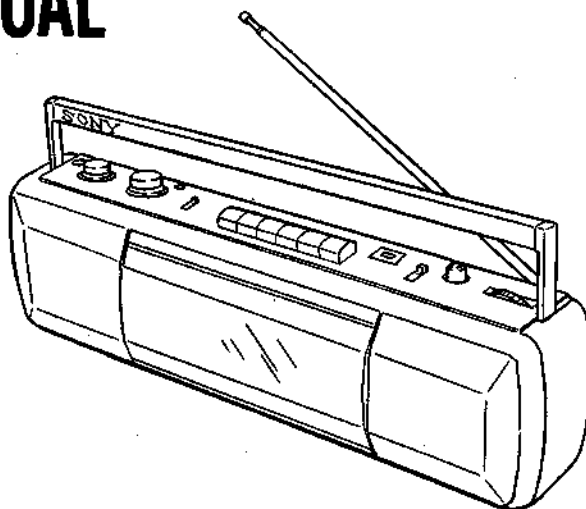


CFS-210L

SERVICE MANUAL

AEP Model
UK Model



SPECIFICATIONS

Frequency range

	FM	MW	LW	SW
Europe, United Kingdom	87.5—107 MHz	530—1605 kHz	150—265 kHz	5.95—18 MHz

Antennas	FM/SW: Telescopic antenna MW/LW: Built-in ferrite bar antenna
Recording system	4-track 2-channel stereo
Frequency response	80—8,000 Hz
Speakers	Full-range: 10cm (4 inches) dia. x 2
Power output	Peak music power output: 12W (6W + 6W) Maximum power output: 5W (2.5W + 2.5W)
Outputs	Headphones jack (stereo minijack) for 8—300 ohm impedance headphones
Power requirements	9V DC, six R20P (size D) batteries

AEP model	220V AC, 50Hz
UK model	240V AC, 50Hz

Power consumption

AEP model	12W
UK model	18W

Battery life

Batteries	FM continuous recording
Sony SUM-1 (NS)	17 hours
Sony AM-1 (N) alkaline	30 hours

Dimensions


Approx. 420 × 143.5 × 130mm (w/h/d)
(16¹/₄ × 5¹/₂ × 5¹/₄ inches)
incl. projecting parts and controls

Weight

Approx. 2.8kg (6 lb 3 oz) incl. batteries

Model Name Using Similar Mechanism	CFS-240L
Tape Transport Mechanism Type	MF-210-75D

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

FM/MW/LW/SW
STEREO CASSETTE-CORDER
SONY®



TABLE OF CONTENTS

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Section 4. Electrical Parts List		18

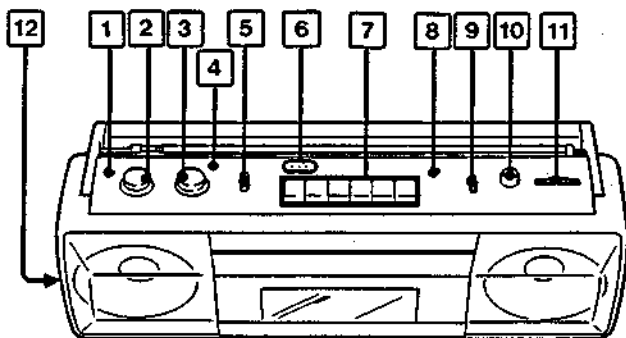
SERVICING NOTE

● Repairing printed resistor

Cut both sides of the resistor and solder the carbon resistor having same value in place of printed one of the conductor side.

1/6W carbon resistor is supplied for the replacing part of the printed resistor.

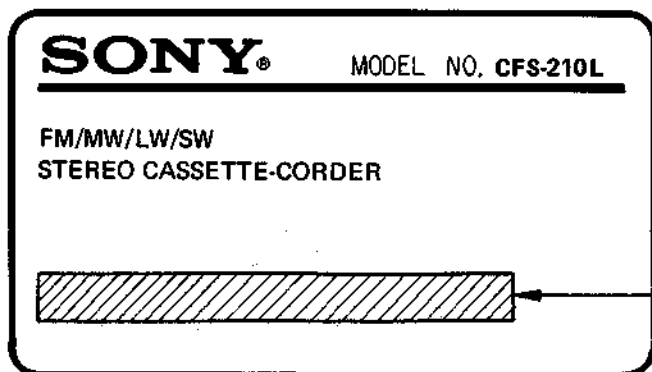
PARTS IDENTIFICATION



- 1 PHONES (headphones) jack
- 2 VOLUME control
- 3 TONE control
- 4 OPR/BATT (operation/battery check) indicator
When it glows faintly during battery operation, replace all the batteries with new ones.
- 5 FUNCTION (RADIO/TAPE) selector
- 6 MIC (built-in)
- 7 Tape operation buttons
 - ⏸ PAUSE
 - ⏩ FF (fast forward)/CUE
 - ⏪ REW (rewind)/REVIEW
 - ▶ PLAY (playback)
 - REC (record)
 - ▲ STOP/EJECT
- 8 MONO/STEREO selector
During FM reception, normally set to STEREO.
When noise makes it hard to hear the broadcast, set to MONO.
- 9 BAND selector
- 10 FINE TUNING knob
- 11 TUNING knob
- 12 AC IN socket

— MODEL IDENTIFICATION —

(Specification Label)



AEP model: 220V 50Hz 12W
UK model: 240V 50Hz 18W

CFS-210L

SONY SERVICE MANUAL

AEP Model
UK Model

SUPPLEMENT-2

File this supplement with the Service Manual.

Subject : Color addition

Special red, special white, special black, and gun black types are added in West Germany and Spanish models.

- Distinction between former types and new types.

Color type	Color of cassette window (*1 on Fig. 1)
RED WHITE BLACK	SILVER
SPECIAL RED SPECIAL WHITE SPECIAL BLACK GUN BLACK	BLACK

- Distinction between special black type and gun black type.

Color type	Color of front cabinet (*2 on Fig. 1)
SPECIAL BLACK GUN BLACK	BLACK WITH SATIN BLACK WITHOUT SATIN

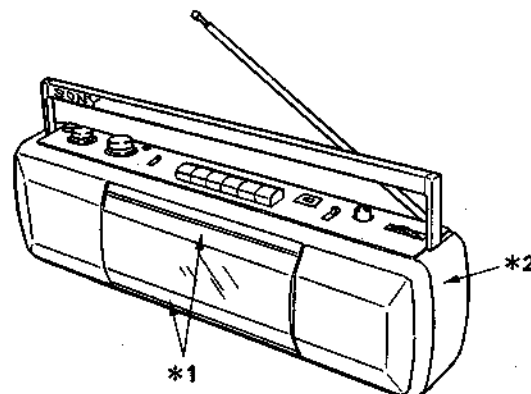


Fig. 1

● Add the following parts in the Service Manual.

No.	Part No.	Description	No.	Part No.	Description
1	3-338-526-11	(SPECIAL RED, SPECIAL WHITE, SPECIAL BLACK, GUN BLACK) ...GRILLE (RIGHT), SP	14	3-338-515-01	(SPECIAL RED, SPECIAL WHITE) ...BUTTON (A), REC
3	X-3338-545-1	(SPECIAL WHITE) ...HOLDER ASSY, CASSETTE		3-338-515-11	(SPECIAL BLACK, GUN BLACK) ...BUTTON (A), REC
	X-3338-546-1	(SPECIAL RED) ...HOLDER ASSY, CASSETTE	15	3-338-514-01	(SPECIAL RED, SPECIAL WHITE) ...BUTTON (A), STOP
	X-3338-547-1	(SPECIAL BLACK) ...HOLDER ASSY, CASSETTE		3-338-514-11	(SPECIAL BLACK, GUN BLACK) ...BUTTON (A), STOP
	X-3338-548-1	(GUN BLACK) ...HOLDER ASSY, CASSETTE	18	3-338-521-01	(SPECIAL RED, SPECIAL WHITE) ...KNOB, TUNING
4	3-338-527-11	(SPECIAL RED, SPECIAL WHITE, SPECIAL BLACK, GUN BLACK) ...GRILLE (LEFT), SP		3-338-521-21	(SPECIAL BLACK, GUN BLACK) ...KNOB, TUNING
5	X-3338-549-1	(SPECIAL WHITE) ...CABINET ASSY, FRONT	19	3-338-524-01	(SPECIAL RED, SPECIAL WHITE) ...PLATE, SIDE, HANDLE
	X-3338-552-1	(SPECIAL RED) ...CABINET ASSY, FRONT		3-338-524-11	(SPECIAL BLACK, GUN BLACK) ...PLATE, SIDE, HANDLE
	X-3338-550-1	(SPECIAL BLACK) ...CABINET ASSY, FRONT	20	3-338-525-21	(SPECIAL BLACK, GUN BLACK) ...HANDLE
	X-3338-551-1	(GUN BLACK) ...CABINET ASSY, FRONT		3-338-525-41	(SPECIAL WHITE) ...HANDLE
				3-338-525-51	(SPECIAL RED) ...HANDLE
6	3-338-522-01	(SPECIAL RED, SPECIAL WHITE) ...KNOB, VOL	21	3-338-532-01	(SPECIAL WHITE) ...LID, BATTERY CASE
	3-338-522-11	(SPECIAL BLACK, GUN BLACK) ...KNOB, VOL		3-338-532-11	(SPECIAL RED) ...LID, BATTERY CASE
7	3-338-501-01	(SPECIAL RED, SPECIAL WHITE) ...KNOB, FINE TUNE		3-338-532-21	(SPECIAL BLACK, GUN BLACK) ...LID, BATTERY CASE
	3-338-501-21	(SPECIAL BLACK, GUN BLACK) ...KNOB, FINE TUNE	57	3-338-520-01	(SPECIAL RED, SPECIAL WHITE) ...KNOB, FUNCTION
10	3-338-519-01	(SPECIAL RED, SPECIAL WHITE) ...BUTTON (A), PAUSE		3-338-520-11	(SPECIAL BLACK, GUN BLACK) ...KNOB, FUNCTION
	3-338-519-11	(SPECIAL BLACK, GUN BLACK) ...BUTTON (A), PAUSE	62	3-338-553-52	(SPECIAL WHITE) ...CABINET (REAR)
11	3-338-516-01	(SPECIAL RED, SPECIAL WHITE) ...BUTTON (A), FF		3-338-553-62	(SPECIAL RED) ...CABINET (REAR)
	3-338-516-11	(SPECIAL BLACK, GUN BLACK) ...BUTTON (A), FF		3-338-553-72	(SPECIAL BLACK, GUN BLACK) ...CABINET (REAR)
12	3-338-517-01	(SPECIAL RED, SPECIAL WHITE) ...BUTTON (A), REW	<u>ACCESSORY & PACKING MATERIAL</u>		
	3-338-517-11	(SPECIAL BLACK, GUN BLACK) ...BUTTON (A), REW	3-338-588-01	(West Germany, Spanish) ...INDIVIDUAL CARTON	
13	3-338-518-01	(SPECIAL RED, SPECIAL WHITE) ...BUTTON (A), PLAY	3-765-875-61	(West Germany, Spanish) ...MANUAL, INSTRUCTION	
	3-338-518-11	(SPECIAL BLACK, GUN BLACK) ...BUTTON (A), PLAY	3-765-875-71	(West Germany, Spanish) ...MANUAL, INSTRUCTION	

SECTION 1 ADJUSTMENTS

1-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
6. The adjustments should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

Torque Measurement

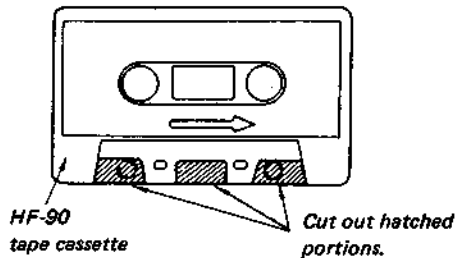
Torque	Torque meter	Meter reading
Forward	CQ-102C	25–50 g·cm (0.35–0.69oz·inch)
Fast Forward, Rewind	CQ-201B	65–110 g·cm (0.9–1.53oz·inch)
Back Tension	CQ-102C	2–6 g·cm (0.03–0.07oz·inch)

Tape Pulling Force Measurement

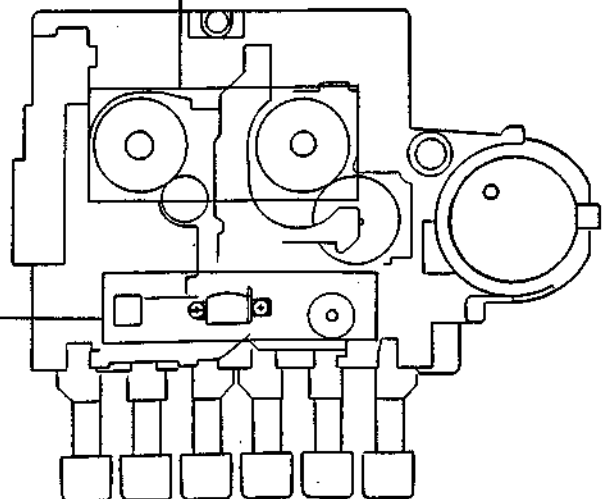
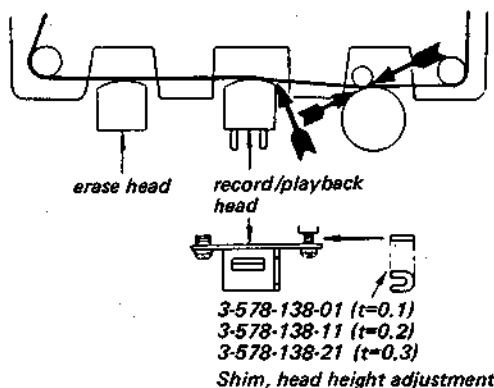
Meter	Meter reading
CQ-403	more than 170 g (more than 5.99 oz)

Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at the portions shown by arrow.



1-2. TAPE RECORDER SECTION ELECTRICAL ADJUSTMENTS

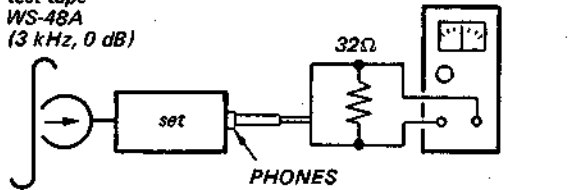
Tape Speed Adjustment

Setting:

FUNCTION switch: TAPE
Mode: playback

Procedure:

test tape
WS-48A
(3 kHz, 0 dB)

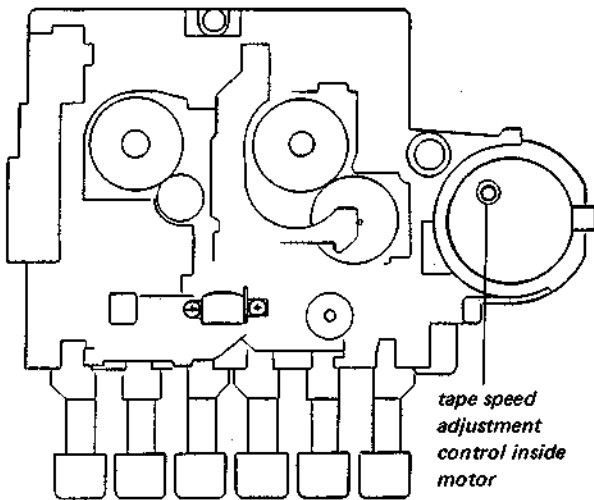


speed checker
LFM-30
or
digital frequency
counter

Specification:

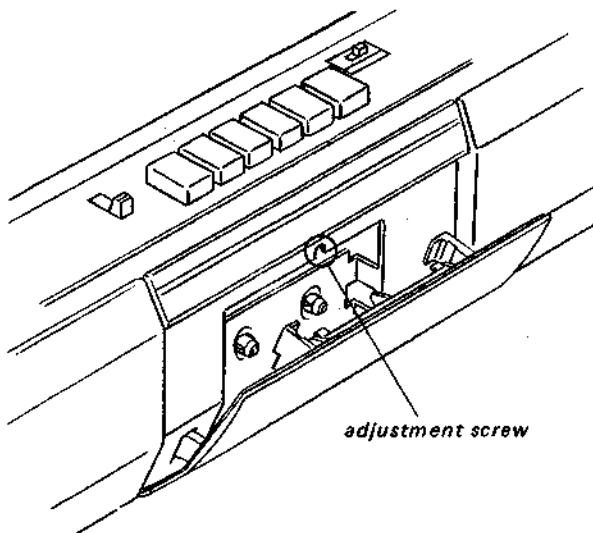
Speed checker	Digital frequency counter
-3 to +3%	2,910 to 3,090Hz

Frequency difference between the beginning and the end of the tape should be within 1% (30 Hz).



tape speed
adjustment
control inside
motor

Adjustment Location:



adjustment screw

Record/Playback Head Azimuth Adjustment

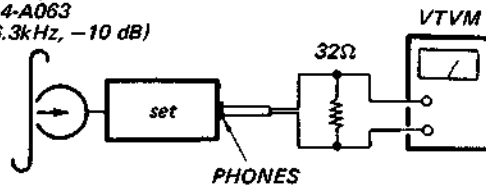
Setting:

FUNCTION switch: TAPE

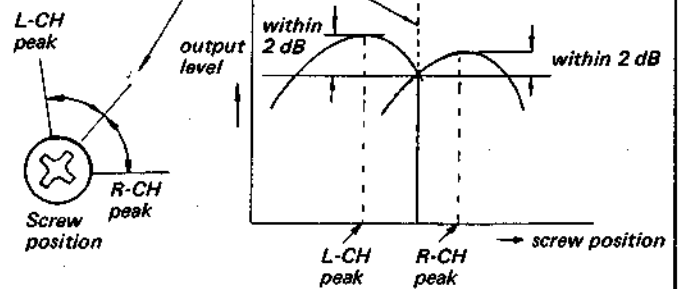
Procedure:

1. Mode: playback

test tape
P-4-A063
(6.3kHz, -10 dB)



2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 2 dB of peak.

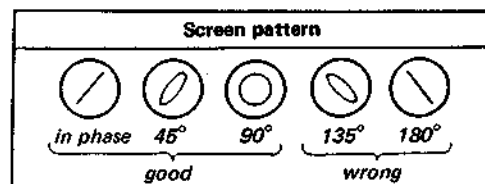
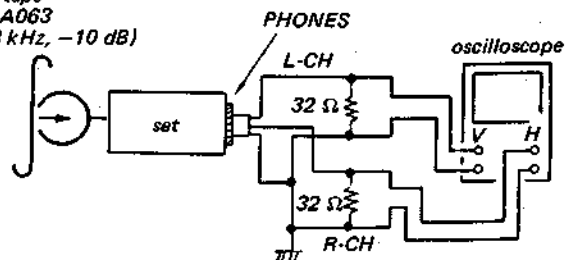


Note: Finish the screw adjustment with a turn in the clockwise direction.
After the adjustment, lock the adjustment screw.

3. Phase Check

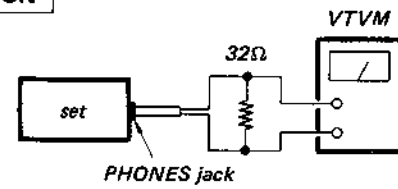
Mode: playback

test tape
P-4-A063
(6.3 kHz, -10 dB)

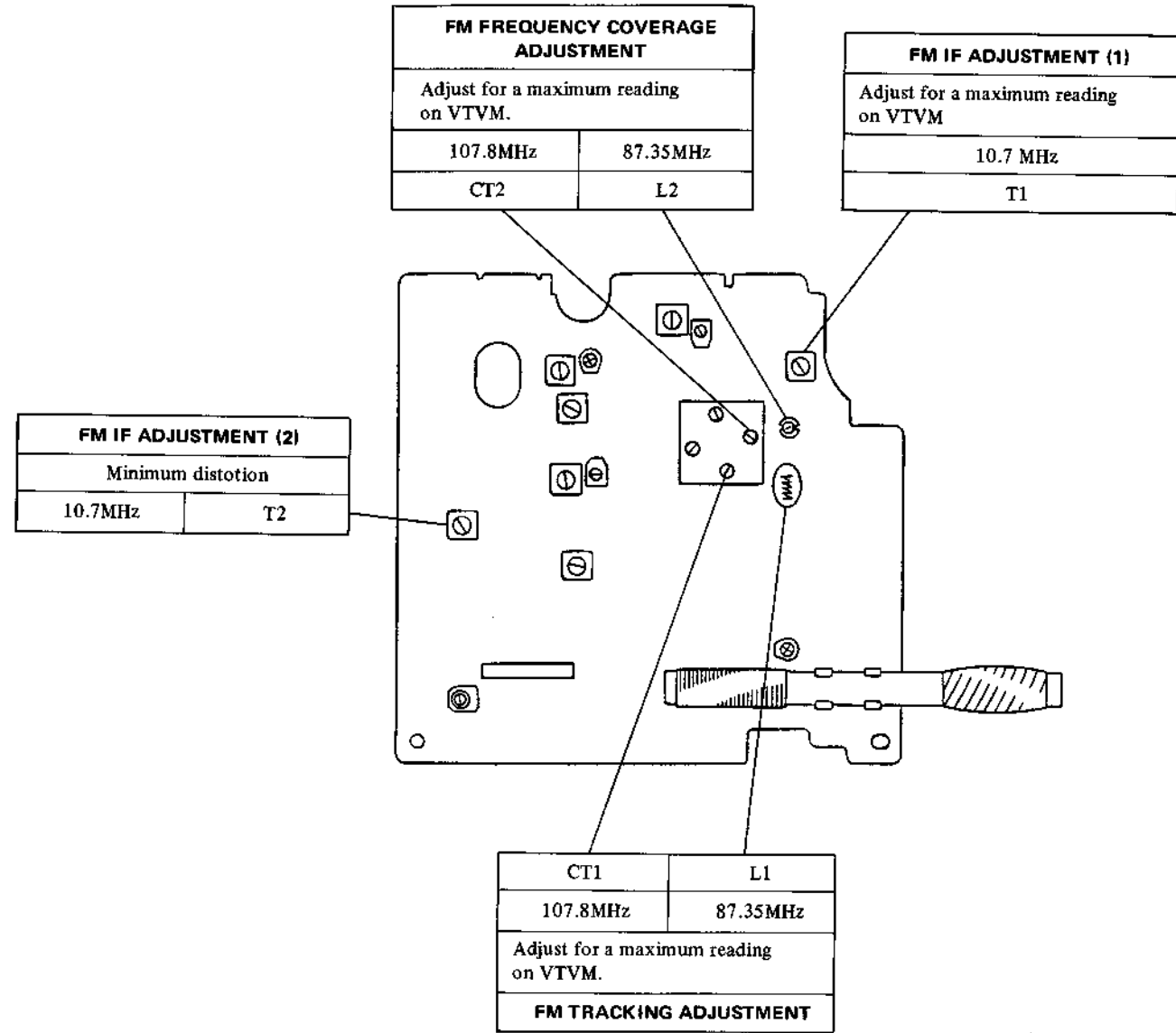
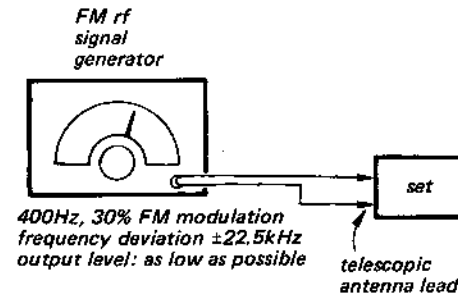


1-3. RADIO SECTION
ELECTRICAL ADJUSTMENTS

FM SECTION



• Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.



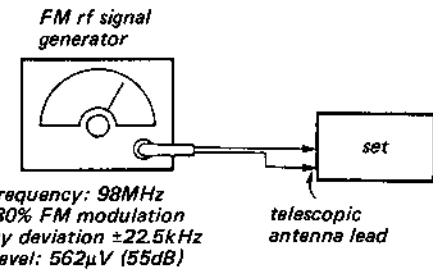
• FM tracking adjustment should be made after FM IF alignment.

VCO Adjustment

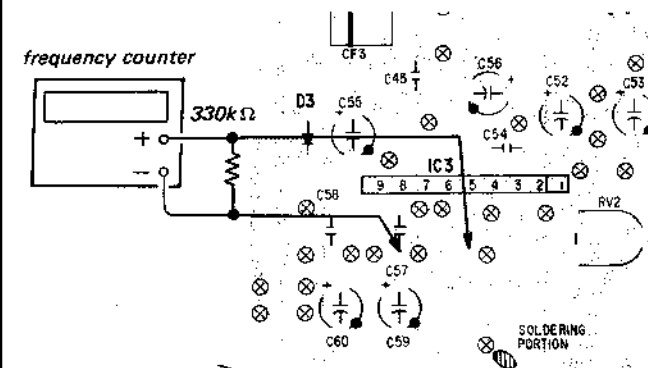
Setting:
FM MONO/ST switch: FM ST

A) Regular Method

Procedure:



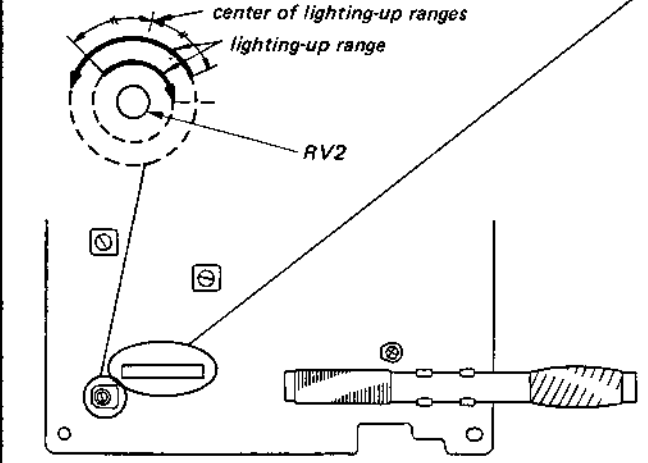
1. Connect frequency counter to it as shown below.
2. Tune the set to 98MHz.
3. Adjust RV1 for 38kHz ± 0.1kHz reading on the frequency counter.



B) Simple Method

Procedure:

1. Tune the set to the FM stereo broadcasting signal.
2. Turn RV1 clockwise or counterclockwise and memorize the lighting-up range of the FM STEREO lamp.
3. Secure RV1 at the center of the lighting-up range of both turns as shown below.



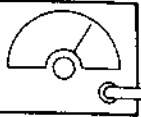
MW/LW/SW SEC

MW/LW

Setting:

FUNCTION sw
BAND switch:

AM rf signal generator



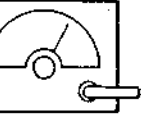
30% amplitude modulation by 400Hz signal

SW

Setting:

FUNCTION sw
BAND switch:

AM rf signal generator

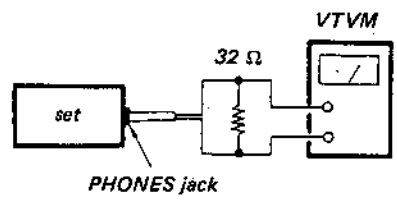
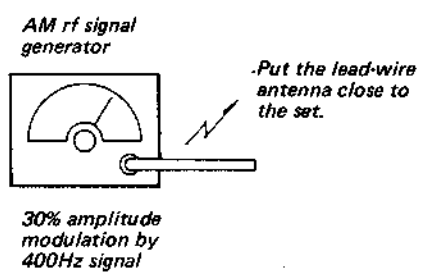


30% amplitude modulation by 400Hz signal

MW/LW/SW SECTION

MW/LW

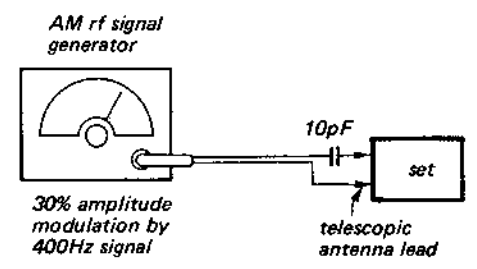
Setting:
 FUNCTION switch: RADIO
 BAND switch: MW/LW



- Repeat the procedure in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.
- Set the FINE TUNING knob in the center position for the SW adjustments.

SW

Setting:
 FUNCTION switch: RADIO
 BAND switch: SW



LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
145kHz	295kHz
L12	CT8

SW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
5.8MHz	18.4MHz
L10	CT7

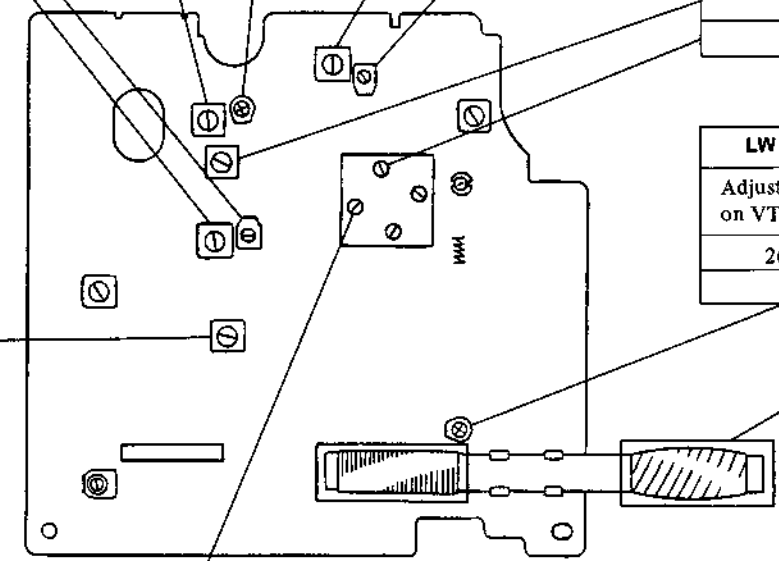
SW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
18.4MHz	CT5
5.8MHz	L8

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L11	520kHz
CT4	1,680kHz

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
260kHz	160MHz
CT6	L9-2

AM IF ALIGNMENT	
UK: 468kHz	T3
AEP: 455kHz	
Adjust for a maximum reading on VTVM.	

MW TRACKING ADJUSTMENT	
CT3	L9-1
1,400kHz	600kHz
Adjust for a maximum reading on VTVM.	



telescopic antenna lead

Put the lead-wire antenna close to the set.

30% amplitude modulation by 400Hz signal

telescopic antenna lead

30% amplitude modulation by 400Hz signal

telescopic antenna lead

10pF

30% amplitude modulation by 400Hz signal

telescopic antenna lead

SOLDERING PORTION

broadcasting signal.

counterclockwise and

range of the FM STE-

the lighting-up range

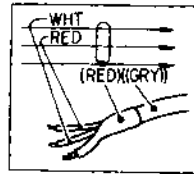
-up ranges

ne

SECTION 2
DIAGRAMS

Note:

- Color code of sleeving over the end of the jacket.



- [Symbol] indicates side identified with part number.

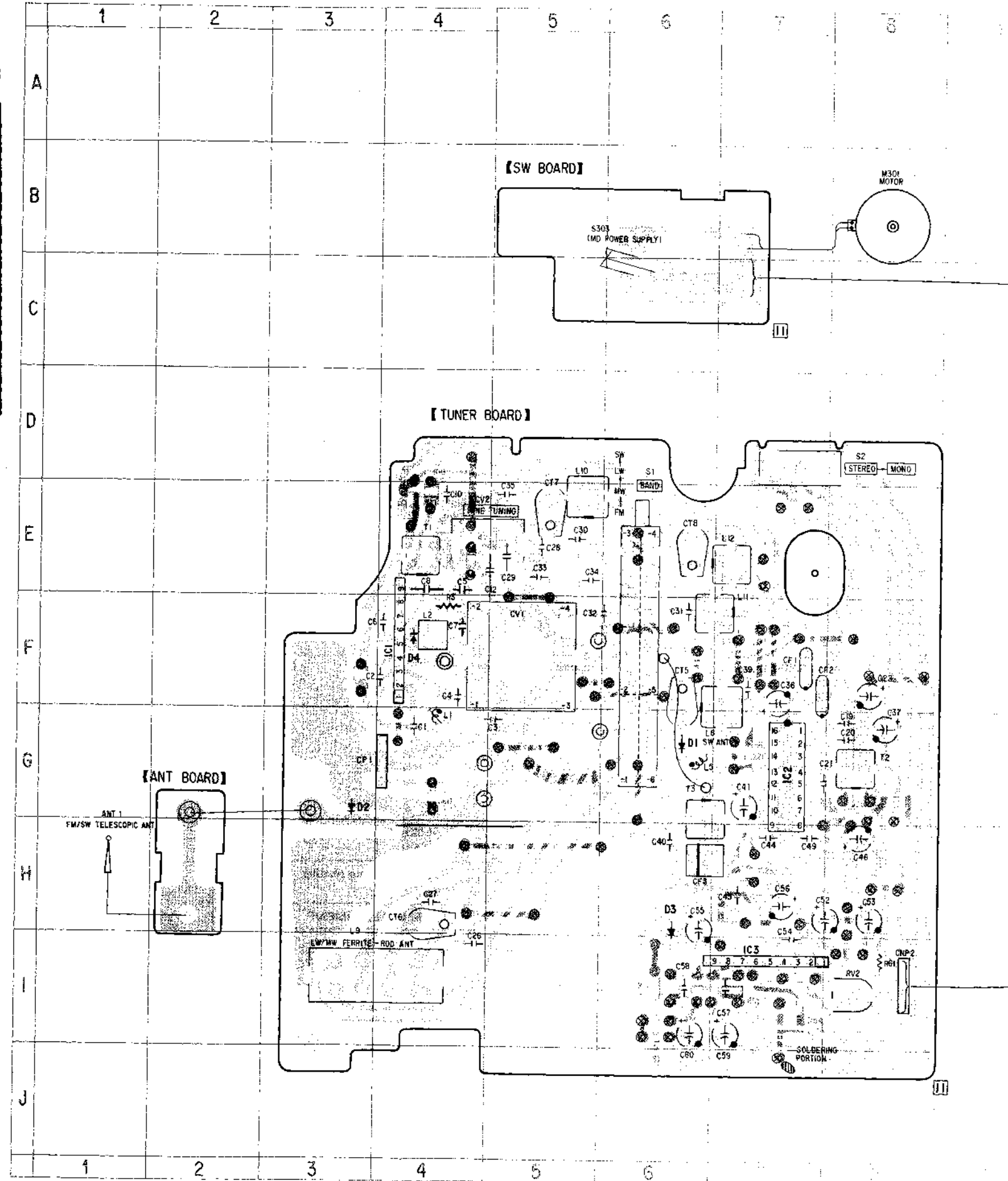
Semiconductors Lead Layout

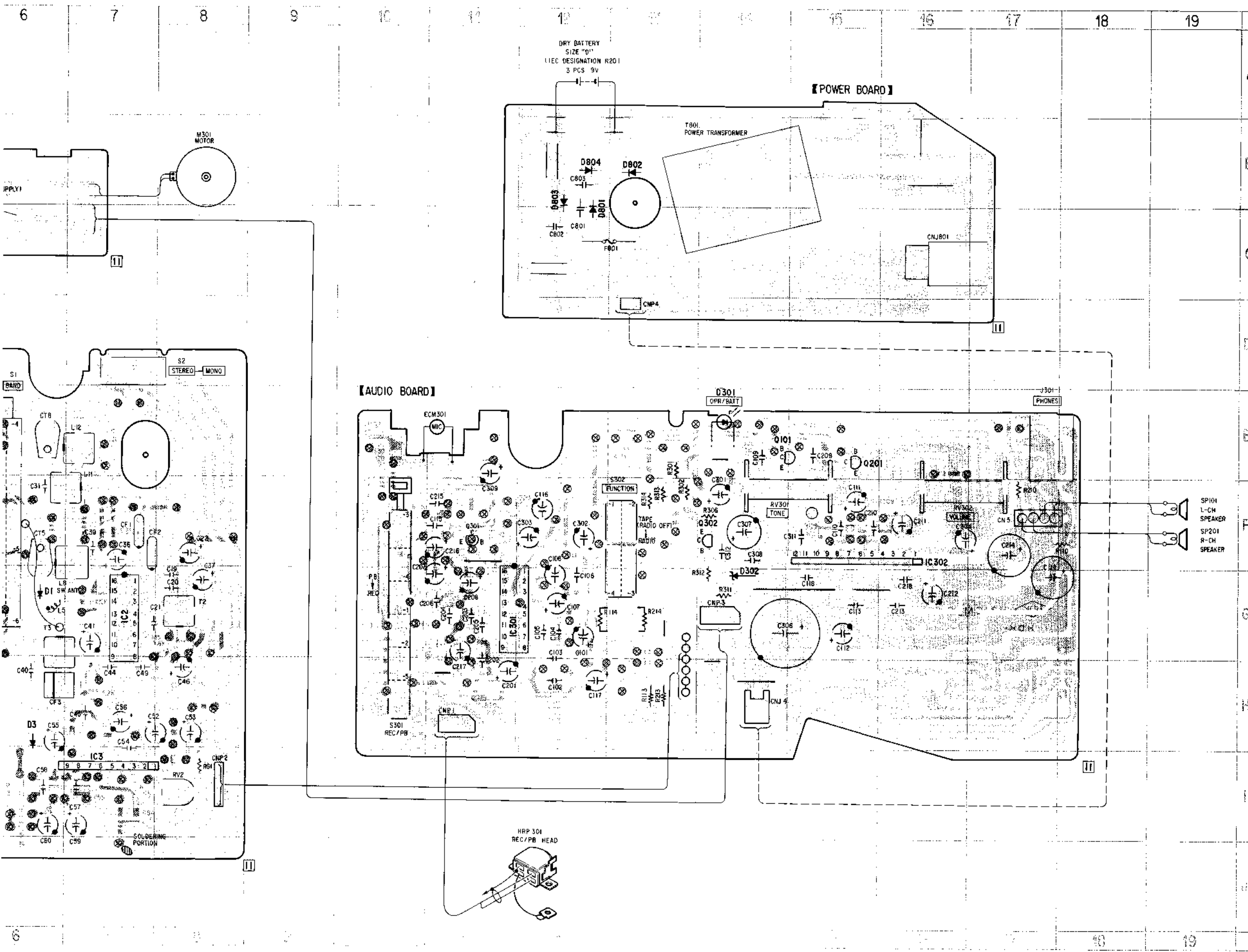
<p>TA7282AP</p>	<p>2SC2001-L</p>
<p>TA7343AP TA7358AP</p>	<p>ISS119</p>
<p>LA1260S TA7668BP</p>	<p>10E2</p>
<p>2SC634SP</p>	<p>TLR123</p>

• SEMICONDUCTOR LOCATION

Ref. No.	Location
IC1	F-4
IC2	G-7
IC3	I-7
IC301	G-11
IC302	F-15
Q101	E-14
Q201	E-15
Q301	F-11
Q302	F-13
D1	G-6
D2	G-3
D3	H-6
D4	F-4
D301	E-14
D302	F-14
D801	B-12
D802	B-13
D803	B-12
D804	B-12

2-1. MOUNTING DIAGRAM





6

7

8

9

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12

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14

15

16

17

18

19

A

B

C

D

E

F

G

H

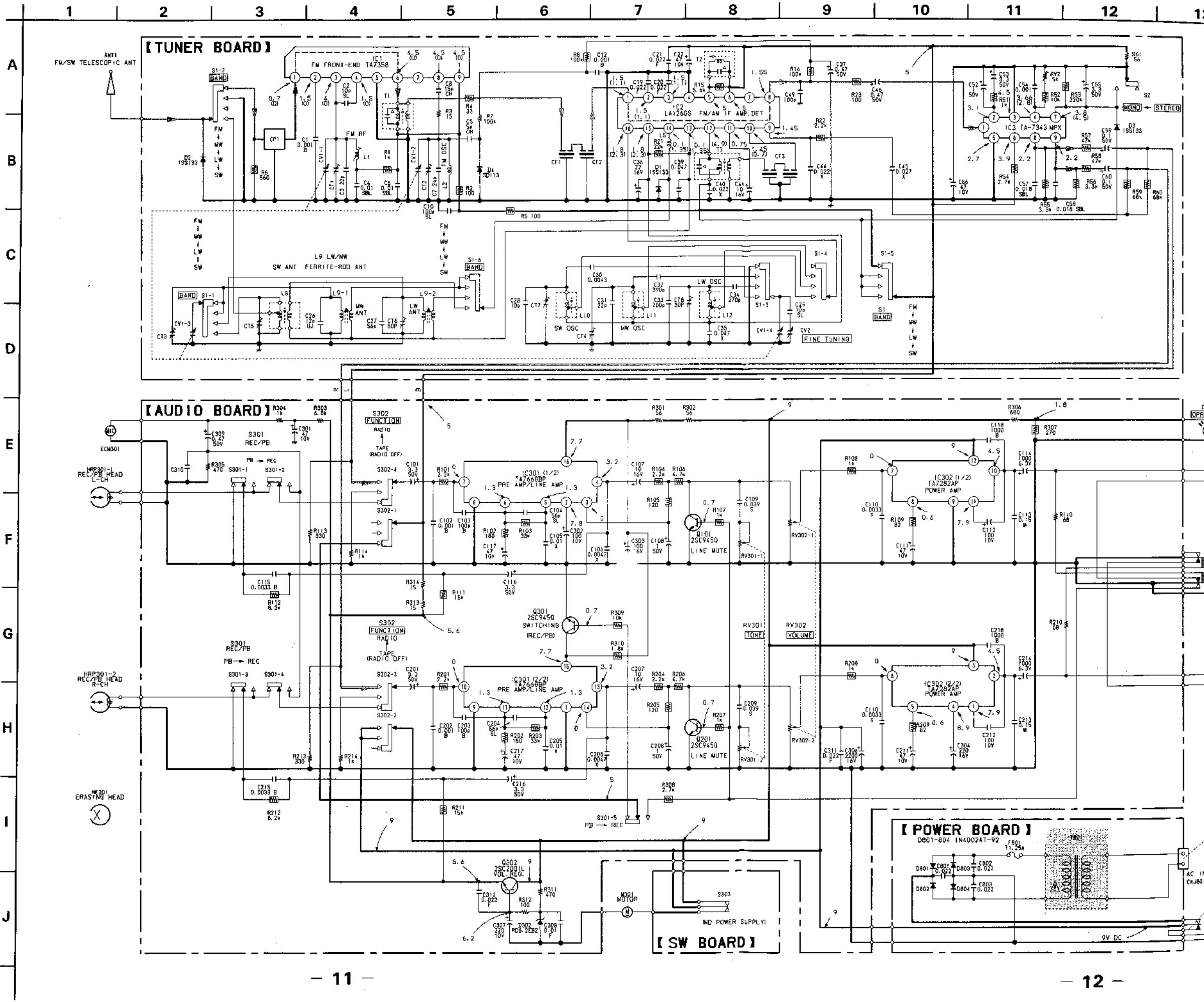
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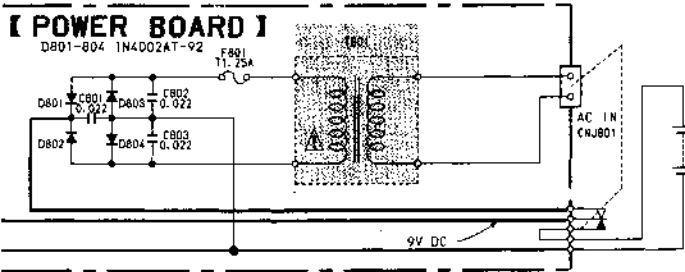
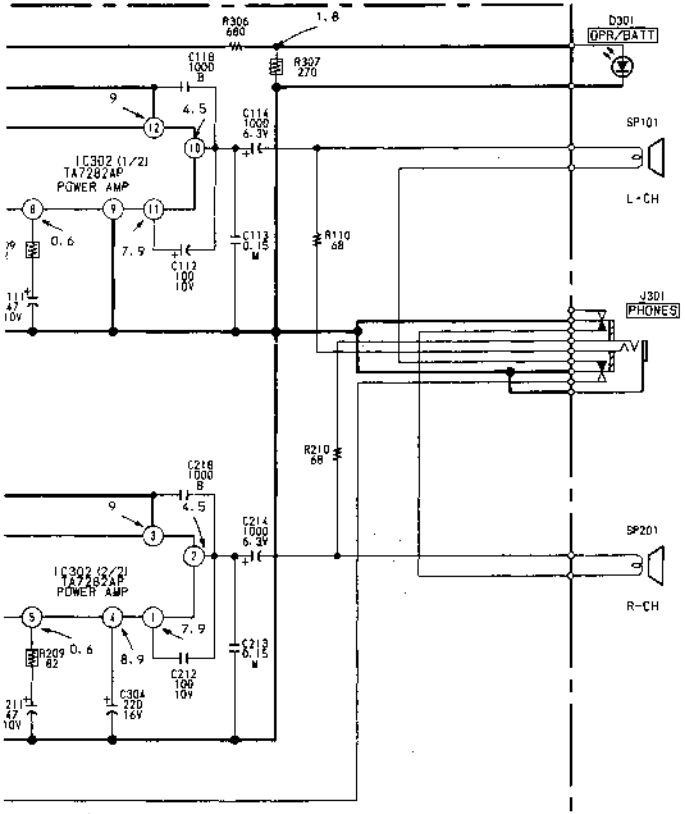
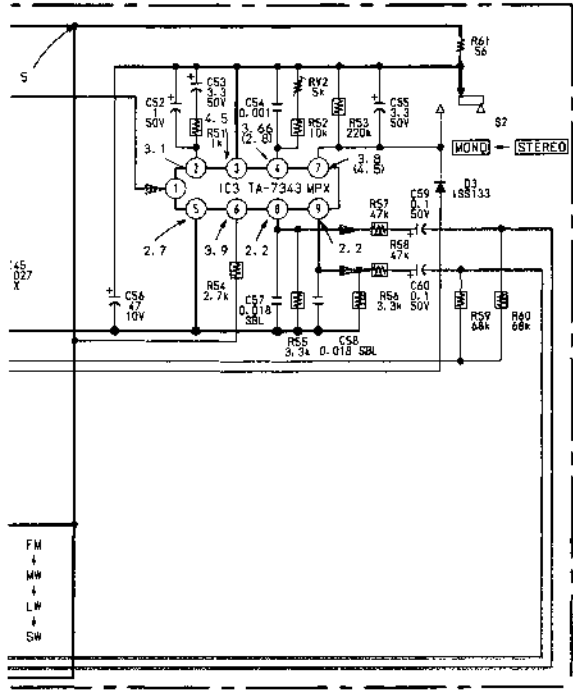
J

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19

2-2. SCHEMATIC DIAGRAM





DRY BATTERY
S1 (REF. 1)
(1EC DESIGNATION R20)
8 PCS. 9V

Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.

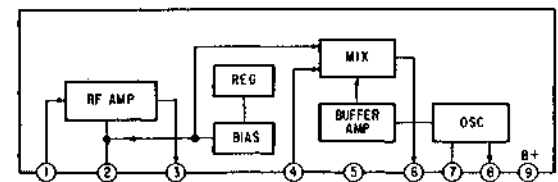
Note: The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

- Δ : internal component.
- : nonflammable resistor.
- Switch

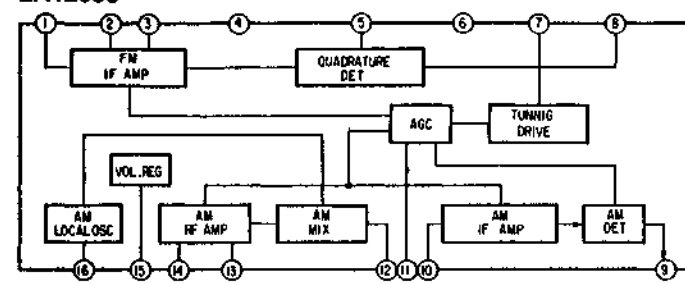
Ref. No.	Switch	Position
S1	BAND	FM
S2	STEREO/MONO	STEREO
S301	REC/PB	PB
S302	FUNCTION	TAPE
S303	MD POWER	OFF

- : B+ bus.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (50 k Ω /V).
- () : AM
no mark : FM
- Voltage variations may be noted due to normal production tolerances.
- : signal path

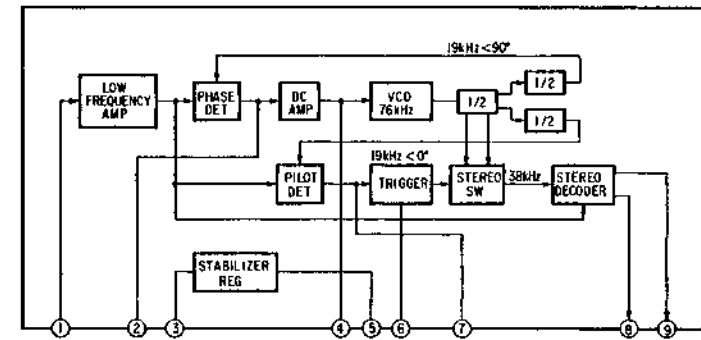
TA7358AP



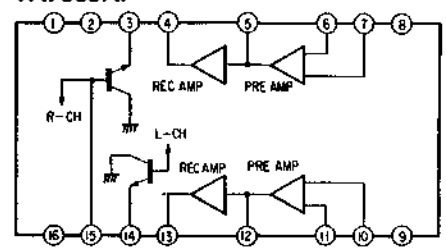
LA1260S



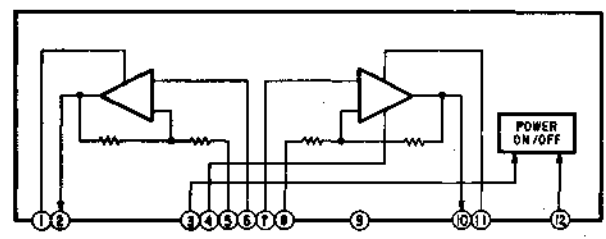
TA7343AP



TA7668AP



TA7282AP



SECTION 3
EXPLODED VIEWS AND PARTS LIST

NOTE:

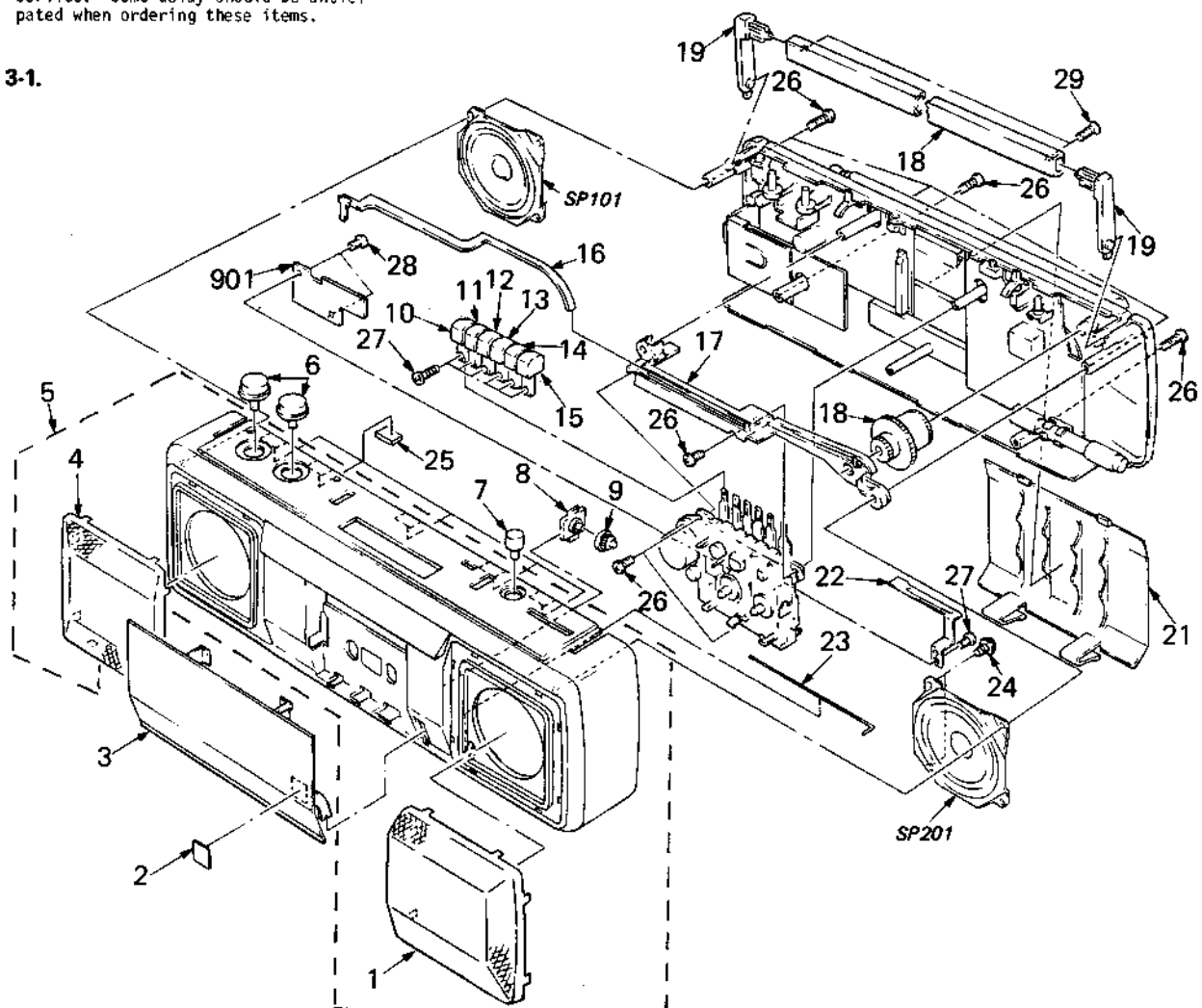
The mechanical parts with no reference number in the exploded views are not supplied.

Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The construction parts of an assembled part are indicated with a collation number in the remark column.

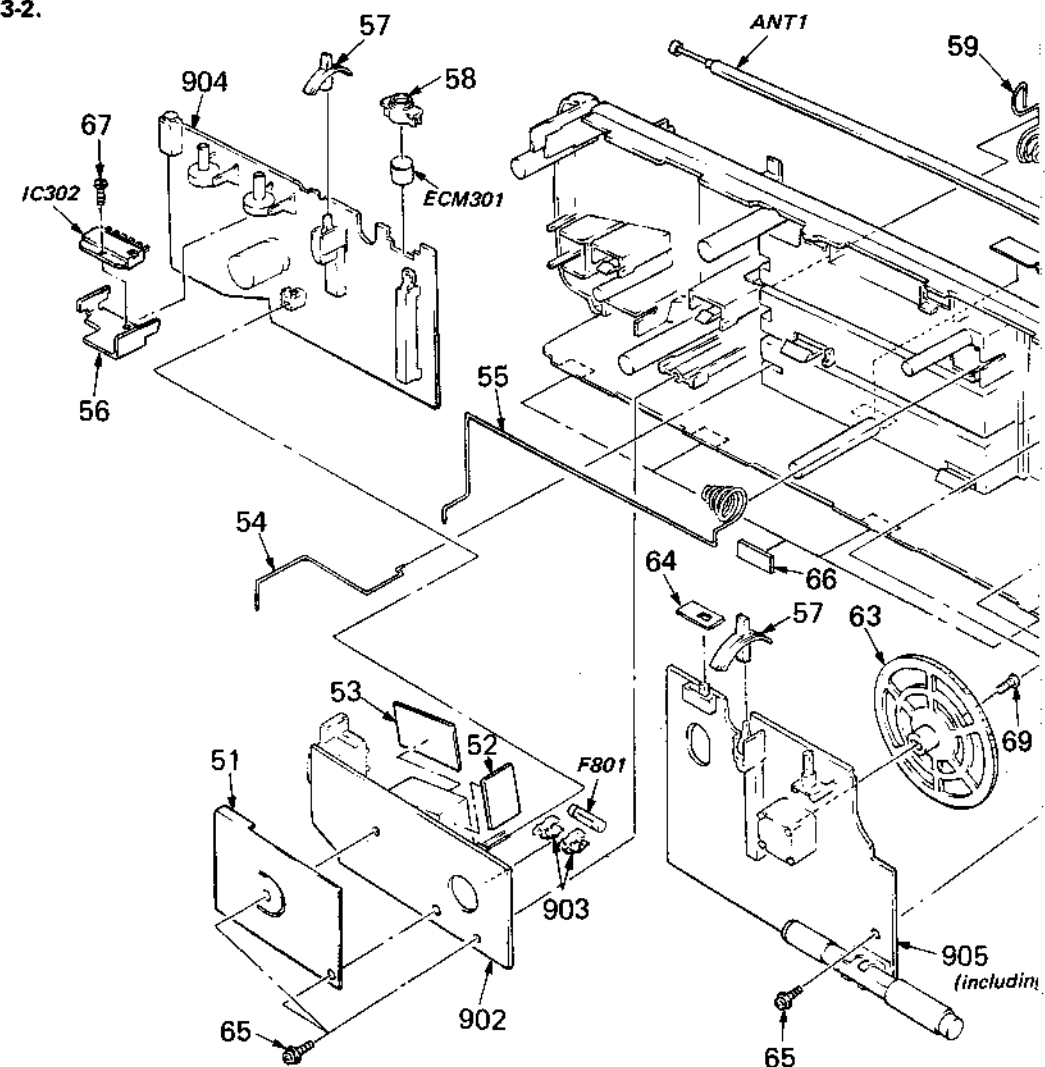
Color Indication of Appearance Parts
Example: (RED)..... KNOB, BALANCE (WHITE)
Cabinet's Color Parts' Color

3-1.

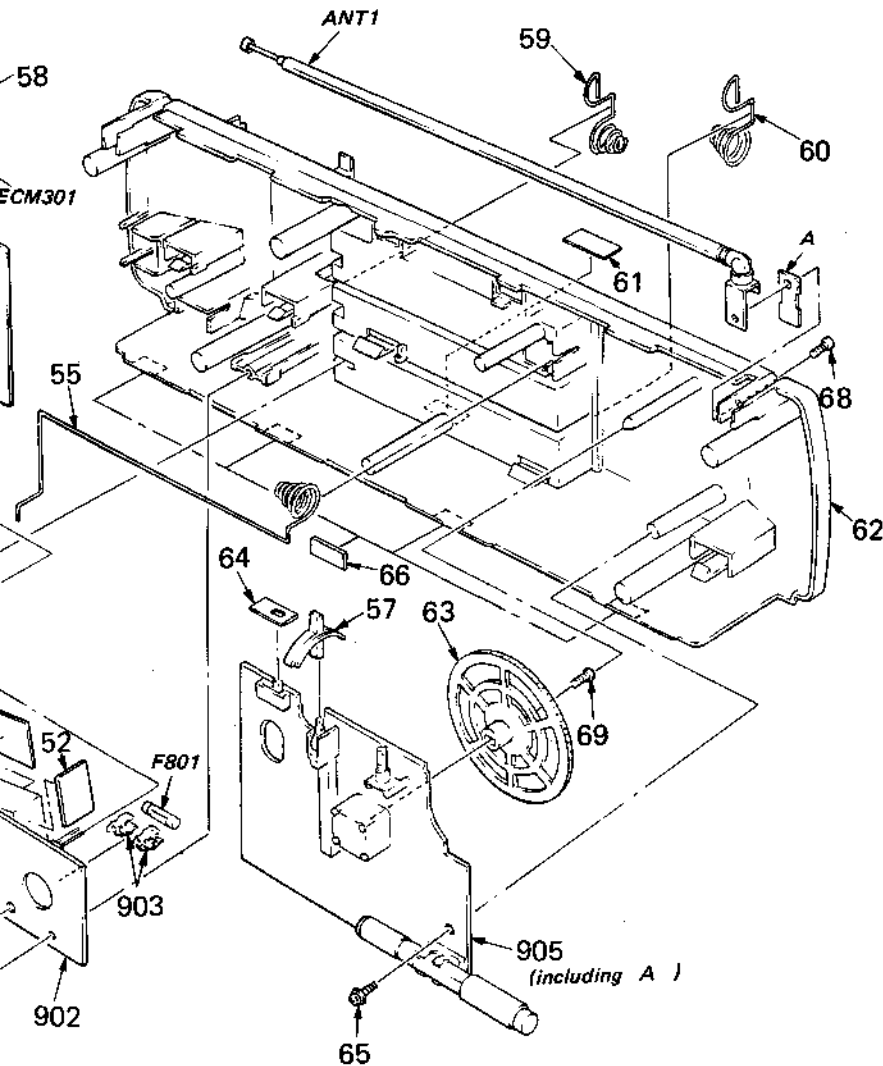


No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	3-338-526-01	GRILLE (R), SP		16	3-338-530-01	RACK, POINTER	
2	3-703-710-01	STICKER, SONY SYMBOL (12)		17	3-338-531-01	CHASSIS	
3	X-3338-505-1	(BLACK).....HOLDER ASSY, CASSETTE		18	3-338-521-01	KNOB, TUNING	
	X-3338-506-1	(BLUE).....HOLDER ASSY, CASSETTE		19	3-338-524-01	PLATE, SIDE, HANDLE	
	X-3338-507-1	(WHITE).....HOLDER ASSY, CASSETTE		20	3-338-525-21	(BLACK).....HANDLE	
	X-3338-508-1	(RED).....HOLDER ASSY, CASSETTE			3-338-525-31	(BLUE).....HANDLE	
4	3-338-527-01	GRILLE (LEFT), SP			3-338-525-41	(WHITE).....HANDLE	
5	X-3338-515-1	(WHITE).....CABINET ASSY, FRONT	1,4		3-338-525-51	(RED).....HANDLE	
	X-3338-516-1	(BLACK).....CABINET ASSY, FRONT	1,4	21	3-338-532-01	(WHITE).....LID, BATTERY CASE	
	X-3338-517-1	(RED).....CABINET ASSY, FRONT	1,4		3-338-532-11	(RED,BLUE).....LID, BATTERY CASE	
	X-3338-518-1	(BLUE).....CABINET ASSY, FRONT	1,4		3-338-532-21	(BLACK).....LID, BATTERY CASE	
6	3-338-522-01	KNOB, VOL		22	3-338-506-01	SPRING	
7	3-338-501-01	KNOB, FINE TUNE		23	3-338-508-01	SPRING	
8	*3-338-507-01	BRACKET, EJECT		24	3-703-137-00	SCREW, TAPPING	
9	3-319-592-01	GEAR, SE		25	3-831-441-XX	CUSHION	
10	3-338-519-01	BUTTON (A), PAUSE		26	7-685-648-71	SCREW +BVTP 3X12 TYPE2 N-S	
11	3-338-516-01	BUTTON (A), FF		27	7-685-790-04	SCREW +BVTT 2.6X4 (S)	
12	3-338-517-01	BUTTON (A), REW		28	7-687-234-11	SCREW, TOTSU PTPWH 2.6X8, TYPE2	
13	3-338-518-01	BUTTON (A), PLAY		29	7-685-247-29	SCREW +KTP 3X10 TYPE2 SLIT	
14	3-338-515-01	BUTTON (A), REC		901	*1-621-300-11	PC BOARD, SW	
15	3-338-514-01	BUTTON (A), STOP		SP101	1-503-746-11	SPEAKER	
				SP201	1-503-746-11	SPEAKER	

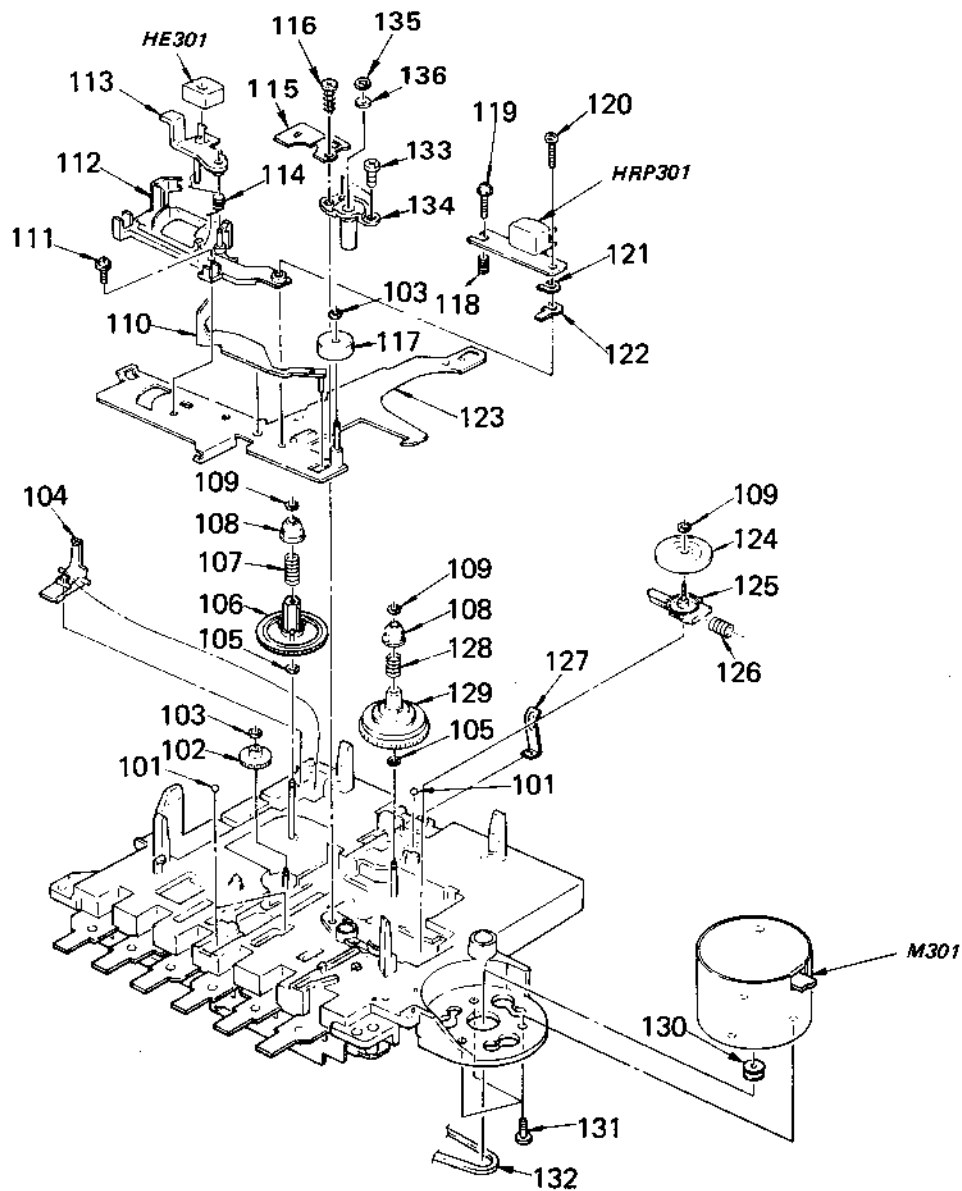
3-2.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	*3-338-503-01	COVER, POWER		63	3-338-505-01	DRUM, TUNING CA	
52	3-338-547-01	CUSHION (A)		64	3-338-513-01	SHEET	
53	3-338-548-01	CUSHION (B)		65	3-703-137-00	SCREW, TAPPING	
54	3-338-509-01	TERMINAL, PLUS		66	3-831-441-XX	CUSHION	
55	3-338-512-01	TERMINAL, MINUS		67	7-685-645-71	SCREW +BVTP 3X6	
56	*3-338-504-01	HEAT SINK		68	7-682-548-04	SCREW +P 3X8	
57	3-338-520-01	KNOB, FUNCTION		69	7-621-259-45	SCREW +P 2.6X6	
58	3-321-122-01	CUSHION, MICROPHONE		902	*1-621-301-11	PC BOARD, POWER	
59	3-338-510-01	SPRING (A)		903	1-533-183-11	HOLDER, FUSE	
60	3-338-511-01	SPRING (B)		904	*A-3270-363-A	PC BOARD ASSY, I	
61	3-527-213-00	LABEL, SERIAL NUMBER		905	*A-3266-353-A	PC BOARD ASSY,	
62	3-338-534-41	(WHITE,YELLOW)...CABINET (REAR)		ANT1	1-501-262-00	ANTENNA, TELESCO	
	3-338-534-51	(RED,BLUE).....CABINET (REAR)		ECM301	8-814-194-20	MICROPHONE, ELE	
	3-338-534-61	(BLACK).....CABINET (REAR)		F801	1-532-285-00	FUSE, TIME-LAG	
				IC302	8-759-205-82	IC TA7282AP	



3-3.

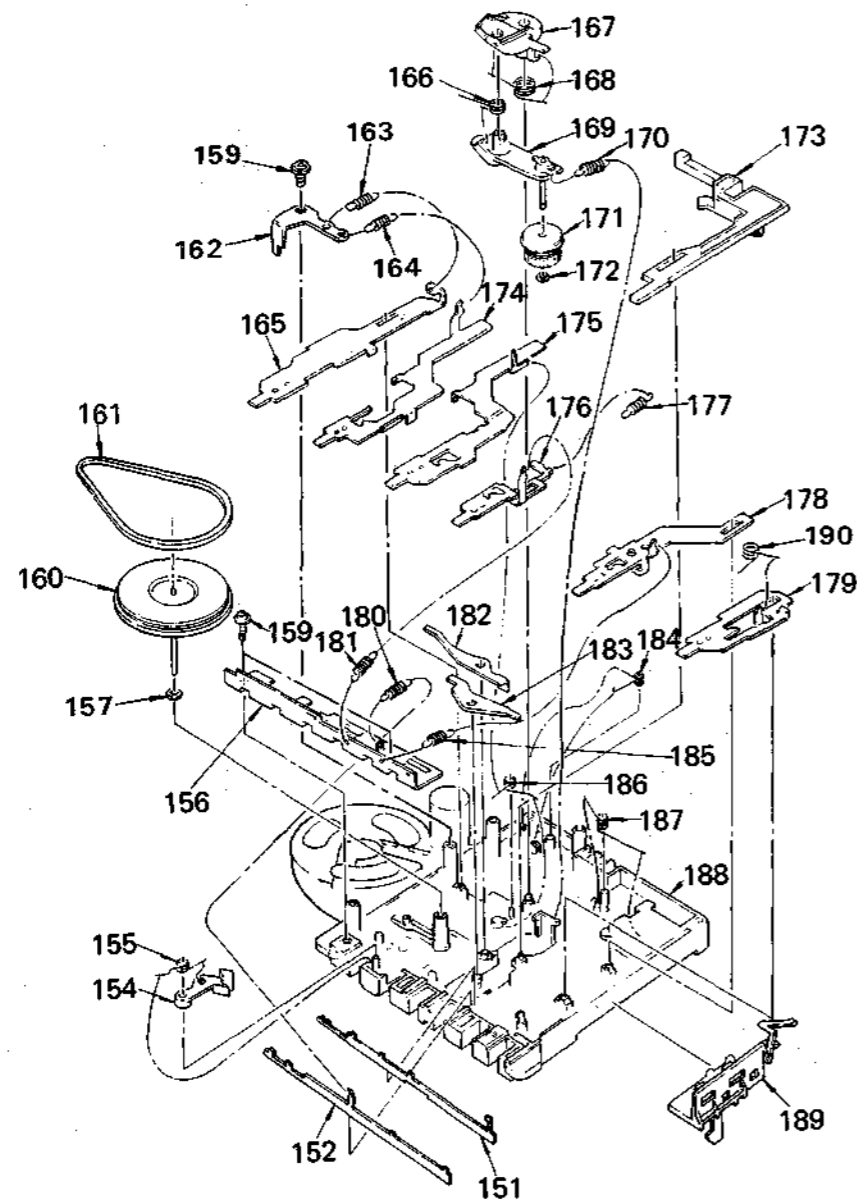


Remarks	No.	Part No.	Description	Remarks
	63	3-338-505-01	DRUM, TUNING CAPACITOR	
	64	3-338-513-01	SHEET	
	65	3-703-137-00	SCREW, TAPPING	
	66	3-831-441-XX	CUSHION	
	67	7-685-645-71	SCREW +BVTP 3X6 TYPE2 SLIT	
	68	7-682-548-04	SCREW +P 3X8	
	69	7-621-259-45	SCREW +P 2.6X6	
	902	*1-621-301-11	PC BOARD, POWER	
	903	1-533-183-11	HOLDER, FUSE	
	904	*A-3270-363-A	PC BOARD ASSY, AUDIO	
	905	*A-3266-353-A	PC BOARD ASSY, TUNER	
	ANT1	1-501-262-00	ANTENNA, TELESCOPIC	
INET (REAR)	ECM301	8-814-194-20	MICROPHONE, ELECTRET CONDENSER	
INET (REAR)	F801	1-532-285-00	FUSE, TIME-LAG	
INET (REAR)	IC302	8-759-205-82	IC TA7282AP	

No.	Part No.	Description	Remarks
101	7-671-112-11	BALL, STEEL	
102	3-558-620-11	GEAR, REWIND	
103	3-307-948-01	WASHER, NYLON	
104	3-313-357-00	CLAW, REC PREVENTION	
105	3-701-437-21	WASHER	
106	3-313-305-00	TABLE, REEL, SUPPLY	
107	3-313-344-00	SPRING, COMPRESSION	
108	3-313-333-00	CLAW, REEL	
109	3-558-708-01	WASHER, STOPPER	
110	3-313-316-00	PULLEY	
111	7-621-955-35	SCREW (2MMX5), + PWH	
112	3-334-717-01	BRACKET (M), HEAD	
113	3-324-221-01	ARM (DC), ERASE HD	
114	3-313-339-00	SPRING	
115	*3-332-309-01	SPRING (B)	
116	3-324-220-01	SCREW (B2.6), TAPPING	
117	3-703-597-41	PINCH ROLLER, STANDARD	
118	3-313-340-00	SPRING, COMPRESSION	
119	3-701-465-00	SCREW, LOCK	
120	7-621-772-40	SCREW +B 2X8	
121	3-578-138-01	SEAM	
	3-578-138-11	SEAM	
	3-578-138-21	SEAM	
122	3-331-108-01	LUG (T), SEAM	
	3-331-108-11	LUG (T), SEAM	
	3-331-108-21	LUG (T), SEAM	
	3-331-108-31	LUG (T), SEAM	
	3-331-108-41	LUG (T), SEAM	
123	X-3313-311-1	CHASSIS ASSY	
124	X-3313-307-0	PULLEY ASSY, FWD	
125	X-3313-301-0	BRACKET ASSY, T PULLEY	
126	3-573-464-00	SPRING, COMPRESSION	
127	3-313-902-00	SPRING	
128	3-324-213-01	SPRING, COMPRESSION	
129	A-3130-031-A	TABLE ASSY, REEL, TAKE-UP	
130	X-3313-308-1	PULLEY, MOTOR	
131	7-621-770-87	SCREW +P 2.6X5	
132	3-313-335-00	BELT, CAPSTAN	
133	3-318-203-71	SCREW (B1.7X5), TAPPING	
134	X-3319-945-1	BEARING ASSY, CAPSTAN	
135	3-307-948-41	WASHER, NYLON	
136	3-701-438-11	WASHER, 2.5	
HE301	1-543-396-11	HEAD, ERASE	
HRP301	1-543-340-21	HEAD, MAGNETIC (REC/PB)	
M301	1-541-231-00	MOTOR	

SECTION 4
ELECTRICAL PARTS LIST

3-4.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	*3-331-145-01	PLATE (C), LOCK		172	3-558-708-01	WASHER, STOPPER	
152	*3-313-351-11	PLATE (A), LOCK		173	3-313-356-00	BRAKE	
154	3-313-322-02	LEVER (A), S.OFF		174	*3-313-353-00	LEVER, FF BUTTON	
155	3-313-323-00	SPRING		175	*3-313-354-00	LEVER, REW BUTTON	
156	*3-313-359-00	RETAINER, LEVER		176	*3-313-326-00	LEVER, FWD BUTTON	
157	3-701-438-11	WASHER, 2.5		177	3-313-342-00	SPRING, TENSION	
159	7-687-233-11	SCREW (+ PTPWH) (2.6X6)		178	*3-313-350-00	LEVER, REC BUTTON	
160	X-3592-309-1	FLYWHEEL (E) ASSY		179	*3-313-325-00	LEVER, STOP BUTTON	
161	3-313-335-00	BELT, CAPSTAN		180	3-313-343-00	SPRING, TENSION	
162	*3-332-310-01	HOK, SPRING		181	3-313-369-00	SPRING, TENSION	
163	3-313-349-00	SPRING, TENSION		182	*3-313-320-00	LEVER, RCP	
164	3-313-348-00	SPRING, TENSION		183	*3-313-321-00	LEVER, PREVENTION, RFR	
165	*3-313-381-01	LEVER (B), PAUSE BUTTON		184	3-313-378-01	SPRING (A)	
166	3-313-313-00	SPRING		185	3-322-529-01	SPRING, TENSION	
167	3-313-314-00	LEVER (SI), FR		186	3-313-338-00	SPRING	
168	3-313-315-00	SPRING		187	3-313-327-00	SPRING	
169	X-3313-304-0	ARM ASSY, REW		188	A-3102-092-A	CHASSIS ASSY, MECHANICAL	
170	3-313-365-00	SPRING, TENSION		189	3-313-380-01	CLAW (A), EJECT	
171	X-3313-312-1	IDLER ASSY, FR		190	3-313-331-00	SPRING	

NOTE:

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μμF.

RESISTORS

All resistors are in ohms.
F : nonflammable

COILS

MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

The components identified by shading and mark are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
901	*1-621-300-11	PC BOARD, SW				
902	*1-621-301-11	PC BOARD, POWER				
903	1-533-183-11	HOLDER, FUSE				
904	*A-3270-363-A	PC BOARD ASSY, AUDIO				
905	*A-3266-353-A	PC BOARD ASSY, TUNER				
ANT1	1-501-375-11	ANTENNA, TELESCOPIC				
C1	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C2	1-102-947-00	CERAMIC	10PF	5%	50V	
C3	1-102-514-00	CERAMIC	22PF	5%	50V	
C4	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C5	1-102-864-00	CERAMIC	5PF	0.5PF	50V	
C6	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C7	1-102-642-00	CERAMIC	24PF	5%	50V	
C8	1-102-851-00	CERAMIC	15PF	5%	50V	
C10	1-102-973-00	CERAMIC	100PF	5%	50V	
C12	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C19	1-101-005-00	CERAMIC	0.022MF		50V	
C20	1-101-005-00	CERAMIC	0.022MF		50V	
C21	1-101-005-00	CERAMIC	0.022MF		50V	
C22	1-123-306-00	ELECT	47MF	20%	10V	
C26	1-102-949-00	CERAMIC	12PF	5%	50V	
C27	1-101-884-00	CERAMIC	56PF	5%	50V	
C28	1-102-947-00	CERAMIC	10PF	0.5PF	50V	
C29	1-102-947-00	CERAMIC	10PF	5%	50V	
C30	1-103-740-00	POLYSTYRENE	0.0043MF	5%	50V	
C31	1-102-720-00	CERAMIC	22PF	5%	50V	
C32	1-104-067-00	POLYSTYRENE	390PF	5%	50V	
C33	1-104-060-00	POLYSTYRENE	200PF	5%	50V	
C34	1-103-711-00	POLYSTYRENE	270PF	5%	50V	
C35	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C36	1-123-330-00	ELECT	22MF	20%	16V	
C37	1-123-379-00	ELECT	0.47MF	20%	50V	
C39	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C40	1-161-055-00	CERAMIC	0.022MF	10%	25V	
C41	1-123-356-00	ELECT	10MF	20%	16V	
C44	1-161-055-00	CERAMIC	0.022MF	10%	25V	
C45	1-161-056-00	CERAMIC	0.027MF	10%	25V	
C46	1-123-379-00	ELECT	0.47MF	20%	50V	
C49	1-102-973-00	CERAMIC	100PF	5%	50V	
C52	1-123-380-00	ELECT	1MF	20%	50V	
C53	1-123-382-00	ELECT	3.3MF	20%	50V	
C54	1-104-077-00	POLYSTYRENE	0.001MF	5%	50V	
C55	1-123-382-00	ELECT	3.3MF	20%	50V	
C56	1-123-306-00	ELECT	47MF	20%	10V	
C57	1-161-054-00	CERAMIC	0.018MF	10%	25V	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
C58	1-161-054-00	CERAMIC	0.018MF	10%	25V	
C59	1-123-607-00	ELECT	0.1MF	20%	50V	
C60	1-123-607-00	ELECT	0.1MF	20%	50V	
C101	1-123-382-00	ELECT	3.3MF	20%	50V	
C102	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C103	1-102-106-00	CERAMIC	100PF	10%	50V	
C104	1-101-884-00	CERAMIC	56PF	5%	50V	
C105	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C106	1-161-047-00	CERAMIC	0.0047MF	10%	25V	
C107	1-123-356-00	ELECT	10MF	20%	16V	
C108	1-123-380-00	ELECT	1MF	20%	50V	
C109	1-161-058-00	CERAMIC	0.039MF	10%	25V	
C110	1-161-007-00	CERAMIC	0.0033MF	10%	50V	
C111	1-123-306-00	ELECT	47MF	20%	10V	
C112	1-123-307-00	ELECT	100MF	20%	10V	
C113	1-130-497-00	MYLAR	0.15MF	5%	50V	
C114	1-123-299-00	ELECT	1000MF	20%	6.3V	
C115	1-102-122-00	CERAMIC	0.0027MF	10%	50V	
C116	1-123-382-00	ELECT	3.3MF	20%	50V	
C117	1-123-306-00	ELECT	47MF	20%	10V	
C118	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C201	1-123-382-00	ELECT	3.3MF	20%	50V	
C202	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C203	1-102-106-00	CERAMIC	100PF	10%	50V	
C204	1-101-884-00	CERAMIC	56PF	5%	50V	
C205	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C206	1-161-047-00	CERAMIC	0.0047MF	10%	25V	
C207	1-123-356-00	ELECT	10MF	20%	16V	
C208	1-123-380-00	ELECT	1MF	20%	50V	
C209	1-161-058-00	CERAMIC	0.039MF	10%	25V	
C210	1-161-007-00	CERAMIC	0.0033MF	10%	50V	
C211	1-123-306-00	ELECT	47MF	20%	10V	
C212	1-123-307-00	ELECT	100MF	20%	10V	
C213	1-130-497-00	MYLAR	0.15MF	5%	50V	
C214	1-123-299-00	ELECT	1000MF	20%	6.3V	
C215	1-102-123-00	CERAMIC	0.0033MF	10%	50V	
C216	1-123-382-00	ELECT	3.3MF	20%	50V	
C217	1-123-306-00	ELECT	47MF	20%	10V	
C218	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C301	1-123-306-00	ELECT	47MF	20%	10V	
C302	1-123-307-00	ELECT	100MF	20%	10V	
C303	1-123-333-00	ELECT	100MF	20%	16V	
C304	1-123-321-00	ELECT	220MF	20%	16V	
C306	1-123-325-00	ELECT	220MF	20%	16V	
C307	1-123-308-00	ELECT	220MF	20%	10V	

ELECTRICAL PARTS

Ref.No.	Part No.	Description		
C308	1-101-004-00	CERAMIC	0.01MF	50V
C309	1-123-379-00	ELECT	0.47MF	20% 50V
C311	1-101-005-00	CERAMIC	0.022MF	50V
C312	1-101-005-00	CERAMIC	0.022MF	50V
C801	1-101-005-00	CERAMIC	0.022MF	50V
C802	1-101-005-00	CERAMIC	0.022MF	50V
C803	1-101-005-00	CERAMIC	0.022MF	50V
CF1	1-567-802-71	FILTER, CERAMIC		
CF2	1-567-802-71	FILTER, CERAMIC		
CF3	1-567-670-11	FILTER, CERAMIC		
CN5	*1-564-778-11	SOCKET, CONNECTOR 4P		
CNJ4	*1-563-307-11	CONNECTOR (SOCKET) 2P		
CNJ801	1-526-838-11	INLET, AC 2P		
CNP1	*1-506-707-11	PLUG, CONNECTOR (2.5MM) 3P		
CNP2	*1-564-778-11	PLUG, CONNECTOR (2.5MM) 4P		
CNP3	*1-506-707-11	PLUG, CONNECTOR (2.5MM) 3P		
CNP4	*1-563-530-00	PIN, CONNECTOR 2P		
CP1	1-231-720-00	FILTER, BANDPASS		
CT5	1-141-290-11	CAP, VAR FILM TRIMMER		
CT6	1-141-260-00	TRIMMER, CERAMIC		
CT7	1-141-290-11	CAP, VAR FILM TRIMMER		
CT8	1-141-245-00	TRIMMER, CERAMIC		
CV1	1-151-387-00	CAP, TUNING, POLYETHYLENE INCLUDING, CT1-4		
CV2	1-141-328-11	CAP, TRIMMER (FINE TUNING)		
D1	8-719-911-19	DIODE 1SS119		
D2	8-719-911-19	DIODE 1SS119		
D3	8-719-911-19	DIODE 1SS119		
D4	8-719-768-71	DIODE 1S26B7S-1		
D301	8-719-812-31	TLR123(OPR/BATT)		
D302	8-719-100-38	DIODE RD6.2EB2		
D801	8-719-200-02	DIODE 10E2		
D802	8-719-200-02	DIODE 10E2		
D803	8-719-200-02	DIODE 10E2		
D804	8-719-200-02	DIODE 10E2		
ECM301	8-814-194-20	MICROPHONE, ELECTRET CONDENSER		
F801	1-532-285-00	FUSE, TIME-LAG		
HE301	1-543-396-11	HEAD, ERASE		
HRP301	1-543-340-21	HEAD, MAGNETIC (REC/PB)		
IC1	8-759-204-03	IC TA7358AP		
IC2	8-759-801-24	IC LA1260S		
IC3	8-759-203-87	IC TA7343AP		

ELECTRICAL PARTS

Ref.No.	Part No.	Description		
IC301	8-759-205-91	IC TA7668BP		
IC302	8-759-205-82	IC TA7282AP		
J301	1-507-948-11	JACK		
L1	*1-422-126-00	COIL, AIR-CORE		
L2	1-459-694-11	COIL, VHF (WITH CORE)		
L5	*1-409-293-00	COIL, AIR CORE		
L8	1-402-262-21	COIL, SW ANT		
L9	1-402-247-11	ANTENNA, FERRITE-ROD (LW/MM)		
L10	1-406-152-11	COIL, OSCILLATION (SW)		
L11	1-406-059-00	COIL, OSC		
L12	1-406-151-11	COIL, OSCILLATION (LW)		
M301	1-541-231-00	MOTOR		
Q101	8-729-600-27	TRANSISTOR 2SC634SP		
Q201	8-729-600-27	TRANSISTOR 2SC634SP		
Q301	8-729-600-27	TRANSISTOR 2SC634SP		
Q302	8-729-100-12	TRANSISTOR 2SC2001-L		
R1	1-249-417-11	CARBON	1K 10%	1/32W
R2	1-249-405-11	CARBON	100 10%	1/32W
R3	1-247-787-00	CARBON	15 5%	1/6W
R4	1-249-399-11	CARBON	33 10%	1/32W
R5	1-249-405-11	CARBON	100 10%	1/32W
R6	1-249-414-11	CARBON	560 10%	1/32W
R7	1-249-441-11	CARBON	100K 10%	1/32W
R8	1-249-441-11	CARBON	100K 10%	1/32W
R15	1-247-849-00	CARBON	5.6K 10%	1/32W
R16	1-249-441-11	CARBON	100K 10%	1/32W
R21	1-247-863-00	CARBON	22K 5%	1/16W
R22	1-249-421-11	CARBON	2.2K 10%	1/32W
R23	1-249-405-11	CARBON	100 10%	1/32W
R51	1-249-417-11	CARBON	1K 10%	1/32W
R52	1-249-429-11	CARBON	10K 10%	1/32W
R53	1-247-887-00	CARBON	220K 10%	1/32W
R54	1-249-422-11	CARBON	2.7K 10%	1/32W
R55	1-249-423-11	CARBON	3.3K 10%	1/32W
R56	1-249-423-11	CARBON	3.3K 10%	1/32W
R57	1-249-437-11	CARBON	47K 10%	1/32W
R58	1-249-437-11	CARBON	47K 10%	1/32W
R59	1-249-439-11	CARBON	68K 10%	1/32W
R60	1-249-439-11	CARBON	68K 10%	1/32W
R61	1-247-801-00	CARBON	56 5%	1/6W
R101	1-249-421-11	CARBON	2.2K 10%	1/32W
R102	1-249-408-11	CARBON	180 10%	1/32W
R103	1-249-435-11	CARBON	33K 10%	1/32W

ELECTRICAL PARTS

Ref.No.	Part No.	Description		
R104	1-249-421-11	CARBON	2.2K 10%	1/32W
R105	1-249-406-11	CARBON	120 10%	1/32W
R106	1-249-425-11	CARBON	4.7K 10%	1/32W
R107	1-249-417-11	CARBON	1K 10%	1/32W
R108	1-249-417-11	CARBON	1K 10%	1/32W
R109	1-247-805-00	CARBON	82 10%	1/32W
R110	1-247-803-00	CARBON	68 5%	1/6W
R111	1-247-859-11	CARBON	15K 10%	1/32W
R112	1-249-428-11	CARBON	8.2K 10%	1/32W
R113	1-249-411-11	CARBON	330 10%	1/32W
R114	1-247-831-00	CARBON	1K 5%	1/6W
R201	1-249-421-11	CARBON	2.2K 10%	1/32W
R202	1-249-408-11	CARBON	180 10%	1/32W
R203	1-249-435-11	CARBON	33K 10%	1/32W
R204	1-249-421-11	CARBON	2.2K 10%	1/32W
R205	1-249-406-11	CARBON	120 10%	1/32W
R206	1-249-425-11	CARBON	4.7K 10%	1/32W
R207	1-249-417-11	CARBON	1K 10%	1/32W
R208	1-249-417-11	CARBON	1K 10%	1/32W
R209	1-247-805-00	CARBON	82 10%	1/32W
R210	1-247-803-00	CARBON	68 5%	1/6W
R211	1-247-859-11	CARBON	15K 10%	1/32W
R212	1-249-434-11	CARBON	8.2K 10%	1/32W
R213	1-249-411-11	CARBON	330 10%	1/32W
R214	1-247-831-00	CARBON	1K 5%	1/6W
R301	1-247-801-00	CARBON	56 5%	1/6W
R302	1-247-801-00	CARBON	56 5%	1/6W
R303	1-249-427-11	CARBON	6.8K 10%	1/32W
R304	1-249-417-11	CARBON	1K 10%	1/32W
R305	1-249-413-11	CARBON	470 10%	1/32W
R306	1-249-415-11	CARBON	680 5%	1/6W
R307	1-249-410-11	CARBON	270 10%	1/32W
R308	1-249-422-11	CARBON	2.7K 10%	1/32W
R309	1-249-429-11	CARBON	10K 10%	1/32W
R310	1-249-420-11	CARBON	1.8K 10%	1/32W
R311	1-247-823-00	CARBON	470 5%	1/6W
R312	1-249-405-11	CARBON	100 5%	1/6W
R313	1-247-787-00	CARBON	15 5%	1/6W
R314	1-247-787-00	CARBON	15 5%	1/6W
RV2	1-228-993-00	RES, ADJ, CARBON 5K		
RV301	1-237-567-11	RES, VAR (TONE)		
RV302	1-230-454-11	RES, VAR, CARBON 20K/20K (VOLUME)		


ELECTRICAL PARTS

Ref.No.	Part No.	Description
S1	1-554-885-11	SWITCH, LEVER SLIDE (BAND)
S2	1-553-937-00	SWITCH, SLIDE (STEREO/MONO)
S301	1-570-931-11	SWITCH, LEVER SLIDE (REC/PB)
S302	1-570-616-21	SWITCH, LEVER SLIDE (FUNCTION)
S303	1-554-495-00	SWITCH, LEAF (MD POWER SPPLY)
SP101	1-503-746-11	SPEAKER
SP201	1-503-746-11	SPEAKER
T1	1-403-872-00	I.F.T CONVERTER FM (SMALL TYPE)
T2	1-404-249-00	COIL, FM DETECTOR
T3	1-404-355-00	TRANSFORMER, IF

TRANSFORMER, POWER
TRANSFORMER, POWER

ACCESSORY & PACKING MATERIAL

Part No.	Description
*3-338-536-01	CUSHION
*3-338-537-01	INDIVIDUAL CARTON
*3-338-541-01	SHEET, PROTECTION
3-701-626-01	BAG, POLYETHYLENE
3-703-895-01	LABEL, COLOR (BLACK)
3-703-908-01	{AEP}...LABEL, COLOR (WHITE)
*3-764-430-01	{AEP}...INSTRUCTION, DBP CAUTION
3-765-875-11	{AEP}...MANUAL INSTRUCTION
3-765-875-41	{UK}...MANUAL INSTRUCTION

The components identified by shading and mark  are critical for safety. Replace only with part number specified.