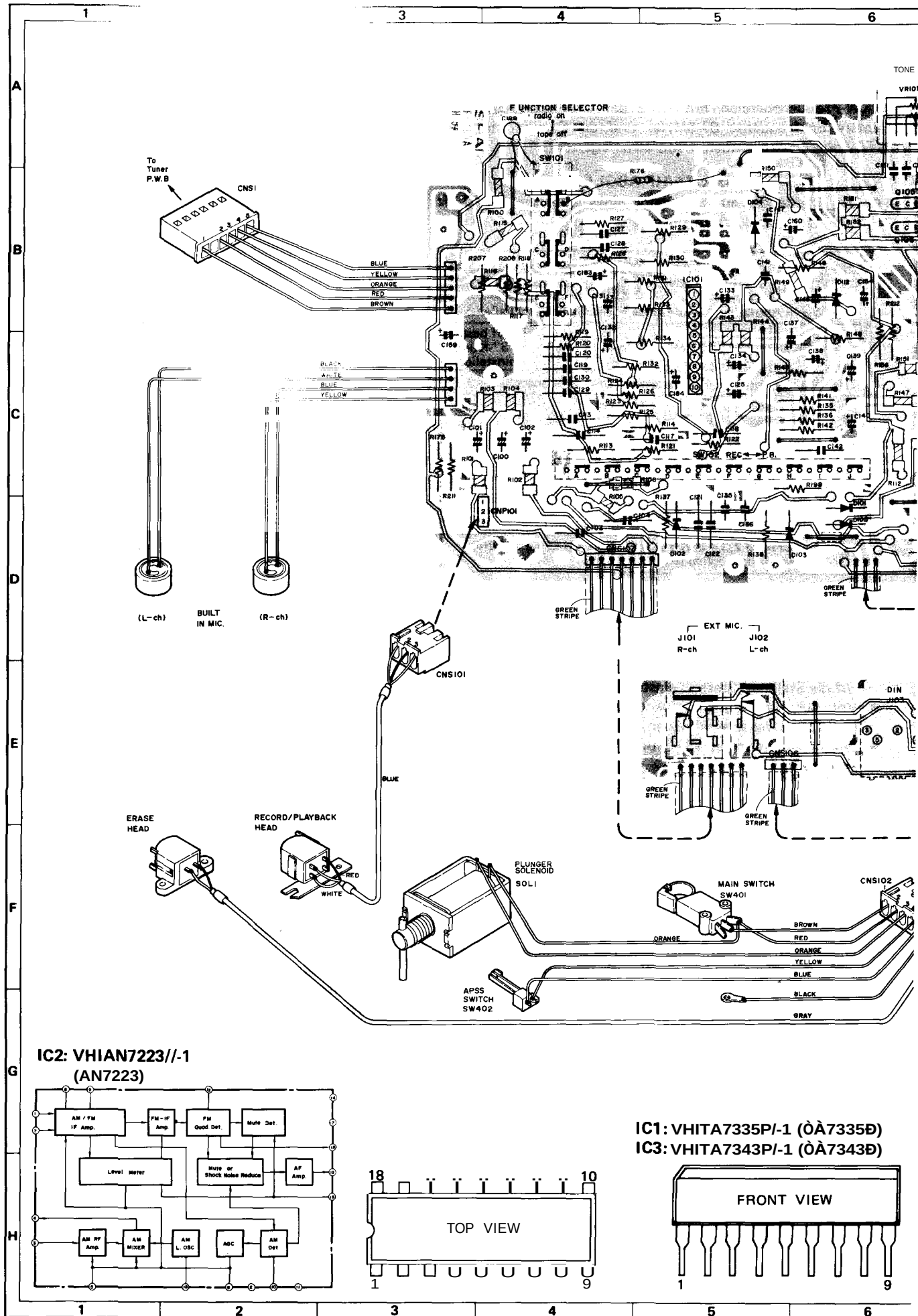
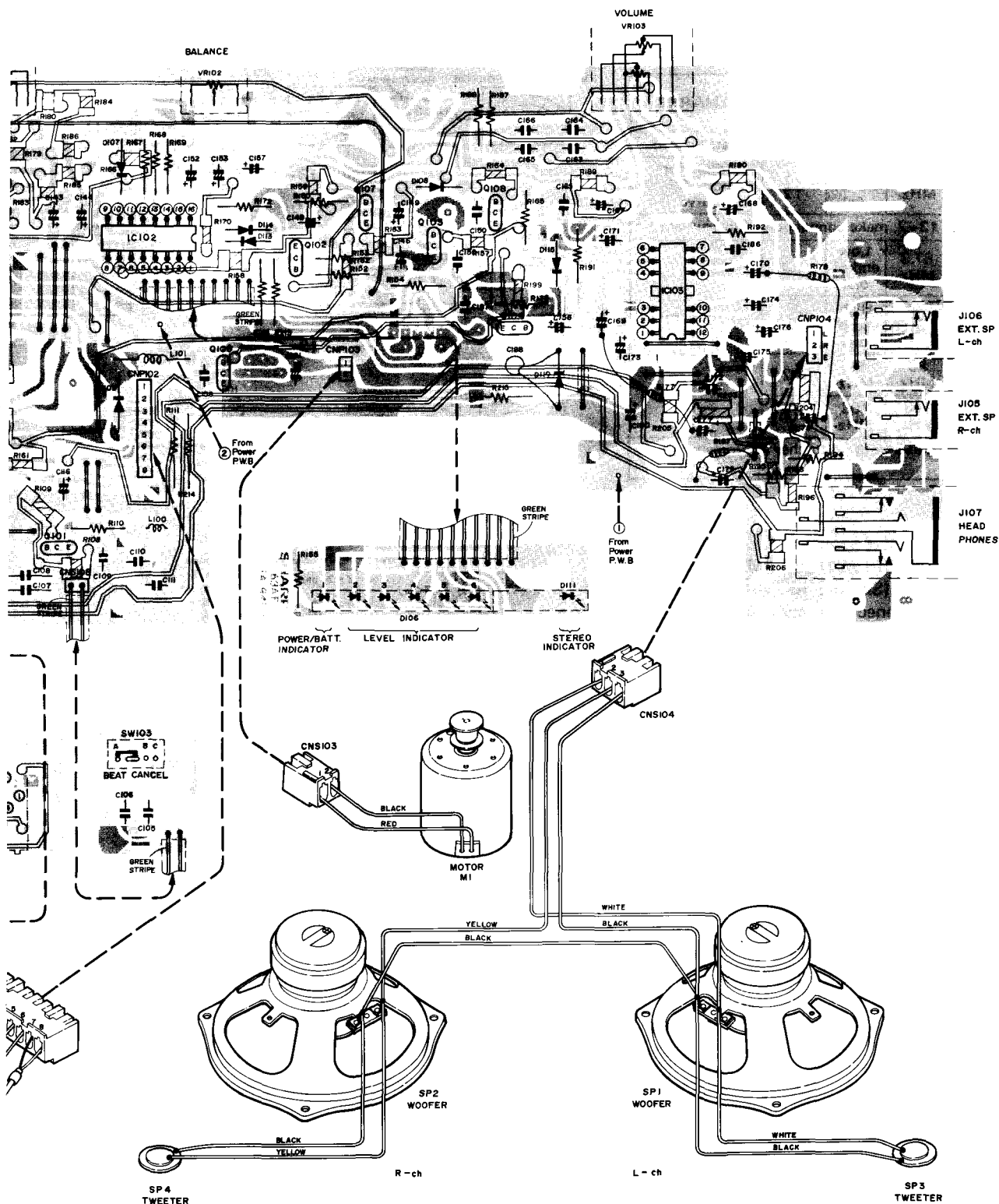
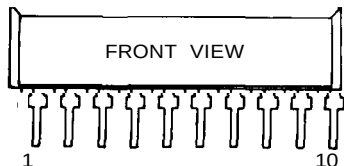


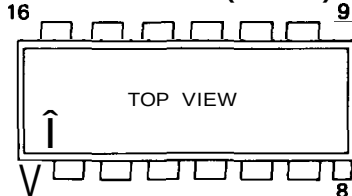
Figure 15 WIRING :



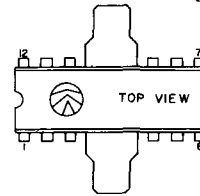
IC101: VHIM51544L/-1 (M51544L)



IC102: VH1R2E01/-1 (IR2E01)



IC103: RH-IX1222AFZZ (LA4192F)



Note:

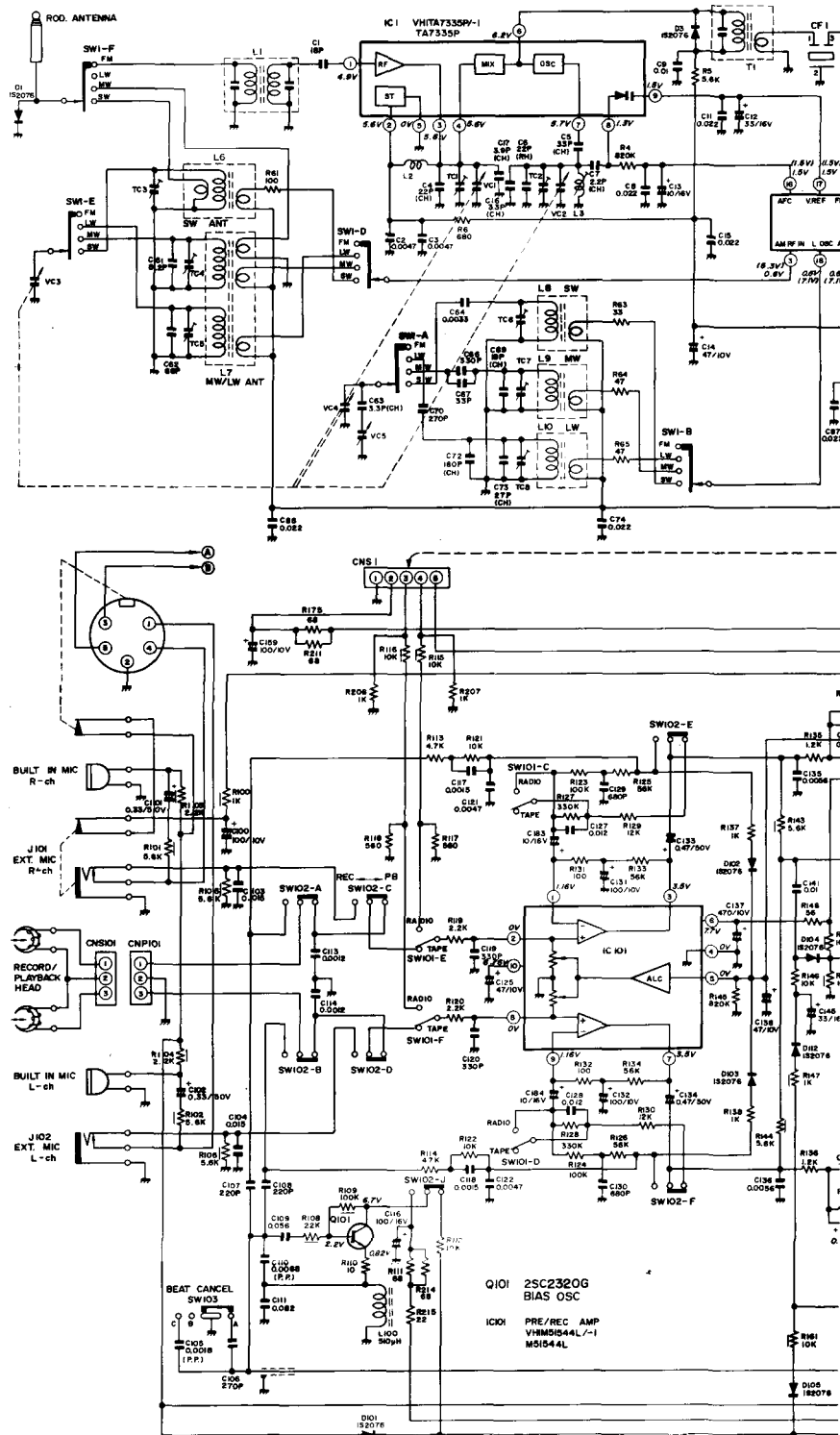
- Voltage reeding are measured with Digital Multimeter under no signal condition in tape position.
() : AM mode
 : FM mode
- Unless otherwise specified all resistance in ohms,
E = 1000 ohms
- Unless otherwise specified all capacitance in microfarads.
P = Picofarads
- (CH), (RH) : Temperature compensation
- (S) : Styrol type
- (P. P.) : Polypropylene type
-  : Printed resistor

Anmerkung:

- Die Spannungen werden bei Einstellung des Gerätes auf die Tape-Stellung ohne Signaleingang mit Digitalvielfachmeßgerät gemessen.
() : AM-Betriebsart
 : UKW-Betriebsart
- Falls nicht anders angegeben, sind alle Widerstände in Ohm angegeben.
E = 1000 Ohm
- Falls nicht anders angegeben, sind alle Kondensatoren in Mikrofarad angegeben.
P = Picofarad
- (CH), (RH): TK-Kondensator
- (S) : Styroltyp
- (P.P.) : Polypropylentyp
-  : Gedruckter Widerstand

Note:

- La tension est mesurée à l'aide d'un multimètre numérique dans les conditions de non signal sur la position "tape".
() : Mode AM
 : Mode FM
- A moins de notification contraire, toute resistance est exprimée en ohms.
E = 1000 ohms
- A moins de notification contraire, toute capacité est exprimée en microfarads.
P = Picofarads
- (CH), (RH) : Compensation de temperature
- (S) : Type styrol
- (P.P.) : Type polypropylene
-  : Resistance imprimée



Notes: F
n
Anmerku

(Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.)
(Technische Daten oder Schaltpläne dieses Modelles können im Sinne der Verbesserung jederzeit ohne Vorankündigung geändert werden.)
(Les caractéristiques ou les diagrammes de câblage de ce modèle sont sujets a modification sans préavis pour l'amélioration du produit.)

Note: L
li

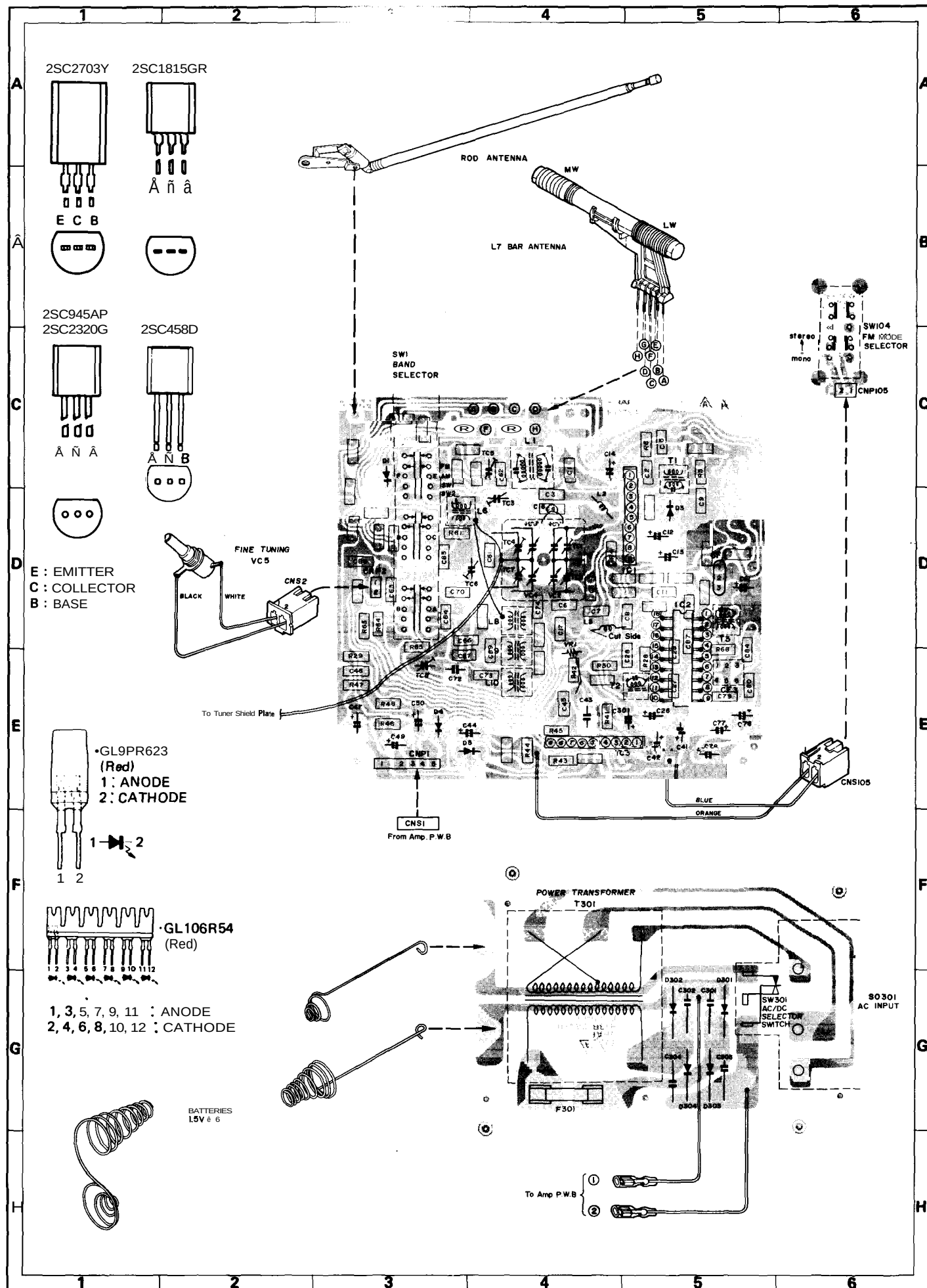


Figure 19 WIRING SIDE OF TUNER AND POWER SUPPLY P.W.BOARD

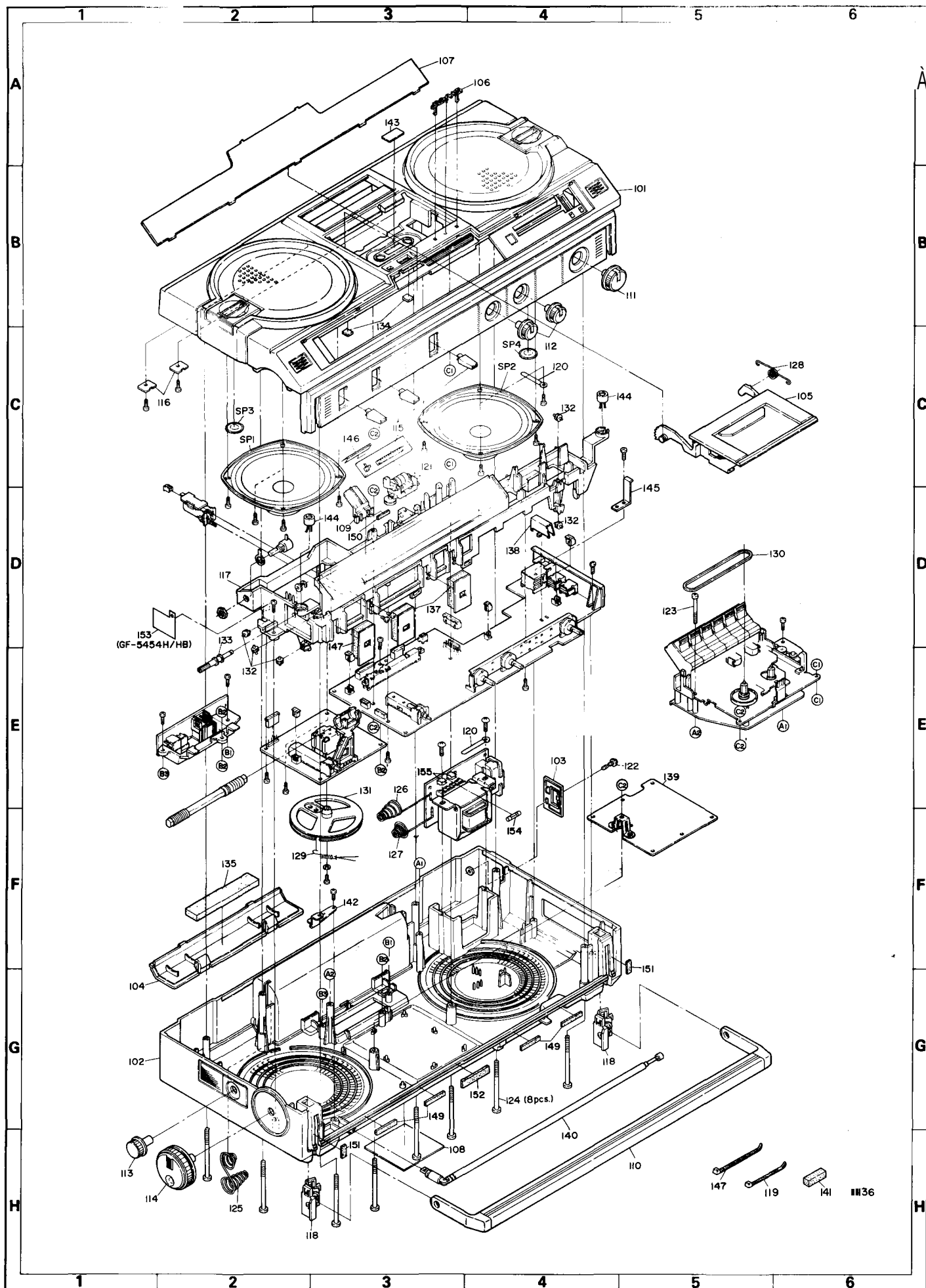


Figure 20 CABINET EXPLODED VIEW

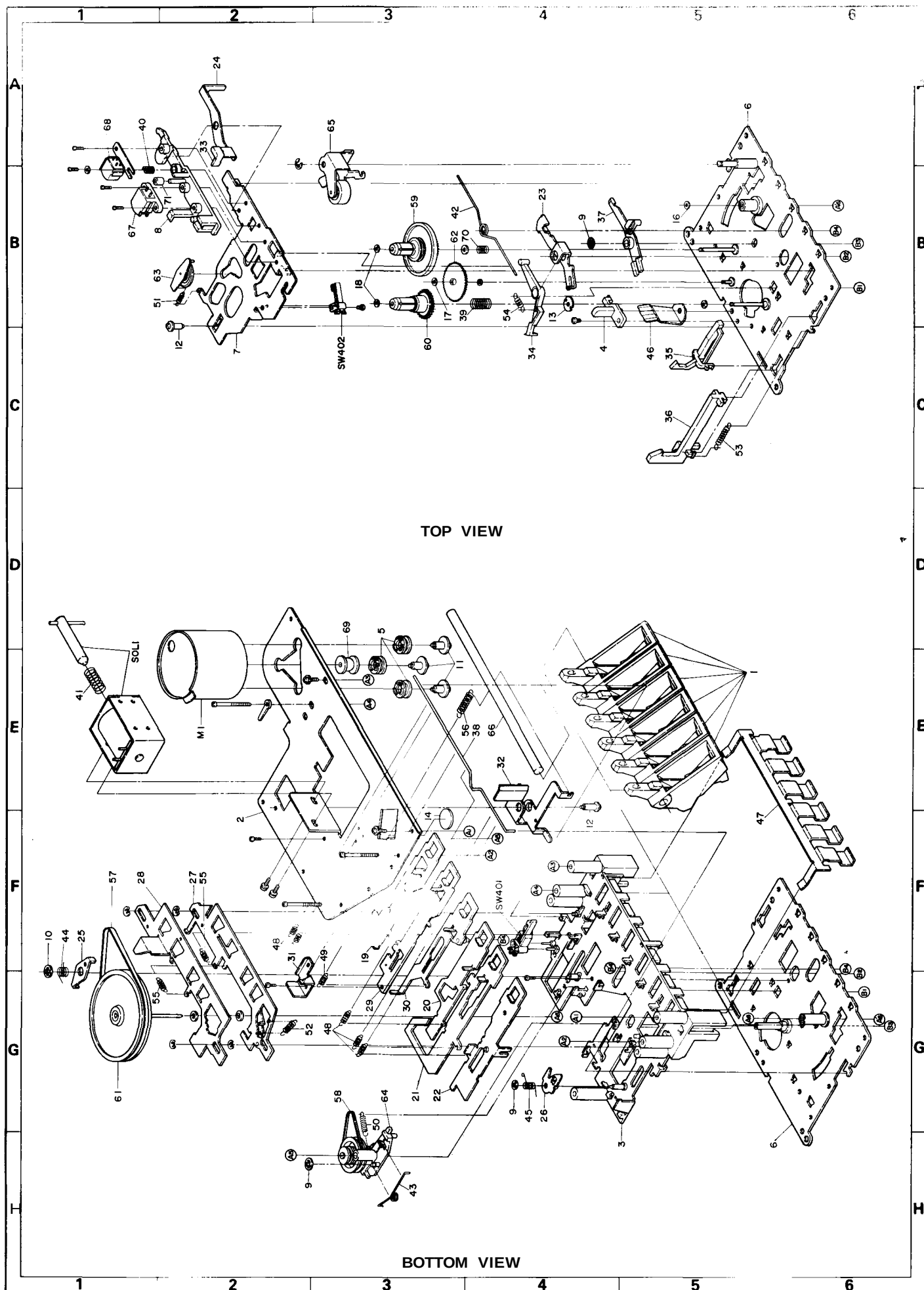


Figure 21 MECHANISM EXPLODED VIEW