

Service Manual

Radio Cassette
RX-5012LS

FM/LW/MW/SW STEREO RADIO CASSETTE RECORDER



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■ SPECIFICATIONS

General:

Power Requirement: AC; 220 V, 50/60 Hz
Battery; 9 V (Six "D" Size Flashlight Batteries)
(National UM-1 or equivalent)
Power Consumption: 13 W (AC only)
Power Output: 7 W (3.5 W×2) . . . RMS (max.)
6.5 W . . . MPO (Music)
Speaker: 12 cm (4²³/₃₂") PM Dynamic
Speaker (3Ω)
Input: MIC; sensitivity 0.32 mV/applicable
microphone impedance 200~600Ω
Output: EXT SP; 3~8Ω
HEADPHONES; 8Ω
Dimensions: 441 mm(W)×241 mm(H)×140 mm(D)
(17³/₈×9¹/₂×5¹/₃")
Weight: 3.2 kg (7 lb. 0.9 oz.) without batteries

Radio Section:

Radio Frequency Range: FM; 87.5~108 MHz
LW; 150~285 kHz (2000~1060 m)
MW; 520~1610 kHz (577~186 m)
SW; 5.9~18 MHz (50.8~16.7 m)
Intermediate Frequency: FM; 10.7 MHz
AM (LW/MW/SW); 455 kHz
Sensitivity: FM; 2.8μV/50 mW output
LW; 147μV/m/50 mW output
MW; 117μV/m/50 mW output
SW; 4.2μV/50 mW output

Tape Deck Section:

Frequency Response: 80~10,000 Hz (with normal tape)
Recording system: DC bias, MAGNET erase
Tape Speed: 4.8 cm/s, (1⁷/₈ ips)
Wow and Flutter: 0.15% (WRMS)
Program Time: 1 hour with C-60 cassette tape
Track System: 4-track 2 channel stereo recording and playback

Specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

LOCATION OF CONTROLS AND COMPONENTS

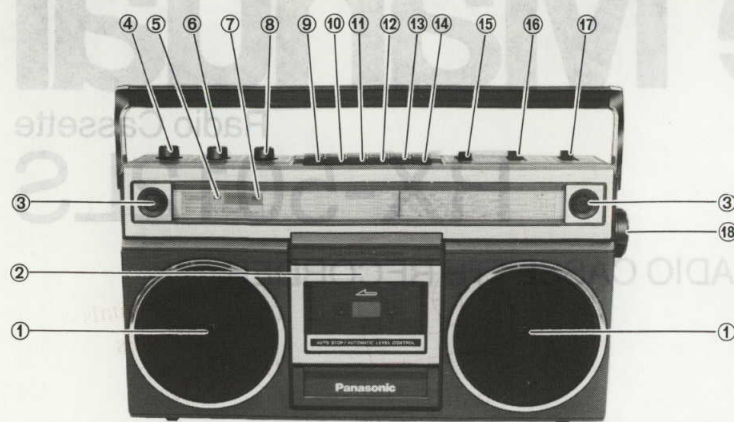


Fig. 1

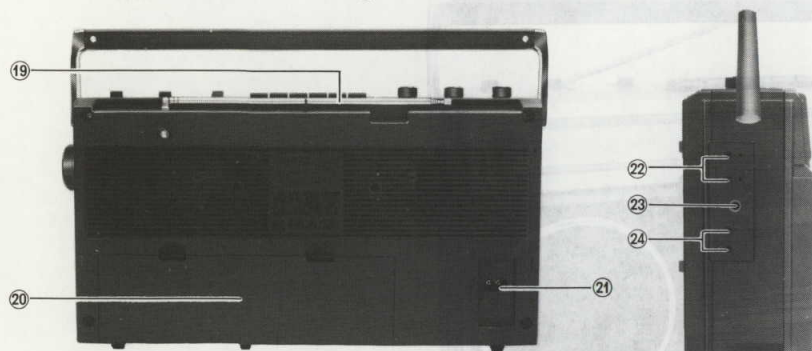


Fig. 2

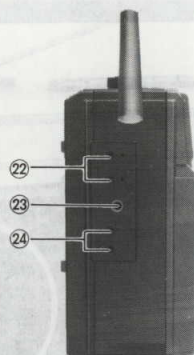


Fig. 3

- ① PM Dynamic Speakers [12 cm (4 3/8") 3Ω]
- ② Cassette Compartment
- ③ Built-in Microphones
- ④ Tone Control (TONE)
- ⑤ Operation/Battery Indicator (OPERATION/BATTERY)
- ⑥ Balance Control (BALANCE)
- ⑦ FM Stereo Indicator (FM STEREO)
- ⑧ Volume Control (VOLUME)
- ⑨ Pause Button
- ⑩ Playback Button
- ⑪ Fast Forward Button
- ⑫ Rewind Button
- ⑬ Record Button
- ⑭ Stop/Eject Button
- ⑮ Function Switch (SELECTOR)
[SLEEP, RADIO, TAPE/OFF]
- ⑯ Band Switch (BAND) [FM, LW, MW, SW]
- ⑰ FM Mode Switch (FM MODE) [STEREO, MONO]
- ⑱ Tuning Control (TUNING)
- ⑲ Telescopic Antenna
- ⑳ Battery Compartment
- ㉑ AC IN Jack (AC IN ~)
- ㉒ Microphone Jacks (MIC) [0.32 mV, 200~600Ω] Ø3.5
- ㉓ Headphone Jack (PHONES) [8Ω] Ø6
- ㉔ External Speaker Jacks (EXT. SP) [3~8Ω] Ø3.5

DISASSEMBLY INSTRUCTIONS

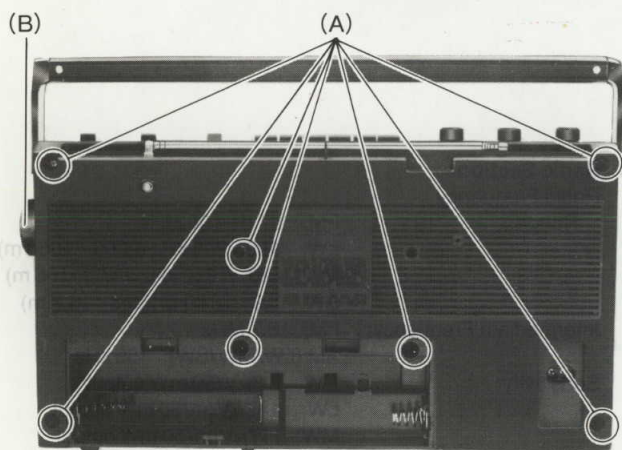


Fig. 4

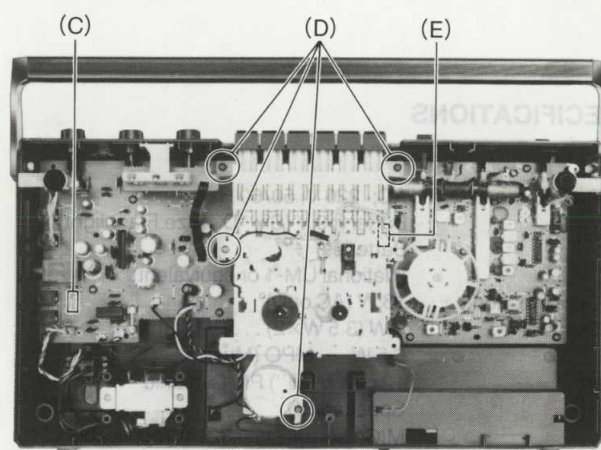


Fig. 5

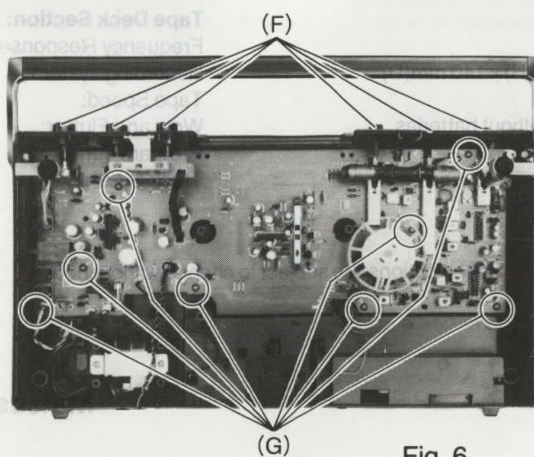


Fig. 6

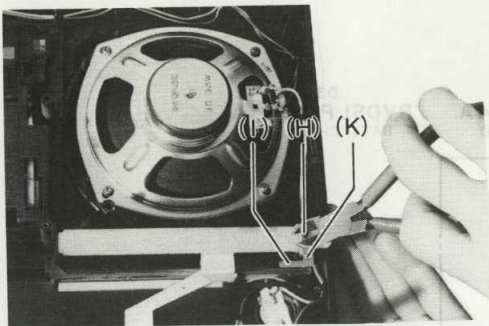


Fig. 7

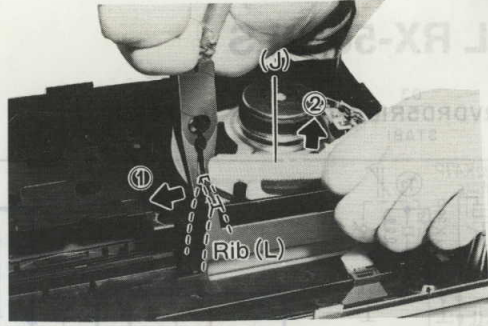


Fig. 8

Ref No.	Procedure	Shown in Fig.—	To remove—	Remove—
1	1~4	4	Front Cabinet (*1, 2)	Screw (3×45)(A)×7
2		4		Knob(B)×1
3		—		Push the Eject Button
4		5		Socket(C)×1
5	1~6	5	Mechanism	Screw (3×14)(D)×4
6		5		Socket(E)×1
7	1~8	6	Circuit Board	Knob(F)×6
8		6		Screw (3×14)(G)×8
9	1~4 9~12	7	Worm gear	Cut the Rib by nippers(H)
10		7		Stopper(I)
11		8		Open the Rib (L) by pliers in the direction of the arrow ①, and remove the Worm gear in the direction of the arrow ②(J)×1
12		7		Settle the Stopper with weld beads (K) after the exchange of the Worm gear.

- *1. Turn the dial drum to fully counter-clockwise.
*2. Turn the tuning shaft to fully counter-clockwise.

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
1. Set volume control to maximum.	6. Set FM mode switch to stereo.
2. Set tone control to treble.	7. Set power source voltage to 9 V DC.
3. Set band switch to LW, MW, SW or FM.	8. Output of signal generator should be no higher than necessary to obtain an output reading.
4. Set balance control to center.	
5. Set function switch to radio.	

■ LW, MW, SW and FM ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
AM-IF ALIGNMENT						
(1)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. at 400 Hz	Point of non-interference. (on/ about 600 kHz)	Output meter across voice coil.	T2 (AM IFT) Adjust for maximum output.
LW-RF ALIGNMENT						
(2)	LW	“	136 kHz	Tuning capacitor fully closed.	“	L8 (LW OSC Coil) “
(3)	LW	“	297 kHz	Tuning capacitor fully open.	“	CT6 (LW OSC Trimmer) “
(4)	LW	“	145 kHz	Tune to signal.	“	(*1) L5 (LW ANT Coil) Adjust for maximum output. Adjust L5 by moving coil bobbin along ferrite core.
(5)	LW	“	285 kHz	“	“	CT3 (LW ANT Trimmer) Adjust for maximum output. Repeat steps (2)~(5).

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS	
	CONNECTIONS	FREQUENCY					
MW-RF ALIGNMENT							
(6)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	511 kHz	Tuning capacitor fully closed.	Output meter across voice coil.	L9 (MW OSC Coil)	Adjust for maximum output.
(7)	MW		1,650 kHz	Tuning capacitor fully open.	"	CT5 (MW OSC Trimmer)	"
(8)	MW		550 kHz	Tune to signal.	"	(*1) L6 (MW ANT Coil)	Adjust for maximum output. Adjust L6 by moving coil bobbin along ferrite core.
(9)	MW		1,500 kHz	"	"	CT4 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (6)~(9).
(*1) Cement antenna bobbin with wax after completing alignment.							
SW-RF ALIGNMENT							
(10)	SW	Connect to test point ▼ through ceramic capacitor (10 pF) Negative side to test point ▼.	5.75 MHz	Tuning capacitor fully closed.	"	L10 (SW OSC Coil)	Adjust for maximum output.
(11)	SW		18.8 MHz	Tuning capacitor fully open.	"	CT7 (SW OSC Trimmer)	"
(12)	SW		5.9 MHz	Tune to signal.	"	L7 (SW ANT Coil)	Adjust for maximum output. Repeat steps (10)~(12).
FM-IF ALIGNMENT							
(13)	FM	High side thru. 0.001 μF to test point ▼. Negative side to test point ▼.	10.7 MHz (SWP.)	Point of non-interference. (on/ about 90 MHz)	Connect vert. amp. of scope to test point ▼. Negative side to test point ▼.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 10).
(14)	FM	"	"	"	"	T3 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 11).
FM-RF ALIGNMENT							
(15)	FM	Connect to test point ▼ through FM dummy antenna. Negative side to test point ▼.	87.5 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L4 (FM OSC Coil)	(*2) Adjust for maximum output.
(16)	FM		108 MHz	Variable capacitor fully open.	"	CT2 (FM OSC Trimmer)	"
(17)	FM		90 MHz	Tune to signal.	"	L3 (FM ANT Coil)	"
(18)	FM		106 MHz	"	"	CT1 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (15)~(18).
(*2) Three output responses will be present; proper tuning is the center frequency.							

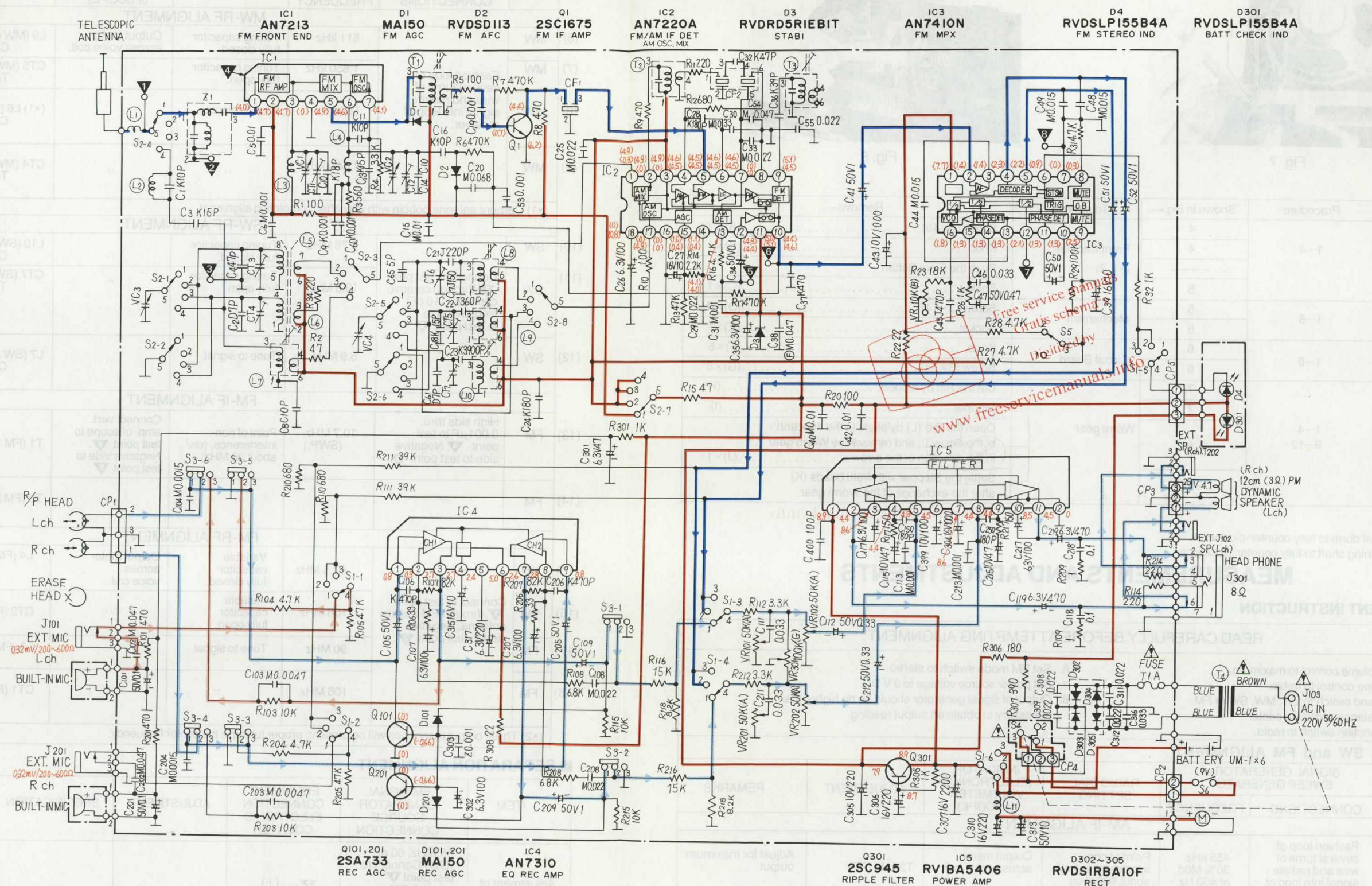
■ SEPARATION ALIGNMENT

ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Adjustment of pilot signal.	98 MHz, 60 dB (CW) Connect to test point ▼ through FM dummy antenna. Negative side to test point ▼.	▼... (+) ▼... (-)	VR1	19 kHz	Adjust VR1, for 19 kHz (±150 Hz) reading on electronics counter.

■ AUDIO ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Azimuth	QZZCFM (6.3 kHz, -20 dB)	EXT SP	Maximum output.	Azimuth screw	Playback mode

SCHEMATIC DIAGRAM MODEL RX-5012LS

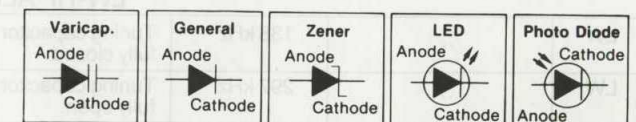


Notes:

- S1-1~S1-6: Function switch in "TAPE/OFF" position.
(1... TAPE/OFF, 2... RADIO, 3... SLEEP)
- S2-1~S2-8: Band switch in "FM" position.
(1... FM, 2... LW, 3... MW, 4... SW)
- S3-1~S3-6: Record/playback switch in "playback" position.
(1... Playback, 3... Record)
- S4: AC/DC IN switch in "DC IN" position.
(1... DC, 2... AC)
- S5: FM Mode switch in "MONO" position.
(1... STEREO, 2... MONO)
- S6: Motor switch in "OFF" position.
- VR1: VCO oscillator frequency adjust VR.
- VR101, 201: Tone control VR.
- VR102, 202: Volume control VR.
- VR301: Balance control VR.
- The mark (▼) shows test point e.g. ▼ = test point 1.
- DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
< > ... FM position, () ... AM position,
[] ... Recording position,
No mark ... Playback position.
- Battery current: No signal 87 mA
Maximum output (radio) 850 mA
Maximum output (tape) 890 mA

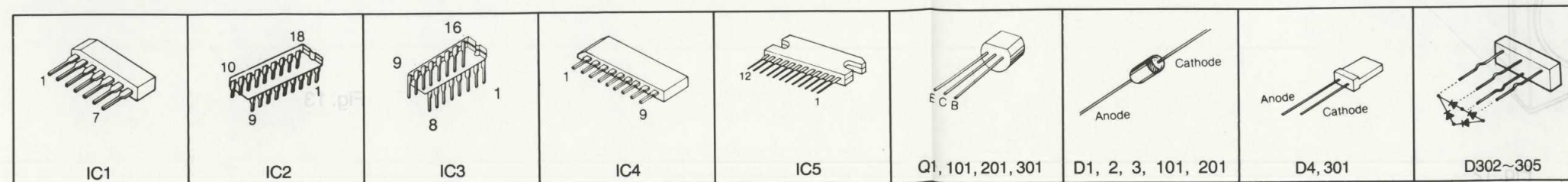
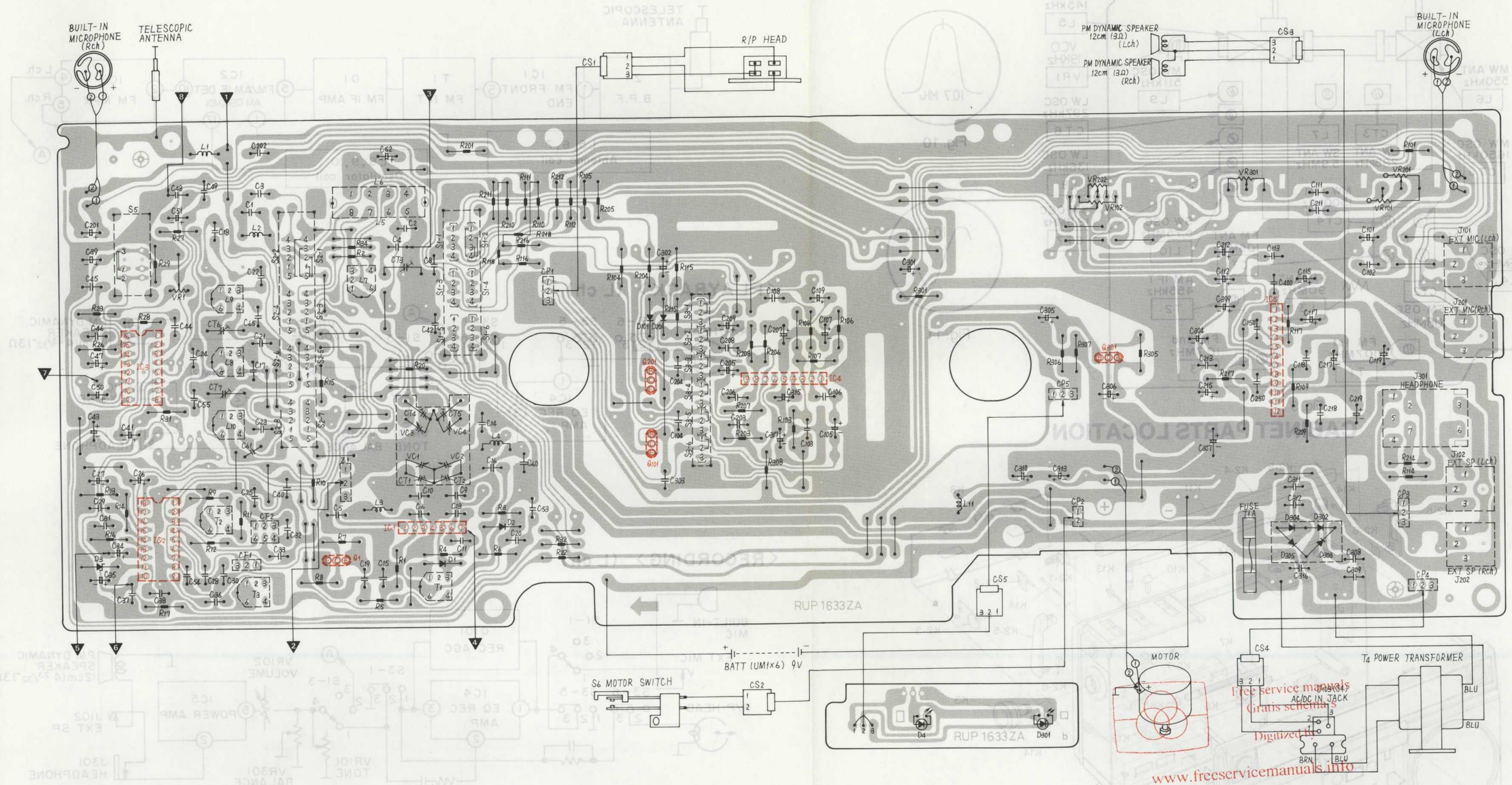
14. Important safety notice

Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.



- + @ Voltage Line
- Tape (PLAY BACK) Signal Line
- Radio (FM) Signal Line
- Tape (RECORD) Signal Line

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM MODEL RX-5012LS



■ ALIGNMENT POINTS

*Please refer to Circuit Board and Wiring Connection Diagram which is located test point.

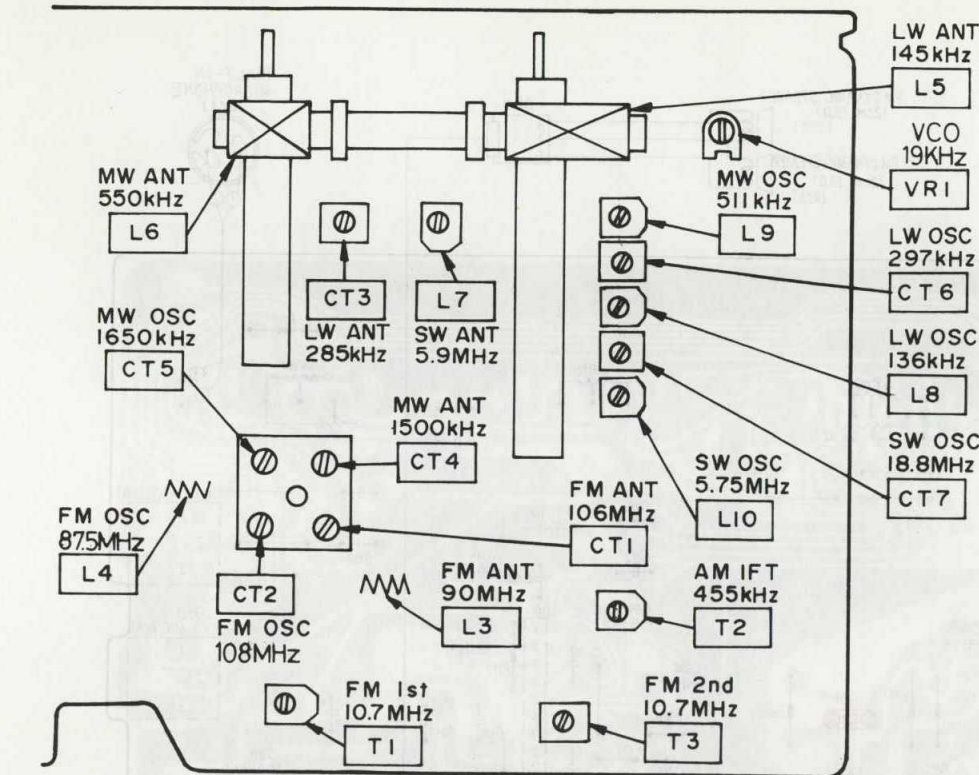


Fig. 9

CABINET PARTS LOCATION

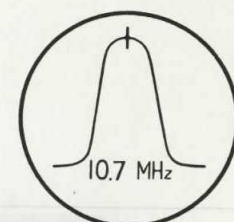


Fig. 10

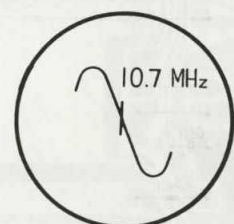
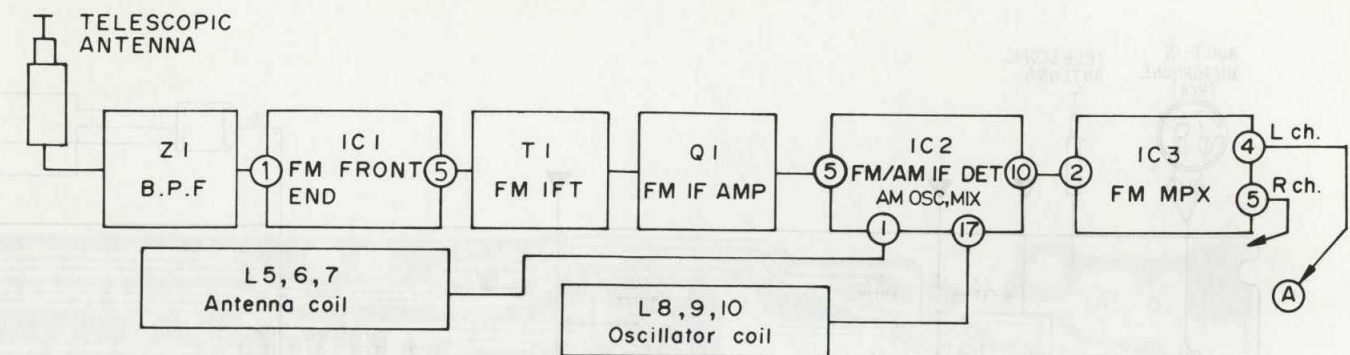


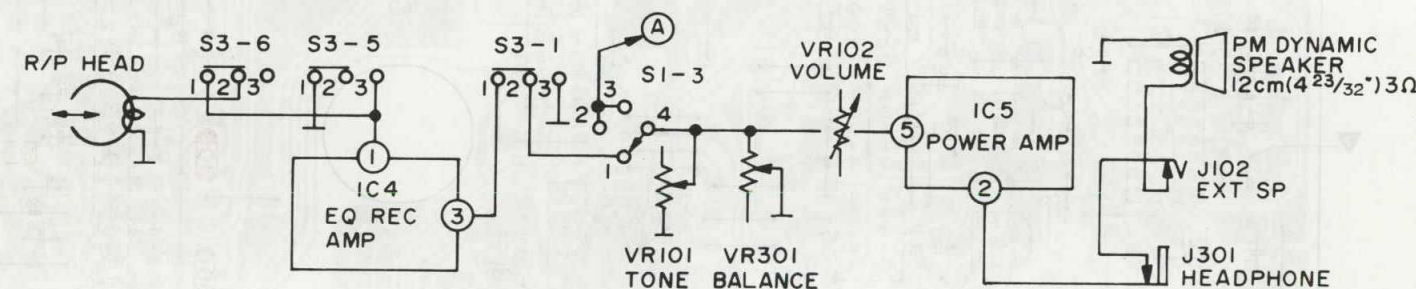
Fig. 11

BLOCK DIAGRAM

< RADIO >



< PLAYBACK > (L ch)



< RECORDING > (L ch)

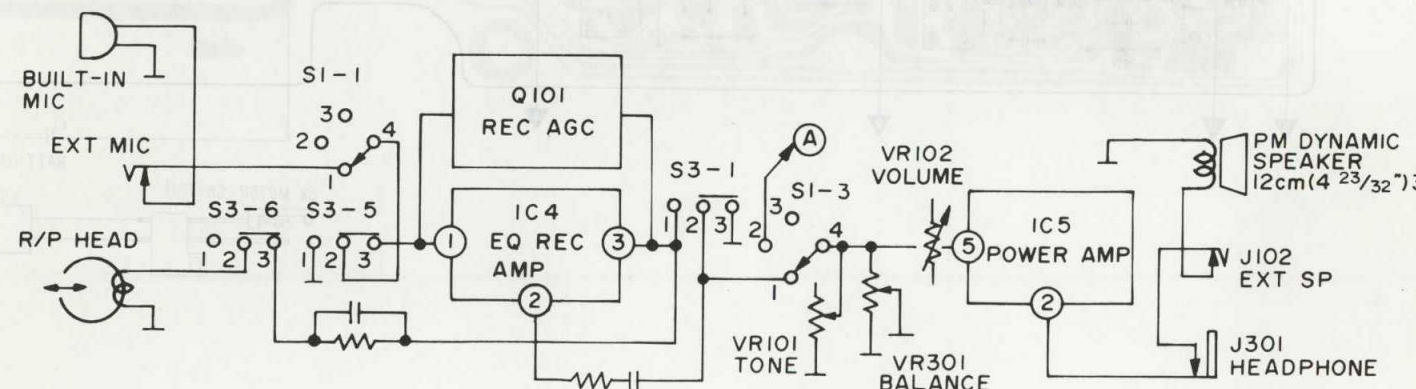


Fig. 13

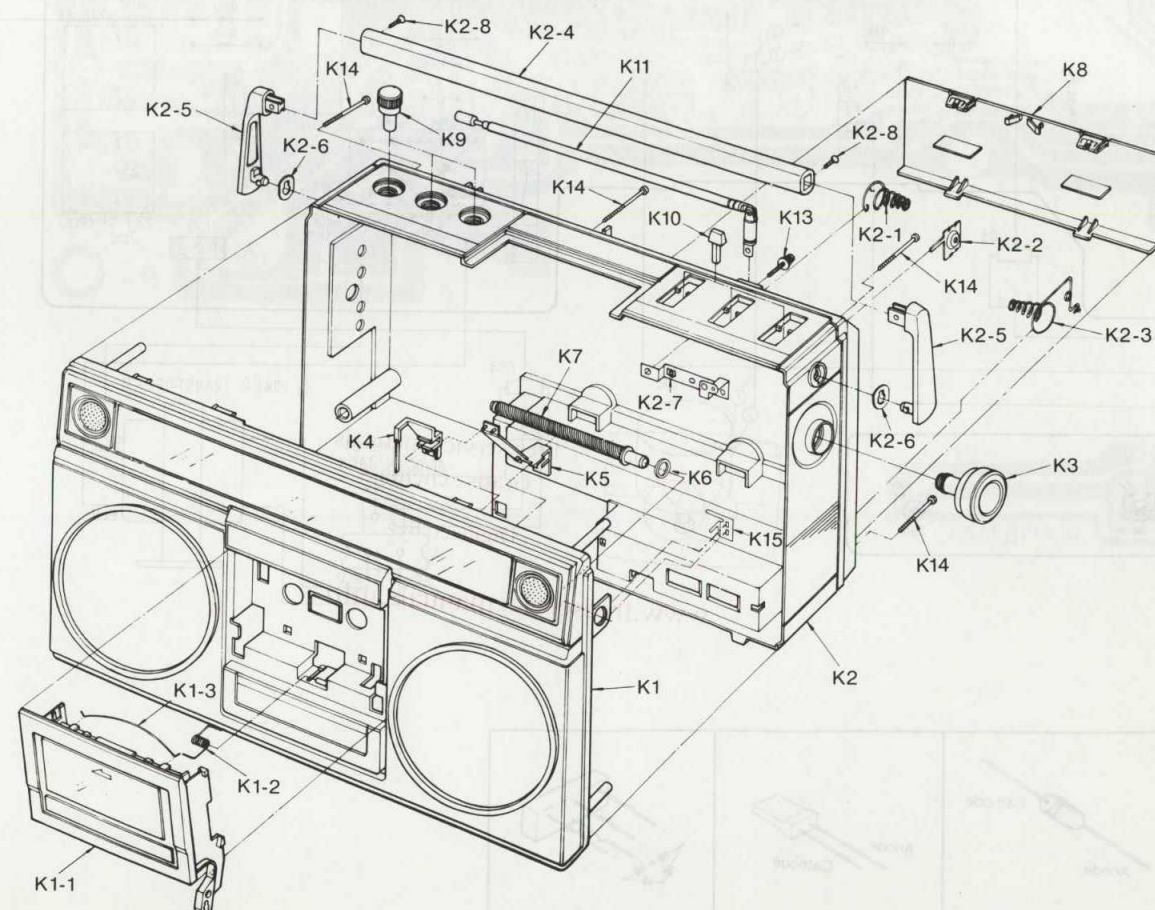


Fig. 12

RX-5012LS DEUTSCH

TECHNISCHE DATEN

Allgemeines:		Empfangsteil:
Stromversorgung:	Wechselstrom: 220 V, 50/60 Hz	Wellenbereiche:
	Batterien: 9 V (sechs Trockenbatterien der Größe "D": National UM-1 o.ä.)	UKW: 87,5~108 MHz
Leistungsaufnahme:	13 W (bei Netzbetrieb)	LW: 150~285 kHz (2000~1060 m)
	max. 7 W (2×3,5 W) eff.	MW: 520~1610 kHz (577~186 m)
Ausgangsleistung:	music. 6,5 W MPO	KW: 5,9~18 MHz (50,8~16,7 m)
	dynamischer	UKW: 10,7 MHz
Lautsprecher:	PM-Lautsprecher, Ø12 cm (3Ω)	LW/MW/KW: 455 kHz
	MIC: Empfindlichkeit 0,32 mV, Mikrofon-impedanz 200~600Ω	UKW: 2,8µV bei 50 mW Ausgangsleistung
Eingangsspannungen:	EXT SP: 3~8Ω	LW: 147µV/m bei 50 mW Ausgangsleistung
	HEADPHONES: 8Ω	MW: 117µV/m bei 50 mW Ausgangsleistung
Ausgangsimpedanzen:	Bandlaufs aus der Entfernung	KW: 4,2µV bei 50 mW Ausgangsleistung
	441×241×140 mm	
Andere Buchsen:	3,2 kg	
Abmessungen (B×H×T):		
Gewicht (ohne Batterien):		

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Gratis schema's

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BEZEICHNUNGEN IN DER SCHEMATISCHEN DARSTELLUNG

Bemerkungen:	
1. S1-1~S1-6: Funktionsschalter auf „TAPE/OFF“.	12. Alle Gleichspannungen sind mit einem Elektronikvoltmeter vom negativen Batterieanschluß aus zu messen.
(1=TAPE/OFF, 2=RADIO, 3=SLEEP)	< > ... Stellung „FM“; () ... Stellung „AM“;
2. S2-1~S2-8: Wellenbereichsschalter auf „FM“.	[] ... Stellung „Aufnahme“;
(1=FM, 2=LW, 3=MW, 4=SW)	Nein marke ... Stellung „Wiedergabe“;
3. S3-1~S3-6: Aufnahme-/Wiedergabeschalter auf „Wiedergabe“.	13. Batteriestrom: ohne Signal 87 mA
(1 ... Wiedergabe, 3 ... Aufnahme)	bei maximaler Ausgangsleistung
4. S4: Wahlschalter für Gleichstrom- oder Wechselstrombetrieb auf „DC IN“.	(Radio) 850 mA
(1 ... Gleichstrom, 2 ... Wahlschlater)	bei maximaler Ausgangsleistung
5. S5: FM Betriebsart auf „MONO“.	(Cassette) 890 mA
(1=STEREO, 2=MONO)	
6. S6: EIN/AUS-Schalter des Motors auf „AUS“.	14. Zur Betriebssicherheit
7. VR1: Einstellung der spannungsgesteuerten Oszillatorfrequenz.	Die im Schaltplan mit Δ gekennzeichneten Bauteile sind für einen sicheren Betrieb dieses Gerätes besonders wichtig und sollten daher nur durch Originalbauteile ersetzt werden.
8. VR101, 201: Klangregler.	
9. VR102, 202: Lautstärkeregler.	
10. VR301: Balanceregler.	
11. Die Markierung (▼) bezeichnet einen Meßpunkt, z.B. ▼=Meßpunkt 1.	

ABGLEICH

VORGANGSWEISE BEIM ABGLEICH

BITTE DIESEN ABSCHNITT VOR DEM ABGLEICH SORGFÄLTIG DURCHLESEN						
1. Den Lautstärkeregler in die Maximalposition stellen.			6. Den UKW Getriebsart-Schalter auf "Stereo".			
2. Den Klangregler in die Höhenposition stellen.			7. Eine Gleichspannung von 9 V anlegen.			
3. Den Wellenbereichsschalter auf LW, MW, KW oder UKW stellen.			8. Der Signalgeneratorausgang sollte nicht größer sein, als für eine Ausgangsanzeige unbedingt notwendig ist.			
4. Den Balanceregler in die Mittelposition stellen.						
5. Den Funktionsschalter auf „radio“ stellen.						
LW-, MW-, KW- und UKW-ABGLEICH						
WEL- LEN- BAND	SIGNALGENERATOR oder WOBBELGENERATOR		STELLUNG DES ABSTIMM- REGLERS	MESSGERÄT (ELEKTRONIK- VOLT-METER oder OSZILLOSKOP)	ABGLEICH	BEMERKUNGEN
	ANSCHLÜSSE	FREQUENZ				
AM-ZF-ABGLEICH						
(1) MW	Aus einem Draht einige Schleifenwindungen bilden und das Signal in die Empfängerschleife abstrahlen.	455 kHz, 30% mod. (Modulationsfrequenz 400 Hz)	Der Abstimmungspunkt, wo keine Interferenz auftritt. (ungefähr bei 600 kHz)	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule.	T2 (AM-ZF-Abgleich)	Die maximale Ausgangsleistung einstellen.
LW-HF-ABGLEICH						
(2) LW	''	136 kHz	Drehkondensator ganz geschlossen.	''	L8 (LW-Oszillatorspule)	''
(3) LW	''	297 kHz	Drehkondensator ganz aufgedreht.	''	CT6 (LW-Oszillatortrimmer)	''
(4) LW	''	145 kHz	Das Signal abstimmen.	''	(*1) L5 (LW-Antennenspule)	Die maximale Ausgangsleistung einstellen. L5 durch Verschieben am Ferritkern abgleichen.
(5) LW	''	285 kHz	''	''	CT3 (LW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (2) bis (5) wiederholen.
MW-HF-ABGLEICH						
(6) MW	''	511 kHz	Drehkondensator ganz geschlossen.	''	L9 (MW-Oszillatorspule)	Die maximale Ausgangsleistung einstellen.
(7) MW	''	1.650 kHz	Drehkondensator ganz aufgedreht.	''	CT5 (MW-Oszillatortrimmer)	''
(8) MW	''	550 kHz	Das Signal abstimmen.	''	(*1) L6 (MW-Antennenspule)	Die maximale Ausgangsleistung einstellen. L6 durch Verschieben am Ferritkern abgleichen.
(9) MW	''	1.500 kHz	''	''	CT4 (MW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (6) bis (9) wiederholen.
(*1) Nach beendetem Abgleich ist der Antennenspulenkörper mit Wachs zu befestigen.						
KW-HF ABGLEICH						
(10) KW		5,75 MHz	Drehkondensator ganz geschlossen.	''	L10 (KW-Oszillatorspule)	Die maximale Ausgangsleistung einstellen.
(11) KW	Über einen Keramik-kondensator (10 pF) an den Meßpunkt ▼ anschließen. Den negativen Ausgang an den Meßpunkt ▼ anschließen.	18,8 MHz	Drehkondensator ganz aufgedreht.	''	CT7 (KW-Oszillatortrimmer)	''
(12) KW		5,9 MHz	Das Signal abstimmen.	''	L7 (KW-Antennenspule)	Die maximale Ausgangsleistung einstellen. Die Schritte (10) bis (12) wiederholen.

(*1) Nach beendetem Abgleich ist der Antennenspulenkörper mit Wachs zu befestigen.

RX-5012LS FRANÇAIS

WEL- LEN- BAND	SIGNALGENERATOR oder WOBBELGENERATOR		STELLUNG DES ABSTIMM- REGLERS	MESSGERÄT (ELEKTRONIK- VOLTMETER oder OSZILLOSKOP)	ABGLEICH	BEMERKUNGEN
	ANSCHLÜSSE	FREQUENZ				
UKW-ZF-ABGLEICH						
UKW	Über einen 0,001 μ F-Kondensator an den Meßpunkt ▼ anschließen. Den negativen Ausgang an den Meßpunkt ▼ anschließen.	10,7 MHz (SWP.)	Der Abstimm- punkt, wo keine Interferenz auf- tritt (ungefähr bei 90 MHz).	Die Vertikal- amplitude des Oszilloskops an den Meßpunkt ▼ anschließen. Den negativen Ausgang an den Meßpunkt ▼ anschließen.	T1 (1. UKW- ZF-Abgleich)	Die Maximalamplitude einstellen. (Siehe Abb. 10.)
UKW	"	"	"	"	T3 (2. UKW- ZF-Abgleich)	Die Maximal- amplitude einstellen. (Siehe Abb. 11.)
UKW-HF-ABGLEICH						
UKW	Über eine künstliche UKW-Antenne an den Meßpunkt ▼ anschließen. Den negativen Ausgang an den Meßpunkt ▼ anschließen.	87,5 MHz	Drehkondensator ganz geschlossen.	Ausgangslei- stungsmesser parallel zur Lautsprecher- Schwingspule.	L4 (UKW-Oszil- latorspule)	(*2) Die maximale Ausgangsleistung einstellen.
UKW		108 MHz	Drehkondensator ganz aufgedreht.	"	CT2 (UKW-Oszil- latortrimmer)	"
UKW		90 MHz	Das Signal abstimmen.	"	L3 (UKW- Antennenspule)	"
UKW		106 MHz	"	"	CT1 (UKW-Anten- nentrimmer)	(*2) Die maximale Ausgangsleistung einstellen. Die Schritte (15) bis (18) wiederholen.
(*2) Es gibt drei verschiedene Ausgangsfrequenzkurven. Stimmen Sie die Mittelfrequenz ab.						

KANALTRENNUNGSABGLEICH

PRÜFUNG	UKW-MESSENDER SOURCE-ANSCHLUSS	GERÄTEAN-SCHLUSS (ELEKTRO-NISCHER ZÄHLER)	EINSTELLUNG	ANGABEN	BEMERKUNGEN
Einstellung des Pilottons	Am Prüfpunkt ▼ über eine künstliche UKW-Antenne anschließen, die negative Seite mit dem Prüfpunkt ▼ verbinden.	▼... (+) ▼... (-)	VR1	19 kHz	Mit dem elektronischen Zähler den Spannungskonstanthalter (VR1) auf 19 kHz (±150 Hz) einstellen.

AUDIO-ABGLEICH

EINSTELLUNG	EINGANG	MESSPUNKT	MESSWERT	EINSTELL-PUNKT	BEMERKUNGEN
Azimut	QZZCFM (6,3 kHz, -20 dB)	EXT SP	Die maximale Ausgangsleistung einstellen.	Azimut-Einstellschraube	bei Wiedergabe

RX-5012LS FRANÇAIS

SPECIFICATIONS

Généralités:		Section radio:	
Alimentation:	c.a. 220 V, 50/60 Hz Piles: 9 V (six piles sèches de dimension D) (National UM-1 ou équivalent) 13 W (C.A. seulement)	radio:	FM: 87,5 à 108 MHz GO: 150 à 285 kHz (2000 à 1060 m) PO: 520 à 1610 kHz (577 à 186 m) OC: 5,9 à 18 MHz (50,8 à 16,7 m)
Consommation:	7 W (3,5 W×2) . . . RMS (max.)	Fréquence intermédiaire:	FM: 10,7 MHz AM (GO/PO/OC): 455 kHz
Puissance de sortie:	6,5 W . . . MPO (Music)	Sensibilité:	FM: 2,8µV pour une sortie de 50 mW GO: 147µV/m pour une sortie de 50 mW PO: 117µV/m pour une sortie de 50 mW OC: 4,2µV pour une sortie de 50 mW
Enceinte acoustique:	haut-parleur dynamique 12 cm à aimant fixe (3Ω)		
Entrée:	MIC: sensibilité 0,32 mV: impédance applicable pour microphone 200 à 600Ω		
Sortie:	EXT SP: 3 à 8Ω HEADPHONE: 8Ω		
Dimensions (l×h×Pr) cm:	44,1×24,1×14,0 (17¾×9½×5½)"		
Poids kg:	3,2 sans piles		

Section platine magnétophone:	
Réponse de fréquence:	80 à 10.000 Hz (avec bande normale)
Système d'enregistrement:	Polarisation C.C., effacement magnétique
Vitesse de bande:	4,8 cm/sec.
Pleurage et scintillement:	0.15% (WRMS)
Durée de lecture:	1 heure avec cassette C-60
Pistes:	Enregistrement et lecture stéréo 4 pistes, 2 canaux

Ces spécifications sont sujettes à des changements sans préavis.

SYMBOLES UTILISES DANS LE SCHEMA

Remarques:	
1. S1-1~S1-6: Commutateur de fonction en position "TAPE/OFF". (1 . . . "TAPE/OFF", 2 . . . "RADIO", 3 . . . "SLEEP")	12. La tension C.C. est mesurée au moyen d'un voltmètre électronique à partir de la borne négative de la pile. < > . . . Position FM, () . . . Position AM, [] . . . Position Enregistrement, Non marque . . . Position Lecture.
2. S2-1~S2-8: Sélecteur de gamme d'onde en position "FM". (1 . . . "FM", 2 . . . "LW", 3 . . . "MW", 4 . . . "SW")	13 Courant des piles: Pas de signal 87 mA Sortie maximum (Radio) 850 mA Sortie maximum (Bande) 890 mA
3. S3-1~S3-6: Commutateur enregistrement/lecture en position "playback". (1 . . . Lecture, 3 . . . Enregistrement)	
4. S4: Sélecteur C.A./C.C. en position "DC IN". (1 . . . C.C., 2 . . . C.A.)	
5. S5: Commutateur de stéréo-mono en position "MONO". (1 . . . "STEREO", 2 . . . "MONO").	14. Remarque importante concernant la sécurité Les pièces marquées Δ ont des caractéristiques spéciales, importantes pour la sécurité. Lors du remplacement d'une de ces pièces, n'utiliser que les pièces spécifiées par le fabricant.
6. S6: Commutateur marche/arrêt du moteur en position "Arrêt".	
7. VR1: Réglage de fréquence de l'oscillateur VCO.	
8. VR101, 201: Commande de tonalité.	
9. VR102, 202: Potentiomètre de volume.	
10. VR301: Commande de balance.	
11. La marque (▼) signale un point de vérification. Ex.: ▼=point de vérification 1.	

ALIGNEMENTS

INSTRUCTIONS D'ALIGNEMENT

AVANT DE PROCEDER AUX ALIGNEMENTS, LIRE ATTENTIVEMENT CE QUI SUIIT	
1. Placer le potentiomètre de volume au maximum.	6. Placer le commutateur de FM mode en position "stéréo".
2. Placer le commande de tonalité sur aigus.	7. Régler la tension sur 9 V C.C.
3. Placer le sélecteur de bande sur GO, PO, OC ou FM.	8. Régler la sortie du générateur étalonné de façon à ne pas surcharger les circuits.
4. Placer la commande de balance au centre.	
5. Placer le sélecteur de fonctions sur "radio".	

ALIGNEMENT GO, PO, OC, et FM

BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE		POSITION DE L'AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE ELECTRO- NIQUES)	REGLAGE	OBSERVATIONS
	BRANCHEMENTS	FREQUENCE				
ALIGNEMENT IF sur AM						
PO	Faire une boucle de plusieurs tours de fil et émettre ls signal dans la boucle du récepteur.	455 kHz (modulation de 30% à 400 Hz)	Point de non- interférence. (à/ environ 600 kHz)	Voltmètre branché à la bobine oscillatrice.	T2 (AM IFT)	Régler pour une sortie maximum.
ALIGNEMENT HF sur GO						
GO	''	136 kHz	Condensateur variable totalement fermé.	''	L8 (bobine d'oscillateur GO)	''
GO	''	297 kHz	Condensateur variable ouvert à fond.	''	CT6 (trimmer d'oscillateur GO)	''
GO	''	145 kHz	Syntoniser sur le signal.	''	(*1) L5 (bobine d'antenne GO)	Régler pour une sortie maximum en glissant la bobine L5 le long du noyau en ferrite.
GO	''	285 kHz	''	''	CT3 (trimmer d'antenne GO)	Régler pour une sortie maximum. Refaire les étapes (2) à (5).
ALIGNEMENT HF sur PO						
PO	''	511 kHz	Condensateur variable totalement fermé.	''	L9 (bobine d'oscillateur PO)	Régler pour une sortie maximum.
PO	''	1.650 kHz	Condensateur variable ouvert à fond.	''	CT5 (trimmer d'oscillateur PO)	''
PO	''	550 kHz	Syntoniser sur le signal.	''	(*1) L6 (bobine d'antenne PO)	Régler pour une sortie maximum en glissant la bobine L6 le long du noyau en ferrite.
PO	''	1.500 kHz	''	''	CT4 (trimmer d'antenne PO)	Régler pour une sortie maximum. Refaire les étapes (6) à (9).
(*1) Sceller la bobine d'antenne à la cire après avoir achevé l'alignement.						
ALIGNEMENT HF sur OC						
OC		5,75 MHz	Condensateur variable totalement fermé.	''	L10 (bobine d'oscillateur OC)	Régler pour une sortie maximum.
OC	Brancher au point ▼ par un condensateur en céramique (10 pF) Côté négatif au point ▼.	18,8 MHz	Condensateur variable ouvert à fond.	''	CT7 (trimmer d'oscillateur OC)	''
OC		5,9 MHz	Syntoniser sur le signal.	''	L7 (bobine d'antenne OC)	Régler pour une sortie maximum. Refaire les étapes (10) à (12).

BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE		POSITION DE L'AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE ELECTRO-NIQUES)	REGLAGE	OBSERVATIONS
	BRANCHEMENTS	FREQUENCE				
ALIGNEMENT IF sur FM						
FM	Brancher au point ▼ via 0,001 µF. Côté négatif au point ▼.	10,7 MHz (SWP.)	Point de non-interférence. (à/environ 90 MHz)	Brancher la sonde vert. de l'oscilloscope au point ▼. Côté négatif au point ▼.	T1 (FM 1 ^{ère} IFT)	Régler pour une amplitude maximum. (Voir fig. 10)
FM	"	"	"	"	T3 (FM 2 ^{ème} IFT)	Régler pour une amplitude maximum. (Voir fig. 11.)
ALIGNEMENT HF sur FM						
FM	Brancher au point ▼ via une antenne fictive FM. Côté négatif au point ▼.	87,5 MHz	Condensateur variable totalement fermé.	Voltmètre branché à la bobine oscillatrice.	L4 (bobine d'oscillateur FM)	(*2) Régler pour une sortie maximum.
FM		108 MHz	Condensateur variable ouvert à fond.	"	CT2 (trimmer d'oscillateur FM)	"
FM		90 MHz	Syntoniser sur le signal.	"	L3 (bobine d'antenne FM)	"
FM		106 MHz	"	"	CT1 (trimmer d'antenne FM)	(*2) Régler pour une sortie maximum. Refaire les étapes (15) à (18).
(*2) Il y aura trois réponses de sortie; la syntonisation adéquate est la fréquence du milieu.						

ALIGNEMENT DE LA SEPARATION

ELEMENT	GENERATEUR DE SIGNAUX FM BRANCHEMENT SUR LA SOURCE	BRANCHEMENT A L'EQUIPMENT (COMPTEUR ELECTRONIQUE)	REGLAGE	SPECIFICATION	REMARQUES
Réglage du signal pilote.	Brancher au point de coupure ▼ par l'intermédiaire d'une antenne FM fictive. Côté négatif au point de coupure ▼.	▼... (+) ▼... (-)	VR1	19 kHz	Régler VR1 pour 19 kHz (±150 Hz) en effectuant la lecture sur le compteur électronique.

ALIGNEMENTS AUDIO

ELEMENT	ENTREE	POINT DE MESURE	SPECIFICATION	POINT DE REGLAGE	OBSERVATIONS
Azimet	QZZCFM (6,3 kHz, -20 dB)	EXT SP	Régler pour une sortie maximum.	Vis d'azimet	Mode de lecture

MECHANISM PARTS LOCATION

Specifications

Take up Tension	50±20 g-cm
FF Tension	100±60 g-cm 50 g-cm
REW Tension	100±60 g-cm 50 g-cm
Wow & flutter	Less than 0.15% (WRMS)
Tape speed	3000±90 Hz
Pressure of Pressure roller	250±30 gr

Mechanism Operation: Auto Stop

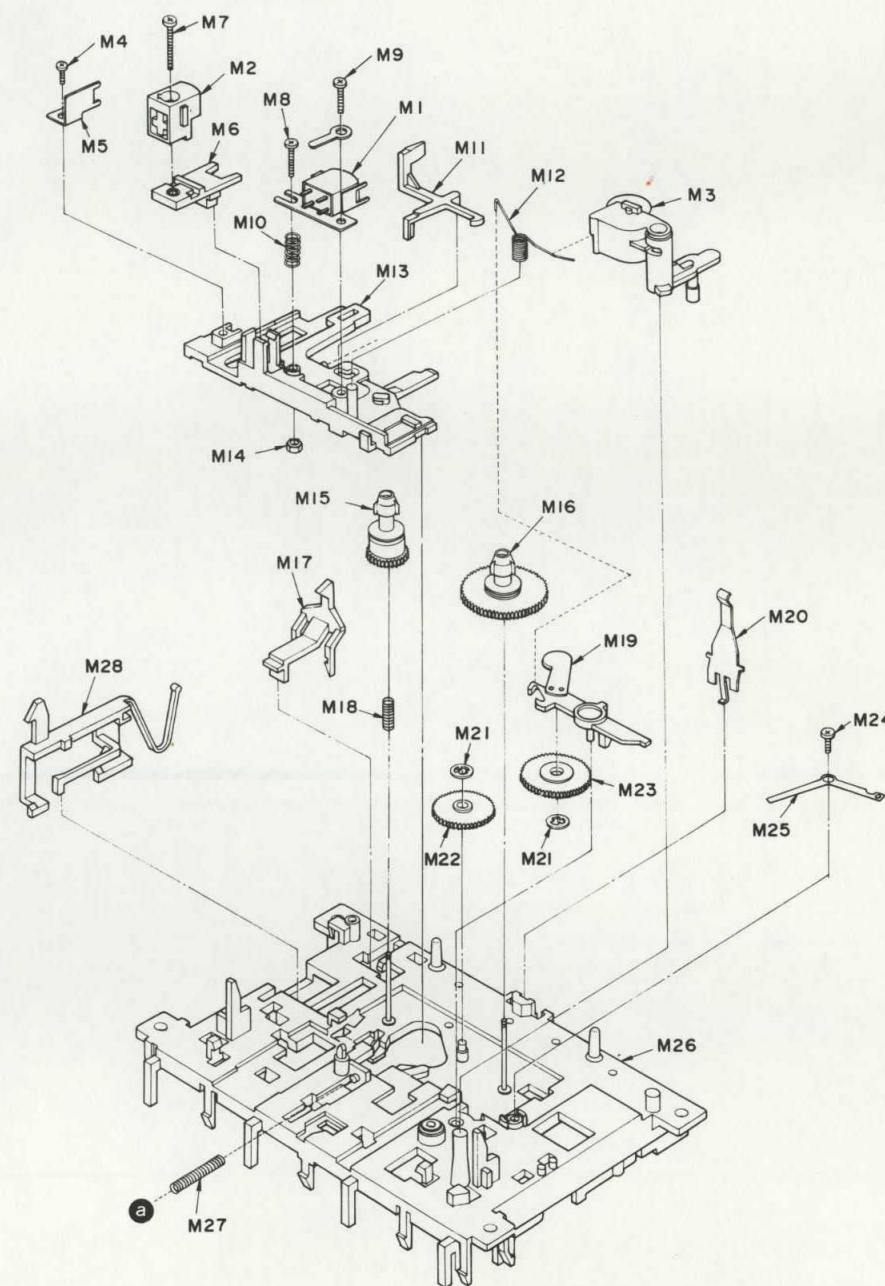


Fig. 14

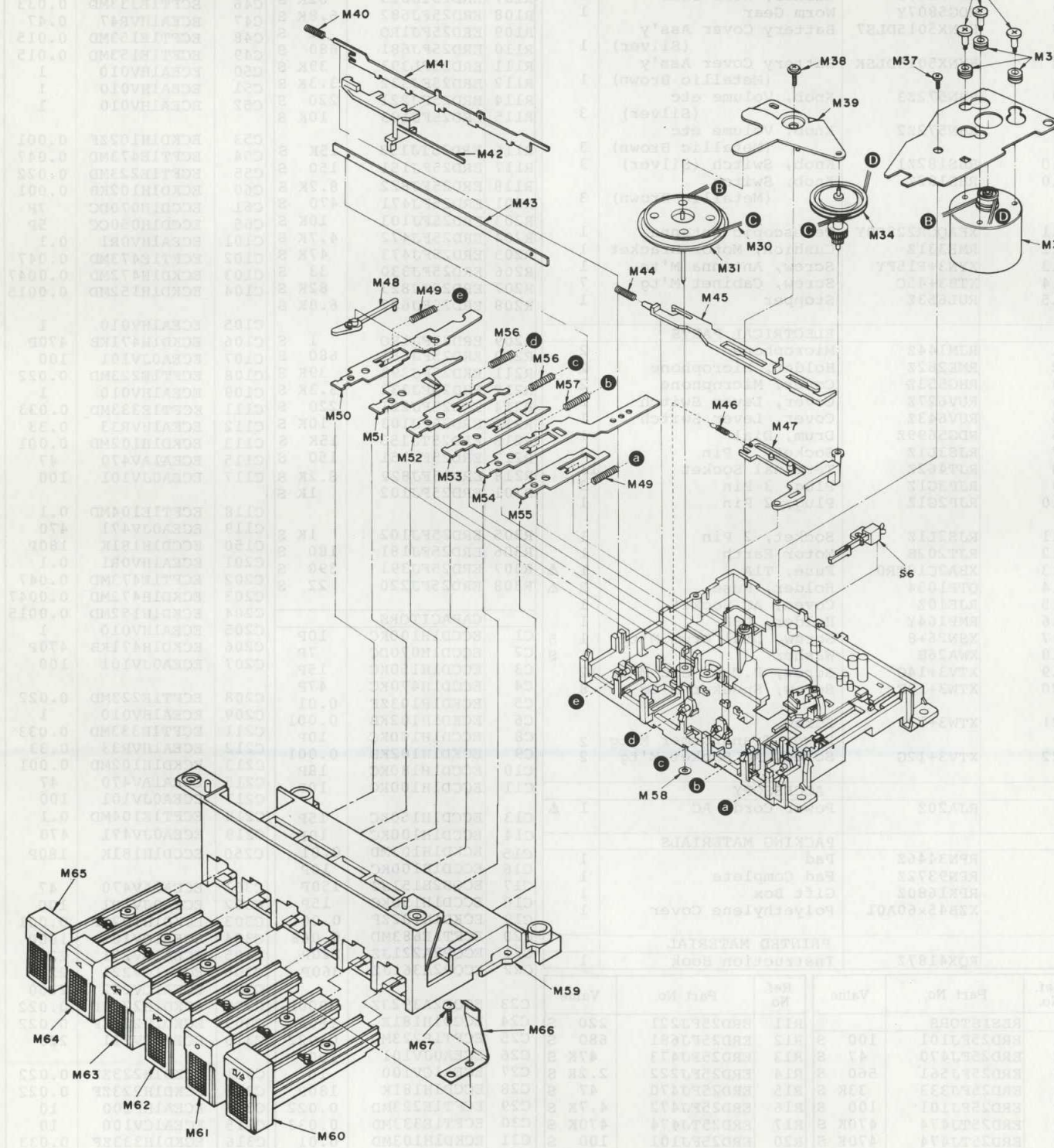


Fig. 15

ELECTRICAL PARTS LOCATION

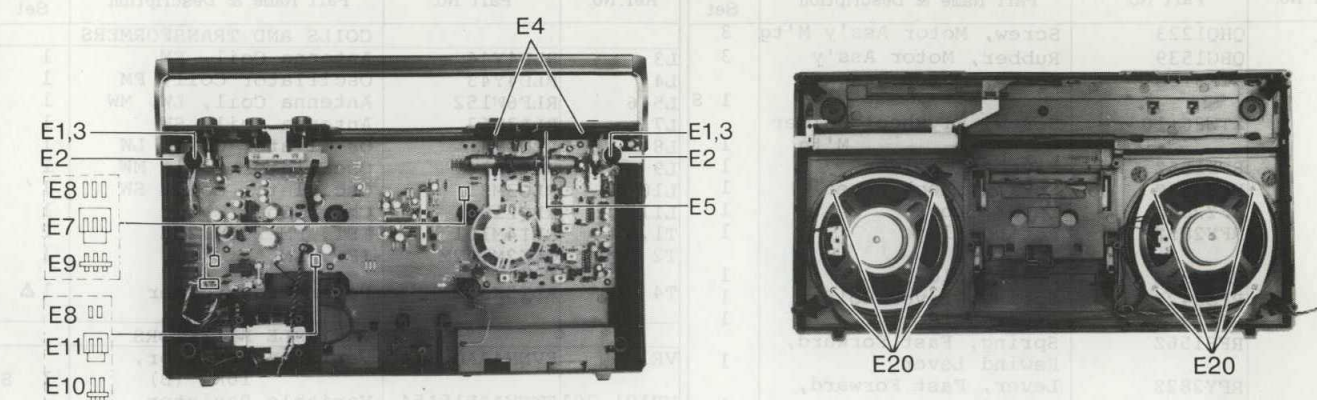


Fig. 16

Fig. 17

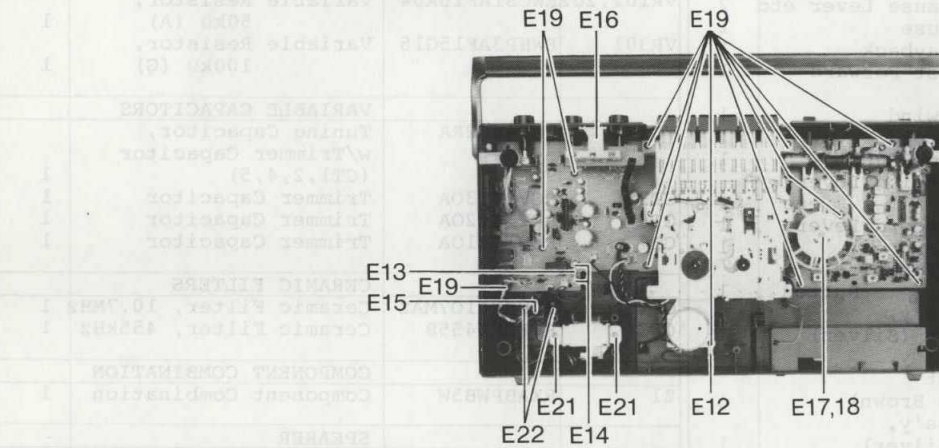


Fig. 18

REPLACEMENT PARTS LIST.....RX-5012LS

(RD83072121C2)

Notes:

- Important safety notice.
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
- The S mark indicates service standard parts and may differ from production parts.
- RESISTORS & CAPACITORS
Unless otherwise specified.
All resistors are in OHMS (Ω) K=1000 Ω , M=1000k Ω
All capacitors are in MICRO FARADS (μ F) P= μ F

*Type & Wattage of Resistor

Type	ERC:Solid	ERX:Metal Film	ERW:Wirewound Resistor
	ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
	ERR:Chip	ERO:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W 14,25:1/4W 12:1/2W 1:1W 2:2W 3:3W

*Type & Voltage of Capacitor

Type	ECFW:Semi-conductor	ECCD, ECKD, ECBT: Ceramic
	ECQS: Styrol	ECQM, ECQV, ECQG: Polyester
	ECUX: Chip	ECBA, ECSZ : Electrolytic
	ECMS: Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG, ECQV, Type	ECSZ Type	Others
1H: 50V	0.5: 50V	OF: 3.15V	0J : 6.3V 1H, 1V, 50: 50V
2A: 100V	1: 100V	1A: 10V	1A : 10V 1J : 63V
2E: 500V	2: 200V	1V: 35V	1C : 16V 2A : 100V
2H: 500V		0J: 6.3V	1E, 25: 25V

Ref.No.	Part No.	Part Name & Description	Per Set
MECHANICAL PARTS			
M1	RJH2E4Y	Record/Playback Head	1
M2	QWY2127Z	Erase Head	1
M3	RFR16Z	Pinch Roller Ass'y	1
M4	XTN2+6B	Screw, Tape Guide M'tg	1 S
M5	RFD107Z	Tape Guide	1
M6	RFE32Z	Erase Head Base	1
M7	XTN26+15B	Screw, Erase Head M'tg	1 S
M8	XTN2+10B	Screw, Azimuth Adjust	1
M9	XTN2+8B	Screw, Record/Playback Head M'tg	1 S
M10	RFS338Z	Spring, Azimuth Adjust	1
M11	RFY91Z	Lever, Auto Stop	1
M12	RFS337Z	Spring, Arm	1
M13	RFU23Z	Head Base	1
M14	RFE122Z	Nut, Record/Playback Head M'tg	1
M15	RFJ31Z	Takeup Reel Table Ass'y	1
M16	RFJ32Z	Supply Reel Table Ass'y	1
M17	RFY279Z	Lever, Erase Safety	1
M18	RFS339Z	Spring, Back Tension	1
M19	RFY281Z	Playback Arm	1
M20	RFS341Z	Spring, Cassette Holder	1
M21	RFX39Y	Speed Nut, Fast Forward, Playback Gear	2
M22	RFG19Z	Fast Forward Gear	1
M23	RFG44Z	Playback Gear	1
M24	XTN26+6B	Screw, Earth Lug M'tg	1 S
M25	RFE123Z	Earth Lug	1
M26	RFU24Z	Mechanism Base Ass'y	1
M27	RFS153Z	Spring, Head Base	1
M28	RFY280Z	Lever, Eject Slide	1
M30	RFB32Z	Main Belt	1
M31	RFF21Z	Flywheel Ass'y	1
M32	RFM20Z	Motor Ass'y with Pulley	1
M34	RFK9Z	Idler Ass'y	1

Ref. No.	Part No.	Part Name & Description	Per Set	Ref. No.	Part No.	Part Name & Description	Per Set
M35	QH1223	Screw, Motor Ass'y M'tg	3	COILS AND TRANSFORMERS			
M36	QBG1539	Rubber, Motor Ass'y	3	L3	RLD4Y44	Antenna Coil, FM	1
M37	XTN3+8B	Screw, Motor Bracket	1 S	L4	RLD4Y43	Oscillator Coil, FM	1
M38	XTW26+10	Screw, Flywheel Holder	1	L5,6	RLF6W152	Antenna Coil, LW, MW	1
M39	RFD155Z	Flywheel Holder	1	L7	RLA3M63	Antenna Coil, SW	1
M40	RFS343Z	Spring, Lock Lever	1	L8	RLO1M4	Oscillator Coil, LW	1
M41	RFY284Z	Lever, Lock	1	L9	RLO2M14	Oscillator Coil, MW	1
M42	RFY285Z	Acting Plate	1	L10	RLO3M31	Oscillator Coil, SW	1
M43	RFY286Z	Lever Holder	1	L11	RLQZ1001	Choke Coil	1
M44	RFS342Z	Spring, Lever Holder	1	TL,3	RLI4M101	IFT, FM 1st, 2nd	2
M45	RFY283Z	Lever Holder	1	T2	QLI2M102M	IFT, AM	1
M46	RFS156Z	Spring, Fast Forward, Rewind Lever	1	T4	RLT5K3G2A	Power Transformer	1 Δ
M47	RFY282Z	Lever, Fast Forward, Rewind	1	VARIABLE RESISTORS			
M48	RFY287Z	Arm, Pause	1	VR1	EVNM4AAO0B14	Variable Resistor, 10kΩ (B)	1 S
M49	RFS340Z	Spring, Pause Lever etc	2	VR101,201	EWCVAAF15A54	Variable Resistor, 50kΩ (A)	1
M50	RFY288Z	Lever, Pause	1	VR102,202	EWCS1AF15A54	Variable Resistor, 50kΩ (A)	1
M51	RFY289Z	Lever, Playback	1	VR301	EWHP3AF15G15	Variable Resistor, 100kΩ (G)	1
M52	RFY290Z	Lever, Fast Forward	1	VARIABLE CAPACITORS			
M53	RFY291Z	Lever, Rewind	1	VC1~4	RCV4RC2RA	Tuning Capacitor, w/Trimmer Capacitor (CTL,2,4,5)	1
M54	RFY292Z	Lever, Record	1	CT3	RCV1GT3OA	Trimmer Capacitor	1
M55	RFY293Z	Lever, Stop/Eject	1	CT6	RCV1GT2OA	Trimmer Capacitor	1
M56	RFS147Z	Spring, Rewind Lever etc	2	CT7	RCV1GT1OA	Trimmer Capacitor	1
M57	RFS344Z	Spring, Record Lever	1	CERAMIC FILTERS			
M58	RFE58Z	Oil Stopper	1	CF1	RVFSFE107MAZ	Ceramic Filter, 10.7MHz	1
M59	RUA555Z	Holder, Mechanism	1	CF2	RVFSFZ455B	Ceramic Filter, 455KHz	1
M60	RYT2X5012LS1	Button Ass'y, Stop/Eject (Silver)	1	COMPONENT COMBINATION			
M60	RYT2X5012LSX	Button Ass'y, Stop/Eject (Metallic Brown)	1	Z1	RXABPWB5W	Component Combination	1
M61	RYT3X5012LS1	Button Ass'y, Record (Silver)	1	SPEAKER			
M61	RYT3X5012LSX	Button Ass'y, Record (Metallic Brown)	1		RAS12P07Z	Speaker, 12cm (4-23/32"), 3Ω PM Dynamic	2
M62	RYT4X5012LS1	Button Ass'y, Rewind (Silver)	1	SWITCHES			
M62	RYT4X5012LSX	Button Ass'y, Rewind (Metallic Brown)	1	S1	RST3F15Z	Switch, Function	1
M63	RYT5X5012LS1	Button Ass'y, Fast Forward (Silver)	1	S2	RST4H03Z	Switch, Band	1
M63	RYT5X5012LSX	Button Ass'y, Fast Forward (Metallic Brown)	1	S3	RSH2F08Z	Switch, Record/Playback	1
M64	RYT6X5012LS1	Button Ass'y, Playback (Silver)	1	S4	Refer to J103	Switch, AC/DC	1
M64	RYT6X5012LSX	Button Ass'y, Playback (Metallic Brown)	1	S5	RST2A06Z	Switch, FM Mode	1
M65	RYT7X5012LS1	Button Ass'y, Pause (Silver)	1	S6	RFA43Z	Switch, Motor	1
M65	RYT7X5012LSX	Button Ass'y, Pause (Metallic Brown)	1	JACKS			
M66	RUS455Z	Spring, Record/Playback	1	J101,102	QJA0172A	Jack, EXT, MIC/SP	4
M67	XTV3+8G	Screw, Record Playback Spring	1	J103	RJJ30Z	Jack, AC IN	1 Δ
IC1	AN7213	IC	1	J301	RJJ1E9Z	Jack, Headphone	1
IC2	AN7220A	IC	1	CABINET PARTS			
IC3	AN7410N	IC	1	K1	RYMX5012LSX8	Front Cabinet Ass'y (Silver)	1
IC4	AN7310	IC	1	K1	RYMX5012LSX1	Front Cabinet Ass'y (Metallic Brown)	1
IC5	RVIBA5406	IC	1	K1-1	RYPX5012LSXG	Cassette Panel Ass'y	1
Q1	2SC1675K1	Transistor (Si)	1	K1-2	RUS441X	Spring, Eject	1
Q101,201	2SA733Q	Transistor (Ge)	2	K1-3	RUS438Z	Spring, Cassette Panel	1
Q301	2SC945-Q	Transistor (Si)	1 S	K2	RYFX5012LSX7	Rear Cabinet Ass'y (Silver)	1
D1,101,201	MA161	Diode (Si)	3 S	K2	RYFX5012LSXG	Rear Cabinet Ass'y (Metallic Brown)	1
D2	RVDS113	Diode (Si)	1	K2	RYFX5012LSF7	Rear Cabinet Ass'y (Silver)	1
D3	RVDRD5R1EB1	Diode (Si)	1	K2	RYFX5012LSXI	Rear Cabinet Ass'y (Metallic Brown)	1
D4,301	RVDSL155B4A	LED (OPE/BATT, FM ST)	2	K2	RYFX5012LSX1	Rear Cabinet Ass'y (Metallic Brown)	1
D302~305	RVDSL1RBA10F	Diode (Si)	1	K2-1	QBN8009	Spring, Battery - Side	1
				K2-2	RJC111Z	Terminal Battery + Side	1
				K2-3	RJC931Z	Terminal Battery -, + Side	1
				K2-4	RKX224Z	Handle (Silver)	1

Ref. No.	Part No.	Part Name & Description	Per Set	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
K2-4	RKX224Z1	Handle (Metallic Brown)	1	R26	ERD25FJ102	1K S	C34	ECEA1HV0R1	0.1
K2-5	RKX192Y	Arm, Handle	2	R27	ERD25FJ472	4.7 K S	C35	ECEA0JV101	100
K2-6	RKX165Z	Spacer, Handle	2	R28	ERD25FJ472	4.7 K S	C36	ECCD1H390KC	39P
K2-7	RJT740Z	Terminal, Telescopic	1	R29	ERD25FJ104	100K S	C37	ECKD1H471KB	470P
		Antenna	1	R31	ERD25FJ472	4.7 K S	C38	ECFT1E473MD	0.01
K2-8	XTB3+8CFY	Screw, Handle M'tg	2	R32	ERD25FJ102	1K S	C39	ECEALCV100	10
K3	RYTLX5012LS1	Knob Ass'y, Tuning (Silver)	1	R34	ERD25FJ221	220 S	C40	ECKD1H103MD	0.01
K3	RYTLX5010LS0	Knob Ass'y, Tuning (Metallic Brown)	1	R101	ERD25FJ471	470 S	C41	ECEA1HV010	1
			1	R103	ERD25FJ103	10K S	C42	ECKD1H103ZF	0.01
			1	R104	ERD25FJ472	4.7 K S			
K4	RDP831Z	Pointer, Dial	1	R105	ERD25FJ473	47K S	C43	ECEA1AV101	100
K5	RDA95Z	Holder, Pointer	1	R106	ERD25FJ330	33 S	C44	ECFT1E153MD	0.015
K6	RNW1010Z	Washer, Worm Gear	1	R107	ERD25TJ823	82K S	C45	ECQP2A471JZ	470P
K7	RDG5807Y	Worm Gear	1	R108	ERD25FJ682	6.8K S	C46	ECFT1E333MD	0.033
K8	RYNX5015DLS7	Battery Cover Ass'y (Silver)	1	R109	ERD25FJ1R0	1 S	C47	ECEA1HVR47	0.47
K8	RYNX5015DLSK	Battery Cover Ass'y (Metallic Brown)	1	R110	ERD25FJ681	680 S	C48	ECFT1E153MD	0.015
K9	RBN572Z3	Knob, Volume etc (Silver)	3	R111	ERD25FL393	39K S	C49	ECFT1E153MD	0.015
K9	RBN572Z2	Knob, Volume etc (Metallic Brown)	3	R112	ERD25FJ332	3.3K S	C50	ECEA1HV010	1
			3	R114	ERD25FJ221	220 S	C51	ECEA1HV010	1
			3	R115	ERD25FJ103	10K S	C52	ECEA1HV010	1
K10	RBS182Z1	Knob, Switch (Silver)	3	R116	ERD25TJ153	15K S	C53	ECKD1H102ZF	0.001
K10	RBS182Z	Knob, Switch (Metallic Brown)	3	R117	ERD25FJ151	150 S	C54	ECFT1E473MD	0.047
			3	R118	ERD25FJ822	8.2K S	C55	ECFT1E223MD	0.022
K11	XEAQCR228EBY	Telescopic Antenna	1	R201	ERD25FJ471	470 S	C60	ECKD1H102KB	0.001
K12	RME331Z	Cushion, Motor Bracket	1	R203	ERD25FJ103	10K S	C61	ECCD1H070DC	7P
K13	XYN3+P15FY	Screw, Antenna M'tg	1	R204	ERD25FJ472	4.7 K S	C65	ECCD1H050CC	5P
K14	XTB3+45C	Screw, Cabinet M'tg	7	R205	ERD25FJ473	47K S	C101	ECEA1HV0R1	0.1
K15	RUL653Z	Stopper	1	R206	ERD25FJ330	33 S	C102	ECFT1E473MD	0.047
			1	R207	ERD25TJ823	82K S	C103	ECKD1H472MD	0.0047
			1	R208	ERD25FJ682	6.8 K S	C104	ECKD1H152MD	0.0015
ELECTRICAL PARTS							C105	ECEA1HV010	1
E1	RJM144Z	Microphone	2	R209	ERD25FJ1R0	1 S	C106	ECKD1H471KB	470P
E2	RME262Z	Holder, Microphone	2	R210	ERD25FJ681	680 S	C107	ECEA0JV101	100
E3	RHG553Z	Cover, Microphone	2	R211	ERD25FJ393	39K S	C108	ECFT1E223MD	0.022
E4	RUV627Z	Cover, Lever Switch	2	R212	ERD25FJ332	3.3K S	C109	ECEA1HV010	1
E5	RUV643Z	Cover, Lever Switch	1	R214	ERD25FJ221	220 S	C111	ECFT1E333MD	0.033
E6	RDG5699Z	Drum, Dial	1	R215	ERD25FJ103	10K S	C112	ECEA1HVR33	0.33
E7	RJS3L1Z	Socket, 3 Pin	3	R216	ERD25TJ153	15K S	C113	ECKD1H102MD	0.001
E8	RJT462Z	Terminal Socket	11	R217	ERD25FJ151	150 S	C115	ECEA1AV470	47
E9	RJP3G1Z	Plug, 3 Pin	3	R218	ERD25FJ822	8.2K S	C117	ECEA0JV101	100
E10	RJP2G1Z	Plug, 2 Pin	1	R301	ERD25FJ102	1K S			
E11	RJS2L1Z	Socket, 2 Pin	1	R305	ERD25FJ102	1K S	C118	ECFT1E104MD	0.1
E12	RJT202B	Motor Earth	1	R306	ERD25FJ181	180 S	C119	ECEA0JV471	470
E13	XBA2C10TRO	Fuse, 11A	1 Δ	R307	ERD25FJ391	390 S	C150	ECCD1H181K	180P
E14	QTF1054	Holder, Fuse	2 Δ	R308	ERD25FJ220	22 S	C201	ECEA1HV0R1	0.1
E15	RJE10Z	Cover, AC Socket	1				C202	ECFT1E473MD	0.047
E16	RMP164Y	Holder, LED	1	CAPACITORS			C203	ECKD1H472MD	0.0047
E17	XSN26+8	Screw, Dial Drum M'tg	1 S	C1	ECCD1H100KC	10P	C204	ECKD1H152MD	0.0015
E18	XWA26B	Washer	1 S	C2	ECCD1H070DC	7P	C205	ECEA1HV010	1
E19	XTV3+14G	Screw, P.C.B. etc M'tg	12	C3	ECCD1H150KC	15P	C206	ECKD1H471KB	470P
E20	XTW3+10F	Screw, Speaker M'tg	8	C4	ECCD1H470KC	47P	C207	ECEA0JV101	100
E21	XTW3+12F	Screw, Power Transformer M'tg	2	C5	ECKD1H103ZF	0.01	C208	ECFT1E223MD	0.022
E22	XTV3+12G	Screw, AC Socket M'tg	2	C6	ECKD1H102KB	0.001	C209	ECEA1HV010	1
			2	C8	ECCD1H100KC	10P	C211	ECFT1E333MD	0.033
			2	C9	ECKD1H102KB	0.001	C212	ECEA1HVR33	0.33
				C10	ECCD1H180KC	18P	C213	ECKD1H102MD	0.001
				C11	ECCD1H100KC	10P	C215	ECEA1AV470	47
							C217	ECEA0JV101	100
				C13	ECCD1H150KC	15P	C218	ECFT1E104MD	0.1
				C14	ECCD1H100KC	10P	C219	ECEA0JV471	470
				C15	ECKD1H103MD	0.01	C250	ECCD1H181K	180P
				C16	ECCD1H100KC	10P			
				C17	ECQS2B151JZ	150P	C301	ECEA1AV470	47
				C18	ECCD1H150KC	15P	C302	ECEA0JV101	100
				C19	ECKD1H102ZF	0.001	C303	ECKD1H102ZF	0.001
				C20	ECFT1E683MD	0.068	C304	ECEALCV102	1000
				C21	ECQP2A221JZ	220P	C305	ECEA1AV221	220
				C22	ECQP2A361JZ	360P	C306	ECEALCV221	220
							C307	ECEALCV222	2200
				C23	ECQP2A392JZ	3900P	C308	ECKD1H223ZF	0.022
				C24	ECCD1H181K	180P	C309	ECKD1H223ZF	0.022
				C25	ECFT1E223MD	0.022	C310	ECEALCV221	220
				C26	ECEA0JV101	100			
				C27	ECEALCV100	10	C311	ECKD1H223ZF	0.022
				C28	ECCD1H181K	180P	C312	ECKD1H223ZF	0.022
				C29	ECFT1E223MD	0.022	C313	ECEA1HF100	10
				C30	ECFT1E333MD	0.033	C315	ECEALCV100	10
				C31	ECKD1H103MD	0.01	C316	ECKD1H333ZF	0.033
				C32	ECCD1H470KC	47P	C317	ECEA0JV221	220
							C399	ECEA1AV101	100
				C33	ECFT1E223MD	0.022	C400	ECCD1H101K	100P