

# Service Manual

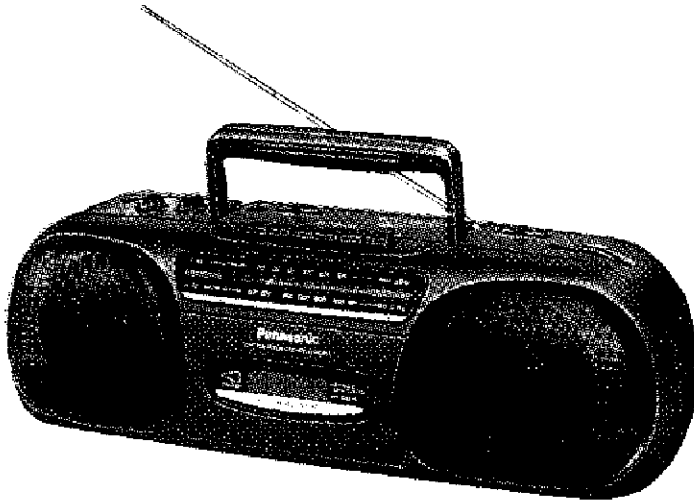
Stereo Radio Cassette Recorder

Radio Cassette

## RX-FS430

Colour

(K) . . . . . Black Type



**Area**

Suffix for Model No.	Area	Colour
(P)	U.S.A	(K)
(PC)	Canada	

### ■ SPECIFICATIONS

**General :**

Power Requirement : AC; 120V, 60Hz  
 Battery; 9V, 6 UM-1 "D" size batteries

Power Consumption : 12 W (AC only)

Power Output : 7W (3.5 X 2) ... RMS (max.)

Speaker : 2 X Woofers; 10cm (4") (2.7Ω)  
 2 X Tweeters; 1.5cm (5/16")

Jacks : Output; Headphone; (32Ω, Ø3.5)

Dimensions : 460 (W) x 149 (H) x 149 (D) mm  
 (18 1/8" X 5 7/8" X 5 7/8")

Weight : 2.4 kg (5lb 5oz) without batteries.

**Radio Section :**

Radio Frequency Range : FM; 88 ~ 108MHz  
 AM; 525 ~ 1705kHz

Intermediate Frequency : FM; 10.7MHz  
 AM; 455kHz

Sensitivity : FM : 12dB/50mW  
 AM : 42.5dB/m/50mW

**Tape Deck Section :**

Frequency Response : 70 ~ 10,000Hz

Recording System : AC bias, Magnet erase

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

Track System : 4-track 2-channel stereo recording and playback

**Notes :**

1. Weights and dimensions shown are approximate.
2. Design and specifications are subject to change without notice.

# Panasonic®

**NOTES:**

- S1-1 ~ S1-2 : Band select switch in "FM STEREO" position.  
(S ... FM STEREO, F...FM, A...AM)
  - S3-1 ~ S3-4 : Function select switch in "TAPE/OFF" position.  
(T...TAPE/OFF, R...RADIO)
  - S4-1 ~ S4-6 : Record/Playback switch in "PLAYBACK" position.  
(R...RECORD, P...PLAYBACK)
  - S6 : Motor switch in "OFF" position.
  - S304 : AC/DC select switch in "DC" position.
  - VR301-1 ~ VR301-2 : Volume control VR.
  - VR302-1 ~ VR302-2 : Tone control VR.
- Battery Current :
- |                 |                         |                         |
|-----------------|-------------------------|-------------------------|
| Radio .....     | 28.9mA (FM, min volume) | 28.5mA (AM, min volume) |
|                 | 56.2mA (FM, max volume) | 64.2mA (AM, max volume) |
| Tape .....      | 33.4mA (volume min)     |                         |
|                 | 82.6mA (volume max)     |                         |
| Recording ..... | 31.4mA (mic, tape)      | 61.4mA (radio, tape)    |
|                 | 30.9mA (mic, w/o tape)  | 61.2mA (mic, w/o tape)  |

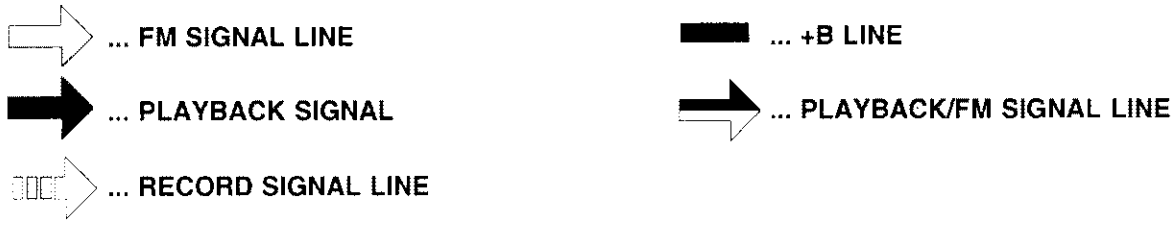
( Measurement condition:  
 Radio: FM 60 dB, 30%mod  
           AM 74 dB, 30%mod  
 Tape: 315 Hz, 0dB  
 Tone: centre )

- DC voltage measurements are taken with electronic voltmeter from negative terminal of battery.
- \*L5 and \*L6 are printed coils formed on the P.C.B and thus not found in the Replacement Parts List.

No mark ... Playback < > ... FM ( ) ... AM

• Important Safety Notice:  
 Component identified by have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

• This schematic diagram may be modified at anytime with the development of new technology.



**FUSE CAUTION**

This symbol located near the fuse indicates that the fuse used is a fast operating type. For continued protection against fire hazard, replace with the same type fuse. For fuse rating, refer to the rating adjacent to the symbol.

Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n'utiliser que des fusibles de même type. Ce dernier est indiqué là où le présent symbole est apposé.





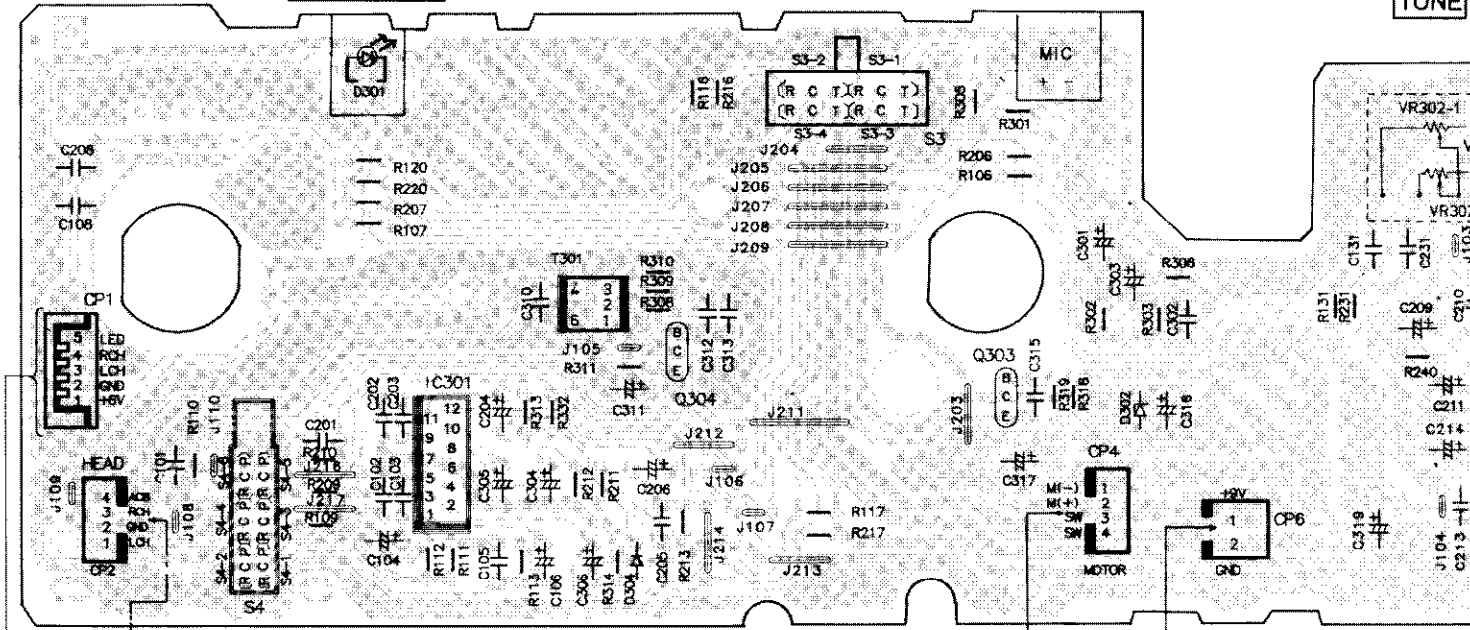
# B MAIN P.C.B (REP1714A)

FM STEREO

SELECTOR

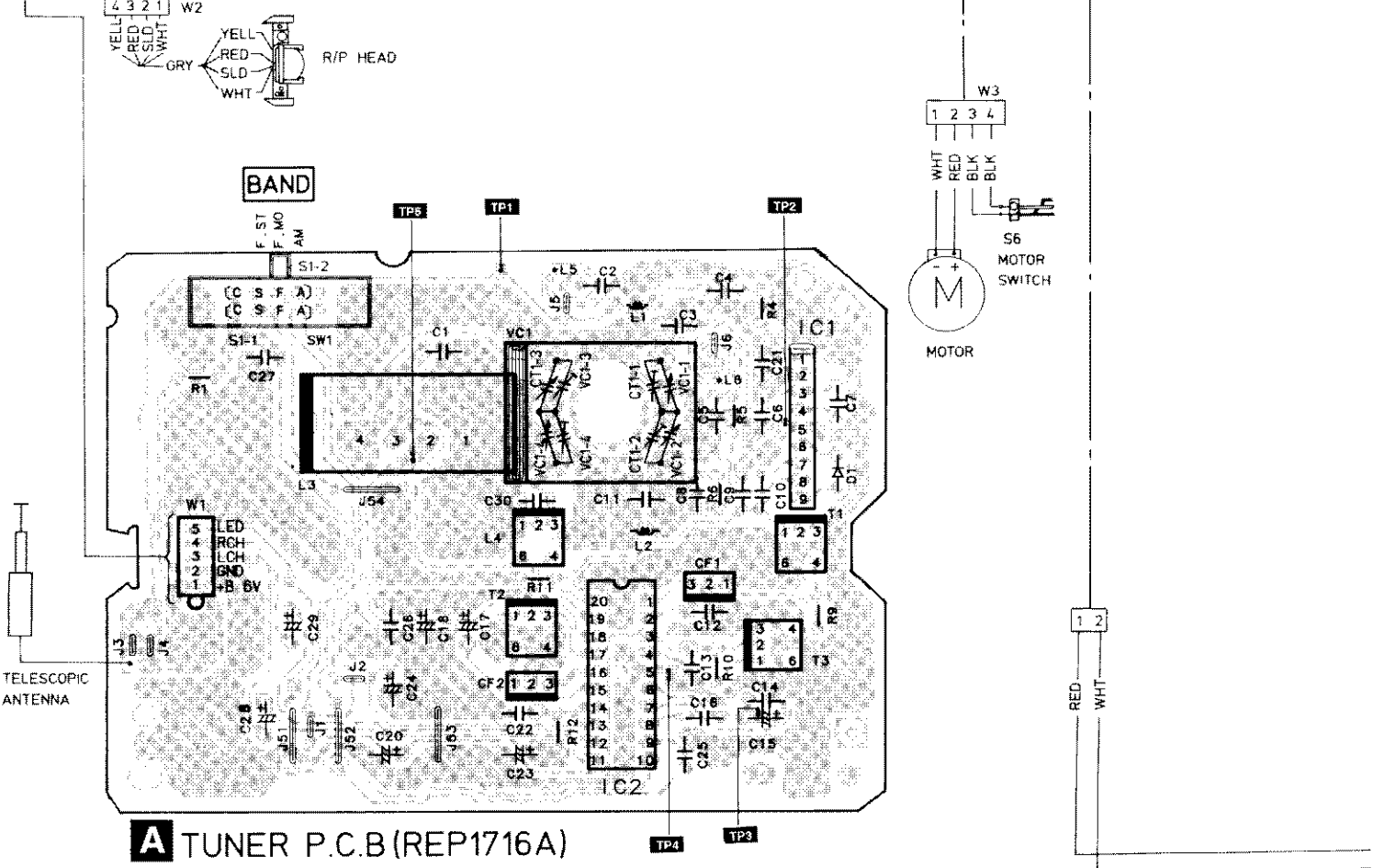
MIC

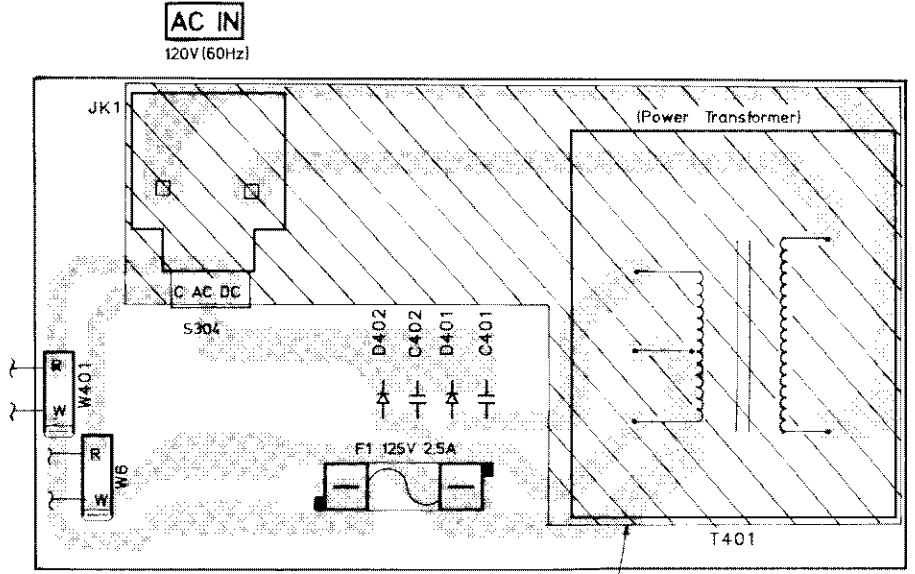
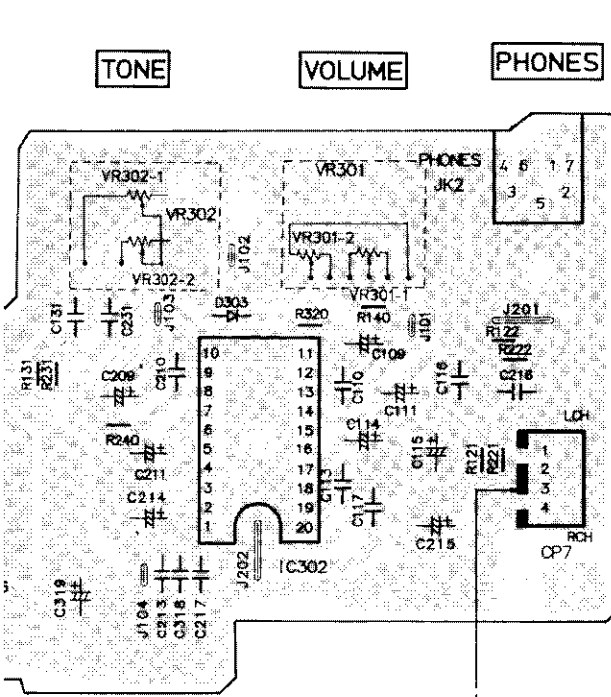
STONE



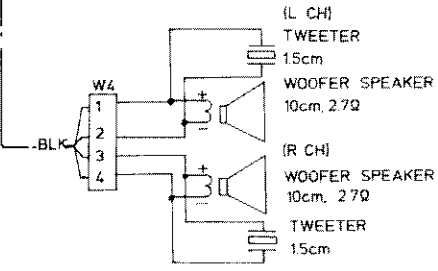
# A TUNER P.C.B (REP1716A)

BAND

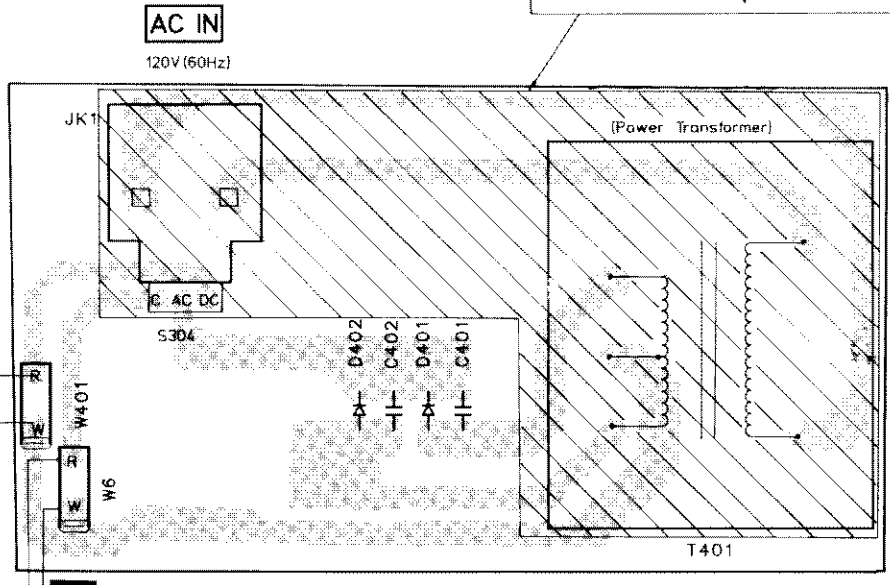
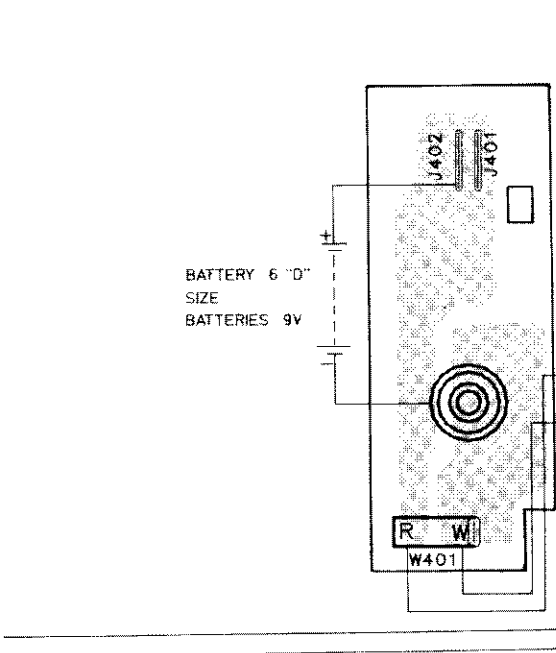




**C** POWER SUPPLY P.C.B FOR PC area (REP1715G)



**CAUTION**  
RISK OF ELECTRIC SHOCK  
AC voltage line. Please do not touch this portion.



**C** POWER SUPPLY P.C.B FOR P area (REP1715A)



# MEASUREMENTS AND ADJUSTMENTS

## ALIGNMENT INSTRUCTIONS

### READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Set volume control to maximum.</li> <li>2. Set tone control to center.</li> <li>3. Set band switch to AM, FM or FM STEREO.</li> <li>4. Set function selector to RADIO or TAPE/OFF.</li> </ol> | <ol style="list-style-type: none"> <li>5. Set power source voltage to 9V DC.</li> <li>6. Output of signal generator should be no higher than necessary to obtain an output reading.</li> </ol> |
|---|--|

## AM-IF ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 1)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	455kHz 30% Mod. at 400Hz	Point of non-interference. (on/ about 600kHz)	Headphone Jack (32Ω)  (Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)	T2 (AM IFT)	Adjust for maximum output.

## AM-RF ALIGNMENT

Fashion a loop of several turns of wire and radiate signal into loop of receiver.	511kHz	Tuning capacitor fully closed.	"	L4 (AM OSC Coil)	Adjust for maximum output.
"	1753kHz	Tuning capacitor fully open.	"	CT1-4 (AM OSC Trimmer)	"
"	600kHz	Tune to signal	"	[*1] L3 (AM ANT Coil)	Adjust for maximum output. Adjust L3 by moving coil along the ferrite core.
"	1500kHz	"	"	CT1-3 (AM ANT Trimmer)	Adjust for maximum output.

[\*1] Fix antenna coil with wax after completing alignment.

## FM-IF ALIGNMENT

SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 1)	REMARKS
CONNECTIONS	FREQUENCY				
Connect to test point <b>TP1</b> through ceramic capacitor. Negative side to test point <b>TP2</b> .	10.7MHz (Sweep)	Point of non-interference. (on/ about 90MHz)	Connect vert. amp. of scope to test point <b>TP3</b> . Negative side to test point <b>TP4</b> .	T1 (FM 1st IFT)	Waveform is shown in Fig. 3
"	"	"	"	T3 (FM 2nd IFT)	Waveform is shown in Fig. 4

## FM-RF ALIGNMENT

Connect to test point <b>TP1</b> through FM dummy antenna. Negative side to test point <b>TP2</b> .	86.2MHz	Variable capacitor fully closed.	Headphone Jack (32Ω)  (Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)	L2 (FM OSC Coil)	[*2] Adjust for maximum output.
	109.2MHz	Variable capacitor fully open.	"	CT1-2 (FM OSC Trimmer)	"
	106.0 MHz	Tune to signal.	"	CT1-1 (FM ANT Trimmer)	"

[\*2] Three output responses will be present; proper tuning is the centre frequency.

## ■ TAPE SPEED ALIGNMENT

TEST TAPE	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
QZZCWAT (3 kHz)	Headphone Jack (32Ω) <i>(Fabricate the plug as shown in Fig.2 and then connect the lead wires of the plug to the measuring instrument.)</i>	Motor VR (As shown in Fig 5)	3000 ± 90 Hz	Playback mode

## ■ ALIGNMENT POINT

• Please refer to Circuit Board and Wiring Connection Diagram for test point locations.

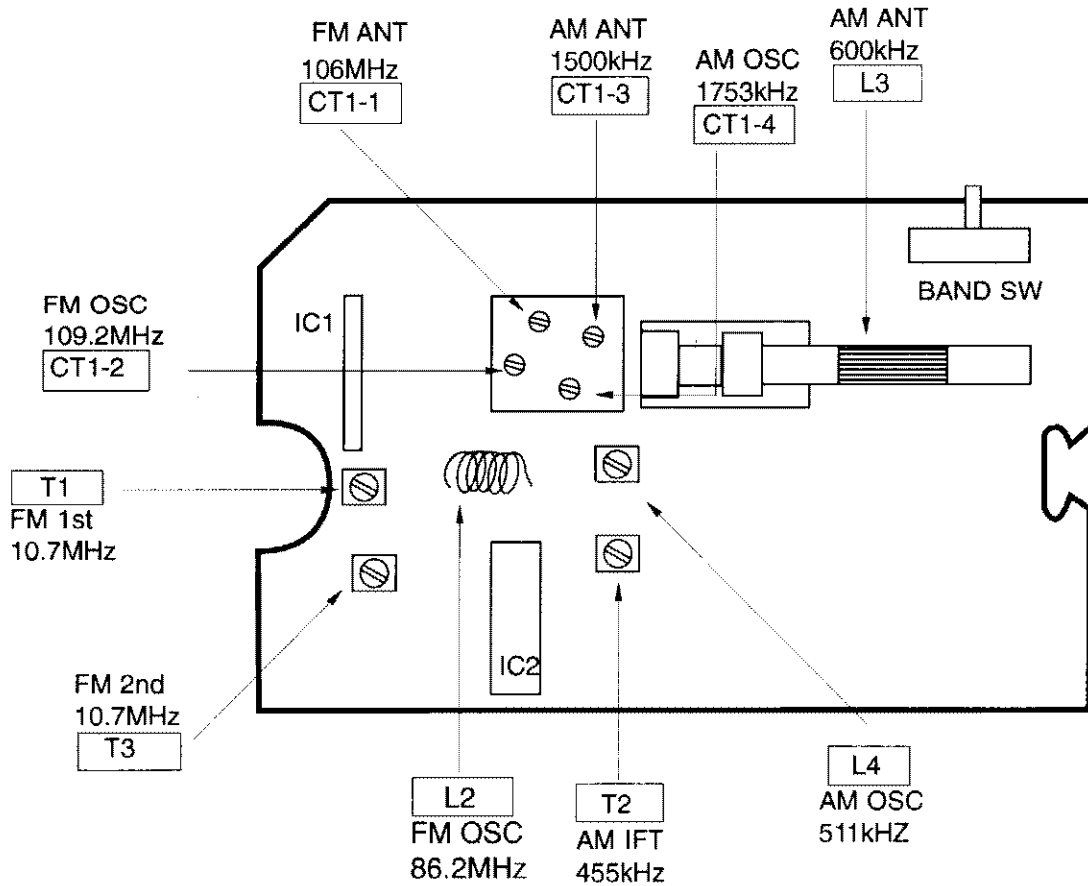


Fig. 1

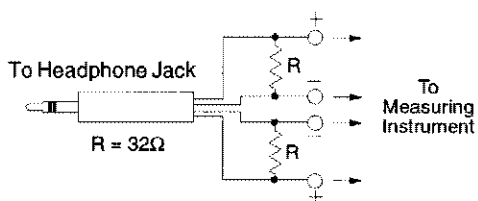


Fig. 2

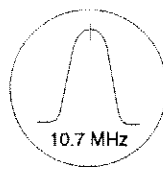


Fig. 3

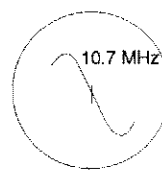


Fig. 4

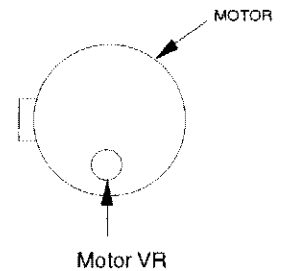


Fig. 5



# MECHANISM PARTS LOCATION (RAA0903)

1 | 2 | 3 | 4

## SPECIFICATIONS

Playback torque	30 ~ 70 g • cm
Fast Forward torque	90 ~ 150 g • cm
Rewind torque	90 ~ 150 g • cm
WOW	0.25% (WRMS)

A

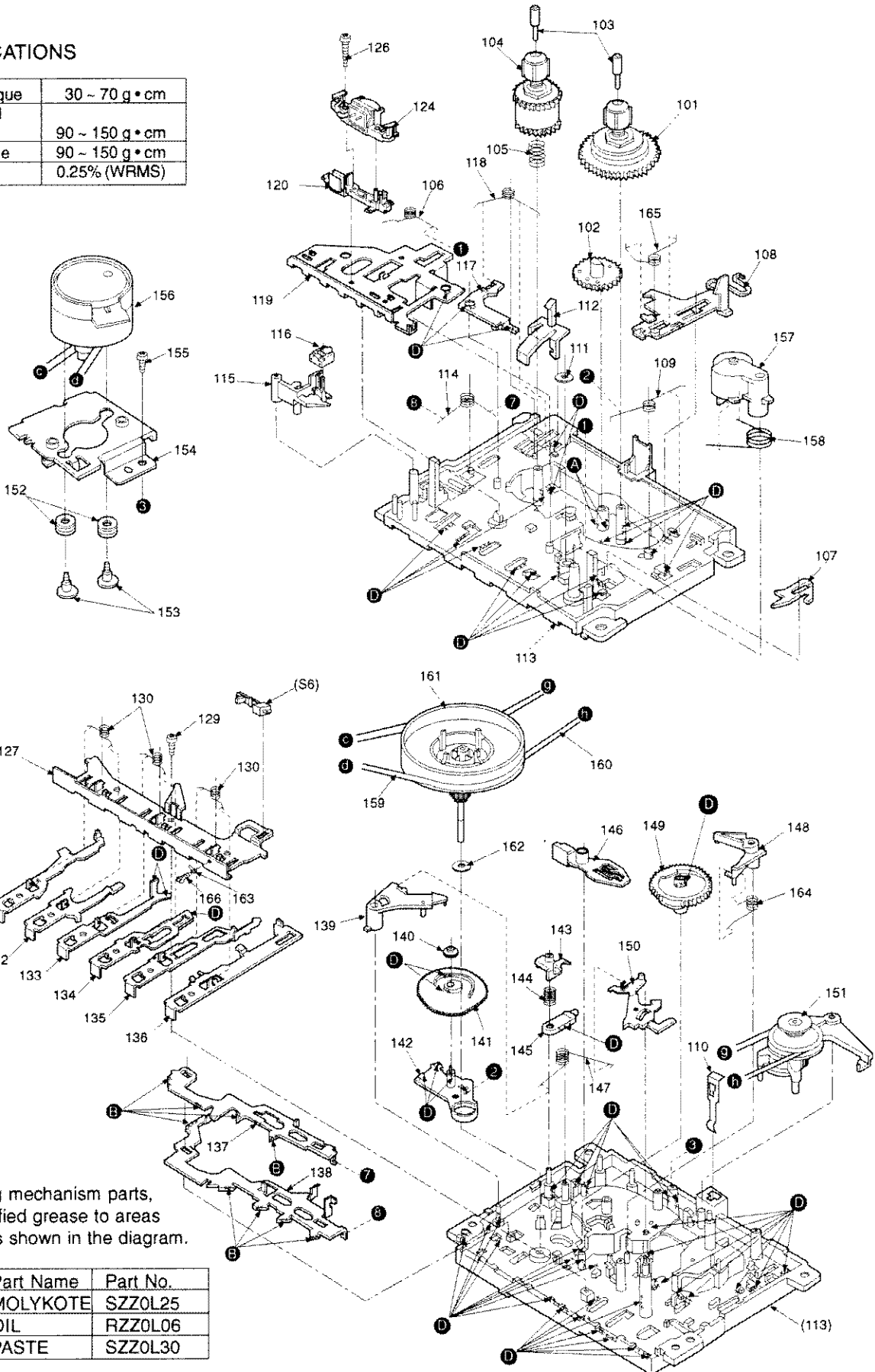
B

C

D

E

F



Note:  
When changing mechanism parts,  
apply the specified grease to areas  
marked "XX" as shown in the diagram.

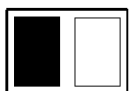
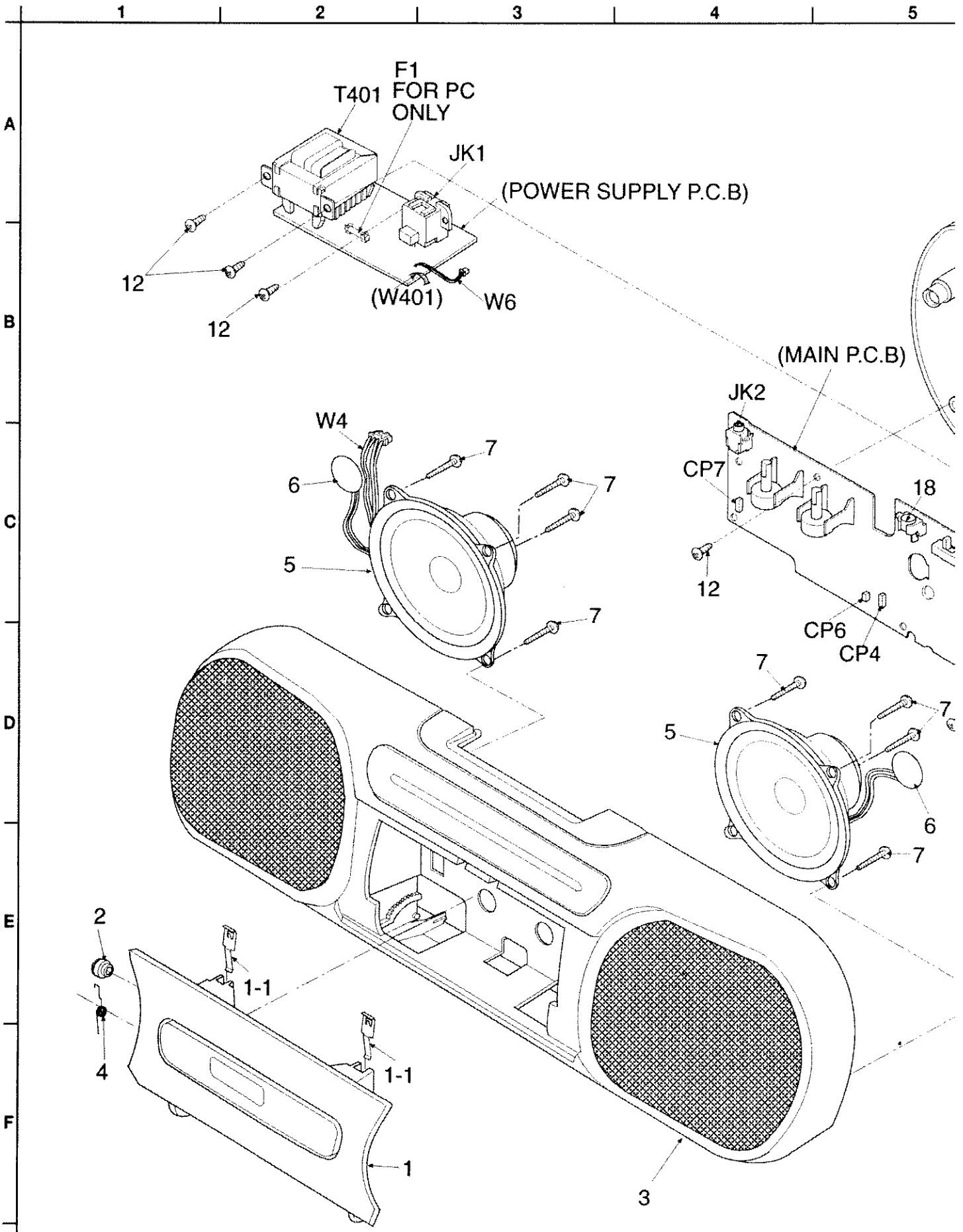
Ref. no.	Part Name	Part No.
<b>A</b>	MOLYKOTE	SZZ0L25
<b>B</b>	OIL	RZZ0L06
<b>D</b>	PASTE	SZZ0L30

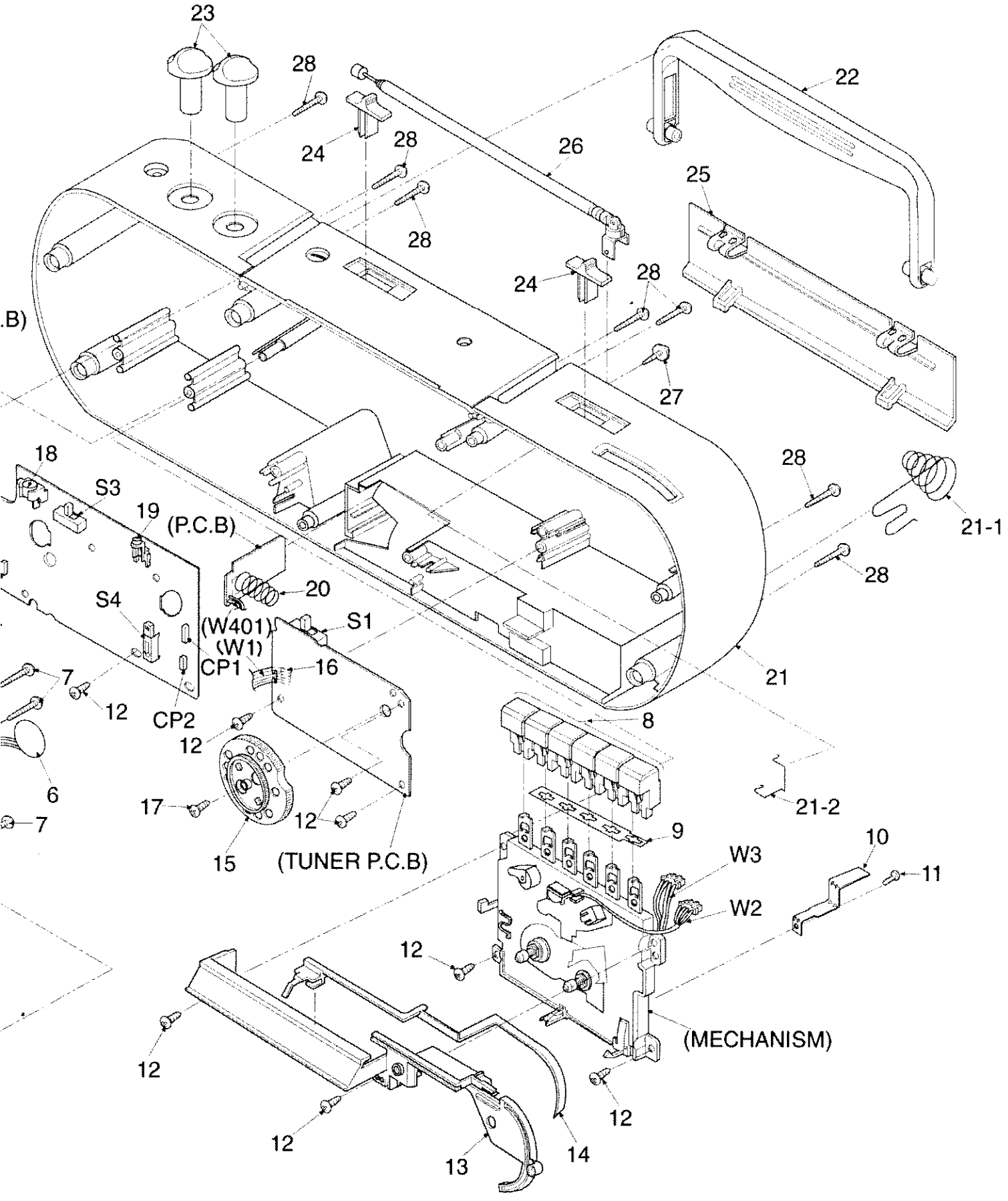
# MECHANISM PARTS LIST

Notes : [M] indicates in Remarks column indicates parts supplied by MESA

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		<b>CASSETTE MECHANISM</b>		149	RDK0005	CAM GEAR	[M]
				150	RML0073-1	AS PROTECT LEVER	[M]
				151	RXP0014	RF CLUTCH ASS'Y	[M]
101	RXR0004	TAKE UP REEL ASS'Y	[M]	152	RMG0102	MOTOR RUBBER CUSHION	[M]
102	RDG0059	FF RELAY GEAR	[M]	153	RHD26002	SCREW	
103	RMS0055	REEL SHAFT	[M]	154	RMA0108	MOTOR BRACKET	[M]
104	RXR0005	SUPPLY REEL ASS'Y	[M]	155	XTN26+8J	SCREW	
105	RMB0125	SPRING	[M]	156	RFM187ZA	MOTOR ASS'Y	[M]
106	RMB0047	SPRING	[M]	157	RXP0015	PINCH ROLLER ASS'Y	[M]
107	RML0076	EJECT SELECTION LVR	[M]	158	RMB0049	SPRING	[M]
108	RMM0029	EJECT SLIDE LEVER	[M]	159	RDV0007	BELT.MAIN	[M]
109	RMB0048	SPRING	[M]	160	RDV0006-1	RF BELT	[M]
110	RMC0061	SPRING	[M]	161	RXF0012	FLYWHEEL ASS'Y	[M]
111	RHW16009	CAPSTAN WASHER	[M]	162	RHW21008	FLYWHEEL WASHER	[M]
112	RML0081-1	RECORD SAFETY LEVER	[M]	163	RJR0033	EARTH LUG	[M]
113	RFU189ZA	MECHANISM BASE ASS'Y	[M]	164	RMB0044	TRIGGER SPRING	[M]
114	RMB0046-1	SPRING	[M]	165	RME0098-2	EJECT SLIDE LEVER SP	[M]
115	RML0080	ERASE HEAD ARM	[M]	166	XTN2+4F	EARTH LUG SCREW	
116	RBR2CY009	ERASE HEAD					
117	RML0116	BRAKE ARM					
118	RMB0109-1	SPRING	[M]				
119	RMA0696	HEAD PANEL	[M]				
120	RMQ0384	HEAD BASE	[M]				
124	RBR4CY016-M	R/P HEAD	[M]				
126	XTN2+12F	SCREW	[M]				
127	RMA0109	BACK PLATE	[M]				
129	XTN2+6J	SCREW					
130	RMB0043-1	SPRING	[M]				
131	RMM0027	PAUSE ROD	[M]				
132	RMM0026	STOP ROD	[M]				
133	RMM0025	FF ROD	[M]				
134	RMM0024	REW ROD	[M]				
135	RMM0023	PLAY ROD	[M]				
136	RMM0028	REC ROD	[M]				
137	RML0078	FUNCTION PLATE	[M]				
138	RML0077	LOCK PLATE	[M]				
139	RML0072	AS RELEASE LEVER	[M]				
140	RMR0227	IDLER GEAR BUSH	[M]				
141	RDG0057	IDLER GEAR	[M]				
142	RML0074	IDLER LEVER	[M]				
143	RMR0211	PAUSE BUSH	[M]				
144	RMB0053	SPRING	[M]				
145	RML0082	PAUSE LEVER	[M]				
146	RML0071	SWAY LEVER	[M]				
147	RMB0045	AS SPRING	[M]				
148	RXL0042	TRIGGLER LEVER ASS'Y	[M]				

# CABINET PARTS LOCATION





# REPLACEMENT PARTS LIST

**Notes:** \* Important safety notice:

Components identified by  $\Delta$  mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.

When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.

\* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area)

Parts without these indications can be used for all areas.

\* [M] Indicates in the Remarks columns indicates parts supplied by MESA.

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		<b>CABINET AND CHASSIS</b>		IC2	BA1442	IC.MPX / IF	[M]
				IC301	BA3313L	IC,PRE AMP	[M]
				IC302	RV1LA4108R	IC.AF POWER	$\Delta$
						<b>TRANSISTORS</b>	
1	RKFLFS430PK	CASSETTE LID ASS'Y	[M]	Q303	2SC2001KTA	TRANSISTOR	
1-1	RUS757ZAA	HALF SPRING	[M]	Q304	2SC1684RTA	TRANSISTOR	
2	RDG0183-J	DAMPER GEAR	[M]			<b>DIODES</b>	
3	RFKGFS430PK	FRONT CABINET ASS'Y	[M]	D1	RVD1SS133TA	DIODE	
4	RMB0347	OPEN SPRING	[M]	D301	LN28RPH	LED	[M]
5	EAS10P241JA3	SPEAKER	[M]	D302	RVDMTZ6R8BTA	DIODE	
6	EFBS10D48A1	TWEETER	[M]	D303	RVD1SS133TA	DIODE	
7	XTV3+10G	SCREW (SPEAKER)		D304	RVD1SS133TA	DIODE	
8	RGZ0016-K	MECHA BUTTON BLOCK	[M]	D401	RVD1SR35TR	DIODE	
9	RMXX0002	SPACER	[M]	D402	RVD1SR35TR	DIODE	
10	RMC0220	REC SPRING PLATE	[M]			<b>VARIABLE RESISTORS</b>	
11	XTN2+3F	SCREW (PLATE)		VR301	EWCUVAF15A54	VR.VOLUME	
12	XTV3+12G	SCREW (PCB & MECH)		VR302	EWC V VAF15D54	VR.TONE	
13	RMK0218	DIAL CHASSIS	[M]			<b>VARIABLE CAPACITORS</b>	
14	RGJ0012-W	POINTER	[M]	VC1	RCV4PCT0V1-A	TRIMMER	[M]
15	RGX0015-K	TUNER KNOB	[M]			<b>SWITCHES</b>	
16	RMR0314	CABLE HOLDER (5P)	[M]	S1	RSS3B45XA-H	SW.BAND	[M]
17	XYN26+C6	SCREW (TUNING KNOB)		S3	RSS2D32ZA-H	SW.FUNCTION	[M]
18	RJM164YA	MIC	[M]	S4	RSP2F001-A	SW.RECORD	[M]
19	RMN0238	LED HOLDER	[M]	S6	RSH1A003-U	SW.DECK MOTOR	[M]
20	RMBX0002	SPRING TERMINAL		S304	RJJ1SM02-H	JACK W/SW (JK1)	$\Delta$
21	RFKHFS430PK	BACK CABINET ASS'Y	(P) [M]			<b>CONNECTORS</b>	
21	RFKHFS430PCK	BACK CABINET ASS'Y	(PC) [M]	CP1	RJS1A5205	CONNECTOR (5P)	[M]
21-1	RJC91003	+ - BATTERY TERMINAL	[M]				
21-2	RJR0112	ANTENNA TERMINAL	[M]				
22	RKX0031-K	HANDLE	[M]				
23	RGW0186-K	VOLUME TONE KNOB	[M]				
24	RBD563ZA-0	FUNCTION BAND KNOB	[M]				
25	RKK318ZC-0	BATTERY COVER	[M]				
26	XEARR175ED-Y	WHIP ANTENNA					
27	XYN3+F8FY	ANTENNA SCREW					
28	XTV3+20G	CABINET SCREW					
		<b>INTEGRATED CIRCUITS</b>					
IC1	AN7205	IC,RF					



# RESISTORS & CAPACITORS

**Notes :**

- \* Capacitor values are in microfarads ( $\mu\text{F}$ ) unless specified otherwise, P=Pico-farads (pF) F=Farads
- \* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).
- \* Bracketed indications in Ref. No. columns specify the area (Refer to the first page for area).
- Parts without these indications can be used for all areas.
- \* [M] Indicates in the values & remarks column indicates parts supplied by MESA

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
	<b>RESISTORS</b>		R309	ERDS2TJ333T	33K 1/4W	C105	ECFR1C333KR	0.033 16V
R1	ERDS2TJ330T	33 1/4W	R310	ERDS2TJ221T	220 1/4W	C106	ECEA1CU100B	10 16V
R4	ERDS2TJ330T	33 1/4W	R311	ERDS2TJ6R8T	6.8 1/4W	C108	ECFR1C183MR	0.018 16V
R5	ERDS2TJ101T	100 1/4W	R313	ERDS2TJ101T	100 1/4W	C109	ECEA1CU100B	10 16V
R6	ERDS2TJ8R2T	8.2 1/4W	R314	ERDS2TJ105T	1M 1/4W	C110	ECBT1C222MR5	2200P 16V
R9	ERDS2TJ101T	100 1/4W	R318	ERDS2TJ471T	470 1/4W	C111	ECEA0JU101B	100 6.3V
R10	ERDS2TJ103T	10K 1/4W	R319	ERDS2TJ680T	68 1/4W	C113	ECBT1C103MS5	0.01 16V
R11	ERDS2TJ221T	220 1/4W	R320	ERDS2TJ222T	2.2K 1/4W	C114	ECEA1CU470B	47 16V
R12	ERDS2TJ332T	3.3K 1/4W	R332	ERDS2TJ104T	100K 1/4W	C115	ECEA1AU471B	470 10V
R106	ERDS2TJ103T	10K 1/4W		<b>CAPACITORS</b>		C116	ECFR1C683MR	0.068 16V
R107	ERDS2TJ564T	560K 1/4W	C1	ECFR1C223MR	0.022 16V	C117	ECFR1C473MR	0.047 16V
R109	ERDS2TJ222T	2.2K 1/4W	C2	ECBT1H470J5	47P 50V	C131	ECFR1C473MR	0.047 16V
R110	ERDS2TJ123T	12K 1/4W	C3	ECBT1H180JC5	18P 50V	C201	ECBT1C152MR5	1500P 16V
R111	ERDS2TJ392T	3.9K 1/4W	C4	ECBT1H100J5	10P 50V	C202	ECBT1C152MR5	1500P 16V
R112	ERDS2TJ560T	56 1/4W	C5	ECBT1H102KB5	1000P 50V	C203	ECBT1H331KB5	330P 50V
R113	ERDS2TJ222T	2.2K 1/4W	C6	ECBT1H102KB5	1000P 50V	C204	ECEA1CU470B	47 16V
R116	ERDS2TJ123T	12K 1/4W	C7	ECBT1H4R7KC5	4.7P 50V	C205	ECFR1C333KR	0.033 16V
R117	ERDS2TJ222T	2.2K 1/4W	C8	ECBT1H150J5	15P 50V	C206	ECEA1CU100B	10 16V
R120	ERDS2TJ472T	4.7K 1/4W	C9	ECBT1H102KB5	1000P 50V	C208	ECFR1C183MR	0.018 16V
R121	ERDS2TJ2R2T	2.2 1/4W	C10	ECBT1H120J5	12P 50V	C209	ECEA1CU221B	220 16V
R122	ERDS2TJ101T	100 1/4W	C11	ECBT1H220JC5	22P 50V	C210	ECBT1C222MR5	2200P 16V
R131	ERDS2TJ682T	6.8K 1/4W	C12	ECFR1C223MR	0.022 16V	C211	ECEA0JU101B	100 6.3V
R140	ERDS2TJ223T	22K 1/4W	C13	ECFR1C223MR	0.022 16V	C213	ECBT1C103MS5	0.01 16V
R206	ERDS2TJ103T	10K 1/4W	C14	ECBT1H221KB5	220P 50V	C214	ECEA1CU470B	47 16V
R207	ERDS2TJ564T	560K 1/4W	C15	ECEA1HU010B	1 50V	C215	ECEA1AU471B	470 10V
R209	ERDS2TJ222T	2.2K 1/4W	C16	ECBT1C682MR5	6800P 16V	C216	ECFR1C683MR	0.068 16V
R210	ERDS2TJ123T	12K 1/4W	C17	ECEA1EU100B	10 25V	C217	ECFR1C473MR	0.047 16V
R211	ERDS2TJ392T	3.9K 1/4W	C18	ECEA1EU100B	10 25V	C231	ECFR1C473MR	0.047 16V
R212	ERDS2TJ560T	56 1/4W	C20	ECEA0JU101B	100 6.3V	C301	ECEA1HU0R1B	0.1 50V
R213	ERDS2TJ222T	2.2K 1/4W	C21	ECBT1H102KB5	1000P 50V	C302	ECFR1C473MR	0.047 16V
R216	ERDS2TJ123T	12K 1/4W	C22	ECFR1C473MR	0.047 16V	C303	ECEA1CU100B	10 16V
R217	ERDS2TJ222T	2.2K 1/4W	C23	ECEA1HUR22B	0.22 50V	C304	ECEA0JU221B	220 6.3V
R220	ERDS2TJ472T	4.2 1/4W	C24	ECEA1EU100B	10 25V	C305	ECEA1HU3R3B	3.3 50V
R221	ERDS2TJ2R2T	2.2 1/4W	C25	ECBT1C103MS5	0.01 16V	C306	ECEA1AU330B	33 10V
R222	ERDS2TJ101T	100 1/4W	C26	ECFR1C223MR	0.022 16V	C310	ECQP1332JZ3	3300P 100V
R231	ERDS2TJ682T	6.8K 1/4W	C27	ECBT1H331KB5	330P 50V	C311	ECEA0JU221B	220 6.3V
R240	ERDS2TJ223T	22K 1/4W	C28	ECEA1HU010B	1 50V	C312	ECFR1C223MR	0.022 16V
R301	ERDS2TJ222T	2.2K 1/4W	C29	ECEA1HU010B	1 50V	C313	ECBT1C103MS5	0.01 16V
R302	ERDS2TJ471T	470 1/4W	C30	ECBT1H5R6KC5	5.6P 50V	C315	ECBT1C103MS5	0.01 16V
R303	ERDS2TJ222T	2.2K 1/4W	C101	ECBT1C152MR5	1500P 16V	C316	ECEA1AU221B	220 10V
R305	ERDS2TJ471T	470 1/4W	C102	ECBT1C152MR5	1500P 16V	C317	ECEA1CU470B	47 16V
R306	ERDS2TJ101T	100 1/4W	C103	ECBT1H331KB5	330P 50V	C318	ECBT1C103MS5	0.01 16V
R308	ERDS2TJ561T	560 1/4W	C104	ECEA1CU470B	47 16V	C319	ECA1CM222EV	2200 16V [M]
						C401	ECKR1H103ZF5	0.01 50V
						C402	ECKR1H103ZF5	0.01 50V