# Service Manua

Radio Cassette

RX-FM15L Stereo Radio Cassette Recorder

> (Black) (Silver) (Red) (Yellow) (White)

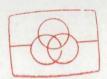
This is the Service Manual for the following areas.

... For all European areas except E F.

· For United Kingdom.

For France.





Free service manuals Gratis schema's

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#### **Color Variation**

Z	E	F
Black	Black	Black
Silver	Silver	Silver
Red	Red	Red
White	White	White
Yellow		Yellow

#### **RX-FM25 MECHANISM SERIES**

#### ■ SPECIFICATIONS

#### General:

Power Requirement:

AC; 🗷 F ......220 V, 50 Hz E.....240 V, 50 Hz

Battery; 9V (Six "D" Size Flashlight

Batteries)

(Panasonic UM-1 or equivalent)

Power Consumption:

16W (AC only)

**Power Output:** 

7W (3.5W×2)...MPO

7W (3.5W×2)...RMS (max.)

Speaker:

10cm PM Dynamic Speaker (3Ω)

Output:

Headphones; 32Ω, φ3.5

Dimensions:

435 mm(W) × 135 mm(H) × 118 mm(D)

Weight:

2kg without batteries

Radio Section:

Radio Frequency Range: FM; 87.5~108MHz

LW: 148.5~285 kHz (2020~1052 m) MW; 520~1610kHz (577~186m)

SW; 5.9~18MHz (50.8~16.7 m)

Intermediate Frequency: FM; 10.7 MHz

Z F ... AM (LW/MW/SW); 455 kHz

E ..... AM (LW/MW/SW); 470 kHz

FM; 4µV/50mW output

(-3dB Limit Sens)

LW; 126µV/m/50mW output

MW; 100µV/m/50mW output

SW: 5µV/50mW output

#### Tape Deck Section:

Frequency Response: Recording System:

Tape Speed:

Track System:

80~8,000 Hz (with normal tape)

AC bias, Magnet erase

4.8 cm/s

4-track 2 channel stereo recording

and playback

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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When the tape is caught in the pinch roller, etc. release the tape by tuning the pulley on the motor with the screwdriver in the direction of the arrow.

- Volume Control (VOLUME)
- **②** Tone Control (TONE)
- **6** Function Selector (SELECTOR)
- Pause Button ( | PAUSE)
- **⑤** Stop/Eject Button ( □△ STOP/EJECT)
- ⑤ Fast Forward Button ( ≪ FF)
- Rewind Button ( >> REWIND)
- 3 Playback Button ( < PLAY)
- Record Button ( RECORD )
- (D) AM Band Selector (AM BAND)
- FM Mode Selector/Beat Proof Switch (FM MODE/B.P)
- 1 Tuning Control (TUNING)
- Fine Tuning Control (FINE TUNING)
- Built-in Speakers 10 cm (3Ω)
- (B) Cassette Compartment
- (FM Stereo Indicator (FM STEREO)
- Built-in Microphone (MIC)
- 1 Telescopic Antenna
- (1) Handle
- Φ Headphones Jack (PHONES) 32Ω, φ3.5
- ⊕ AC Socket (AC IN ~)
- Battery Compartment

### **DISASSEMBLY INSTRUCTIONS**

Ref No.	Shown in Fig. —.	To remove —.	Remove —.					
1			Remove the battery cover.					
2	ritiwi sH000,8 -08	Tapa Book Sention:	Screw (3×35)mm(A)×7					
3	AC blost Magnet érase - 4.8 m/s - 4 kack 2 onognet sere	Front Cabinet Ass'y	Knob(B)×					
4			Push the stop/eject button.					
5	stoertyalg bris	Manharlandia	Screw (3×12) mm(C)×2					
6	2	Mechanism Unit	Pull out the 3 pin socket (CP2)(D)×1					
7	2	Speakers	Screw (3×12) mm(E)×4					
8	3	Main Circuit Board	Screw (3×12)mm(F)×9					
9	4	0	Remove the spring direction of arrow 1.					
10	ta Electric Trad	Cassette Compartment	Remove the rib direction of arrow ②.					

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S...Black, S...Silver, S...Red, Y...Yellow, W...White.

4. • mark stands for that the parts are supplied in MESA.

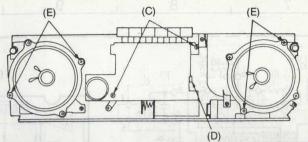
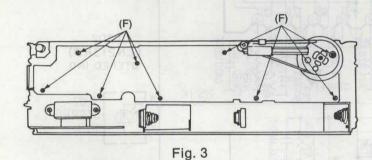
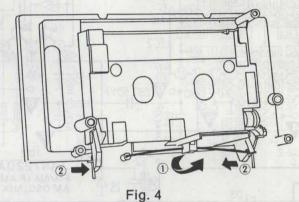


Fig. 2

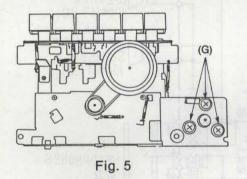
SOL SAND AND ALEGAN BOTTON (SOL



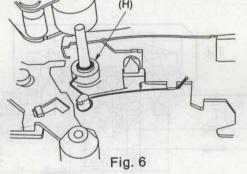


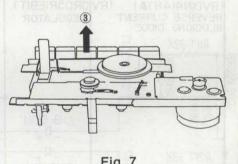
■ HOW TO FIX THE MOTOR

■ HOW TO FIX THE FLYWHEEL ASS'Y



• Remove the 3 screws (G).

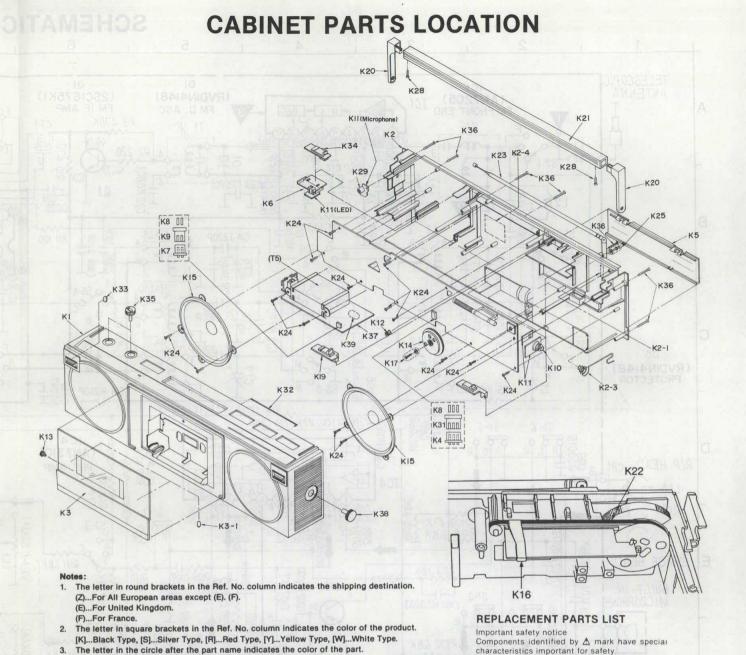




(1) Remove the washer (H).

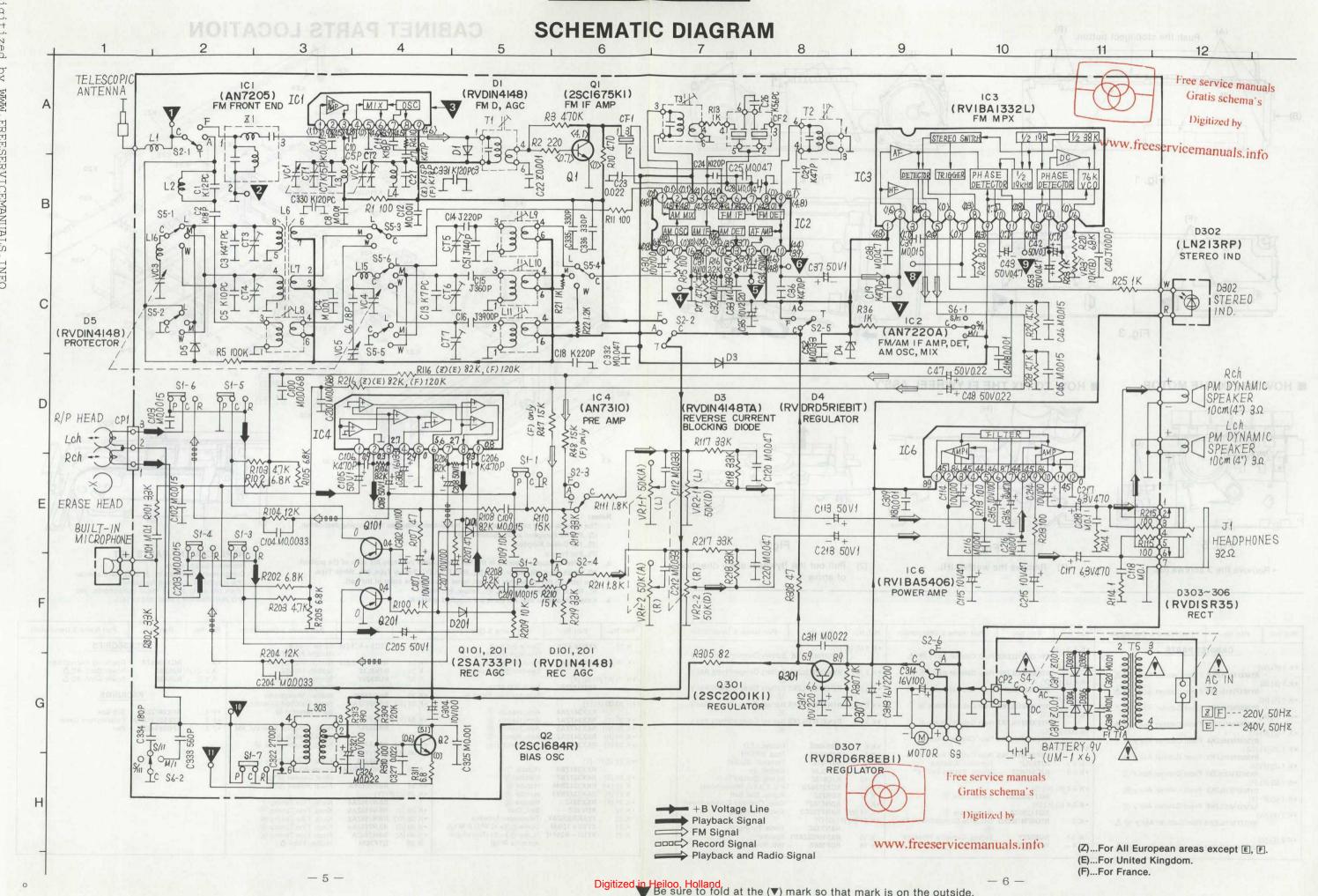
(2) Pull out the flywheel ass'y direction of arrow 3.

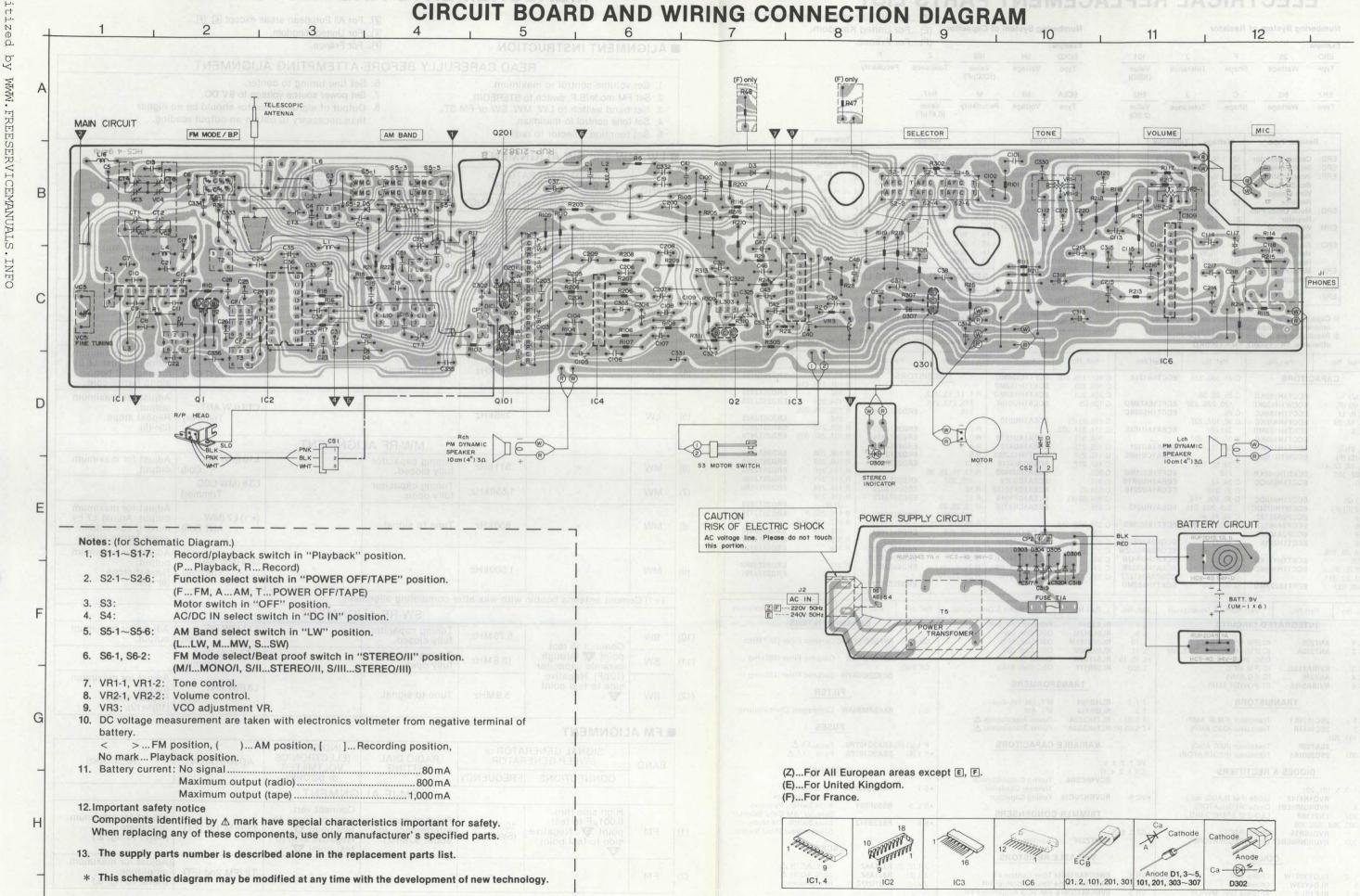
Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
	CABIN	ET PARTS_	• K 2 (E) [	RYFXFM15LEK2	P. Rear Cabinet Ass'y ® ▲	• K 5 (Z) (F)		Battery Compartment Ass'y
K 1 (E) [W	RYMXFM15LEK8	Front Cabinet Ass'y ( 🖟 🛆	• K 2 (E) [	RYFXFM15LZEK	Rear Cabinet Ass'y (€)'∆	• K 5 [W]	RYNXFM15LZ10	Battery Compartment Ass'y
K 1 (E) [S	RYMXFM15LE91	Front Cabinet Ass'y (\$\int \Delta\$	• K 2 (Z) (	RYFXFM15LZK4	Rear Cabinet Ass'y 🕥	•K 5 [S]	RYNXFM15LZK5	Battery Compartment Ass'y
K 1 (E) [K	RYMXFM15LEK2	Front Cabinet Ass'y R 🛆	• K 2 (Z) (	RYFXFM15LZK8	Rear Cabinet Ass'y (W)	•K 5 [R]		Battery Compartment Ass'y (R)
K 1 (Z) (F	RYMXFM15LZE	⟨Front Cabinet Ass'y (♠ Δ)	• K 2(Z) (F	(R)	Rear Cabinet Ass'y (R)	• K 5 [K]	RYNXFM15LZKS	Battery Compartment Ass'y
K 1 (Z) (F	[W]	Front Cabinet Ass'y (Y) Front Cabinet Ass'y (W)	• K 2 (Z) (	F) [K]	S Rear Cabinet Ass'y (K)	•K6 K7	RME400Z RJP2G4Y	Holder, LED Plug, 2P/CP1
K 1 (Z) (F	RYMXFM15LZ91	Front Cabinet Ass'Y (\$)	• K 2-3	RJT865Z RJC91003Z	Terminal, Antenna Spring, Battery (+/-)	K 8 K 9 K 10	RJT707Z RJS2L3Z RJC610Z	Terminal, Socket Socket, 2p Spring (Battery (-))
K 1 (Z) (F	RYMXFM15LZK2	Front Cabinet Ass'y ®	• K 2-4 (E	[W] [S] RGT1200ZA1	Name Plate S	•K 11 •K 12	RUP2138ZA RDR72Z	P.C.B (LED, Microphone) Pulley, Dial Belt
K 2 (E) [V	RYMXFM15LZKS	Front Cabinet Ass'y 🛞	• K 2-4 (E	RGT1200ZA	Name Plate ©		RDG5782Y RBN733ZC2	Gear, Cassette Compartmen Knob, Tuning (W)
	RYFXFM15LEK8	Rear Cabinet Ass'y Ŵ △	•K3	RYQXFM15LZKS	(8)	• K 14 [K] [	RBN733Z	Knob, Tuning (K)
• K 2 (E) [S		Rear Cabinet Ass'y (H) 🛆	K 3-1 K 4	RUS527Y RJP3G4Y	Spring, Cassette Pressure Plug, 3 pin	K 15 •K 16	RAS10P22ZAD1 RDP306Z	Speaker Dial Pointer W



Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Descrip	ption
K 17	XYN26 + C8	Screw ⊕2.6×8 (Tuning Knob M'tg)	• K 28	XTC3 + 8CFZM	Screw ⊕3×8 (Handle Arm M'tg)		ACCE	SSORIES	
K 19 [W]	RBD372ZA1	Knob, FM Mode	• K 29	WM034B7Z202	Built-in Microphone	• A 1	RQX4901ZA	Operating Instructions	
	750 100	Selector/Beat Proof W	K 31	RJS3L3Z	Socket, 3P/CS2	A 2 (Z) (F	RJA20Z	Power Cord, AC △	
K 19 [K] [	RI (SI (YI		K 32	RUS528Y	Spring, Cassette	A 2 (E)	RJA43Z	Power Cord, AC △	
io find t	RBD372ZA	Knob, FM Mode			Compartment				
		Selector/Beat Proof (K)	• K 33	RHG720W	Rubber, Microphone		PAC	CKINGS	
K 20 (Z) (	F) [Y]	-0.5	• K 34 [W]		Knob, Function Selector, AM				
11 20 (2) (	RKX347ZA4	Arm, Handle (Y)			Band Selector (W)	•P1	RPK2402ZA	Gift Box	
K 20 [S]	RKX347ZA7	Arm, Handle (A)	• K 34 [K] [	RI (SI (YI		•P2	XZB55X35A02	Polyethylene Cover	
K 20 [W]	RKX347ZA8	Arm, Handle (W)	100	RBD371Z	Knob, Function Selector, AM	•P3	RPN9524ZB	Pad	
K 20 [R]	RKX347ZA2	Arm, Handle (R)	A DE LUID		Band Selector (K)				
K 20 [K]	RKX347Z	Arm, Handle (R)	• K 35 [W]	RBN670XA4	Knob, Volume, Tone W	- 1			
		249	• K 35 [K]			766			
K 21 (Z) (	F) [Y]			RBN670X	Knob, Volume, Tone (K)	- A - 62			
	RKX331ZB4	Handle (Ý)	K 36	XTN3 + 40GM	Screw ⊕3×40				
K 21 [S]	RKX331ZB7	Handle (H)	1 1 1 5 TO		(Rear Cabinet M'tg)				
K 21 [W]	RKX331ZB94	Handle W	• K 37	RUP2045YA	P.C.B (Power) A				
K 21 [R]	RKX331ZB93	Handle (R)	• K 38 (Z) (	F) [Y]					
K 21 [K]	RKX331Z	Handle (K)		RBN755ZA4	Knob, Fine Tuning				
K 22	RDV40Z	Belt, Dial	• K 38 [S]	RBN755ZA5	Knob, Fine Tuning (H)				
K 23	XEARR225EAY	Telescopic Antenna	• K 38 [W]		Knob, Fine Tuning W				
K 24	XTV3 + 12GM	Screw ⊕3×12 (P.C.B M'tg)	• K 38 [R]	RBN755ZA6	Knob, Fine Tuning (R)				
K 25	XYN3 + F25FN	Screw ⊕3×25 (Telescopic	• K 38 [K]	RBN755ZA	Knob, Fine Tuning (§				
		Antenna M'tg)	K 39	QTF1054	Holder, Fuse △				

characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.





5/18/15

(Z) ... For All European areas except E, F.

## **ELECTRICAL REPLACEMENT PARTS LIST**

Numbering	System	of Resistor
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ERD: Carbon Resistor ERC: Solid Resistor ERF: Incombustible

Resistor ERM: Wire-Wound Resistor ERO: Superstable Resistor ERX: Metal-Film

RRJ: ERJ:

Box-Shaped Wire-Wound ERG: Metal Oxide-Film

Chip Resistor

Example:				
ERD	25	F	J	101
Туре	Wattage	Shape	Tolerance	Value (100Ω)
ERJ	6G	С	J	2R2
Туре	Wattage	Shape	Tolerance	Value (2.2Ω)

Туре	Wattage	Shape	Tol	erance	Value (100Ω)
ERJ	6G	С		J	2R2
Type Wattage		Shape	Shape Tol		Value (2.2Ω)
Re	sistor Type	Watt	age	Toleran	се

1/8W 1/4W 1/2W 1/8W 1/4W 1/4W 1/2W 1 1/2W 2 2W

2 : 2W 3 : 3W S1 : 1/2W S2 : 1/4W 6G : 1/10W 8G : 1/8W

F: ±1% G: ±2% J: ±5% K: ±10% H: ±20%

Number	ing Syster	n of Capacit	(-)	or United Kingdom.
Example:			(F)F	For France.
ECKD	1H	102	Z	F
Туре	Voltage	Value (1000 pF)	Tolerance	Peculiarity
ECEA	50	М	R47	
Туре	Voltage	Peculiarity	Value (0.47 μF)	

	Capacitor Type								
ECCD:	Ceramic Capacitor (Chitacon)								
ECKD:	Ceramic Capacitor (Chitabari)								
ECFD:	Semiconductor Ceramic Capacitor								
ECE ::	Electrolytic Capacito Tantalum Fixed Electrolytic Capacito								
ECQ[:	Polystyrenc Film Capacitor								
ECQS:	Polystyrene Film Capacitor								
ECQS:	Polypropylene Film Capacitor								
ECQV:	T.F Capacitor								
ECU□:	Chip Capacitor								
ECBT:	Cylindrical Ceramic Capacitor								

<sup>※</sup> Capacity are in microtarads (μF) unless specified otherwise, P=Pico-farads.

	Capacitor Type	Voltage	Tolerance	
ECCD:	Ceramic Capacitor (Chitacon)	(ECCD, ECKD Type) 1H : 500 V DC 2H	: 500 V DC	K : ±10% M : ±20%
ECKD:	Ceramic Capacitor (Chitabari)	(ECFD Type) C : 12V DC D	: 25V DC	Z : +80 %
ECFD:	Semiconductor Ceramic Capacitor	E : 50 V DC (ECQ Type)		J : ±5% G : ±2%
ECE[:	Electrolytic Capacitor Tantalum Fixed	05 : 50 WV DC 1 (ECE, ECS Type)	: 100WV DC	F : ±1% C : ±0.25pF
	Electrolytic Capacitor	0G : 4V 0J 1A : 10V 1C	: 6.3V : 16V	D : ±0.5pF F : ±1pF
ECQ[:	Polystyrenc Film Capacitor	1E : 25V 1V	: 35 V	
ECQS:	Polystyrene Film Capacitor	1H : 50V 1J 2A : 100V	: 63 V	
ECQS:	Polypropylene Film Capacitor	REPLACEMENT	PARTS L	ST
ECUT:	T.F Capacitor	Important safety noti		
LOUI.	Chip Capacitor	Components identifie	ed by 🛆 mar	k nave special

only manufacturer's specified parts. · mark stands for that the parts are supplied in MESA.

When replacing any of these components, use

characteristics important for safety.

Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.
CAPA	CITORS	C 24, 330, 331	ECCT1H121K	C 101, 118, 218 C 103, 203	ECFT1E104MD ECKT1H152MD	RESIS	STORS	R 47, 48 (F) R 101, 119, 219,	ERD25TJ153
		0.05.00.00			ECKT1H132MD	R 1, 11, 15, 113,		302	ERD25TJ332
C 1 (Z)	ECCT1H120KC	C 25, 28, 38,	F0FT4F470MD	C 104, 204				R 104, 204	ERD25TJ123
C 1 (E) (F)	ECCW1H120KC	120, 220, 332	ECFT1E473MD	C 108 (Z)	ECEA1HU010E	115, 213, 215,	ERD25TJ101	R 106, 116, 206,	LIIDZOTOTZO
C 2, 6, 11	ECCT1H180KC	C 26	ECCT1H560KC	-		310	ERDZSTJIUT	216	ERD25TJ823
C 3, 17, 29	ECCT1H470KC	C 30, 107, 207,		C 108 (E) (F)	ECEA1HU010			R 106, 206	ERD25TJ823
C 4, 8	ECKT1H103MD	321 (Z)	ECEA1AU101E	C 114, 214, 302,		R 2	ERD25TJ221		ERD25TJ470
C 5	ECCT1H100KC	C 30, 107, 207,		304, 315	ECEA1AU101B	R 3	ERD25TJ474	R 107, 207, 308	END2513470
C 7, 21(Z)	ECCT1H150KC	321 (E) (F)	ECEA1AU101	C 115, 215	ECEA1AU470	R 4	ERD25TJ100	D 100 000	EDDOFT 1000
C 7 (E) (F)	ECCW1H150KC	C 31	ECEA1CU100E	C 116, 216	ECKT1H102MD	R 5	ERD25TJ104	R 108, 208	ERD25TJ822
0 9, 12, 22, 41,		C 33, 52, 112,	HIS COL	C 117, 217	ECEA0JU471E	R 10	ERD25TJ471	R 109, 209	ERD25TJ103
309, 325	ECKD1H102KB	212	ECFT1E333MD	C 303	ECEA1CU330B	R 13, 18, 25, 36,		R 110, 210	ERD25TJ153
C 10	ECCT1H050CC	C 34, 42	ECEA1HU0R1B	C 313	ECEA1CU222	100, 307	ERD25TJ102	R 111, 211	ERD25TJ182
3 10	200111100000	C 35, 312	ECEA1AU221B	C 314 (Z)	ECEA1CF101SE	R 16	ERD25TJ222	R 114, 214	ERD25TJ1R0
C 13 (Z)	ECCT1H070DC	C 37, 105, 113,		C 314 (E) (F)	ECEA1CF101S	R 17	ERD25TJ473	R 116, 216	
C 13 (E) (F)	ECCW1H070DC	205, 208, 213	ECEA1HU010	C 316	ECEA1CU471E	R 18, 28, 29,		(Z) (E)	ERD25TJ823
	ECQP2A221JZ	C 39, 45, 46,	LOLATITOGIO	0 010	LOURING	103, 203	ERD25TJ472	R 116, 216 (F)	ERD25TJ124
C 14	ECQP2A361JZ	102, 109, 209	ECFT1E153MD	C 317, 318, 319,		R 20, 102, 105,	AND DESIGNATION OF	R 117, 118, 217,	
C 15		102, 109, 209	LOTTILISSIND	320	ECKW1H103MD	202, 205	ERD25TJ682	218	ERD25TJ333
C 16	ECQP2A392JZ	C 40 (Z)	ECQP2A102JZT	C 322 (Z)	ECQP2A272JZ	202, 200	LIIDZOTOGOZ	R 305	ERD25TJ820
C 18	ECCT1H221K		ECQP2A102JZW		ECQP2A272JZW	R 21, 23	ERD25VJ102	R 309	ERD25TJ124
C 19, 36, 106,		C 40 (E) (F)		C 322 (E) (F)		R 22	ERD25VJ122T	11.000	
206	ECKT1H471KB	C 43, 53	ECEA1HUR47B	C 333	ECKT1H561KB	R 24	ERD257J821	R 311	ERD25TJ6R8
C 21 (E) (F)	ECCT1H180KC	C 47, 48	ECEA1HUR22B	C 334	ECKT1H181KB		END2313021	R 313	ERD25TJ391
C 23, 32, 311,		C 51	ECQP2A141JZT	C 335, 336	ECCT1H331K	R 28, 29, 103,	EDDOST 1470	11010	L1102310031
326, 327	ECFT1E223MD	C 100, 200	ECKT1H682MD			203	ERD25TJ472		

C 23, 32, 311,	CT1H180KC CFT1E223MD	C 47, 48 C 51 C 100, 200	ECEA1HUR22B ECQP2A141JZT ECKT1H682MD	C 334 C 335, 336	ECKT1H181KB ECCT1H331K	R 24 R 28, 29, 103, 203			R 311
Ref. No. Part	No. Pa	art Name & Descript	tion Ref. No.	Part No.	Part Name & D	escription	Ref. No.	Part No.	Part Name & Description
INT IC 1 AN7203 IC 2 AN7221 IC 3 RVIBA IC 4 AN7311 IC 6 RVIBA	OSC, 132L IC (FI	M FRONT END) M/AM IF AMP, DET.	AM L 8 L 9 L 10 L 11 • L 15, 16 L 303	RL09B17T	Antenna Coil, SW OSC Coil, LW OSC Coil, MW OSC Coil, SW Choke Coil OSC Coil, BIAS	I managara	CF 1 CF 2 (Z) ( CF 2 (E)	RVFSFE107N F) RVFSFZ455	W Ceramic Filter (470kHz)
Q 1 2SC167 Q 2 2SC168		Sistor (FM IF AMP) sistor (OSC AMP)	T 1, 2 T 3 T 5 (E) • T 5 (Z) (F	RLi4B153 RLi2B153 RLT5K3E2A RLT5K3G3A	IFT, FM 1st, 2nd IFT, AM Power Transforme Power Transforme		Z 1	RXABPMB6A	FILTER  W Component Combinations  FUSES
Q 101, 201 2SA733 Q 301 2SC200		sistor (REC AGC) sistor (REGULATOR)	) VC 1, 2, (CT 1, 2,	4, 6	CAPACITORS			XBA2C10TR XBA2C10TB	
D 1, 3, 5, 101, 20 RVD1N D 4 RVDRD D 302 LN213 D 303, 304, 305, 3	148 Diode R1EB1 Diode	e (FM D.AGC, etc.) e (REGULATOR) (FM STEREO IND.)	•VC 5	RCV4RC2RA RCVRH7UC16	Tuning Capacitor/ Trimmer Capacitor Tuning Capacitor CONDENSERS	with r	•S 1 •S 2, 5 •S 6	RSH2G03ZA RSS3F06Y RSS3B31Z	Record/Playback Slide Switch, Function Selector, AM Band Selector Slide Switch, FM Mode
RVD1S	35 Diode R8EB1T Diode	e Coil	CT 3, 5,	VARIABL EWCUVAF15A5	Trimmer  E RESISTORS  4 Tone Control VR 4 Volume Control V			RJJ1A4Z RJJ1A5Z RJJ1D27Z	Selector/Beat Proof Switch  JACKS  Jack, AC IN △ Jack, AC IN △ Headphones

## **MEASUREMENTS AND ADJUSTMENTS**

Z...For All European areas except E. F.

E...For United Kingdom.

F...For France.

#### ■ ALIGNMENT INSTRUCTION

#### READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

- 1. Set volume control to maximum.
- 2. Set FM mode/B.P. switch to STEREO/II.
- 3. Set band switch to LW, MW, SW or FM ST.
- 4. Set tone control to maximum. 5. Set function selector to radio.

6. Set fine tuning to center.

- 7. Set power source voltage to 9V DC. 8. Output of signal generator should be no higher
- than necessary to obtain an output reading.

#### ■ LW, MW and SW ALIGNMENT

	BAND	SIGNAL GENER SWEEP GENE		RADIO DIAL SETTING	(ELECTRONICS VOLTMETER	ADJUSTMENT	REMARKS
-		CONNECTIONS	FREQUENCY	SETTING	or SCOPE)		
1			30000	AM-IF AL	IGNMENT		
)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	Z F 455kHz E470kHz 30% Mod. at 400Hz	Point of non- interference. (on/ about 600 kHz)	Output meter across voice coil.	T3 (AM IFT)	Adjust for maximum output.
1	7702			LW-RF AL	IGNMENT		
)	LW	"	136 kHz	Tuning capacitor fully closed.	"	L9 (LW OSC Coil)	
)	LW	"	297 kHz	Tuning capacitor fully open.	"	CT5 (LW OSC Trimmer)	"
)	LW	n n	145 kHz	Tune to signal.	"	(* 1) L6 (LW ANT Coil)	Adjust for maximum output. Adjust L6 by moving coil bobbin along ferrite core.
)	LW	"	285 kHz	"	n n	CT3 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).
1		- 9	a III - DIMANY	MW-RF A	LIGNMENT		
)	MW	"	511kHz	Tuning capacitor fully closed.	"	L10 (MW OSC Coil)	Adjust for maximum output.
)	MW	"	1,650 kHz	Tuning capacitor fully open.	"	CT6 (MW OSC Trimmer)	"
)	MW	"	550 kHz	Tune to signal.	п	(* 1) L7 (MW ANT Coil)	Adjust for maximum output. Adjust L7 by moving coil bobbin along ferrite core.
)	MW	"	1,500 kHz	cosition.	iteh in "Flayback" ecord) n teh in "POWER OF	CT4 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (6)~(9).
-	(*1) C	ement antenna bobbi	n with wax after	er completing align	ment.	a to MA a Part Millar	100
1				SW-RF AI	LIGNMENT	VE TOTAL METOLOGIC	181.4
)	sw	Connect to test	5.75MHz	Tuning capacitor fully closed.	Ich in "I"V" posible	L11 (SW OSC Coil)	Adjust for maximum output.
)	sw	point through ceramic capacitor	18.8MHz	Tuning capacitor fully open.	at proof witten la	CT7 (SW OSC Trimmer)	6 841, 86-21
2)	SW	(10 pF). Negative side to test point	5.9MHz	Tune to signal.	n	L8 (SW ANT Coil)	Adjust for maximum output. Repeat steps (10)~(12).

#### ■ FM ALIGNMENT

	BAND	SIGNAL GENER SWEEP GENE		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY	Aminos	or SCOPE)	Itualia municata	nuama Aianea 141
T	TETT			Amore FM-IF AL	IGNMENT	Madmim output	
	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. 2.)
	FM	" Ygo	of new"rechno	Inempoloved ent rift	w smit yn" te beliib	T2 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3.)

<sup>※</sup> Resistance are in ohms (Ω), unless specified otherwise, 1 K=1,000Ω, 1 M=1,000 KΩ

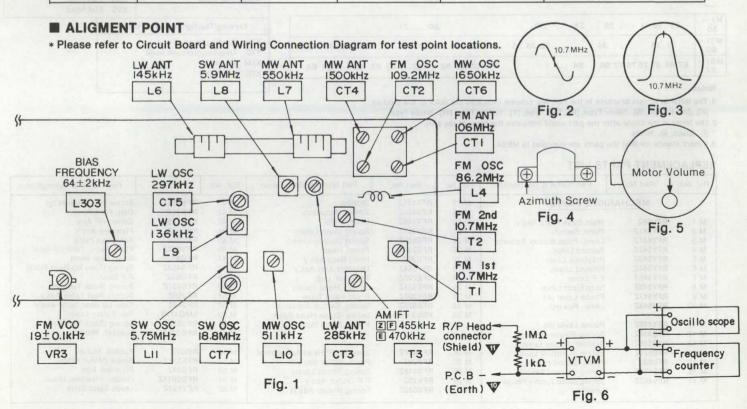
BAND	SIGNAL GENER SWEEP GENE		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY	SETTING	or SCOPE)		
DIP BUS	Tellor brussard to	A MINGSOLD	FM-RF A	LIGNMENT	EWI	(FRONT V
FM	Connect to test	86.2 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L4 (FM OSC Coil)	(*2) Adjust for maximum output.
FM	point <b>V</b> through FM dummy antenna. Negative	109.2 MHz	Variable capacitor fully open.	"	CT2 (FM OSC Trimmer)	"
FM	side to test point	106 MHz	Tune to signal.	"	CT1 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3)~(5).

#### ■ SEPARATION ALIGNMENT

ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION  Free service many	REMARKS
Adjustment of pilot signal.	98MHz, 60dB Connect to test point through FM dummy antenna. Negative side to test point .	<b>♥</b> (+)	www.frees	Gratis schema' DightMaby	Adjust VR1, for 19kHz (±100Hz) reading on electronics counter.

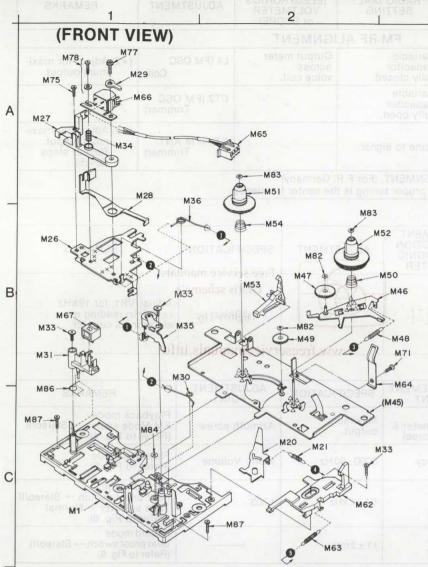
#### **TAPE ADJUSTMENT**

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Azimuth	QZZCFM (8kHz, -20dB)	SP OUT (AC voltmeter & Oscilloscope)	Maximum output.	Azimuth screw	Playback mode FM Mode switch → Stereo/II (Refer to Fig. 4)
Tape speed	QZZCWAT (3kHz)	SP OUT (Frequency counter)	3000±90 Hz	Motor Volume	Playback mode (Refer to Fig. 5)
Bias oscillation frequency	wate-aditional dela	<b>▼</b> (+)	64±2kHz	L303	Record mode Beat proof switch → Stereo/II Tape selector → Normal (Refer to Fig. 6)
Bias current	Use metal tape	<b>₩</b> (+) <b>₩</b> (-)	11±2mV		Record mode Beat proof switch → Stereo/II (Refer to Fig. 6)



by WWW. FREESERVICEMANUALS

## **MECHANISM PARTS LOCATION**



MI∼ 30	27	26	1	29	28	30		20	0	21				
M31~	31	33		34	Senas	33 35 36	53 51 54	49	47	891 10	5	2 33	50 46 4	8(45)
M61~ 87	87 86	67	75 78	77 66	84	1	87 65 83	82	82	63	83	62	71	64

#### Notes:

- The letter in square brackets in the Ref. No. column indicates the color of the product.
   [K]...Black Type, [S]...Sliver Type, [R]...Red Type, [Y]...Yellow Type, [W]...White Type.

   The letter in square brackets in the Ref. No. column indicates the color of the product.
   [K]...Black Type, [S]...Sliver Type, [R]...Red Type, [Y]...Yellow Type, [W]...White Type.
- 2. The letter in the circle after the part name indicates the color of the part. 

  (E...Black, (E...White)
- 3. mark stands for that the parts are supplied in MESA.

#### REPLACEMENT PARTS LIST

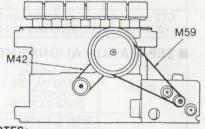
Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
1	MECHAN	ICAL PARTS	M 18	RFX101Z	Stopper	M 41	RFE172Z	Screw (F.F Cruth M'tg)
		and bid	M 19	RFS466Z	Spring (Actuator)	M 42	RFB71Z	Belt, Fast Wind
M 1	RFU68Z	Main Base Plate Ass'y	M 20	RFY549Z	Lever, Auto	M 43	RFX145Z	Coller, RF Arm
M 2	RFY541Z	Plate, Switch	M 21	RFS453Z	Spring (Auto Lever)	M 44	RFF37Z	Flywheel Ass'y
M 3	RFY641Z	Lever, Push Button Actuator	M 22	RFS530Z	Spring (Button Lever)	M 45	RFU40Z	Sub Base Plate
M 4	RFY542Z	Record Lever	M 26	RFE227Z	Panel, Head	M 46	RFY652Z	Plate Ass'y, Take Up Gear
M 5	RFY543Z	Playback Lever	M 27	RFU39Z	Head Base Ass'y	M 47	RFG61Z	Gear, Fast Wind
M 6	RFY544Z	Rewind Lever	M 28	RFY394Z	Detector Arm Ass'y	M 48	RFS450Z	Spring (Take Up Gear Plate)
M 7	RFY545Z	F.F Lever	M 29	RFE228Z	Terminal, Lug	M 49	RFG62Z	F.F Gear
M 8	RFY546Z	Stop/Eject Lever	M 30	RFS531Z	Spring (Head Panel)	M 50	RFS537Z	Spring (Back Tension)
M 9	RFY547Z	Pause Lever (A)	M 31	RFY397Z	Erase Head Base	M 51	RFJ50Z	Supply Reel Table Ass'y
M 10	RFY548Z	Lever, Rewind	M 32	RFS625Z	Spring, Switch Actuator	M 52	RFJ44Z	Take Up Reel Table Ass'y
			M 33	XSN3+6	Screw (Erase Head Base	M 53	SMQ4778	Rec Safety Lever
M 11	RFY420Z	Pause Lever (B)	O IP He		Plate · Pinch Rolle etc. M'to	M 54	RFS533Z	Spring (Back Tension)
M 12	RFS459Z	Spring (Pause Lever)	fostings		⊕3×6)	M 55	RFD219Z	Bracket, Motor
M 13	RFS536Z	Stopper, Pause Lever	Tall Land		THE PARTY OF THE P	at thirty		
M 14	RFS529Z	Spring (F.F/REW Lever)	M 34	RFS447Z	Spring, R/P Head Adjustment	M 56	RFi27Z	Rubber, Motor
M 15	RFU62Z	Plate, Button Holding	M 35	RFR29Z	Pinch, Roller Ass'y	M 57	RFE231Z	Screw (Motor M'tg)
M 16	RFS463Z	Spring (Record Lever)	M 36	RFS448Z	Spring (Pinch Lever)	M 59	RFB54Z	Flywheel Belt
M 17	RFS462Z	Spring (Stop/Eject • Pause	M 39	RFK20Z	F.F Crutch Ass'y	M 61	RFD9011Z	Holder, Flywheel Metal
		Lever)	M 40	RFS532Z	Spring (Pulley Ass'y)	M 62	RFY551Z	Lever, Eject Slide

#### SPECIFICATIONS

Pressure of pressure roller	250~350g
Takeup tension	25~65 g-cm
Tape speed fluctuation	±3%
Wow & flutter	Less than 0.2% (WRMS)

Mechanism Operation: Auto Stop

#### • BELT LOCATION



#### NOTES:

When changing mechanism parts, apply the specified grease to the area marked show in the drawing "Mechanism Parts Location".

"xx" mark ...Floil G-488 [SZZ0L10] (Lubricating grease)

"\( \Delta \Delta \)" mark ...Silicone oil No. 4 [SZZ0L14] (Lubricating oil)

#### **Screw Dimensions Quick Reference**

Dimensions

 $\frac{\text{XSN}}{\text{N}} \frac{3}{3} + \frac{10}{\text{Pan head machine screw}}$  3 mm in diameter, 10 mm long.

Type/Diameter/Length

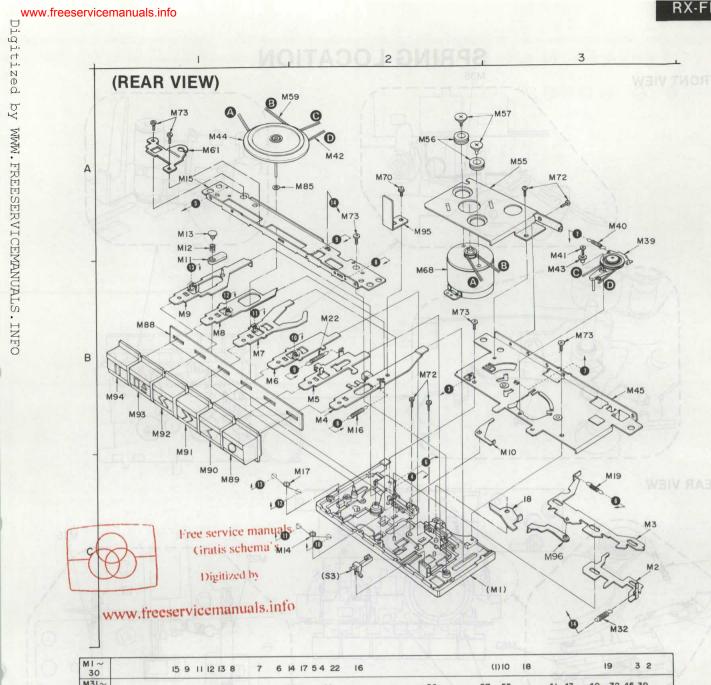
#### Types

Pre	Precision machine screw		Machine screw
XQC	Flat head	XSB	Binding head
XQG	Oval fillister head	XSC	Oval countersunk head
XQH	Flat fillister head	XSH	Flat fillister head
XQS	Flat head	XSN	Pan head
		XSS	Flat head

Tapping/Tap-tight machine screw

XTB Binding head
XTC Oval countersunk head
XTN Pan head

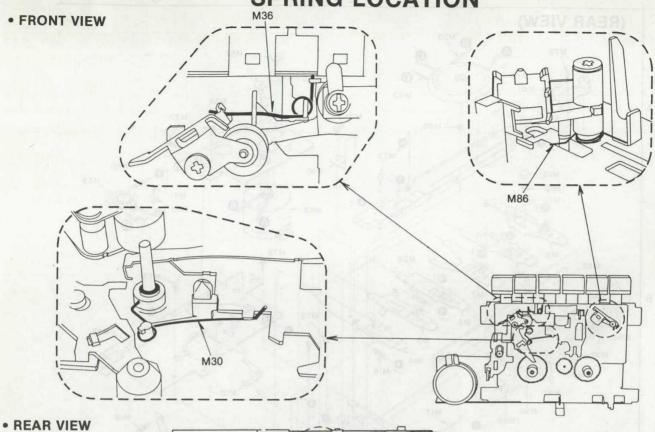
XTS Flat head

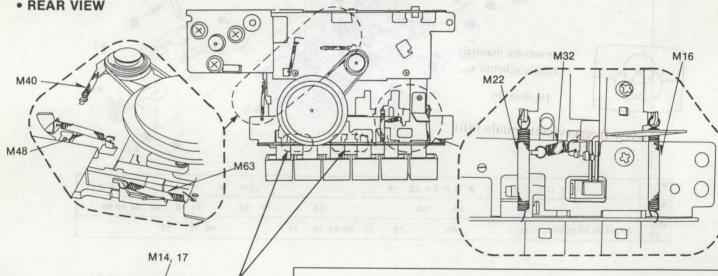


M1~ 30	15 9 11 12 13 8	7	6 14 17	5 4 22	16				(	1)10	18				19	3	2
M31∼ 60	44		59	42			56	1	57	55	1	41	43	40	32	45 3	9
MEL	94 93 88 92 73 91 61 90 89		85		73	70	95 68 72	73			96	72		73			

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
M 63 M 64	RFS454Z RFS534Z	Spring (Eject Slide Lever) Spring (Cassette Pressure)	M 83	RFN142Z	Washer (Reel Table M'tg)	• M 91 (Z)	RBC716Y	Button, Rewind (K)
• M 65		Lead Wire, R/P Head	M 84	RFN123Z	Washer (Flywheel M'tg)	• M 92 [K]	RBC715Y	Button, Fast Forward (K)
M 66	RJH2E9YA-W	Head, Record/Playback	M 85	RFN153Z	Washer (for Flywheel)	- 14 00 040		Button, Fast Forward (W)
M 67	RJH2C12XZ	Head Erase	M 86	RFS535Z	Spring (Erase Base Plate)		RBC715YA2	Button, rast rolward (w)
M 68	RFM54Z	DC Motor Ass'y	M 87	RFE232Z	Screw (Main Base Plate M'tg)	• M 92 (Z)		Button, Fast Forward (K)
M 70	RFE229Z	Screw (Recording Spring	M 88	RFY553Z	Plate, Button Lever Retainer	• M 93 [K]	RBC715Y	Button, Fast Forward (N
		M'tg ⊕2×3)	• M 89 [K]		Data - Broad (II)	- M 92 [V]	RBC714Y	Button, Stop/Eject (K)
M 71	XTN2 + 3B	Screw (Cassette Retainer	11.00 (7)	RBC718Y	Button, Record (K)	- M O2 DAD	RBC714YA2	Button, Stop/Eject W
		Spring M'tg ⊕2×3)	• M 89 (Z)		Button, Record (K)	• M 93 (Z)		Button, Gtop/Eject (W
M 72	XTN2 + 4B	Screw (Motor Bracket M'tg	- 14 00 040	RBC718Y		* IVI 93 (Z)	RBC714Y	Button, Stop/Eject (K)
	I HOTE L	⊕2×4)		RBC718YA2	Button, Record W		NBC/141	Batton, Gtop/2/cot (g
M 73	XSB2 + 4	Screw (Button Holding	• M 90 [K]	RBC717Y	Button, Playback (K)	• M 94 [K]	(R) (S)	
		Plate - Sub Base Plate M'tg	- 14 00 04/	Selection of the select	Button, Playback (W)	- 101 34 [13]	RBC713Y	Button, Pause (K)
12/10/2004	DE PAR	⊕2×4)	• IVI 90 [VV	RBC717YA2	Button, Flayback W	• M 94 [W]		Datteril, Lause ()
M 75	XSN2+6	Screw (Head Base M'tg	- 14 00 (7)	(E) DO		- 101 34 [00]	RBC713YA2	Button, Pause (W)
		⊕2×6)	• M 90 (Z)		Button, Playback (K)	• M 94 (Z)		Button, rados (j)
M 77	RFE89Z	Screw (R/P Head M'tg)	- 14 04 (14)	RBC717Y	Button, Flayback	- 141 34 (2)	RBC713Y	Button, Pause (K)
M 78	RFE230Z	Screw (Head Adjustment)	• M 91 [K]		Button Bewind (R)	• M 95	RUS702ZA	Spring (Record)
M 82	RFN143Z	Washer (F.F • Fast Wind		RBC716Y	Button, Rewind (K)	M 96	RFY591	Lever, E Kick
		Gear M'tg)	• M 91 [W	RBC716YA2	Button, Rewind (W)	IVI 96	UL 1991	Level, L Mick

## **SPRING LOCATION**





	())))	)))))) d	ℓ ×d (mm)						
M12	M16	M19	M21	M22	M32				
5.8×3.4	15.5×2.4	10.5×2.2	8.6×2.1	14.5×2.7	7.5×2.2				
M34	M40	M48	M50	M54	M63				
5×3.4	10×2.2	14.5×2.2	4.6×6.7	6.1×6.8	13.2×2				

<u>01</u>	2 1: long & 2: short	ℓ 1× ℓ 2 (mm	<u>⊨ ℓ 1</u> 0) ℓ 1× ℓ 2 (mm)	2 1: long
M14	M17	M36	M30	M86
14.5×14.5	14.5×14.5	19.5×83	23.8×9.4	11×9.5