

100

AIWA®

S/M Code No. 83-015 **W**
DATE OF ISSUE 5/1983

SERVICE MANUAL

**4 BAND STEREO RADIO
CASSETTE RECORDER**

MODEL NO.

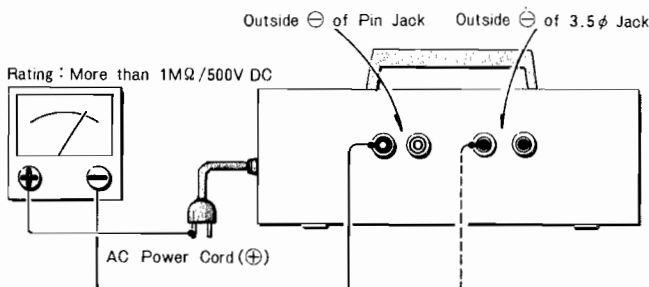
CS-250



TYPE. H,HR,HU,HUB,HJ,HJR,HJB, U,UB,CB,E,EB,KB,G,ZB

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

1. No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.
2. No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.
3. When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.
4. The following matters shall be maintained as they are, when repairing.
 - 1) Soldering of lead-wire ends
* Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
 - 2) Wiring and holding of lead-wires with wire-clips and binders
 - 3) Materials of lead-wires
* e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
 - 4) Location of all kinds of insulators
 - 5) Setting of voltage selector switch
* Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. After repaired, the insulation resistance or leakage current shall be measured with $500 \pm 5V$ D.C and shall be not less than $1M\Omega$.
6. General instructions for mechanism repair
 - 1) The heads, capstan and pinch roller shall be cleaned of good quality alcohol after repaired, because dirty heads shall cause distorted sounds while dirty capstan and pinch roller shall occur wow/flutter and take-up fault.
 - 2) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
 - 3) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch roller, especially.
 - 4) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
 - 5) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, malfunction and damage.



SPECIFICATIONS

GENERAL

Semiconductors:	H, HR, HU, HUB, HJ, HJR, HJB, U, UB, CB, G models 6 ICs, 12 transistors, 1 FET, 11 diodes, 1 LED E, EB, KR, KB models 6 ICs, 13 transistors, 1 FET, 13 diodes, 1 LED ZB model 6 ICs, 15 transistors, 1 FET, 13 diodes, 1 LED
Power source:	Batteries DC 9V (SUM-1 x 6) H, HR, HU, HUB, HJ, HJR, HJB models AC 110 ~ 120V/220 ~ 240V Switchable 50/60 Hz U, UB models AC 120V/220 ~ 240V, 50/60 Hz CB model AC 120V, 60 Hz E, EB, ZB models AC 110 ~ 120V/220 ~ 240V, 50/60 Hz KR, KB, G models AC 120V/240V, 50/60 Hz
Speakers:	100mmφ x 2 (Woofer) 20mmφ x 2 (Tweeter)
Power consumption:	H, HR, HU, HUB, HJ, HJR, HJB models 12W U, UB models 9W CB model 16W E, EB, KR, KB, ZB models 14W G model 14W
Output:	7W maximum (3.5W + 3.5W) U, UB, CB models FTC Rule 1.6 watts per channel, Min. RMS at 2.8 ohms, from 200 Hz to 10 kHz, with no more than 10% Total Harmonic Distortion
Dimensions:	405(W)x165(H)x114.5(D)mm [15-3/4" x 6-1/2" x 4-1/2"]
Weight:	3kg (6.61lbs)

RADIO SECTION

Circuit:	Superheterodyne
Frequency range:	H, HR, HU, HUB, HJ, HJR, HJB, U, UB, CB, G models FM 87 ~ 109 MHz SW ₂ 6.8 ~ 22.5 MHz SW ₁ 2.1 ~ 7.3 MHz MW 515 ~ 1650 MHz E, EB, KR, KB, ZB models FM 87.4 ~ 108.3 MHz SW 5.8 ~ 18.5 MHz MW 515 ~ 1650 kHz LW 145 ~ 320 kHz
Intermediate frequency:	H, HR, HU, HUB, HJ, HJR, HJB, U, UB, CB, G models FM 10.7 ± 0.3 MHz SW ₂ , SW ₁ , MW 468 ± 3.5 kHz E, EB, KR, KB, ZB models FM 10.7 ± 0.3 MHz SW, MW, LW 468 ± 3.5 kHz
Sensitivity:	H, HR, HU, HUB, HJ, HJR, HJB, U, UB, CB, G models FM 12 ± 4 dB (at 88 MHz) 10 ± 4 dB (at 100 MHz) 10 ± 4 dB (at 108 MHz) SW ₂ 40 ± 5 dB (at 7.0 MHz) 29 ± 5 dB (at 14.0 MHz) 19 ± 5 dB (at 22.0 MHz) SW ₁ 40 ± 3 dB (at 2.3 MHz) 38 ± 3 dB (at 4.0 MHz) 41 ± 3 dB (at 7.0 MHz) MW 41 ± 3 dB (at 600 kHz) 43 ± 3 dB (at 1000 kHz) 40 ± 3 dB (at 1400 kHz) E, EB, KR, KB models FM 12 ± 4 dB (at 88 MHz) 10 ± 4 dB (at 100 MHz) 11 ± 4 dB (at 108 MHz) SW 43 ± 3 dB (at 5.9 MHz) 32 ± 3 dB (at 10.0 MHz) 19 ± 3 dB (at 18.0 MHz) MW 41 ± 3 dB (at 600 kHz) 40 ± 3 dB (at 1000, 1400 kHz) LW 53 ± 3 dB (at 150 kHz) 52 ± 3 dB (at 200 kHz) 53 ± 3 dB (at 300 kHz)
(IHF, THD 3%)	
(S/N 10 dB)	
(S/N 10 dB)	
(S/N 10 dB)	
(IHF, THD 3%)	
(S/N 10 dB)	
(S/N 10 dB)	
(S/N 10 dB)	

Image rejection:	H, HR, HU, HUB, HJ, HJR, HJB, U, UB, CB, G models FM 24 ± 4 dB (at 108.0 MHz) SW ₂ 7 ± 3 dB (at 22.0 MHz) SW ₁ 18 ± 3 dB (at 7.0 MHz) MW 53 ± 4 dB (at 1400 kHz) E, EB, KR, KB, ZB models FM 24 ± 4 dB (at 108.0 MHz) SW 10 ± 3 dB (at 18 MHz) MW 50 ± 4 dB (at 1400 kHz) LW 50 ± 5 dB (at 300 kHz)
IF rejection:	H, HR, HU, HUB, HJ, HJR, HJB, U, UB, CB, G models FM 80 ± 10 dB (at 88.0 MHz) MW 65 ± 8 dB (at 600 kHz) E, EB, KR, KB, ZB models FM 80 ± 10 dB (at 88.0 MHz) MW 65 ± 8 dB (at 600 kHz) 48 ± 4 dB
AM Suppression:	22 ± 3 dB (at 1 kHz)
FM stereo separation:	
Antenna:	H, HR, HU, HUB, HJ, HJR, HJB, U, UB, CB, G models FM, SW, Whip antenna SW ₁ , MW Ferrite bar antenna E, EB, KR, KB, ZB models FM, SW Whip antenna MW, LW Ferrite bar antenna

TAPE RECORDER SECTION

Track type:	4 track 2 channels
Tape speed:	4.8 cm/s ± 2% (1-7/8 ips)
Recording system:	AC bias
Erasing system:	DC erase
Record bias frequency:	60 ± 0.5 kHz
Erasing ratio:	63 ± 5 dB
Separation:	40 ± 5 dB (at REC/PB) 1.5 ± 1.0% (at PB)
Distortion:	3.0 ± 2.0% (at REC/PB)
Signal noise ratio:	More than 52 ± 5/48 ± 5 dB (at PB, DC/AC) More than 35 ± 5/35 ± 5 dB (at REC/PB, DC/AC)
Noise level:	30 ± 10/40 ± 20 mV (DC/AC, REC/PB MAX) 12 ± 5/16 ± 8 mV (DC/AC, PB MAX)
Frequency response:	40 ~ 15,000 Hz (CrO ₂) 40 ~ 12,500 Hz (LH)
Head:	Super permalloy head
Motor:	DC electric governor
Wow and Flutter:	0.08% (WRMS)
Auto stop:	Mechanical full auto stop system
Pinch roller pressure:	125 ± 15g (1.23 ± 0.15N)
Take up torque:	35 ⁺¹⁵ ₋₅ g-cm (0.34 ^{+0.15} _{-0.049} mN·m)
FF & rewind torque:	100 ± 20g-cm (0.98 ± 0.2mN·m)
FF & rewind time:	90 ± 5s. (C-60)
Input terminals:	AUX 3.5φ ZB model DIN max sensitivity 0.56mV/5.6kΩ
Input sensitivity/Impedance:	AUX 300mV/47kΩ
Output terminals:	PHONES 3.5φ ZB model DIN standard level 0.6V/2.2kΩ

• Specifications and external appearance are subject to change without due to product improvement.

DISASSEMBLY INSTRUCTIONS

1. To remove Front Cabinet

- 1) Remove the 7 screws and 3 knobs. (See Figure 1)

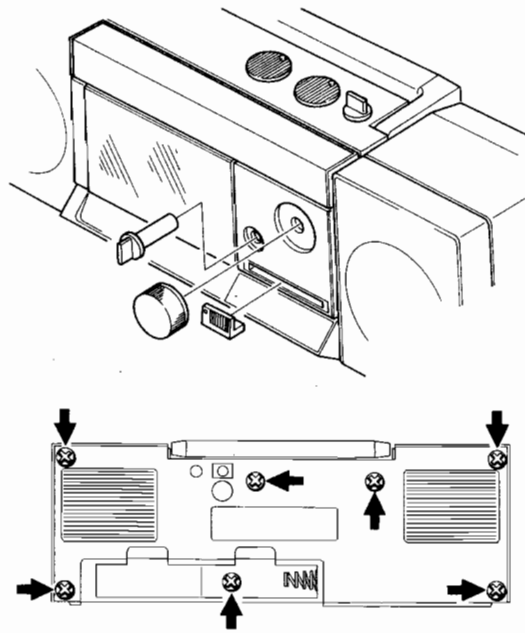


Fig. 1

3. To remove Tuner P.C.B.

- 1) Disconnect the flat cable and fasten-terminals (Black). (See Figure 4)
- 2) Remove the 4 screws and the single knob. (See Figure 4)

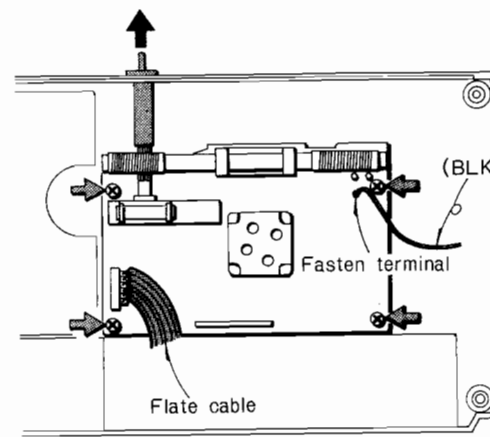


Fig. 4

- 2) Remove the 5 screws and 2 knobs to detach the main circuit board by holding the transformer and shaft of function switch. (See Figure 7)

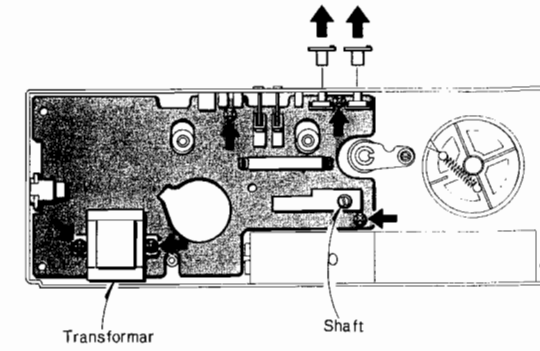


Fig. 7

CAUTION When detaching the main and volume circuit boards, take care not to break the rods (DSL) and not to bend the LED. (See Figure 8)

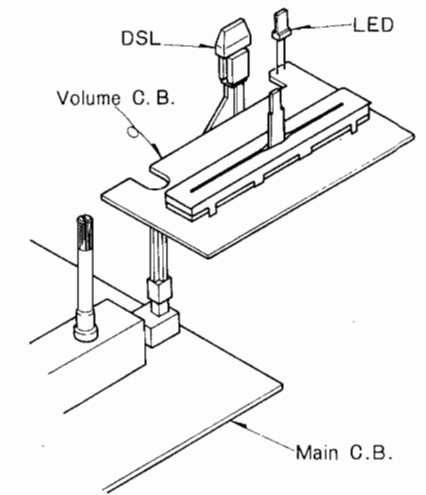


Fig. 8

- 2) Detach the ECM holder, and disconnect the connector and fasten-terminal (Blue). (See Figure 2)

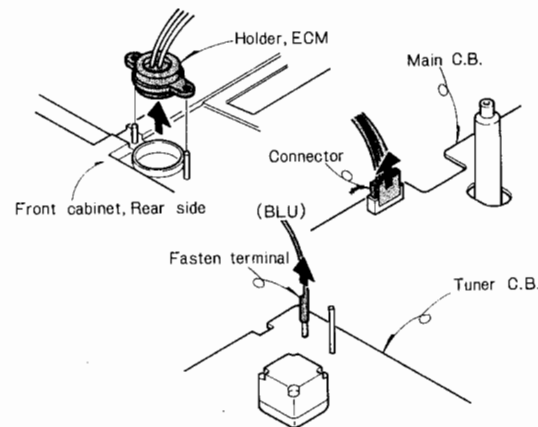


Fig. 2

4. To remove Volume P.C.B.

- 1) Remove the single screw. (See Figure 5)

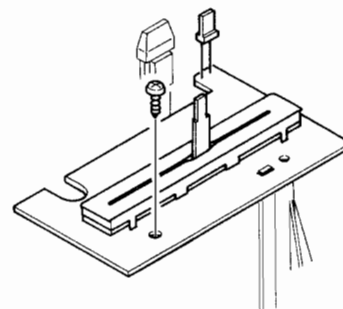


Fig. 5

2. To remove Mechanism

- 1) Remove the 2 screws (Red), and disconnect the 2 connectors. (See Figure 3)

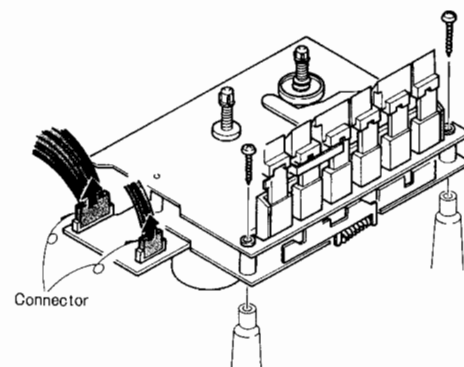


Fig. 3

5. To remove Main P.C.B.

- 1) Turn the tuning shaft to put the dial pointer to the right side, and stick the dial string with cellophane tape as illustrated. (See Figure 6)

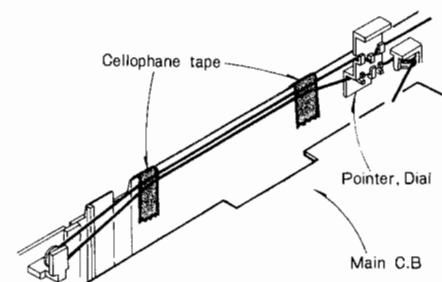
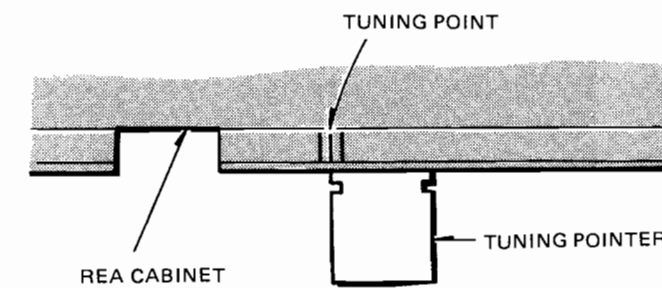
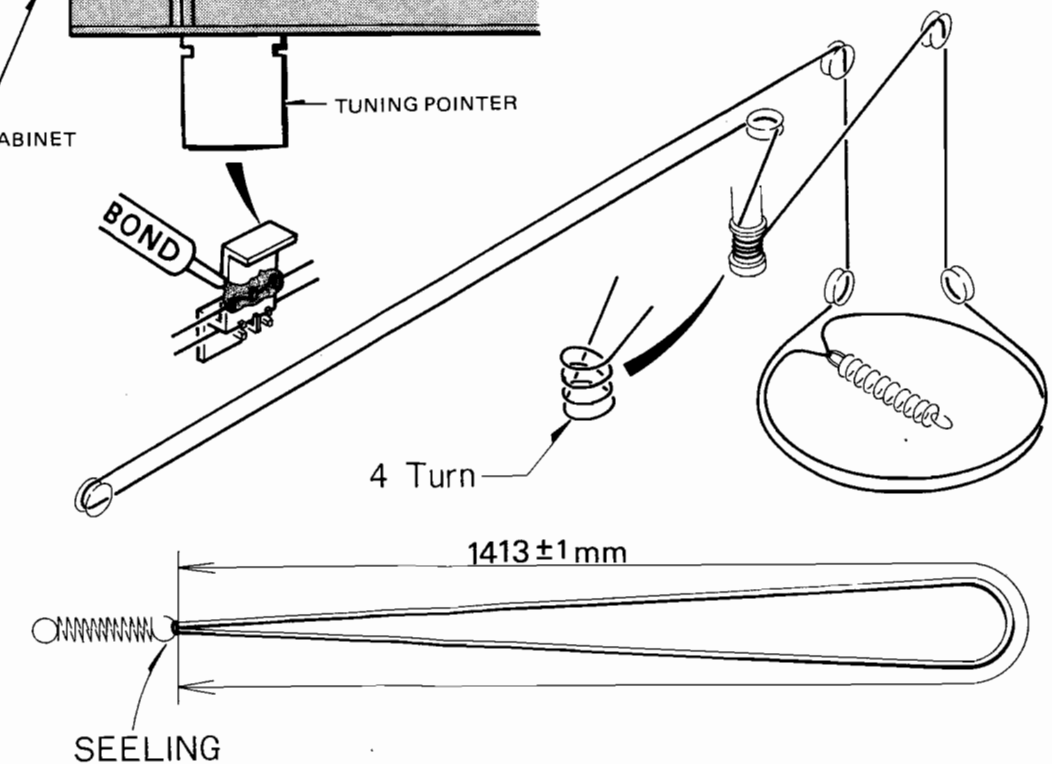


Fig. 6

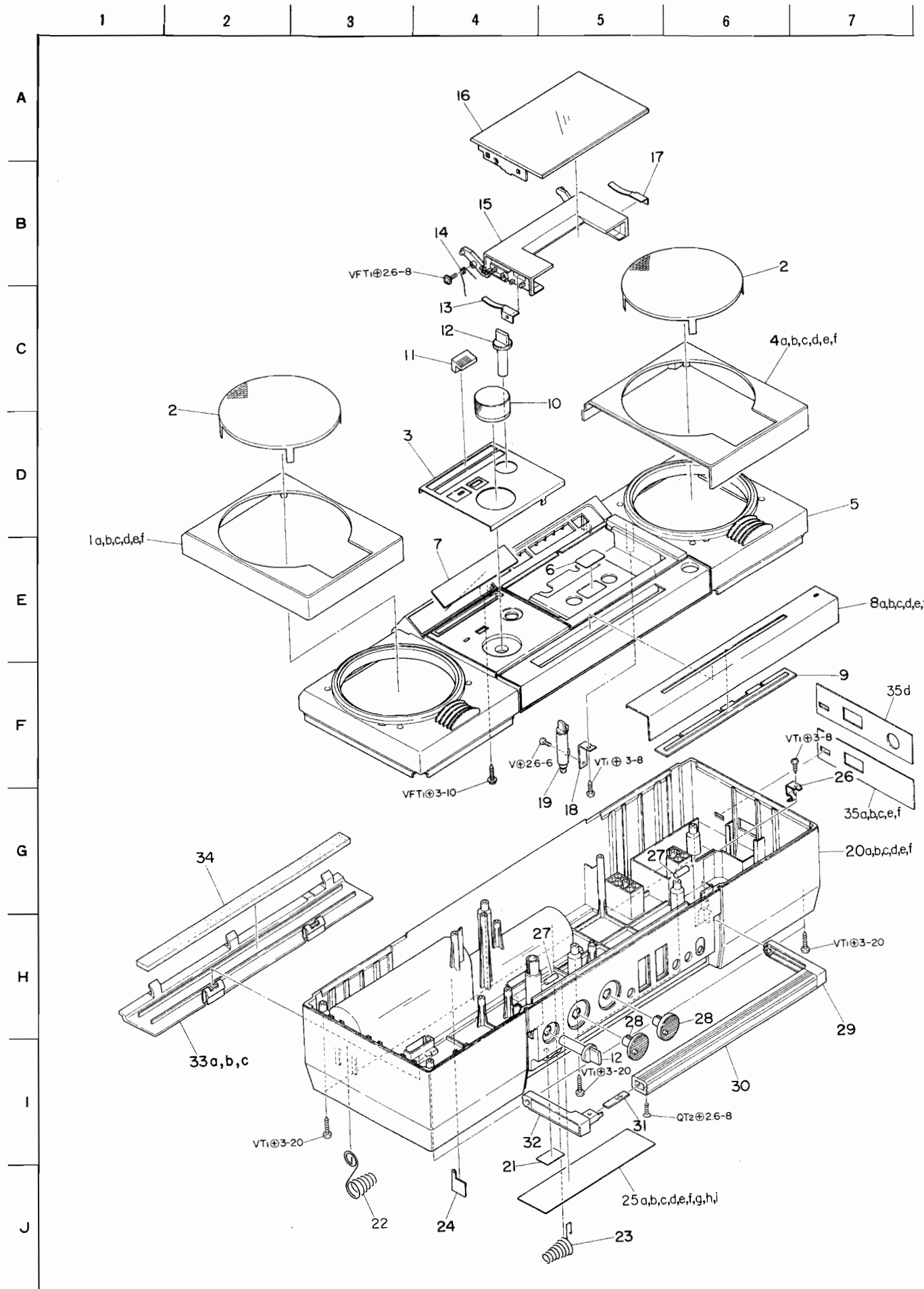
DIAL CORD STRINGING



After completed the dial cord stringing, mount the tuning circuit board, turning the tuning shaft counter-clockwise until the pointer stops, setting the tuning pointer as illustrated, and seal the pointer with an adhesive sealant.



EXPLODED VIEW-1



PARTS LIST

[R] = Red [B] = Black

MECHANICAL PARTS LIST

Ref. No.	Part No.	Part No. Changed to	Description	Q'ty
1-1a~9	09-017-954-01		Front cabinet ass'y (H, HU, HJ, U, G models only)	1
1-1b~9	09-017-959-01		Front cabinet ass'y (E model only)	1
1-1c~9	09-017-955-01		Front cabinet ass'y [R] (H, HJ models only)	1
1-1d~9	09-017-958-01		Front cabinet ass'y [R] (K model only)	1
1-1e~9	09-017-956-01		Front cabinet ass'y [B] (HU, HJ, U, C models only)	1
1-1f~9	09-017-957-01		Front cabinet ass'y [B] (E, K, Z models only)	1
1-1a, b	81-516-039-01		Panel, Speaker R	1
c, d	81-516-004-01		Panel, Speaker R [R]	1
e, f	81-516-059-01		Panel, Speaker R [B]	1
1-2	81-516-035-01		Grille, Woofer	2
1-3	81-516-052-01		Panel, Front	1
1-4a, b	81-516-038-01		Panel, Speaker L	1
c, d	81-516-003-01		Panel, Speaker L [R]	1
e, f	81-516-058-01		Panel, Speaker L [B]	1
1-5	81-516-001-01		Cabinet, Front	1
1-6	81-516-026-01		Label, Tape indicator	1
1-7	81-516-053-01		Plate, REC MUTE	1
1-8a, c, e	81-516-050-01		Plate, Dial (H, HU, HJ, U, C, G models only)	1
b, d, f	81-516-051-01		Plate, Dial (E, K, Z models only)	1
1-9	81-516-008-01		Window, Tuning	1
1-10	81-516-034-01		Knob, Tuning	1
1-11	81-516-022-01		Knob, Slide	1
1-12	81-516-012-01		Knob, Selector	2
1-13	81-511-210-01		Pressure plate spring R, Cassette	1
1-14	81-516-204-01		T-spring, Cassette box	1
1-15	81-516-005-01		Cassette box	1
1-16	81-516-049-01		Cassette lid	1
1-17	81-511-211-01		Pressure plate spring L, Cassette	1
1-18	81-516-213-01		Holder, Air-damp	1
1-19	81-504-580-01		Air-damp ass'y	1
1-20a~24	09-017-960-01		Rear cabinet ass'y (H, HU, HJ, U models only)	1
1-20b~24	09-017-965-01		Rear cabinet ass'y (E, G models only)	1
1-20c~24	09-017-961-01		Rear cabinet ass'y [R] (H, HJ models only)	1
1-20d~24	09-017-964-01		Rear cabinet ass'y [R] (K model only)	1
1-20e~24	09-017-962-01		Rear cabinet ass'y [B] (HU, HJ, U, C models only)	1
1-20f~24	09-017-963-01		Rear cabinet ass'y [B] (E, K, Z models only)	1
1-20a	81-516-027-01		Cabinet, Rear (H, HU, HJ, U models only)	1
b	81-516-045-01		Cabinet, Rear (E, G models only)	1
c	81-516-072-01		Cabinet, Rear [R] (H, HJ models only)	1
d	81-516-073-01		Cabinet, Rear [R] (K model only)	1
e	81-516-070-01		Cabinet, Rear [B] (HU, HJ, U, C models only)	1
f	81-516-071-01		Cabinet, Rear [B] (E, K, Z models only)	1
1-21	81-516-055-01		Blind plate	1
1-22	81-504-577-01		C-spring, Battery contact	1
1-23	81-516-212-01		C-spring, Battery contact	1
1-24	87-038-032-01		Terminal plate, Battery	1
1-25a	81-516-062-01		Name plate, Spec. (H model only)	1
b	81-516-069-01		Name plate, Spec. (HU model only)	1
c	81-516-068-01		Name plate, Spec. (HJ model only)	1
d	81-516-046-01		Name plate, Spec. (U model only)	1
e	81-516-047-01		Name plate, Spec. (C model only)	1
f	81-516-048-01		Name plate, Spec. (E model only)	1
g	81-516-063-01		Name plate, Spec. (K model only)	1
h	81-516-064-01		Name plate, Spec. (G model only)	1
i	81-516-066-01		Name plate, Spec. (Z model only)	1
1-26	81-504-583-01		P-spring, Handle	1
1-27	81-516-205-01		Shaft, Handle	2
1-28	81-516-021-01		Knob, Volume	2
1-29	81-516-041-01		Metal fitting L, Carrying handle	1
1-30	81-516-024-01		Grip, Handle	1
1-31	81-504-572-01		Plate, Nut	2
1-32	81-516-042-01		Metal fitting R, Carrying handle	1
1-33a	81-516-036-01		Battery room lid	1
b	81-516-043-01		Battery room lid [R]	1
c	81-516-060-01		Battery room lid [B]	1
1-34	81-504-581-01		Cushion	1

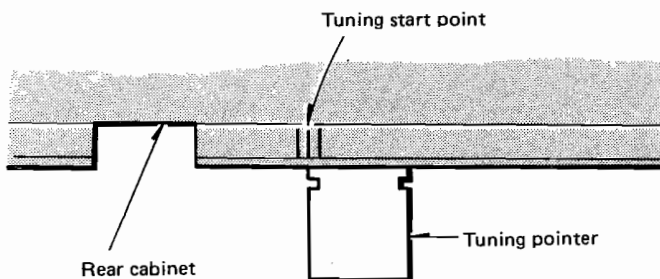
Ref. No.	Part No.	Part No. Changed to	Description	Q'ty
1-35a	81-516-028-01		Name plate, Jack (H, HU, HJ models only)	1
b	81-516-031-01		Name plate, Jack (U model only)	1
c	81-516-032-01		Name plate, Jack (C model only)	1
d	81-516-054-01		Name plate, Jack (E, Z models only)	1
e	81-516-030-01		Name plate, Jack (K model only)	1
f	81-516-067-01		Name plate, Jack (Z model only)	1

Part No.	Description
87-261-033-21	V+2-4
87-261-073-21	V+2.6-6
87-351-035-21	VT ₁ +2-6
87-351-095-21	VT ₁ +3-8
87-351-102-21	VT ₁ +3-20
87-356-103-21	VT ₁ +3-25
87-081-977-01	VT ₂ +2.6-20
87-321-035-21	QT ₁ +2-6
87-324-074-21	QT ₂ +2.6-8
87-251-032-21	U+2-3
87-251-038-21	U+2-12
87-251-039-21	U+2-14
87-251-070-21	U+2.6-3
87-349-038-01	UT ₁ +2-12
87-349-073-01	UT ₁ +2.6-6

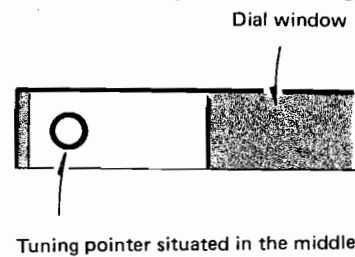
Part No.	Description
87-349-095-01	UT ₁ +3-8
87-511-074-21	VFT ₁ +2.6-8
87-511-095-21	VFT ₁ +3-8
87-511-096-21	VFT ₁ +3-10

CAUTION WHEN MOUNTING

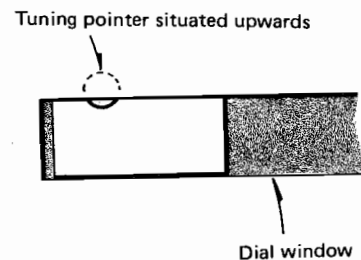
When mounting the front cabinet, make certain to set the tuning pointer to the tuning start point as illustrated.



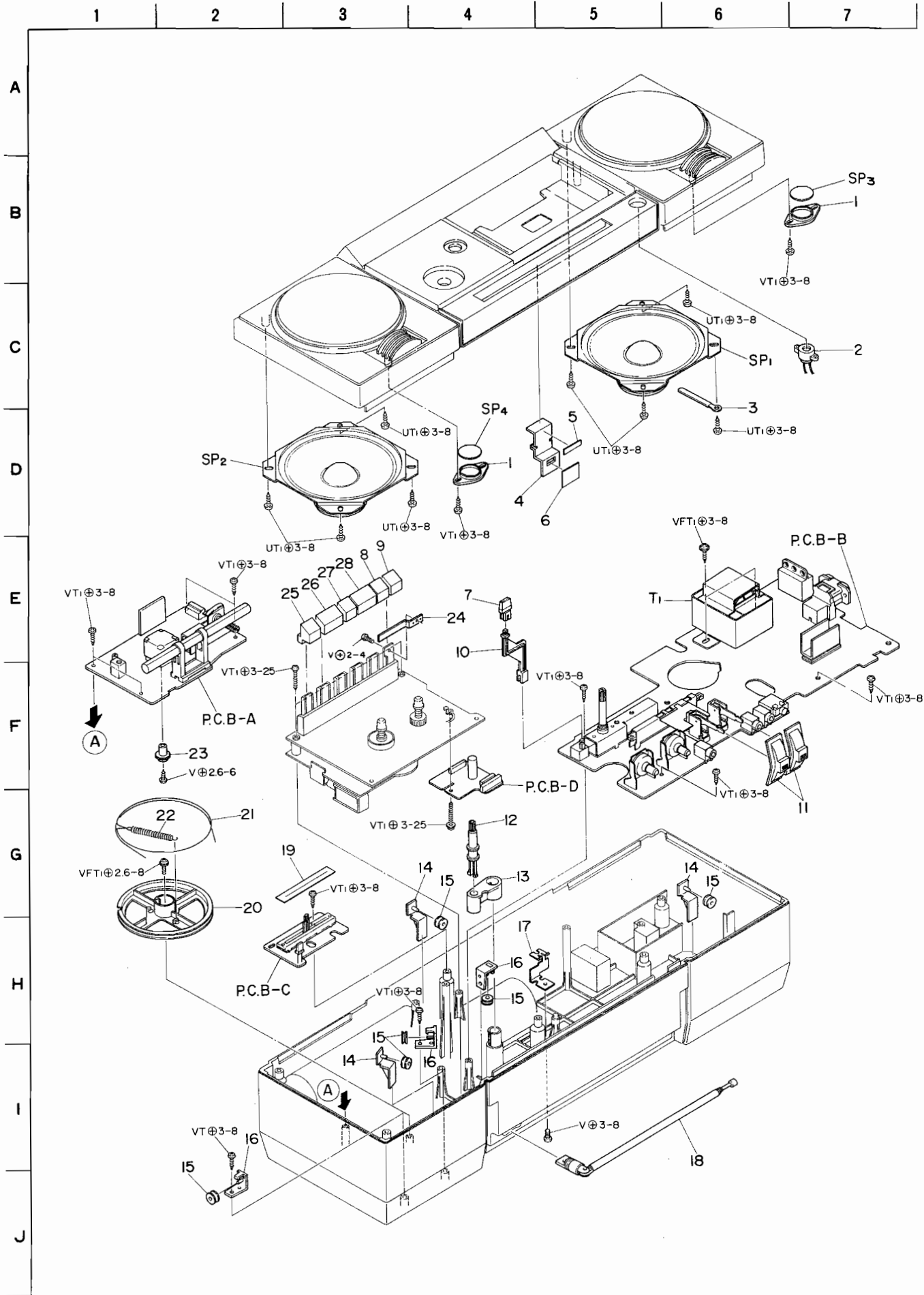
* Cabinet mounted, having a correct tuning start point.



* Cabinet mounted, having a wrong tuning start point.

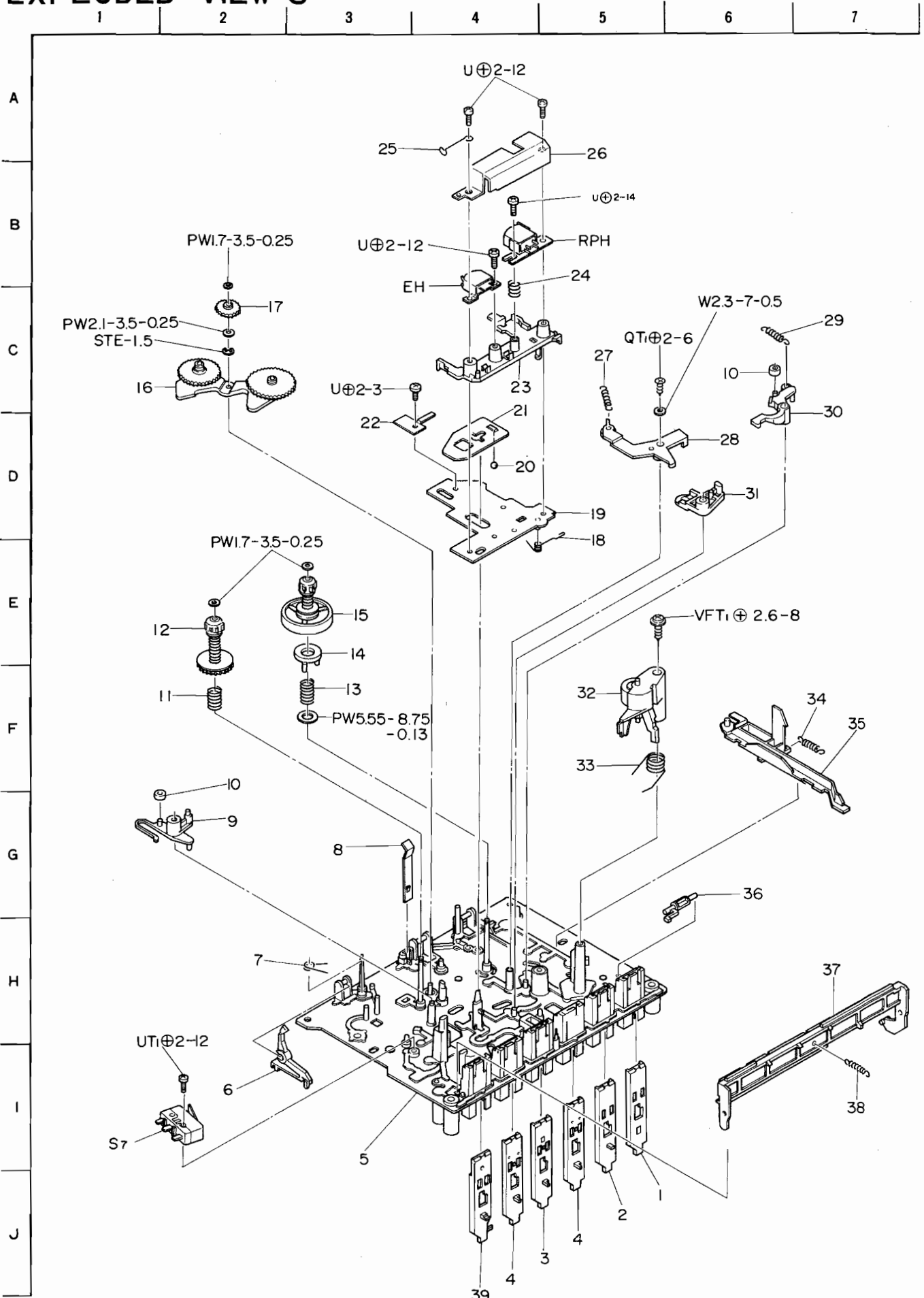


EXPLODED VIEW-2



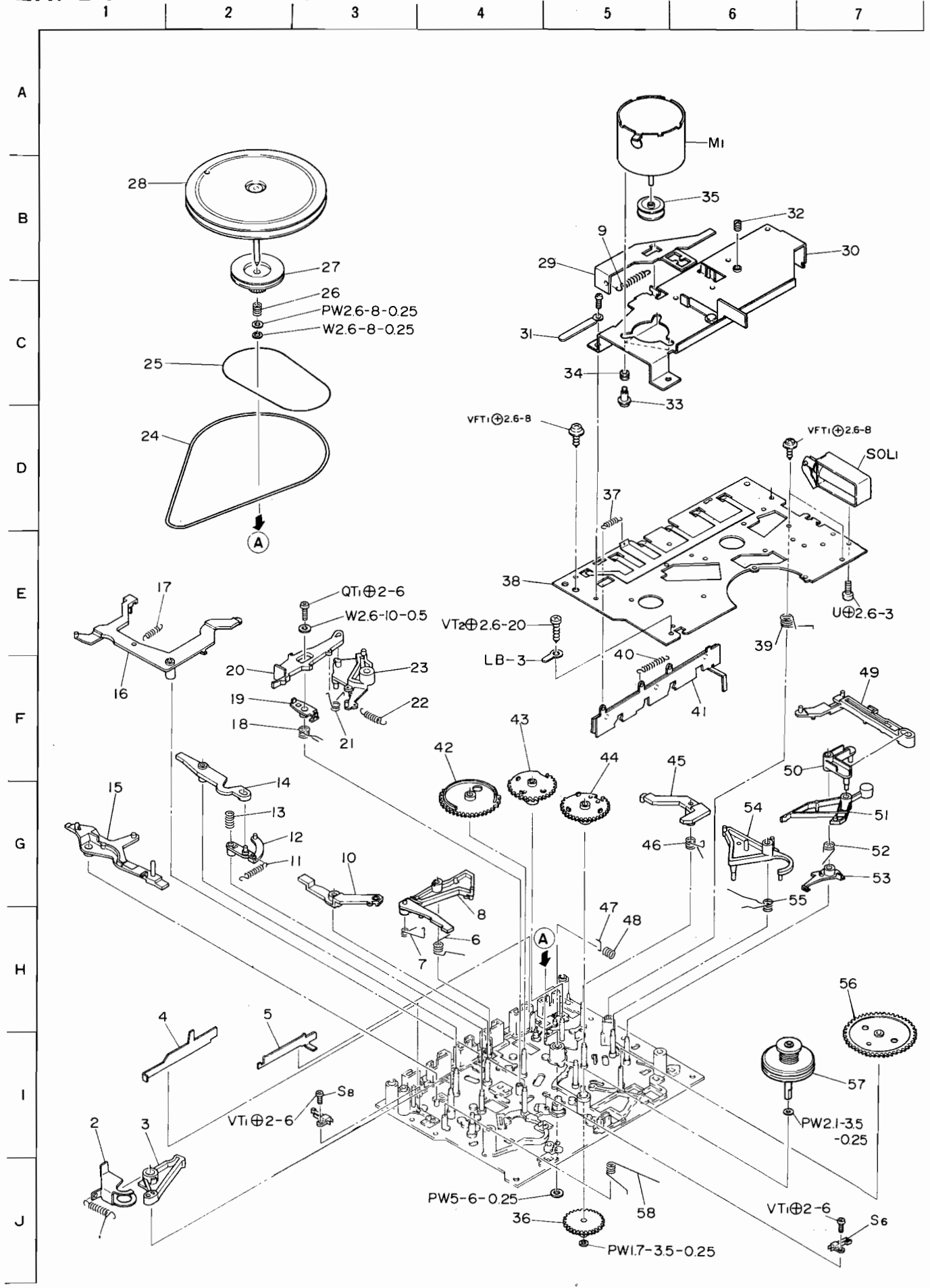
Ref. No.	Part No.	Part No. Changed to	Description	Q'ty
2-1	87-064-098-01		Cover, Tweeter	2
2-2	87-064-097-01		Holder, ECM 30M	1
2-3	87-038-039-01		Wire binder	1
2-4	81-516-007-01		Pointer, Tuning	1
2-5	81-516-598-01		Himeron cloth 19-3	1
2-6	81-516-599-01		Himeron cloth 20-15	1
2-7	82-570-019-01		Push-button C, DSL	1
2-8	81-516-015-01		Push-key, REW	1
2-9	81-516-014-01		Push-key, REC	1
2-10	81-516-203-01		Rod B	1
2-11	81-516-013-01		Knob, Toggle	2
2-12	81-516-201-01		Shaft, Tuning	1
2-13	81-516-210-01		Holder, Tuning shaft	1
2-14	81-504-573-01		Holder H, Roller	3
2-15	82-592-597-01		Roller 7-10-2.7	6
2-16	81-504-574-01		Holder V, Roller	3
2-17	81-516-211-01		Metal fitting, Antenna	1
2-18	87-043-060-01		Whip antenna	1
2-19	81-516-044-01		Himeron cloth 10-62	1
2-20	81-500-205-01		Drum, Dial	1
2-21	87-096-045-01		String, Dial	1
2-22	82-541-291-01		E-spring, Dial	1
2-23	81-511-203-01		Joint, Dial	1
2-24	82-585-434-01		Lever, One-push recording	1
2-25	81-516-019-01		Push-key, PAUSE	1
2-26	81-516-018-01		Push-key, STOP	1
2-27	81-516-017-01		Push-key, F.F.	1
2-28	81-516-016-01		Push-key, PLAY	1

EXPLODED VIEW-3



Ref. No.	Part No.	Part No. Changed to	Description	Q'ty
3-1	82-585-361-01		Plate button, PAUSE	1
3-2	82-585-382-01		Plate button B, STOP	1
3-3	82-585-355-01		Plate button, PLAY	1
3-4	82-585-360-01		Plate button, FR B	2
3-5	82-585-395-21		Outsert chassis B ass'y	1
3-6	82-585-255-11		REC blocking lever	1
3-7	82-585-294-21		T-spring, Center shift	1
3-8	82-585-319-01		P-spring, Cassette pressure	1
3-9	82-585-252-01		Lever L, Brake	1
3-10	82-585-286-01		G cushion, Brake	2
3-11	82-585-290-01		C-spring, Back tension	1
3-12	82-585-215-11		Supply reel platform ass'y	1
3-13	82-585-292-41		C-spring, Slip disk	1
3-14	82-585-272-11		Slip disk T	1
3-15	82-585-210-31		Take-up reel platform ass'y	1
3-16	82-585-231-21		FR lever ass'y	1
3-17	82-585-235-01		Gear A, REW	1
3-18	82-585-295-21		T-spring, Actuating	1
3-19	82-585-208-11		Actuating chassis	1
3-20	87-075-005-01		Steel ball 2φ	1
3-21	82-585-284-01		P-spring, Actuating	1
3-22	82-585-349-01		Holder, Idler lever	1
3-23	82-585-209-31		Head base	1
3-24	82-585-291-01		C-spring, RPH	1
3-25	82-591-245-11		Holder, Wire	1
3-26	82-594-625-01		Shield plate, Head	1
3-27	82-585-313-31		E-spring, Play idler	1
3-28	82-585-446-01		Play idler lever B ass'y	1
3-29	82-585-312-01		E-spring, Brake R	1
3-30	82-585-253-11		Lever R, Brake	1
3-31	82-585-265-21		REV lever	1
3-32	82-585-240-11		Pinch lever ass'y	1
3-33	82-585-296-11		T-spring, Pinch lever	1
3-34	82-585-311-01		E-spring, Lid lock	1
3-35	82-186-216-11		Slide plate, Eject	1
3-36	82-585-279-21		Eject lever A	1
3-37	82-585-377-21		Plate lock B	1
3-38	82-585-317-41		E-spring, Button lock	1
3-39	82-585-432-01		Plate button C, REC	1

EXPLODED VIEW-4



Ref. No.	Part. No.	Part no. Changed to	Description	Q'ty
4-1	82-585-384-01		E-spring, REC B	1
4-2	82-585-267-01		REC lever B	1
4-3	82-585-413-01		REC lever A	1
4-4	82-585-282-11		Slide plate, Motor switch	1
4-5	82-585-283-01		Slide plate, FR auto	1
4-6	82-585-306-11		T-spring, Play lever	1
4-7	82-585-307-01		T-spring, REC lever	1
4-8	82-585-428-01		PLAY lever ass'y	1
4-9	82-591-349-01		E-spring, REC slide lever	1
4-10	82-585-258-11		Trigger lever, PLAY	1
4-11	82-585-308-21		E-spring, REW lever	1
4-12	82-585-260-31		REW lever	1
4-13	82-439-369-11		Slip spring	1
4-14	82-585-259-11		Trigger lever, REW	1
4-15	82-585-387-11		Trigger lever, REC	1
4-16	82-585-257-21		Trigger lever, FF	1
4-17	82-585-301-01		E-spring, Trigger play	1
4-18	82-585-297-01		T-spring, FR lever A	1
4-19	82-585-385-01		FR lever E	1
4-20	82-585-386-01		FR lever F	1
4-21	82-585-298-01		T-spring, FR lever B	1
4-22	82-585-311-01		E-spring, Lid lock	1
4-23	82-585-403-01		FR lever G	1
4-24	81-500-213-01		Main belt	1
4-25	82-585-378-01		Rubber belt FR C	1
4-26	82-585-368-01		C-spring, Flywheel	1
4-27	82-585-375-11		Gear B, Flywheel	1
4-28	82-595-227-01		Flywheel ass'y	1
4-29	81-516-206-01		Slide lever, REC	1
4-30	81-516-207-01		Holder, Motor	1
4-31	87-038-039-01		Wire binder	2
4-32	82-565-373-01		Thrust bearing	1
4-33	87-081-483-01		Motor screw, M2.6	3
4-34	87-087-029-01		Rubber cushion	3
4-35	82-595-228-01		Motor pulley	1
4-36	82-585-216-11		Gear, Drive	1
4-37	82-175-289-01		E-spring, Slide plate A	1
4-38	82-585-442-01		Mechanism chassis C ass'y	1
4-39	82-585-321-41		T-spring, Auto kick	1
4-40	82-585-332-01		E-spring, REC lock	1
4-41	82-585-435-01		Slide plate key ass'y	1
4-42	82-585-244-01		Gear, PLAY cam	1
4-43	82-585-246-01		Gear, PAUSE cam	1
4-44	82-585-245-21		Gear, FR cam	1
4-45	82-585-256-31		Trigger lever, PAUSE	1
4-46	82-585-304-21		T-spring, Trigger Pause	1
4-47	82-585-362-01		Shaft lock B	1
4-48	81-500-599-01		C-spring, Lock plate	1
4-49	82-585-270-41		Plate auto kick	1
4-50	82-585-269-11		Lever, Auto B	1
4-51	82-585-268-01		Lever, Auto A	1
4-52	82-585-299-01		T-spring, Auto eject	1
4-53	82-585-271-01		Auto eject lever	1
4-54	82-585-431-01		PAUSE lever	1
4-55	82-585-300-11		T-spring, FR cam	1
4-56	82-585-247-11		Gear, Auto kick	1
4-57	82-585-369-11		Slip pulley FR ass'y	1
4-58	82-585-303-21		T-spring, Trigger REC	1

■ ACCESSORIES/PACKAGE LIST

Ref. No.	Part No.	Part No. Changed to	Description	Q'ty
1a	81-516-855-01		Box gift, EXN (H, HR, HU, HUB, U, UB, CB, E, EB, KR, KB, G, ZB models only)	1
b	81-516-858-01		Box gift, EXJH (HJ, HJR, HJB models only)	1
2	81-516-852-01		Poly-form L	1
3	81-516-853-01		Poly-form R	1
4	87-056-606-01		Poly-bag	1
5	87-051-137-11		Poly-bag	1
6a	81-516-904-01		Instructions booklet (H, HR, HU, HUB, HJ, HJR, HJB, U, UB, CB, G models only)	1
b	81-516-905-01		Instructions booklet (E, EB, KR, KB, ZB models only)	1
7	87-051-171-11		Poly-vinyl sack	1
8	87-056-009-51		List, Distributors (H, HR, HJ, HJR, HJB, CB, E, EB, KR, KB, G, ZB models only)	1
9	87-056-067-01		Sheet, Caution, FTZ	1
10	87-056-057-01		List, Service stations (HU, HUB, U, UB models only)	1
11	87-056-045-01		Guarantee card U (HU, HUB, U, UB models only)	1
12	87-056-050-11		Safety instructions (U, UB models only)	1
13	87-056-008-11		Label, AC power cord (KR, KB models only)	1
14	87-056-046-01		Label, Power supply instruction (KR, KB models only)	1
15	87-056-016-01		Tag, Voltage selector (KR, KB models only)	1
16	87-056-059-01		Guarantee card (G model only)	1
17a	82-593-968-01		AC power cord (H, HR, HU, HUB, HJ, HJR, HJB, models only)	1
b	87-034-928-01		AC power cord (U, UB, CB models only)	1
c	87-034-989-01		AC power cord (E, EB, ZB models only)	1
d	81-504-968-01		AC power cord (KR, KB models only)	1
e	81-504-967-01		AC power cord (G model only)	1
18	87-049-137-01		Siemens plug (H, HR, HU, HUB, HJ, HJR, HJB models only)	1
19a	82-595-858-01		Label color, Red (HR, HJR, KR models only)	1
b	87-057-443-01		Label color, Black (HUB, HJB, UB, CB, EB, KB, ZB models only)	1

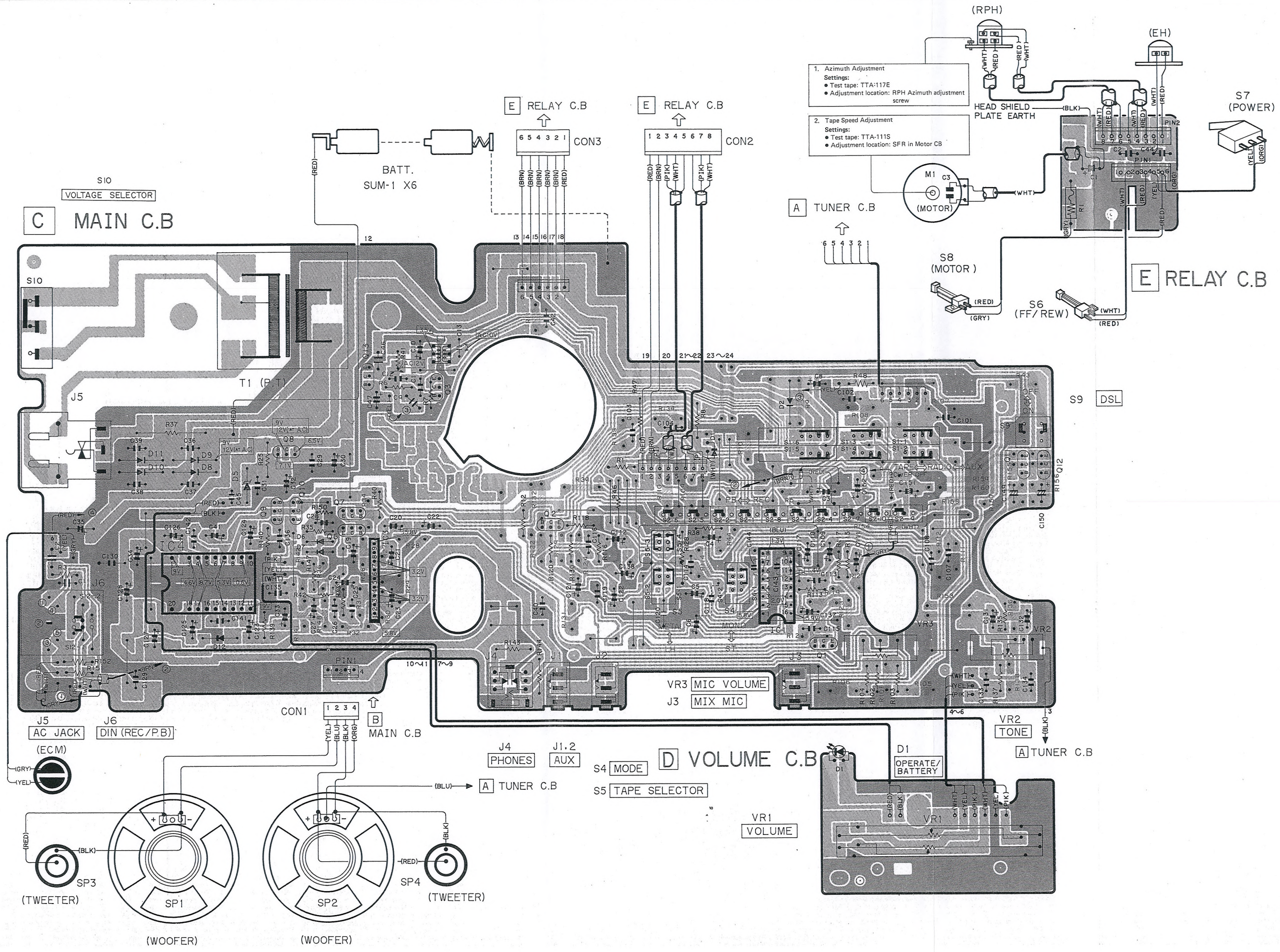
AIWA Co., Ltd. Tokyo Japan

NOTES (1) Earth pattern Printed resistor pattern Others pattern
 (2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

WIRING-1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A
B
C
D
E
F
G
H
I
J



1. Azimuth Adjustment
Settings:
• Test tape: TTA-117E
• Adjustment location: RPH Azimuth adjustment screw
2. Tape Speed Adjustment
Settings:
• Test tape: TTA-111S
• Adjustment location: SFR in Motor CB

S10
VOLTAGE SELECTOR
C MAIN C.B.

E RELAY C.B.
E RELAY C.B.
CON3
CON2

A TUNER C.B.

E RELAY C.B.

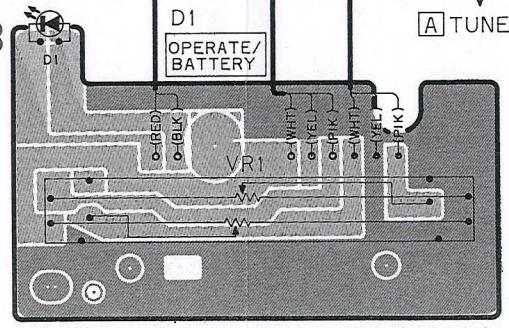
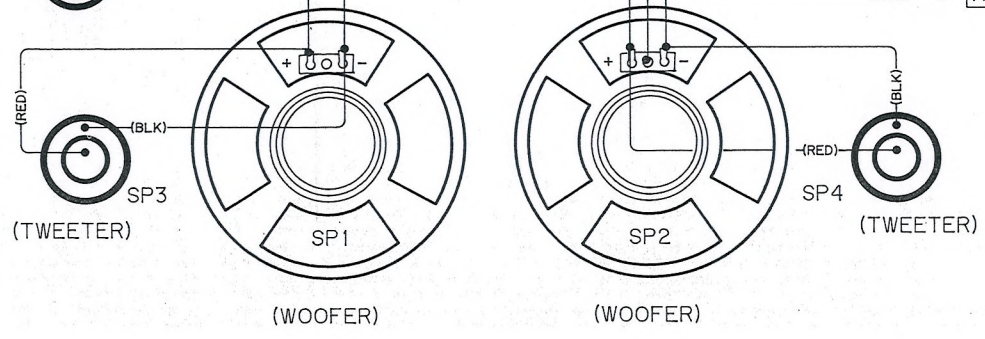
J5 AC JACK (ECM)
J6 DIN (REC/P.B.)

CON1
MAIN C.B.

J4 PHONES
J1,2 AUX
A TUNER C.B.

S4 MODE
S5 TAPE SELECTOR
D VOLUME C.B.

D1 OPERATE/BATTERY
VR1 VOLUME
A TUNER C.B.



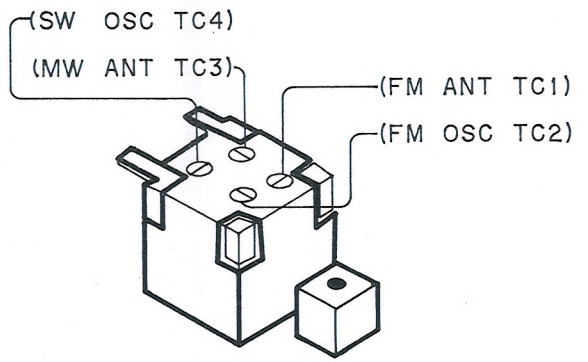
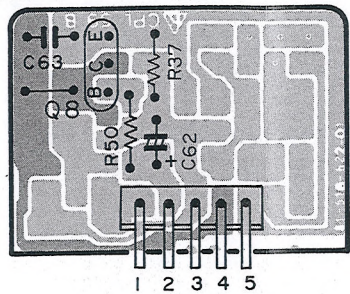
NOTES (1) Earth pattern Printed resistor pattern Others pattern
 (2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. But () is with AM reception.

WIRING-2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

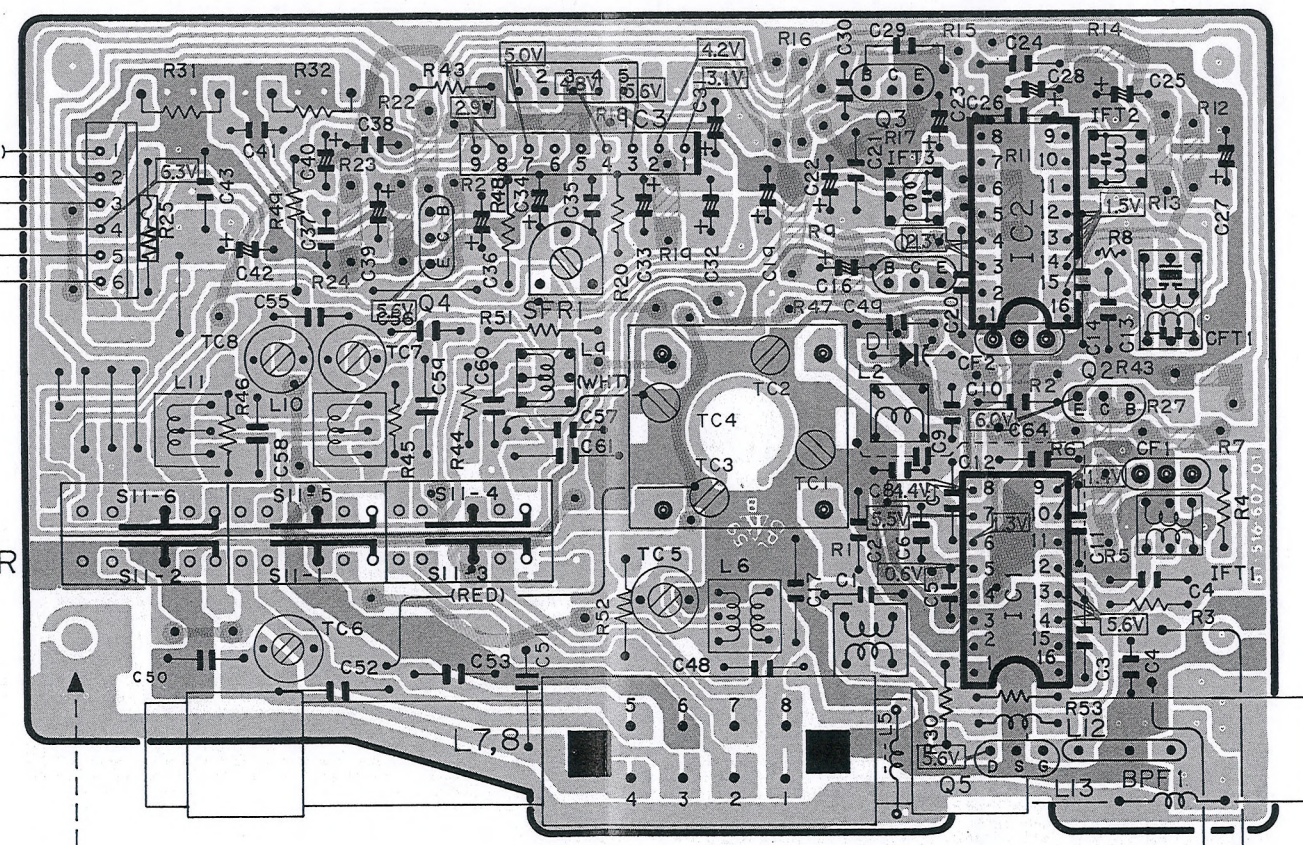
A
B
C
D
E
F
G
H
I
J

B SWITCHING C.B.



A TUNER C.B.

A TUNER C.B.



C MAIN C.B.

FM ← SW → MW → LW
S11 BAND SELECTOR

(ROD ANTENNA)
 (BLK) VR2 FRAME EARTH
 (BLU) SP2 EARTH

LW Tracking Adjustment
 L8 150kHz
 TC6 300kHz

SW Tracking Adjustment
 L6 5.9MHz
 TC5 18.0MHz

SW Freq. Range Adjustment
 L9 5.8MHz
 TC4 18.5MHz

LW Freq. Range Adjustment
 L11 145kHz
 TC8 320kHz

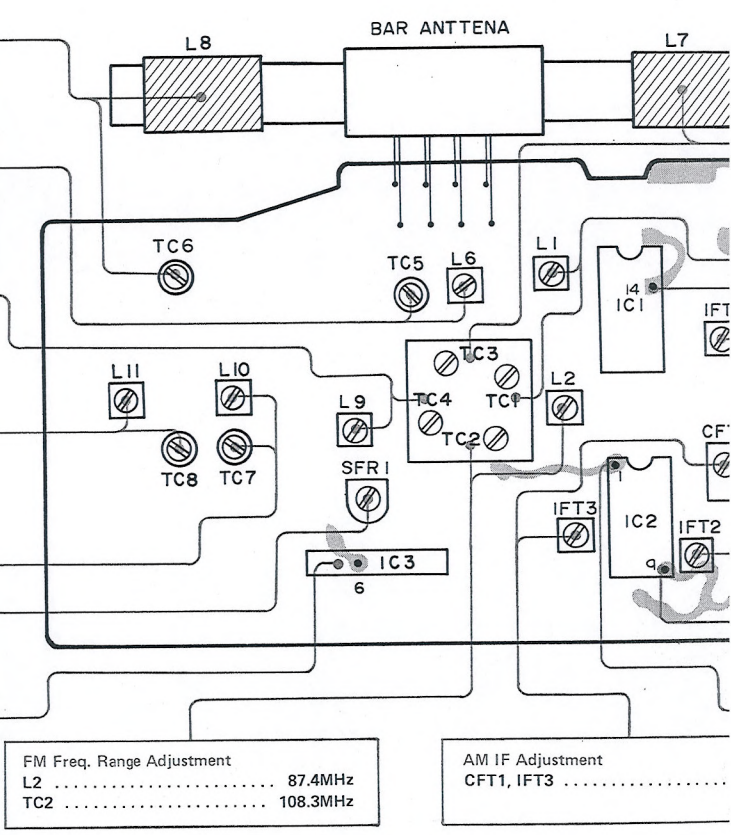
MW Freq. Range Adjustment
 L10 515kHz
 TC7 1,650kHz

V.C.O. Frequency Adjustment
 SFR1 38 kHz ± 40 Hz

TP6 V.C.O. Test Point

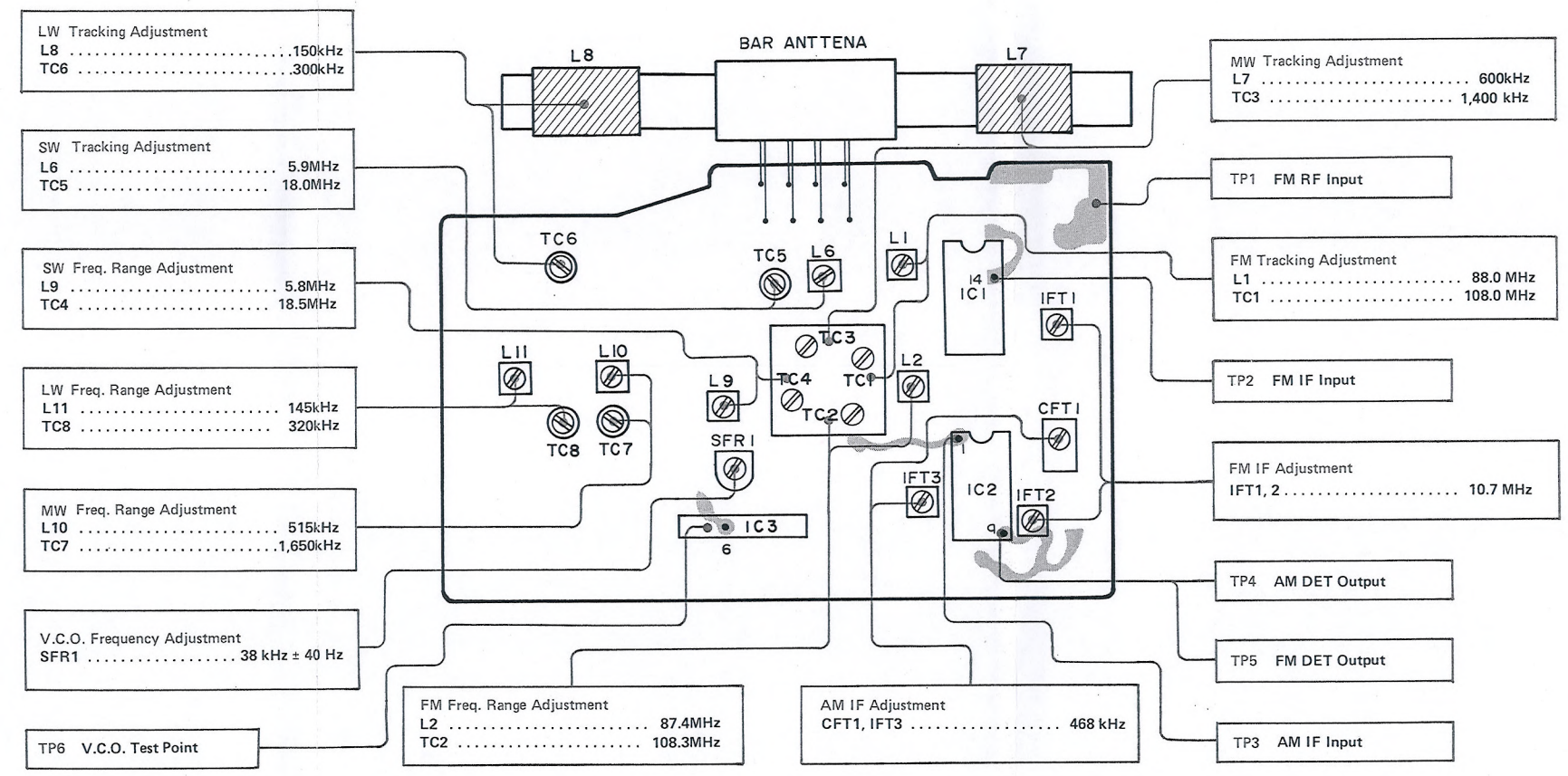
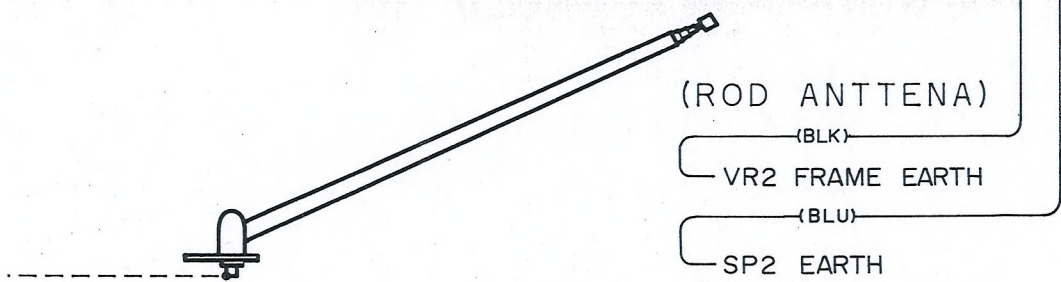
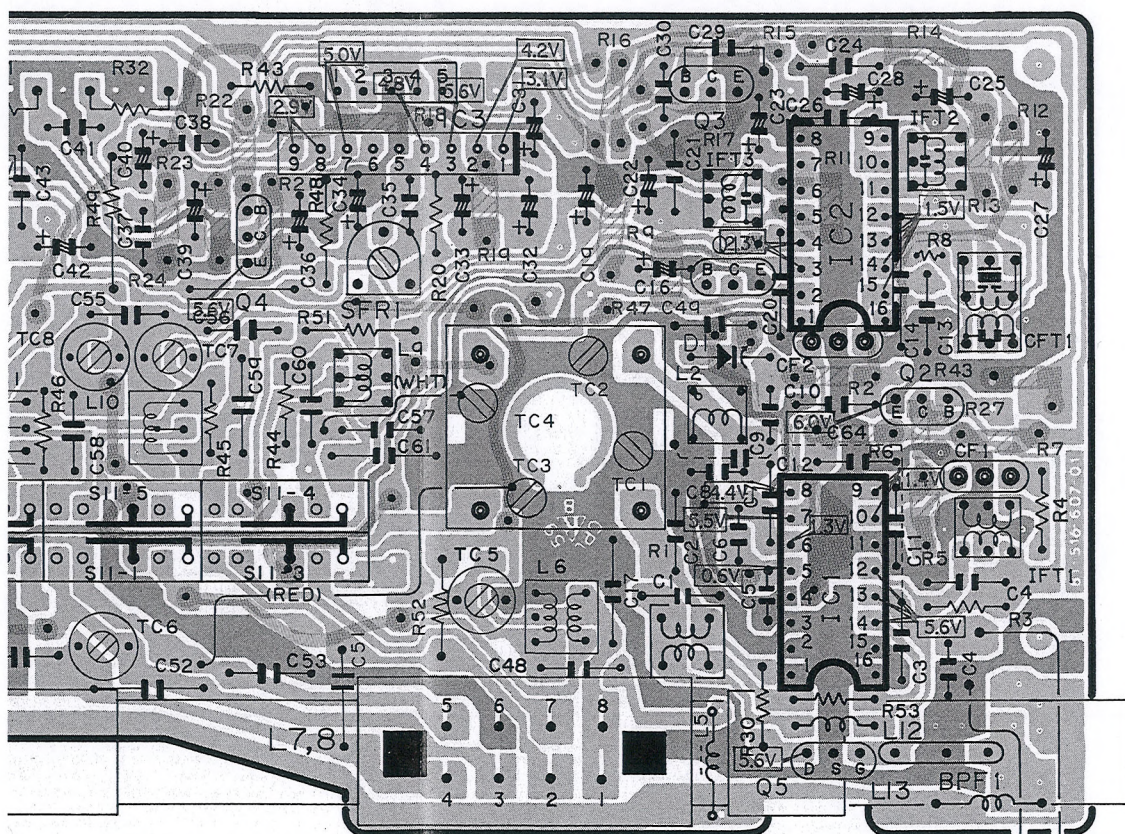
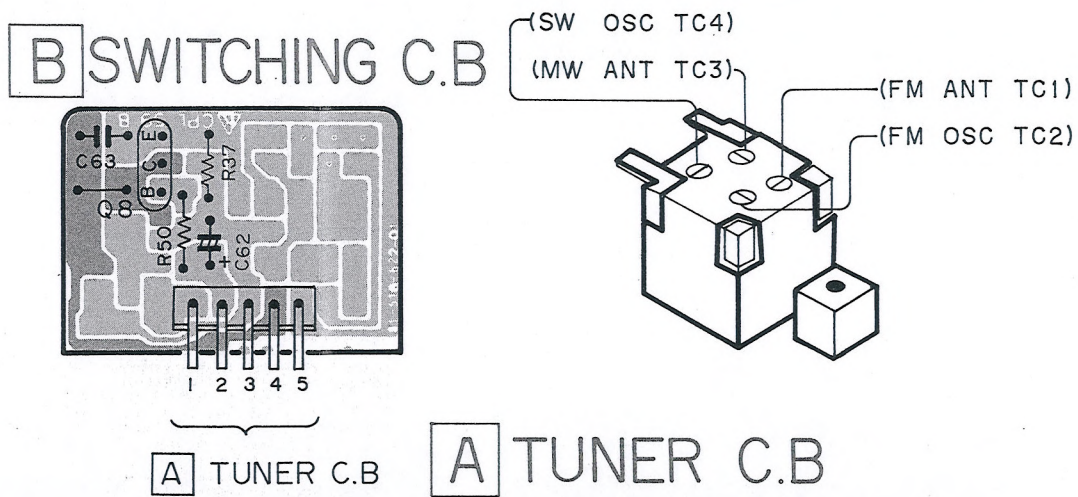
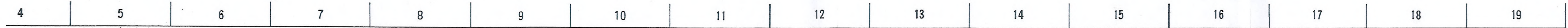
FM Freq. Range Adjustment
 L2 87.4MHz
 TC2 108.3MHz

AM IF Adjustment
 CFT1, IFT3

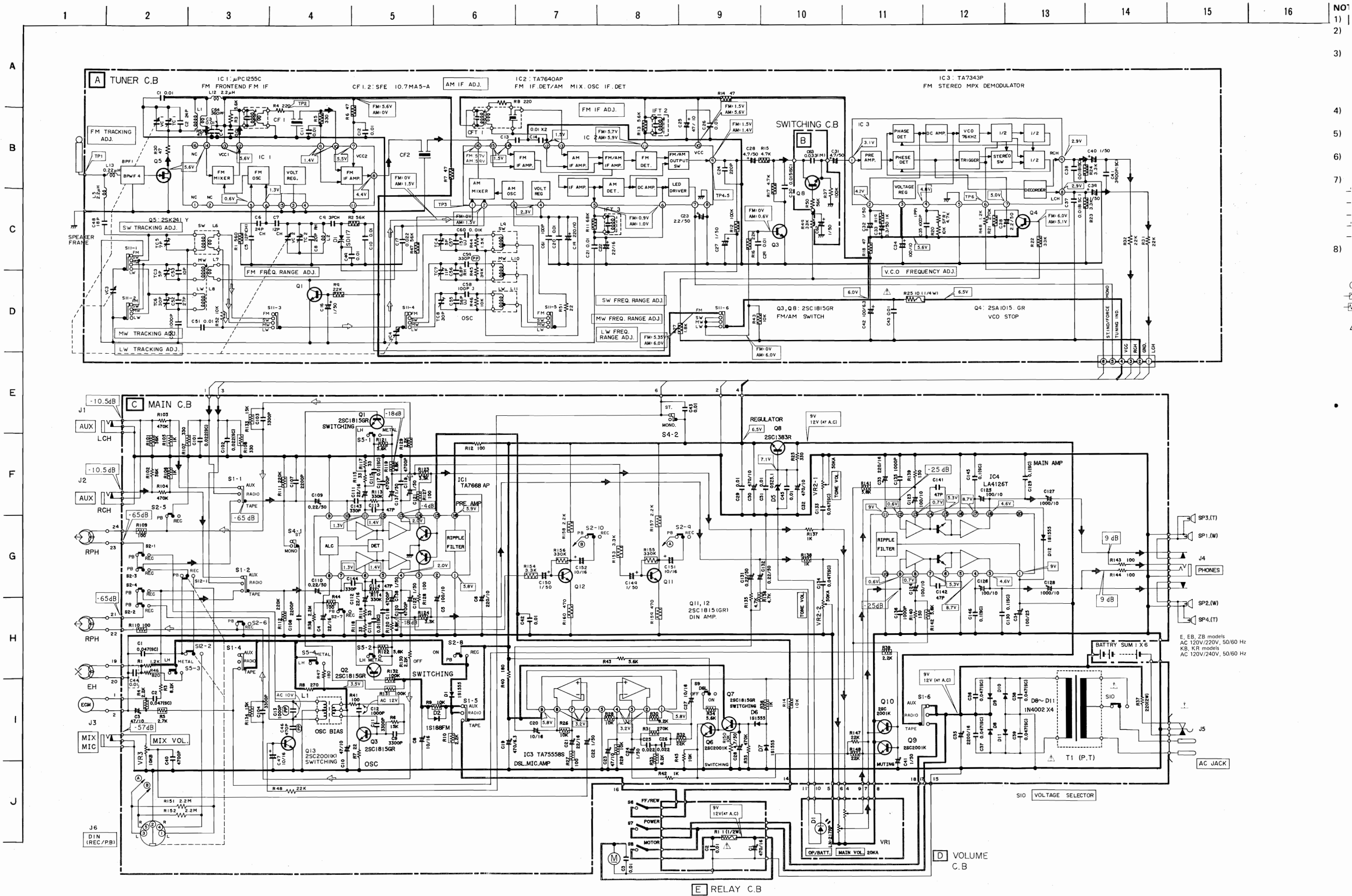


- S (1) Earth pattern Printed resistor pattern Others pattern
 (2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. But () is with AM reception.

CS-250 E, EB, KR, KB, ZB CS-250 E, EB, KR, KB, ZB



SCHEMATIC DIAGRAM

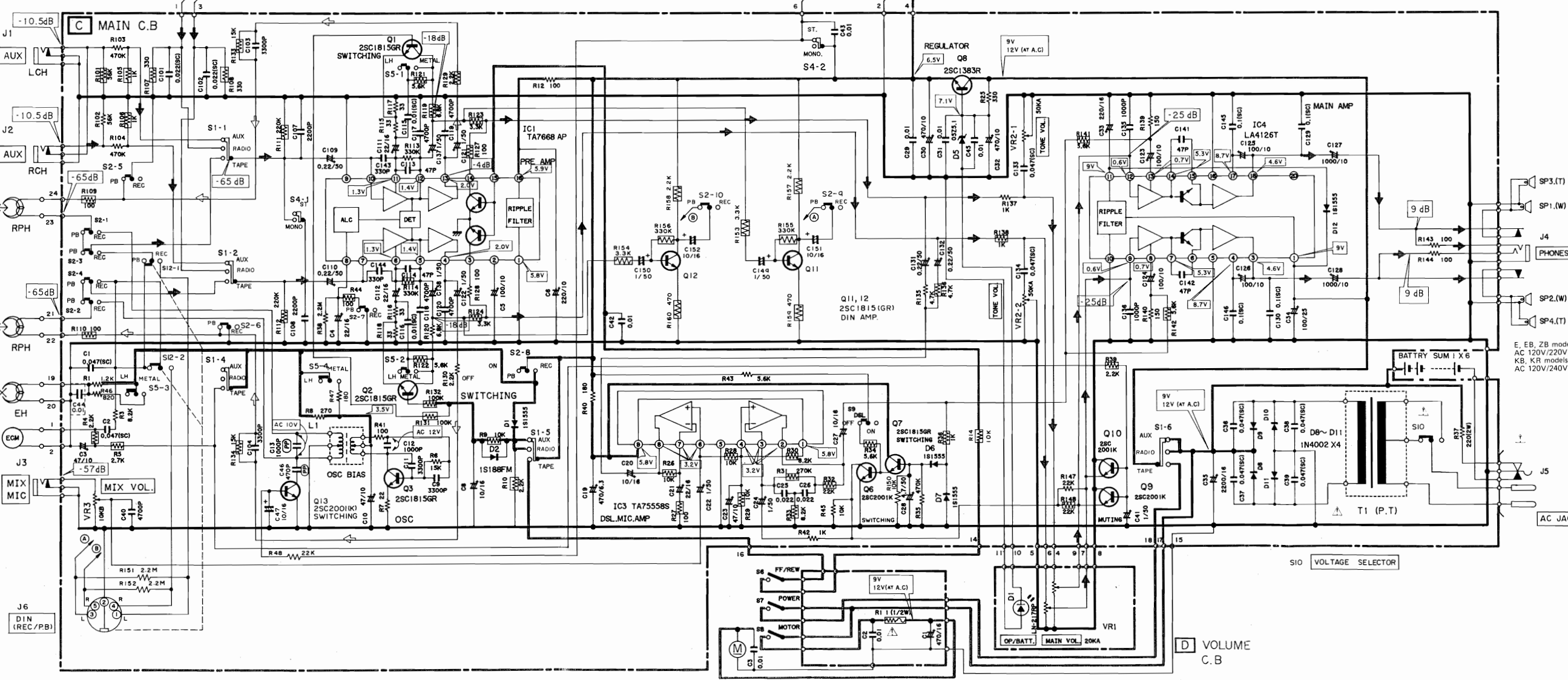
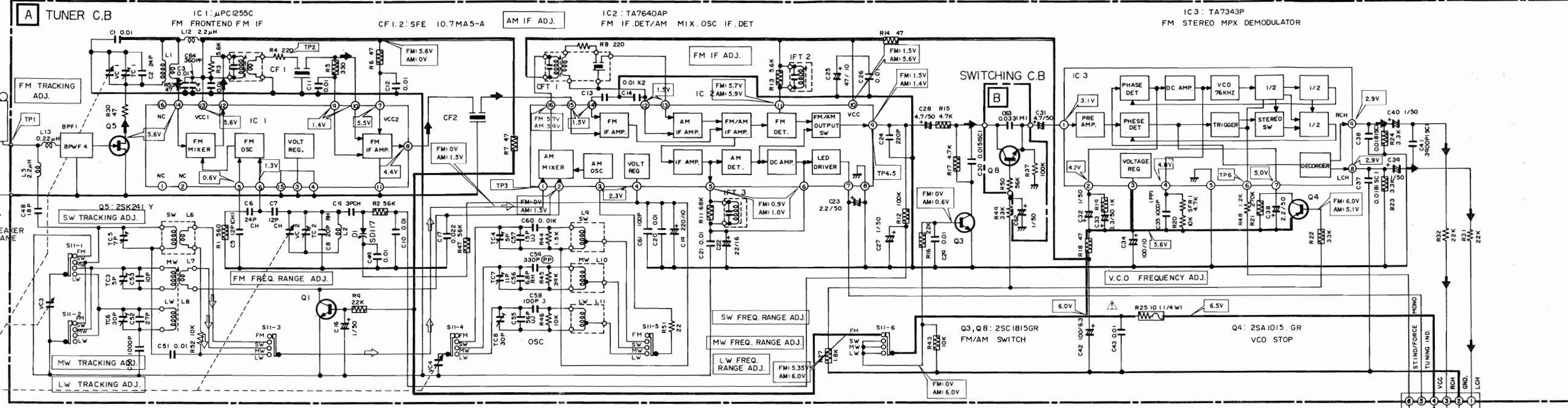


E, EB, ZB models
AC 120V/220V, 50/60 Hz
KB, KR models
AC 120V/240V, 50/60 Hz

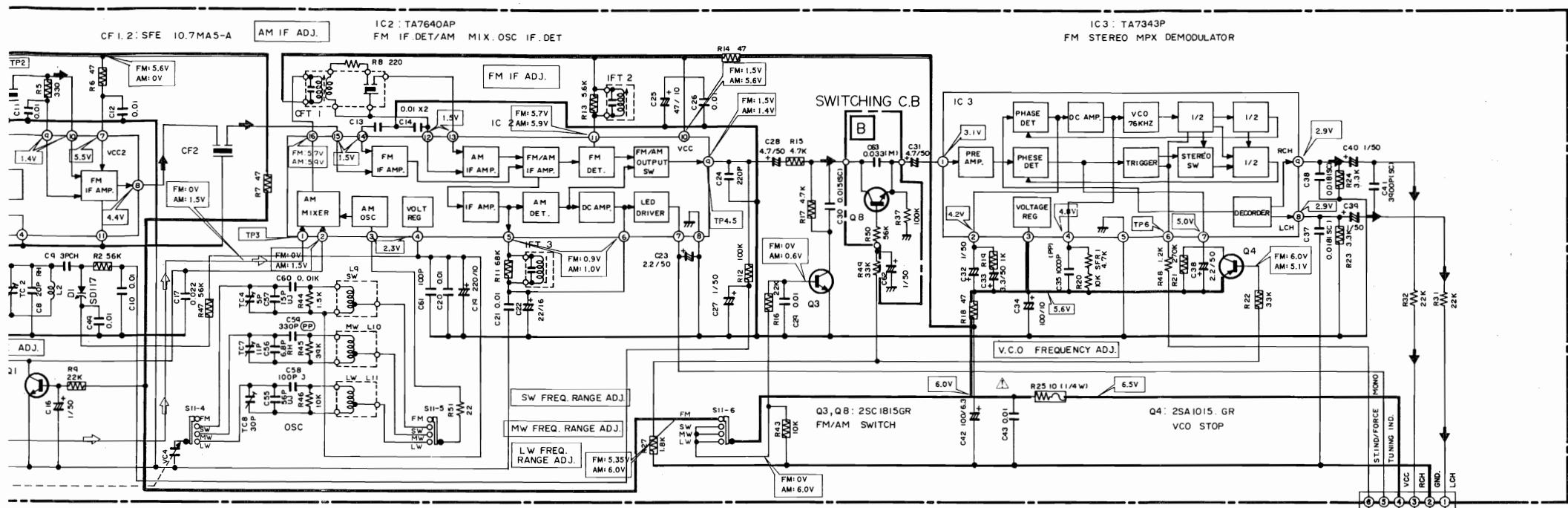
NO 1
1)
2)
3)
4)
5)
6)
7)
8)

A
B
C
D
E
F
G
H
I
J

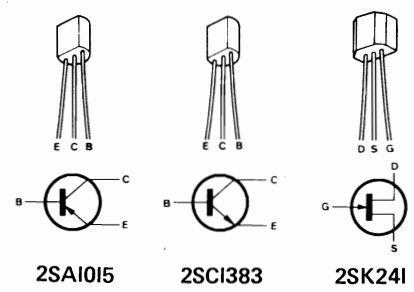
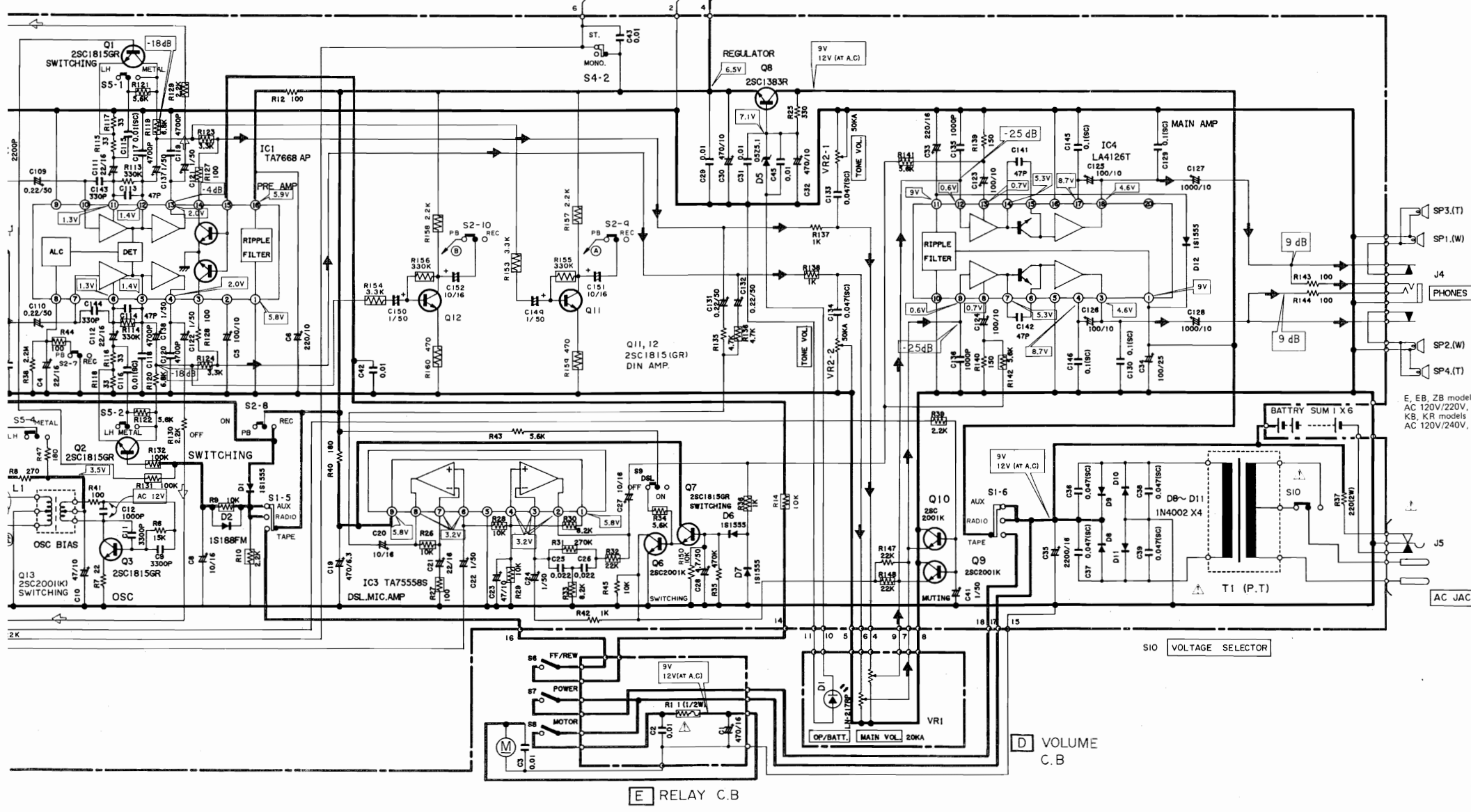
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



4 5 6 7 8 9 10 11 12 13 14 15 16



- NOTES:**
- 1) B (+) power supply
 - 2) Signal path
 - 3) Rec path, AM signal path.
 - 4) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. But () is with AM reception or recording. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
 - 5) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
 - 6) Capacitors with no designation have a dielectric strength of less than 50WV.
 - 7) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
 - 8) Ceramic capacitor symbols:
 - For temperature compensation (SL)
 - High dielectric constant system (YY)
 - High dielectric constant system (YW, YP, YZ)
 - Semiconductor ceramic
 - For temperature compensation (SH, CH, RH, UJ)
 - 9) Explanation of symbols
 - Mylar capacitor
 - Aluminum solid capacitor
 - Polypropylene film capacitor
 - Printed resistor
 - Fuse resistor
 - Safety component symbol
- This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.
- This schematic diagram is subject to change without notice in the interests of improved performance.



- S1** FUNCTION (AUX)
S2 REC/PB (PB)
S4 MODE (STEREO)
S5 TAPE SELECTOR (LH)
S6 FF/REW (OFF)
S7 POWER (OFF)
S8 MOTOR (OFF)
S9 DSL (OFF)
S10 VOLTAGE SELECTOR
S11 BAND SELECTOR (FM)
S12 DIN

E, EB, ZB models
 AC 120V/220V, 50/60 Hz
 KB, KR models
 AC 120V/240V, 50/60 Hz