

Service Manual

Radio Cassette

RX-1210

(Black) (Silver) (Red)

Free service manuals
Radio Cassette Recorder
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This is the Service Manual for the following areas.

- Z** ...For all European areas except **E** **I**
G **Y**
- E** ...For United Kingdom.
- I** ...For Italy
- G** ...For F.R. Germany.
- Y** ...For Spain and Greece.

■ SPECIFICATION

Power Requirement: AC: **Z** **G** **I** **Y** ...220V, 50Hz
E 240V, 50Hz

Battery: 6V (four "D" Size Batteries)
(Panasonic UM-1 or Equivalent)

Power Consumption: 5W (AC only)

Power Output: 1.5W (RMS Max)

Frequency Range: 80~8,000Hz

Recording System: DC Bias, Maguet Erase

Tape Speed: 4.8cm/s (1 7/8 ips.)

Fast Forward And

Rewind Time: 120 Seconds With C-60
Cassette Tape

Track System: 2-Track 1-Channel
Playback and Monaural Recording

Speaker: 4" (10 cm) PM Dynamic Speaker (4 Ω)

Radio Frequency Range: FM: 87.5~108MHz
AM: 520~1610kHz (577~186m)

Intermediate Frequency: FM: 10.7MHz
AM: 455kHz (470kHz...**E** only)

Sensitivity: FM: 3.1μV For 50mW Output
(-3dB Limit Sens)
AM: 112μV/m For 50mW Output

Dimensions: 284mm(W)x175mm(H)x103mm(D)
(11 3/16" x 6 7/8" x 4 1/16")

Weight: 1.3kg(2lb 14oz) Without Battery

Design and specifications are subject to change without notice.

Panasonic

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

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LOCATION OF CONTROLS AND COMPONENTS

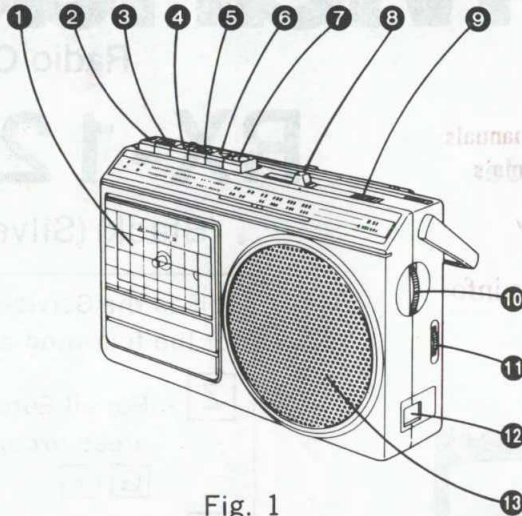


Fig. 1

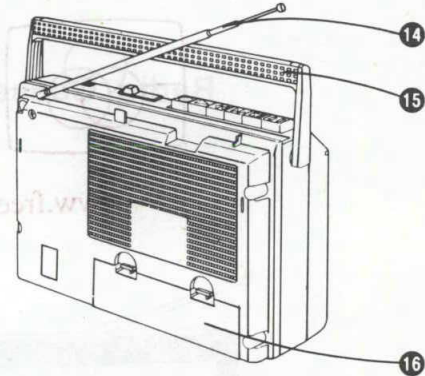


Fig. 2

- | | | | |
|---|----------------------------------|----|---------------------------|
| 1 | Cassette Compartment | 9 | Built-in Microphone (MIC) |
| 2 | Pause Button (PAUSE) | 10 | Tuning Control (TUNING) |
| 3 | Stop/Eject Button (■ STOP/EJECT) | 11 | Volume Control (VOLUME) |
| 4 | Fast Forward Button (◀◀ FF) | 12 | AC Socket (AC IN ~) |
| 5 | Rewind Button (▶▶ REW) | 13 | Speaker 10cm 4Ω |
| 6 | Playback Button (◀ PLAY) | 14 | Telescopic Antenna |
| 7 | Record Button (● RECORD) | 15 | Handle |
| 8 | Function Selector | 16 | Battery Compartment |

DISASSEMBLY INSTRUCTIONS

Notes:

1. Set the variable capacitor to minimum position.
2. Turn the tuning knob clockwise to end scale position.
3. Before inserting radio PWB into front cabinet, it must be assured that the shaft of Variable capacitor inserts into the cavity of tuning knob completely.

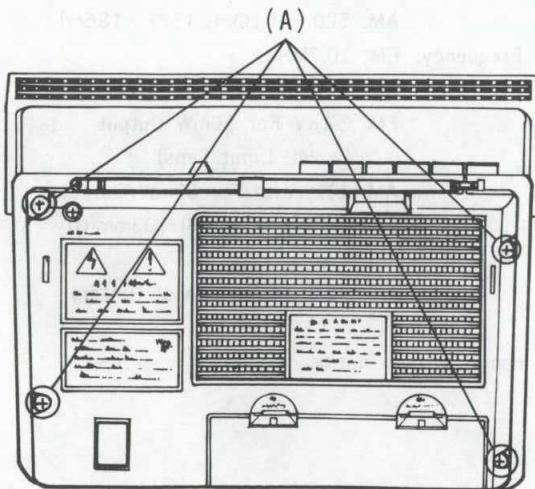


Fig. 3

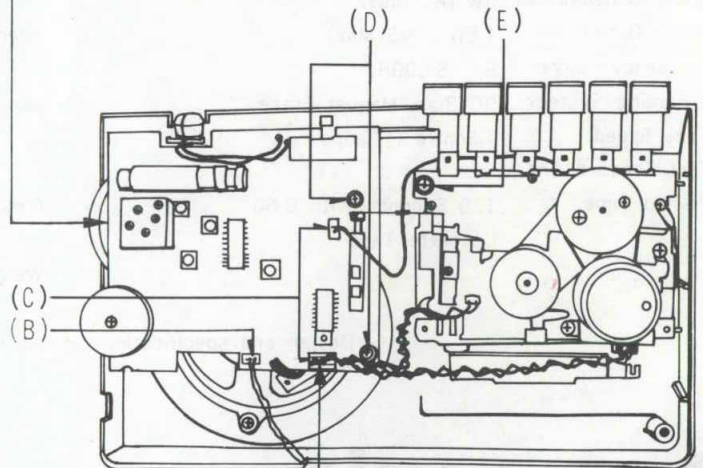


Fig. 4

PUSH TO RELEASE

Service Manual

Radio Cassette

RX-1210

(Black) (Silver) (Red)

Supplement - 1

Radio Cassette Recorder

- Please use this manual together with the service manual for model No RX-1210[Z]/[E]/[I]/[G]/[Y] order No TD86070196C2.
- This service manual indicates the main differences between; Original RX-1210[Z]/[E]/[I]/[G]/[Y] and RX-1210[Z]/[E]/[I]/[G]/[Y] (Supplement-1).

Please note that the following part number was omitted in the RX-1210 service manual.

This is the Service Manual for the following areas.

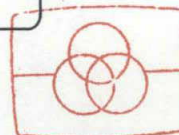
- Z** ...For all European areas except **E** **I** **G** **Y**.
- E** ...For United Kingdom.
- I** ...For Italy.
- G** ...For F.R. Germany.
- Y** ...For Spain and Greece.

■ PARTS COMPARISON TABLE:

Note:

- (T) mark stands for that the parts are supplied in TAMACO.
 (BK).....Black
 (SL).....Silver
 (RD).....Red
 (BK.M)....Black of metal

Ref. No.	Description	Part Number		Remarks
		RX-1210 (Original)	RX-1210 (Supplement-1)	
K1	Front Cabinet Ass'y (RD)	RYMX1210ZKT91	RYMX1210ZT91	(T)
K1 [ZEA]	Front Cabinet Ass'y (BK.M)	RYMX1210ZEA92	RYMX1210ZT92	(T)
K3	Rear Cabinet Ass'y (SL)	RYFX1210ZKT91	RYFX1210ZT91	(T)
K5	Handle (BK)	RKH106Z/2	RKH106Z	(T)
K5	Handle (RD)	RKH106Z/2	RKH106Z2	(T)
K8	Band Knob (SL)	RBD214TZ0/1	RBD214TZ	(T)
K8	Band Knob (BK, RD)	RBD214TZ0/1	RBD214TZ1	(T)



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Matsushita Electric Trading Co., Ltd.

P.O. Box 288, Central Osaka Japan

TD [Z][E][I][G][Y] T.Y

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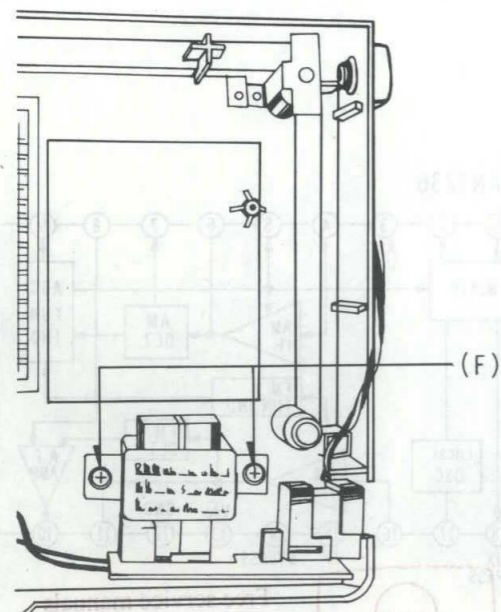


Fig. 5

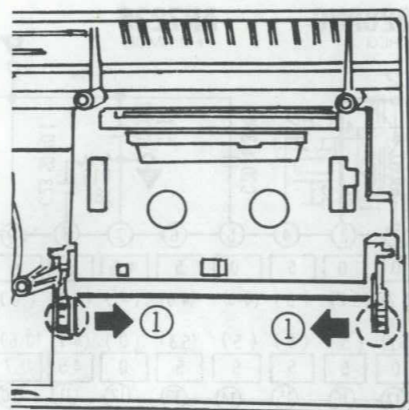


Fig. 6

Ref. No.	Shown in Fig.—	To remove—	Remove
1	3	Rear Cabined	Screw(3×35)mm(A)×4 Socket.....(B)×1
2		P. W. B. Mechanism	Socket.....(C)×2
3	4		Screw(3×12)mm(D)×2
4			Screw(3×14)mm(E)×1
5	5	Power Transformer	Screw(3×12)mm(F)×2
6	6	Cassette Panel	To remove Cassette Panel, Push the rib in the direction of arrow①

■ ALIGNMENT POINTS

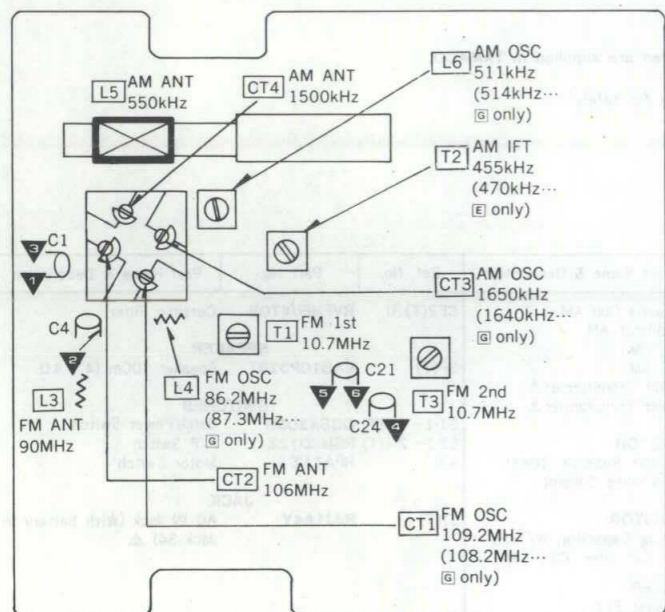


Fig. 7

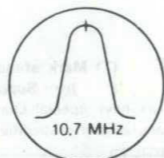


Fig. 8

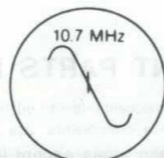


Fig. 9

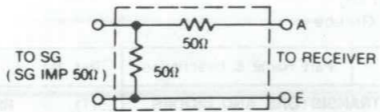


Fig. 10 FM Dummy Antenna

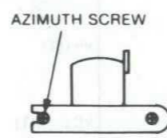


Fig. 11

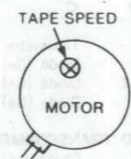


Fig. 12

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT					
Note: 1. Set volume control to maximum. 2. Set band selector switch to AM or FM. 3. Set power source voltage to 6 volts DC.			4. Output of signal generator should be no higher than necessary to obtain an output reading.		
SWEEP GENERATOR or SIGNAL GENERATOR		RADIO DIAL SETTING [DISTANCE]	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
CONNECTIONS	FREQUENCY				
AM IF & RF ALIGNMENT					
(1)	Fashion loop of several turns of wire and radiate signal. into loop of receiver.	455kHz (470kHz... [E] only) 30% with 400Hz	Point of non-interference. (on/about 600 kHz).	Output meter across speaker voice coil.	T2 (AM IFT) Adjust for maximum output.
(2)	"	511kHz (514kHz... [G] only)	Tuning capacitor fully closed.	"	L6 (AM OSC Coil) Adjust for maximum Output.
(3)	"	1650kHz (1640kHz... [G] only)	Tuning capacitor fully open	"	CT3 (AM OSC Trimmer)
(4)	"	550 kHz	Tune to signal	"	(*1) L5 (AM ANT Coil) Adjust L5 by moving coil bobbin along ferrite core.
(5)	"	1500kHz	Tune to signal	"	CT4 (AM ANT Trimmer) Adjust for maximum output. Repeat steps (2)–(5)
(*1) Cement antenna bobbin with wax after completing alignment.					
FM-IF ALIGNMENT					
(6)	High side thru. 0.001μF to point [E] and common to [F]	10.7 MHz (400 kHz SWP.)	Point of non-interference. (on/about 90 MHz)	Connect vert. amp. of scope to point [E] Negative side to test point [F]	T1 (FM 1st IFT) Adjust for maximum amplitude and proper linearity between ±100 kHz markers. (Refer to fig. 8.)
(7)	"	"	"	"	T3 (FM 2nd IFT) Adjust T3 so that 10.7 MHz marker appears at the center. (Refer to fig. 9.)
FM-RF ALIGNMENT					
(8)	Connect to point [A] through FM dummy antenna. Common to [B]. (Refer to fig. 10)	86.2MHz (87.3MHz... [G] only)	Tuning capacitor fully closed.	Output meter across speaker voice coil.	L4 (FM OSC Coil) (*2) Adjust for maximum output.
(9)	"	109.2MHz (108.2MHz... [G] only)	Tuning capacitor fully open	"	CT1 (FM OSC Trimmer)
(10)	"	90MHz	Tune to signal.	"	L3 (FM ANT jump line) (*2) Adjust for maximum output.
(11)	"	106 MHz	Tune to signal	"	CT2 (FM ANT Trimmer) Repeat steps (8)–(11).
(*2) Proper tuning is the center frequency.					

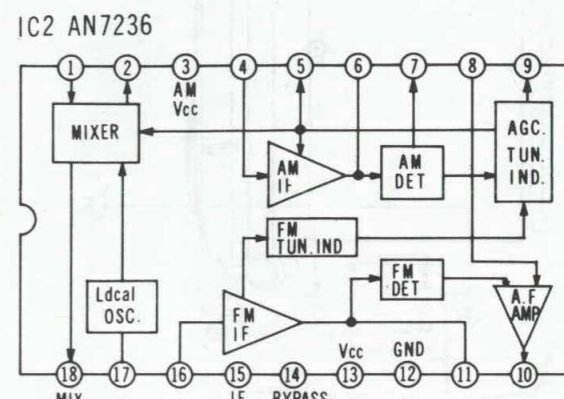
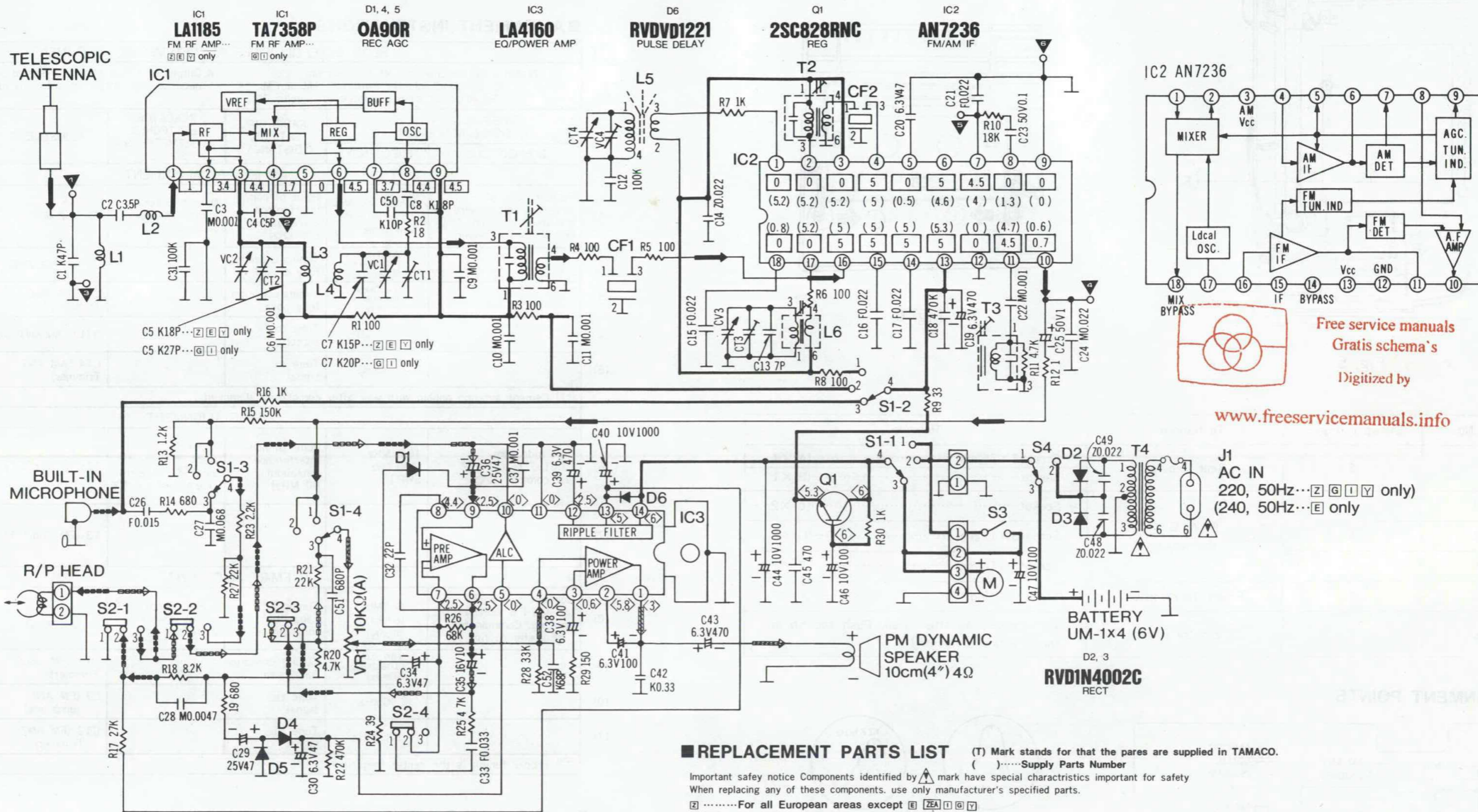
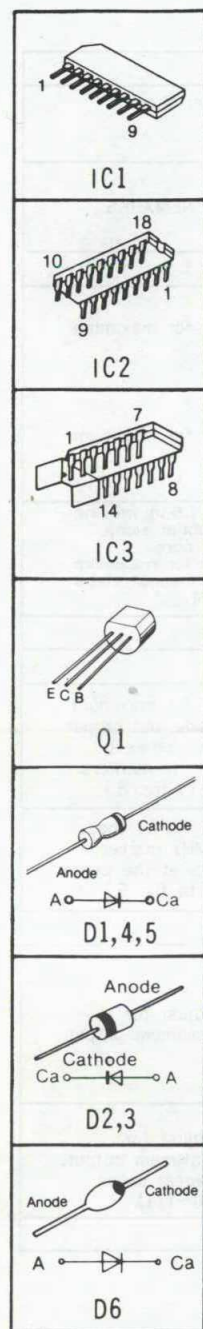
■ AUDIO ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Azimuth	QZZCAA (6.3kHz, -10dB)	—	Maximum output.	Azimuth screw (Refer to fig. 11.)	Playback mode

■ TAPE SPEED ADJUSTMENT

ADJUSTMENT	
1. Playback test tape (QZZCWAT, 3kHz).	
2. Adjust VR until 3000Hz ± 90Hz is read on the counter. (Refer to fig.12)	

SCHEMATIC DIAGRAM MODEL RX-1210



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- Notes**
- S1-1~S1-4: Band/Power switch in "Tape" position (1.....AM, 2.....FM, 3.....Tape)
 - S2-1~S2-4: Playback/Rec Selector switch in "Play" position (1.....Playback, 3.....Record)
 - S3: Motor ON/OFF switch in "OFF" position
 - S4: AC/Battery switch in "Battery" position (2.....AC, 3.....DC)
 - DC voltage measurement are taken with electronics Voltmeter Based on negative terminal of battery.
- + (B) Voltage Line.
 Playback Signal
 Record Signal
 Playback and Radio Signal
 FM Signal
 ...FM position, ()...AM position, < >...Tape position.

- Battery current No signal (Radio).....20mA
Maximum output (Radio).....275mA
(Tapeplay).....350mA
- VR1.....Volume Control,
- The mark (▼) Shows test point e.g. ▼1 : Test point 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

REPLACEMENT PARTS LIST

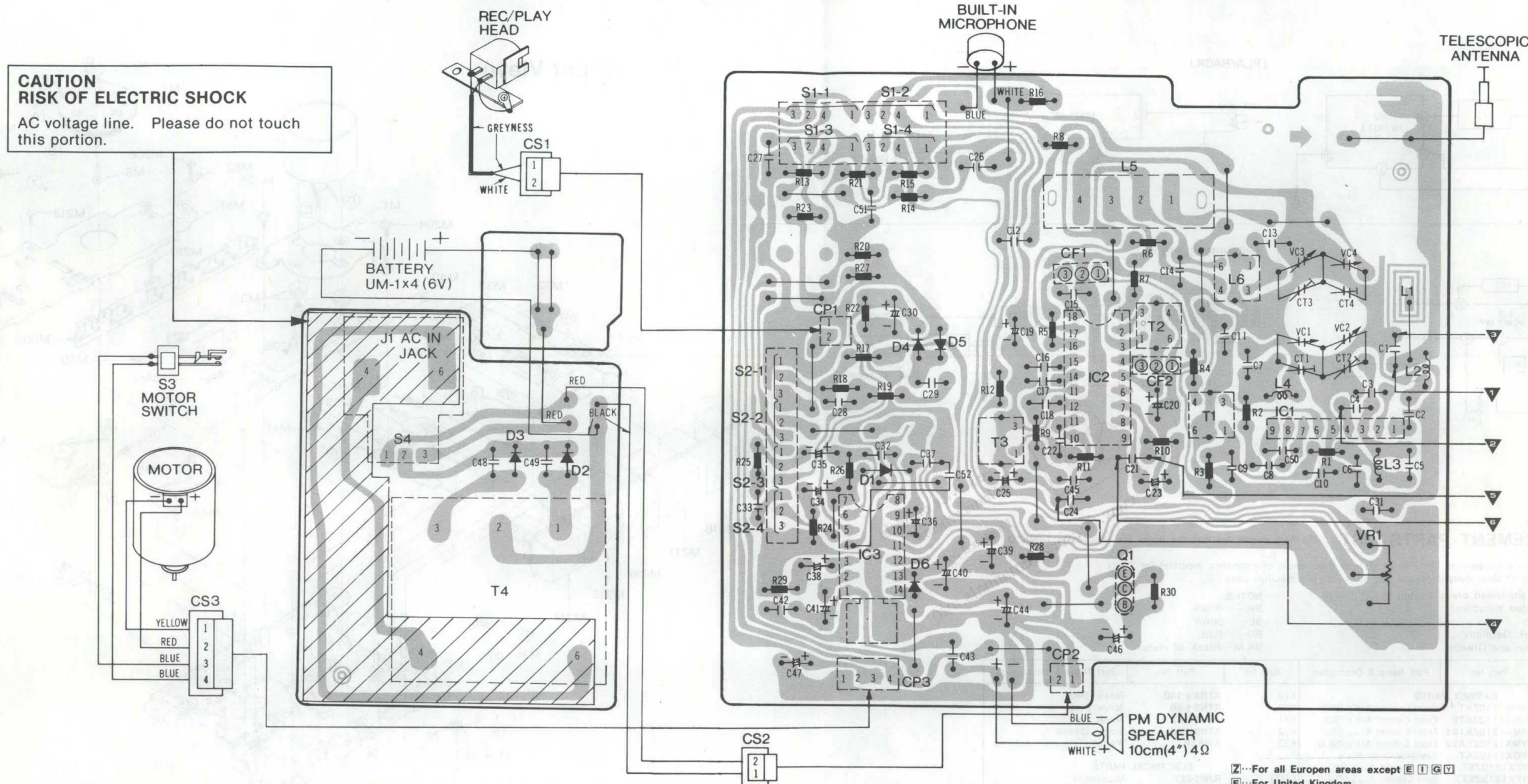
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Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUIT, TRANSISTORS AND DIODES			L5(T)	RLF2C63	Antenna Coil AM	CF2(T)	RVFSFU470B	Ceramic Filter
IC1(T)	RVILA1185 (LA1185)	IC	L6(T)	RLO2B87-M	Oscillator AM	SPEAKER		
IC1	RVITA7358P (TA7358P)	IC	T1.3(T)	RLI4B153	IFT, FM	SP(T)	EAS10P328T	Speaker 10Cm (4") 4 Ω
IC2	AN7236	IC	T2(T)	RLI2B215	IFT, AM	SWITCHES		
IC3	RVILA4160 (LA4160)	IC	T4(T)	RLT5I2AIB	Power Transformer ▲	S1-1~1-4(T)	QSS4303H	Band/Power Switch
Q1	2SC828R	Transistor (Si)	T4(T)	RLI5I2G2B	Power Transformer ▲	S2-1~2-4(T)	RSH2D12Z	R/P Switch
D1,4,5	2OA90	Diode (Ge)	VARIABLE RESISTOR			S3	RFAT71Z	Motor Switch
D2,3(T)	RVD1N4002	Diode (Ge)	VR1(T)	RVV1C5A14	Variable Resistor, 10K Ω (A) Volume Control	JACK		
D6	VD1221	Diode (Ge)	VARIABLE CAPACITOR			J1(T)	RJJ1A4Y	AC IN Jack (With Battery in Jack S4) ▲
COILS AND TRANSFORMERS			VC1~4(T)	RCV4LC2V1K	Tuning Capacitor, W/Trimmer Capacitor (CT1~4)			
L2	RLQY75S5	Choke Coil	CERAMIC FILTER					
L3	RLD4Y44	Antenna Coil FM	CF1(T)	RVFSFE107MAZ	Ceramic Filter			
L4(T)	RLO4Y19	Oscillator FM	CF2(T)	RVFSFU455B	Ceramic Filter			
L4(T)	RLO4N221	Oscillator FM						

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM MODEL RX-1210



ELECTRICAL PARTS LIST

Numbering System of Resistor

Example	ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (100 Ω)	
ERX	2	AN	J	2R2	
Type	Wattage	Shape	Tolerance	Value (2.2 Ω)	

Numbering System of Capacitor

Example	ECKD	1H	102	Z	F
Type	Voltage	Value (1000 pF)	Tolerance	Peculiarity	
ECEA	50	M	R47		
Type	Voltage	Peculiarity	Value (0.47 μF)		

Resistor Type	Wattage	Tolerance
ERD: Carbon	10: 1/8 W	±5%
ERG: Metal Film	12: 1/2 W	
ERX: Metal Film	25: 1/4 W	
ERQ: Fuse Type Metal	1: 1 W	
RRD: Carbon (Chip Type)	18: 1/8 W	

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA: Electrolytic	0J : 6.3 V	2H : 500 V DC	C : ±0.25pF
ECCD: Ceramic	1A : 10 V	1 : 100 V	J : ±5%
ECKD: Ceramic	1C : 16 V	DKC : 400 V AC	K : ±10%
ECQM: Polyester	1E : 25 V		Z : +80%
	1H : 50 V		-20%
ECQP: Polypropylene	1V : 35 V		P : +100%
	50 : 50 V		-0%
ECET: Electrolytic	25 : 25 V		
ECEA□□□N: Non Polar Electrolytic	16 : 16 V		
QCU□: Ceramic (Chip Type)			
ECUX: Ceramic (Chip Type)			

REPLACEMENT PARTS LIST

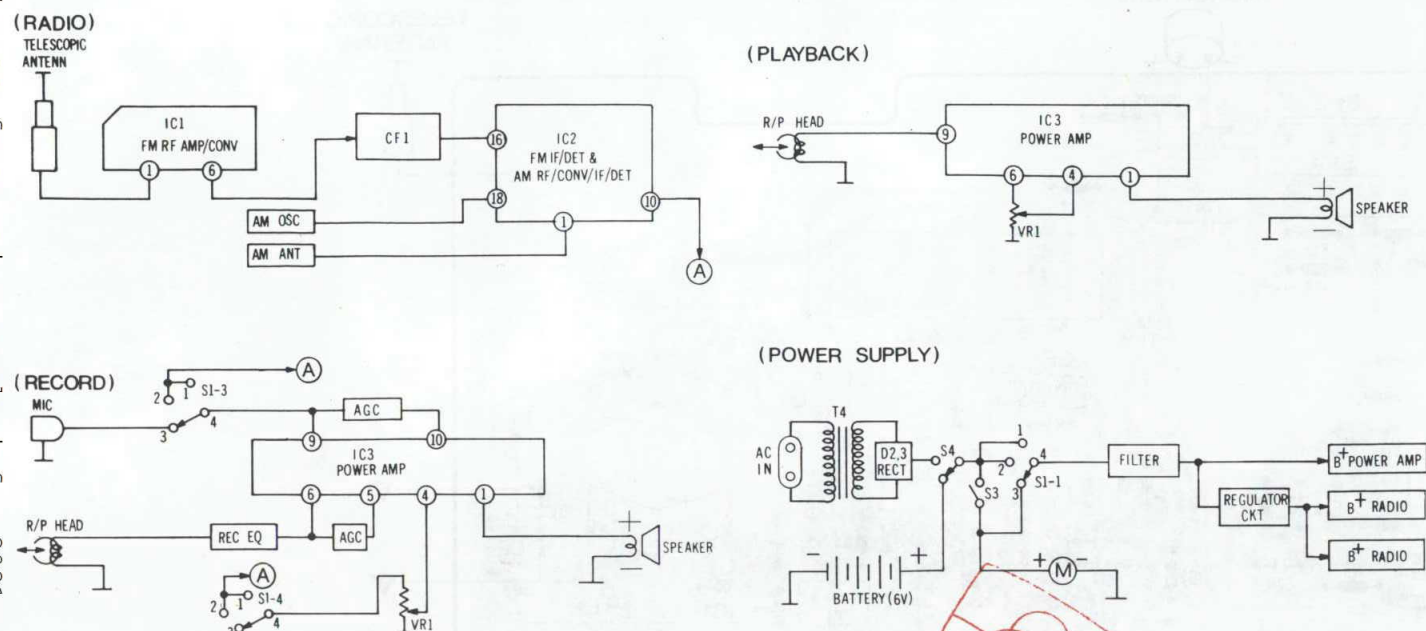
Ref. No.	Part No.
RESISTORS	
R1,3,4,5,6,8	ERDS2TJ101
R2	ERDS2TJ180
R7,16,30	ERDS2TJ102
R9	ERDS2TJ330
R10	ERDS2TJ183
R11	ERDS2TJ472
R12	ERDS2TJ100
R13	ERDS2TJ122
R14,19	ERDS2TJ681
R15	ERDS2TJ154
R17	ERDS2TJ273
R18	ERDS2TJ822
R20,25	ERDS2TJ472
R22	ERDS2TJ474
R23	ERDS2TJ222
R24	ERDS2TJ390
R26	ERDS2TJ683
R21,27	ERDS2TJ223
R28	ERDS2TJ333
R29	ERDS2TJ151

Ref. No.	Part No.
CAPACITORS	
C1	ECCD1H470KC
C2	ECCD1H3R5CC
C3,6,9,10	ECCD1H102MD
.11,22,37	
C4	ECCD1H050C
C5	ECCD1H180KC
C6	ECCD1H270KC
C7	ECCD1H150KC
C8	ECCD1H200KC
C7	ECCD1H180KC
C12,31	ECCD1H101KB
C13	ECCD1H070DC
C14,48,49	ECCD1H223ZF
C15,16,19	ECFVD223MD
.21,24	
C18,45	ECKD1H471KB
C19,39,43	ECEA0JS471
C20,30,34	ECEA0JS470
C23	ECEA50ZR1
C25	ECEA50Z1
C26	ECFVD153MD
C27	ECFVD683MD

Ref. No.	Part No.
C28	ECKD1H472MD
C29,36	ECEA1ES4R7
C32	ECCD1H220KC
C33	ECFVD333MD
C35	ECEA1CS100
C38,41	ECEA0JS101
C40,44	ECEA1AS102
C42	ECQG1H334KZ
C46	ECEA1AS101
C47	ECEA1AS471
C50	ECCD1H100KC
C51	ECCD1H681KC
C52	ECCD1H680KC

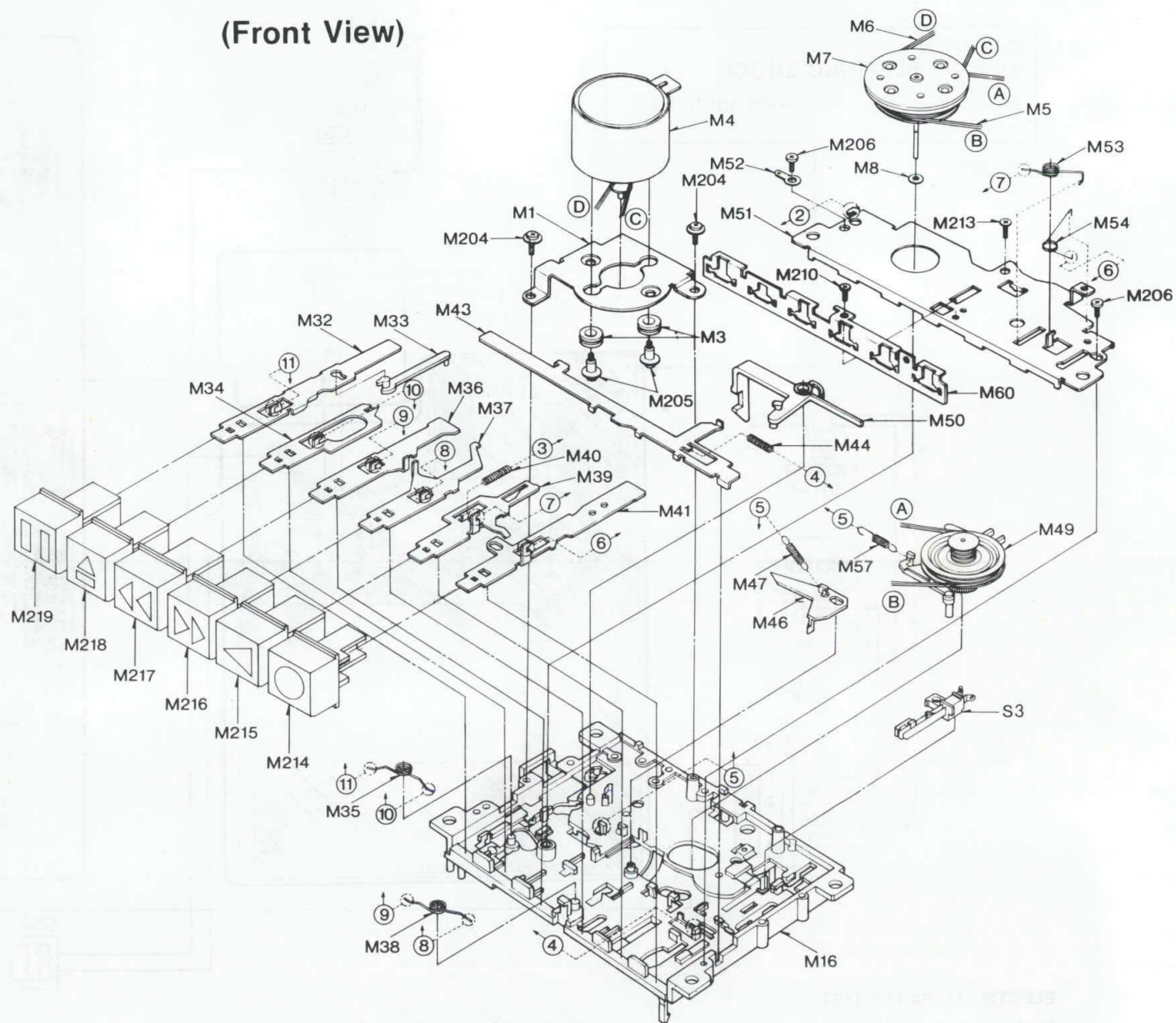
For all European areas except I G V
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BLOCK DIAGRAM



MECHANISM PARTS LOCATION

(Front View)



REPLACEMENT PARTS LIST

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- NOTES:
- BK.....Black
 - SL.....Silver
 - RD.....Red
 - BK.M.....Black of metal

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
CABINET PARTS					
K1(T)	RYMX1210ZKT	Front Cabinet Ass'y (BK)	K19	XTN3+14B	Screw, Deck
K1(T)	RYMX1210ZKT8	Front Cabinet Ass'y (SL)	K20	XTN3+6B	Screw, Deck
K1(T)	RYMX1210ZKT91	Front Cabinet Ass'y (RD)	K21	XTN2+4B	Screw, Deck
K1(T)	RYMX1210ZEA92	Front Cabinet Ass'y (BK.M)	K22	XTN3+8B	Screw, Speaker
K2(T)	RYQX1210ZKT	Cassette Cover Ass'y	K23	XWA3B	Washer, Telescopic Antenna
K3(T)	RYFX1210ZKT	Rear Cabinet Ass'y (BK)	ELECTRICAL PARTS		
K3(T)	RYFX1210ZKT2	Rear Cabinet Ass'y (RD)	E1(T)	RJM142Y	Microphone
K3(T)	RYFX1210ZKT91	Rear Cabinet Ass'y (SL)	E2(T)	RJP2G1TZ	Plug 2P
K3(T)	RKF230TZ	Rear Cabinet (BK.M)	E3	RJS4T1Z	Socket Case 4P
K4(T)	RKK261Z	Battery Cover (BK)	E4(T)	QEF045TZ	R/P Head Wire Ass'y
K4(T)	RKK261Z2	Battery Cover (RD)	E5(T)	QEF055TZ	Power Wire Ass'y
K4(T)	RKK261Z91	Battery Cover (SL)	E6	XTN3+12B	Screw
K5(T)	RKH106Z/2	Handle (BK/RD)	E7	XWG3	Washer (Service Parts Only)
K5(T)	RKH106Z91	Handle (SL)	E8(T)	RUP264TZ-B	P.C.B. Battery
K6(T)	RBT225TZ	Tuning Knob	E9(T)	RUP253TZ	Power P.C.B (Without Electrical Parts)
K7(T)	RBT226TZ	Volume Knob	ACCESSORIES		
K8(T)	RBD214TZ0/1	Band Knob (SL/BK, RD)	A1(T)	RJA20Z	AC Cord Δ
K8(T)	RBD214TZ1	Band Knob (BK.M)	A1(T)	RJA86Z	AC Cord Δ
K9(T)	RMD004TZ	R/P Angle	PACKING MATERIALS		
K10(T)	RUS202TZ	Spring R/P Lever	P1(T)	RPK316TZ	Gift Box
K11(T)	RJT224TZ	Terminal Telescopic ANT	P2(T)	RPP295TZ	Polyethylene Cover
K12(T)	RUS221TZ	Cassette Cover Spring	P3(T)	RPNA1022TZ	Pad
K13(T)	RJC244TZ	Battery Terminal + & -	PRINTED MATERY		
K14(T)	RJC245TZ	Battery Terminal -	Y1(T)	ROX489TZ	Instruction Book
K15(T)	RHG574Z	MIC Gum			
K16(T)	XEARK180EC	Telescopic Antenna			
K17	XTB3+35BFN	Screw, Rear Cabinet			
K18	XSB3+8BN	Screw, Telescopic Antenna			

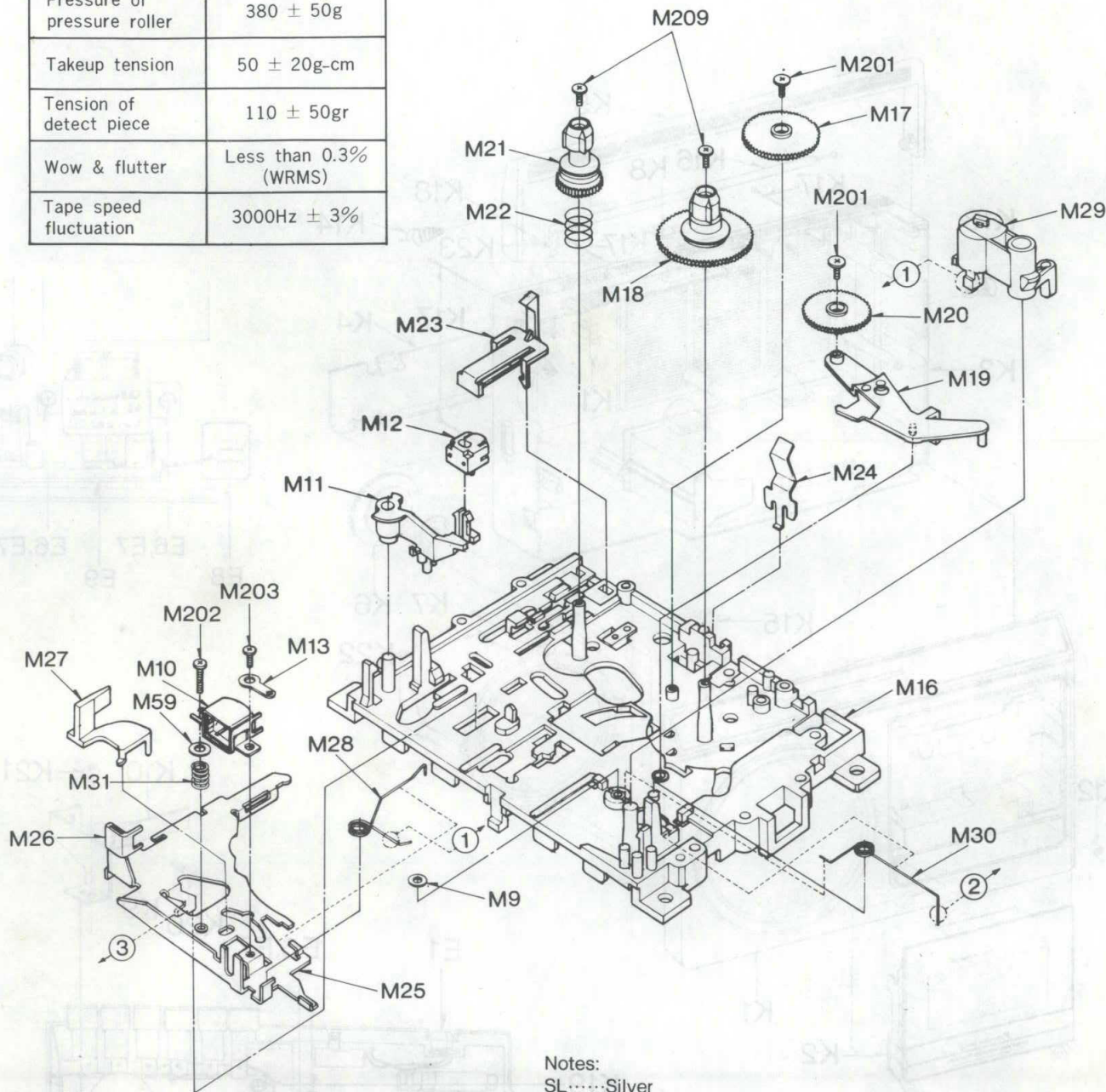
REPLACEMENT PARTS PIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
MECHANICAL PARTS					
M1	RFD270Z	Motor Plate	M20	RFG93Z	Idler Gear
M3	RFI43Z	Rubber Cushion	M21	RfJ61Z	Supply Reel
M4(T)	RFM86Z	Motor Ass'y	M22	RFS631Z	Spring
M5	RFB72Z	Belt	M23	RFY692Z	Inter Lock Arm
M6	RFB73Z	Belt Flywheel	M24	RFS632Z	Cassette Spring
M7	RFF43Z	Flywheel Ass'y	M25	RFU90Z	Head Base
M8	RFN114Z	Flywheel Washer	M26	RFE294Z	Tape Guide
M9	RFN168Z	Washer	M27	RFE295Z	Tape Sensor
M10(T)	RJH0C03YY	R/P Head	M28	RFS633Z	Pinch Arm Spring
M11	RFY691Z	Erase Head Arm	M29	RFR39Z	Pinch Arm Ass'y
M12	RJH2C15XZ	Erase Head	M30	RFS634Z	Earth Spring
M13	RFE293Z	Lug Plate	M31	RFS635Z	Azimuth C. Spring
M16	RFU89Z	Chassis	M32	RFY693Z	Pause Lever
M17	RFG92Z	F. F. Gear	M33	RFY694Z	Pause Arm
M18	RFJ60Z	Take up reel Ass'y	M34	RFY695Z	Stop Eject Lever
M19	RFY702Z	Idler Arm	M35	RFS636Z	Spring
			M36	RFY696Z	FF Lever

Rear View

SPECIFICATION

Pressure of pressure roller	380 ± 50g
Takeup tension	50 ± 20g-cm
Tension of detect piece	110 ± 50gr
Wow & flutter	Less than 0.3% (WRMS)
Tape speed fluctuation	3000Hz ± 3%



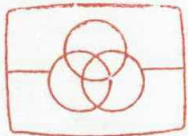
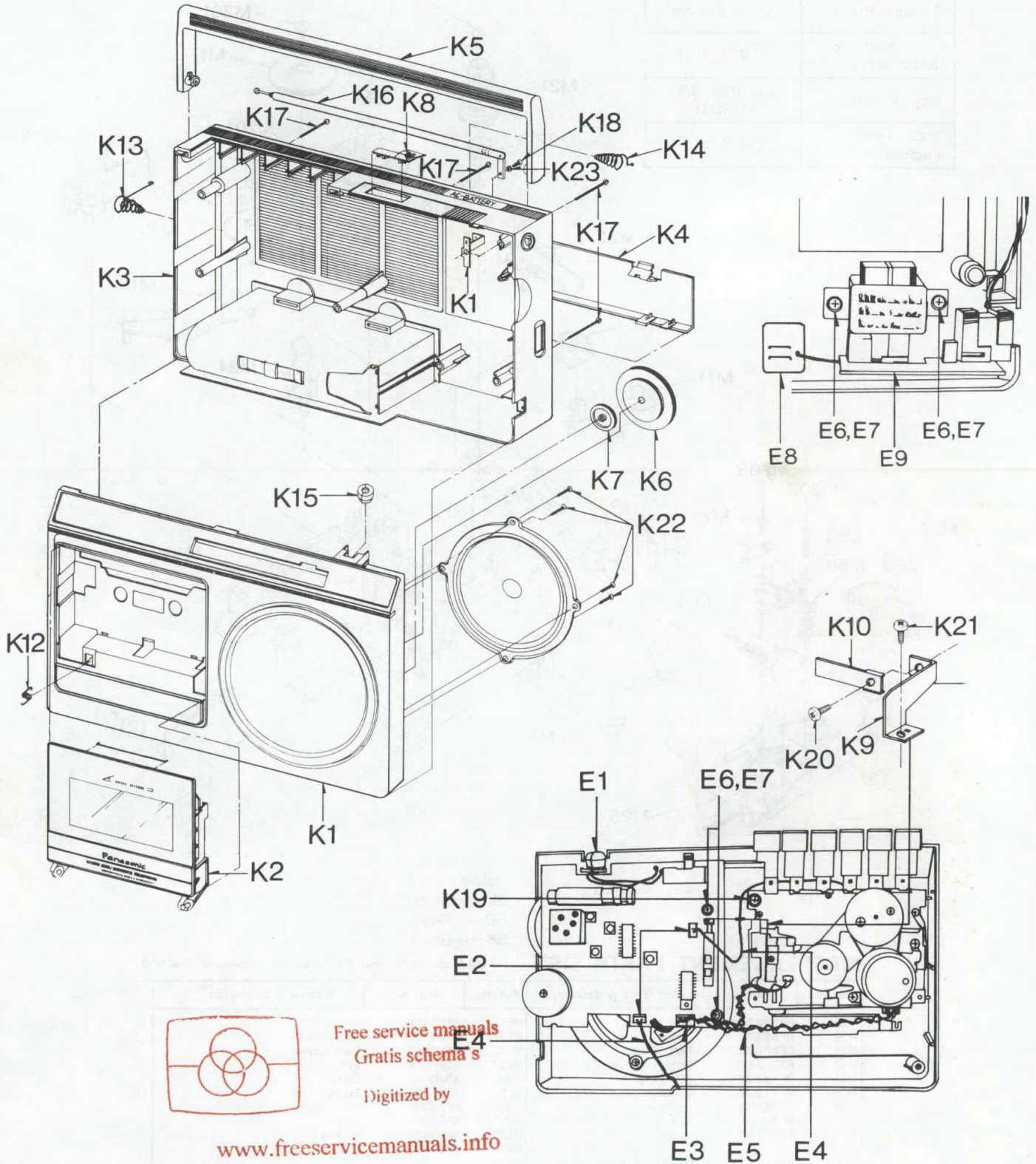
Notes:
 SL.....Silver
 RD.....Red
 BK.....Black

REPLACEMENT PARTS LIST

(T) Mark stands for that the pears are supplied in TAMACO.

Ref. No.	Part No.	Part Name & Dascription	Ref. No.	Part No.	Part Name & Description
M37	RFY697Z	REW Lever	M59	RFE310Z	Spacer C
M38	RFS637Z	Spring	M60	RFD271Z	Lever Holder
M39	RFY698Z	Play Lever	M201	RFE304Z	Bush, Screw
M40	RFS638Z	Spring	M202	XSN2+B	Screw
M41	RFY699Z	REC Lever	M203	XSN2+3	Screw
M43	RFY700Z	Function Lever	M204	XTW26+B	Screw
M44	RFS639Z	Spring	M205	RFE305Z	Motor Screw
M46	RFY701Z	Arm	M206	RFE306Z	Screw
M47	RFS619Z	Spring	M209	RFE307Z	Bush B
M49	RFQ48Z	RF Pully Arm Ass'y	M210	RFE309Z	Screw
M50	RFY703Z	Eject Arm	M213	RFE308Z	Bush C
M51	RFU91Z	Plate	M214(T)	RBC237TZ/1	Button REC (SL/RD, BK)
M52	RFE296Z	Earth Lug	M215(T)	RBC238TZ/1	Button Play (SL/RD, BK)
M53	RFS640Z	Spring	M216(T)	RBC239TZ/1	Button REW (SL/RD, BK)
M54	RFS626Z	Spring	M217(T)	RBC240TZ/1	Button FF (SL/RD, BK)
M57	RFS627Z	Spring	M218(T)	RBC241TZ/1	Button Stop/Eject (SL/RD, BK)
			M219(T)	RBC242TZ/1	Button Pause (SL/RD, BK)

CABINET AND ELECTRICAL PARTS LOCATION



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