

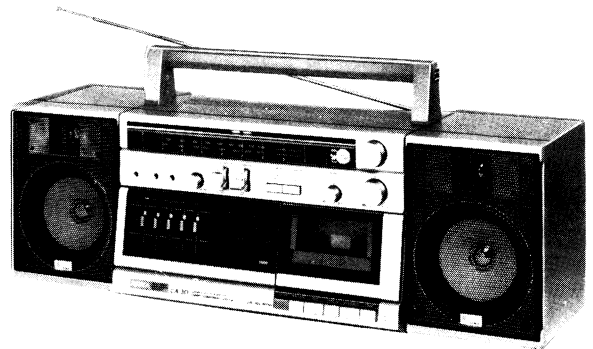
AIWA[®] SERVICE MANUAL

S/M Code No. 84-011
DATE OF ISSUE 5/1984

CARRY COMPONENT SYSTEM

MODEL NO.

CA-30



TYPE. HS,HUS,HJS,HJR,HJB,CS,US,
ES,KS,GS,ZS,ZB,FJS

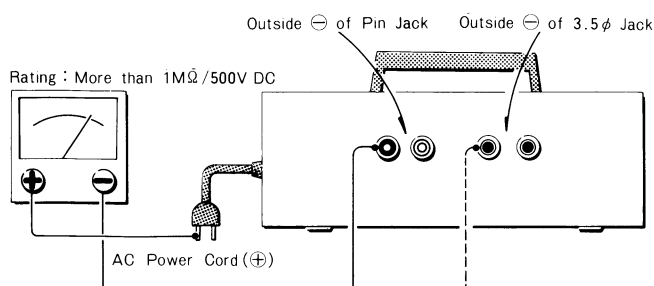
Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

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) 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.
- 2) 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.
- 3) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
- 4) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, malfunction and damage.

Measuring Point



Product Share Restrictions

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SPECIFICATIONS

GENERAL

Power source:

Batteries, DC 13.5V (SUN-1×9)
Car battery (thru car asaptor)
H. HU, HJ, HJR, HJB, E, Z, ZB,
FJ models AC 110~240V
Switchable 50/60 Hz
C model
AC 120V, 60 Hz
U, UB models
AC 120V/220V~240V
Switchable 50/60 Hz
K, G models
AC 120V/240V
Switchable 50/60 Hz

Power consumption:

H. HU, HJ, HJR, HJB, FJ models 27W
C model 29W
U, UB model 23W
E, Z, ZB, models 33W
K, G, model 38W

Dimensions:

334 (W) × 202 (H) × 189 (D)mm
(13 1/4" × 8" × 7 1/2")

Weight:

4.1 Kg (9lbs)

RADIO SECTION

Circuit:

Superheterodyne

H. HU, HJ, HJR, HJB, C, U, UB,

G, FJ, models

FM 87~109 MHz

SW₂ 6.8~22.5 MHz

SW₁ 2.1~ 7.3 MHz

MW 515~1650 kHz

E, K, Z, 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. HU, HJ, HJR, HJB, C, U, UB,

G, FJ models

FM 10.7 ± 0.09 MHz

SW₂, SW₁, MW 468 ± 3.5 kHz

E, K, Z, ZB models

FM 10.7 ± 0.09 MHz

SW, MW, LW 468 ± 3.5 kHz

Sensitivity:

H. HU, HJ, HJR, HJB, C, U, UB,

G, FJ models

FM 18 ± 4 dB(at 88 MHz)

16 ± 4 dB(at 100, 108 MHz)

SW₂ 40 ± 5 dB(at 7.0 MHz)

29 ± 5 dB(at 14.0 MHz)

19 ± 5 dB(at 22.0 MHz)

SW₁ 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, K, Z, ZB models

FM 18 ± 4 dB(at 88 MHz)

16 ± 4 dB(at 100, 108 MHz)

SW 39 ± 4 dB(at 5.9 MHz)

30 ± 5 dB(at 10.0 MHz)

21 ± 5 dB(at 18.0 MHz)

MW 41 ± 3 dB(at 600 kHz)

40 ± 3 dB(at 1000, 1400kHz)

LW 53 ± 3 dB(at 150 kHz)

52 ± 3 dB(at 200 kHz)

53 ± 3 dB(at 300 kHz)

Image rejection:

H. HU, HJ, HJR, HJB, C, U, UB,

G, FJ models

FM 24 ± 4 dB(at 108 MHz)

SW₂ 7 ± 3 dB(at 22 MHz)

SW₁ 18 ± 3 dB(at 7 MHz)

MW 53 ± 4 dB(at 1400 kHz)

E, K, Z, ZB model

FM 24 ± 4 dB(at 108 MHz)

SW 10 ± 3 dB(at 18 MHz)

MW 50 ± 4 dB(at 1400 kHz)

LW 55 ± 5 dB(at 300 kHz)

IF rejection:

H. HU, HJ, HJR, HJB, C, U, UB,

G, FJ models

FM 80 ± 10dB(at 88.0 MHz)

MW 65 ± 8dB(at 600 kHz)

E, K, Z, ZB model

FM 80 ± 10dB(at 88.0 MHz)

MW 65 ± 8dB(at 600 kHz)

22 ± 3dB(at 1 kHz)

FM stereo separation:

Antenna:

H. HU, HJ, HJR, HJB, C, U, UB,

G, FJ models

FM, SW₂ whip antenna

SW₁ MW Ferrite bar antenna

E, K, Z, ZB models

FM, SW whip antenna

MW, LW Ferrite antenna

External antenna terminals for

FM (except Z, ZB models)

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:

AC erase

Record bias frequency:

61 ± 0.5 kHz

Erasing ratio:

More than 55 dB

Separation:

More than 35 dB (at REC/PB)

Distortion:

Less than 3% (at PB)

Less than 3% (at REC/PB)

Signal noise ratio:

More than 49/47 dB (at PB,

DC/AC)

More than 43/42 dB(at REC/PB,

DC/AC)

Noise level:

Less than 40/50 mV (DC/AC, MAX)

Frequency response:

30~14,000 Hz (CrO₂)

30~13,000 Hz (NORMAL)

Output power:

14 W maximum (7W + 7W, DC)

Head:

Super permalloy head (for

REC/PB)

Ferrite head (for Erase)

DC electric governor

0.045% (WRMS)

Moter:

Wow and Flutter:

Auto stop:

Mechanical full auto stop

system

Pinch roller pressure:

125 ± 10g (1.23 ± 0.098N)

Take up torque:

35⁺ 15₋ 5 g · cm (340⁺ 147₋ 49 mN · m)

FF & rewind torque:

110 ± 20g-cm (1078 ±

196mN · m)

FF & rewind time:

90 ± 5s. (C-60)

Input terminals:

MLX MIC φ 6.3 jack × 2

LINE IN pin × 2

PHONO pin × 2

Input sensitivity/

Impedance:

MIC 1.4mV/3.3kΩ

LINE IN 300mV/47kΩ

PHONO 5mV/47kΩ

Output terminals:

LINE OUT pin × 2

EXT.SP φ 3.5 jack

PHONES φ 6.3 jack

Output sensitivity/

Impedance:

EXT.SP 4~8Ω

LINE OUT 300mV/1kΩ

PHONES 330mV/8Ω

SPEAKER SECTION

Type:

2 way closed type

Speakers:

Woofer 120mmφ × 2

Cone type

Tweeter 40mmφ × 2

Ceramic type

Impedance:

4Ω

Frequency response:

70~18,000 Hz

Sound pressure level:

87 dB/W/m

Allowance maximum

input power:

10W

Dimension:

141.2 (W) × 202 (H) × 176 (D)mm


(5 2/1" × 8" × 6 7/8")

Weight:

1.8 kg (3.96 lbs)

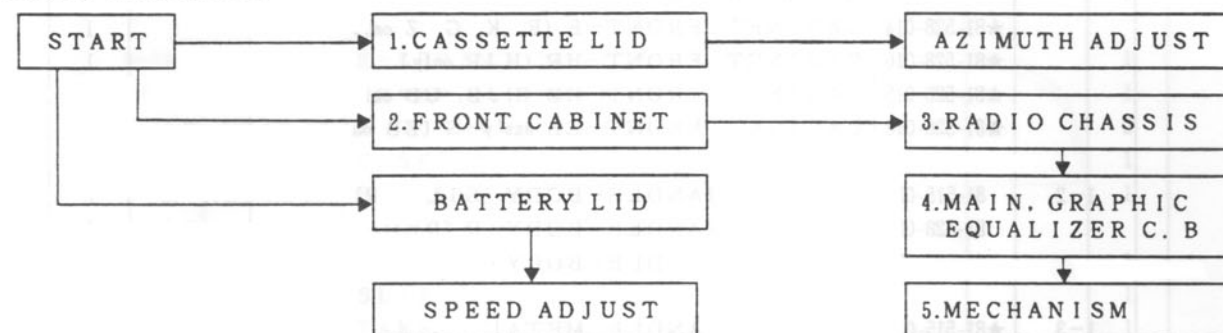
SYSTEM

Dimension: 612 (W) × 267 (H) × 189 (D)mm
(24 1/8" × 10 5/8" × 7 1/2")
Weight: 7.7kg (17 lbs)

- Specifications and external appearance are subject to change without due to product improvement.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the  symbol are trademarks of Dolby Laboratories Licensing Corporation.

DISASSEMBLY INSTRUCTIONS

EXPLODED PROCESS



1. Removing Cassette Lid

- 1) Open the cassette lid and insert a precise screwdriver to the lock of the cassette box. Remove the cassette box, sliding in direction ② while pushing the lock in direction ① by the screwdriver. (See Figure-1)

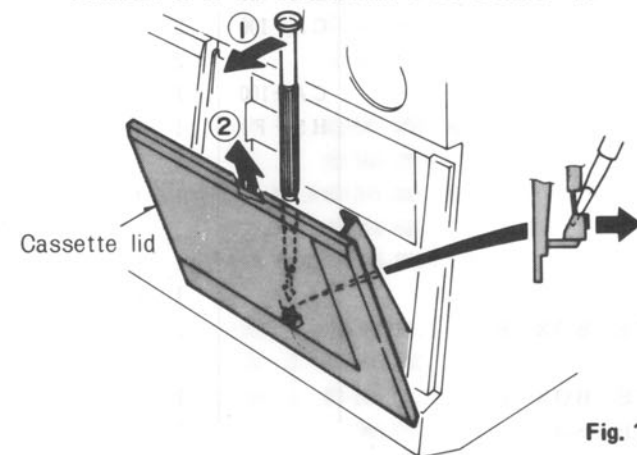


Fig. 1

2. Removing Front Cabinet

- 1) Remove the 11 knobs. (See Figure-2)

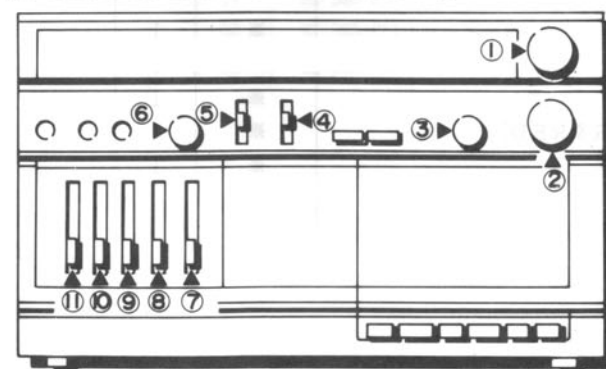


Fig. 2

3

- 2) Remove the 8 screws. (See Figure-3)

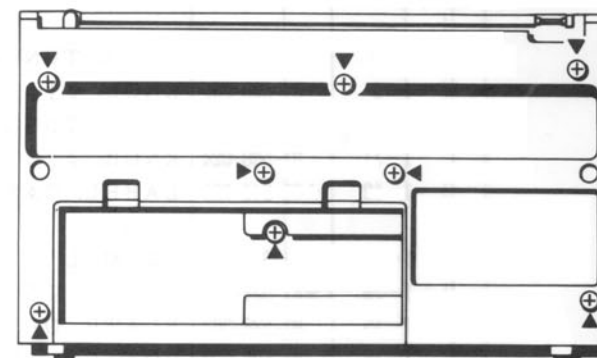


Fig. 3

- 3) Set the cassette lid to EJECT mode, and hold up the front cabinet. (See Figure-4)

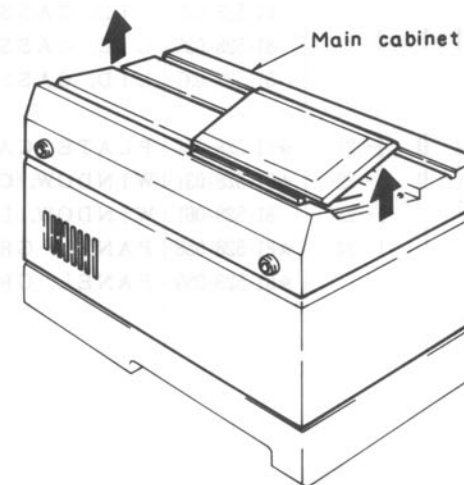


Fig. 4

3. Removing Radio Chassis

- 1) Remove the 2 red screws. (See Figure-5)

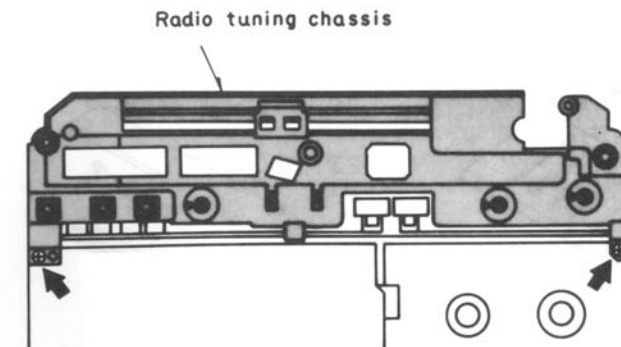


Fig. 5

4. Removing Main & Graphic EQ C.B

- 1) Remove the graphic eq. C.B. holding up in the direction of the arrow. (See Figure-6)

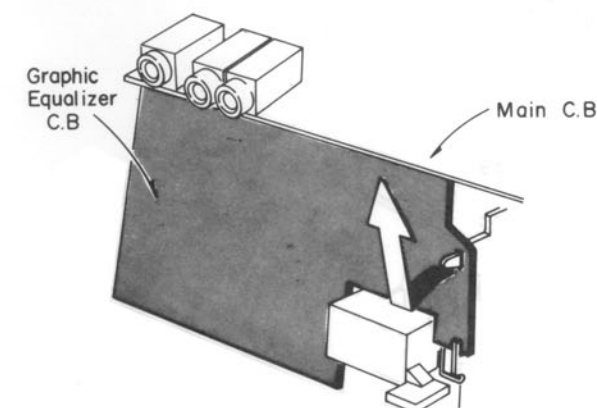


Fig. 6

- 2) Remove the main and graphic eq. C.B in the direction of the arrow. (See Figure-7)

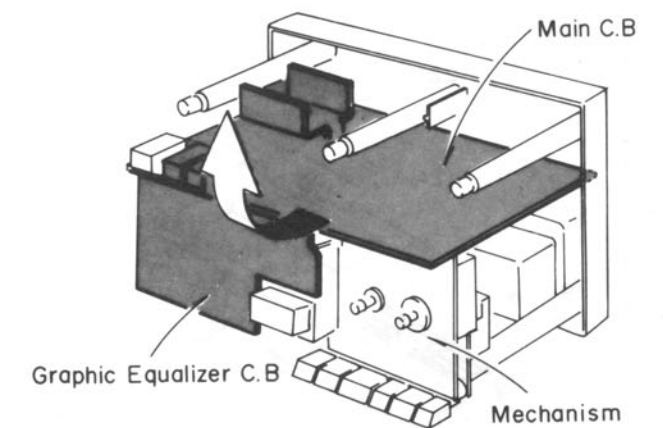


Fig. 7

5. Removing Mechanism

- 1) Remove the red screw. (See Figure-8)

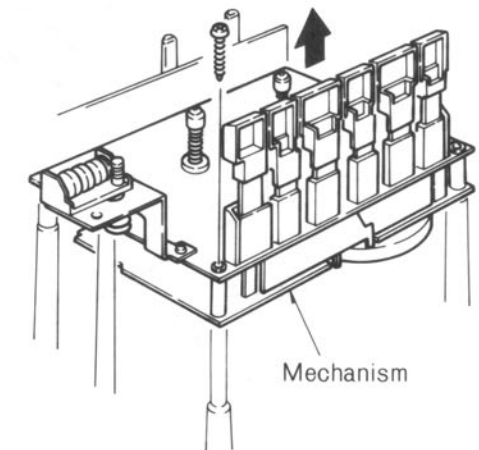
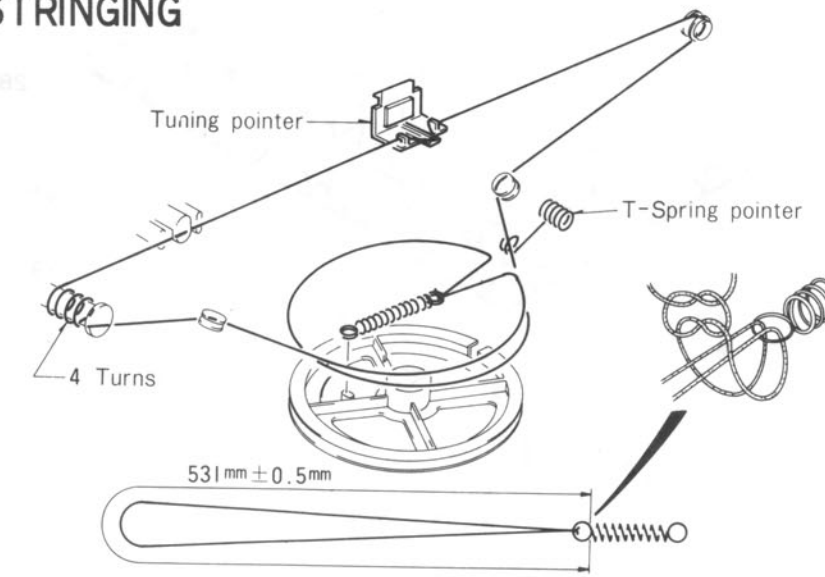


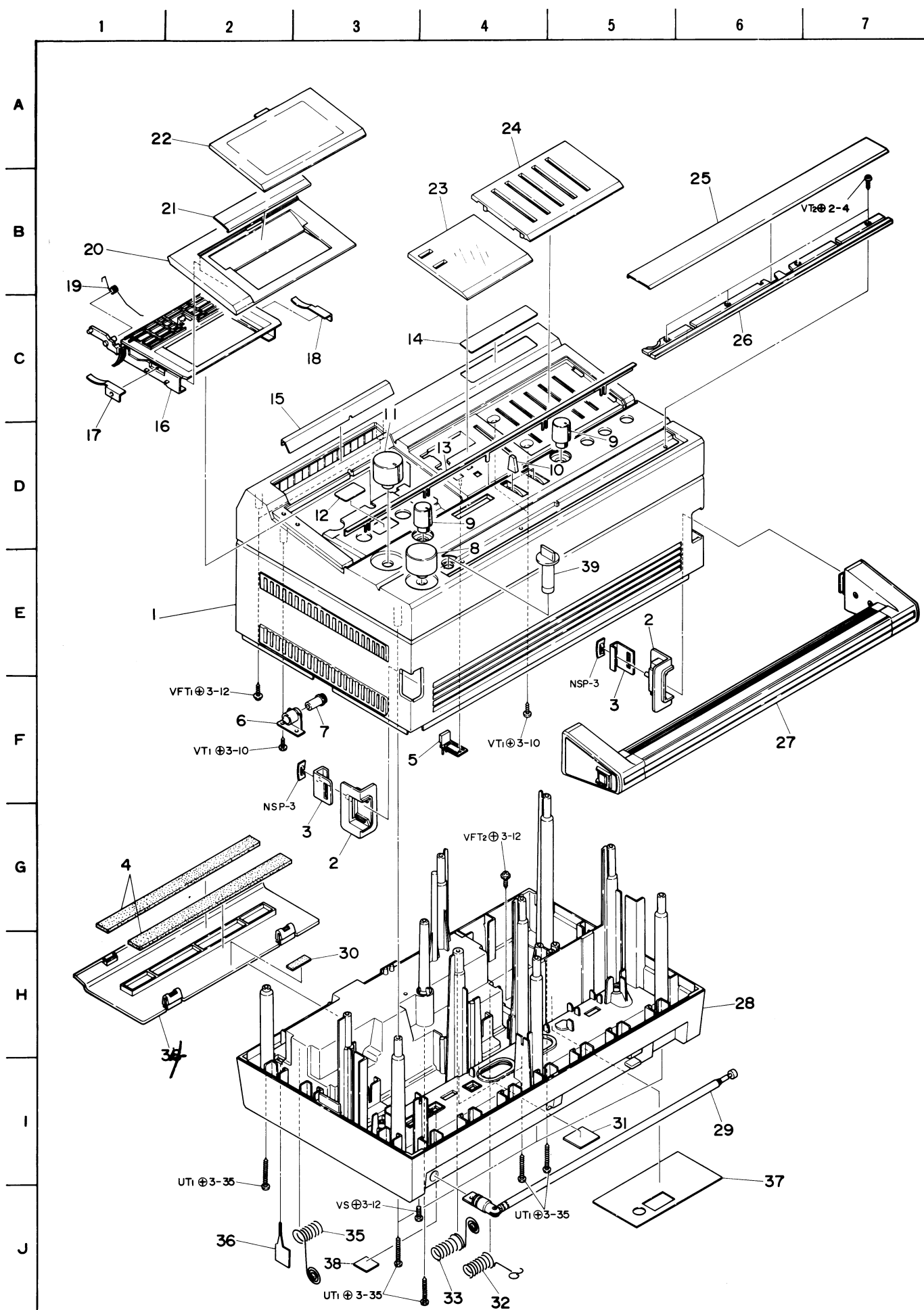
Fig. 8

DIAL CORD STRINGING



4

EXPLODED VIEW-1



PARTS LIST

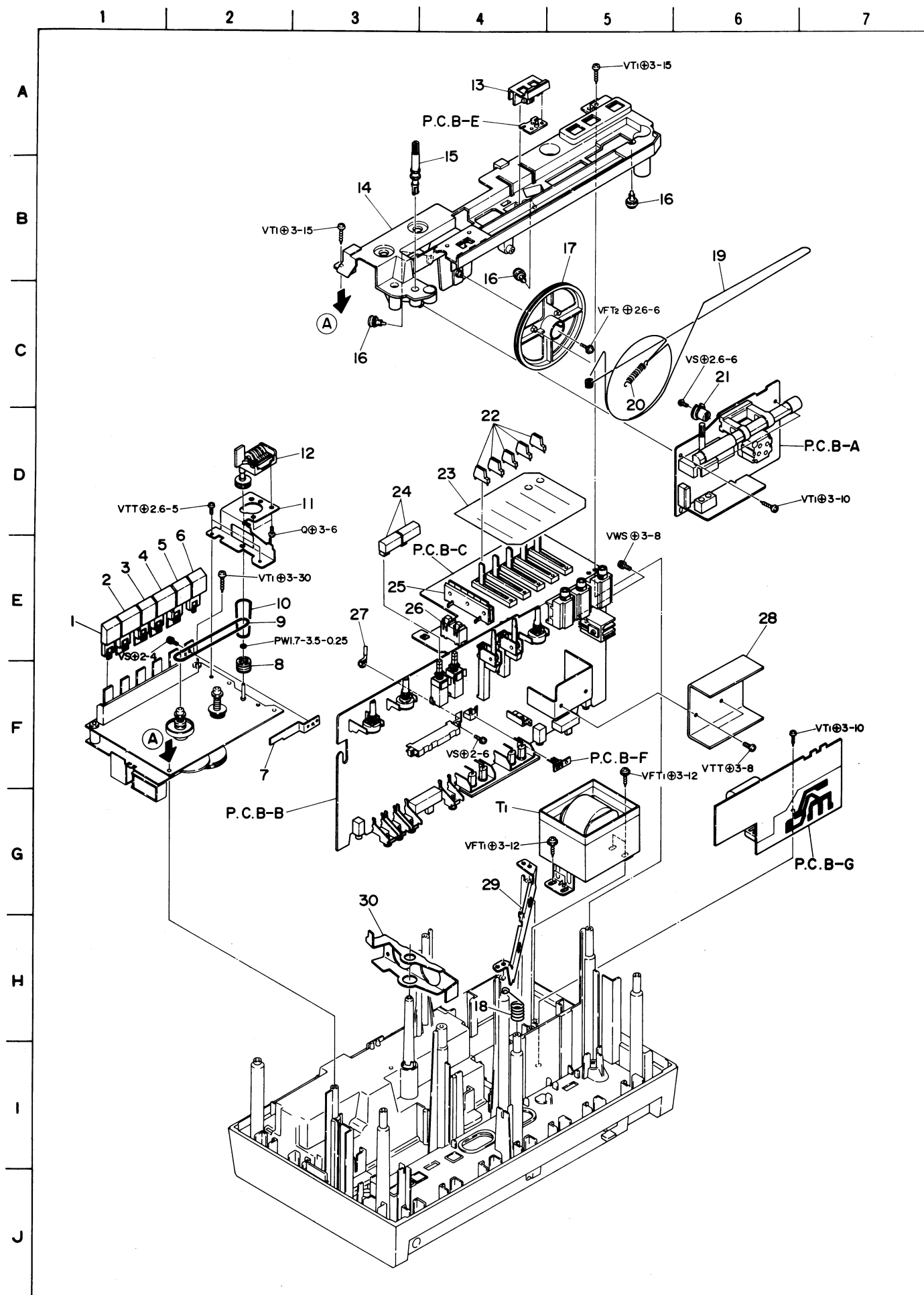
MECHANICAL PARTS LIST

■ ※ mark in this part list shows exclusive part.
■ ★-mark means less required items and availabilities may be limited.

Ref. No.	Part No.	Description		Q'ty	
1-1 ~2	81-528-003	CABINET, FRONT-H Ass'y-S (H, HU, HJ, C, U, FJ only)	※	1	
	81-528-009	CABINET, FRONT-E Ass'y-S (E, K, G, Z only)	※	1	
	81-528-006	CABINET, FRONT-HR Ass'y-S (HJR only)	※	1	
	81-528-151	CABINET, FRONT-HB Ass'y-S (HJB, UB only)	※	1	
	81-528-152	CABINET, FRONT-EB Ass'y-S (ZB only)	※	1	
1-1	★81-528-013	CABINET, FRONT-H (H, HU, HJ, C, U, FJ only)	※	1	
	★81-528-014	CABINET, FRONT-E (E, K, G, Z only)	※	1	
	★81-528-016	CABINET, FRONT-HR (HJR only)	※	1	
	★81-528-015	CABINET, FRONT-HB (HJB, UB only)	※	1	
	★81-528-018	CABINET, FRONT-EB Ass'y-S (ZB only)	※	1	
1-2	81-515-030	HOLDER, HANDLE-BODY (SILVER)	CA-70	2	
	81-528-069	HOLDER, HANDLE-BODY · R (RED)	※	2	
	81-528-153	HOLDER, HANDLE-BODY · B (BLACK)	※	2	
1-3	★81-515-031	HOLDER, HANDLE METAL	CA-70	2	
1-4	★87-063-133	M-CUSHION, 14-170-4T		2	
1-5	81-528-064	BUTTON, REC-MUTE	※	1	
1-6	★81-528-220	HOLDER, OIL-DAMPER Ass'y	※	1	
1-7	82-534-264	GEAR, OIL-DAMP		1	
1-8	81-508-035	KNOB, TUN-S	CA-100	1	
1-9	81-508-031	KNOB, φ15-S	CA-100	2	
1-10	81-563-014	KNOB, TOGGLE		2	
1-11	81-508-024	KNOB, φ25-S	CA-100	1	
1-12	★81-648-025	LABEL, CASSETTE	HS-F1	1	
1-13	81-528-066	TRIM, L	※	1	
1-14	★81-528-124	BADGE, 13-75 EX	※	1	
1-15	81-528-063	PLATE, OP	※	1	
1-16	81-528-033	BOX, CASSETTE	※	1	
1-17	81-511-210	P-SPRING, CASSETTE BOX R		1	
1-18	81-511-211	P-SPRING, CASSETTE BOX L		1	
1-19	81-528-225	T-SPRING, CASSETTE BOX	※	1	
1-20	81-528-032	LID, CASSETTE (SILVER)	※	1	
	81-528-036	LID, CASSETTE-R (RED)	※	1	
	81-528-037	LID, CASSETTE-B (BLACK)	※	1	
1-21	★81-528-034	PLATE, CASSETTE	※	1	
1-22	★81-528-031	WINDOW, CASSETTE	※	1	
1-23	81-528-061	WINDOW, LED	※	1	
1-24	★81-528-058	PANEL, GREQ (SILVER&RED)	※	1	
	★81-528-059	PANEL, GREQ (BLACK)	※	1	

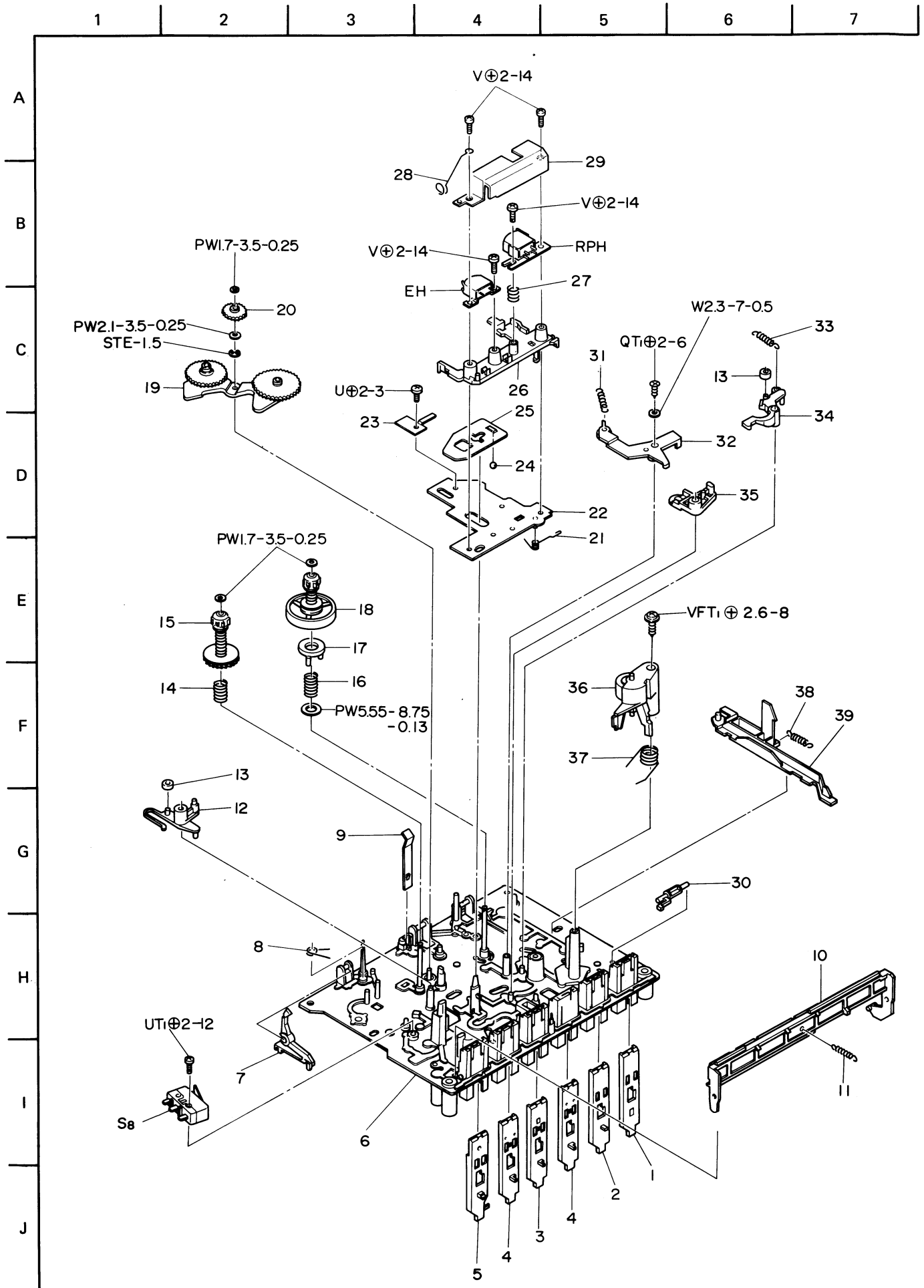
Ref. No.	Part No.	Description		Q'ty	
1-25	★81-528-053	PLATE, DIAL-H (H, HU, HJ, HJB, C, UB only)	※	1	
	★81-528-054	PLATE, DIAL-E (E, K, G, Z, ZB only)	※	1	
	★81-528-055	PLATE, DIAL-F (FJ only)	※	1	
	★81-528-140	PLATE, DIAL-HR (HJR only)	※	1	
1-26	★81-528-051	WINDOW, DIAL	※	1	
1-27	81-528-076	HANDLE, Ass'y -S (SILVER)	※	1	
	81-528-068	HANDLE, Ass'y -R (RED)	※	1	
	81-528-077	HANDLE, Ass'y -B (BLACK)	※	1	
1-28	81-528-021	CABINET, REAR (H, HU, HJ, C, E, K, G, Z, FJ only)	※	1	
	81-528-019	CABINET, REAR (U only)	※	1	
	81-528-023	CABINET, REAR (HJR only)	※	1	
	81-528-024	CABINET, REAR (HJB, ZB only)	※	1	
	81-528-025	CABINET, REAR (UB only)	※	1	
1-29	87-043-075	ANTENNA, WHIP		1	
1-30	★81-518-232	S-CUSHION, 20-8-3	CS-W330	1	
1-31	★81-528-067	PLATE, 24. 6-27-0. 3 (H, HJ, HJR, HJB C, E, K, G, Z, ZB, FJ only)	※	1	
	★81-528-121	PLATE, FCC (HU, U, UB, only)	※	1	
1-32	81-528-213	C-SPRING, BATTERY-A	※	1	
1-33	81-528-214	C-SPRING, BATTERY-B	※	1	
1-34	81-528-096	LID, BATTERY (SILVER)	※	1	
	81-528-098	LID, BATTERY-R (RED)	※	1	
	81-528-094	LID, BATTERY-B (BLACK)	※	1	
1-35	81-528-215	C-SPRING, BATTERY-C	※	1	
1-36	81-528-216	TERMINAL-WR	※	1	
1-37	★81-528-082	NAME PLATE, Spec. (H, HU only)	※	1	
	★81-528-090	NAME PLATE, Spec. (HJ, HJR, HJB only)	※	1	
	★81-528-088	NAME PLATE, Spec. (C only)	※	1	
	★81-528-085	NAME PLATE, Spec. (U, UB only)	※	1	
	★81-528-081	NAME PLATE, Spec. (E only)	※	1	
	★81-528-086	NAME PLATE, Spec. (K only)	※	1	
	★81-528-087	NAME PLATE, Spec. (G only)	※	1	
	★81-528-084	NAME PLATE, Spec. (Z, ZB only)	※	1	
	★81-528-083	NAME PLATE, Spec. (FJ only)	※	1	
1-38	81-528-060	PLATE, AM-ANT (H, HU, HJ, HJR, HJB, C, U, UB, E, K, G, Z, ZB, FJ only)	※	1	
	81-528-062	PLATE, EXT-ANT (Z, ZB only)	※	1	
1-39	81-528-048	KNOB, SELECTOR-CP	※	1	

EXPLODED VIEW-2



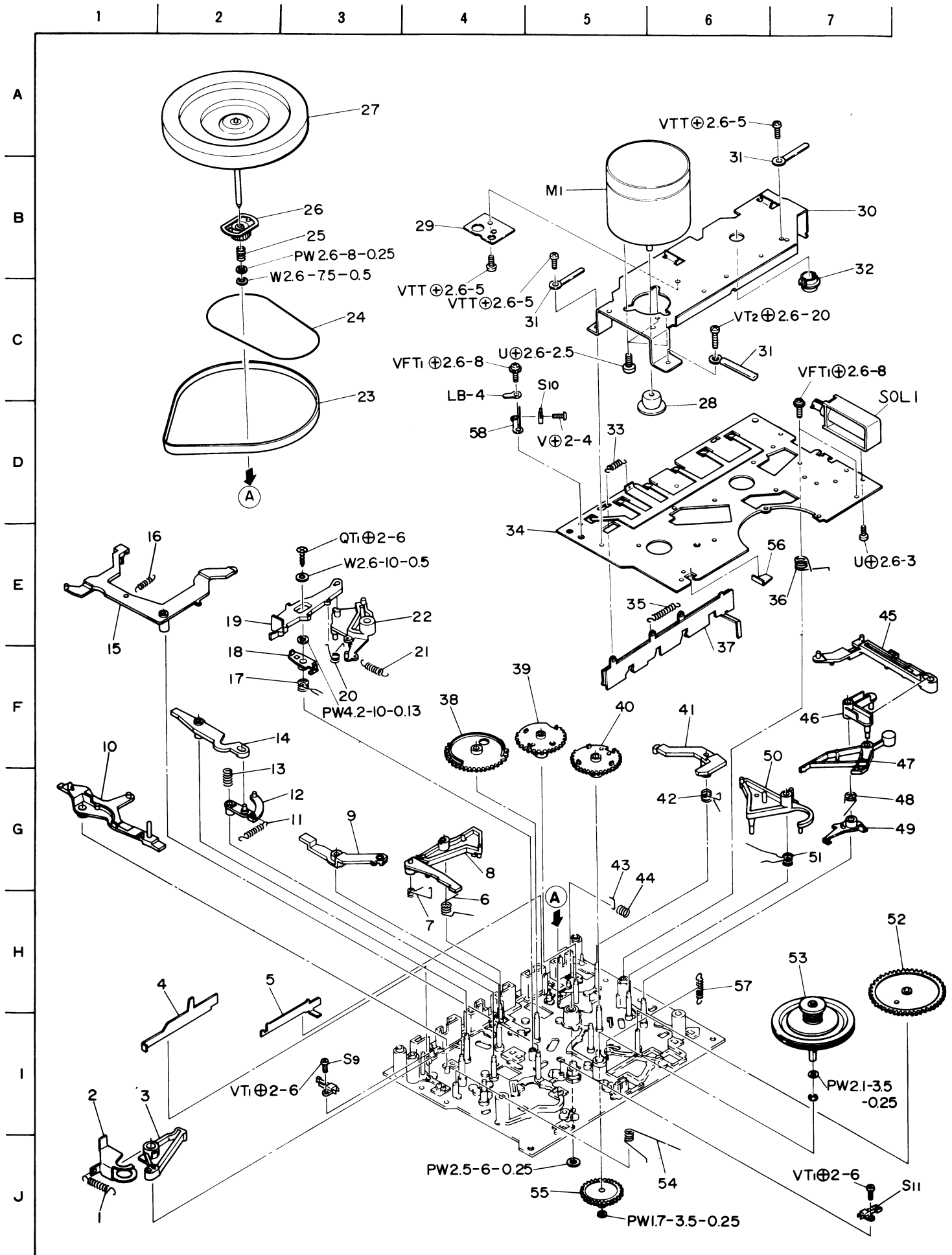
Part No. Changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	2-1	81-528-044	PUSH-KEY, PAUSE	※	1	
	2-2	81-528-043	PUSH-KEY, STOP	※	1	
	2-3	81-528-042	PUSH-KEY, FF	※	1	
	2-4	81-528-041	PUSH-KEY, PLAY	※	1	
	2-5	81-528-040	PUSH-KEY, REW	※	1	
	2-6	81-528-045	PUSH-KEY, REC	※	1	
	2-7	★82-585-434	LEVER, ONE RECORD		1	
	2-8	82-585-427	IDLER PULLEY, COUNTER		1	
	2-9	82-585-426	RUBBER BELT, COUNTER		1	
	2-10	81-528-223	BELT, COUNTER	※	1	
	2-11	★81-528-219	HOLDER, COUNTER	※	1	
	2-12	87-040-168	COUNTER		1	
	2-13	81-528-078	POINTER, TUNING	※	1	
	2-14	81-528-210	CHASSIS, TUNING		1	
	2-15	81-516-201	SHAFT, TUNING		1	
	2-16	87-071-019	PULLEY-7, Ass'y		3	
	2-17	★81-500-205	DRUM, DIAL	CS-300	1	
	2-18	81-528-227	T-SPRING, POINTER	※	1	
	2-19	87-096-090	STRING, DIAL 0. 3		1	
	2-20	82-541-291	E-SPRING, DIAL		1	
	2-21	81-511-203	JOINT, DRUM		1	
	2-22	81-528-072	KNOB, GREQ	※	5	
	2-23	★81-528-079	CLOTH, GREQ	※	1	
	2-24	81-528-047	PUSH-BUTTON, 9-20	※	2	
	2-25	★81-528-211	HOLDER, LED-6	※	1	
	2-26	★81-528-212	HOLDER, LED-2	※	1	
	2-27	★81-528-218	ARM, REC-SW	※	1	
	2-28	★81-515-623	HEAT SINK P-B	CA-70	1	
	2-29	★81-528-226	HOLDER, PWB-GREQ	※	1	
	2-30	★81-528-217	LEBER, REC	※	1	

EXPLODED VIEW-3



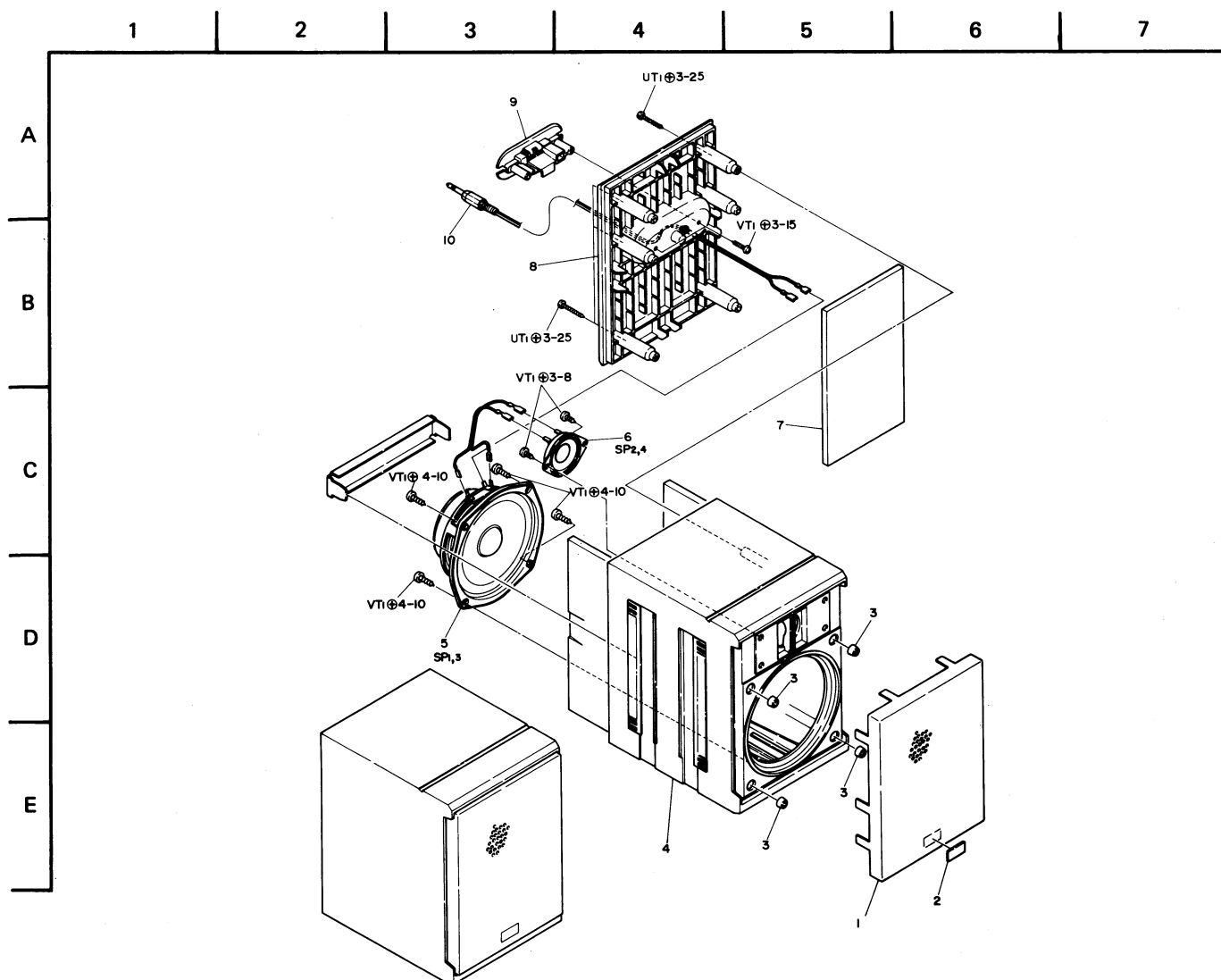
Part No. Changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	3-1	82-585-361	PLATE BUTTON, PAUSE		1	
	3-2	82-585-382	PLATE BUTTON, STOP B		1	
	3-3	82-585-355	PLATE BUTTON, PLAY		1	
	3-4	82-585-360	PLATE BUTTON, FR B		2	
	3-5	82-585-432	PLATE BUTTON, REC C		1	
	3-6	★82-585-418	OUTSERT SHASSIS Ass'y B		1	
	3-7	82-585-255	LEVER, REC BLOCKING		1	
	3-8	82-585-294	T-SPRING, SENTER SHIFT		1	
	3-9	82-585-448	P-SPRING, CASSETTE HOLDER A		1	
	3-10	82-585-461	LOCK PLATE C		1	
	3-11	82-585-317	E-SPRING, BUTTON LOCK		1	
	3-12	★82-585-252	LEVER L, BRAKE		1	
	3-13	★82-585-286	G CUSHION, BRAKE		2	
	3-14	82-585-290	C-SPRING, BACK TENSION		1	
	3-15	82-585-215	SUPPLY REEL PLATFOM Ass'y		1	
	3-16	82-585-292	C-SPRING, SLIP DISK		1	
	3-17	82-585-272	SLIP DISK		1	
	3-18	82-585-423	TAKE-UP REEL PLATFORM Ass'y		1	
	3-19	82-585-231	FR LEVER Ass'y		1	
	3-20	82-585-235	GEAR A, REW		1	
	3-21	82-585-295	T-SPRING, ACTUATING		1	
	3-22	★82-585-208	SHASSIS, ACTUATING		1	
	3-23	★82-585-439	HOLDER, IDLER LEVER		1	
	3-24	87-073-005	STEEL BALL ϕ 2		1	
	3-25	82-585-284	P-SPRING, ACTUATING		1	
	3-26	82-585-399	HEAD BASE		1	
	3-27	82-585-291	C-SPRING, RPH		1	
	3-28	★82-591-245	HOLDER, WIRE	CS-W7	1	
	3-29	★82-594-625	SHILDE PLATE, HEAD	CS-500	1	
	3-30	★82-585-279	LEVER A, EJECT		1	
	3-31	82-585-313	E-SPRING, PLAY IDLER LEVER		1	
	3-32	82-585-446	PLAY IDLER LEVER B Ass'y		1	
	3-33	82-585-312	E-SPRING, BRAKE R		1	
	3-34	★82-585-253	LEVER, BRAKE R		1	
	3-35	★82-585-265	REV LEVER		1	
	3-36	82-585-240	PINCH LEVER Ass'y		1	
	3-37	82-585-296	T-SPRING, PINCH LEVER		1	
	3-38	82-585-311	E-SPRING, LID LOCK		1	
	3-39	82-585-455	SLIDE PLATE, EJECT B		1	

EXPLODED VIEW-4



Part No. Changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	4-1	82-585-384	E-SPRING, REC B		1	
	4-2	★82-585-267	LEVER, REC B		1	
	4-3	★82-585-413	LEVER, REC C		1	
	4-4	★82-585-282	SLIDE PLATE, MOTOR SW		1	
	4-5	★82-585-283	SLIDE PLATE, FR AUTO		1	
	4-6	82-585-306	T-SPRING, PLAY LEVER		1	
	4-7	82-585-307	T-SPRING, REC LEVER		1	
	4-8	★82-585-428	PLAY LEVER Ass'y B		1	
	4-9	82-585-258	TRIGGER LEVER, PLAY		1	
	4-10	★82-585-387	TRIGGER LEVER, REC B		1	
	4-11	82-585-308	E-SPRING, REW LEVER		1	
	4-12	★82-585-260	REW LEVER		1	
	4-13	82-439-369	C-SPRING, SLIP		1	
	4-14	★82-585-259	TRIGGER LEVER, REW		1	
	4-15	82-585-257	TRIGGER LEVER, FF		1	
	4-16	82-585-301	E-SPRING, TRIGGER LEVER PLAY		1	
	4-17	82-585-297	T-SPRING, FR LEVER A		1	
	4-18	★82-585-403	FR LEVER G		1	
	4-19	★82-585-386	FR LEVER F		1	
	4-20	82-585-298	T-SPRING, FR LEVER B		1	
	4-21	82-585-311	E-SPRING, LID LOCK		1	
	4-22	82-585-385	FR LEVER E		1	
	4-23	82-585-287	RUBBER BELT, FLYWHEEL		1	
	4-24	82-585-336	RUBBER BELT, FR B		1	
	4-25	82-585-398	C-SPRING, FLYWHEEL A		1	
	4-26	82-585-243	GEAR, FLYWHEEL		1	
	4-27	82-585-367	FLYWHEEL B Ass'y		1	
	4-28	82-585-452	PULLEY, MOTOR		1	
	4-29	★81-528-228	STOPPER, BELT	※	1	
	4-30	★81-585-281	HOLDER, MOTOR		1	
	4-31	★87-038-039	WIRE BINDER		1	
	4-32	82-585-326	THRUST BEARING B		1	
	4-33	82-585-332	E-SPRING, REC LOCK		1	
	4-34	★82-585-442	MECHANISM SHASSIS Ass'y C		1	
	4-35	82-175-289	E-SPRING, SLIDE PLATE	AD -3500	1	
	4-36	82-585-321	T-SPRING, AUTO KICK		1	
	4-37	★82-585-435	SLIDE PLATE KEY Ass'y D		1	
	4-38	82-585-244	GEAR, PLAY CAM		1	
	4-39	82-585-246	GEAR, PAUSE CAM		1	
	4-40	82-585-245	GEAR, FR CAM		1	
	4-41	★82-585-256	TRIGGER LEVER, PAUSE		1	
	4-42	82-585-304	T-SPRING, TRIGGER PAUSE		1	
	4-43	82-585-362	LOCK B, SHAFT		1	
	4-44	82-585-599	C-SPRING, SHAFT LOCK B		1	
	4-45	★82-585-359	AUTO KICK PLATE Ass'y		1	
	4-46	★82-585-269	LEVER B, AUTO		1	
	4-47	82-585-268	LEVER A, AUTO		1	
	4-48	82-585-299	T-SPRING, AUTO EJECT		1	
	4-49	★82-585-271	LEVER, AUTO EJECT		1	
	4-50	★82-585-431	LEVER B, PAUSE		1	
	4-51	82-585-300	T-SPRING, FR CAM		1	
	4-52	82-585-400	GEAR B, AUTO KICK		1	
	4-53	82-585-217	SLIP PULLEY FR Ass'y		1	
	4-54	82-585-303	T-SPRING, TRIGGER REC		1	
	4-55	82-585-457	GEAR B, DRIVE		1	
	4-56	★82-585-453	BUTTON GUIDE, REC		1	
	4-57	82-585-317	E-SPRING, BUTTON LOCK		1	
	4-58	★82-587-232	HOLDER, REC SW		1	

EXPLODED VIEW-5



Part No. Changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	5-1	81-528-103	SPEAKER, GRILLE (SILVER, RED)	※	2	
		81-528-113	SPEAKER, GRILLE (BLACK)	※	2	
	5-2	★81-528-105	BAGE 10-22	※	2	
	5-3	★81-528-107	CUSHION, GRILLE	※	8	
	5-4	81-528-100	FRONT CABINET, SP-R (SILVER)	※	1	
		81-528-110	FRONT CABINET, SP-R (RED)	※	1	
		81-528-108	FRONT CABINET, SP-R (BLACK)	※	1	
		81-528-101	FRONT CABINET, SP-L (SILVER)	※	1	
		81-528-111	FRONT CABINET, SP-L (RED)	※	1	
		81-528-109	FRONT CABINET, SP-L (BLACK)	※	1	
	5-5	81-528-617	SPEAKER,	※	2	
	5-7	★81-528-115	ABSORBENT	※	2	
		★81-528-116	ABSORBENT, U	※	2	
	5-8	81-528-102	REAR CABINET, SP (SILVER)	※	2	
		81-528-112	REAR CABINET, SP (RED)	※	2	
		81-528-106	REAR CABINET, SP (BLACK)	※	2	
	5-9	81-528-104	HOLDER, CORD (SILVER)	※	2	
		81-528-114	HOLDER, CORD (RED)	※	2	
		81-528-122	HOLDER, CORD (BLACK)	※	2	
	5-10	81-528-619	SPEAKER CORD	※	2	

Part No.	Description
87-261-033-21	V + 2 - 4
87-261-039-21	V + 2 - 1 4
87-067-062-01	V + 2.6 - 2.5
87-351-035-01	VT ₁ + 2 - 6
87-351-095-21	VT ₁ + 3 - 8
87-351-096-21	VT ₁ + 3 - 1 0
87-356-096-21	VT ₁ + 3 - 1 0 (RED)
87-356-099-21	VT ₁ + 3 - 1 5 (RED)
87-356-104-21	VT ₁ + 3 - 3 0
87-067-121-01	VT ₁ + 4 - 1 0
87-352-033-21	VT ₂ + 2 - 4
87-081-480-01	VTT + 2.6 - 5
87-081-512-01	VTT + 3 - 8
87-231-094-21	Q + 3 - 6
87-321-035-01	QT ₁ + 2 - 6
87-251-032-21	U + 2 - 3
87-251-070-21	U + 2.6 - 3
87-341-103-21	UT ₁ + 3 - 2.5
87-341-105-21	UT ₁ + 3 - 3 5
87-481-033-21	VS + 2 - 4
87-481-035-21	VS + 2 - 6
87-481-073-21	VS + 2.6 - 6
87-481-095-21	VS + 3 - 8
87-485-097-21	VS + 3 - 1 2
87-511-074-01	VFT ₁ + 2.6 - 8

Part No.	Description
87-512-073-21	VFT ₂ + 2.6 - 6
87-511-097-21	VFT ₂ + 3 - 1 2
87-450-414-01	LB - 4
87-392-003-01	NSP - 3
87-441-003-01	STE - 1 5
87-410-308-01	W 2.3 - 7 - 0.5
82-585-356-01	W 2.6 - 8 - 0.3
87-081-242-01	W 2.6 - 1 0 - 0.5
87-081-808-01	PW 1.7 - 3.5 - 0.2 5
87-081-978-01	PW 2.1 - 3.5 - 0.2 5
82-416-358-01	PW 2.5 - 6 - 0.2 5
87-081-976-01	PW 2.6 - 8 - 0.2 5
87-067-024-01	PW 4.2 - 1 0 - 0.1 3
82-585-394-01	PW 5.5 5 - 8.7 5 - 0.1 3

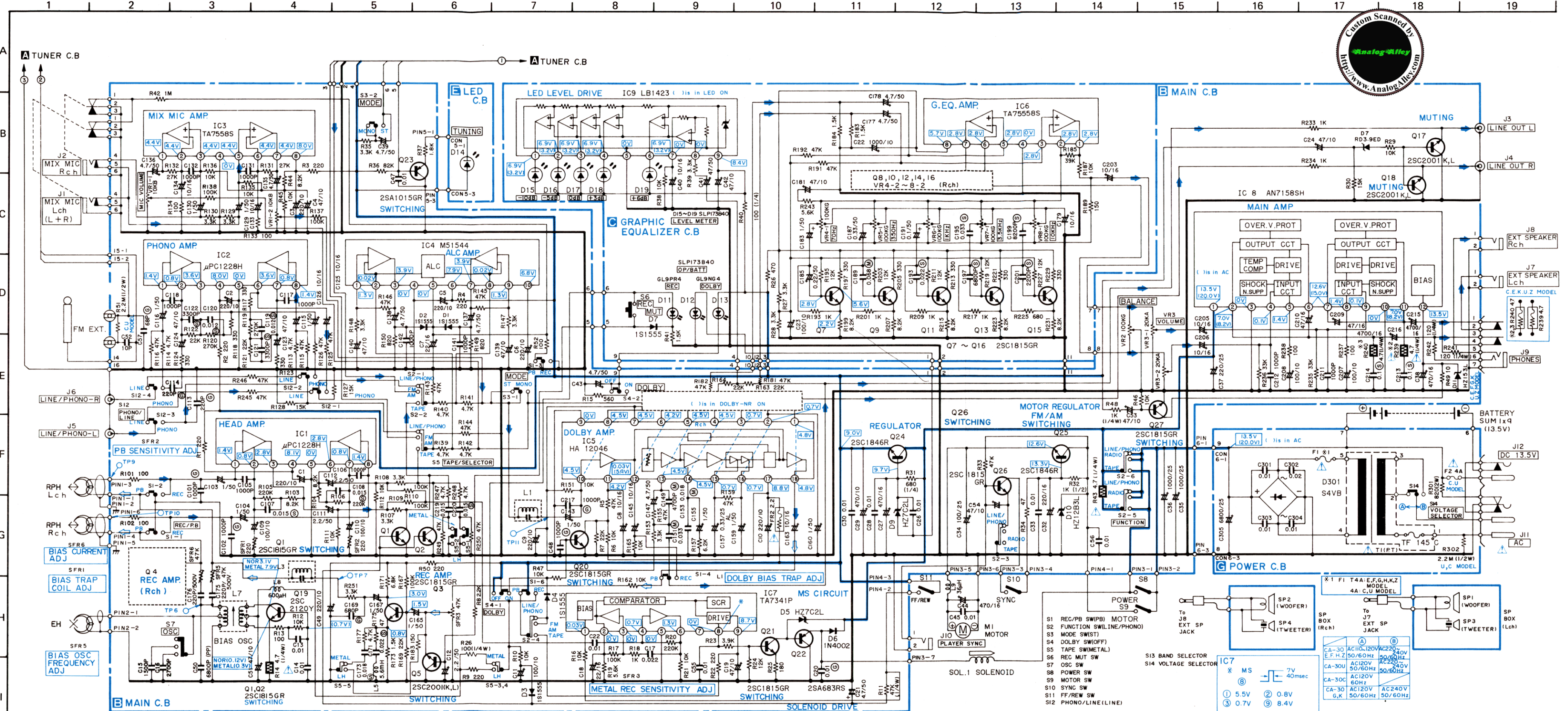
■ ACCESSORIES/PACKAGE LIST

Part No. Changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	1	★81-528-860	BOX, GIFT (HS, HUS, CS, US, ES, KS, GS, ZS, ZB only)	※	1	
	2	★81-528-862	BOX, GIFT (HJS, HJR, HJB, FJS only)	※	1	
	3	★81-528-904	BOOKLET, INSTRUCTION (HS, HJS, HJR, HJB, HUS, CS, US, GS, FJS only)	※	1	
	4	★81-528-905	BOOKLET, INSTRUCTION (ES, KS, ZS, ZB only)	※	1	

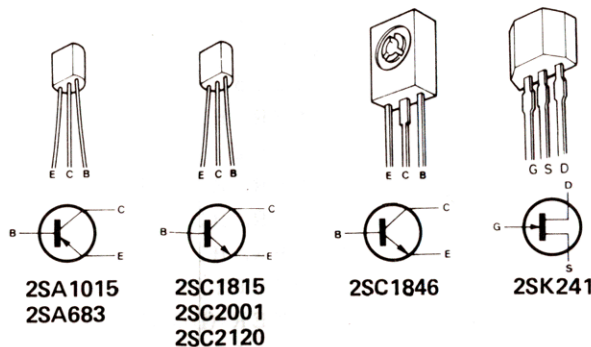
ELECTRICAL MAIN PARTS LIST

■ ★-mark means less required items and availabilities may be limited.

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
	87-027-851	AN7158	CFT1. 2	87-008-261	CERAMIC FILTER 10.7MA5-A (EXCEPT E, K, Z)	J1. 2	★87-049-369	JACK, 6.3φ [MIX MIC LEFT (L+R), MIX MIC RIGHT]	〈SUB CIRCUIT BOARD SECTION〉		
	87-027-953	HA12046	CFT1. 2	87-008-264	CERAMIC FILTER 10.7MS2-A (E, K, Z only)	J3. 4. 5. 6	★81-528-615	PIN JACK 4P (LINE OUT, LCH, RCH, LINE IN/PHONO LCH, RCH)	PCB-D	*	SUB CIRCUIT BOARD
	87-020-129	LB1423							D4	87-027-097	1S1555
	87-027-952	M51544	S13	87-031-821	ROTARY SWITCH (BAND SELECTOR)				LPF1	87-008-253	LOW-PASS FILTER
	87-027-863	TA75558S				J7. 8	★87-049-084	JACK, 3.5φ (EXT. SPEAKER LCH, RCH)	〈LED CIRCUIT BOARD SECTION〉		
	87-027-885	TA7341P	SFR1	87-021-741	SFR, 4.7KΩ-B	J9	★87-049-370	JACK, 6.3φ (PHONES)	PCB-E	*	LED CIRCUIT BOARD
	87-027-867	TA7343P			〈RESISTOR〉	J10	★87-032-892	JACK, 2.5φ (PLAYER SYNC)	D14	87-027-636	LED, TLR226 (TUNING)
	87-027-913	TA7640AP	ΔR25	87-029-102	47Ω 1/4W FUSE RESISTOR (U, C, E, K, Z only)	S1	81-528-611	SLIDE SWITCH (REC/PB)	〈CONNECT CIRCUIT BOARD SECTION〉		
	87-027-910	μPC1228H			〈CAPACITORS〉	S2	81-528-629	LEVER SWITCH (FUNCTION)	PCB-F	★ *	CONNECT CIRCUIT
	89-106-834	2SA683RS				S3. 4	87-031-789	PUSH SWITCH (MODE, DOLBY NR)	〈POWER CIRCUIT BOARD SECTION〉		
	89-110-155	2SA1015 (GR)	C 1. 3. 4. 10	87-018-047	0.01μF 50V CERAMIC				ΔPCB-G	*	POWER CIRCUIT BOARD
	89-318-155	2SC1815 (GR)	11. 12. 13.			S5	81-528-610	LEVER SWITCH (TAPE SELECTOR)	ΔT1	81-528-639	POWER TRANSFORMER
	89-318-464	2SC1846 (R)	14. 20. 21.			S7	87-031-819	SLIDE SWITCH (OSC)			(H, C, U, F only)
	89-320-011	2SC2001 (K, L)	26. 29. 43.			S12	87-031-820	SLIDE SWITCH (PHONO/LINE)	ΔT1	81-528-646	POWER TRANSFORMER
	89-321-204	2SC2120 (Y)	60			VR1	87-021-851	VOLUME, 10KΩ-B (MIC VOLUME)			(E, K, G, Z only)
	89-502-414	2SK241Y	C2	87-018-016	22pF 50V CERAMIC (F only)				D301	87-027-609	BRIDGE, 4VB
〈TUNER CIRCUIT BOARD SECTION〉			C2	87-018-015	20pF 50V CERAMIC (EXCEPT F)	VR2	82-664-614	VOLUME, 100KΩ-G (BALANCE)	ΔF1. 2	87-035-303	FUSE, 4A (UL) (C, U only)
PCB-A	81-561-651	TUNER CIRCUIT BOARD	C5	88-254-120	12pF CERAMIC (EXCEPT F)	VR3	87-021-850	VOLUME, 20KΩ-A (VOLUME)	ΔF1	87-035-192	FUSE, "T" 4A (EXCEPT U, C)
D1	87-017-004	SD-117	C7	87-018-055	12pF CERAMIC	SFR1. 2	87-021-849	SFR, 220Ω-B	Δ	★87-033-147	FUSE CLAMP
D2	87-027-332	ZENER, HZ6B1L	C17	87-012-105	0.022μF CERAMIC	SFR3. 4. 5	87-021-781	SFR, 47Ω-B	ΔJ11. 12	★87-032-929	JACK AC-DC (ACJACK, DC135V) (H, U, F only)
D3	87-027-097	1S1555	C24	87-018-036	220pF CERAMIC				ΔJ11. 12	★87-049-023	JACK AC-DC (ACJACK, DC135V) (C only)
L1	87-006-062	FM RF COIL-H	C40	87-015-695	1μF 50V ELECTOLYTIC		★81-528-614	TERMINAL ANTENNA (FM300Ω, GND) (EXCEPT Z)	ΔJ11. 12	★87-032-958	JACK AC-DC (ACJACK, DC135V) (E, K, G, Z only)
L2	87-007-132	FM OSC COIL (EXCEPT F)	C48	87-018-014	18pF 50V CERAMIC (E, K, Z only)			TERMINAL ANTENNA (GND) (Z only)	ΔS14	★87-031-780	SILDE SWITCH (VOLTAGE SELECTOR)
L2	87-007-138	FM OSC COIL (F only)						〈RESISTORS〉			〈RESISTOR〉
L5. 12	87-005-151	COIL, 2.2μH	C49	87-018-047	0.01μF CERAMIC (F only)	ΔFR2	87-029-090	22Ω 1/4W FUSE RESISTOR	ΔR301	87-025-336	820Ω 2W
L6	87-006-063	SW ANTENNA-H (EXCEPT E, K, Z)	C50	87-018-044	1000pF 50V CERAMIC (E, K, Z only)	R14. 43	87-025-313	4.7Ω 1/4W NONFLAMMABLE (H, G, F only)			〈CAPACITOR〉
L6	87-006-064	SW ANTENNA-E (E, K, Z only)	C52	87-018-017	24pF 50V CERAMIC (E, K, Z only)	239. 240		4.7Ω 1/4W FUSE RESISTOR (C, U, E, K, Z only)	C305	87-010-121	6800μF 25V ELECTROLYTIC
L7. 8	81-528-644	MW-SW BAR ANTENNA (EXCEPT E, K, Z)	C52	87-018-008	8.2pF 50V CERAMIC (EXCEPT E, K, Z)	ΔR239. 240	87-029-089	4.7Ω 1/4W FUSE RESISTOR (C, U, E, K, Z only)	〈MISCELLANEOUS〉		
L7. 8	81-528-646	LW-MW BAR ANTENNA (E, K, Z only)	C53	87-018-006	5.6pF 50V CERAMIC (F only)			〈CAPACITORS〉	SP1. 2	81-528-630	SPEAKER (WOOFER)
L9	87-007-125	SW2 OSC COIL (EXCEPT E, K, Z)	C55	87-018-091	56pF 50V CERAMIC (E, K, Z only)	C20	87-018-047	0.01μF CERAMIC	SP3. 4	81-528-618	SPEAKER (TWEETER)
L9	87-007-127	SW OSC COIL (E, K, Z only)				C48. 101. 102	87-018-044	0.001μF CERAMIC	M1	87-045-219	MOTOR
L10	87-007-124	SW1 OSC COIL (EXCEPT E, K, Z)	C56	87-018-082	15pF 50V CERAMIC	106. 141. 142. 217. 218			RPH	87-046-239	REC/PB HEAD
L10	87-007-123	MW OSC COIL (E, K, Z only)	C57	87-018-081	12pF 50V CERAMIC (F only)				EH	87-046-240	ERASE HEAD
L11	87-007-123	MW OSC COIL (EXCEPT E, K, Z)	C57	87-018-080	10pF CERAMIC (EXCEPT E, K, Z, F)	C50	87-014-077	6800pF PP	S8	87-031-537	MICRO SWITCH (POWER)
L11	87-007-126	LW OSC COIL (E, K, Z only)	C58	87-014-033	100pF PP (E, K, Z only)	C57	87-018-028	68pF CERAMIC (EXCEPT H, G)	S9. 10	87-031-548	LEAF SWITCH (MOTOR, SYNC)
L13	81-528-797	FM AIR COIL 6T (E, K, Z, F only)	C59	87-018-094	1500pF 50V CERAMIC (EXCEPT E, K, Z)	C157. 158	87-015-429	0.33μF 25V ALUMINUM SOLID	S11	87-031-649	LEAF SWITCH (FF/REW)
						C169. 170	87-018-042	680pF CERAMIC	L9	87-003-065	CHOKE COIL, 36μH
VC1 ~4			C61	87-018-032	100pF 50V CERAMIC	C215. 216	87-010-124	4700μF 16V ELECTROLYTIC	SOL1	★82-585-601	SOLENOID
TC1 ~4			〈MAIN CIRCUIT BOARD SECTION〉			〈GRAPHIC EQUALIZER CIRCUIT BOARD SECTION〉			Note; Combination Circuit Board		
VC1 ~4			PCB-B	*	MAIN CIRCUIT BOARD	PCB-C	*	GRAPHIC EQUALIZER	The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.		
TC1 ~4			D1. 2. 3. 4	87-027-097	1S1555			CIRCUIT BOARD	Combination circuit board A		
TC5	87-011-146	TRIMMER, 7pF	D5. 9	87-027-606	ZENER, HZ7C-2L	D7	87-027-097	1S1555	81-528-631 (EXCEPT C,U)		
TC6. 7. 8	87-011-147	TRIMMER, 11pF (EXCEPT E, K, Z, F)	D6	82-596-799	1N4002	D11	87-027-772	LED, GL9PR4 (REC MUTE)	Combination circuit board B		
			D7	87-027-211	ZENER, RD3.9EB	D12. 15. 16	87-020-158	LED, SLP-173B-40 (OPERATE/BATT..-10dB, -5dB, 0dB, +3dB, +6dB)	81-528-651 (C,U only)		
TC6. 8	87-011-148	TRIMMER, 30pF (E, K, Z, F only)	D10	87-027-676	ZENER, HZ12B-3L	17. 18. 19		LED, GL-9NG4 (DOLBY NR)	PCB-B	81-528-632	PCB-B 81-528-652
TC7	87-011-147	TRIMMER, 11pF (E, K, Z only)	D11	87-027-449	ZENER, HZ15-3L (EXCEPT H)			SLIDE VOLUME, 100KΩ-G (70HZ, 350HZ, 1KHZ, 3.5KHZ, 10KHZ)	PCB-C	81-528-633	PCB-C 81-528-653
IFT1	87-008-258	FM IFT				D13	87-027-773		PCB-D	81-528-637	PCB-D 81-528-657
IFT2	87-008-259	FM IFT (QUAD)	L1. 2. 3. 4	81-511-628	FILTER (DOLBY)	VR4. 5. 6. 7	87-021-852		PCB-E	81-528-636	PCB-E 81-528-656
IFT3	87-008-256	AM IFT (DET)	L5. 6	87-003-070	COIL, 5.6mH	8			PCB-F	81-528-635	PCB-F 81-528-655
BPF1	87-030-082	BAND PASS FILTER	L7	81-528-613	BIAS OSC COIL				PCB-G	81-528-634	PCB-G 81-528-654
CFT1	87-008-260	CERAMIC FILTER TRANSFORMER 468PS	L8	82-401-661	COIL, 600μH	S6	87-031-771	TACT SWITCH (REC MUTE)			



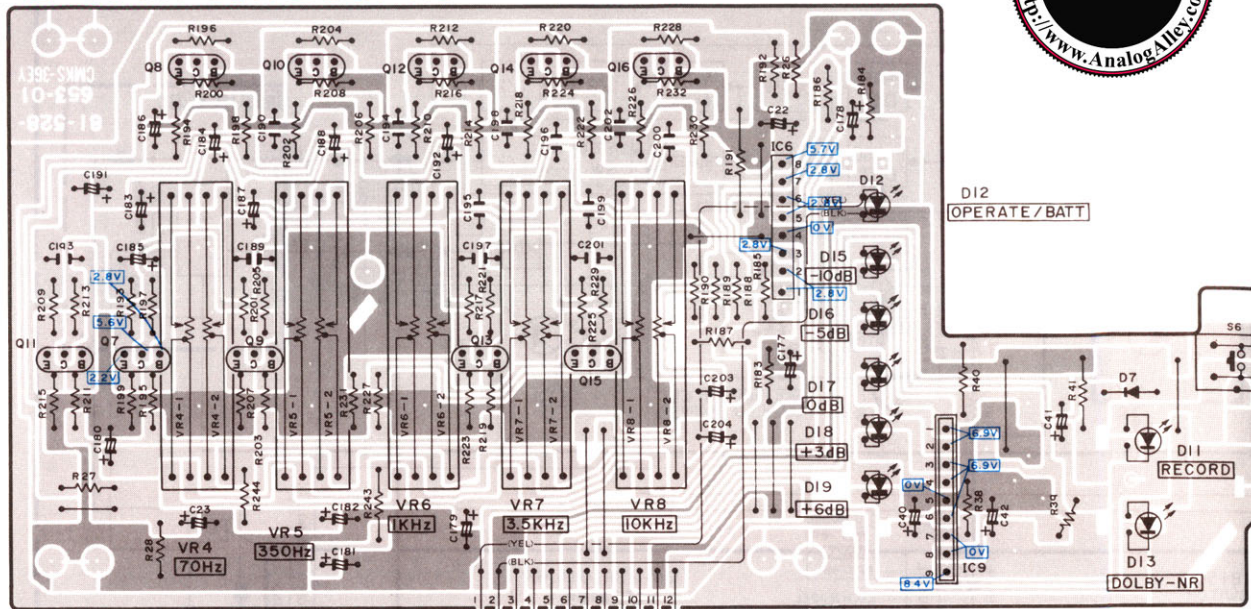
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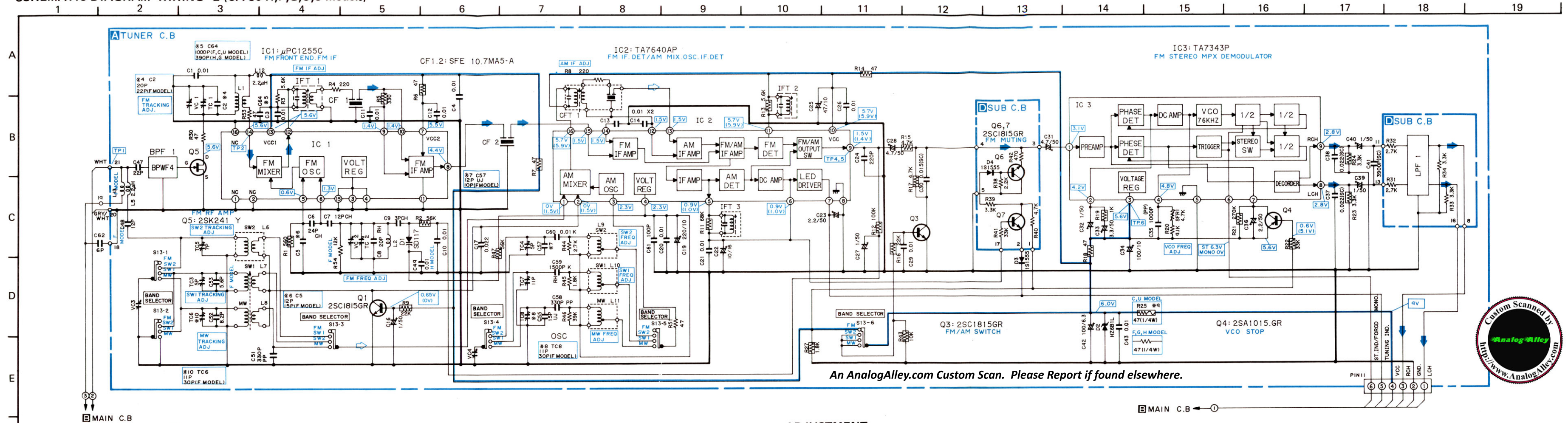


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GRAPHIC EQUALIZER C.B

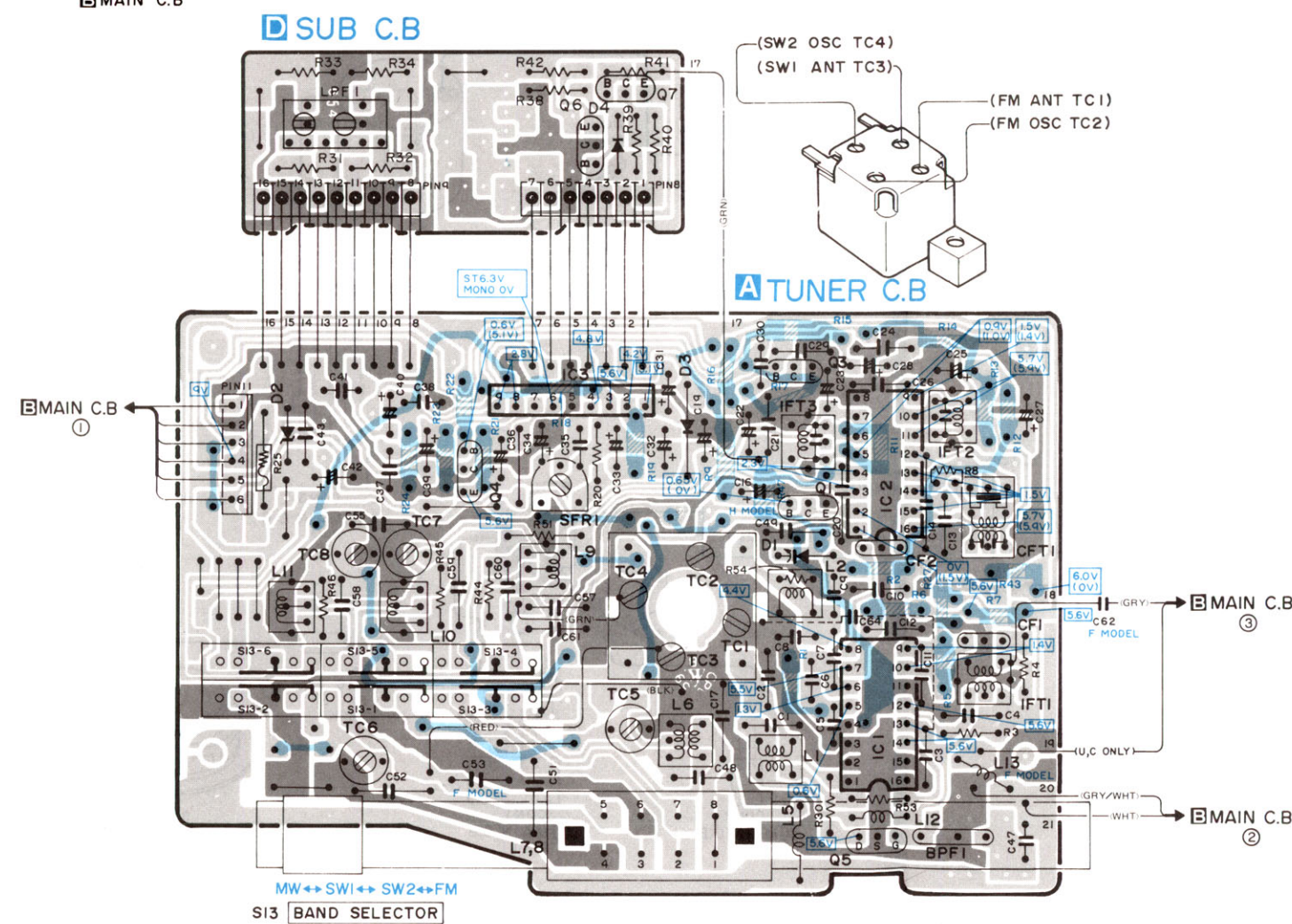




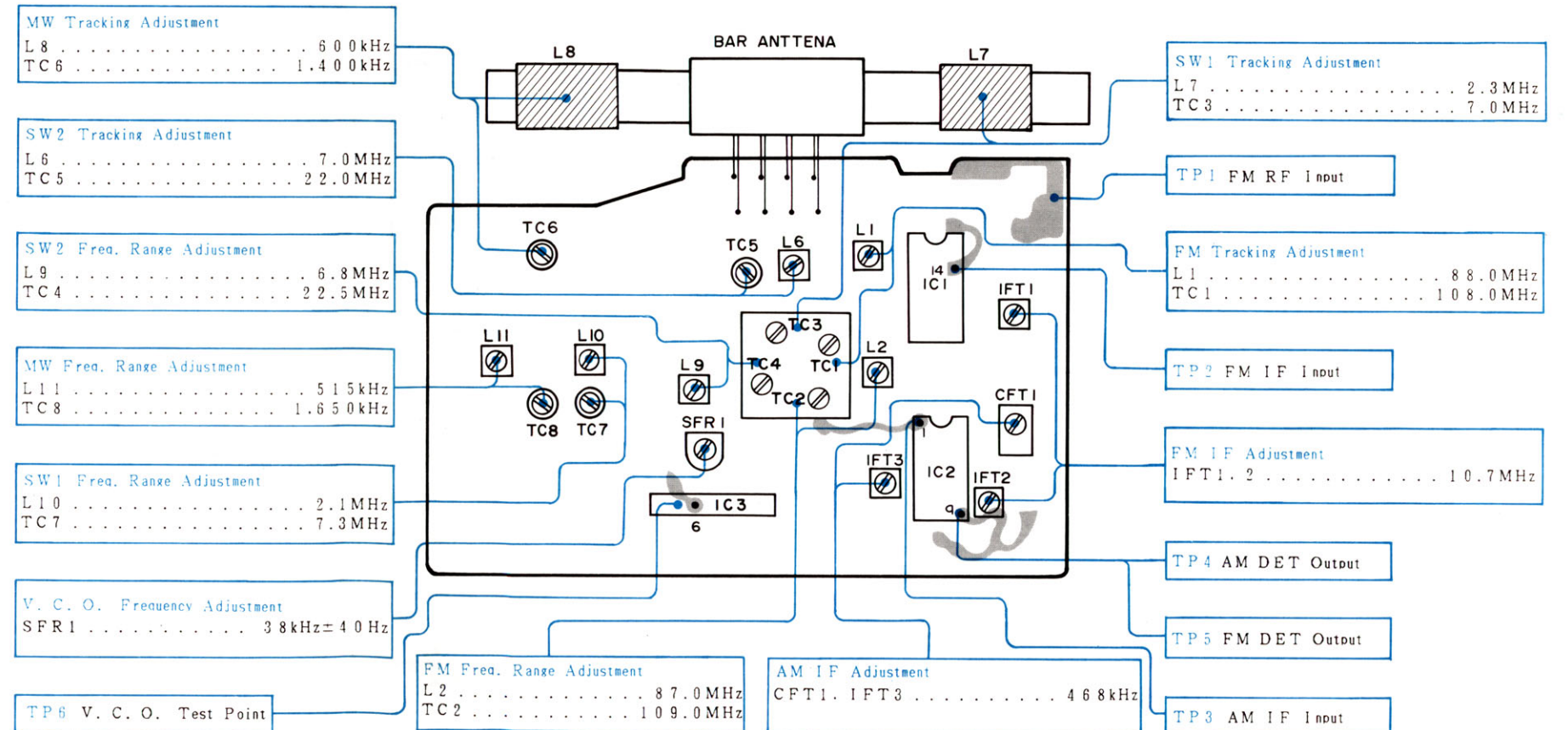
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MAIN C.B. ← ①

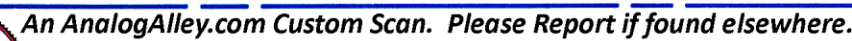


ADJUSTMENT



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.



MW Tracking Adjustment	
L7	60.0 kHz
TC3	1.400 kHz

SW Tracking Adjustment	
L6	5.9 MHz
TC5	18.0 MHz

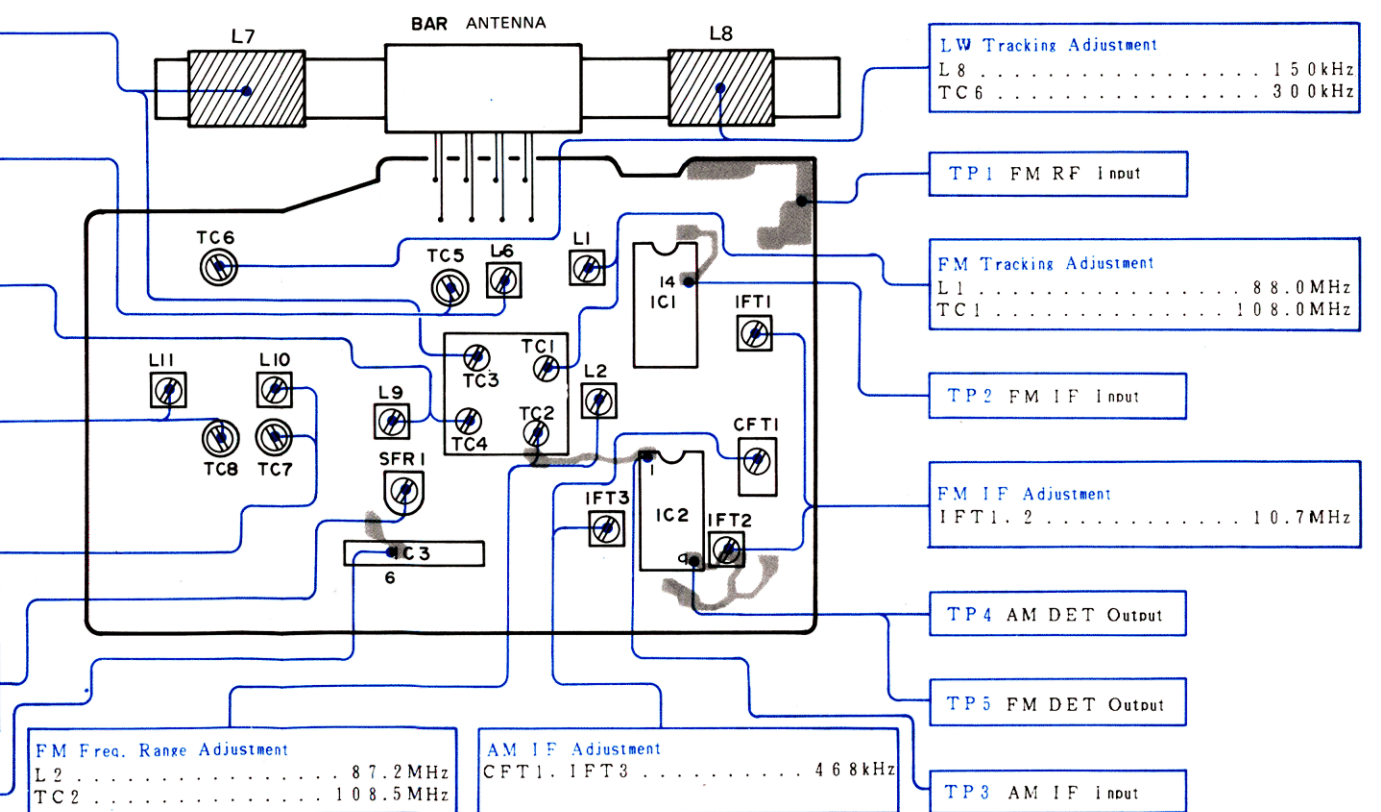
SW Freq. Range Adjustment	
L9	5.8 MHz
TC4	18.5 MHz




LW Freq. Range Adjustment	
L11	14.5 kHz
TC8	32.0 kHz

MW Freq. Range Adjustment	
L10	5.15 kHz
TC7	1.650 kHz

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

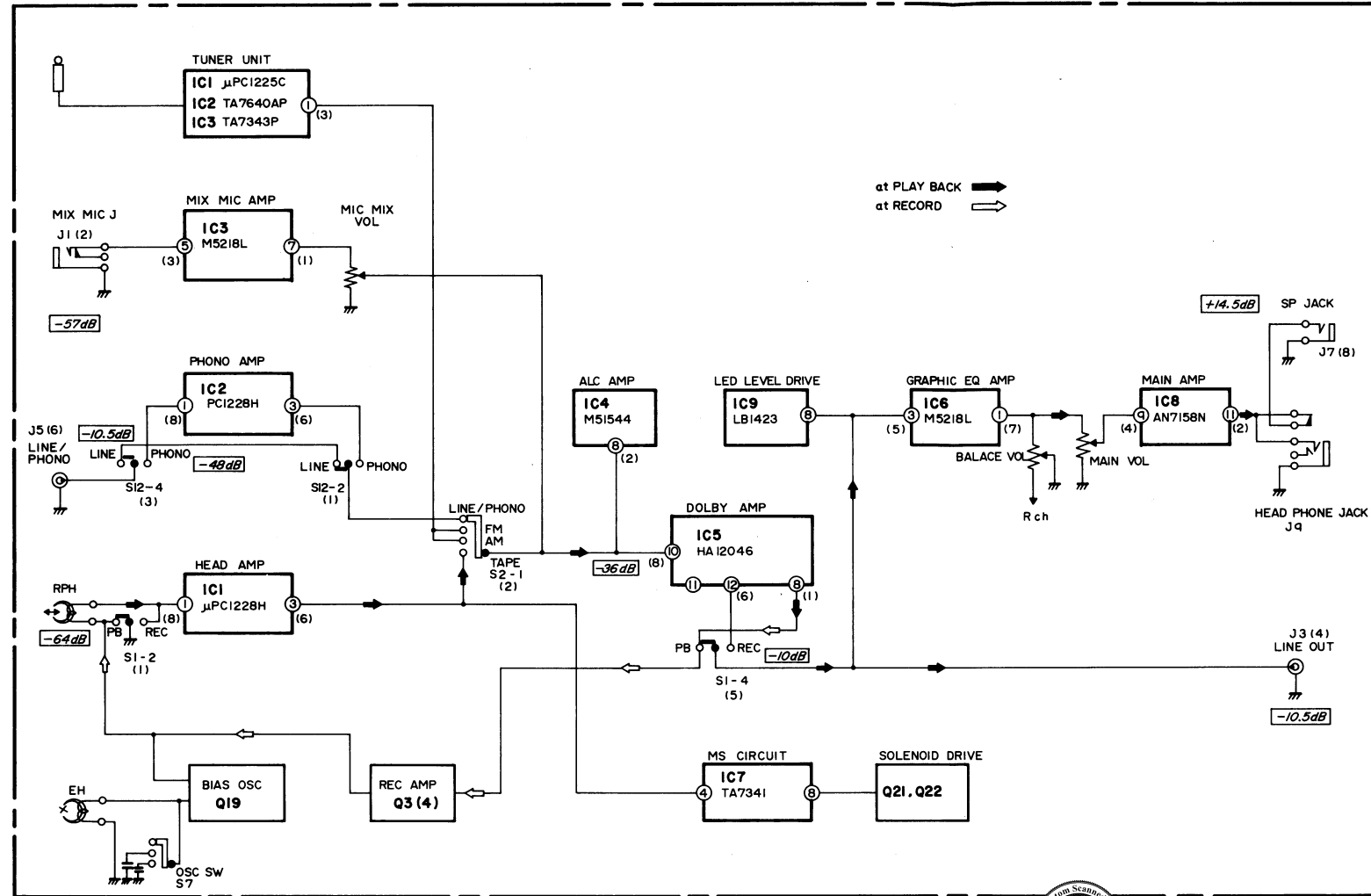
TP6	V. C. O. Test Point
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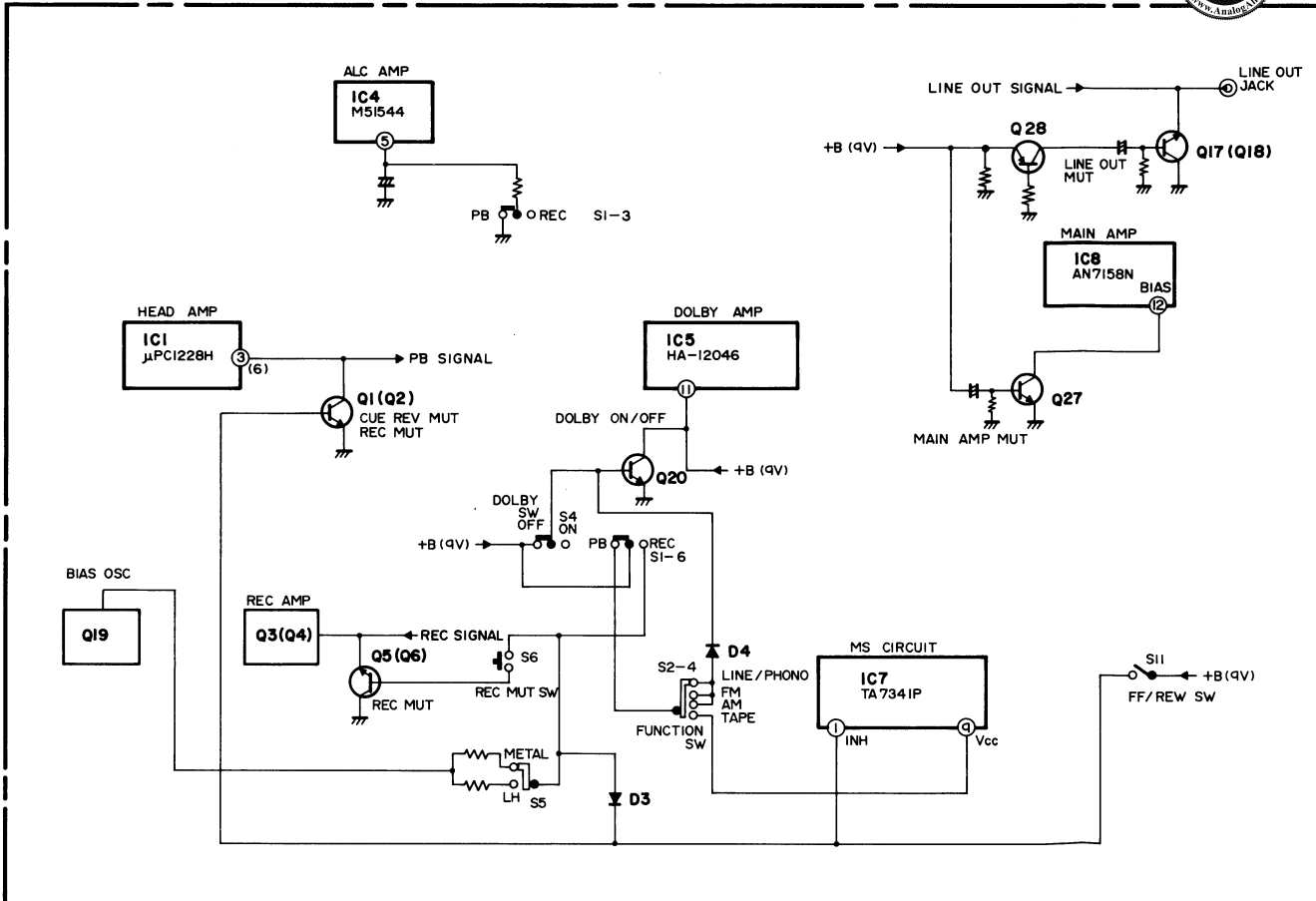
- NOTES** (1)  Earth pattern  Printed resistor pattern  Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.
But () is with AM reception.

BLOCK DIAGRAM (CA-30)

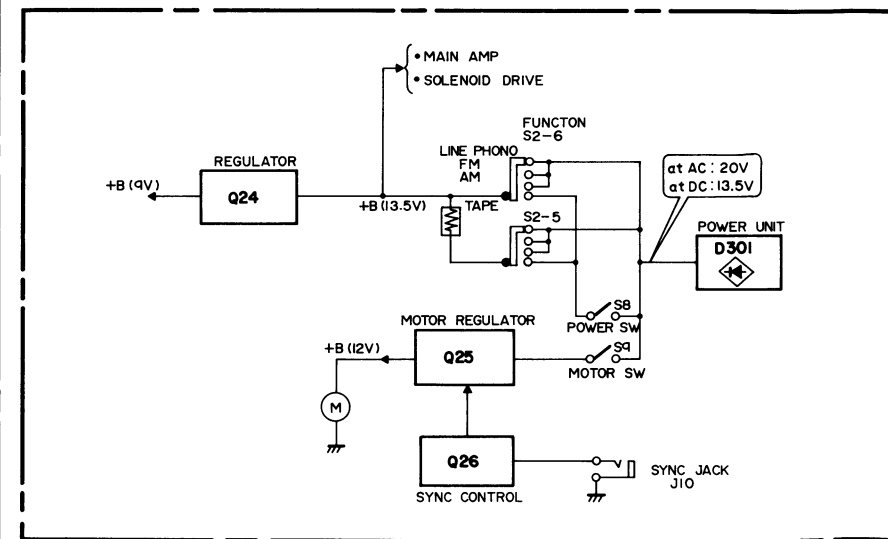
•Signal section



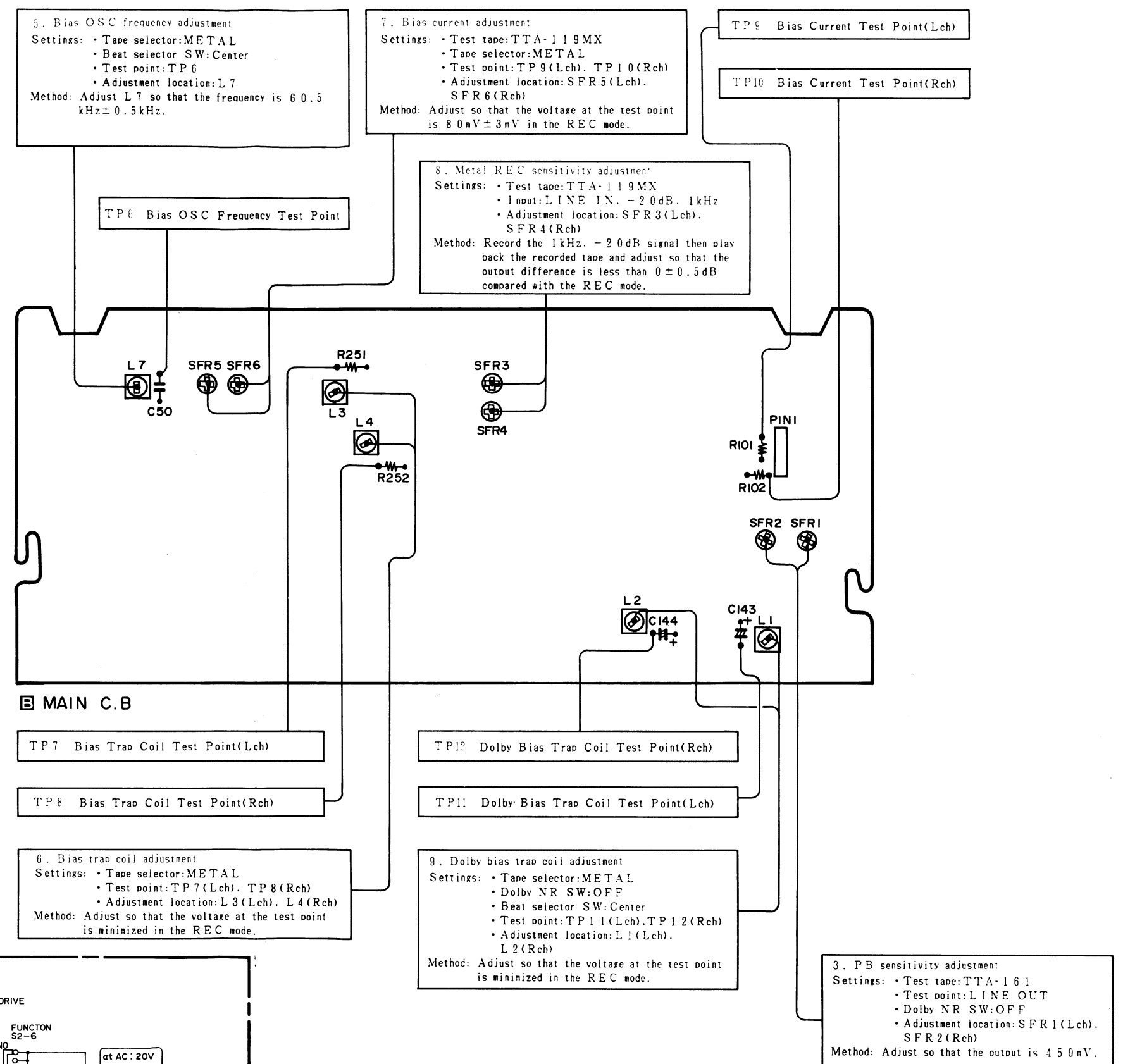
•Control section



•Power section



ADJUSTMENT



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