

Service Manual

Radio Cassette RX-5020LS

FM/LW/MW/SW Stereo Radio Cassette



RX-1810 MECHANISM SERIES

■ SPECIFICATIONS

Power Requirement:	AC; 100~110/115~127/ 200~220/230~250 V, 50/60 Hz Battery, 9 V (six "D" size dry batteries) (National UM-1 or equivalent)	REC/PB Connection:	5P DIN type IN; 0.39 mV (3.7 k Ω over) OUT; 0.37 V (47 k Ω under)
Power Consumption:	15 W	Speaker:	12 cm (4 $\frac{3}{32}$ ") PM Dynamic speaker (3 Ω)
Power Output:	7.0 W (3.5 W $\times$ 2)...RMS (max.)	Radio Frequency Range:	FM; 87.5~108 MHz LW; 145~285 kHz (2060~1060m) MW; 520~1610 kHz (577~186m) SW; 5.9~18 MHz (50.8~16.7m)
Frequency Range:	100~10,000 Hz (with normal tape) 100~11,000 Hz (with FeCr tape) 100~12,000 Hz (with CrO ₂ tape)	Intermediate Frequency:	FM; 10.7 MHz AM; (LW/MW/SW); 455 kHz
Recording System:	AC bias, MAGNET erase	Sensitivity:	FM; 2.3 μ V/50 mW output LW; 300 μ V/m/50 mW output MW; 140 μ V/m/50 mW output SW; 18 μ V/50 mW output
Tape Speed:	4.8 cm/s, (1 $\frac{7}{8}$ ips)	Dimensions:	424mm(W) $\times$ 223mm(H) $\times$ 142mm(D) [16 $\frac{5}{8}$ "(W) $\times$ 8 $\frac{3}{4}$ "(H) $\times$ 5 $\frac{5}{8}$ "(D)]
Program Time:	1 hour with C-60 cassette tape	Weight:	3.6 kg (7 lb. 14 oz.) without batteries
Track System:	4-track 2-channel stereo recording and playback		
Input:	MIC; sensitivity 0.25 mV/ applicable microphone impedance 200~600 Ω (recommended microphone RP-8135)		
Output:	EXT SP; 3~8 Ω HEADPHONES; 8 Ω		

Specifications are subject to change without notice.

LOCATION OF CONTROLS AND COMPONENTS

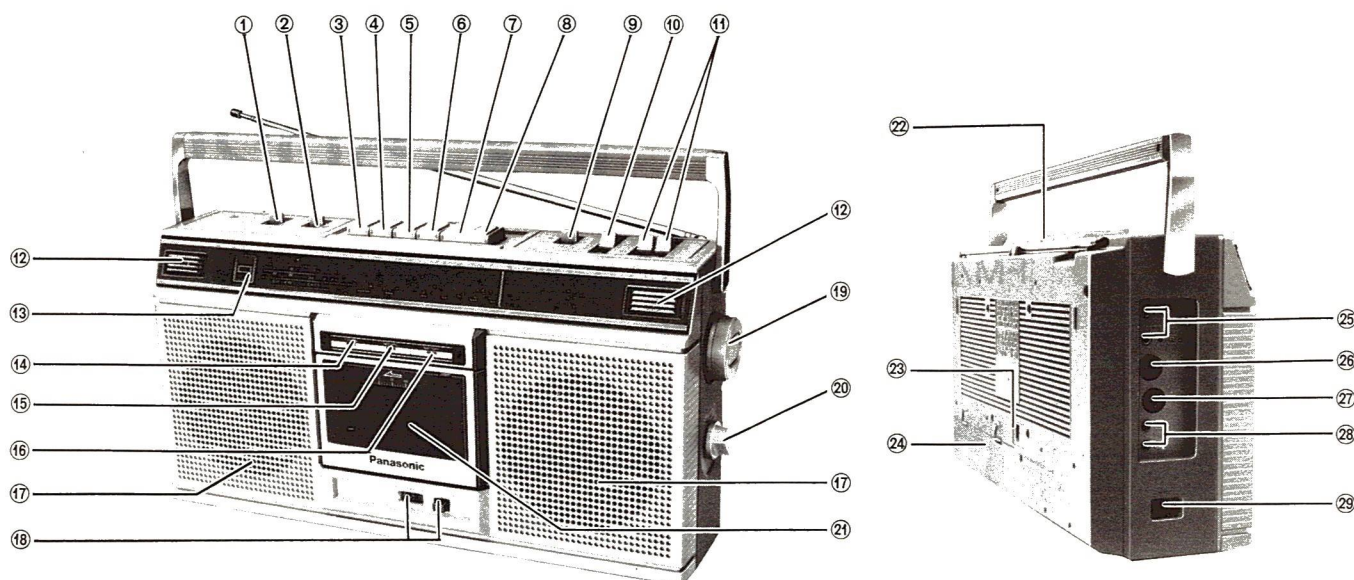


Fig. 1

- | | |
|--|--|
| ① Mode Selector/Beat Proof Switch
(STEREO I, II/MONO III) | ⑩ LED Battery Check Indicator |
| ② Function Selector (TAPE/RADIO/SLEEP) | ⑪ Speaker (12 cm, 3Ω) |
| ③ Eject/Pause Button | ⑫ Tape Counter and Reset Button |
| ④ Stop Button | ⑬ Tuning Control |
| ⑤ Fast Forward/Cue Button | ⑭ Band Selector (FM/LW/MW/SW) |
| ⑥ Rewind/Review Button | ⑮ Cassette Compartment |
| ⑦ Playback Button | ⑯ Telescopic Antenna |
| ⑧ Record Button | ⑰ Voltage Selector |
| ⑨ Tape Selector (NORMAL/FeCr/CrO ₂) | ⑱ Battery Compartment |
| ⑪ Tone Control | ⑲ Microphone Jacks (0.25 mV) |
| ⑫ Volume Control (L, R) | ⑳ DIN Connector Jack IN: 0.39 mV/3.7 kΩ over
OUT: 0.37 mV/47 kΩ under |
| ⑬ Built-in Microphone (L, R) | ㉑ Headphone Jack (8Ω) |
| ⑭ FM Stereo Indicator | ㉒ External Speaker Jacks (3~8Ω) |
| ⑮ LED Tuning Indicator | ㉓ AC Socket |
| ⑯ LED Recording Indicator | |

DISASSEMBLY INSTRUCTIONS

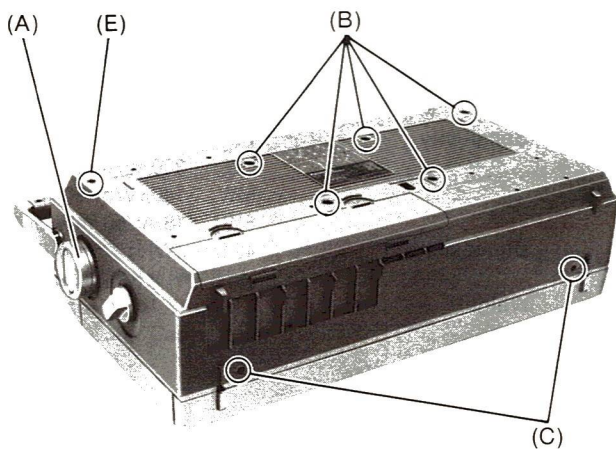


Fig. 2

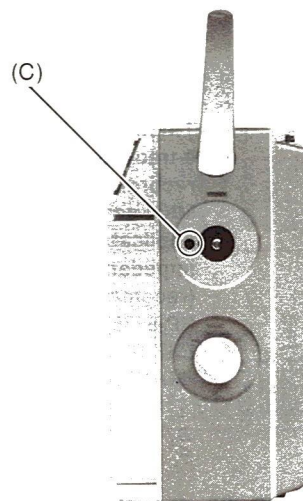


Fig. 3

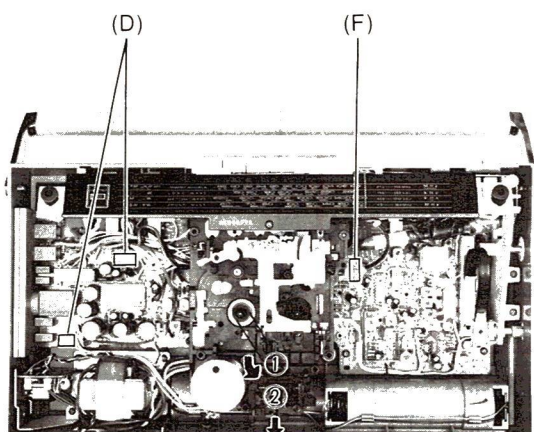


Fig. 4

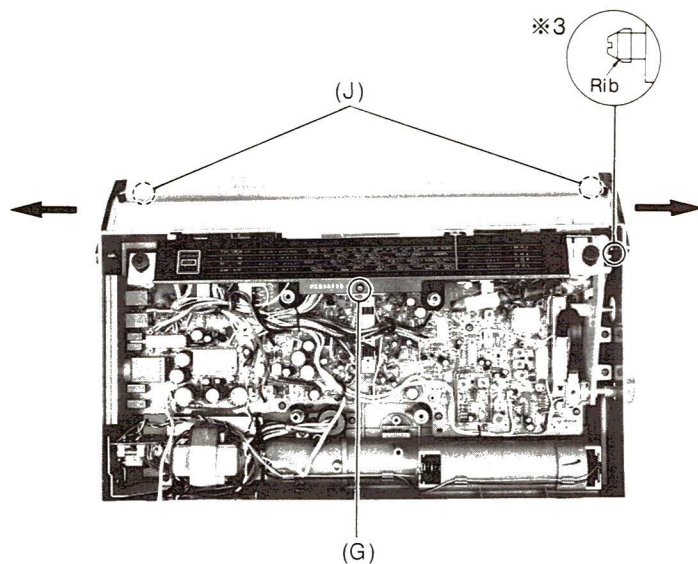


Fig. 5

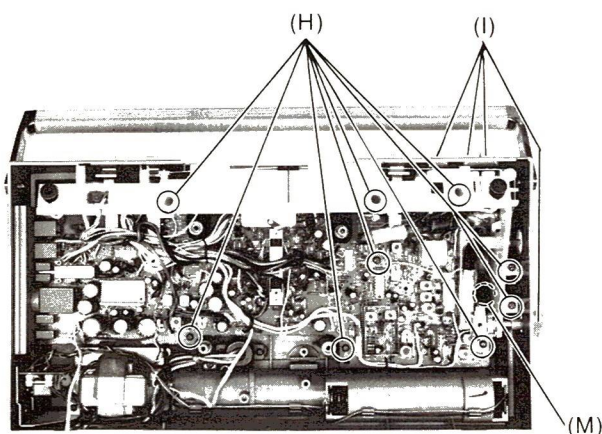


Fig. 6

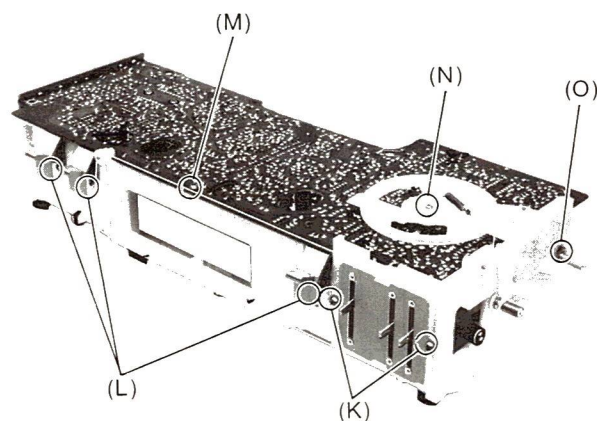


Fig. 7

Procedure	To remove—.	Remove—.	Shown in Fig. —.
1	Front Cabinet	Knob(A) × 1	2
		Screw 3 × 45(B) × 5	
		Screw 3 × 10(C) × 3	2 and 3
		Socket.....(D) × 2	4
	Telescopic Antenna	Screw 3 × 14(E) × 1	2
2	Mechanism ※1	Socket(F) × 1	4
3	Dial Scale	Screw 3 × 12(G) × 1	5
4	Main Circuit Board	Screw 3 × 12(H) × 9	6
		Knob(I) × 4	6
		Screw 3 × 8(J) × 2	5
5	Handle & Arm ※2, 3	Screw 3 × 10(K) × 2	7
7	Dial Chassis	Screw 3 × 6(L) × 3	6 and 7
		Screw 3 × 10(M) × 2	
		Screw 2.6 × 8(N) × 1	
		Nut(O) × 1	

※1. Remove the mechanism, in the direction of arrow ① & ②.

※2. To remove the handle, first remove two screws (J) and open the handle arm in direction of the arrow as shown in Fig. 5.

※3. To remove the handle arm, cut the rib of handle arm.

ALIGNMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set tone control to center.
3. Set band switch to MW, LW, SW or FM.
4. Set function selector to radio.
5. Set power source voltage to 9 V DC.
6. 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		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
AM IF ALIGNMENT						
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.	Output meter across voice coil.	T ₃ (AM 1st IFT) T ₄ (AM 2nd IFT)	Adjust for maximum output.
LW-RF ALIGNMENT						
LW	"	145 kHz	145 kHz [11.72mm($\frac{15}{32}$ ")]	Output meter across voice coil.	L ₆ (LW OSC Coil) (* 1) L ₂ (LW ANT Coil)	Adjust for maximum output. Adjust L ₂ by moving coil bobbin along ferrite core.
LW	"	285 kHz	285 kHz [99.58mm($3\frac{39}{32}$ ")]	"	CT ₅ (LW OSC Trimmer) CT ₃ (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
(* 1) Cement antenna bobbin with wax after completing alignment.						
MW-RF ALIGNMENT						
MW	"	550 kHz	550 kHz [11.73mm($\frac{15}{32}$ ")]	Output meter across voice coil.	L ₇ (MW OSC Coil) (* 2) L ₂ (MW ANT Coil)	Adjust for maximum output. Adjust L ₂ by moving coil bobbin along ferrite core.
MW	"	1,500 kHz	1,500 kHz [99.58mm($3\frac{39}{32}$ ")]	"	CT ₆ (MW OSC Trimmer) CT ₄ (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
(* 2) Cement antenna bobbin with wax after completing alignment.						
SW-RF ALIGNMENT						
SW	Connect to test point ▼ through ceramic capacitor (10 PF). Negative side to test point ▼.	6 MHz	6 MHz [4.15mm($\frac{5}{32}$ ")]	Output meter across voice coil.	L ₈ (SW OSC Coil) L ₃ (SW ANT Coil)	Adjust for maximum output.
SW		18 MHz	18 MHz [105.31mm($4\frac{5}{32}$ ")]	"	CT ₇ (SW OSC Trimmer)	Audjst for maximum output. Repeat steps (6) and (7).

■ FM ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
FM	Connect to test point ▼ through 0.001 μ F. Negative side to test point ▼.	10.7 MHz	Point of non-interference.	Connect vert. amp. of scope to test point ▼. Negative side to test point ▼.	T ₁ (FM IFT) (Primary)	Adjust for maximum amplitude. (Refer to fig. 9.)
FM		"	"	"	T ₂ (FM IFT) (Secondary)	Adjust for maximum amplitude. (Refer to fig. 10.)
FM-RF ALIGNMENT						
FM	Connect to test point ▼ through FM dummy antenna. Negative side to test point ▼. (Refer to fig. 11.)	90 MHz	90 MHz [13.6mm($\frac{17}{32}$ ")]	Output meter across voice coil.	L ₉ (FM OSC Coil) L ₄ (FM TUNE Coil)	(* 3) Adjust for maximum output.
FM		106 MHz	106 MHz [93.55mm($3\frac{11}{16}$ ")]	"	CT ₂ (FM OSC Trimmer) CT ₁ (FM TUNE Trimmer)	(* 3) Adjust for maximum output. Repeat steps (3) and (4).
(* 3) Three output responses will be present; proper tuning is the center frequency.						

SEPARATION ALIGNMENT

ITEM	SIGNAL 90 MHz, 60 dB SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Adjustment of pilot signal.	—	▼... (+) side ▼... (-) side	VR ₁	19 kHz	Adjust VR ₁ for 19 kHz (±100 Hz) reading on electronics counter.

AUDIO ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Bias current	—	(Lch) ▼ (Rch) ▼ (Earth) ▼	5.2 ± 0.2 mV (Use CrO ₂ tape)	VR ₃₀₃ (Lch) VR ₃₀₂ (Rch)	Record mode Beat Proof→I
Bias oscillation frequency	—	▼ (+), ▼ (-)	52 ~ 54.5 kHz	L ₃₀₁	Record mode Beat Proof→I

ADJUSTMENT PARTS LOCATION

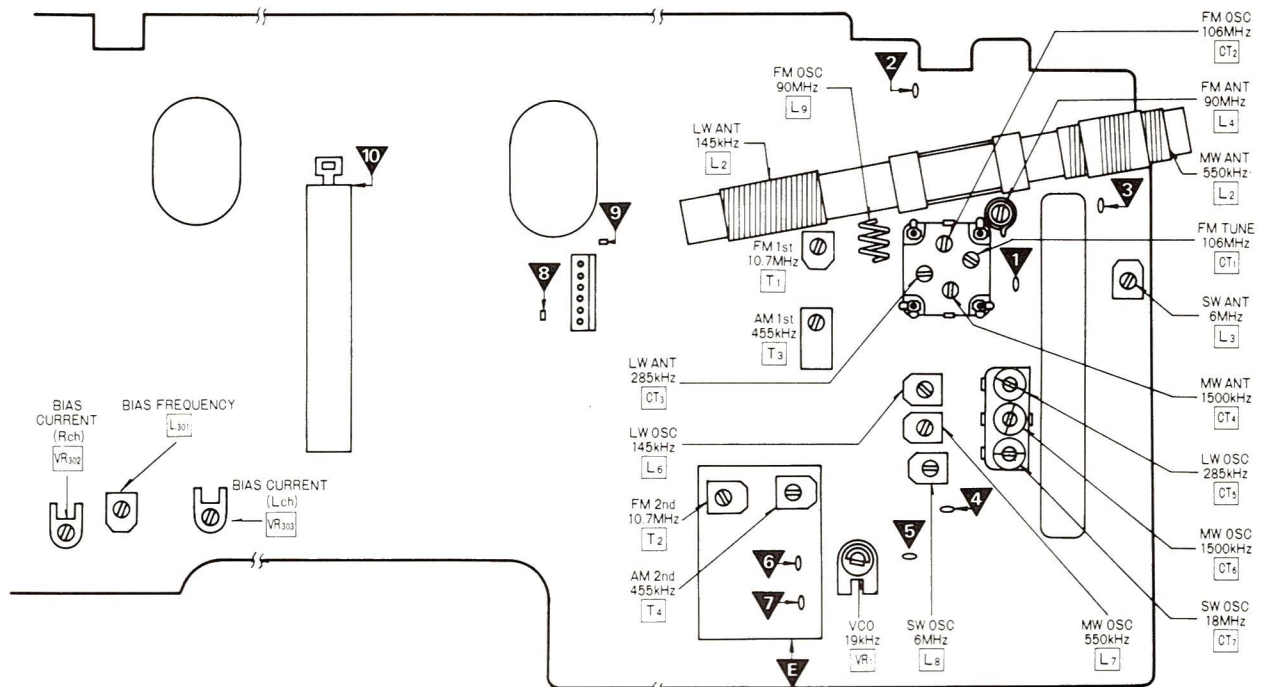


Fig. 8

DIAL THREADING

■ DIAL CORD LENGTH: 1150 mm

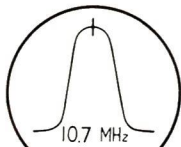


Fig. 9

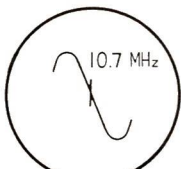


Fig. 10

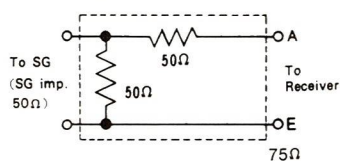


Fig. 11 FM Dummy Antenna

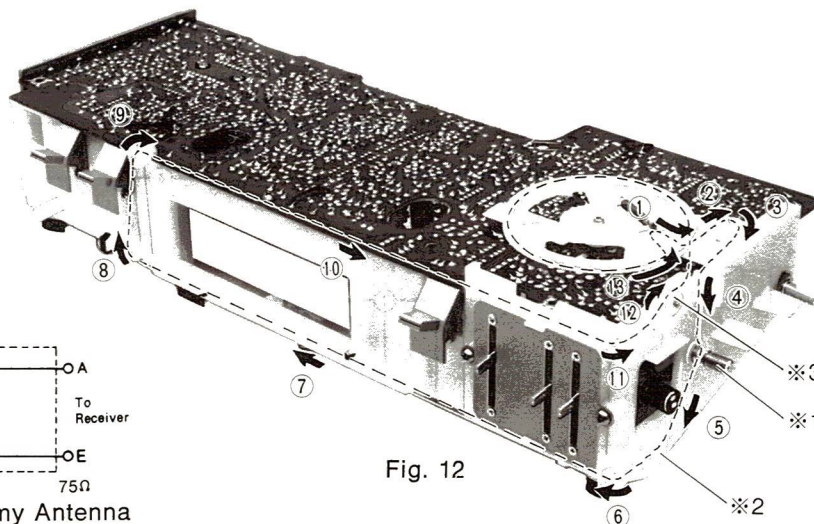
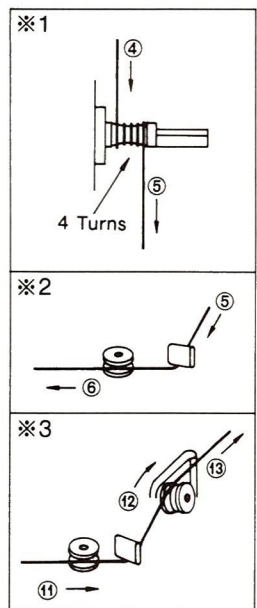


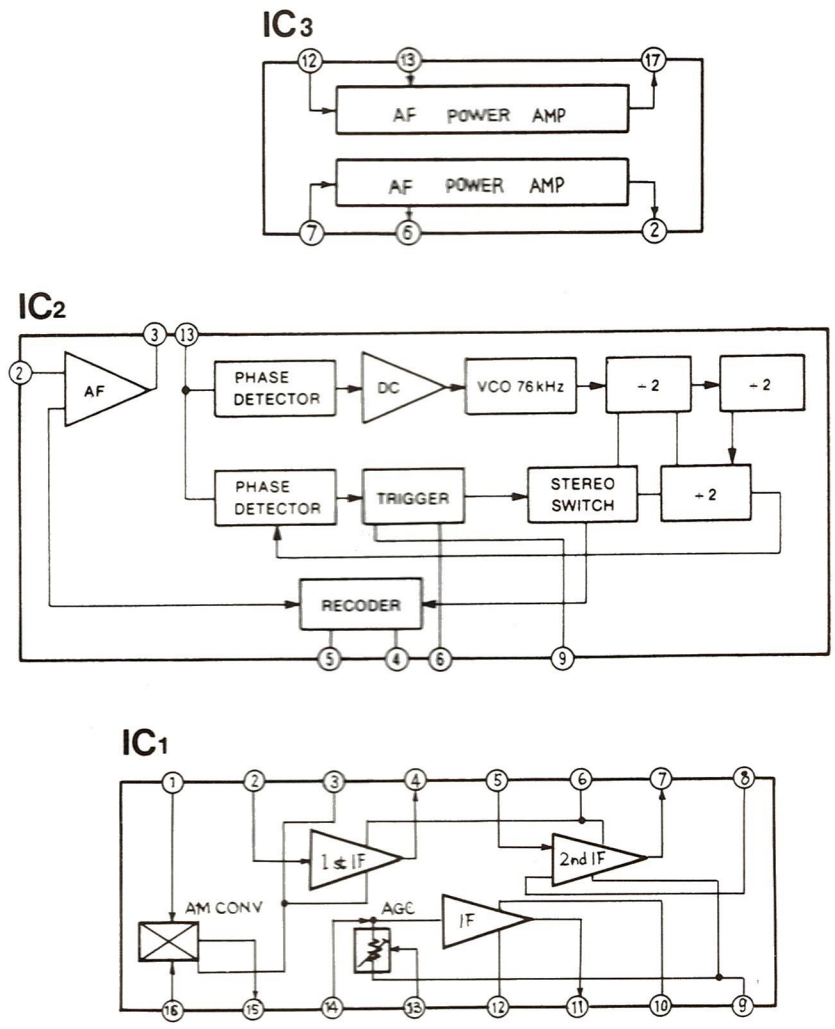
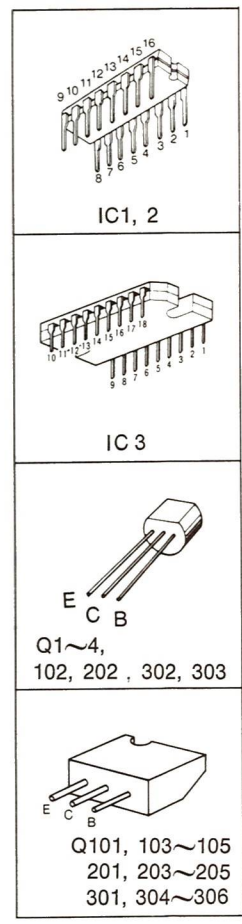
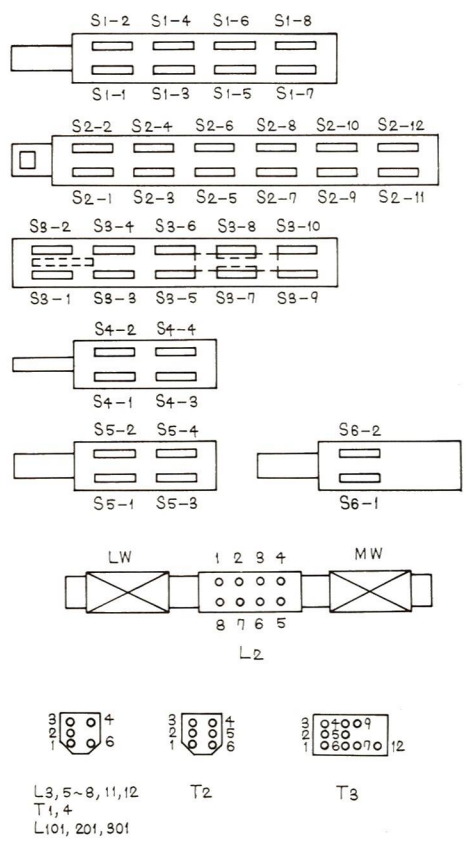
Fig. 12



Notes:

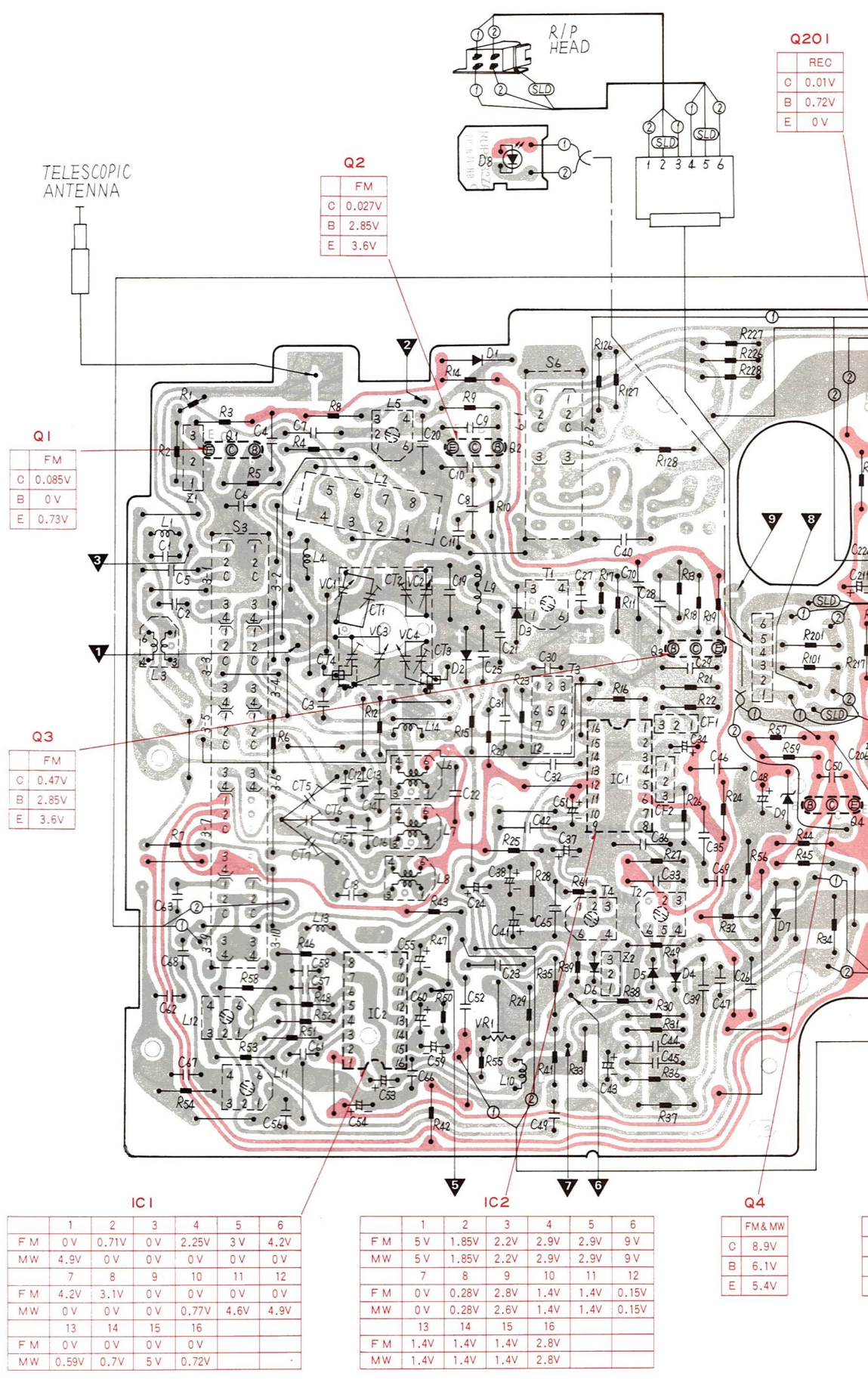
- 1. S₁₋₁~S₁₋₈Function switch in "TAPE" position.
(1...TAPE, 2...RADIO, 3...SLEEP)
- 2. S₂₋₁~S₂₋₁₂Record/playback switch in "play-back" position.
- 3. S₃₋₁~S₃₋₁₀Band switch in "FM" position.
(1...FM, 2...LW, 3...MW, 4...SW)
- 4. S₄₋₁~S₄₋₂DIN ON/OFF switch in "OFF" position.
- 5. S₅₋₁~S₅₋₄Mode/beat proof switch in "STEREO/I" position.
(1...STEREO/I, 2...STEREO/II, 3...MONO/III)
- 6. S₆₋₁~S₆₋₂Tape selector switch in "NORMAL" position.
(1...NORMAL, 2...FeCr, 3...CrO₂)
- 7. S₈AC/DC IN selector switch in "DC IN" position.
- 8. S₉Motor ON/OFF switch in "OFF" position.
- 9. S₁₀AC voltage selector switch in "100 V" position.
- 10. VR₁.....Pilot signal adjustment VR.
- 11. VR_{101,201}Tone control.
- 12. VR_{102,202}Volume control.
- 13. VR_{302,303}Bias current adjustment VR.
- 14. The mark (▼) shows test point. e.g. ▼ = test point 1.
- 15. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
()...FM position, < >...MW position
[]...REC position.
- 16. Battery current: No signal167mA
Maximum (Radio)965mA
Maximum (Tape)480mA
- 17. ⚠ indicates that only parts specified by the manufacturer be used for safety.

BOTTOM VIEW



SCHEMATIC DIAGRAM MODEL RX-5020LS





Q1

	FM
C	0.085V
B	0 V
E	0.73V

Q2

	FM
C	0.027V
B	2.85V
E	3.6V

Q3

	FM
C	0.47V
B	2.85V
E	3.6V

IC1

	1	2	3	4	5	6
FM	0V	0.71V	0V	2.25V	3V	4.2V
MW	4.9V	0V	0V	0V	0V	0V
	7	8	9	10	11	12
FM	4.2V	3.1V	0V	0V	0V	0V
MW	0V	0V	0V	0.77V	4.6V	4.9V
	13	14	15	16		
FM	0V	0V	0V	0V		
MW	0.59V	0.7V	5V	0.72V		

IC2

	1	2	3	4	5	6
FM	5V	1.85V	2.2V	2.9V	2.9V	9V
MW	5V	1.85V	2.2V	2.9V	2.9V	9V
	7	8	9	10	11	12
FM	0V	0.28V	2.8V	1.4V	1.4V	0.15V
MW	0V	0.28V	2.6V	1.4V	1.4V	0.15V
	13	14	15	16		
FM	1.4V	1.4V	1.4V	2.8V		
MW	1.4V	1.4V	1.4V	2.8V		

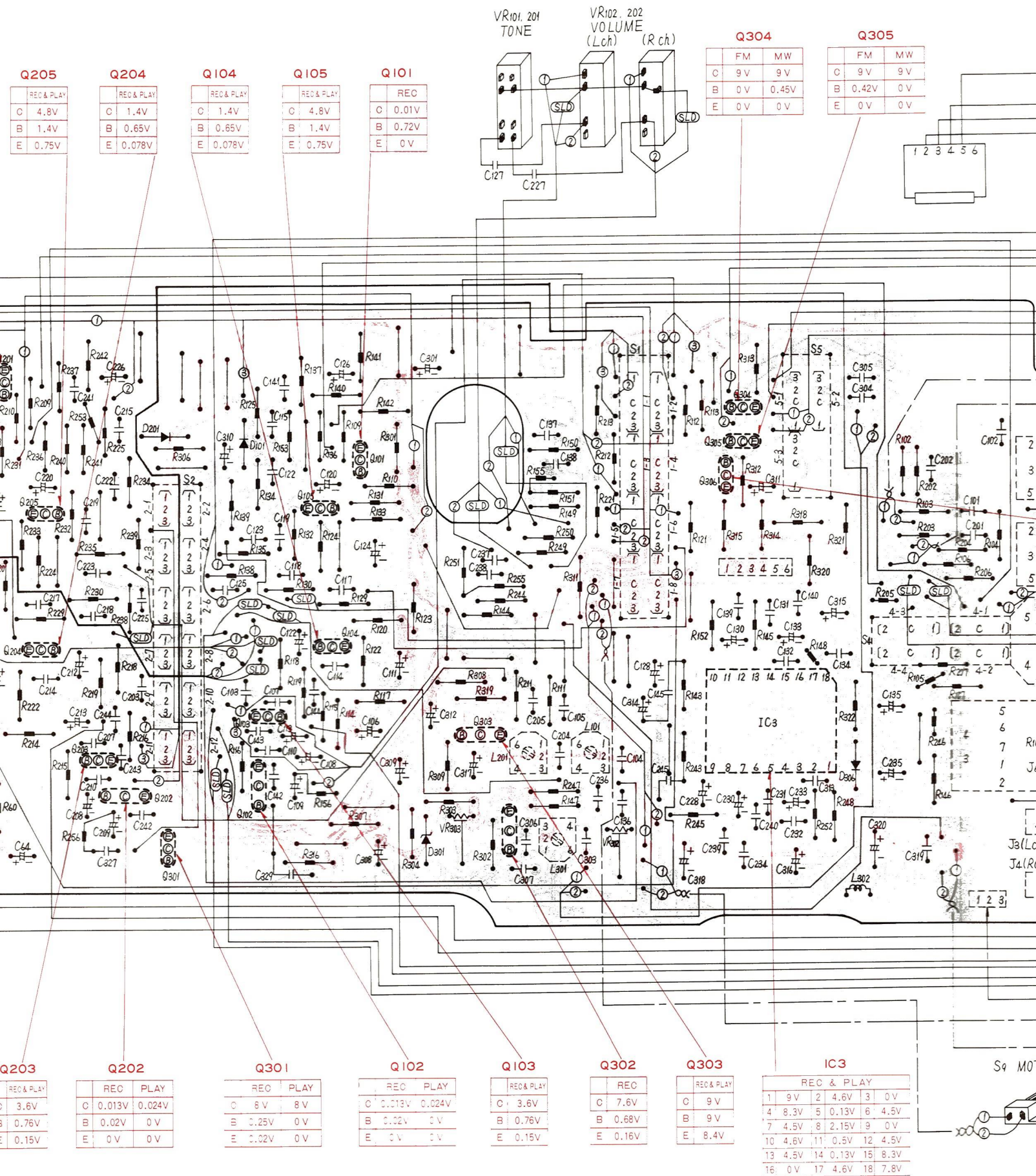
Q4

	FM&MW
C	8.9V
B	6.1V
E	5.4V

Q201

	REC
C	0.01V
B	0.72V
E	0 V

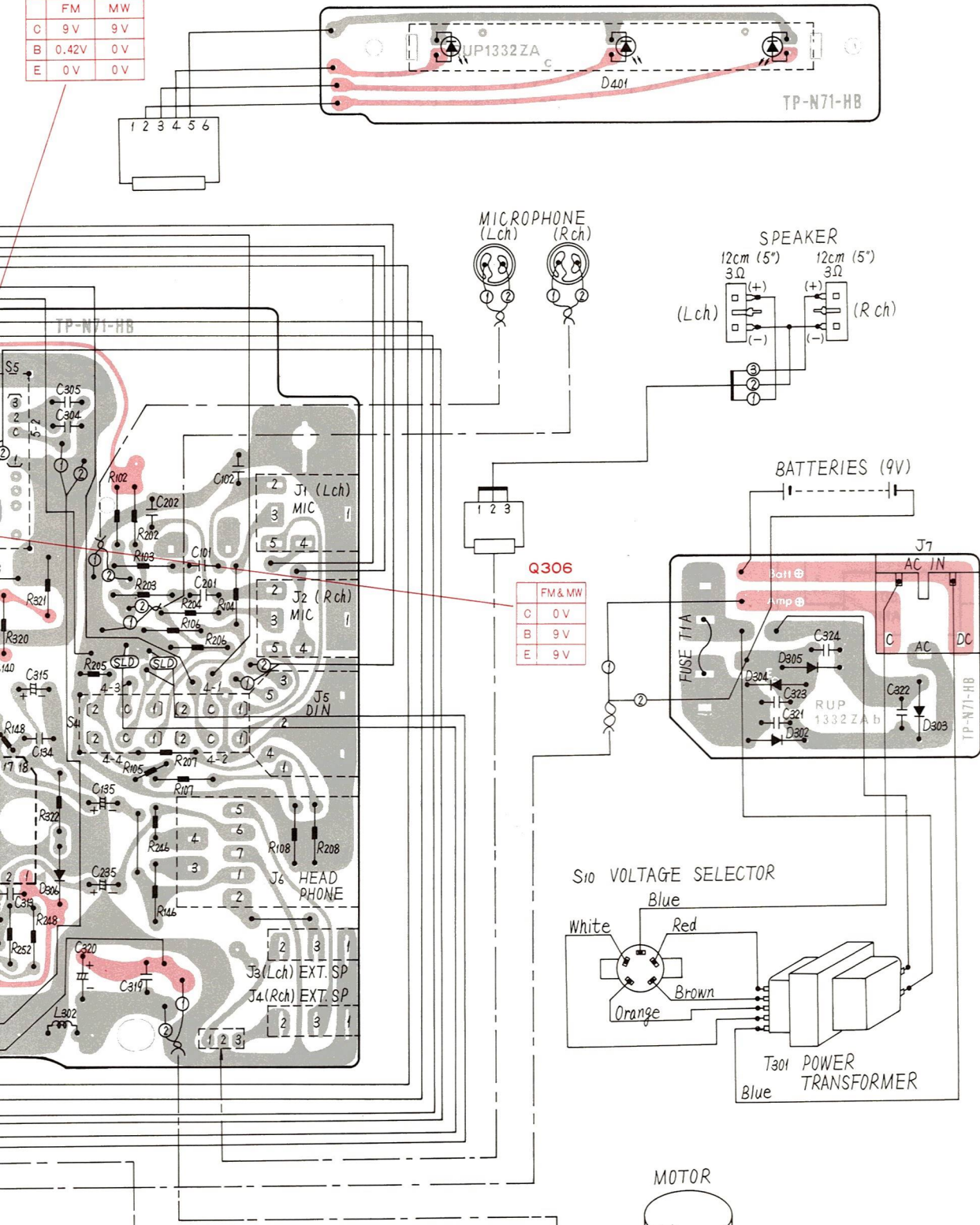
WIRING CONNECTION DIAGRAM MODEL RX-5020LS



S

Q305

	FM	MW
C	9 V	9 V
B	0.42V	0 V
E	0 V	0 V



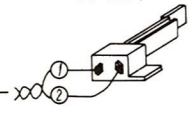
Q306

	FM & MW
C	0 V
B	9 V
E	9 V

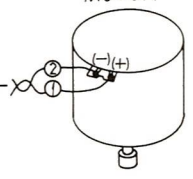
IC3

REC & PLAY			
2	4.6V	3	0V
5	0.13V	6	4.5V
8	2.15V	9	0V
11	0.5V	12	4.5V
14	0.13V	15	8.3V
17	4.6V	18	7.8V

S9 MOTOR SWITCH

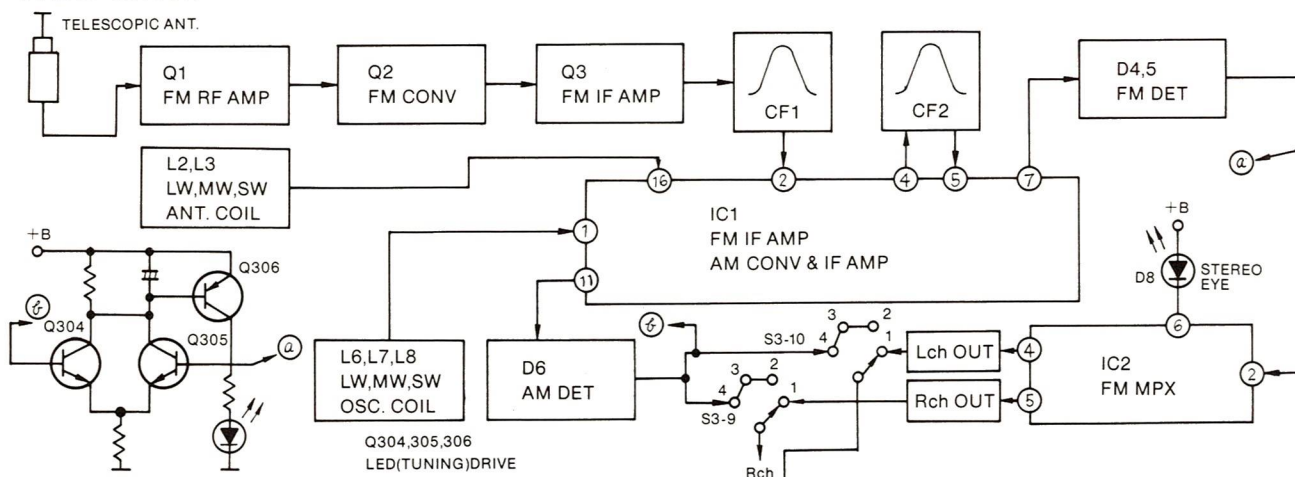


MOTOR

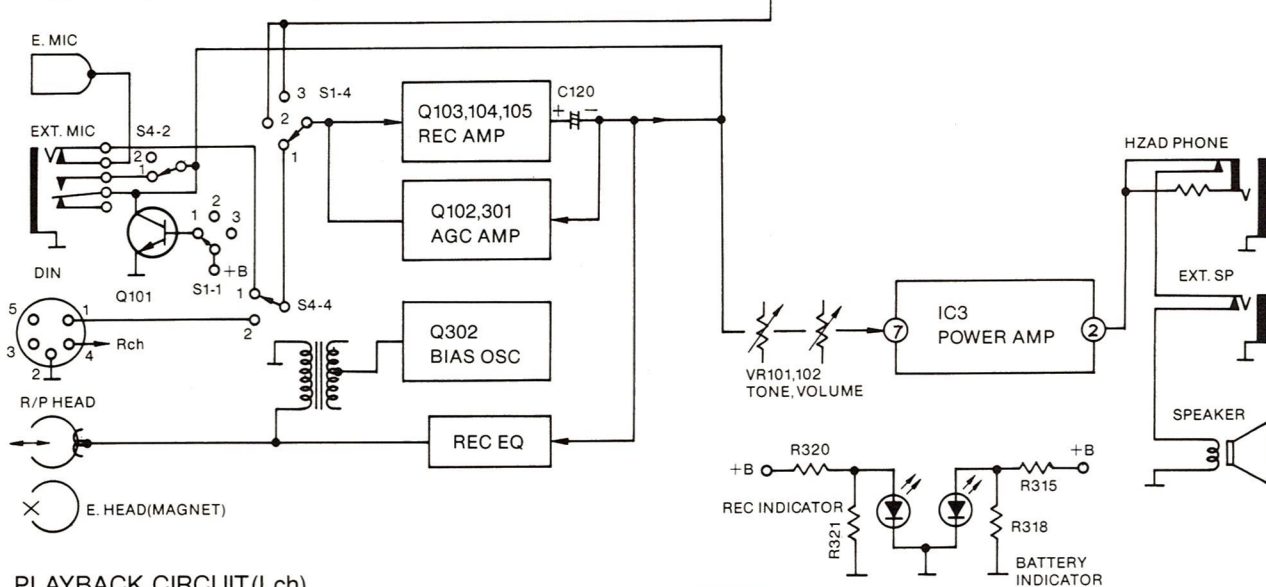


BLOCKDIAGRAM OF ELECTRICAL CIRCUIT

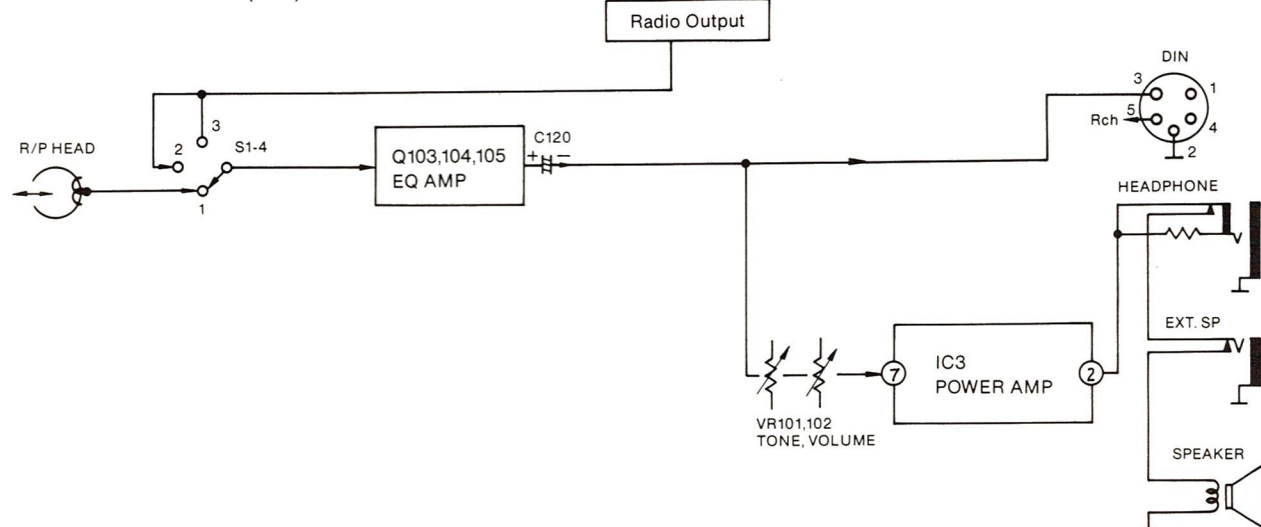
RADIO CIRCUIT



RECORDING CIRCUIT (Lch)



PLAYBACK CIRCUIT (Lch)



EXPLODED VIEWS

Specification

Pressure of pressure roller	400 ± 60 gr
Takeup tension	50 ± 20 gr
Tension of detect piece	65 ± 10 gr
Wow & flutter	Less than 0.4% (RMS)
Tape speed fluctuation	$\pm 3\%$

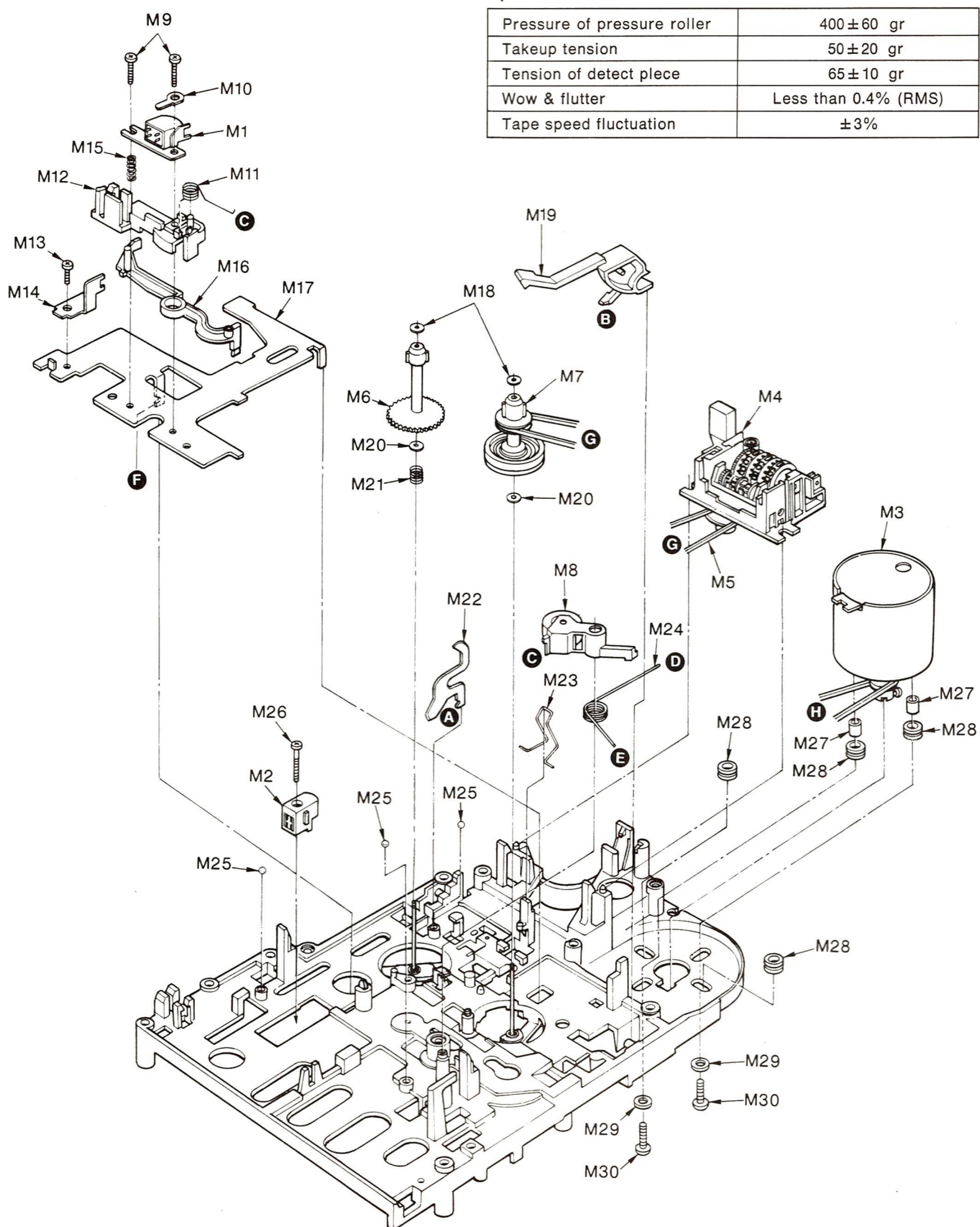


Fig. 13

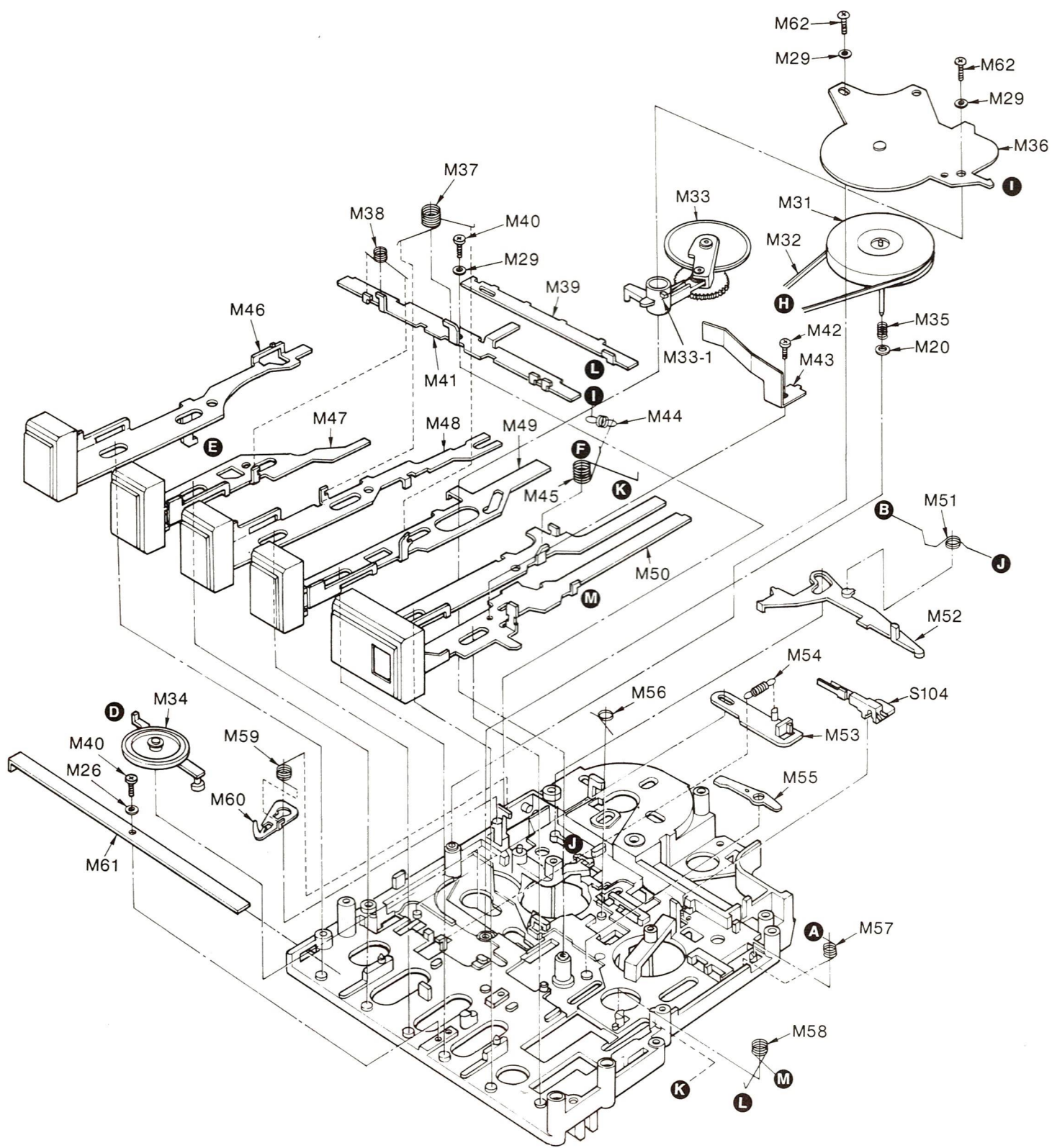


Fig. 14

CABINET PARTS

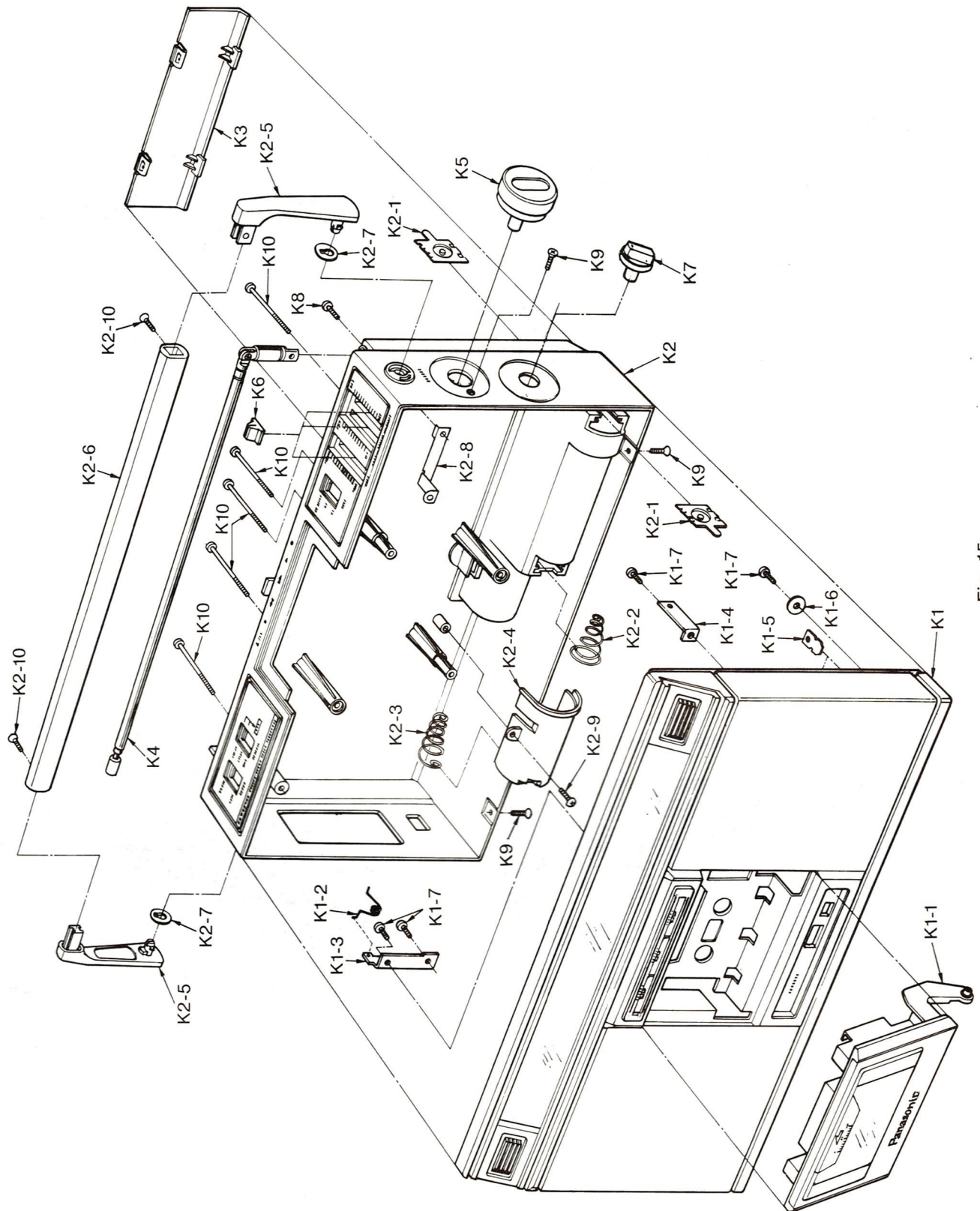


Fig. 15

ELECTRIAL PARTS LOCATION

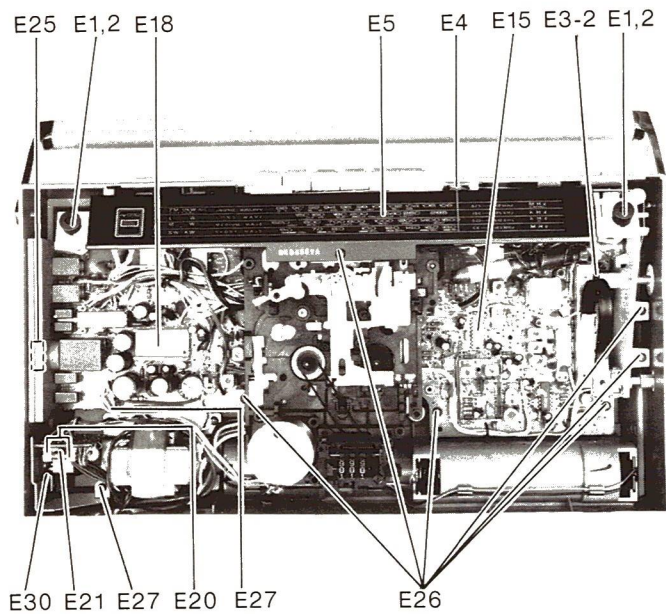


Fig. 16

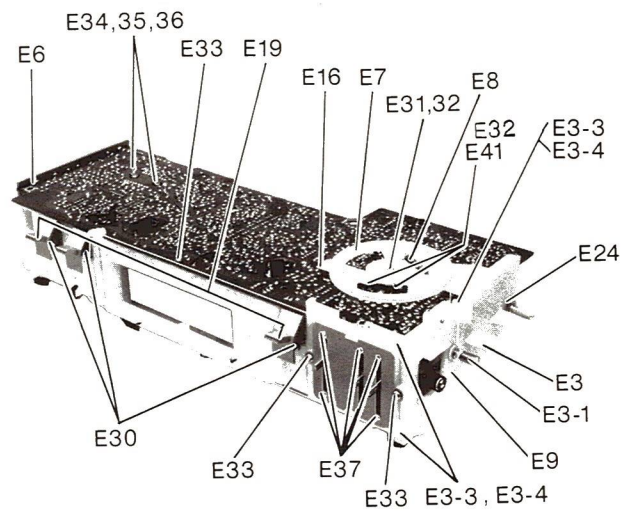


Fig. 17

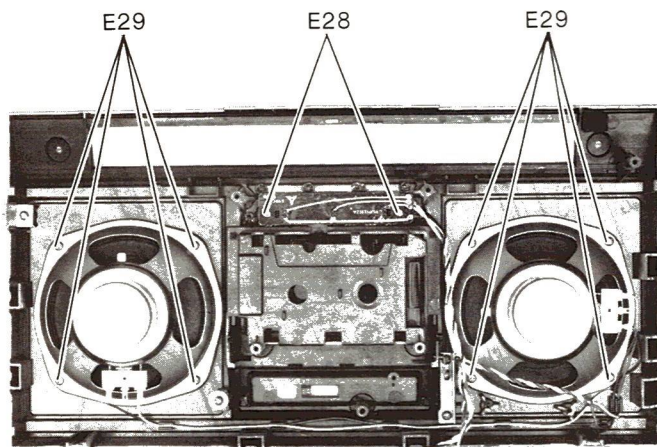


Fig. 18

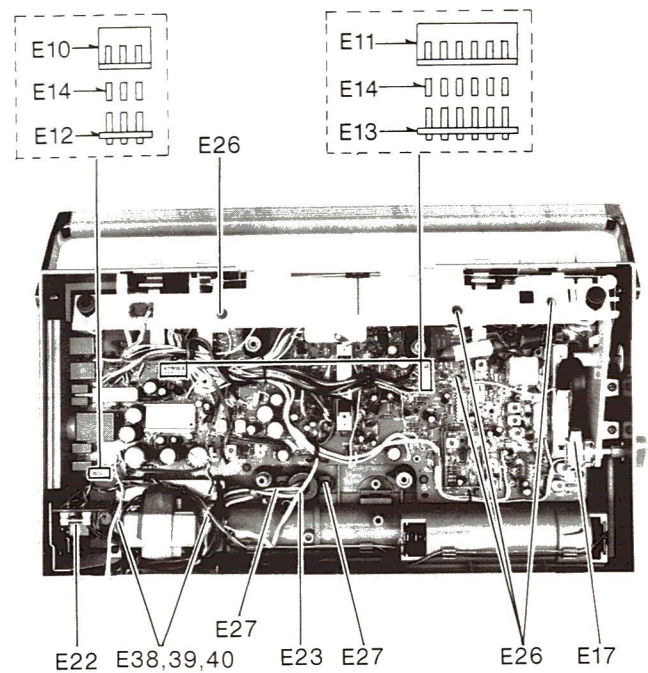


Fig. 19

REPLACEMENT PARTS LISTModel RX-5020LS (RD8007-1785C)

NOTES: 1. Δ indicates that only parts specified by the manufacturer be used for safety.
2. The S mark indicates service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
M1	QWY4124Z	MECHANICAL PARTS		
M2	QWY2129Z	Head, Record/Playback	1	
M3	QXU0183	Head, Erase	1	
M4	QDC0133	Motor Ass'y	1	
M5	QDB0169	Counter	1	
M6	QDR1149	Belt, Counter	1	
M7	QXD0118	Supply Reel Table Ass'y	1	
M8	QXL1401	Takeup Reel Table Ass'y	1	
M9	XSN2410	Pressure Roller Ass'y	1	
M10	QJT0039	Screw, + 2x10	1	
M11	QBN1774	Terminal, Head Earth	2	S
M12	QZM1255	Spring, Pressure Roller	1	
M13	XSN26+3	Table, Head	1	
M14	QMG0062	Screw, + 2.6x3	1	S
M15	QBC1298	Guide, Tape	1	
M16	QML3672	Spring, Head Adjusting	1	
M17	QMK1874	Lever, Auto-Stop Detector	1	
M18	QBW2008	Plate, Head Base	1	
M19	QML3670	Washer	2	
M20	QBJ3224	Lever, Cassette-up	1	
M21	QBC1272	Washer	3	
M22	QML3669	Spring, Back Tension	1	
M23	QBN1775	Lever, Erase Safety	1	
M24	QBN1773	Spring, Cassette Retainer	1	
M25	QDK1012	Spring, Idler	1	
M26	XTN26+14F	Ball, Steel	3	
M27	QMC0079	Screw, + 2.6x14	1	
M28	QBG1420	Pipe, Motor	2	
M29	XWG26	Cushion, Motor	4	
M30	XSN26+8	Washer	6	S
M31	QXF0167	Screw, + 2.6x8	2	S
M32	QDB0267	Flywheel Ass'y	1	
M33	QXL1328	Belt, Flywheel	1	
M33-1	QBN1710	Fast Forward Frame Ass'y	1	
M34	QXL1400	Spring, Fast Forward Lever	1	
M35	QBC1359	Idler Lever Ass'y	1	
M36	QX0318	Spring, Flywheel	1	
M37	QBN1777	Flywheel Holding Plate Ass'y	1	
M38	QBN1709	Spring, Fast Forward Rod	1	
M39	QMR1783	Spring, Stop Rod	1	
M40	XTN26+8B	Rod, Lock	2	S
M41	QMF2085	Screw, + 2.6x8	1	
M42	XTN26+4B	Plate, Rod Holding	1	
M43	QBP1901	Screw, 2.6x4	1	S
M44	QBT1890	Spring, Record Retainer	1	
		Spring, Base Plate Retainer	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
M45	QBN1776	Spring, Playback Rod	1	
M46	QXR0661	Eject/Pause Rod Ass'y	1	
M47	QXR0658	Stop Rod Ass'y	1	
M48	QXR0655	Fast Forward/Cue Rod Ass'y	1	
M49	QXR0652	Rewind/Review Rod Ass'y	1	
M50	QXR0684	Playback Rod Ass'y	1	
M51	QBN1701	Spring, Change Lever	1	
M52	QML3531	Lever, Change	1	
M53	QMR1784	Rod, Auto-Stop Detection	1	
M54	QBT1889	Spring, Auto-Stop Detection Rod	1	
M55	QML3668	Lever, Review	1	
M56	QBN1712	Spring, Fast Forward	1	
M57	QBN1783	Spring, Erase Safety	1	
M58	QBN1706	Spring, Record Rod	1	
M59	QBN1705	Spring, Pause Lock Lever	1	
M60	QML3528	Lever, Pause Lock	1	
M61	QMF2131	Plate, Rod Holding	1	
M62	XTN26+10B	Screw, + 2.6x10	2	S
		INTEGRATED CIRCUITS, TRANSISTORS AND DIODES		
IC1	RV1UPC1018CE	IC	1	
IC2	RV1BA1330	IC	1	
IC3	AN7145MP	IC	1	
Q1,2,3	2SA838	Transistor (Ge)	3	
Q4,303	2SC945	Transistor (Si)	2	
Q101,104,105,201,204,205,301,304,305				
Q102,202	2SD636	Transistor (Si)	9	
Q103,203	2SC828	Transistor (Si)	2	
Q302	2SC2021	Transistor (Si)	2	
Q306	2SC1317	Transistor (Si)	1	
D1	2SA786	Transistor (Ge)	1	
D2	MV121	Varistor	1	
D3,7,101,201,306	MA345	Varistor	1	
D4,5	MA161	Diode (Si)	5	S
D6	2OA90	Diode (Ge)	2	S
D8	OA90	Diode (Ge)	1	S
D9	LN220RP	LED, Stereo Eye	1	
D301	RVDRD6R2EB2	Zener	1	
D302,303,304,305	MA1056	Zener	1	
D401	RVDSMLA02	Diode (Si)	4	S
	LN03218P	LED, Battery, Tuning, Record	1	
		COILS AND TRANSFORMERS		
L2	QLF6D7	Antenna Coil, LW, MW	1	
L3	RLA3M4	Antenna Coil, SW	1	
L4	RLD4N5	Antenna Coil, FM	1	
L5	RLI4M103	Trap Coil, 10.7MHz	1	
L6	RLO1M5	Oscillator Coil, LW	1	
L7	RLO2M15	Oscillator Coil, MW	1	
L8	RLO3M36	Oscillator Coil, SW	1	
L9	RLO4Y43	Oscillator Coil, FM	1	
L10	RLM1Z4K	Trap Coil, 57KHz	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
L11,12	QLM1M2	Trap Coil, 19kHz	2	
L101,201	QLQM1531	Trap Coil, Bias	2	
L301	QLB01174	Oscillator Coil, Bias	1	
L302	LAL04NA220K	Coil (Cylinder)	1	
T1	RLI4M101	IFT, FM 1st	1	S
T2	RLI4M511	IFT, FM 2nd	1	
T3	RLI7W105	IFT, AM 1st	1	
T4	RLI2M402	IFT, AM 2nd	1	
T301	RLT5U12	Power Transformer	1	A
VR1	EVNM4AA00B14	VARIABLE RESISTORS		
VR101, 201	EVBV33S10D54	Preset, 10k Ω (B)	1	S
VR102, 202	EVAV39S10A54	Variable Resistor, 50k Ω (D)	1	
VR302, 303	EVNM4AA00B54	Variable Resistor, 50k Ω (A)	2	
VC1,2,3,4	CTL2,3,4	Preset, 50k Ω (B)	2	S
CT5,6,7	PVC22J20T2L 3T8M	VARIABLE CAPACITORS		
CFL1,2	SFEL07MA3	Tuning Capacitor	1	
		Trimmer Capacitor	1	
		CERAMIC FILTER		
		Ceramic Filter, 10.7MHz	2	
Z1	RXABPMB3	COMPONENT COMBINATIONS		
Z2	EXAF203Z471	Component Combination (L,C)	1	
		Component Combination (C,R)	1	
		SPEAKER		
	EASL2P126SX	Speaker, 12cm (5"), 3 Ω	2	
S1	RST3H11Z	SWITCHES		
S2	RSH2L04Z	Switch, Tape/Radio/Sleep	1	
S3	ESA2629	Record/Playback	1	
S4	QSS4210	" Band	1	
S5	QST4312	" MIC/DIN	1	
S6	RST3B10Z	" Mode/Beat Proof	1	
S8	Refer to J7	" Tape	(1)	
S9	QSB0170	" AC/DC	1	
S10	RSR4A01X	" Motor	1	
		" AC Voltage Select	1	A
J1,2	RJJI1D2Z	JACKS		
J3,4	RJJI1D2Z	Jack, EXT. MIC	2	
J5	QJSL1954	" EXT. SP	2	
J6	RJJI1E2Z	" DIN	1	
J7	RJJI15Z	" HEADPHONE	1	
		" AC IN	1	A
R311	ERX12ANJR22	RESISTORS (Value is in OHMS)		
R148,248	ERD25TJ1R0	0.22 1/2W Metal-Oxide Film	1	S
		1 1/4W Carbon	2	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R308	ERD25TJ2R2	2.2 1/4W Carbon	1	S
R59,101,201,302	ERD25TJ100	10	4	S
R44	ERD25TJ220	22	1	S
R24,25,60	ERD25TJ470	47	3	S
R5,20,307	ERD25TJ560	56	3	S
R16	ERD25TJ680	68	1	S
R145,245	ERD25TJ820	82	2	S
R6,10,14	ERD25TJ101	100	3	S
R17,22,116,216,318,322	ERD25TJ151	150	6	S
R304	ERD25TJ181	180	1	S
R146,246	ERD25TJ221	220	2	S
R321	ERD25TJ271	270	1	S
R123,223,313,319	ERD25TJ331	330	4	S
R21,315,320	ERD25TJ391	390	3	S
R26,46,48,122,222	ERD25TJ471	470	5	S
R53,54,314	ERD25TJ561	560	3	S
R13,18,133,233,309	ERD25TJ681	680	5	S
R19	ERD25TJ821	820	1	S
R11,30,31,45,50,117,144,217,244,301	ERD25TJ102	1 k	10	S
R23,104,113,149,204,213,249	ERD25TJ122	1.2 k	7	S
R38	ERD25TJ152	1.5 k	1	S
R3,8,57,102,121,132,202,221,232	ERD25TJ222	2.2 k	9	S
R9,32,42,51,52,107,110,114,131,139,207,210,214,231,239,316	ERD25TJ332	3.3 k	16	S
R136,236	ERD25TJ392	3.9 k	2	S
R27,36,37,105,142,205,242	ERD25TJ472	4.7 k	7	S
R151,251	ERD25TJ562	5.6 k	2	S
R35,39,106,108,138,206,208,238	ERD25TJ682	6.8 k	8	S
R49,109,155,209,255	ERD25TJ822	8.2 k	5	S
R2,7,58,119,129,150,153,219,229,250,253	ERD25TJ103	10 k	11	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R103, 128, 203, 228	ERD25TJ123	12 k 1/4W Carbon	4	S
R55, 126, 141, 216, 241, 312	ERD25TJ153	15 k "	6	S
R56, 111, 211	ERD25TJ183	18 k "	3	S
R33, 152, 252	ERD25TJ223	22 k "	3	S
R120, 140, 220, 240	ERD25TJ333	33 k "	4	S
R43	ERD25TJ393	39 k "	1	S
R1, 28, 34, 41, 112, 118, 127, 130, 137, 143, 212, 218, 227, 230, 237, 243, 303	ERD25TJ473	47 k "	17	S
R125, 225	ERD25TJ563	56 k "	2	S
R15, 47, 124, 135, 224, 235	ERD25TJ104	100 k "	6	S
R156, 256	ERD25TJ154	150 k "	2	S
R12, 29	ERD25TJ224	220 k "	2	S
R134, 234	ERD25TJ274	270 k "	2	S
R147, 247	ERD25TJ474	470 k "	2	S
R4, 115, 215	ERD25TJ105	1 M "	3	S
R306	ERC14GK106	10 M Solid	1	S
CAPACITORS (Value is in MICRO FARADS except P.P=PICO FARADS)				
C1, 15	ECCDLH080DC	8 P 50V Ceramic	2	
C2, 6	ECCDLH120JC	12 P "	2	
C12	ECCDLH180JC	18 P "	1	
C107, 143, 207, 243	ECCDLH200K	20 P "	4	
C3	ECCDLH330K	33 P "	1	
C144, 244	ECCDLH560K	56 P "	2	
C132, 232	ECKDLH101KB	100 P "	2	
C114, 123, 142, 214, 223, 242	ECKDLH221KB	220 P "	6	
C115, 215, 313	ECKDLH331KB	330 P "	3	
C131, 136, 141, 231, 236, 241	ECKDLH471KB	470 P "	6	
C104, 204	ECKDLH561KB	560 P "	2	
C11, 110, 145, 210, 245, 327	ECKDLH102MD	0.001 "	7	
C50	ECKDLH103ZF	0.01 "	1	
C47	ECKDLH103MD	0.01 "	1	
C319, 321, 322, 323, 324	ECKDLH223ZF	0.022 "	5	
C25	ECBTLH47K	4.7 P "	1	
C7	ECBTLH56K	5.6 P "	1	
C21	ECBTLH68K	6.8 P "	1	
C8	ECBTLH120J	12 P "	1	
C19	ECBTLH160J	16 P "	1	
Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C31	ECBTLH180J	18 P 50V Ceramic (Cylinder)	1	
C9	ECBTLH220J	22 P "	1	
C33	ECBTLH330J	33 P "	1	
C40	ECBTLH101J	100 P "	1	
C39	ECBTLH221J	220 P "	1	
C44, 45	ECBTLH102MD	0.001 "	2	
C4, 10, 27, 28, 29, 32, 42, 46	ECBTLH103NX	0.01 25V "	8	
C5, 20, 22, 23, 26, 30, 35, 36, 52, 65, 69, 70	ECBTLH223NY	0.022 16V "	12	
C303	ECQM05122KZ	0.0012 50V Polyester	1	
C305	ECQM05682KZ	0.0068 "	1	
C304	ECQM05103KZ	0.01 "	1	
C134, 234	ECQM05224JZ	0.22 "	2	
C14	ECQS1101JZ	100P 100V Styrol	1	
C13	ECQS1181JZ	180 P "	1	
C16	ECQS1301JZ	300 P "	1	
C66	ECQS1681JZ	680 P "	1	
C18	ECQS1332JZ	0.0033 "	1	
C103, 117, 203, 217	ECFVD102MD	0.001 25V Semi-Conductor	4	
C105, 205	ECFVD222MD	0.0022 "	2	
C119, 125	137, 219, 225, 237	0.0033 "	6	
C122, 222	ECFVD332MD	0.0068 "	2	
C62, 67, 177, 227	ECFVD333MD	0.033 "	4	
C49	ECFVD103MD	0.01 "	1	
C56, 57, 58, 101, 201, 307	ECFVD153MD	0.015 "	6	
C306	ECFVD183MD	0.018 "	1	
C118, 138, 218, 238	ECFVD223MD	0.022 "	4	
C102, 140, 202, 240	ECFVD333MD	0.033 "	4	
C61, 63, 68	ECFVD473MD	0.047 "	3	
C139, 239	ECFVD683MD	0.068 "	2	
C128, 228	ECEA50ZR1	0.1 50V Electrolytic	2	S
C60, 126, 226	ECEA50ZR22	0.22 "	3	S
C59	ECEA50ZR47	0.47 "	1	S
C24, 34, 51, 108, 112, 113, 208, 212, 213	ECEA50Z1	1 "	9	S
C53, 55, 120, 220	ECEA50Z3R3	3.3 "	4	S
C43	ECEA52Z4R7	4.7 25V "	1	S
C37, 109, 209, 310, 311	ECEALHS100	10 50V "	5	S
C124, 224	ECEALHS220	22 25V "	2	S
C38, 130, 230, 314	ECEALCS330	33 16V "	4	S
C41, 317	ECEALAS470	47 10V "	2	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C48, 106, 133, 206, 233	100	10V Electrolytic	5	S
C301	220	"	1	S
C64	330	"	1	S
C54, 111, 211, 308	470	"	4	S
C135, 235	1000	"	4	S
C315, 316	1000	16V	2	S
C318, 320	2200	"	2	S
E1	RJML42Z	ELECTRICAL PARTS	2	
E2	QBG1616	Built-in Microphone	2	
E3	RZAX5020LSXG	Cover, Microphone	2	
E3-1	QMN8013	Dial Chassis Ass'y	1	
E3-2	XUC3FT	Shaft, Tuning	1	S
E3-3	QDP1478	Circlip	1	
E3-4	QMN8001	Roller, Dial	3	
E4	RDP219Z	Shaft, Dial Roller	3	
E5	RKD55Y	Pointer	1	
E6	RKE354Z	Scale, Dial	1	
E7	QTQ0032	Jack Board	1	
E8	QBT1320	Drum, Dial	1	
E9	RDZ05Z	Spring, Dial	1	
E10	QJS1921TN	Cord, Dial (115cm)	1	
E11	QJS1922TN	Socket, 3P	ROLL	
E12	QJP1921TN	Socket, 6P	1	
E13	QJP1922TN	Plug, 3P	2	
E14	QJT1054	Plug, 6P	1	
E15	RMC171Y	Contact	19	
E16	RMC383Z	Shield Plate, IC	1	
E17	ESA3366	Shield Plate, IFT	1	
E18	QTH1139	Remote Switch	1	
E19	RBS166Z	Heat Sink	1	
E20	QTF1054	Knob, Lever	1	
E21	XBAQ100027	Holder, Fuse	1	
E22	RUV482Z	Fuse, 250V, 1A	3	
E23	RUV387Z	Cover, AC Socket	2	
E24	QNQ1004	Cover, Voltage Select	1	
E25	RHM108Z	Nut	1	
E26	XTV3+12GR	Nut, Headphone	1	
E27	XTV3+10GR	Screw, + 3x12	10	
E28	XTV3+8G	Screw, + 3x10	7	
E29	XTW3+8G	Screw, + 3x8	2	
E30	XSN3+6S	Screw, + 3x8	8	
E31	XSN26+8	Screw, + 3x6	5	
E32	XWG26	Screw, + 2.6x8	1	S
E33	XTV3+10G	Washer	3	S
E34	XSN3+10S	Screw, + 3x10	4	S
E35	XWA3B	Screw, + 3x10	2	S
E36	XWG3	Washer	2	S
E37	XSS2+4	Screw, + 2x4	6	S
E38	XSN4+6S	Screw, + 4x6	2	S
Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
E39	XWA4B	Washer	2	S
E40	XWG4	Washer	2	S
E41	XSN26+4	Screw, + 2.6x4	2	S
K1	RYMX5020LSX8	CABINET PARTS	1	
K1-1	RYQX5020M	Front Cabinet Ass'y	1	
K1-2	RDS5023Z	Cassette Lid Ass'y	1	
K1-3	RMR94Z	Spring, Cassette Lid	1	
K1-4	RMD1099Z	Angle, Spring	1	
K1-5	QMF1943	Holder, Front Cabinet	1	
K1-6	XWG3	Plate, Front Cabinet Holding	2	
K1-7	XTV3+8G	Washer	1	S
K2	RYFX5020LSXG	Screw, + 3x8	4	
K2-1	QJB0116	Rear Cabinet Ass'y	1	
K2-2	QJB0016	Terminal, Battery +	2	
K2-3	QBN8009	Terminal (A), Battery -	1	
K2-4	RJB1010Z	Spring, Battery -	1	
K2-5	RKX192Z	Holder, Battery	1	
K2-6	RKX193Y	Arm, Handle	2	
K2-7	RKX165Z	Handle	1	
K2-8	RJT703Z	Retainer, Handle	2	
K2-9	XTV3+10G	Terminal, Telescopic Antenna	1	
K2-10	XTN3+8GFZ	Screw, + 3x10	1	
K3	RYNX5020M7	Screw, + 3x8	2	
K4	XEARR345CAN	Cover, Battery	1	
K5	RBN530Z	Telescopic Antenna	1	
K6	RBD113Y	Knob, Tuning	1	
K7	RBS170Z	Knob, Volume, Tone	3	
K8	XSN3+14BVS	Knob, Band	1	
K9	XTS3+10FFZ	Screw, + 3x14	1	S
K10	XTN3+45G	Screw, + 3x10	3	
		Screw, + 3x45	5	
A1	RJA20Z	ACCESSORIES	1	
A2	RQE13Z	Power Cord, AC	1	
		Voltage Caution Tag	1	
P1	RPK962Z	PACKING MATERIALS	1	
P2	RPN9342Z	Gift Box	1	
P3	XZB40X60A02	Pad Complete (L, R)	1	
		Poly Bag	1	
Y1	RQX6579Z	PRINTED MATERIAL	1	
		Instruction Book	1	