ORDER NO. RB2008219C2

Service Manual

Radio Cassette

RX-C60LS

Portable Component System with 4 Band Radio

■ SPECIFICATIONS

General:

Power Requirement:	AC; 110~115/115~127/200~220/230~250 V, 50/60 Hz Battery; 12 V (Eight "D" Size Flashight Batteries) (National UM-1 or equivalent) Car battery; with optional car adaptor RP-952
Power Consumption:	35 W (AC only)
Power Output:	15 W (7.5 W×2) . . . RMS (max.) 20 W (10 W×2) . . . MPO
Speaker:	Woofer; 10 cm (4") PM Dynamic Speaker (3Ω) Tweeter; 3 cm (1 3/16") Ceramic Speaker (200Ω)
Input:	MIC; sensitivity 0.26 mV/applicable microphone impedance 200~600Ω MIX MIC: sensitivity 0.8 mV/200~600Ω PHONO: sensitivity 2.5 mV/47 kΩ over DC IN; 13.2 V
Output:	Ext SP; 3~8Ω Headphones; 0.6 mW, 8Ω
REC/PB Connection:	5P DIN type IN; 3 mV/10 kΩ over OUT; 420 mV/4.7 kΩ under
Dimensions:	Total Size 530 (W)×172 (H)×176 (D) mm (20 7/8"×6 25/32"×6 15/16") Main Unit 298 (W)×172 (H)×176 (D) mm (11 23/32"×6 25/32"×6 15/16") Speaker Box 118 (W)×172 (H)×157 (D) mm (4 5/8"×6 25/32"×6 3/16")
Weight:	6.0 kg (13 lb. 3.6 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; 2μV/500 mW output LW; 224μV/m/50 mW output MW; 112μV/m/50 mW output SW; 12μV/50 mW output

Tape Deck Section:

Frequency Response:	40~12,000 Hz (with normal tape) 40~14,000 Hz (with CrO_2 tape) 40~16,000 Hz (with Metal tape)
Recording system:	AC bias, AC erase
Tape Speed:	4.8 cm/s, (1 7/8 ips)
Wow and Flutter:	0.055% (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

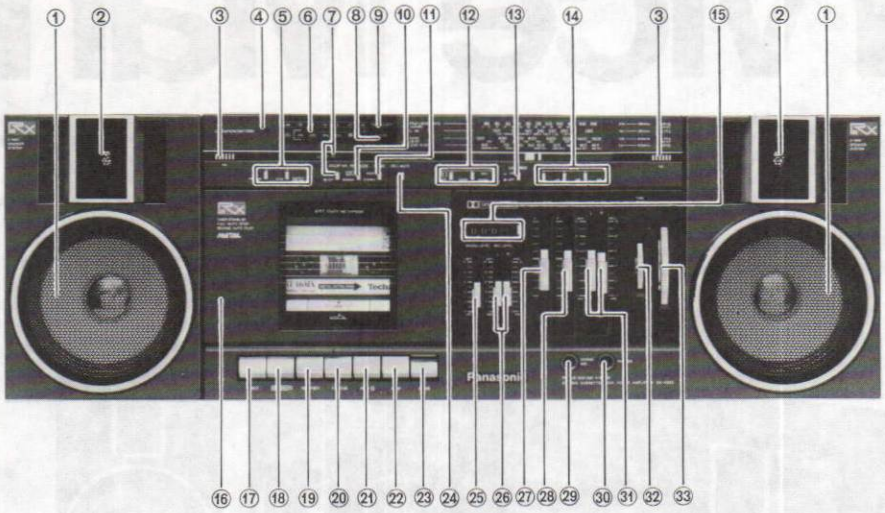


Fig. 1

① Speakers (Woofer) [10 cm (4") 3Ω]
② Speakers (Tweeter) [3 cm (1¼") 200Ω]
③ Built-in Microphones (MIC)
④ Power/Battery Check Indicator (POWER/BATTERY)
⑤ Tape Selector [NORMAL/CrO_2/METAL]
⑥ Level Meter (LEVEL)
⑦ *Dolby Noise Reduction Switch and Indicator (DOLBY NR) [ON/OFF]
⑧ Tuning Indicator (TUNING)
⑨ FM Stereo Indicator (FM STEREO)
⑩ Recording Mode Selector (REC MODE)
⑪ Mode Selector Switch (MODE) [MONO/STEREO]
⑫ Function Selector (SELECTOR) [POWER OFF/TAPE, RADIO, DIN IN/PHONO]
⑬ Loudness Switch (LOUDNESS) [ON/OFF]
⑭ Band Selector (BAND) [FM/LW/MW/SW]
⑮ Tape Counter and Reset Button
⑯ Cassette Compartment
⑰ Eject Button (EJECT)
⑱ Record Button (RECORD)
⑲ Rewind/Review Button (REW/REVIEW)
⑳ Fast Forward/Cue Button (FF/CUE)
㉑ Playback Button (PLAY)
㉒ Stop Button (STOP)
㉓ Pause Button (PAUSE)
㉔ Record Muting Button (REC MUTE)
㉕ Mixing Level Control (MIXING LEVEL)
㉖ Recording Level Controls (REC LEVEL)
㉗ Bass Control (BASS)
㉘ Treble Control (TREBLE)
㉙ Mixing Microphone Jack (MIXING MIC) [0.8 mV, (−62 dB)/200~600Ω]
㉚ Headphone Jack (PHONES) [0.6 mW, 8Ω]
㉛ Volume Controls (VOLUME)
㉜ Fine Tuning Control (FINE TUNING)
㉝ Tuning Control (TUNING)

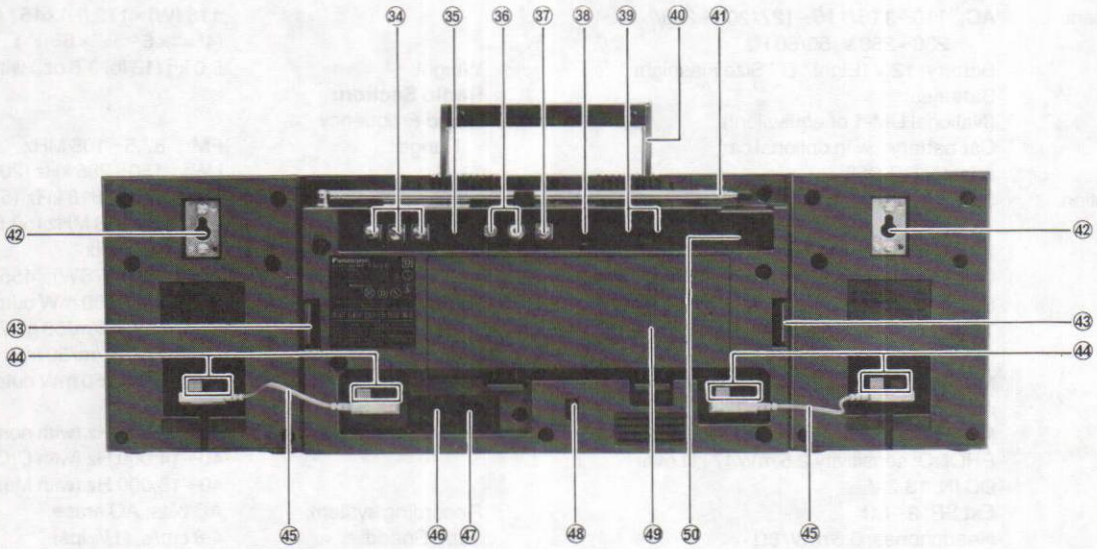


Fig. 2

㉞ External Antenna Terminals (AM ANT/FM ANT)
㉟ Input Selector (PHONO•LINE)
㊱ Phono Input Jacks (PHONO) [2.5 mV (−52 dB)/47 kΩ over]
㊲ Phono Ground Terminal (⏚)
㊳ DIN Jack (IN: 3 mV/10 kΩ, OUT: 420 mV/4.7 kΩ)
㊴ Microphone Jacks (MIC) [0.26 mV/200~600Ω]
㊵ Handle
㊶ Telescopic Antenna
㊷ Speaker Wall Mounts
㊸ Speaker Lock Buttons
㊹ Speaker Terminals (3~8Ω)
㊺ Speaker Cables
㊻ DC Input Jack (DC IN 13.2 V ⊖-⊃-⊕)
㊼ AC Socket (AC IN ~)
㊽ Voltage Selector (VOLTAGE SELECTOR)
㊾ Battery Compartment
㊿ Beat Proof Switch (BEAT PROOF) [I/II/III]

DOLBY SYSTEM

*"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
*Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

DISASSEMBLY INSTRUCTIONS

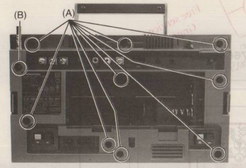


Fig. 3

Fig. 4

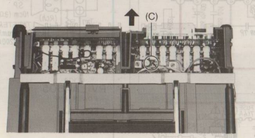


Fig. 5

Fig. 6

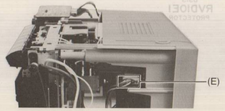


Fig. 7

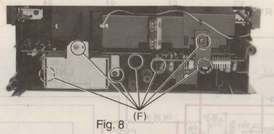


Fig. 8

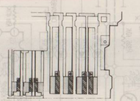


Fig. 9

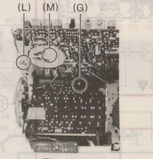


Fig. 10

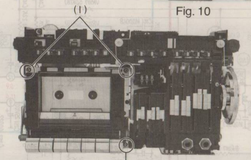


Fig. 11

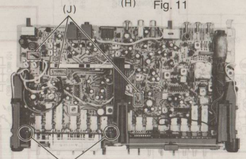


Fig. 12

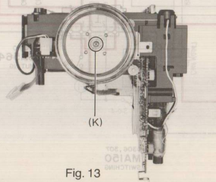


Fig. 13

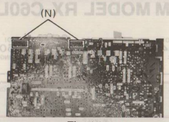


Fig. 14

Fig. 15

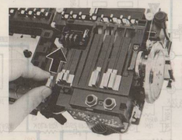


Fig. 16

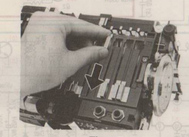


Fig. 17

■ DIAL THREADING

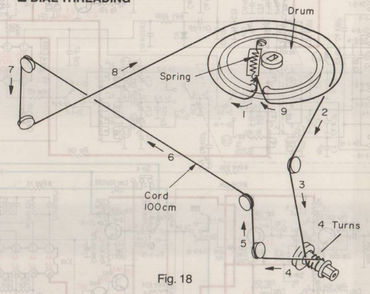


Fig. 18

Procedure	To remove—.	Remove—.	Shown in Fig.—.
1	Front Cabinet ※1	Battery Cover	——
2		Screw (3×45) ..... (A)×9	3
3		Screw (3×12) ..... (B)×1	3
4		Remove the Cassette Panel in the direction of the arrow.	4
5		Shut the Cassette Holder and remove the Front Cabinet.	——
6	Chassis and Power Circuit Board	Socket (1 pin) ..... (C)×1	5
7		Socket (2 pin, 5 pin, 8 pin) ..... (D)×3	6
8		Socket (5 pin) ..... (E)×1	7
9		Remove the chassis in the direction of the arrow.	5
10		Screw (3×12) ..... (F)×7	8
11	Control Circuit Board ※2	Place the control knobs as shown in the figure.	9
12		Screw (3×10) ..... (G)×1	10
13		Screw (3×10) ..... (H)×1	11
14	Mechanism	Screw (3×10) ..... (I)×2	11
15		Socket ..... (J)×3	12
16	Tuning Knob	Screw (3×6) ..... (K)×1	13
17	Push Switch	Screw (3×10) ..... (L)×3	10, 12
18		Screw (2.6×6) ..... (M)×1	10
19		Remove the Dial Cord.	——
20		LED Circuit Board Soldering Point ..... (N)×2	14
21		Remove the LED Circuit Board in the direction of the arrow.	15
22		Remove the soldering point of the switch.	——

※1 Before removing the Front Cabinet, remove the screw attaching the telescopic antenna.
※2 To reassemble insert the control knobs in the direction of arrow in figure 16 and 17.

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set bass and treble control to center.
3. Set band switch to LW, MW, SW or FM.
4. Set balance control to center.
5. Set function selector to radio.
6. Set fine tuning to center.
7. Set power source voltage to 12 V DC.
8. Output of signal generator should be no higher than necessary to obtain an output reading.

■ LW, MW and SW ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR: CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR: FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
				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	"	145 kHz	145 kHz [8.0 mm (5/16")]	Output meter across voice coil	L7 (LW OSC Coil) (•1) L4 (LW ANT Coil)	Adjust for maximum output. Adjust L4 by moving coil bobbin along ferrite core.
(3)	LW	"	285 kHz	285 kHz [67.0 mm (2 5/8")]	"	CT4 (LW OSC Trimmer) CT1 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
				MW-RF ALIGNMENT			
(4)	MW	"	550 kHz	550 kHz [8.0 mm (5/16")]	Output meter across voice coil	L8 (MW OSC Coil) (•1) L5 (MW ANT Coil)	Adjust for maximum output. Adjust L5 by moving coil bobbin along ferrite core.
(5)	MW	"	1,500 kHz	1,500 kHz [67.0 mm (2 5/8")]	"	CT5 (MW OSC Trimmer) CT8 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
(•1) Cement antenna bobbin with wax after completing alignment.							
				SW-RF ALIGNMENT			
(6)	SW	Connect to test point ▽ through ceramic capacitor (10 pF). Negative side to test point ▼.	5.9 MHz	5.9 MHz [2.8 mm (7/8")]	Output meter across voice coil	L9 (SW OSC Coil) L6 (SW ANT Coil)	Adjust for maximum output.
(7)	SW		18 MHz	18 MHz [70.8 mm (2 25/32")]	"	CT6 (SW OSC Trimmer) CT3 (SW ANT Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR: CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR: FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
				FM-IF ALIGNMENT			
(1)	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. 20).
(2)	FM	"	"	"	"	T3 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 21).
				FM-RF ALIGNMENT			
(3)	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.	L2 (FM OSC Coil)	(•2) Adjust for maximum output.
(4)	FM		108 MHz	Variable capacitor fully open.	"	CT7 (FM OSC Trimmer)	"
(5)	FM		90 MHz	Tune to signal.	"	L1 (FM ANT Coil)	"
(6)	FM		106 MHz	"	"	CT2 (FM ANT Trimmer)	(•2) Adjust for maximum output. Repeat steps (3)~(6).
(•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	DIN OUT ⑤, ⑥ pin.	VR1	19 kHz	Adjust VR1, for 19 kHz (± 100 Hz) reading on electronics counter.

■ AUDIO ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Azimuth	QZZCFM (10 kHz, −20 dB)	EXT SP	Maximum output.	Azimuth screw	Playback mode
Playback level	QZZCFM (315 Hz, 0 dB)	DIN OUT ⑤, ⑥ pin.	0.42±0.02 V	VR102 (Lch) VR202 (Rch)	Playback mode
LED meter	QZZCFM (315 Hz, 0 dB)	Meter	——	VR107 (Lch) VR207 (Rch)	Adjust VR107, VR207 so that the 2nd LED from the Right begins to go out.
Bias oscillation frequency	——	▽...(+) ▼...(−)	68±0.5 kHz	L301	Record mode Beat proof switch→II Tape selector→Metal
Erase current	Use metal tape	▽...(+) ▼...(−)	140 ±7/3 mV	VR302	Record mode Beat proof switch→III Tape selector→Metal
Bias trap	——	▽...(Lch) ▼...(Rch) ▼...(−)	0±0.5 dB	L101 (Lch) L201 (Rch)	Record mode Beat proof switch...I→II→III Tape selector→Metal
Bias current	Use metal tape	▽...(Lch) ▼...(Rch) ▼...(−)	Metal 4±0.2 mV Normal 1.9±0.15 mV	Metal VR101 (Lch) VR201 (Rch) Normal VR303	Record mode Beat proof switch→III Tape selector→Metal
Overall gain	EXT MIC f = 1 kHz, −70 dB	DIN Jack input ③, ⑥ pin output ⑤, ⑥ pin	REC... 32 mV Playback... 32±2 mV	VR104 (Lch) VR204 (Rch)	1. Place UNIT into record mode, and tape selector to normal. 2. Supply 1 kHz (−70 dB) from AF oscillator to DIN ①, ④ pin. 3. Adjust REC LEVEL until monitor level at test point ▽ and ▼ becomes 32 mV. 4. Playback recorded tape, and make sure the value at DIN on the electronics voltmeter becomes 32 mV ± 2 mV.

■ ALIGNMENT POINT ●As for test points, refer to the circuit board, on page 9.

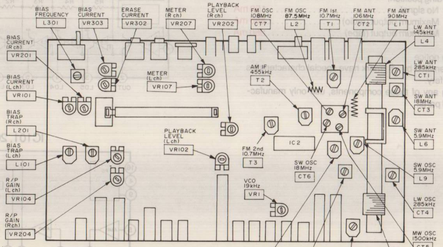
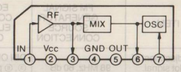
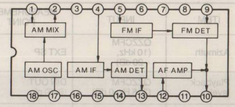


Fig. 19

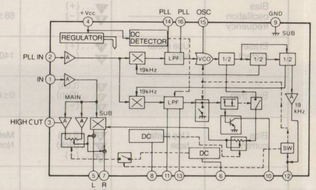
IC1 AN7213



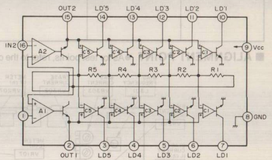
IC2 AN7220A



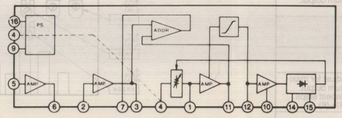
IC3 RVIBA1356



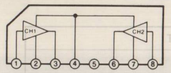
IC71 RVITA7666P



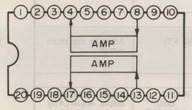
IC101, 201 RVINE649N



IC302 RVIBA328



IC304 RVILA4505



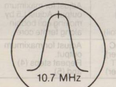
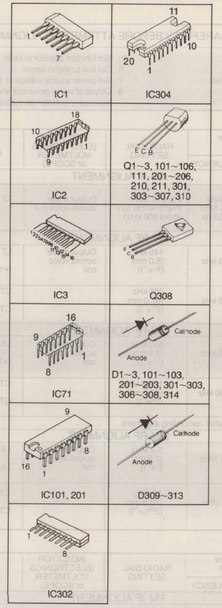


Fig. 20

Fig. 21



Notes:

1. S1-1~S1-4: Band switch in "FM" position. (1 . . . FM, 2 . . . LW, 3 . . . MW, 4 . . . SW)
2. S2-1, S2-2: Loudness switch in "OFF" position.
3. S3-1~S3-4: Function switch in "TAPE" position. (1 . . . RADIO, 2 . . . TAPE, 3 . . . PHONO/DIN IN)
4. S4-1, S4-2: Rec mute ON/OFF switch in "OFF" position.
5. S5-1, S5-2: Mode switch in "STEREO" position. (1 . . . STEREO, 2 . . . MONO)
6. S6-1~S6-4: Recording mode switch in "MANUAL" position. (1 . . . MANUAL, 3 . . . EASY-MATIC)
7. S7-1, S7-2: Dolby IN/OUT switch in "IN" position.
8. S8-1~S8-3: Tape select switch in "NORMAL" position. (1 . . . NORMAL, 2 . . . CrO_2, 3 . . . METAL)
9. S9: AC/DC IN select switch in "DC IN" position.
10. S10-1: Play ON/OFF switch in "OFF" position.
11. S10-2, S10-3: FF, rewind ON/OFF switch in "OFF" position.
12. S10-4: Play/stop switch
13. S11-1~S11-12: Record/playback switch in "playback" position. (1 . . . Playback, 3 . . . Record)
14. S12-1~12-4: DIN/PHONO switch in "PHONO" position.
15. S13: Beat proof switch in "I" position. (1 . . . I, 3 . . . II, 4 . . . III)
16. S14: Voltage select switch.
17. VR1: VCO oscillator frequency adjust VR.
18. VR101, 201, 303: Bias current adjustment VR.
19. VR102, 202: Playback gain adjustment VR.
20. VR103, 203: Recording level adjustment VR.
21. VR104, 204: Overall gain adjustment VR.
22. VR105, 205: Bass control.
23. VR106, 206: Treble control.
24. VR107, 207: Meter adjustment VR.
25. VR108, 208: Volume control.
26. VR301: Mixing revel control VR.
27. VR302: Erase current adjustment VR.
28. The mark (▼) shows test point e.g.▽ = test point 1.
29. The mark (※) shows printed-type resistors.
30. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
    < >. . . FM position, ( ) . . . AM position, [ ] . . . Recording position.
31. Battery current: No signal . . . . . 150 mA
    Maximum output (radio) . . . . . 580 mA
    Maximum output (tape) . . . . . 860 mA
32. Important safety notice
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components, use only manufacturer's specified parts.

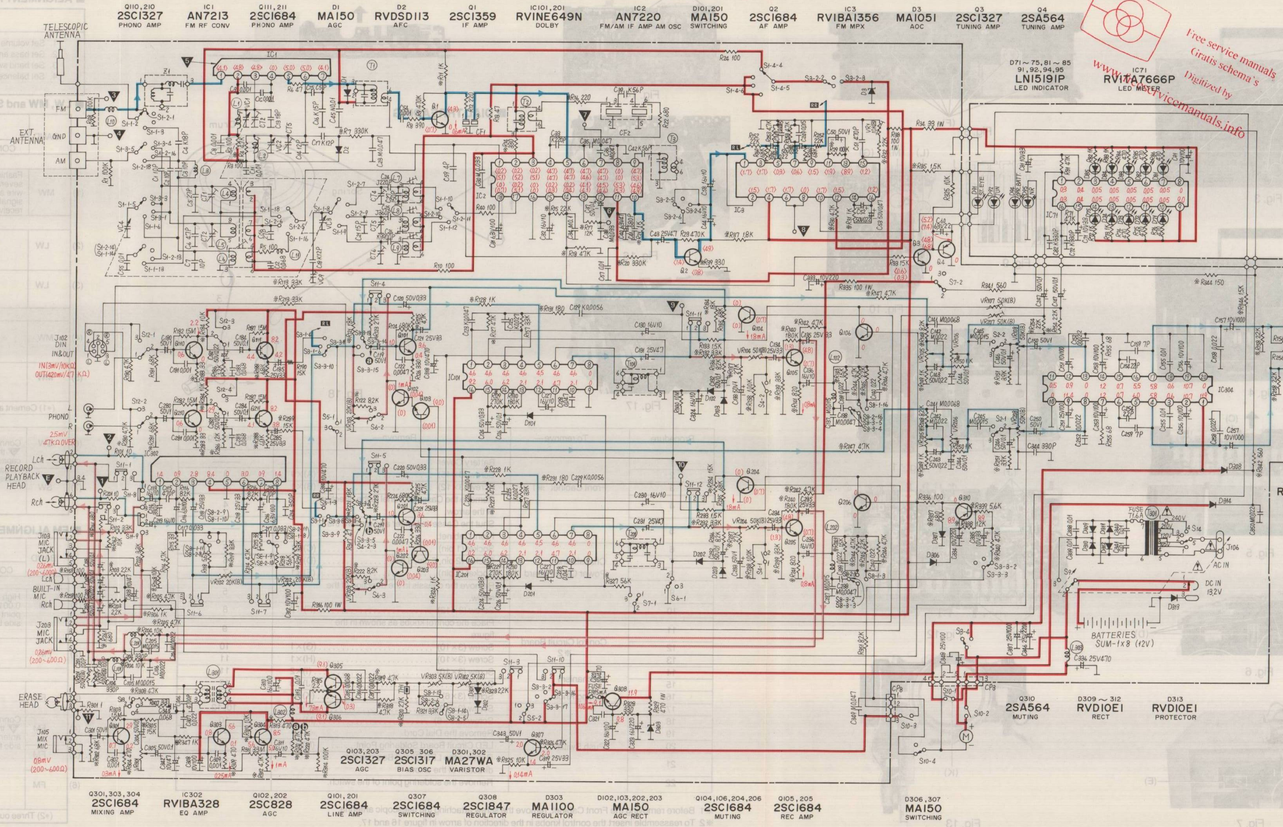
+ ⊕ Voltage Line
Tape (PLAY BACK) Signal Line
Radio (FM) Signal Line
Tape (RECORD) Signal Line

BIAS VOLTAGE
1.9±0.2 mV (Normal)
2.7±0.3 mV (CrO_2)
4±0.3 mV (Metal)

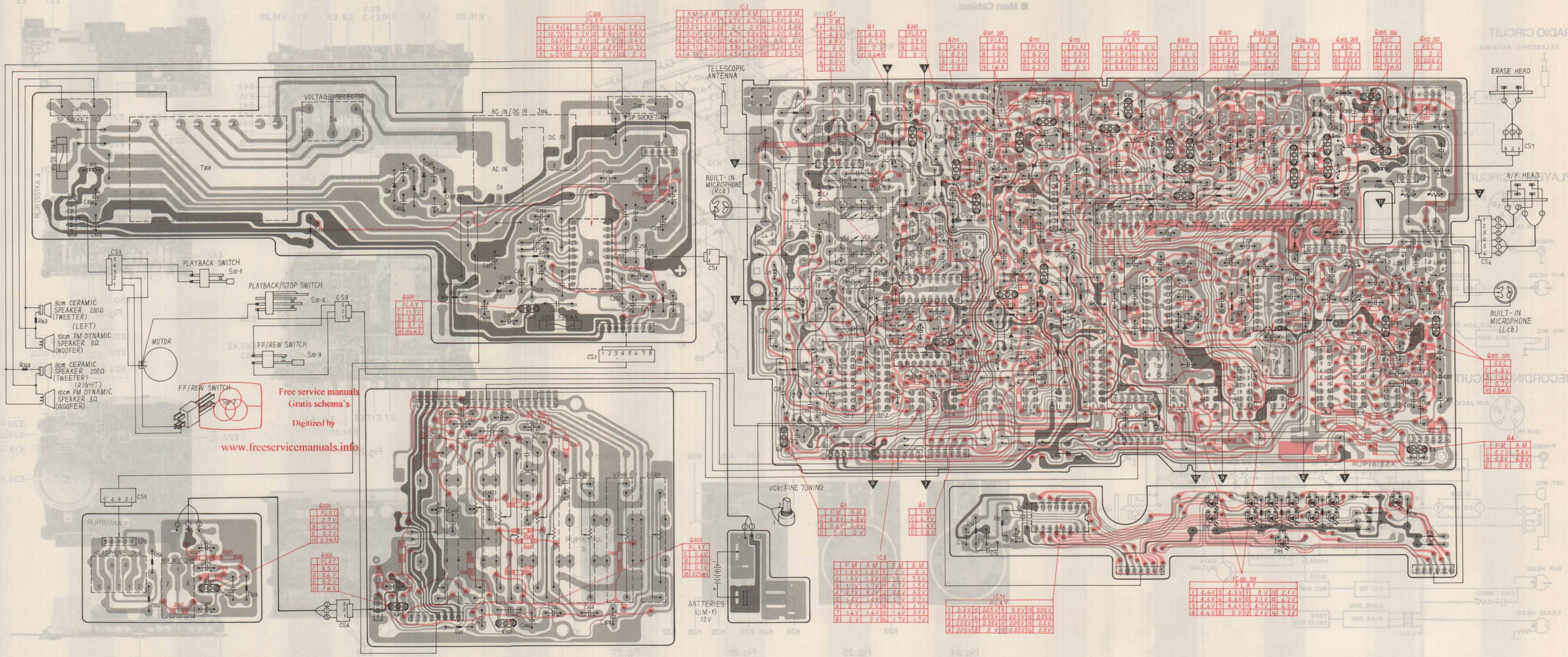
OVERALL FREQUENCY RESPONSE

Metal	100 Hz 0±3 dB 1 kHz 0 dB 10 kHz −1±5 dB
CrO_2	100 Hz 1±3 dB 1 kHz 0 dB 10 kHz −1±5 dB
Normal	100 Hz 1±3 dB 1 kHz 0 dB 10 kHz 1±5 dB

SCHEMATIC DIAGRAM MODEL RX-C60LS

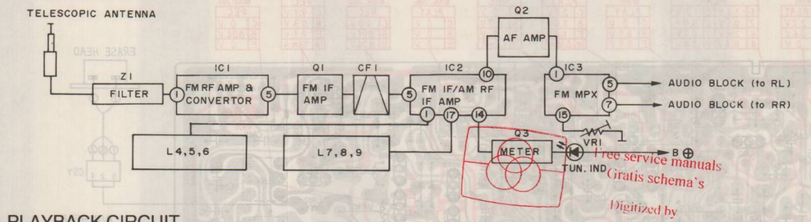


CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM MODEL RX-C60LS

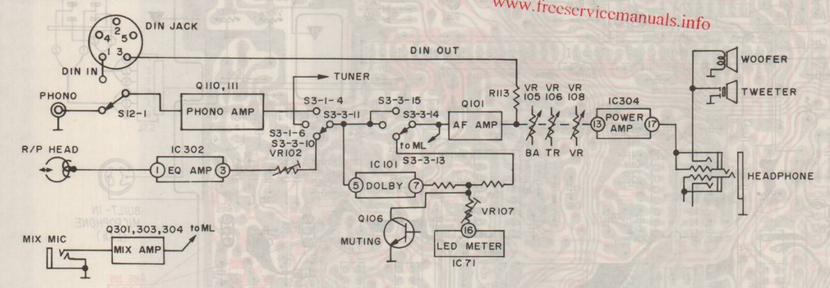


BLOCK DIAGRAM

RADIO CIRCUIT



PLAYBACK CIRCUIT



RECORDING CIRCUIT

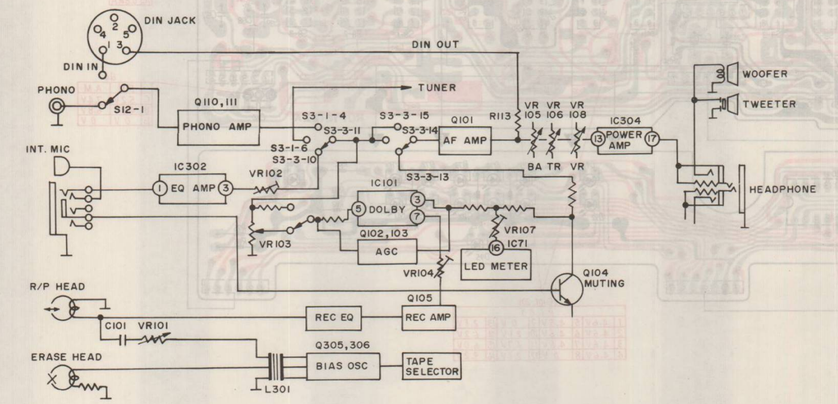


Fig. 22

CABINET PARTS LOCATIONS

■ Main Cabinet

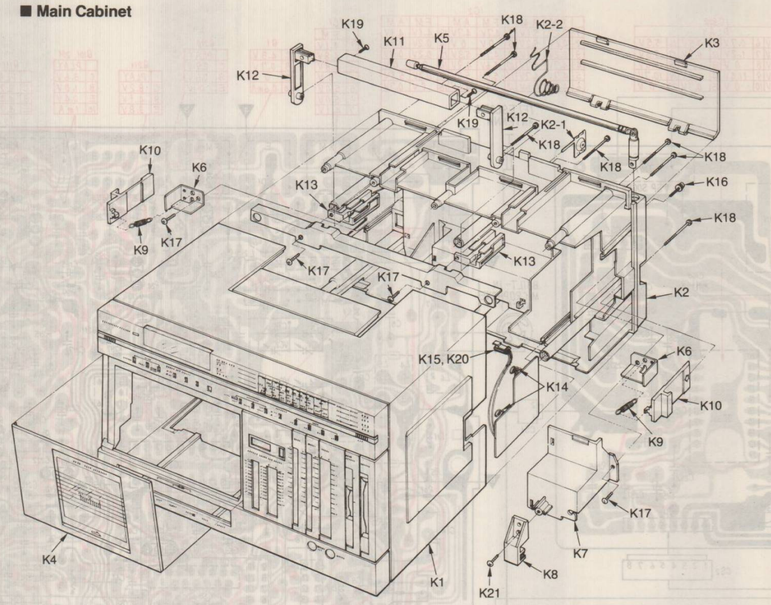


Fig. 23

■ Speaker Cabinet

Fig. 24

Fig. 25

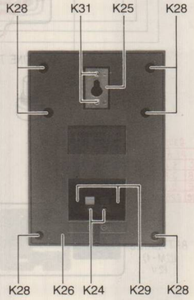


Fig. 26

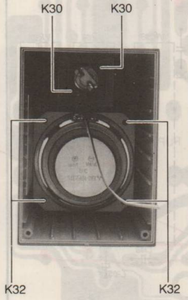


Fig. 27

ELECTRICAL PARTS LOCATION

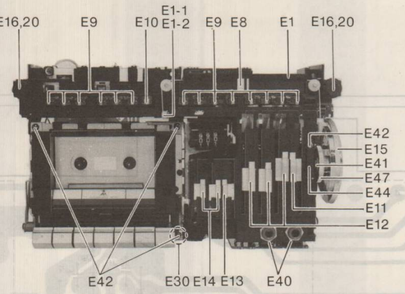


Fig. 28

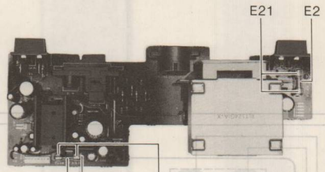


Fig. 31

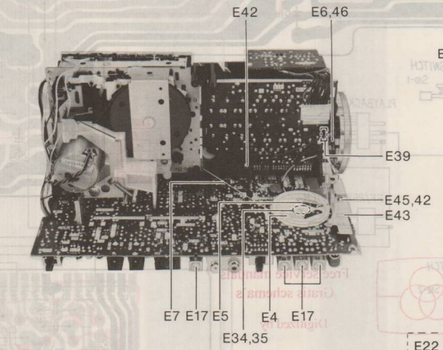


Fig. 29

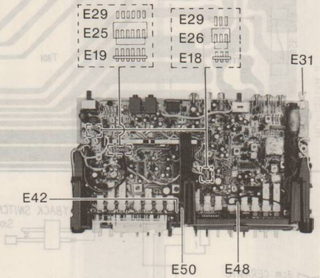


Fig. 32

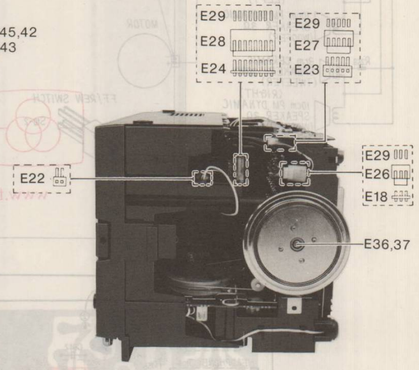


Fig. 33

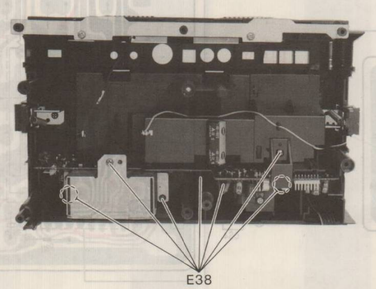


Fig. 30

Fig. 34

MECHANISM PARTS LOCATION

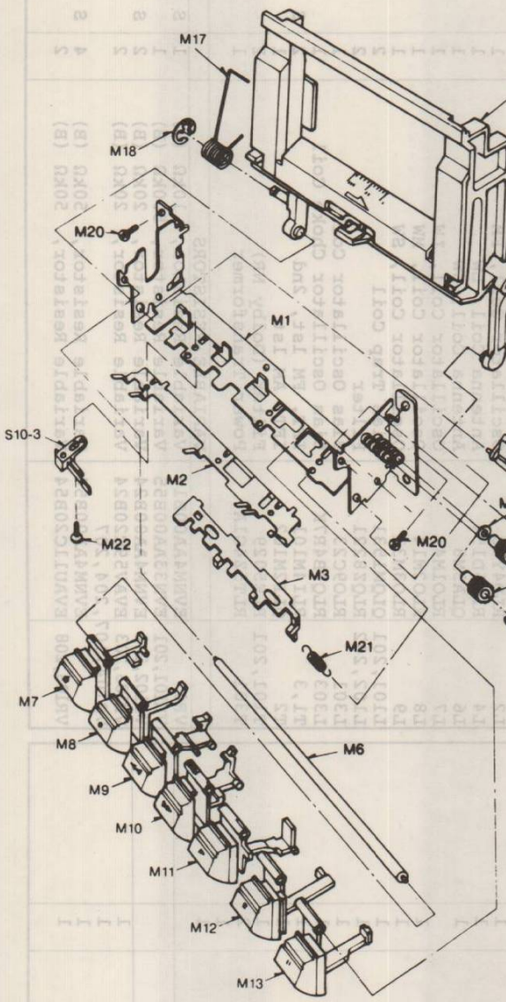


Fig. 35

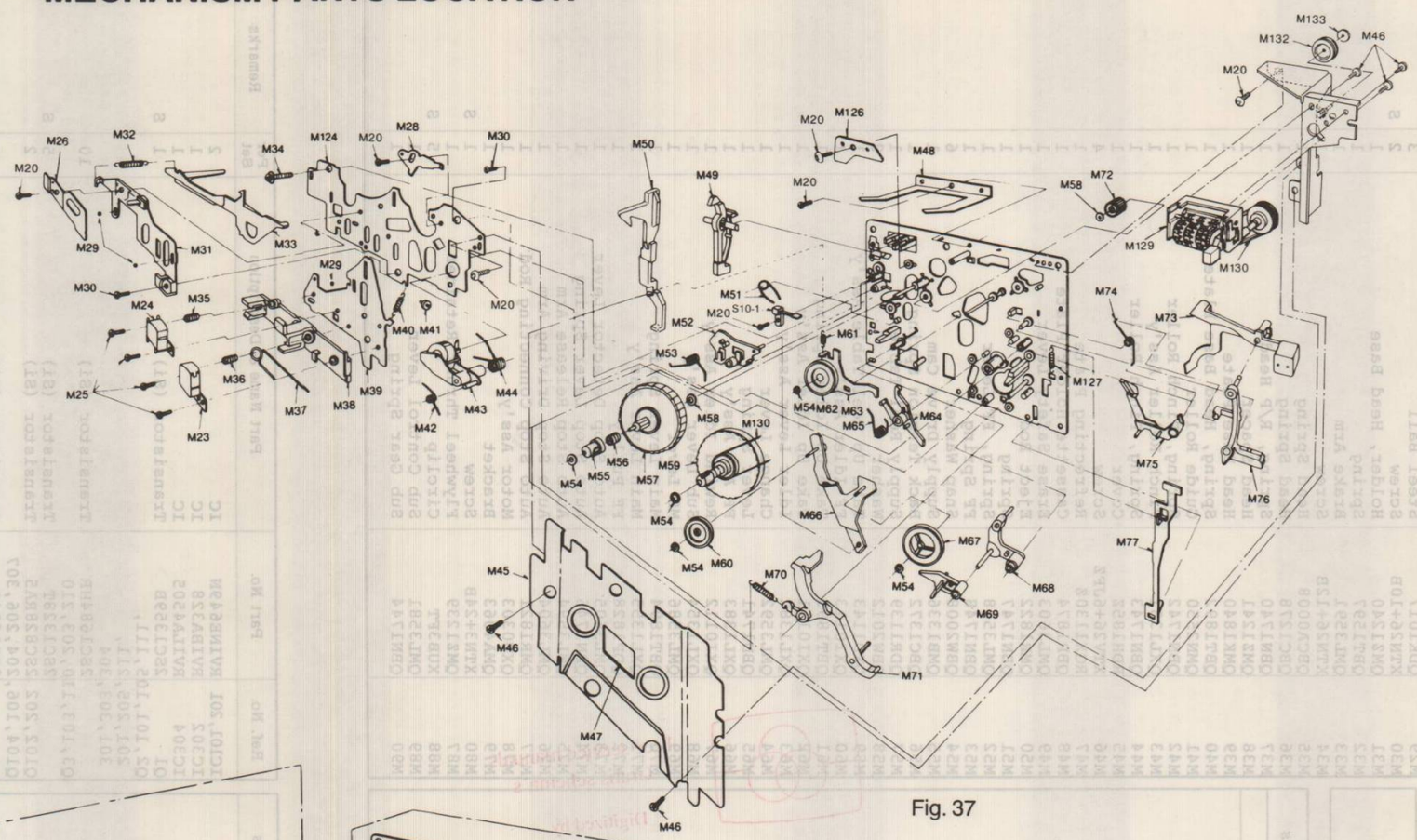


Fig. 37

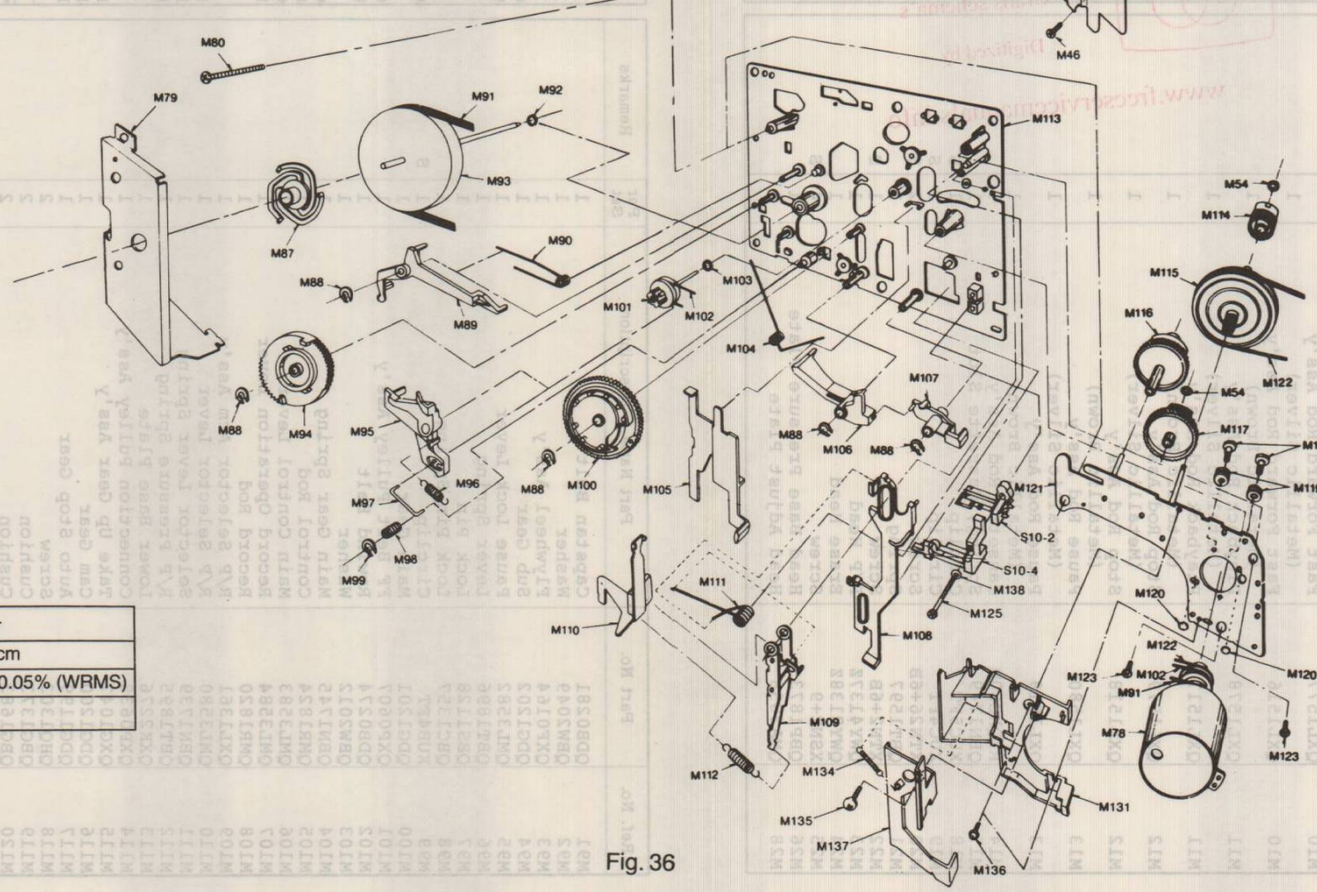


Fig. 36

SPECIFICATIONS

Pressure of pressure roller	360±50 gr
Takeup tension	45^{+15}_{-10} gr-cm
Wow and flutter	Less than 0.05% (WRMS)
Tape speed fluctuation	±3%

■ REPLACEMENT PARTS LIST .....Model RX-C60LS

(RD82082018C2)

NOTES: 1. Important safety notice.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
2. The S mark indicates service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		MECHANICAL PARTS		
M1	QXA1044	Button Bracket Ass'y	1	
M2	QBP1875	Spring, Operation Rod	1	
M3	QMR1823	Lock Rod	1	
M4	QML3593	Lock Arm	1	
M5	QDG1102	Gear, Slow Up	2	
M6	QMN2554	Shaft, Operation Rod	1	
M7	QXL1574	Eject Rod Ass'y (Metallic Silver)	1	
M7	QXL1513	Eject Rod Ass'y (Metallic Brown)	1	
M8	QXL1575	Recording Rod Ass'y (Metallic Silver)	1	
M8	QXL1514	Recording Rod Ass'y (Metallic Brown)	1	
M9	QXL1576	Rewind Rod Ass'y (Metallic Silver)	1	
M9	QXL1515	Rewind Rod Ass'y (Metallic Brown)	1	
M10	QXL1577	Fast Forward Rod Ass'y (Metallic Silver)	1	
M10	QXL1516	Fast Forward Rod Ass'y (Metallic Brown)	1	
M11	QXL1578	Playback Rod Ass'y (Metallic Silver)	1	
M11	QXL1517	Playback Rod Ass'y (Metallic Brown)	1	
M12	QXL1579	Stop Rod Ass'y (Metallic Silver)	1	
M12	QXL1518	Stop Rod Ass'y (Metallic Brown)	1	
M13	QXL1580	Pause Rod Ass'y (Metallic Silver)	1	
M13	QXL1519	Pause Rod Ass'y (Metallic Brown)	1	
M14	RYQXC60N	Cassette Rod Ass'y	1	
M17	QBN1749	Spring, Cassette Slot	1	
M18	XUC5FT	Circlip	1	S
M19	XUC4FT	Circlip	2	S
M20	XTN26+6B	Screw	2	S
M21	QBT1597	Spring	1	
M22	XTN2+6B	Screw	1	S
M23	QWY4137Z	R/P Head	1	
M24	QWY2138Z	Erase Head	1	
M25	XSN2+9	Screw	4	S
M26	QBP1873	Head Base Pressure Plate	1	
M28	QMA3858	Head Adjust Plate	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
M29	QDK1017	Steel Ball	3	
M30	XTN26+10B	Screw	2	S
M31	QMZ1240	Holder, Head Base	1	
M32	QBT1597	Spring	1	
M33	QML3591	Brake Arm	1	
M34	XTN26+12B	Screw	1	S
M35	QBCA0008	Head Spring	1	
M36	QBC1278	Head Spring	1	
M37	QBN1740	Spring, R/P Head	1	
M38	QMZ1241	Head Spacer	1	
M39	QMK1840	Head Base Plate	1	
M40	QBT1892	Spring, Head Base Plate	1	
M41	QMN2550	Guide Roller	1	
M42	QBN1742	Spring, Pinch Roller	1	
M43	QXL1381	Pinch Roller Ass'y	1	
M44	QBN1743	Spring, Pinch Roller	1	
M45	RDH185Z	Cover	1	
M46	XTV26+6JFZ	Screw	4	
M47	RGX1130Z	Refrecting Plate	1	
M48	QBP1874	Cassette Holder Plate	1	
M49	QML3603	Erase Safety Lever	1	
M50	QMR1822	Eject Rod	1	
M51	QBN1747	Spring	1	
M52	QML3588	Spring, FF Lever	1	
M53	QBN1748	FF Spring	1	
M54	QBW2008	Snap Washer	6	
M55	QMB1336	Supply Drive Cam	1	
M56	QBC1372	Back Tension Spring	1	
M57	QDR1139	Supply Reel Table	1	
M58	QBW2012	Washer	2	
M59	QXD1143	Take Up Reel Table Ass'y	1	
M60	QXI0113	FF Idler Ass'y	1	
M61	QBT1893	Take Up Idler Spring	1	
M62	QXI0111	Take Up Idler Ass'y	1	
M63	QXL1382	Idler Lever Ass'y	1	
M64	QML3592	Change Lever	1	
M65	QBN1741	Lever Spring	1	
M66	QXL1383	FF Arm Ass'y	1	
M67	QXI0112	Rewind Idler Ass'y	1	
M68	QXL1354	Sub Lever Ass'y	1	
M69	QML3586	MS Lever	1	
M70	QBT1894	Main Lever Spring	1	
M71	QXL1355	Main Lever Ass'y	1	
M72	QDP1828	FF Pulley	1	
M73	QML3605	Auto Stop Detector Lever	1	
M74	QBN1746	Auto Stop Lever Spring	1	
M75	QML3594	Auto Stop Release Arm	1	
M76	QML3604	Auto Stop Driving Arm	1	
M77	QMR1821	Auto Stop Connecting Rod	1	
M78	QXU0303	Motor Ass'y	1	
M79	QMA4063	Bracket	1	
M80	XTN3+24B	Screw	1	S
M87	QMZ1239	Flywheel Thrust Retainer	1	
M88	XUB3FT	Circlip	5	S
M89	QML3581	Sub Control Lever	1	
M90	QBN1744	Sub Gear Spring	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
M91	QDB0281	Capstan Belt	1	
M92	QBW2049	Washer	1	
M93	QXF0164	Flywheel Ass'y	1	
M94	QDG1202	Sub Gear	1	
M95	QML3582	Pause Lock Lever	1	
M96	QBT1896	Lever Spring	1	
M97	QBS1128	Lock Pin	1	
M98	QBC1357	Lock Pin Spring	1	
M99	XUB4FT	Circlip	1	S
M100	QDG1201	Main Gear	1	
M101	QXP0607	FF Belt Pulley Ass'y	1	
M102	QDB0274	Rewind Belt	1	
M103	QBW2012	Washer	1	
M104	QBN1745	Main Gear Spring	1	
M105	QMR1824	Control Rod	1	
M106	QML3583	Main Control Lever	1	
M107	QML3584	Record Operation Lever	1	
M108	QMR1820	Record Rod	1	
M109	QXL1361	R/P Selector Arm Ass'y	1	
M110	QML3580	R/P Selector Lever	1	
M111	QBN1739	Selector Lever Spring	1	
M112	QBT1895	R/P Pressure Spring	1	
M113	QXK2276	Lower Base Plate	1	
M114	QXP0638	Connection Pulley Ass'y	1	
M115	QXG1047	Take Up Gear Ass'y	1	
M116	QDG1200	Cam Gear	1	
M117	QDG1199	Auto Stop Gear	1	
M118	QHQ1303	Screw	2	
M119	QBG1373	Cushion	2	
M120	QBG1683	Cushion	2	
M121	QXK2286	Sub Chassis Ass'y	1	
M122	QDB0273	Fast Forward Belt	1	
M123	XTN3+10B	Screw	2	S
M124	QMK1838	Upper Base Plate	1	
M125	XTN2+20F	Screw	1	
M126	QMF2118	Fast Forward Bracket	1	
M127	QBT1682	Auto Stop Connection Rod Spring	1	
M128	QBW2020	Washer	1	
M129	RSE922	Counter	1	
M130	QDB0143-2	Belt	1	
M131	RUE482	Holder	1	
M132	RDR462	Roller	1	
M133	RNW150-2	Washer	1	
M134	RDS3120A	Spring	1	
M135	XTWR3+12Q	Screw	1	
M136	XTW3+6L	Screw	2	
M137	RUB265Z	R/P Lever	1	
M138	XWA2B	Washer	1	
		INTEGRATED CIRCUITS, TRANSISTORS AND DIODES		
IC1	AN7213	IC	1	
IC2	AN7220A	IC	1	
IC3	RVIBA1356	IC	1	
IC71	RVITA7666P	IC	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
IC101,201	RVINE649N	IC	2	
IC302	RVIBA328	IC	1	
IC304	RVILA4505	IC	1	
Q1	2SC1359B	Transistor (Si)	1	S
Q2,101,105,111, 201,205,211, 301,303,304	2SC1684HR	Transistor (Si)	10	
Q3,103,110,203,210	2SC1328T	Transistor (Si)	5	S
Q102,202	2SC828RA5	Transistor (Si)	2	
Q104,106,204,206,307	2SC1684S	Transistor (Si)	5	
Q305,306	2SC1317NCR	Transistor (Si)	2	
Q308	2SC1847R	Transistor (Si)	1	
Q4,310	2SA722-S	Transistor (Ge)	2	S
D1,101~103,201~ 203,306~308,314	MA161	Diode (Si)	11	S
D2	RVDSD113	Diode (Si)	1	S
D3	MA1051	Diode (Si)	1	
D71~75,81~85, 91,92,94,95	LN15191P	LED	1	
D301,302	MA27WA	Diode (Si)	2	
D303	MA1100	Diode (Si)	1	
D309~313	SM112	Diode (Si)	5	S
		THERMISTOR		
TH1	RRT202	Thermistor	1	
		COILS AND TRANSFORMERS		
L1	RLD4Y54	Antenna Coil, FM	1	
L2	RLD4Y43	Oscillator Coil, FM	1	
L4	RLF6D154	Antenna Coil, LW	1	
L6	QLA3M8	Antenna Coil, SW	1	
L7	RLO1M4	Oscillator Coil, LW	1	
L8	RLO2M14	Oscillator Coil, MW	1	
L9	RLO3M31	Oscillator Coil, SW	1	
L101,201	QLQM1531	Bias Trap Coil	2	
L102,202	RLQZ8221	Filter	2	
L301	RLO9C23	Bias Oscillator Coil	1	
L303	RLQZB4R7K	Bias Oscillator Choke Coil	1	
T1,3	RLI4M101	IFT, FM 1st, 2nd	2	S
T2	QLI2M102	IFT, AM 1st	1	
T101,201	RLE5029	Filter (Dolby NR)	2	
T301	RLT524G1A	Power Transformer	1	⚠
		VARIABLE RESISTORS		
VR1	EVNM4AA00B14	Variable Resistor, 10kΩ (B)	1	S
VR101,201	EVN33AA00B55	Variable Resistor, 500kΩ (B)	1	
VR102,202	EVNM4AA00B24	Variable Resistor, 20kΩ (B)	2	S
VR103,203	EVAV59C20B24	Variable Resistor, 20kΩ (B)	2	
VR104,107,204,207	EVNM4AA00B54	Variable Resistor, 50kΩ (B)	4	S
VR108,208	EVAU11C20B54	Variable Resistor, 50kΩ (B)	2	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
VR105,106,205,206	EVBU07C20A54	Variable Resistor, 50kΩ (A)	2	
VR301	EVAV58C20A54	Variable Resistor, 50kΩ (A)	1	
VR302,303	EVNM4AA00B53	Variable Resistor, 5kΩ (B)	2	S
		VARIABLE CAPACITORS		
VC1~4	RCV4RC2VK	Tuning Capacitor, w/Trimmer Capacitor (CT2,5,7,8)	1	
CT1	RCV1PX20AGS	Trimmer Capacitor	1	
CT4,6	RCV1PX10AGS	Trimmer Capacitor	2	
VC5	RCVMPT8NC14	Fine Tuning	1	
		CERAMIC FILTERS		
CF1	RVF107MTWAZ	Ceramic Filter, 10.7MHz	1	
CF2	RVFSFZ455B	Ceramic Filter, 455kHz	1	
		COMPONENT COMBINATION		
Z1	RXABPMB3	Component Combination	1	
		SPEAKERS		
	EAS10P231S	Speaker, 10cm (4"), 3Ω	2	
	EAS3FP03A	Speaker, 3cm (1-1/4"), 200Ω	2	
		SWITCHES		
S1-1~1-4,2-1, 2-2,3-1~3-4	RSHX047Z	Switch, Band/Loudness/Function	1	
S4-1,4-2,5-1,5-2, 6-1~6-4,7-1,7-2 8-1~8-3	RSHX045Z	Switch, Rec Mute/Mode, etc.	1	
S9	RSS3A06Z	Switch, AC/DC	1	
S10-1	QSB0275	Switch, Playback, FF/REW	1	
S10-2,10-3	QSB0254	Switch, FF/REW	2	
S10-4	RSH2A10Z	Switch, Playback/Stop	1	
S11-1~11-12	RSH2L06Z	Switch, Record/Playback	1	
S12-1~12-4	RSS42A	Switch, DIN/PHONO	1	
S13	RJS0J2Z	Switch, Beatproof	1	
S14	RSR4A07Z	Switch, Voltage Selector	1	⚠
		JACKS		
J102	RJF1087Z	Jack, DIN	1	
J103,203	RJJ1D7Z	Jack, EXT MIC (L.R)	2	
J104	RJJ1E2Z	Jack, HEAD PHONE	1	
J105	RJJ1E7Z	Jack, MIXING MIC	1	
J106	RJJ1F2Z	Jack, AC/DC IN	1	⚠
J107,207	RJF1088Z	Jack, Speaker Socket	2	
		RESISTORS (Value is in OHMS)		
R2,3,10,24,40,336	ERD25FJ101	100 1/4W Carbon	6	S
R315	ERD25FJ2R2	2.2 " "	1	S
R301	ERD25FJ1R0	1.0 " "	1	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R101,201	ERD25FJ100	10 1/4W Carbon	2	S
R72,73,82,83, 190,191,290,291	ERD25FJ102	1 k " "	8	S
R330	ERC14GJ106	10 M " Solid	1	S
R133,233	ERD25FJ152	1.5 k " Carbon	2	S
R189,289	ERD25FJ153	15 k " "	1	S
R1	ERD25TJ154	150 k " "	1	S
R182,187, 282,287,303	ERD25TJ155	1.5 M " "	5	S
R12,156,256	ERD25FJ221	220 " "	3	S
R5	ERD25FJ101	100 " "	1	S
R44,115,215	ERD25FJ330	33 " "	3	S
R43,126,163, 226,263,328	ERD25FJ331	330 " "	6	S
R307	ERD25FJ6R8	6.8 " "	1	S
R102,157,202,257	ERD25FJ332	3.3 k " "	4	S
R351	ERD25FJ333	33 k " "	1	S
R8	ERD25FJ391	390 " "	1	S
R6,13	ERD25FJ470	47 " "	2	S
R180	ERD25FJ472	4.7 k " "	1	S
R9	ERD25TJ474	470 k " "	1	S
R135,235	ERD25TJ683	68 k " "	2	S
R124,224	ERD25TJ684	680 k " "	2	S
R136,236	ERD25FJ822	8.2 k " "	2	S
R23	ERD25TJ474	470 k " "	1	S
R116,216	ERD25TJ823	82 k " "	2	S
R311	ERD25TJ335	3.3 M " "	1	S
R155,255	ERD25FJ680	68 " "	2	S
R74~76,84~86	ERD25FJ471	470 " "	6	S
R33,71,81	ERD25FJ473	47 k " "	3	S
R48,192	ERD25TJ104	100 k " "	2	S
R34	ERG1ANJ330	33 1W Metal Oxide	1	S
R317	ERG1ANJ470	47 " "	1	S
R38,316,335	ERG1ANJ101	100 " "	3	S
R329	ERG1ANJ471	470 " "	1	S
		CAPACITORS (Value is in MICRO FARADS except P.P=PICO FARADS)		
C1	ECCD1H100KC	10 P 50V Ceramic	1	
C4	ECCD1H180KC	18 P " "	1	
C39,42	ECCD1H560KC	56 P " "	2	
C18	ECCD1H120KC	12 P " "	1	
C21	ECCD1H150KC	15 P " "	1	
C33	ECCD1H221K	220 P " "	1	
C72,82	ECCD1H331K	330 P " "	2	
C59	ECCD1H040C	4 P " "	1	
C2	ECCD1H050CC	5 P " "	1	
C42,62	ECKD1H102KB	0.001 " "	2	

Ref. No.	Part No.	Part Name & Description			Per Set	Remarks
C350	ECKD1H332MD	0.0033	50V	Ceramic	1	
C338∿341	ECKD1H103ZF	0.01	"	"	4	
C307	ECQG1H223MZ	0.022	"	Polyester	1	
C345	ECQG1H683MZ	0.068	"	"	1	
C27	ECQP1151JZ	150 P	125V	Polypropylene	1	
C24	ECQP1221JZ	220 P	"	"	1	
C140,158,240,258						
	ECQV05224JZ	0.22	50V	Epoxy	4	
C104,204	RCQP2A331JZ	330 P	100V	Polypropylene	2	
C25	RCQP2A361JZ	360 P	"	"	1	
C26	RCQP2A392JZ	3900	"	"	1	
C51	RCQP2A471JZ	470 P	"	"	1	
C306	RCQP2A472JZ	4700	"	"	1	
C63	ECCD1H101K	100 P	"	Ceramic	1	
C18,21	ECCD1H120KC	12 P	"	"	2	
C137,237	ECFT1E153KD	0.015	25V	Semi-Conductor	2	
C139,239	ECFT1E223KD	0.022	"	"	2	
C125,225	ECFT1E273KD	0.027	"	"	2	
C117,217	ECFT1E333KD	0.033	"	"	2	
C30	ECFT1E333MD	0.033	"	"	1	
C123,223	ECFT1E472KA	0.0047	"	"	2	
C23,35,36,128,228						
	ECFT1E473MD	0.047	"	"	5	
C129,229	ECFT1E562KA	0.0056	"	"	2	
C12,183,283						
	ECFT1E683MD	0.068	"	"	3	
C34,355	ECFT1E104MD	0.1	"	"	2	
C349	ECFT1E473MD	0.047	"	"	1	
C64	ECFT1E333MD	0.033	"	"	1	
C31,91,116,151, 153,156,216, 253,256,308						
	ECEA1AS101	100	10V	Electrolytic	10	S
C60	ECEA0JK220	22	6.3V	"	1	
C40,312,333,334						
	ECEA1AS221	220	10V	"	4	S
C335	ECEA1CS330	33	16V	"	1	S
C303	ECEA1AS470	47	10V	"	1	S
C314,318,320						
	ECEA1AS471	470	"	"	3	S
C44,58,113,127, 130,136,213,227, 230,236,324,311						
	ECEA1HS100	10	50V	"	12	S
C157,257	ECEA1AS102	1000	10V	"	2	S
C337	ECEA1VS102	1000	35V	"	1	S
C336	ECEA1ES471	470	25V	"	1	S
C251,310,322						
	ECEA1ES101	100	"	"	3	S
C118,121,134,135, 185,218,221,234, 235,285,319						
	ECEA50Z3R3	3.3	50V	"	11	S
C32,43,131,231						
	ECEA25Z4R7	4.7	25V	"	4	S
C50	ECEA50Z2R2	2.2	50V	"	1	S

Ref. No.	Part No.	Part Name & Description			Per Set	Remarks
C52,102,143, 148,182,202, 243,248,282						
	ECEA50ZR22	0.22	50V	Electrolytic	9	S
C120,124,220,224						
	ECEA50ZR33	0.33	"	"	4	S
C53	ECEA50ZR47	0.47	"	"	1	S
C37,103,126,132, 144,146,147,184, 203,226,232,244, 246,247,284,304, 305						
	ECEA50ZR1	0.1	"	"	17	S
C323	ECEA1CS221	220	16V	"	1	S
C348	ECEA1EF101	100	25V	"	1	
C119,133,150,180, 219,233,250, 280,301,343						
	ECEA50Z1	1	50V	"	10	S
C346	ECEA1ES222	2200	25V	"	1	S
C28,29,45,57, 155,255,321						
	ECBS1C103NY	0.01	16V	Ceramic	7	
C105,145,205,245						
	ECBS1E152MX	0.0015	25V	"	4	
C344	ECBS1E332MX	0.0033	"	"	1	
C106,206,316, 317,152,252						
	ECBS1E222NX	0.0022	"	"	6	
C122,138,222,238						
	ECBS1E472NX	0.0047	"	"	4	
C315	ECBS1E682MX	0.0068	"	"	1	
C3,14,17	ECBS1H100JC	10 P	50V	"	3	
C101,201	ECBS1H101JL	100 P	"	"	2	
C9∿11,54,181,281						
	ECBS1H102KB	0.001	"	"	6	
C141,241	ECBS1E682NX	0.0068	25V	"	2	
C154,254	ECBS1H220JC	22 P	50V	"	2	
C13,16	ECBS1H150JC	15 P	"	"	1	
C5,56	ECBS1H270JC	27 P	"	"	2	
C114,214	ECBS1H331KB	330 P	"	"	2	
C6,15	ECBS1H4R7KC	4.7	"	"	2	
C115,215	ECBS1H471KB	470 P	"	"	2	
C41	ECBS1H681KB	680 P	"	"	1	
C55,313	ECBT1E103MM	0.01	25V	Ceramic	2	
C149,249	ECBT1E153MX	0.015	"	"	2	
C159,259	ECBS1H6R8KC	6.8	50V	"	2	
C142,242,302,309						
	ECBT1C223NY	0.022	16V	"	2	
C71,81	ECSF1AM335X1	3.3	10V	Electrolytic	2	
		ELECTRICAL PARTS				
E1	RZAXC60LSXG1	Dial Chassis Ass'y (Metallic Brown)			1	
E1	RZAXC60LSXG	Dial Chassis Ass'y (Metallic Silver)			1	

RX-C60LS DEUTSCH

■ TECHNISCHE DATEN

Allgemeines:

Stromversorgung: Wechselstrom: 110~115/115~127/ 200~220/230~250 V, 50/60 Hz
Batterien: 12 V (acht Trockenbatterien der Größe "D": National UM-1 o.ä.)
Autobatterie: über den Autosadapter RP-952 (Sonderzubehör) anschließbar

Leistungsaufnahme: 35 W (bei Netzbetrieb)

Ausgangsleistung: max. 15 W (2×7,5 W) eff.
20 W (2×10 W) MPO

Lautsprecher:
Tiefontlautsprecher: dynamischer PM-Lautsprecher, Ø10 cm (3Ω)
Hochtonlautsprecher: keramischer Lautsprecher, Ø3 cm (200Ω)

Eingangsspannungen: MIC: Empfindlichkeit 0,26 mV, Mikrofonimpedanz 200~600Ω
Mischmikrofonbuchse: Empfindlichkeit 0,8 mV
PHONO: Empfindlichkeit 2,5 mV/mind. 47 kΩ
DC IN: 13,2 V

Ausgangsimpedanzen: EXT SP: 3~8Ω
HEADPHONES: 0,6 mW, 8Ω

REC/PB-Anschlußbuchse: 5-polige DIN-Buchse
IN: Empfindlichkeit 3 mV/mind. 10 kΩ
OUT: Ausgangspegel 420 mV/max. 4.7 kΩ

Abmessungen (B×H×T): Gesammtsumme Grösse 530×172×176 mm
Hauptsächlich 298×172×176 mm
Lautsprecher Schachtel 118×172×157 mm

Gewicht (ohne Batterien): 6,0 kg

Empfangsteil:

Wellenbereiche:
UKW: 87,5~108 MHz
LW: 150~285 kHz (2000~1060 m)
MW: 520~1610 kHz (577~186 m)
KW: 5,9~18 MHz (50,8~16,7 m)

Zwischenfrequenz: UKW: 10,7 MHz
LW/MW/KW: 455 kHz

Empfindlichkeit:
UKW: 2µV bei 500 mW Ausgangsleistung
LW: 224µV/m bei 50 mW Ausgangsleistung
MW: 112µV/m bei 50 mW Ausgangsleistung
KW: 12µV bei 50 mW Ausgangsleistung

Tonbandteil:

Frequenzgang: 40~12.000 Hz (Normalband)
40~14.000 Hz (CrO₂-Band)
40~16.000 Hz (Reineisenband)

Aufnahmesystem: Wechselstrom-Vormagnetisierung, Wechselstromlöschung

Bandgeschwindigkeit: 4,8 cm/s

Gleichlaufschwankungen: 0,055% bewertet (WRMS)

Spieldauer: 1 Stunde mit Cassette C-60

Spurlage: Stereoaufnahme und -wiedergabe auf 4 Spuren/2 Kanälen

Änderungen vorbehalten.

ABGLEICH

■ VORGANGSWEISE BEIM ABGLEICH

BITTE DIESEN ABSCHNITT VOR DEM ABGLEICH SORGFÄLTIG DURCHLESEN

1. Den Lautstärkeregler in die Maximalposition stellen.
2. Den Baßregler und den Höhenregler in die Mittelposition stellen.
3. Den Wellenbereichsschalter auf LW, MW, KW oder UKW stellen.
4. Den Balanceregler in die Mittelposition stellen.
5. Den Funktionsschalter auf „radio" stellen.
6. Drehen Sie den Feinabstimmregler in die Mittelstellung.
7. Eine Gleichspannung von 12 V anlegen.
8. Der Signalgeneratorausgang sollte nicht größer sein, als für eine Ausgangsanzeige unbedingt notwendig ist.

■ LW-, MW- und KW-ABGLEICH

	WELLENBAND	SIGNALGENERATOR oder WOBBELGENERATOR ANSCHLÜSSE	SIGNALGENERATOR oder WOBBELGENERATOR FREQUENZ	STELLUNG DES ABSTIMM-REGLERS	MESSGERÄT (ELEKTRONIK-VOLTMETER oder OSZILLOSKOP)	ABGLEICH	BEMERKUNGEN
			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 Abstimmpunkt, 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	,,	145 kHz	145 kHz [8,0 mm]	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule.	L7 (LW-Oszillatorspule) (*1) L4 (LW-Antennenspule)	Die maximale Ausgangsleistung einstellen. L4 durch Verschieben am Ferritkern abgleichen.
(3)	LW	,,	285 kHz	285 kHz [67,0 mm]	,,	CT4 (LW-Oszillatortrimmer) CT1 (LW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (2) und (3) wiederholen.
(4)	MW	Aus einem Draht einige Schleifenwindungen bilden und das Signal in die Empfängerschleife abstrahlen.	550 kHz	550 kHz [8,0 mm]	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule.	L8 (MW-Oszillatorspule) (*1) L5 (MW-Antennenspule)	Die maximale Ausgangsleistung einstellen. L5 durch Verschieben am Ferritkern abgleichen.
(5)	MW	,,	1.500 kHz	1.500 kHz [67,0 mm]	,,	CT5 (MW-Oszillatortrimmer) CT8 (MW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (4) und (5) wiederholen.
			KW-HF-ABGLEICH				
(6)	KW	Über einen Keramikkondensator (10 pF) an den Meßpunkt ▼ anschließen. Den negativen Ausgang an den Meßpunkt ▼ anschließen.	5,9 MHz	5,9 MHz [2,8 mm]	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule.	L9 (KW-Oszillatorspule) L6 (KW-Antennenspule)	Die maximale Ausgangsleistung einstellen.
(7)	KW	,,	18 MHz	18 MHz [70,8 mm]	,,	CT6 (KW-Oszillatortrimmer) CT3 (KW-Antennentrimmer)	Die maximale Ausgangsleistung einstellen. Die Schritte (6) und (7) wiederholen.

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

■ UKW-ABGLEICH

	WELLENBAND	SIGNALGENERATOR oder WOBBELGENERATOR ANSCHLÜSSE	SIGNALGENERATOR oder WOBBELGENERATOR FREQUENZ	STELLUNG DES ABSTIMM-REGLERS	MESSGERÄT (ELEKTRONIK-VOLTMETER oder OSZILLOSKOP)	ABGLEICH	BEMERKUNGEN
			UKW-ZF-ABGLEICH				
(1)	UKW	Über einen 0,001 µF-Kondensator an den Meßpunkt ▼ anschließen. Den negativen Ausgang an den Meßpunkt ▼ anschließen.	10,7 MHz (SWP,)	Der Abstimmpunkt, wo keine Interferenz auftritt (ungefähr bei 90 MHz).	Die Vertikalamplitude des Oszilloskops an den Meßpunkt ▼ anschließen. Den negativen Ausgang an den Meßpunkt ▼ anschließen.	T1 (1. UKW-ZF-Abgleich)	Die Maximalamplitude einstellen. (Siehe Abb. 20.)
(2)	UKW	,,	,,	,,	,,	T3 (2. UKW-ZF-Abgleich)	Die Maximalamplitude einstellen. (Siehe Abb. 21.)
			FM-HF-ABGLEICH				
(3)	UKW	Über eine künstliche UKW-Antenne an den Meßpunkt ▼ anschließen. Den negativen Ausgang an den Meßpunkt ▼ anschließen.	87,5 MHz	Drehkondensator ganz geschlossen.	Ausgangsleistungsmesser parallel zur Lautsprecher-Schwingspule.	L2 (UKW-Oszillatorspule)	(*2) Die maximale Ausgangsleistung einstellen.
(4)	UKW		108 MHz	Drehkondensator ganz aufgedreht.	,,	CT7 (UKW-Oszillatortrimmer)	,,
(5)	UKW		90 MHz	Das Signal abstimmen.	,,	L1 (UKW-Antennenspule)	,,
(6)	UKW		106 MHz	,,	,,	CT2 (UKW-Antennentrimmer)	(*2) Die maximale Ausgangsleistung einstellen. Die Schritte (3) bis (6) wiederholen.

(*2) Es gibt drei verschiedene Ausgangsfrequenzkurven. Stimmen Sie die Mittelfrequenz ab.

■ KANALTRENNUNGSABGLEICH

PRÜFUNG	UKW-MESSENDER SOURCE-ANSCHLUSS	GERÄTEANSCHLUSS (ELEKTRONISCHER ZÄHLER)	EINSTELLUNG	ANGABEN	BEMERKUNGEN
Einstellung des Pilottons	98 MHz, 60 dB	DIN OUT ③, ⑤ pin.	VR1	19 kHz	Mit dem elektronischen Zähler den Spannungskonstanthalter (VR1) auf 19 kHz (±100 Hz) einstellen.

■ AUDIO-ABGLEICH

EINSTELLUNG	EINGANG	MESSPUNKT	MESSWERT	EINSTELLPUNKT	BEMERKUNGEN
Azimut	QZZCFM (10 kHz, −20 dB)	EXT SP	Die maximale Ausgangsleistung einstellen.	Azimut-Einstellschraube	bei Wiedergabe
Wiedergabepegel	QZZCFM (315 Hz, 0 dB)	DIN OUT ③, ⑤ pin.	0,42±0,02 V	VR102 (linker Kanal) VR202 (rechter Kanal)	bei Wiedergabe
LED-Anzeige	QZZCFM (315 Hz, 0 dB)	Anzeige	———	VR107 (linker Kanal) VR207 (rechter Kanal)	VR107, VR207 so einstellen, daß die zwei erlöschen von Rechtes aufleuchtet.
Oszillationsfrequenz für Vormagnetisierung	———	▼ . . . (+) ▼ . . . (−)	68±0,5 kHz	L301	bei Aufnahme: Oszilator→II Bandsortenwähler . . . Reineisen
Löschstrom	für Reineisenband	▼ . . . (+) ▼ . . . (−)	140±7/3 mV	VR302	bei Aufnahme: Oszilator→III Bandsortenwähler . . . Reineisen
Vormagnetisierungssperre	———	▼ . . . (linker Kanal) ▼ . . . (rechter Kanal) ▼ . . . (Masse)	0±0,5 dB	L101 (linker Kanal) L201 (rechter Kanal)	bei Aufnahme: Oszilator→I→II→III
Vormagnetisierungsstrom	für Reineisenband	▼ . . . (linker Kanal) ▼ . . . (rechter Kanal) ▼ . . . (Masse)	Reineisen 4±0,2 mV Normal 1,9±0,15 mV	Reineisen VR101 (linker Kanal) VR201 (rechter Kanal) Normal VR303	bei Aufnahme: Oszilator→III Bandsortenwähler . . . Reineisen
Gesamtverstärkung	Außenmikrofon („EXT. MIC") f=1 kHz, −70 dB	DIN Jack input ③, ⑥ pin output ③, ⑥ pin	Aufnahme . . . 32 mV Wiedergabe . . . 32±2 mV	VR104 (linker Kanal) VR204 (rechter Kanal)	1. Auf Aufnahme schalten und den Bandsortenwähler auf „Normal" stellen. 2. Das 1-kHz-Signal eines NF-Generators (−70 dB) an die Außenmikrofonbuchse (DIN ③, ⑥ pin) anlegen. 3. Den Aufnahmepegel (REC LEVEL) so regeln, daß der Pegel (bei Vorderbandkontrolle) an den Meßpunkten ▼ und ▼ 32 mV beträgt. 4. Das bespielte Band wiedergeben. Kontrollieren, ob der Wert, der an der DIN-Buchse vom Elektronikvoltmeter angezeigt wird, 32±2 mV beträgt.

BEZEICHNUNGEN IN DER SCHEMATISCHEN DARSTELLUNG

Bemerkungen:

1. S1-1~S1-4: Wellenbereichsschalter auf „FM". (1=UKW, 2=LW, 3=MW, 4=SW)
2. S2-1, S2-2: Schalter für gehörrichtige Lautstärkekorrektur auf „OFF".
3. S3-1~S3-4: Funktionsschalter auf „TAPE". (1=RADIO, 2=TAPE, 3=PHONO/DIN IN)
4. S4-1, S4-2: Leeraufnahmeschalter auf „OFF".
5. S5-1, S5-2: Betriebsart-/Schwebungsunterdrückungsschalter auf „STEREO". (1=STEREO, 2=MONO)
6. S6-1~S6-4: Aufnahmeschalter auf „MANUAL". (1=MANUAL, 3=EASY-MATIC)
7. S7-1, S7-2: Dolbyschalter auf „OUT".
8. S8-1~S8-3: Bandsortenwähler auf „NORMAL". (1=NORMAL, 2=CrO₂, 3=METAL)
9. S9: Wahlschalter für Gleichstrom- oder Wechselstrombetrieb auf „DC IN".
10. S10-1: Wiedergabetaste auf „OFF".
11. S10-2, S10-3: Schnellvorlauf-, Rückspultaste auf „OFF".
12. S10-4: Auf vorlauftaste/stopptaste.
13. S11-1~S11-12: Aufnahme-/Wiedergabeschalter auf „Wiedergabe". (1=Wiedergabeschalter, 3=Aufnahme).
14. S12-1~S12-4: DIN/PHONO auf „PHONO".
15. S13: Schalter zum Unterdrücken von Interferenzpfeifen auf „I".
16. S14: Netzspannungswähler.
17. VR1: Einstellung der spannungsgesteuerten Oszillatorfrequenz.
18. VR101, 201, 303: Spannungsregler zur Einstellung des Vormagnetisierstroms.
19. VR102, 202: Spannungsregler zur Einstellung der Wiedergabeverstärkung.
20. VR103, 203: Aussteuerungsregler.
21. VR104, 204: Spannungsregler zur Einstellung der Gesamtverstärkung.
22. VR105, 205: Baßregler.
23. VR106, 206: Höhenregler.
24. VR107, 207: Spannungsregler zur Einstellung des Anzeigepegels.
25. VR108, 208: Lautstärkeregler.
26. VR301: Mischpegelregler.
27. VR302: Spannungsregler zur Einstellung des Löschstroms.
28. Die Markierung (▼) bezeichnet einen Meßpunkt, z.B. ▼=Meßpunkt 1.
29. Die Markierung (e) bezeichnet einen gedruckten Widerstand.
30. Alle Gleichspannungen sind mit einem Elektronikvoltmeter vom negativen Batterieanschluß aus zu messen.
    < > . . . Stellung „UKW". ( ) . . . Stellung „AM".
    [ ] . . . Stellung „Aufnahme".
31. Batteriestrom: ohne Signal . . . . . 150 mA
    bei maximaler Ausgangsleistung (Radio) . . . . . 580 mA
    bei maximaler Ausgangsleistung (Cassette) . . . . . 860 mA
32. Zur Betriebssicherheit
    Die im Schaltplan mit ⚠ gekennzeichneten Bauteile sind für einen sicheren Betrieb dieses Gerätes besonders wichtig und sollten daher nur durch Originalbauteile ersetzt werden.

RX-C60LS FRANÇAIS

■ SPECIFICATIONS

Généralités:

Alimentation: c.a. 110 à 115/115 à 127/200 à 220/230 à 250 V, 50/60 Hz
Piles: 12 V (huit piles sèches de dimension D) (National UM-1 ou équivalent)
Batteries pour bateau: avec adaptateur RP-952 bateau en option

Consommation: 35 W (C.A. seulement)

Puissance de sortie: 15 W (7,5 W×2) . . . RMS (max.)
20 W (10 W×2) . . . MPO

Enceinte acoustique: Haut-parleur des graves: haut-parleur dynamique 10 cm à aimant fixe (3Ω)
Haut-parleur des aigus: 3 cm haut-parleur à aimant permanent (200Ω)

Entrée: MIC: sensibilité 0,26 mV: impédance applicable pour microphone 200 à 600Ω
Microphone de mixage: sensibilité 0,8 mV
PHONE: sensibilité 2,5 mV/47 kΩ ou plus
DC IN: 13,2 V

Sortie: EXT SP: 3 à 8Ω
HEADPHONE: 0,6 mW, 8Ω

Branchement REC/PB: fiche DIN à 5 broches:
IN: sensibilité 3 mV/10 kΩ ou plus
OUT: sortie 420 mV/4,7 kΩ ou moins

Dimensions (l×h×Pr) cm: Totale grandeur
530×172×176
($20^{7}/_{8}$×$6^{25}/_{32}$×$6^{15}/_{16}$)''
Principal
298×172×176
($11^{23}/_{32}$×$6^{25}/_{32}$×$6^{15}/_{16}$)''
Parleur boîte
118×172×157
($4^{5}/_{8}$×$6^{25}/_{32}$×$6^{3}/_{16}$)''

Poids kg: 6,0 sans piles

Section radio:

Gamme de fréquence 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)

Fréquence intermédiaire: FM: 10,7 MHz
AM (GO/PO/OC): 455 kHz

Sensibilité:
FM: 2μV pour une sortie de 500 mW
GO: 224μV/m pour une sortie de 50 mW
PO: 112μV/m pour une sortie de 50 mW
OC: 12μV pour une sortie de 50 mW

Section platine magnétophone:

Réponse de fréquence:
40 à 12.000 Hz (avec bande normale)
40 à 14.000 Hz (avec bande CrO_2)
40 à 16.000 Hz (avec bande Métal)

Système d'enregistrement: Polarisation C.A., effacement C.A.
Vitesse de bande: 4,8 cm/sec.
Pleurage et scintillement: 0.055% (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.

ALIGNEMENTS

■ INSTRUCTIONS D'ALIGNEMENT

AVANT DE PROCEDER AUX ALIGNEMENTS, LIRE ATTENTIVEMENT CE QUI SUIT

1. Placer le potentiomètre de volume au maximum.
2. Placer les commandes des graves et aigus au centre.
3. Placer le sélecteur de bande sur GO, PO, OC ou FM.
4. Placer la commande de balance au centre.
5. Placer le sélecteur de fonctions sur ''radio''.
6. Placer la commande de syntonisation fine sur sa position centrale.
7. Régler la tension sur 12 V C.C.
8. Régler la sortie du générateur étalonné de façon à ne pas surcharger les circuits.

■ ALIGNEMENT GO, PO, et OC

	BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE: BRANCHEMENTS	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE: FREQUENCE	POSITION DE L'AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE ELECTRONIQUES)	REGLAGE	OBSERVATIONS
		ALIGNEMENT IF sur AM					
(1)	PO	Faire une boucle de plusieurs tours de fil et émettre le 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					
(2)	GO	,,	145 kHz	145 kHz [8,0 mm ($^{5}/_{16}$'')]	Voltmètre branché à la bobine oscillatrice.	L7 (bobine d'oscillateur GO) (*1) L4 (bobine d'antenne GO)	Régler pour une sortie maximum en glissant la bobine L4 le long du noyau en ferrite.
(3)	GO	,,	285 kHz	285 kHz [67,0 mm ($2^{5}/_{8}$'')]	,,	CT4 (trimmer d'oscillateur GO) CT1 (trimmer d'antenne GO)	Régler pour une sortie maximum. Refaire les étapes (2) et (3).
		ALIGNEMENT HF sur PO					
(4)	PO	,,	550 kHz	550 kHz [8,0 mm ($^{5}/_{16}$'')]	Voltmètre branché à la bobine oscillatrice.	L8 (bobine d'oscillateur PO) (*1) L5 (bobine d'antenne PO)	Régler pour une sortie maximum en glissant la bobine L5 le long du noyau en ferrite.
(5)	PO	,,	1.500 kHz	1.500 kHz [67,0 mm ($2^{5}/_{8}$'')]	,,	CT5 (trimmer d'oscillateur PO) CT8 (trimmer d'antenne PO)	Régler pour une sortie maximum. Refaire les étapes (4) et (5).
	(*1) Sceller la bobine d'antenne à la cire après avoir achevé l'alignement.						
		ALIGNEMENT HF sur OC					
(6)	OC	Brancher au point ▼ par un condensateur en céramique (10 pF) Côté négatif au point ▼.	5,9 MHz	5,9 MHz [2,8 mm ($^{1}/_{8}$'')]	Voltmètre branché à la bobine oscillatrice.	L9 (bobine d'oscillateur OC) L6 (bobine d'antenne OC)	Régler pour une sortie maximum.
(7)	OC	,,	18 MHz	18 MHz [70,8 mm ($2^{25}/_{32}$'')]	,,	CT6 (trimmer d'oscillateur OC) CT3 (trimmer d'antenne OC)	Régler pour une sortie maximum. Refaire les étapes (6) et (7).

■ ALIGNEMENT FM

	BANDE	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE: BRANCHEMENTS	GENERATEUR ETALONNE ou GENERATEUR DE BALAYAGE: FREQUENCE	POSITION DE L'AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ou OSCILLOSCOPE ELECTRONIQUES)	REGLAGE	OBSERVATIONS
		ALIGNEMENT IF sur FM					
(1)	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 1ère IFT)	Régler pour une amplitude maximum. (Voir fig. 20)
(2)	FM	,,	,,	,,	,,	T3 (FM 2ème IFT)	Régler pour une amplitude maximum. (Voir fig. 21.)
		ALIGNEMENT HF sur FM					
(3)	FM		87,5 MHz	Condensateur variable totalement fermé.	Voltmètre branché à la bobine oscillatrice.	L2 (bobine d'oscillateur FM)	(*2) Régler pour une sortie maximum.
(4)	FM	Brancher au point ▼ via une antenne fictive FM. Côté négatif au point ▼.	108 MHz	Condensateur variable ouvert à fond.	,,	CT7 (trimmer d'oscillateur FM)	,,
(5)	FM		90 MHz	Syntoniser sur le signal.	,,	L1 (bobine d'antenne FM)	,,
(6)	FM		106 MHz	,,	,,	CT2 (trimmer d'antenne FM)	(*2) Régler pour une sortie maximum. Refaire les étapes (3) à (6).
	(*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.	98 MHz, 60 dB	DIN OUT ③, ⑤ pin	VR1	19 kHz	Régler VR1 pour 19 kHz (±100 Hz) en effectuant la lecture sur le compteur électronique.

■ ALIGNEMENTS AUDIO

ELEMENT	ENTREE	POINT DE MESURE	SPECIFICATION	POINT DE REGLAGE	OBSERVATIONS
Azimut	QZZCFM (10 kHz, −20 dB)	EXT SP	Régler pour une sortie maximum.	Vis d'azimut	Mode de lecture
Niveau de lecture	QZZCFM (315 Hz, 0 dB)	DIN OUT ③, ⑤ pin	0,42±0,02 V	VR102 (canal gauche) VR202 (canal droit)	Mode de lecture
LED-mètre	QZZCFM (315 kHz, 0 dB)	Mètre	———	VR107 (canal gauche) VR207 (canal droit)	Régler le VR107, VR207 de façon à ce que la 2ème DEL à partir de la droite commence à s'éteindre.
Fréquence d'oscillation de polarisation	———	▼ . . . (+) ▼ . . . (−)	68±0,5 kHz	L301	Mode d'enregistrement Interrupteur anti-battement→II Sélecteur de bande . . . METAL
Courant d'effacement	Utiliser une bande METAL.	▼ . . . (+) ▼ . . . (−)	140±$\frac{7}{3}$ mV	VR302	Mode d'enregistrement Interrupteur anti-battement→III Sélecteur de bande . . . METAL
Eliminateur de polarisation	———	▼ . . . (canal gauche) ▼ . . . (canal droit) ▼ . . . (−)	0±0,5 dB	L101 (canal gauche) L201 (canal droit)	Mode d'enregistrement Interrupteur anti-battement→I→II→III Sélecteur de bande . . . METAL
Courant de polarisation	Utiliser une bande METAL.	▼ . . . (canal gauche) ▼ . . . (canal droit) ▼ . . . (−)	Métal 4±0,2 mV Normal 1,9±0,15 mV	Métal VR101 (canal gauche) VR201 (canal droit) Normal VR303	Mode d'enregistrement Interrupteur anti-battement→III Sélecteur de bande . . . METAL
Gain total	Micro externe f = 1 kHz, −70 dB	DIN Jack input ①, ④ pin output ③, ⑤ pin	Enregistrement . . . 32 mV Lecture . . . 32±2 mV	VR104 (canal gauche) VR204 (canal droit)	1. Mettre ''UNIT'' en mode d'enregistrement, et le sélecteur de bande sur ''NORMAL''. 2. Amener à la borne micro externe (DIN ①, ④ pin) un signal de 1 kHz (−70 dB) de l'oscillateur b.f. 3. Régler le niveau d'enregistrement jusqu'à ce que le niveau du contrôleur à ▼ et ▼ atteigne 32 mV. 4. Ecouter une bande enregistrée, et vérifier que la valeur à DIN sur le voltmètre électronique atteigne 32 mV±2 mV.

SYMBOLES UTILISES DANS LE SCHEMA

Remarques:

1. S1-1~S1-4: Sélecteur de gamme d'onde en position ''FM''. (1 . . . ''FM'', 2 . . . ''LW'', 3 . . . ''MW'', 4 . . . ''SW'')
2. S2-1, S2-2: Interrupteur de correction physiologique en position ''OFF''.
3. S3-1~S3-4: Commutateur de fonction en position ''TAPE''. (1 . . . ''RADIO'', 2 . . . ''TAPE'', 3 . . . ''PHONO/DIN IN'')
4. S4-1, S4-2: Interrupteur ''ON/OFF'' du commutateur d'enregistrement silencieux en position ''OFF''.
5. S5-1, S5-2: Commutateur de stéréo-mono/anti-battements en position ''STEREO''. (1 . . . ''STEREO'', 2 . . . ''MONO'').
6. S6-1~S6-4: Commande de mode d'enregistrement en position ''MANUAL''. (1 . . . ''MANUAL'', 3 . . . ''EASY-MATIC'')
7. S7-1, S7-2: Commutateur ''IN/OUT'' du dolby en position ''IN''.
8. S8-1~S8-3: Sélecteur de bande en position ''NORMAL''. (1 . . . ''NORMAL'', 2 . . . ''CrO_2'', 3 . . . ''METAL'')
9. S9: Sélecteur C.A./C.C. en position ''DC IN''.
10. S10-1: Commutateur ''ON/OFF'' du commutateur lecture en position ''OFF''.
11. S10-2, S10-3: Touche ''ON/OFF'' du commutateur d'avance rapide-rebobinage en position ''OFF''.
12. S10-4: Interrupteur de lecture/d'arrêt.
13. S11-1~S11-12: Commutateur enregistrement/lecture en position ''playback''. (1 . . . Playback, 3 . . . Record)
14. S12-1~12-4: Commutateur DIN/PHONO en position ''PHONO''.
15. S13: Interrupteur de suppression de battement en position ''I''.
16. S14: Sélecteur de tension.
17. VR1: Réglage de fréquence de l'oscillateur VCO.
18. VR101, 201, 303: Régulateur de tension de réglage du courant de polarisation.
19. VR102, 202: Régulateur de tension de réglage de gain de lecture.
20. VR103, 203: Régulateur de tension de réglage de niveau d'enregistrement.
21. VR104, 204: Régulateur de tension de réglage de gain total.
22. VR105, 205: Commande des graves.
23. VR106, 206: Commande des aigus.
24. VR107, 207: Régulateur de tension de réglage du niveau des indicateurs.
25. VR108, 208: Potentiomètre de volume.
26. VR301: Commande du niveau de mixage.
27. VR302: Régulateur de tension de réglage du courant d'effacement.
28. La marque (▼) signale un point de vérification. Ex.: ▼=point de vérification ↓
29. La marque (⊛) signale une résistance imprimée.
30. 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.
31. Courant des piles: Pas de signal . . . . . 150 mA
    Sortie maximum (Radio) . . . . . 580 mA
    Sortie maximum (Bande) . . . . . 860 mA
32. Remarque importante concernant la sécurité
    Les pièces marquées ⚠ 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.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
E1-1	RDR21-1	Pulley	1	
E1-2	RDY43Z	Shaft, Pulley	1	
E2	XBA2C03SS0	Fuse, 250V 315mA	1	⚠
E3	XBA2C16TR0	Fuse, 250V 1.6A	1	⚠
E4	RDD483Z	Drum	1	
E5	RDS4090A	Spring, Dial	1	
E6	RDT3231Z	Shaft, Tuning	1	
E7	RDZ05Z	Cord, Dial (100cm)	1 ROLL	
E8	RDP848Z	Pointer, Dial	1	
E9	RBC406Y	Knob, Tape etc. (Metallic Brown)	14	
E9	RBC406Z	Knob, Tape etc. (Metallic Silver)	14	
E10	RBC407Y	Knob, Rec Mute (Metallic Brown)	1	
E10	RBC407Z	Knob, Rec Mute (Metallic Silver)	1	
E11	RBD161Y	Knob, Volume (Right) (Metallic Brown)	1	
E11	RBD161Z	Knob, Volume (Right) (Metallic Silver)	1	
E12	RBD162Y	Knob, Volume (Left), Bass, Treble (Metallic Brown)	3	
E12	RBD162Z	Knob, Volume (Left), Bass, Treble (Metallic Silver)	3	
E13	RBD163Y	Knob, Rec Level (Right) (Metallic Brown)	1	
E13	RBD163Z	Knob, Rec Level (Right) (Metallic Silver)	1	
E14	RBD164Y	Knob, Rec Level (Left), Mixing Level (Metallic Brown)	2	
E14	RBD164Z	Knob, Rec Level (Left), Mixing Level (Metallic Silver)	2	
E15	RBT9001X	Knob, Tuning (Metallic Brown)	1	
E15	RBT9001Y	Knob, Tuning (Metallic Silver)	1	
E16	RJM142Z	Built-in Microphone	2	
E17	RJF1046Z	Terminal, Ext Ant	4	
E18	RJP3G1Z	Plug, 3 Pin	2	
E19	RJP6G1Z	Plug, 6 Pin	1	
E20	RHG590Z	Rubber	2	
E21	QTE1054	Holder, Fuse	4	⚠
E22	RJP2G2Z	Plug, 2 Pin	1	
E23	RJP5G2Z	Plug, 5 Pin	1	
E24	RJP8G1Z	Plug, 8 Pin	1	
E25	RJS6L1Z	Socket, 6 Pin	1	
E26	RJS3L1Z	Socket, 3 Pin	2	
E27	RJS5L1Z	Socket, 5 Pin	1	
E28	RJS8L1Z	Socket, 8 Pin	1	
E29	RJT462Z	Terminal, Socket	28	
E30	RJT784Z	Terminal, Earth	1	
E31	RJT768Z	Terminal, Antenna	1	
E32	RJT785Z	Terminal, 6 Pin	1	
E33	RJT667Z	Terminal, 7 Pin	1	
E34	XSN26+6	Screw	1	S
E35	XWA26B	Washer	1	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
E36	XSN3+6S	Screw	1	S
E37	XWA3B	Washer	2	S
E38	XTV3+12GR	Red Screw	7	
E39	XNS11	Nut	1	S
E40	XNS12D	Nut	2	
E41	XNS8D	Nut	1	
E42	XTV3+10G	Screw	8	
E43	RMC858Z	Sheald Cover	1	
E44	RUL685Z	Bracket, Fine Tuning	1	
E45	RNW325	Washer	1	
E46	RNW621A	Washer	1	
E47	RBT159Y	Knob, Fine Tuning (Metallic Brown)	1	
E47	RBT159Z	Knob, Fine Tuning (Metallic Silver)	1	
E48	XSN2+W4	Screw	1	
E49	XSN3+8S	Screw	1	S
E50	XANR2T20	Neon Lamp, Arrester	2	
		CABINET PARTS		
		MAIN CABINET		
K1	RYMXC601LSX1	Front Cabinet Ass'y (Metallic Brown)	1	
K1	RYMXC601LSX8	Front Cabinet Ass'y (Metallic Silver)	1	
K2	RYFXC60LSXG1	Rear Cabinet Ass'y (Metallic Brown)	1	
K2	RYFXC60LSXG7	Rear Cabinet Ass'y (Metallic Silver)	1	
K2-1	RJC111Z	Terminal, Battery + Side	1	
K2-2	RJC950Z	Terminal, Battery, +, - Side	1	
K3	RYNXC60LSXG1	Battery Cover Ass'y (Metallic Brown)	1	
K3	RYNXC60M7	Battery Cover Ass'y (Metallic Silver)	1	
K4	RYPXC60LSXG1	Cassette Panel Ass'y (Metallic Brown)	1	
K4	RYPXC60LSXG	Cassette Panel Ass'y (Metallic Silver)	1	
K5	XEAQCR228FAK	Telescopic Antenna	1	
K6	RUL675Z	Speaker Wall Mounts	2	
K7	RUV660Z4	Battery Cover (Metallic Brown)	1	
K7	RUV660Z	Battery Cover (Metallic Silver)	1	
K8	RME308Z4	Holder, Printed Circuit Board Fix. (Metallic Brown)	1	
E8	RME308Z	Holder, Printed Circuit Board Fix. (Metallic Silver)	1	
K9	RDS5133Z	Spring, Speaker Box	2	
K10	RBC405Z4	Button, Speaker Box (Metallic Brown)	2	
K10	RBC405Z	Button, Speaker Box (Metallic Silver)	2	
K11	RKX254Z4	Handle (Metallic Brown)	1	
K11	RKX254Z	Handle (Metallic Silver)	1	
K12	RKX255X	Arm, Handle	2	
K13	RKT135Z4	Stopper, Arm (Metallic Brown)	2	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
K13	RKT135Z	Stopper, Arm (Metallic Silver)	2	
K14	RJC511Z	Terminal, Battery - Side	2	
K15	RJS2L1Z	Socket, 2 Pin	1	
K16	XYN3+F12FZ	Screw, Telescopic Antenna M'tg (Metallic Brown)	1	
K16	XYN3+F12FN	Screw, Telescopic Antenna M'tg (Metallic Silver)	1	
K17	XTV3+12G	Screw	4	
K18	XTV3+45G	Screw	9	
K19	XTC3+8CFN	Screw (Metallic Silver)	2	
K19	XTC3+8CFZ	Screw (Metallic Brown)	2	
K20	RJT462Z	Terminal	2	
K21	XTV3+12GR	Red Screw	1	
		SPEAKER BOX		
K22	RYMXC602LG93	Speaker Box Ass'y Left (Metallic Brown)	1	
K22	RYMXC602M8	Speaker Box Ass'y Left (Metallic Silver)	1	
K23	RYMXC603LG93	Speaker Box Ass'y Right (Metallic Brown)	1	
K23	RYMXC603M8	Speaker Box Ass'y Right (Metallic Silver)	1	
K24	RJF1090Z	Terminal Speaker	2	
K25	RUL661Z	Speaker Wall Mounts	2	
K26	RKF601Z92	Cover, Speaker Cabinet (Metallic Brown)	2	
K26	RKF601Z7	Cover, Speaker Cabinet (Metallic Silver)	2	
K27	RHG1059Z	Rubber, Speaker	2	
K28	XTN35+50GFZ	Screw, Speaker Box M'tg (Metallic Brown)	12	
K28	XTN35+50GFY	Screw, Speaker Box M'tg (Metallic Silver)	12	
K29	XTV3+12GFZ	Screw	4	
K30	XTV3+10G	Screw	4	
K31	XTV3+12GFY	Screw	4	
K32	XTV3+8G	Screw	8	
		ACCESSORIES		
	RJA20Z	Power Cord, AC	1	⚠
	RJF2F1Z	Cord, Speaker (Short)	2	
	RJE123E	Cord, Speaker (Long)	2	
	RJN23Z	Cassette Tape	1	
	RQB13Z	Caution Tag	1	
		PACKING MATERIALS		
	XZB36X35A04	Polyethylene Cover for Speaker	2	S
	XZB60X50A01	Polyethylene Cover for Main Cabinet	1	S
	RPN3784Z	Pad	1	
	RPN3787Z	Pad	2	
	RPN9424Z	Pad Complete	1	
	RPK1427Z	Gift Box	1	
	RPN3816Z	Pad	1	
		PRINTED MATERIAL		
	RQX6953Z	Instruction Book	1	

RD Ⓕ XG
Printed in Japan

ORDER NO. RD82102040S2

Service Manual

Supplement -1

Radio Cassette

RX-C60LS

Portable Component System with 4 Band Radio

This is the latest service manual for model RX-C60LS.
Please use this service manual instead of previous service manual (order No. RD82082018C2) for servicing.

■ SPECIFICATIONS

General:

Power Requirement: AC; 110~115/115~127/200~220/230~250 V, 50/60 Hz
Battery; 12 V (Eight "D" Size Flashight Batteries)
(National UM-1 or equivalent)
Car battery; with optional car adaptor RP-952

Power Consumption: 35 W (AC only)

Power Output: 15 W (7.5 W×2) . . . RMS (max.)
20 W (10 W×2) . . . MPO

Speaker: Woofer; 10 cm (4") PM Dynamic Speaker (3Ω)
Tweeter; 3 cm (1 3/16") Ceramic Speaker (200Ω)

Input: MIC; sensitivity 0.26 mV/applicable microphone impedance 200~600Ω
MIX MIC: sensitivity 0.8 mV/200~600Ω
PHONO: sensitivity 2.5 mV/47 kΩ over
DC IN; 13.2 V

Output: Ext SP; 3~8Ω
Headphones; 0.6 mW, 8Ω

REC/PB Connection: 5P DIN type IN; 3 mV/10 kΩ over
OUT; 420 mV/4.7 kΩ under

Dimensions: Total Size
530 (W)×172 (H)×176 (D) mm
(20 7/8"×6 25/32"×6 15/16")
Main Unit
298 (W)×172 (H)×176 (D) mm
(11 23/32"×6 25/32"×6 15/16")
Speaker Box
118 (W)×172 (H)×157 (D) mm
(4 5/8"×6 25/32"×6 3/16")

Weight: 6.0 kg (13 lb. 3.6 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; 2μV/500 mW output
LW; 224μV/m/50 mW output
MW; 112μV/m/50 mW output
SW; 12μV/50 mW output

Tape Deck Section:

Frequency Response: 40~12,000 Hz (with normal tape)
40~14,000 Hz (with CrO_2 tape)
40~16,000 Hz (with Metal tape)

Recording system: AC bias, AC erase
Tape Speed: 4.8 cm/s, (1 7/8 ips)
Wow and Flutter: 0.055% (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

LOCATION OF CONTROLS AND COMPONENTS

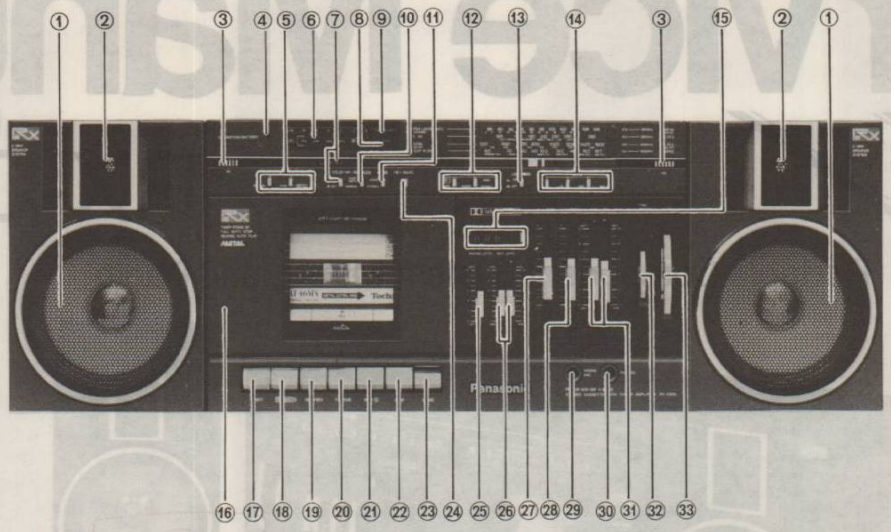


Fig. 1

① Speakers (Woofer) [10 cm (4") 3Ω]
② Speakers (Tweeter) [3 cm (1¼") 200Ω]
③ Built-in Microphones (MIC)
④ Power/Battery Check Indicator (POWER/BATTERY)
⑤ Tape Selector [NORMAL/CrO₂/METAL]
⑥ Level Meter (LEVEL)
⑦ *Dolby Noise Reduction Switch and Indicator (DOLBY NR) [ON/OFF]
⑧ Tuning Indicator (TUNING)
⑨ FM Stereo Indicator (FM STEREO)
⑩ Recording Mode Selector (REC MODE)
⑪ Mode Selector Switch (MODE) [MONO/STEREO]
⑫ Function Selector (SELECTOR) [POWER OFF/TAPE, RADIO, DIN IN/PHONO]
⑬ Loudness Switch (LOUDNESS) [ON/OFF]
⑭ Band Selector (BAND) [FM/LW/MW/SW]
⑮ Tape Counter and Reset Button
⑯ Cassette Compartment
⑰ Eject Button (EJECT)
⑱ Record Button (RECORD)
⑲ Rewind/Review Button (REW/REVIEW)
⑳ Fast Forward/Cue Button (FF/CUE)
㉑ Playback Button (PLAY)
㉒ Stop Button (STOP)
㉓ Pause Button (PAUSE)
㉔ Record Muting Button (REC MUTE)
㉕ Mixing Level Control (MIXING LEVEL)
㉖ Recording Level Controls (REC LEVEL)
㉗ Bass Control (BASS)
㉘ Treble Control (TREBLE)
㉙ Mixing Microphone Jack (MIXING MIC) [0.8 mV, (−62 dB)/200~600Ω]
㉚ Headphone Jack (PHONES) [0.6 mW, 8Ω]
㉛ Volume Controls (VOLUME)
㉜ Fine Tuning Control (FINE TUNING)
㉝ Tuning Control (TUNING)

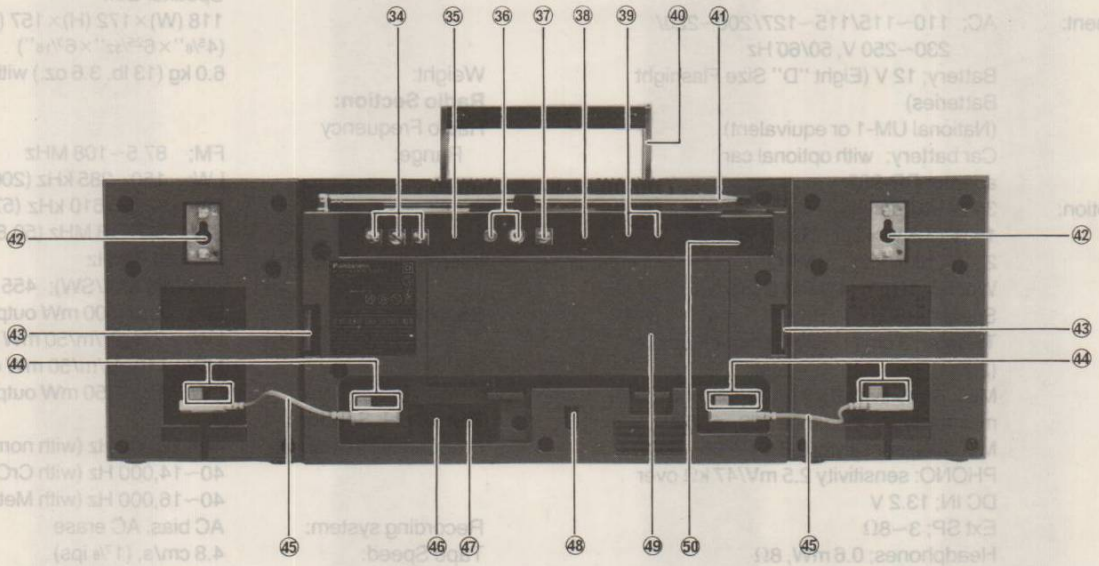


Fig. 2

㉞ External Antenna Terminals (AM ANT/FM ANT)
㉟ Input Selector (PHONO•LINE)
㊱ Phono Input Jacks (PHONO) [2.5 mV (−52 dB)/47 kΩ over]
㊲ Phono Ground Terminal (⏚)
㊳ DIN Jack (IN: 3 mV/10 kΩ, OUT: 420 mV/4.7 kΩ)
㊴ Microphone Jacks (MIC) [0.26 mV/200~600Ω]
㊵ Handle
㊶ Telescopic Antenna
㊷ Speaker Wall Mounts
㊸ Speaker Lock Buttons
㊹ Speaker Terminals (3~8Ω)
㊺ Speaker Cables
㊻ DC Input Jack (DC IN 13.2 V ⊖-⊙-⊕)
㊼ AC Socket (AC IN ~)
㊽ Voltage Selector (VOLTAGE SELECTOR)
㊾ Battery Compartment
㊿ Beat Proof Switch (BEAT PROOF) [I/II/III]

DOLBY SYSTEM

*"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
*Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

DISASSEMBLY INSTRUCTIONS

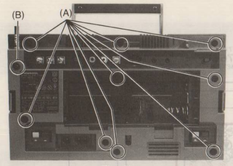


Fig. 3


Fig. 4

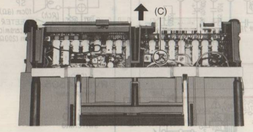


Fig. 5

Fig. 6

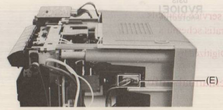


Fig. 7

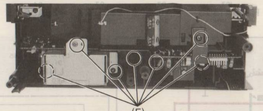


Fig. 8

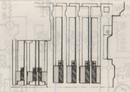


Fig. 9

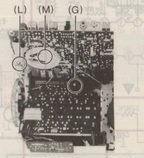


Fig. 10

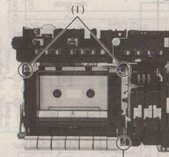


Fig. 11

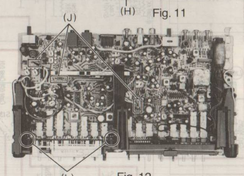


Fig. 12

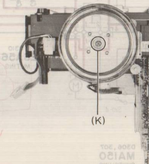


Fig. 13

Fig. 14


Fig. 15

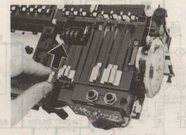


Fig. 16

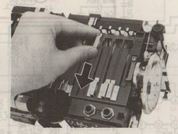


Fig. 17

■ DIAL THREADING

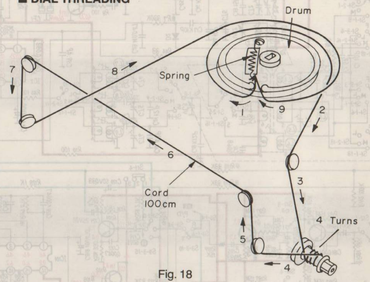


Fig. 18

Procedure	To remove—.	Remove—.	Shown in Fig.—.
1	Front Cabinet ※1	Battery Cover	——
2		Screw (3×45) ..... (A)×9	3
3		Screw (3×12) ..... (B)×1	3
4		Remove the Cassette Panel in the direction of the arrow.	4
5		Shut the Cassette Holder and remove the Front Cabinet.	——
6	Chassis and Power Circuit Board	Socket (1 pin) ..... (C)×1	5
7		Socket (2 pin, 5 pin, 8 pin) ..... (D)×3	6
8		Socket (5 pin) ..... (E)×1	7
9		Remove the chassis in the direction of the arrow.	5
10		Screw (3×12) ..... (F)×7	8
11	Control Circuit Board ※2	Place the control knobs as shown in the figure.	9
12		Screw (3×10) ..... (G)×1	10
13		Screw (3×10) ..... (H)×1	11
14	Mechanism	Screw (3×10) ..... (I)×2	11
15		Socket ..... (J)×3	12
16	Tuning Knob	Screw (3×6) ..... (K)×1	13
17	Push Switch	Screw (3×10) ..... (L)×3	10, 12
18		Screw (2.6×6) ..... (M)×1	10
19		Remove the Dial Cord.	——
20		LED Circuit Board Soldering Point ..... (N)×2	14
21		Remove the LED Circuit Board in the direction of the arrow.	15
22		Remove the soldering point of the switch.	——

※1 Before removing the Front Cabinet, remove the screw attaching the telescopic antenna.
※2 To reassemble insert the control knobs in the direction of arrow in figure 16 and 17.

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set bass and treble control to center.
3. Set band switch to LW, MW, SW or FM.
4. Set balance control to center.
5. Set function selector to radio.
6. Set fine tuning to center.
7. Set power source voltage to 12 V DC.
8. Output of signal generator should be no higher than necessary to obtain an output reading.

■ LW, MW and SW ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR: CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR: FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
				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	"	145 kHz	145 kHz (8.0 mm (9/16"))	Output meter across voice coil	L7 (LW OSC Coil) (*1) L4 (LW ANT Coil)	Adjust for maximum output. Adjust L4 by moving coil bobbin along ferrite core.
(3)	LW	"	285 kHz	285 kHz (67.0 mm (2 5/8"))	"	CT4 (LW OSC Trimmer) CT1 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
				MW-RF ALIGNMENT			
(4)	MW	"	550 kHz	550 kHz (8.0 mm (9/16"))	Output meter across voice coil	L8 (MW OSC Coil) (*1) L5 (MW ANT Coil)	Adjust for maximum output. Adjust L5 by moving coil bobbin along ferrite core.
(5)	MW	"	1,500 kHz	1,500 kHz (67.0 mm (2 5/8"))	"	CT5 (MW OSC Trimmer) CT8 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
(*1) Cement antenna bobbin with wax after completing alignment.							
				SW-RF ALIGNMENT			
(6)	SW	Connect to test point ▼ through ceramic capacitor (10 pF). Negative side to test point ▼.	5.9 MHz	5.9 MHz (2.8 mm (7/8"))	Output meter across voice coil	L9 (SW OSC Coil) L6 (SW ANT Coil)	Adjust for maximum output.
(7)	SW		18 MHz	18 MHz (70.8 mm (2 25/32"))	"	CT6 (SW OSC Trimmer) CT3 (SW ANT Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR: CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR: FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
				FM-IF ALIGNMENT			
(1)	FM	High side thru. 0.001μF 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. 20).
(2)	FM	"	"	"	"	T3 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 21).
				FM-RF ALIGNMENT			
(3)	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.	L2 (FM OSC Coil)	(*2) Adjust for maximum output.
(4)	FM		108 MHz	Variable capacitor fully open.	"	CT7 (FM OSC Trimmer)	"
(5)	FM		90 MHz	Tune to signal.	"	L1 (FM ANT Coil)	"
(6)	FM		106 MHz	"	"	CT2 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3)~(6).
(*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	▼ . . . (+) ▼ . . . (−)	VR1	19 kHz	Adjust VR1, for 19 kHz (±100 Hz) reading on electronics counter.

■ AUDIO ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Azimuth	QZZCFM (10 kHz, −20 dB)	EXT SP	Maximum output.	Azimuth screw	Playback mode
Playback level	QZZCFM (315 Hz, 0 dB)	DIN OUT ③, ⑤ pin.	0.42±0.02 V	VR102 (Lch) VR202 (Rch)	Playback mode
LED meter	QZZCFM (315 Hz, 0 dB)	Meter	——	VR107 (Lch) VR207 (Rch)	Adjust VR107, VR207 so that the 2nd LED from the Right begins to go out.
Bias oscillation frequency	——	▼ . . . (+) ▼ . . . (−)	68±0.5 kHz	L301	Record mode Beat proof switch→II Tape selector→Metal
Erase current	Use metal tape	▼ . . . (+) ▼ . . . (−)	140 $\pm^{7}_{5}$ mV	VR302	Record mode Beat proof switch→III Tape selector→Metal
Bias trap	——	▼ . . . (Lch) ▼ . . . (Rch) ▼ . . . (−)	0±0.5 dB	L101 (Lch) L201 (Rch)	Record mode Beat proof switch . . . I→II→III Tape selector→Metal
Bias current	Use metal tape	▼ . . . (Lch) ▼ . . . (Rch) ▼ . . . (−)	Metal 4±0.2 mV Normal 1.9±0.15 mV	Metal VR101 (Lch) VR201 (Rch) Normal VR303	Record mode Beat proof switch→III Tape selector→Metal
Overall gain	EXT MIC f = 1 kHz, −70 dB	DIN Jack input ①, ④ pin output ⑥, ⑤ pin	REC . . . 32 mV Playback . . . 32±2 mV	VR104 (Lch) VR204 (Rch)	1. Place UNIT into record mode, and tape selector to normal. 2. Supply 1 kHz (−70 dB) from AF oscillator to DIN ①, ④ pin. 3. Adjust REC LEVEL until monitor level at test point ▼ and ▼ becomes 32 mV. 4. Playback recorded tape, and make sure the value at DIN on the electronics voltmeter becomes 32 mV±2 mV.

■ ALIGNMENT POINT

●As for test points, refer to the circuit board, on page 9.

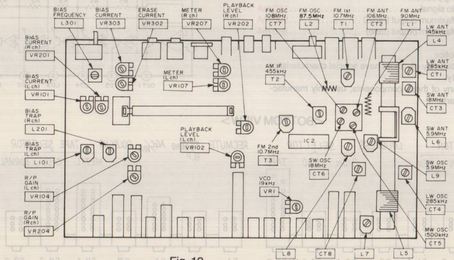


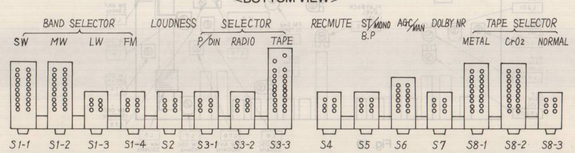
Fig. 19

RX-C60LS RX-C60LS

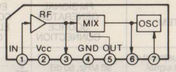
Notes:

1. S1-1~S1-4: Band switch in "FM" position. (F . . . FM, L . . . LW, M . . . MW, S . . . SW)
2. S2-1, S2-2: Loudness switch in "OFF" position.
3. S3-1~S3-4: Function switch in "TAPE" position. (R . . . RADIO, T . . . TAPE, P/D . . . PHONO/DIN IN)
4. S4-1, S4-2: Rec mute ON/OFF switch in "OFF" position.
5. S5-1, S5-2: Mode switch in "STEREO" position. (1 . . . STEREO, 2 . . . MONO)
6. S6-1~S6-4: Recording mode switch in "MANUAL" position. (1 . . . MANUAL, 3 . . . EASY-MATIC)
7. S7-1, S7-2: Dolby IN/OUT switch in "IN" position.
8. S8-1~S8-3: Tape select switch in "NORMAL" position. (N . . . NORMAL, C . . . CrO₂, M . . . METAL)
9. S9: Beat proof switch in "I" position. (1 . . . I, 3 . . . II, 4 . . . III)
10. S10-1: Play ON/OFF switch in "OFF" position.
11. S10-2, S10-3: FF, rewind ON/OFF switch in "OFF" position.
12. S10-4: Play/stop switch
13. S11-1~S11-12: Record/playback switch in "playback" position. (1 . . . Playback, 3 . . . Record)
14. S12-1~12-4: DIN/PHONO switch in "PHONO" position.
15. S13: AC/DC IN select switch in "DC IN" position.
16. S14: Voltage select switch.
17. VR1: VCO oscillator frequency adjust VR.
18. VR101, 201, 303: Bias current adjustment VR.
19. VR102, 202: Playback gain adjustment VR.
20. VR103, 203: Recording level adjustment VR.
21. VR104, 204: Overall gain adjustment VR.
22. VR105, 205: Bass control.
23. VR106, 206: Treble control.
24. VR107, 207: Meter adjustment VR.
25. VR108, 208: Volume control.
26. VR301: Mixing revel control VR.
27. VR302: Erase current adjustment VR.
28. The mark (▼) shows test point e.g. (▼) = test point 1.
29. The mark (※) shows printed-type resistors.
30. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
    < > . . . FM position, ( ) . . . AM position,
    [ ] . . . Recording position.
31. Battery current: No signal . . . . . 150 mA
    Maximum output (radio) . . . . . 580 mA
    Maximum output (tape) . . . . . 860 mA

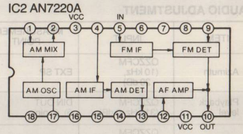
32. Important safety notice
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components, use only manufacturer's specified parts.



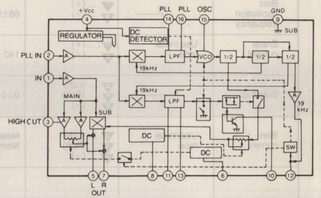
IC1 AN7213



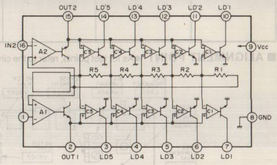
IC2 AN7220A



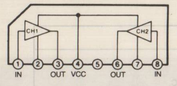
IC3 RVIBA1356



IC71 RVITA7666P



IC302 RVIBA328



IC304 RVILA4505

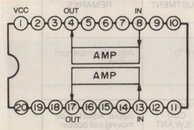
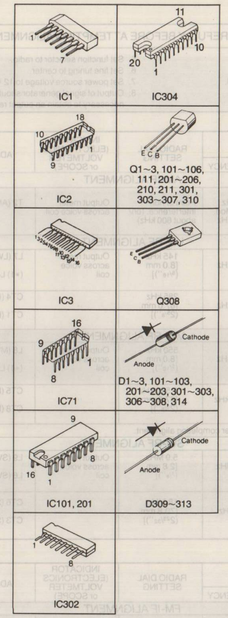


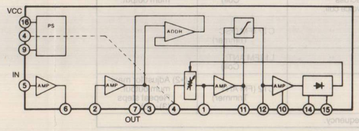
Fig. 20

Fig. 21



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

IC101, 201 RVINE649N

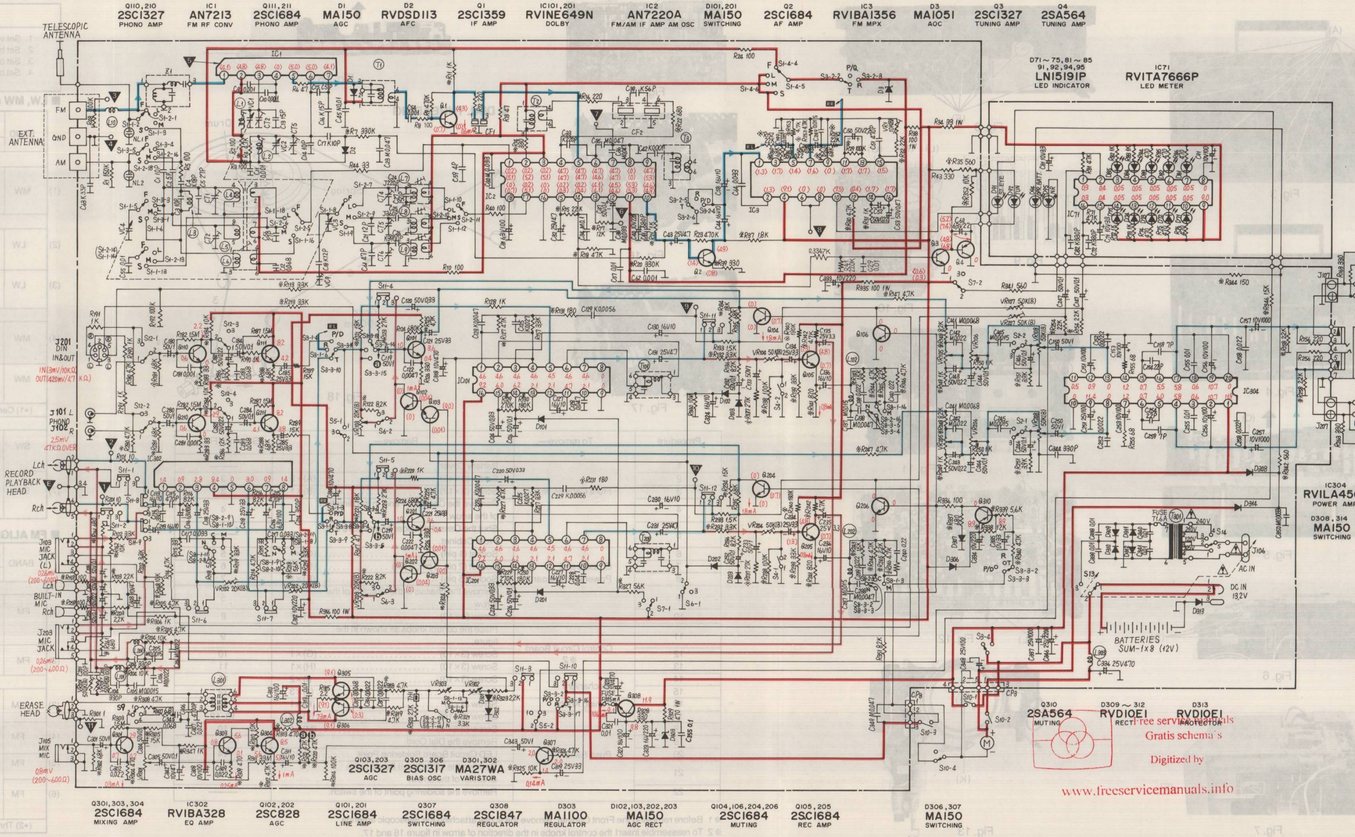


BIAS VOLTAGE
1.9±0.2 mV (Normal)
2.7±0.3 mV (CrO₂)
4±0.3 mV (Metal)

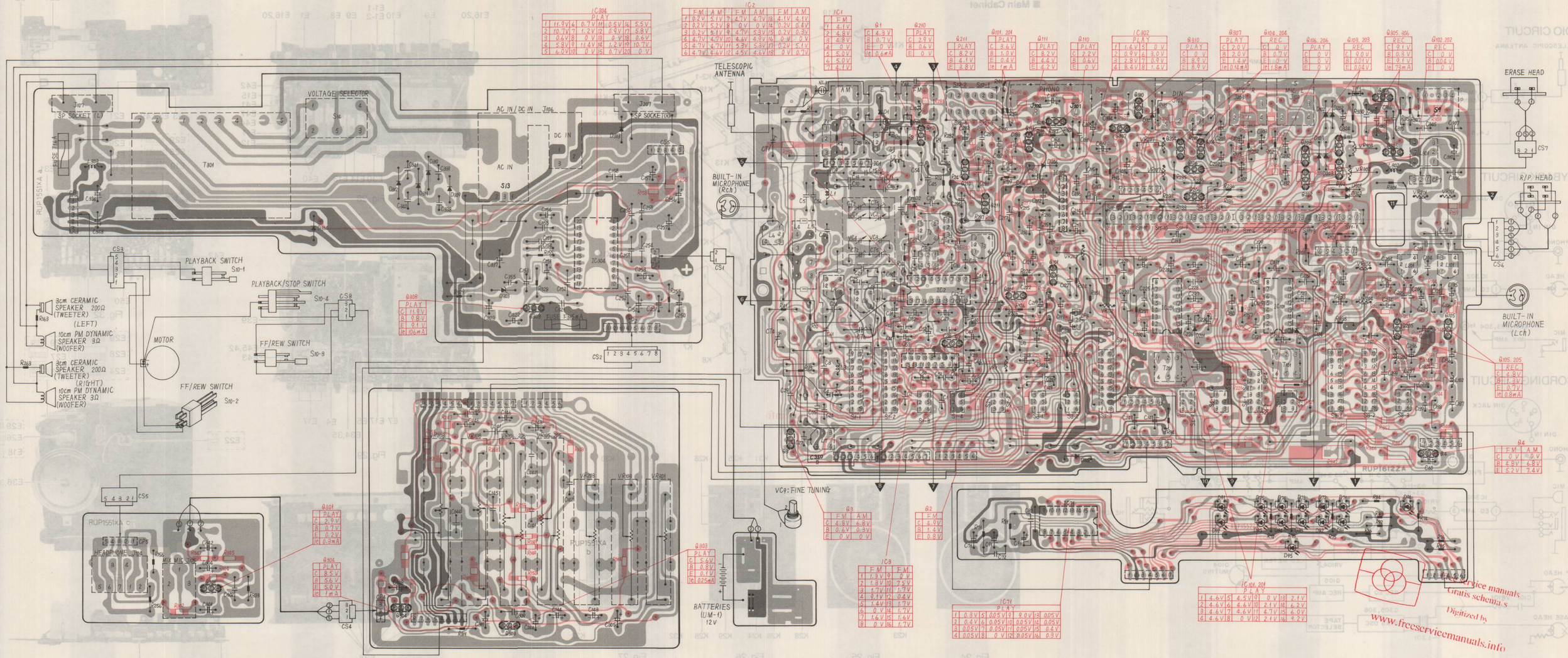
OVERALL FREQUENCY RESPONSE

Metal	100 Hz 0±3 dB 1 kHz 0 dB 10 kHz −1±5 dB
CrO₂	100 Hz 1±3 dB 1 kHz 0 dB 10 kHz −1±5 dB
Normal	100 Hz 1±3 dB 1 kHz 0 dB 10 kHz 1±5 dB

SCHEMATIC DIAGRAM MODEL RX-C60LS

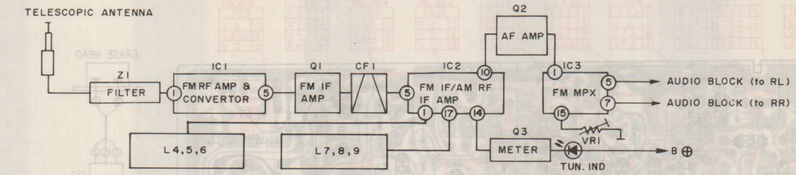


CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM MODEL RX-C60LS

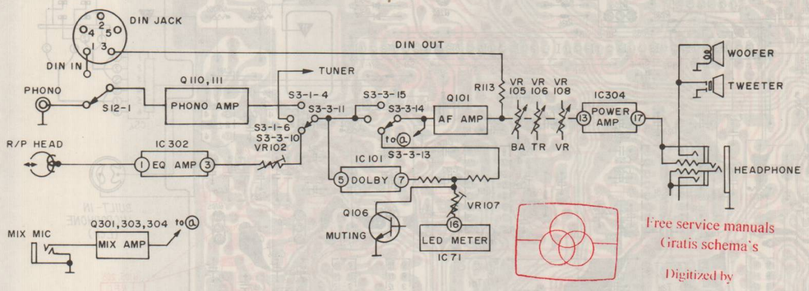


BLOCK DIAGRAM

RADIO CIRCUIT



PLAYBACK CIRCUIT



RECORDING CIRCUIT

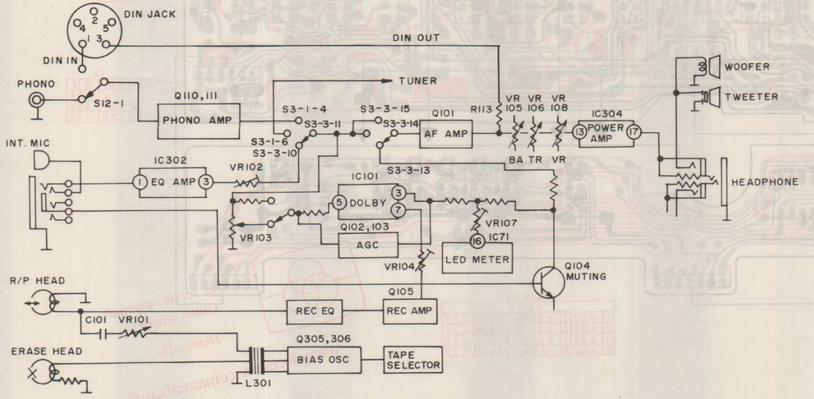


Fig. 22

CABINET PARTS LOCATIONS

■ Main Cabinet

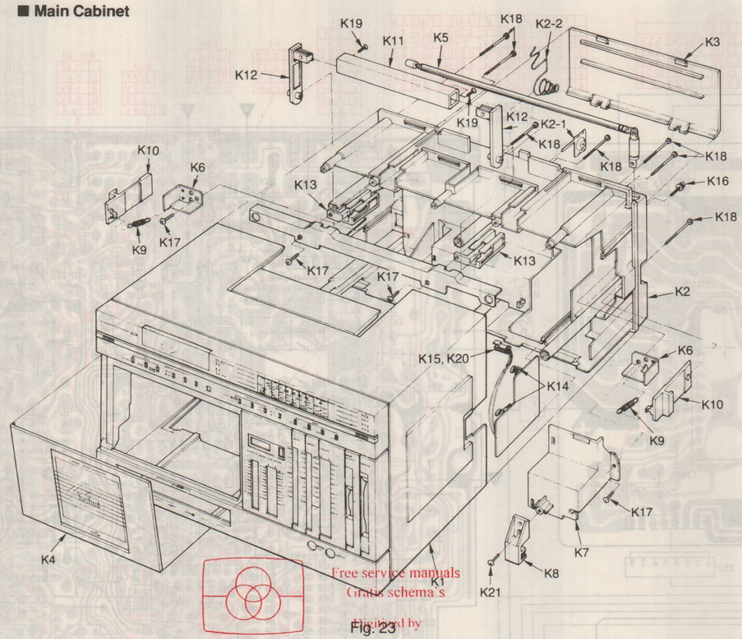


Fig. 23

■ Speaker Cabinet

Fig. 24

Fig. 25

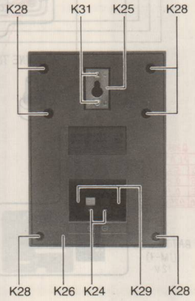


Fig. 26

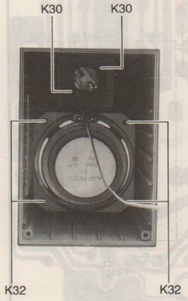


Fig. 27

ELECTRICAL PARTS LOCATION

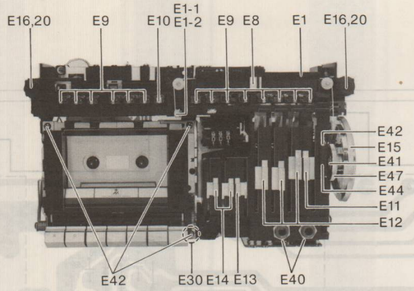


Fig. 28

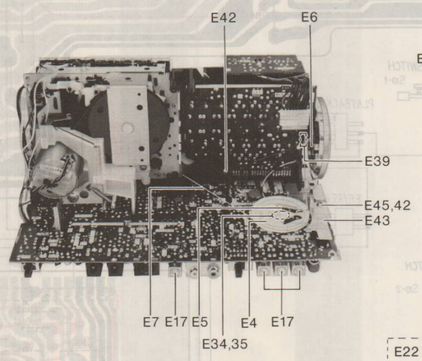


Fig. 29

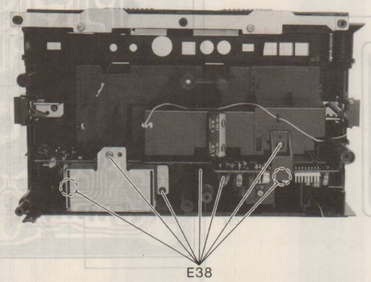


Fig. 30

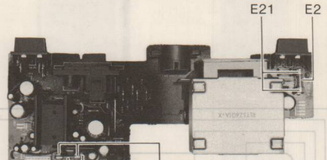


Fig. 31

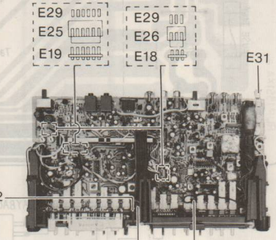


Fig. 32

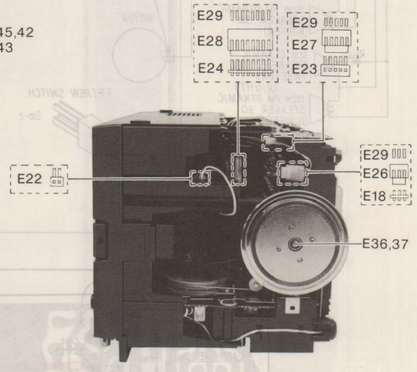


Fig. 33

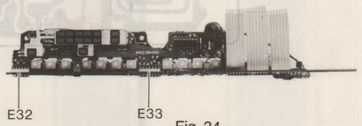


Fig. 34

MECHANISM PARTS LOCATION

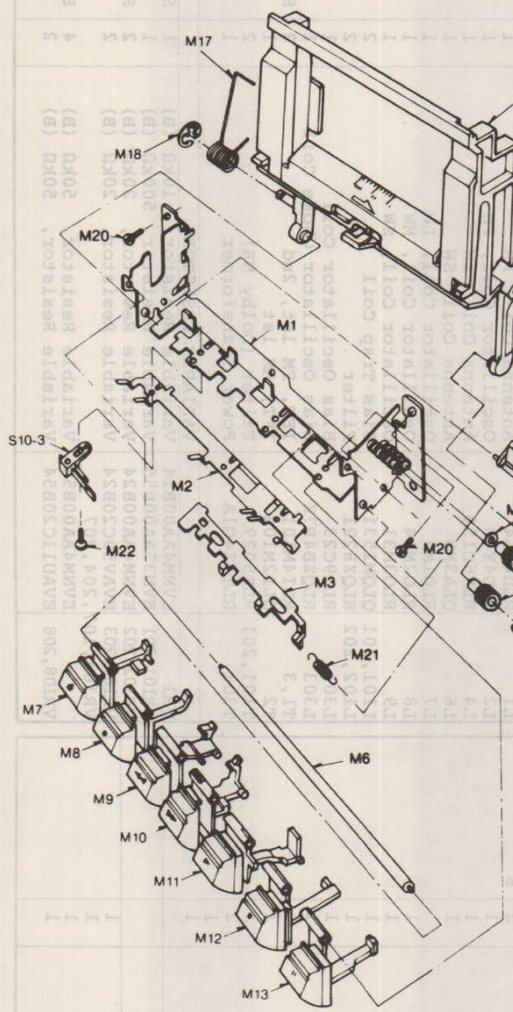


Fig. 35

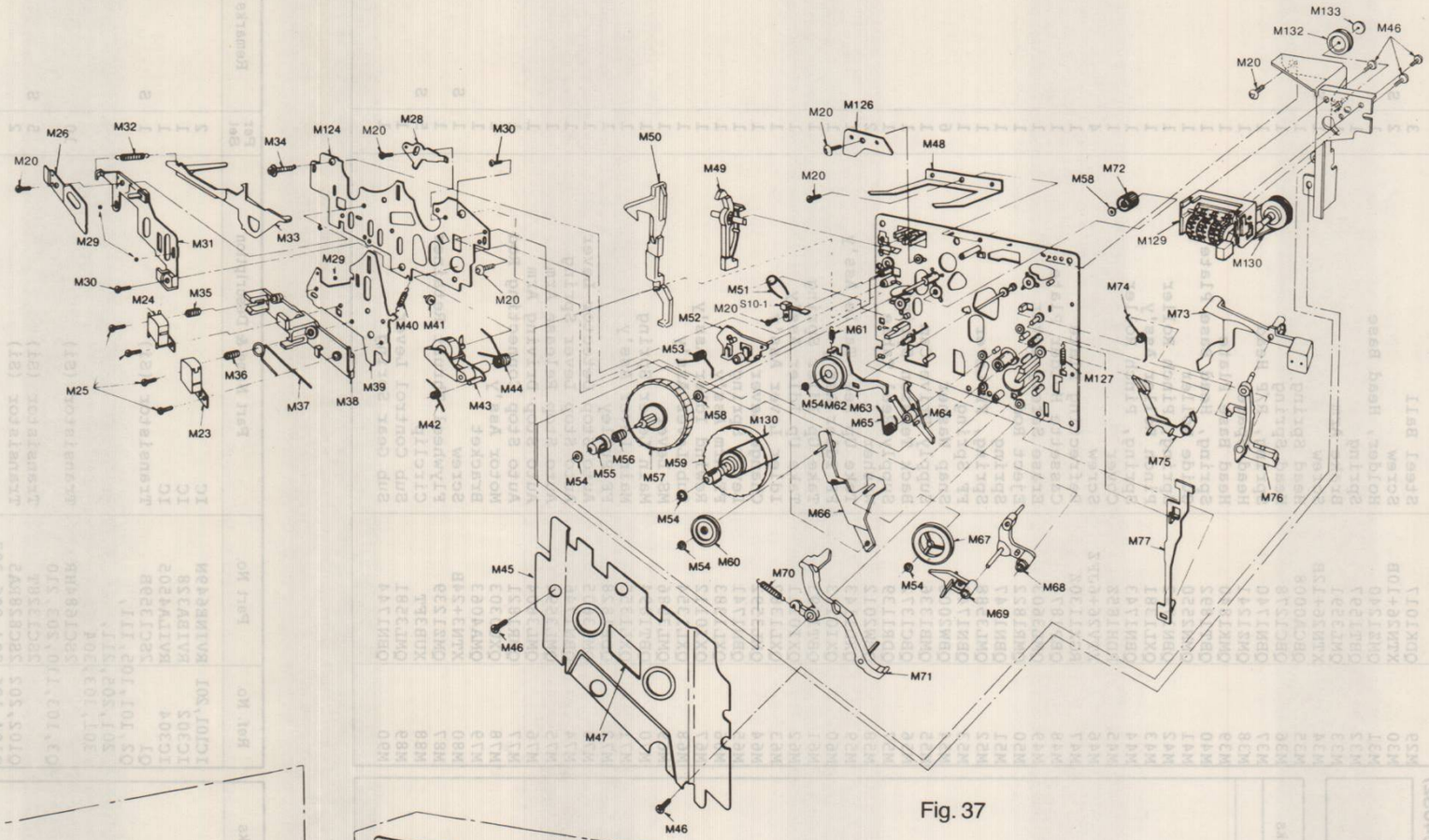


Fig. 37

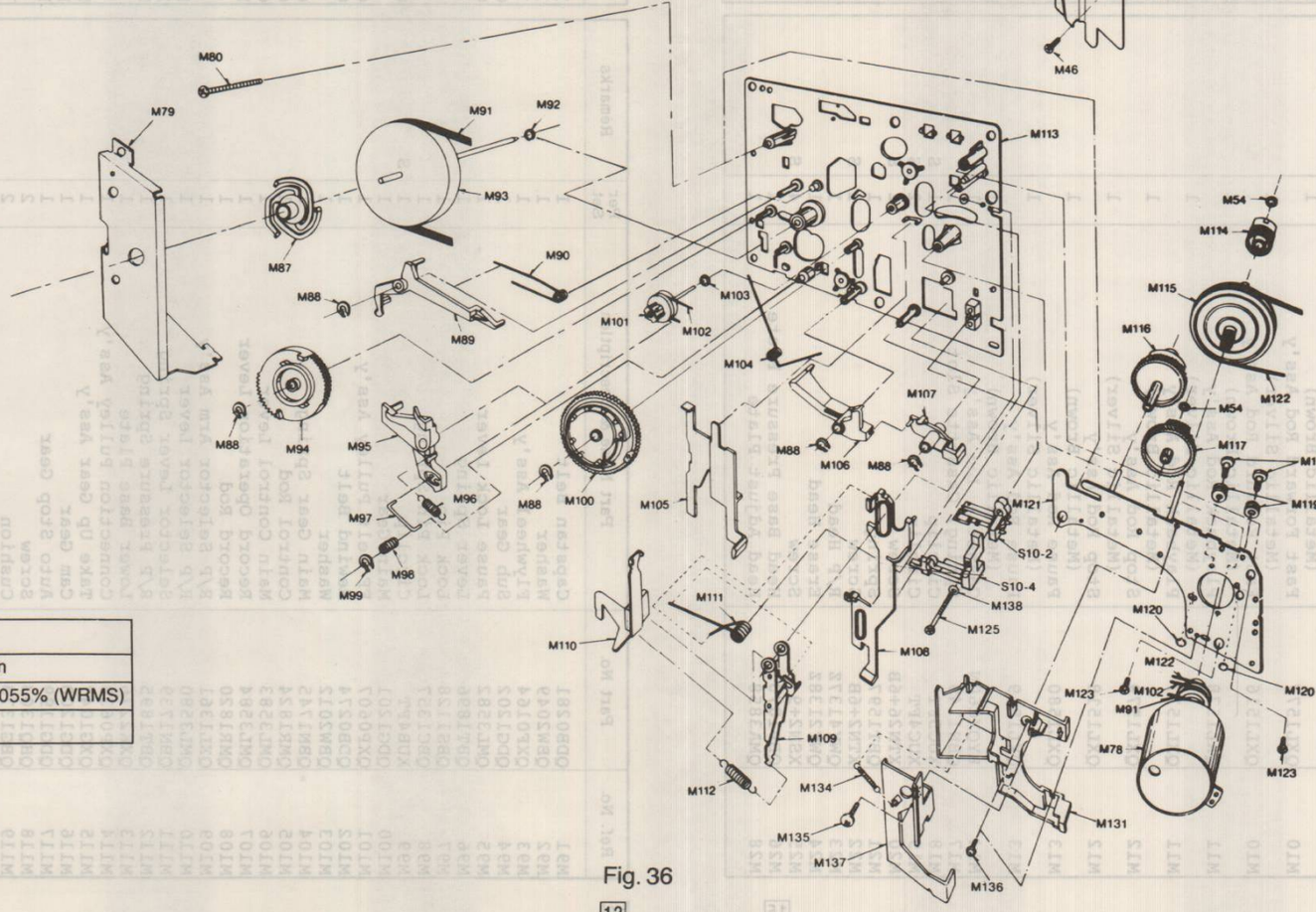


Fig. 36

SPECIFICATIONS

Pressure of pressure roller	360±50 gr
Takeup tension	45^{+15}_{-10} gr-cm
Wow and flutter	Less than 0.055% (WRMS)
Tape speed fluctuation	±3%

■ REPLACEMENT PARTS LIST .....Model RX-C60LS

(RD82102040S2)

NOTES: 1. Important safety notice.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
2. The S mark indicates service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		MECHANICAL PARTS		
M1	QXA1044	Button Bracket Ass'y	1	
M2	QBP1875	Spring, Operation Rod	1	
M3	QMR1823	Lock Rod	1	
M4	QML3593	Lock Arm	1	
M5	QDG1102	Gear, Slow Up	2	
M6	QMN2554	Shaft, Operation Rod	1	
M7	QXL1574	Eject Rod Ass'y (Metallic Silver)	1	
M7	QXL1513	Eject Rod Ass'y (Metallic Brown)	1	
M8	QXL1575	Recording Rod Ass'y (Metallic Silver)	1	
M8	QXL1514	Recording Rod Ass'y (Metallic Brown)	1	
M9	QXL1576	Rewind Rod Ass'y (Metallic Silver)	1	
M9	QXL1515	Rewind Rod Ass'y (Metallic Brown)	1	
M10	QXL1577	Fast Forward Rod Ass'y (Metallic Silver)	1	
M10	QXL1516	Fast Forward Rod Ass'y (Metallic Brown)	1	
M11	QXL1578	Playback Rod Ass'y (Metallic Silver)	1	
M11	QXL1517	Playback Rod Ass'y (Metallic Brown)	1	
M12	QXL1579	Stop Rod Ass'y (Metallic Silver)	1	
M12	QXL1518	Stop Rod Ass'y (Metallic Brown)	1	
M13	QXL1580	Pause Rod Ass'y (Metallic Silver)	1	
M13	QXL1519	Pause Rod Ass'y (Metallic Brown)	1	
M14	RYQXC60N	Cassette Lid Ass'y	1	
M17	QBN1749	Spring, Cassette Slot	1	
M18	XUC5FT	Circlip	1	S
M19	XUC4FT	Circlip	2	S
M20	XTN26+6B	Screw	2	S
M21	QBT1597	Spring	1	
M22	XTN2+6B	Screw	1	S
M23	QWY4137Z	R/P Head	1	
M24	QWY2138Z	Erase Head	1	
M25	XSN2+9	Screw	4	S
M26	QBP1873	Head Base Pressure Plate	1	
M28	QMA3858	Head Adjust Plate	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
M29	QDK1017	Steel Ball	3	
M30	XTN26+10B	Screw	2	S
M31	QMZ1240	Holder, Head Base	1	
M32	QBT1597	Spring	1	
M33	QML3591	Brake Arm	1	
M34	XTN26+12B	Screw	1	S
M35	QBCA0008	Head Spring	1	
M36	QBC1278	Head Spring	1	
M37	QBN1740	Spring, R/P Head	1	
M38	QMZ1241	Head Spacer	1	
M39	QMK1840	Head Base Plate	1	
M40	QBT1892	Spring, Head Base Plate	1	
M41	QMN2550	Guide Roller	1	
M42	QBN1742	Spring, Pinch Roller	1	
M43	QXL1381	Pinch Roller Ass'y	1	
M44	QBN1743	Spring, Pinch Roller	1	
M45	RDH185Z	Cover	1	
M46	XTV26+6JFZ	Screw	4	
M47	RGX1130Z	Refrecting Plate	1	
M48	QBP1874	Cassette Holder Plate	1	
M49	QML3603	Erase Safety Lever	1	
M50	QMR1822	Eject Rod	1	
M51	QBN1747	Spring	1	
M52	QML3588	Spring, FF Lever	1	
M53	QBN1748	FF Spring	1	
M54	QBW2008	Snap Washer	6	
M55	QMB1336	Supply Drive Cam	1	
M56	QBC1372	Back Tension Spring	1	
M57	QDR1139	Supply Reel Table	1	
M58	QBW2012	Washer	2	
M59	QXD1143	Take Up Reel Table Ass'y	1	
M60	QXI0113	FF Idler Ass'y	1	
M61	QBT1893	Take Up Idler Spring	1	
M62	QXI0111	Take Up Idler Ass'y	1	
M63	QXL1382	Idler Lever Ass'y	1	
M64	QML3592	Change Lever	1	
M65	QBN1741	Lever Spring	1	
M66	QXL1383	FF Arm Ass'y	1	
M67	QXI0112	Rewind Idler Ass'y	1	
M68	QXL1354	Sub Lever Ass'y	1	
M69	QML3586	MS Lever	1	
M70	QBT1894	Main Lever Spring	1	
M71	QXL1355	Main Lever Ass'y	1	
M72	QDP1828	FF Pulley	1	
M73	QML3605	Auto Stop Detector Lever	1	
M74	QBN1746	Auto Stop Lever Spring	1	
M75	QML3594	Auto Stop Release Arm	1	
M76	QML3604	Auto Stop Driving Arm	1	
M77	QMR1821	Auto Stop Connecting Rod	1	
M78	QXU0303	Motor Ass'y	1	
M79	QMA4063	Bracket	1	
M80	XTN3+24B	Screw	1	S
M87	QMZ1239	Flywheel Thrust Retainer	1	
M88	XUB3FT	Circlip	5	S
M89	QML3581	Sub Control Lever	1	
M90	QBN1744	Sub Gear Spring	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
M91	QDB0281	Capstan Belt	1	
M92	QBW2049	Washer	1	
M93	QXF0164	Flywheel Ass'y	1	
M94	QDG1202	Sub Gear	1	
M95	QML3582	Pause Lock Lever	1	
M96	QBT1896	Lever Spring	1	
M97	QBS1128	Lock Pin	1	
M98	QBC1357	Lock Pin Spring	1	
M99	XUB4FT	Circlip	1	S
M100	QDG1201	Main Gear	1	
M101	QXP0607	FF Belt Pulley Ass'y	1	
M102	QDB0274	Rewind Belt	1	
M103	QBW2012	Washer	1	
M104	QBN1745	Main Gear Spring	1	
M105	QMR1824	Control Rod	1	
M106	QML3583	Main Control Lever	1	
M107	QML3584	Record Operation Lever	1	
M108	QMR1820	Record Rod	1	
M109	QXL1361	R/P Selector Arm Ass'y	1	
M110	QML3580	R/P Selector Lever	1	
M111	QBN1739	Selector Lever Spring	1	
M112	QBT1895	R/P Pressure Spring	1	
M113	QXK2276	Lower Base Plate	1	
M114	QXP0638	Connection Pulley Ass'y	1	
M115	QXG1047	Take Up Gear Ass'y	1	
M116	QDG1200	Cam Gear	1	
M117	QDG1199	Auto Stop Gear	1	
M118	QHQ1303	Screw	2	
M119	QBG1373	Cushion	2	
M120	QBG1683	Cushion	2	
M121	QXK2286	Sub Chassis Ass'y	1	
M122	QDB0273	Fast Forward Belt	1	
M123	XTN3+10B	Screw	2	S
M124	QMK1838	Upper Base Plate	1	
M125	XTN2+20F	Screw	1	
M126	QMF2118	Fast Forward Bracket	1	
M127	QBT1682	Auto Stop Connection Rod Spring	1	
M128	QBW2020	Washer	1	
M129	RSE92Z	Counter	1	
M130	QDB0143-2	Belt	1	
M131	RUE48Z	Holder	1	
M132	RDR46Z	Roller	1	
M133	RNW150-2	Washer	1	
M134	RDS3120A	Spring	1	
M135	XTWR3+12Q	Screw	1	
M136	XTW3+6L	Screw	2	
M137	RUB265Z	R/P Lever	1	
M138	XWA2B	Washer	1	
		INTEGRATED CIRCUITS, TRANSISTORS AND DIODES		
IC1	AN7213	IC	1	
IC2	AN7220A	IC	1	
IC3	RVIBA1356	IC	1	
IC71	RVITA7666P	IC	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
IC101,201	RVINE649N	IC	2	
IC302	RVIBA328	IC	1	
IC304	RVILA4505	IC	1	
Q1	2SC1359B	Transistor (Si)	1	S
Q2,101,105,111, 201,205,211, 301,303,304	2SC1684HR	Transistor (Si)	10	
Q3,103,110,203,210	2SC1328T	Transistor (Si)	5	S
Q102,202	2SC828RA5	Transistor (Si)	2	
Q104,106,204,206,307	2SC1684S	Transistor (Si)	5	
Q305,306	2SC1317NCR	Transistor (Si)	2	
Q308	2SC1847R	Transistor (Si)	1	
Q4,310	2SA722-S	Transistor (Ge)	2	S
D1,101∿103,201∿ 203,306∿308,314	MA161	Diode (Si)	11	S
D2	RVDSD113	Diode (Si)	1	S
D3	MA1051	Diode (Si)	1	
D71∿75,81∿85, 91,92,94,95	LN15191P	LED	1	
D301,302	MA27WA	Diode (Si)	2	
D303	MA1100	Diode (Si)	1	
D309∿313	SM112	Diode (Si)	5	S
		THERMISTOR		
TH1	RRT202	Thermistor	1	
		COILS AND TRANSFORMERS		
L1	RLD4Y54	Antenna Coil, FM	1	
L2	RLD4Y43	Oscillator Coil, FM	1	
L4	RLF6D154	Antenna Coil, LW	1	
L6	QLA3M8	Antenna Coil, SW	1	
L7	RLO1M4	Oscillator Coil, LW	1	
L8	RLO2M14	Oscillator Coil, MW	1	
L9	RLO3M31	Oscillator Coil, SW	1	
L101,201	QLQM1531	Bias Trap Coil	2	
L102,202	RLQZ8221	Filter	2	
L301	RLO9C23	Bias Oscillator Coil	1	
L303	RLQZB4R7K	Bias Oscillator Choke Coil	1	
T1,3	RLI4M101	IFT, FM 1st, 2nd	2	S
T2	QLI2M102	IFT, AM 1st	1	
T101,201	RLE5029	Filter (Dolby NR)	2	
T301	RLT5Z4G1A	Power Transformer	1	⚠
		VARIABLE RESISTORS		
VR1	EVNM4AA00B14	Variable Resistor, 10kΩ (B)	1	S
VR101,201	EVN33AA00B55	Variable Resistor, 500kΩ (B)	1	
VR102,202	EVNM4AA00B24	Variable Resistor, 20kΩ (B)	2	S
VR103,203	EVAV59C20B24	Variable Resistor, 20kΩ (B)	2	
VR104,107,204,207	EVNM4AA00B54	Variable Resistor, 50kΩ (B)	4	S
VR108,208	EVAU11C20B54	Variable Resistor, 50kΩ (B)	2	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
VR105,106,205,206	EVBU07C20A54	Variable Resistor, 50kΩ (A)	2	
VR301	EVAV58C20A54	Variable Resistor, 50kΩ (A)	1	
VR302,303	EVNM4AA00B53	Variable Resistor, 5kΩ (B)	2	S
		VARIABLE CAPACITORS		
VC1∿4	RCV4RC2VK	Tuning Capacitor, w/Trimmer Capacitor (CT2,5,7,8)	1	
CT1	RCV1GT20A	Trimmer Capacitor	1	
CT4,6	RCV1GT10A	Trimmer Capacitor	2	
VC5	RCVMFT8NC14	Fine Tuning	1	
		CERAMIC FILTERS		
CF1	RVF107MTWAZ	Ceramic Filter, 10.7MHz	1	
CF2	RVFSFZ455B	Ceramic Filter, 455kHz	1	
		COMPONENT COMBINATION		
Z1	RXABPMB3	Component Combination	1	
		SPEAKERS		
	EAS10P231S	Speaker, 10cm (4"), 3Ω	2	
	EAS3FP03A	Speaker, 3cm (1-1/4"), 200Ω	2	
		SWITCHES		
S1-1∿1-4,2-1,2-2,3-1∿3-4	RSHX047Z	Switch, Band/Loudness/Function	1	
S4-1,4-2,5-1,5-2,6-1∿6-4,7-1,7-2,8-1∿8-3	RSHX045Z	Switch, Rec Mute/Mode, etc.	1	
S9	RSS3A06Z	Switch, Beatproof	1	
S10-1	QSB0275	Switch, Playback	1	
S10-2,10-3	QSB0254	Switch, FF/REW	2	
S10-4	RSH2A10Z	Switch, Playback/Stop	1	
S11-1∿11-12	RSH2L06Z	Switch, Record/Playback	1	
S12-1∿12-4	RSS42A	Switch, DIN/PHONO	1	
S13	Refer to J106	Switch, AC/DC		
S14	RSR4A07Z	Switch, Voltage Selector	1	⚠
		JACKS		
J101,102	RJF1087Z	Jack, Phono	1	
J201	RJS0J2Z	Jack, Din	1	
J103,203	RJJ1D7Z	Jack, EXT MIC (L.R)	2	
J104	RJJ1E2Z	Jack, HEAD PHONE	1	
J105	RJJ1E7Z	Jack, MIXING MIC	1	
J106	RJJ1F2Z	Jack, AC/DC IN	1	⚠
J107,207	RJF1088Z	Jack, Speaker Socket	2	
		RESISTORS (Value is in OHMS)		
R2,3,5,8,10,24,40,336	ERD25FJ101	100 1/4W Carbon	8	S
R315	ERD25FJ2R2	2.2 " "	1	S
R301	ERD25FJ1R0	1.0 " "	1	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R101,201	ERD25FJ100	10 1/4W Carbon	2	S
R72,73,82,83,190,191,290,291	ERD25FJ102	1 k " "	8	S
R330	ERC14GJ106	10 M " Solid	1	S
R133,233	ERD25FJ152	1.5 k " Carbon	2	S
R189,289	ERD25FJ153	15 k " "	1	S
R1	ERD25TJ154	150 k " "	1	S
R182,187,282,287,303	ERD25TJ155	1.5 M " "	5	S
R12,156,256	ERD25FJ221	220 " "	3	S
R41	ERD25TJ224	220k ¼W Carbon	1	S
R44,115,215	ERD25FJ330	33 " "	3	S
R43,126,163,226,263,328	ERD25FJ331	330 " "	6	S
R307	ERD25FJ6R8	6.8 " "	1	S
R102,157,202,257	ERD25FJ332	3.3 k " "	4	S
R351	ERD25FJ333	33 k " "	1	S
R6,13	ERD25FJ470	47 " "	2	S
R180	ERD25FJ472	4.7 k " "	1	S
R9	ERD25TJ474	470 k " "	1	S
R135,235	ERD25TJ683	68 k " "	2	S
R124,224	ERD25TJ684	680 k " "	2	S
R136,236	ERD25FJ822	8.2 k " "	2	S
R23	ERD25TJ474	470 k " "	1	S
R116,216	ERD25TJ823	82 k " "	2	S
R311	ERD25TJ335	3.3 M " "	1	S
R155,255	ERD25FJ680	68 " "	2	S
R74∿76,84∿86	ERD25FJ471	470 " "	6	S
R33,71,81	ERD25FJ473	47 k " "	3	S
R48,192	ERD25TJ104	100 k " "	2	S
R34	ERG1ANJ330	33 1W Metal Oxide	1	S
R317	ERG1ANJ470	47 " "	1	S
R38,316,335	ERG1ANJ101	100 " "	3	S
R329	ERG1ANJ471	470 " "	1	S
		CAPACITORS (Value is in MICRO FARADS except P.P=PICO FARADS)		
C1,2	ECCD1H100KC	10 P 50V Ceramic	2	
C4	ECCD1H180KC	18 P " "	1	
C39	ECCD1H560KC	56 P " "	1	
C18,21	ECCD1H120KC	12 P " "	2	
C33	ECCD1H221K	220 P " "	1	
C72,82	ECCD1H331K	330 P " "	2	
C59	ECCD1H040C	4 P " "	1	
C63	ECCD1H330KC	33P " "	1	
C42,62	ECKD1H102KB	0.001 " "	2	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C350	ECKD1H332MD	0.0033 50V Ceramic	1	
C338~341	ECKD1H103ZF	0.01 " "	4	
C307	ECQG1H223MZ	0.022 " Polyester	1	
C345	ECQG1H683MZ	0.068 " "	1	
C27	ECQP1151JZ	150 P 125V Polypropylene	1	
C24	ECQP1221JZ	220 P " "	1	
C140,158,240,258	ECQV05224JZ	0.22 50V Epoxy	4	
C104,204	RCQP2A331JZ	330 P 100V Polypropylene	2	
C25	RCQP2A361JZ	360 P " "	1	
C26	RCQP2A392JZ	3900 " "	1	
C51	RCQP2A471JZ	470 P " "	1	
C306	RCQP2A472JZ	4700 " "	1	
C137,237	ECFT1E153KD	0.015 25V Semi-Conductor	2	
C139,239	ECFT1E223KD	0.022 " "	2	
C125,225	ECFT1E273KD	0.027 " "	2	
C117,217	ECFT1E333KD	0.033 " "	2	
C30	ECFT1E333MD	0.033 " "	1	
C123,223	ECFT1E472KA	0.0047 " "	2	
C23,35,36,128,228	ECFT1E473MD	0.047 " "	5	
C129,229	ECFT1E562KA	0.0056 " "	2	
C12,183,283	ECFT1E683MD	0.068 " "	3	
C34,355	ECFT1E104MD	0.1 " "	2	
C349	ECFT1E473MD	0.047 " "	1	
C64	ECFT1E333MD	0.033 " "	1	
C31,91,116,151,153,156,216,253,256,308	ECEA1AS101	100 10V Electrolytic	10	S
C60	ECEA0JK220	22 6.3V "	1	
C40,312,333,334	ECEA1AS221	220 10V "	4	S
C335	ECEA1CS330	33 16V "	1	S
C303	ECEA1AS470	47 10V "	1	S
C314,318,320	ECEA1AS471	470 " "	3	S
C44,58,113,127,130,136,213,227,230,236,324,311	ECEA1HS100	10 50V "	12	S
C157,257	ECEA1AS102	1000 10V "	2	S
C337	ECEA1VS102	1000 35V "	1	S
C336	ECEA1ES471	470 25V "	1	S
C251,310,322	ECEA1ES101	100 " "	3	S
C118,121,134,135,185,218,221,234,235,285,319	ECEA50Z3R3	3.3 50V "	11	S
C32,43,131,231	ECEA25Z4R7	4.7 25V "	4	S
C50	ECEA50Z2R2	2.2 50V "	1	S
C52,102,143,148,182,202,243,248,282	ECEA50ZR22	0.22 50V Electrolytic	9	S
C120,124,220,224	ECEA50ZR33	0.33 " "	4	S
C53	ECEA50ZR47	0.47 " "	1	S
C37,103,126,132,144,146,147,184,203,226,232,244,246,247,284,304,305	ECEA50ZR1	0.1 " "	17	S
C323	ECEA1CS221	220 16V "	1	S
C348	ECEA1EF101	100 25V "	1	
C119,133,150,180,219,233,250,280,301,343	ECEA50Z1	1 50V "	10	S
C346	ECEA1ES222	2200 25V "	1	S
C28,29,45,57,155,255,321	ECBS1C103NY	0.01 16V Ceramic	7	
C105,145,205,245	ECBS1E152MX	0.0015 25V "	4	
C344	ECBS1E332NX	0.0033 " "	1	
C106,206,316,317,152,252	ECBS1E222NX	0.0022 " "	6	
C122,138,222,238	ECBS1E472NX	0.0047 " "	4	
C315	ECBS1E682MX	0.0068 " "	1	
C3,14,17	ECBS1H100JC	10 P 50V "	3	
C101,201	ECBS1H101JL	100 P " "	2	
C9~11,54,181,281	ECBS1H102KB	0.001 " "	6	
C141,241	ECBS1E682NX	0.0068 25V "	2	
C154,254	ECBS1H220JC	22 P 50V "	2	
C13,16	ECBS1H150JC	15 P " "	1	
C5,56	ECBS1H270JC	27 P " "	2	
C114,214	ECBS1H331KB	330 P " "	2	
C15,61	ECBS1H4R7KC	4.7 " "	2	
C115,215	ECBS1H471KB	470 P " "	2	
C41	ECBS1H681KB	680 P " "	1	
C55,313	ECBT1E103MM	0.01 25V Ceramic	2	
C149,249	ECBT1E153MX	0.015 " "	2	
C159,259	ECBS1H6R8KC	6.8 50V "	2	
C142,242,302,309	ECBT1C223NY	0.022 16V "	2	
C71,81	ECSF1AM335X1	3.3 10V Electrolytic	2	
		ELECTRICAL PARTS		
E1	RZAXC60LSXG1	Dial Chassis Ass'y (Metallic Brown)	1	
E1	RZAXC60LSXG	Dial Chassis Ass'y (Metallic Silver)	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
E1-1	RDR21-1	Pulley	1	
E1-2	RDY43Z	Shaft, Pulley	1	
E2	XBA2C03SS0	Fuse, 250V 315mA	1	⚠
E3	XBA2C16TR0	Fuse, 250V 1.6A	1	⚠
E4	RDD483Z	Drum	1	
E5	RDS4090A	Spring, Dial	1	
E6	RDT3231Z	Shaft, Tuning	1	
E7	RDZ05Z	Cord, Dial (100cm)	1 ROLL	
E8	RDP848Z	Pointer, Dial	1	
E9	RBC406Y	Knob, Tape etc. (Metallic Brown)	14	
E9	RBC406Z	Knob, Tape etc. (Metallic Silver)	14	
E10	RBC407Y	Knob, Rec Mute (Metallic Brown)	1	
E10	RBC407Z	Knob, Rec Mute (Metallic Silver)	1	
E11	RBD161Y	Knob, Volume (Right) (Metallic Brown)	1	
E11	RBD161Z	Knob, Volume (Right) (Metallic Silver)	1	
E12	RBD162Y	Knob, Volume (Left), Bass, Treble (Metallic Brown)	3	
E12	RBD162Z	Knob, Volume (Left), Bass, Treble (Metallic Silver)	3	
E13	RBD163Y	Knob, Rec Level (Right) (Metallic Brown)	1	
E13	RBD163Z	Knob, Rec Level (Right) (Metallic Silver)	1	
E14	RBD164Y	Knob, Rec Level (Left), Mixing Level (Metallic Brown)	2	
E14	RBD164Z	Knob, Rec Level (Left), Mixing Level (Metallic Silver)	2	
E15	RBT9001X	Knob, Tuning (Metallic Brown)	1	
E15	RBT9001Y	Knob, Tuning (Metallic Silver)	1	
E16	RJM142Z	Built-in Microphone	2	
E17	RJF1046Z	Terminal, Ext Ant	4	
E18	RJP3G1Z	Plug, 3 Pin	2	
E19	RJP6G1Z	Plug, 6 Pin	1	
E20	RHG590Z	Rubber	2	
E21	QTF1054	Holder, Fuse	4	⚠
E22	RJP2G2Z	Plug, 2 Pin	1	
E23	RJP5G2Z	Plug, 5 Pin	1	
E24	RJP8G1Z	Plug, 8 Pin	1	
E25	RJS6L1Z	Socket, 6 Pin	1	
E26	RJS3L1Z	Socket, 3 Pin	2	
E27	RJS5L1Z	Socket, 5 Pin	1	
E28	RJS8L1Z	Socket, 8 Pin	1	
E29	RJT462Z	Terminal, Socket	28	
E30	RJT784Z	Terminal, Earth	1	
E31	RJT768Z	Terminal, Antenna	1	
E32	RJT785Z	Terminal, 6 Pin	1	
E33	RJT667Z	Terminal, 7 Pin	1	
E34	XSN26+6	Screw, Drum M'tg	1	S
E35	XWA26B	Washer, Drum M'tg	1	S
E36	XSN3+6S	Screw, Tuning Knob M'tg	1	S
E37	XWA3B	Washer, Tuning Knob M'tg	2	S
E38	XTV3+12GR	Red Screw, Circuit Board M'tg	7	
E39	XNS11	Nut, Tuning Shaft M'tg	1	S
E40	XNS12D	Nut, Headphone Jack M'tg	2	
E41	XNS8D	Nut, Fine Tuning M'tg	1	
E42	XTV3+10G	Screw, Circuit Board M'tg	8	
E43	RMC858Z	Sheald Cover	1	
E44	RUL685Z	Bracket, Fine Tuning	1	
E45	RNW325	Washer	1	
E47	RBT159Y	Knob, Fine Tuning (Metallic Brown)	1	
E47	RBT159Z	Knob, Fine Tuning (Metallic Silver)	1	
E48	XSN2+W4	Screw	1	
E49	XSN3+8S	Screw	1	S
E50	XANR2T20	Neon Lamp, Arrester	2	
		CABINET PARTS		
		MAIN CABINET		
K1	RYMXC601LSX1	Front Cabinet Ass'y (Metallic Brown)	1	
K1	RYMXC601LSX8	Front Cabinet Ass'y (Metallic Silver)	1	
K2	RYFXC60LSXG1	Rear Cabinet Ass'y (Metallic Brown)	1	
K2	RYFXC60LSXG7	Rear Cabinet Ass'y (Metallic Silver)	1	
K2-1	RJC111Z	Terminal, Battery + Side	1	
K2-2	RJC950Z	Terminal, Battery, +, - Side	1	
K3	RYNXC60LSXG1	Battery Cover Ass'y (Metallic Brown)	1	
K3	RYNXC60M7	Battery Cover Ass'y (Metallic Silver)	1	
K4	RYPXC60LSXG1	Cassette Panel Ass'y (Metallic Brown)	1	
K4	RYPXC60LSXG	Cassette Panel Ass'y (Metallic Silver)	1	
K5	XEAQCR228FAK	Telescopic Antenna	1	
K6	RUL675Z	Bracket, Speaker Mounts	2	
K7	RUV660Z4	Battery Cover (Metallic Brown)	1	
K7	RUV660Z	Battery Cover (Metallic Silver)	1	
K8	RME308Z4	Holder, Printed Circuit Board Fix. (Metallic Brown)	1	
K8	RME308Z	Holder, Printed Circuit Board Fix. (Metallic Silver)	1	
K9	RDS5133Z	Spring, Speaker Box	2	
K10	RBC405Z4	Button, Speaker Box (Metallic Brown)	2	
K10	RBC405Z	Button, Speaker Box (Metallic Silver)	2	
K11	RKX254Z4	Handle (Metallic Brown)	1	
K11	RKX254Z	Handle (Metallic Silver)	1	
K12	RKX255Z	Arm, Handle	2	
K13	RKT135Z4	Stopper, Arm (Metallic Brown)	2	

RX-C60LS

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
K13	RKT135Z	Stopper, Arm (Metallic Silver)	2	
K14	RJC511Z	Terminal, Battery - Side	2	
K15	RJS2L1Z	Socket, 2 Pin	1	
K16	XYN3+F12FZ	Screw, Telescopic Antenna M'tg (Metallic Brown)	1	
K16	XYN3+F12FN	Screw, Telescopic Antenna M'tg (Metallic Silver)	1	
K17	XTV3+12G	Screw	4	
K18	XTV3+45G	Screw	9	
K19	XTC3+8CFN	Screw (Metallic Silver)	2	
K19	XTC3+8CFZ	Screw (Metallic Brown)	2	
K20	RJT462Z	Terminal	2	
K21	XTV3+12GR	Red Screw	1	
		SPEAKER BOX		
K22	RYMXC602LG93	Speaker Box Ass'y Left (Metallic Brown)	1	
K22	RYMXC602M8	Speaker Box Ass'y Left (Metallic Silver)	1	
K23	RYMXC603LG93	Speaker Box Ass'y Right (Metallic Brown)	1	
K23	RYMXC603M8	Speaker Box Ass'y Right (Metallic Silver)	1	
K24	RJF1090Z	Terminal Speaker	2	
K25	RUL661Z	Speaker Wall Mounts	2	
K26	RKF601Z92	Cover, Speaker Cabinet (Metallic Brown)	2	
K26	RKF601Z7	Cover, Speaker Cabinet (Metallic Silver)	2	
K27	RHG1059Z	Rubber, Speaker	2	
K28	XTN35+50GFZ	Screw, Speaker Box M'tg (Metallic Brown)	12	
K28	XTN35+50GFY	Screw, Speaker Box M'tg (Metallic Silver)	12	
K29	XTV3+12GFZ	Screw	4	
K30	XTV3+10G	Screw	4	
K31	XTV3+12GFY	Screw	4	
K32	XTV3+8G	Screw	8	
		ACCESSORIES		
	RJA20Z	Power Cord, AC	1	⚠
	RJP2F1Z	Cord, Speaker (Short)	2	
	RJE123Z	Cord, Speaker (Long)	2	
	RJN23Z	Cassette Tape	1	
	RQE13Z	Caution Tag	1	
		PACKING MATERIALS		
	XZB36X35A04	Polyethylene Cover for Speaker	2	S
	XZB60X50A01	Polyethylene Cover for Main Cabinet	1	S
	RPN3784Z	Pad	1	
	RPN3787Z	Pad	2	
	RPN9424Z	Pad Complete	1	
	RPK1427Z	Gift Box	1	
	RPN3816Z	Pad	1	
		PRINTED MATERIAL		
	RQX6953Z	Instruction Book	1	