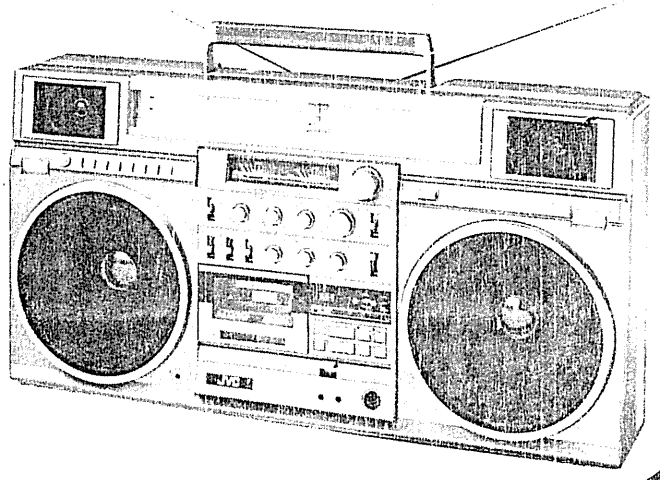
JVC

SERVICE MANUAL

MODEL

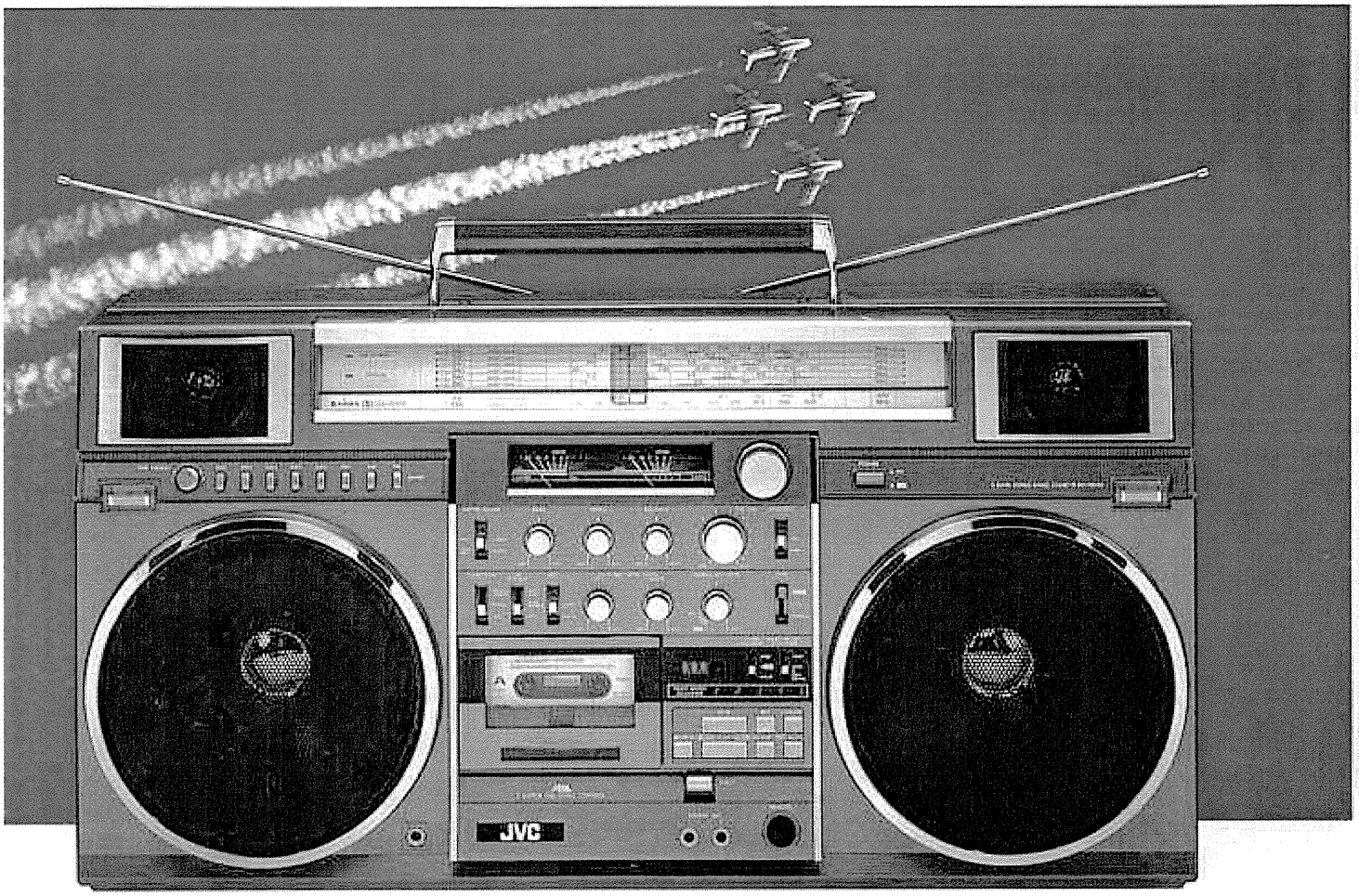
RC-M90JW/W

FM-AM-SW1-SW2-SW3-SW4-SW5-SW6
8-BAND STEREO RADIO
CASSETTE RECORDER



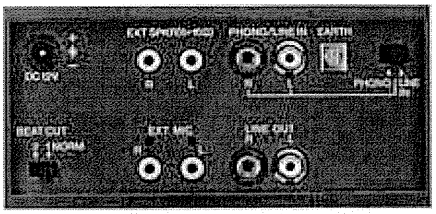
No. 1462
November 1981

RC-M90



- **8-Waveband tuner!**
- **Super ANRS for noise reduction and dynamic range expansion**
- **Massive power of a total 40 watts**

- 8-Waveband tuner with shortwave split 6 ways for easier, more accurate tuning
- For better FM channel separation, the multiplex circuit uses a PLL (Phase Locked Loop) IC
- Easy-to-read 15 cm (6") tuning dial
- Large high-inertia flywheel with independent drive belt for smoother tuning
- FM stereo LED that lights when tuned to the center frequency of a stereo broadcast
- Beat cut switch
- Twin telescopic antennas
- Terminals for the connection of an external antenna
- Signal strength meter for easier tuning
- BTL (balanced transformerless) power amplification circuit
- 2-way 4-speaker system with two 20-cm (8") woofers and two 6.5-cm (2-1/2") tweeters
- New polyurethane laminated cone paper makes woofers stiffer for in-phase vibration and resistant to water splashes
- Independent bass and treble tone controls
- Loudness switch and Balance control
- Advanced two-motor full-logic tape transport system that gives wow and flutter of only 0.05 % WRMS
- Solenoid operation means that only the lightest touch on the operation buttons is all that is necessary
- Heads specially designed to make the most of metal tape with Metaperm record/playback head and 2-gap SA (Sen-Alloy) erase head
- 3-position tape selector so that optimum bias and equalization can be set for any tape
- 5-Program Multi Music Scanner lets you skip backwards or forwards so that playback starts where you want it to
- Optional remote control unit (R-15E)
- Quick cue and review
- Timer standby switch
- Record muting
- Gear/oil-damped cassette door
- Right-side-up cassette loading
- Super ANRS for an expanded dynamic range and lower tape hiss
- ANRS, compatible with Dolby* B noise reduction, lets you play Dolbyized* cassettes and make noise-reduced recordings
- ALC (Automatic Level Control) automatically sets optimum recording level
- Manual override lets you set recording level manually referring to right and left meters
- Meters also function as battery checker and tuning meter
- Mike mixing jacks on front panel with independent level control
- Microphone jacks on rear panel controlled by input level control
- RIAA equalizer built in so that turntable can be connected directly
- Jacks provided for connection of another source component
- Terminals for the connection of a pair of external speakers
- 3-way power supply: AC, car (via optional adapter) or batteries
- Output power: 40 watts maximum (20 W + 20 W)



Contents

Specifications

Semiconductors : 21 ICs, 77 transistors & 1 FET
Speakers : 20 cm x 2, 6.5 cm x 2

Tuner section

Frequency ranges :

FM	88 – 108 MHz
AM	540 – 1600 kHz
SW1	1.6 – 3.5 MHz
SW2	3.5 – 6.0 MHz
SW3	5.95 – 6.2 MHz
SW4	6.0 – 11.0 MHz
SW5	11.0 – 18.5 MHz
SW6	18.5 – 26.0 MHz

Antennas : Telescopic antennas for FM & SW
Ferrite core antenna for AM & SW1
External antenna terminal (for FM & SW) provided

Tape recorder section

Track system : 4-Track 2-channel stereo
Frequency response: 30 – 17,000 Hz (with metal tape)
30 – 16,000 Hz (with chrome tape)
30 – 15,000 Hz (with normal tape)
Wow & flutter : 0.05% (WRMS)
S/N ratio : 54 dB (Metal)
Rewind time : Within 95 sec. (C-60 cassette)
Fast forward time : Within 95 sec. (C-60 cassette)

Amplifier section

Power output : Max. 40 W (20 W + 20 W)
Music power of 60 W (30 W + 30 W)
Input jacks : Mic x 2 (0.45 mV, 1.3 kΩ)
Mix. Mic x 2 (0.8 mV, 1.6 kΩ)
Line in x 2 (input level 120 mV min., impedance; 100 kΩ)
Phono in x 2 (input level 3 mV min., impedance; 47 kΩ)
Remote control jack x 1 (8-pin)
DC in x 1
Output jacks : Ext. speaker x 2 (load impedance 6 – 16 Ω)
Headphones (2 mW/8 Ω, load impedance 8 – 32 Ω)
Line out x 2 (0.3 V, impedance; 2.7 kΩ)
Power supply : DC 15 V (10 "R20" cells) Car battery through a car battery adapter
AC 240/220/110 V, 50/60 Hz (RC-M90W)
AC 240/220/120 V, 50/60 Hz (RC-M90JW)
AC 240 V, 50/60 Hz (RC-M90WH)
Power consumption: 70 W(RC-M90W), 61 W(RC-M90JW)
Dimensions : 668(W) x 350(H) x 177(D) mm
Weight : 10.0 kg (without batteries)
11.1 kg (with batteries)

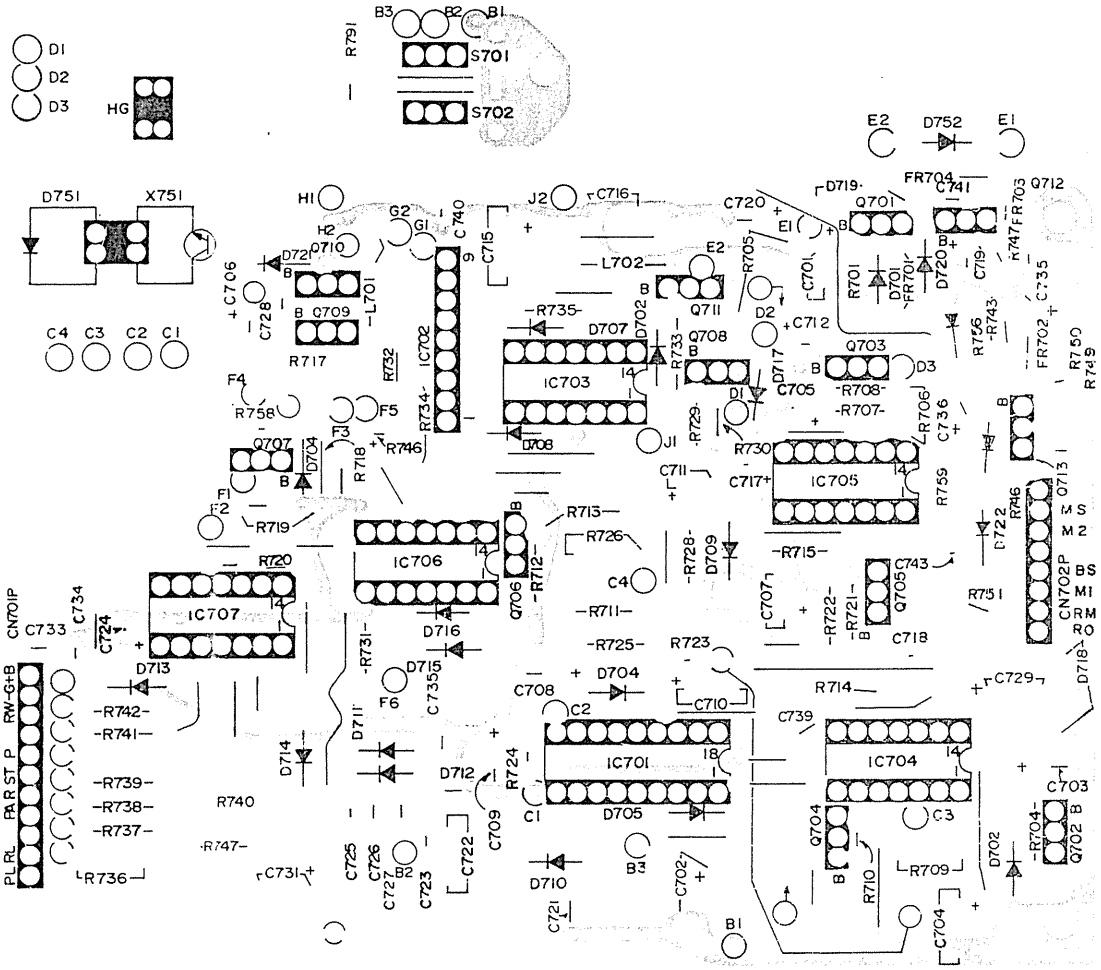
Design and specifications subject to change without notice.
No. 1462

Fuatures

1. Newly developed 2-way, 4-speaker system with polyurethane laminated cone woofers.
   - 2-way, 4-speaker system with two 20 cm woofers and two 6.5 cm tweeters.
   - Uses newly developed polyurethane laminated cone in the woofers to reproduce rich, realistic sound.
2. High total power output of 40 W (20 W per channel). Peak music power of 60 W (30 W per channel).
3. 2-motor full logic control mechanism.
   - Provided with a remote control jack.
   - Timer standby mechanism.
   - Cue and review facilities.
4. Multi music scan mechanism for skipping up to 5 different program selections.
   "Under license of Stear S.A., Brussel, Belgium"
5. Built-in SUPER ANRS, ANRS/DOLBY* B noise reduction systems to greatly reduce tape hiss and improve dynamic range.
6. Metal tape compatibility.
   - METAPERM recording/playback head and 2-gap SA (Sen-Alloy) erase head.
   - 3-position tape select switch for Metal, CrO_2 and Normal tapes.
7. Multi mixing facilities when using wired microphone.
   - Provided with mixing volume control.
   - Provided with two microphone jacks (6.3 mm dia.) for exclusively microphone mixing.
8. 8-Band radio selection including FM, AM, SW1 – SW6.
9. Manual/Automatic Recording Level control.
10. Record muting facility for leaving non-recorded sections.
11. Equipped with recording and external input (PHONO/LINE IN) jacks.
    - Built-in RIAA equalizer for direct connection of a turntable.
12. External output and external speaker jacks.
13. External antenna terminals for FM and SW.

* "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licencing Corporation.

Mechanical Control P.W.B Parts



⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Mecha. Control P.W. Board Parts List

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
		VMW2169-002A	P.W. Board		1
IC701		VUC0002-001	IC		1
IC702		BA6208A	"		1
IC703		M74LS00P	"		1
IC704, 705, 706		M74LS05P	"		3
IC707		M74LS12P	"		1
X701		2SD325(E)HP	Transistor		1
X702, 712		2SD439(E)	"		2
X703, 704		2SD636(S)	"		2
X705,706,707,708,709,713		2SD636(R,S)	"		6
X710, 711		2SC2673(P,Q,R)	"		2
D701, 723		HZ7C2	Zener Diode		2
D702, 718, 719		10E1	Si. Diode		3
D703		HZ6B	Zener Diode		1
D704–717, 722, 724		1S2076	Si. Diode		16
D721		HZ6C2	Zener Diode		1
D720		HZ12B1	"		1
R701, 704		QRD147J-102S	C. Resistor	1 kΩ ¼ W	2
R743		" -103S	"	10 kΩ "	1
R745		QRD143J-100S	"	10 Ω "	1
R747		" -391S	"	390 Ω "	1
R749		" -562S	"	5.6 kΩ "	1
R750		" -473S	"	47 kΩ "	1
R751		" -101S	"	100 Ω "	1
R754		" -102S	"	1 kΩ "	1

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
R758		QRD143J-822S	C. Resistor	8.2 kΩ ¼ W	1
R760		QRD141J-681S	"	680 Ω "	1
FR701, 704	⚠	QRH141J-4R7	Fusible Resistor	4.7 Ω "	2
FR702	⚠	" -100	"	10 Ω "	1
FR703	⚠	" -2R2	"	2.2 Ω "	1
C701, 704, 707, 712		QET41AR-227	E. Capacitor	220 μF 10 V	4
C702, 731		QET41ER-108	"	1000 μF 25 V	2
C703		QET41HR-105	"	1 μF 50 V	1
C705		QET41AR-107	"	100 μF 10 V	1
C706		QET41ER-476	"	47 μF 25 V	1
C708		QET41AR-337	"	330 μF 10 V	1
C709, 710		QEE41EM-105B	T.E. Capacitor	1 μF 25 V	2
C711		QEB41EM-475	E. Capacitor (Low Leak)	4.7 μF "	1
C713		QET41ER-336	E. Capacitor	33 μF "	1
C714,718,721,722,723,725, 726,727,732,733,734,739, 741,742		QCF11EZ-223	C. Capacitor	0.022 μF "	14
C715		QET41AR-477	"	470 μF 10 V	1
C716, 728		QCF11EZ-473	"	0.047 μF 25 V	2
C717, 724		QET41AR-476	E. Capacitor	47 μF 10 V	2
C719		QET41CR-106	"	10 μF 16 V	1
C720		QET41ER-477	"	470 μF 25 V	1
C729		QET41CR-336	"	33 μF 16 V	1
C735, 743		" -476	"	47 μF "	2
C736		" -226	"	22 μF "	1
C737, 738, 740		QCF11HP-103	C. Capacitor	0.01 μF 50 V	3
C744		QCC11EM-104	"	0.1 μF 25 V	1
CN701P		QMV5004-011	Connector		1
CN702P		" -008	"		1
L701		T41572-001	Inductor		1
L702		VQP0004-231	"		1
[Switch P.W. Board]		VMW2169-002B	P.W. Board		1
S701, 702		QSP0029-001	Push Switch		2
R791		QRD181J-680A	C. Resistor	68 Ω 1/8 W	1
[LED P.W. Board Ass'y]		VMW2169-002C	P.W. Board		1
X751		PN202S	Photo Transistor		1
D751		TLP108D	LED		1
		VKZ4135-001	Spacer		1
		VYH4450-001	Photo Shell		1
[H.G. P.W. Board Ass'y]		VMW2169-002D	P.W. Board		1
H.G.		VHE610G	Hall Element		1
[Solenoid P.W. Board]		VMW2169-002E	P.W. Board		1
D752		10E1	Si. Diode		1
S703		VSH1108-006	Switch Ass'y		1

Names of Parts

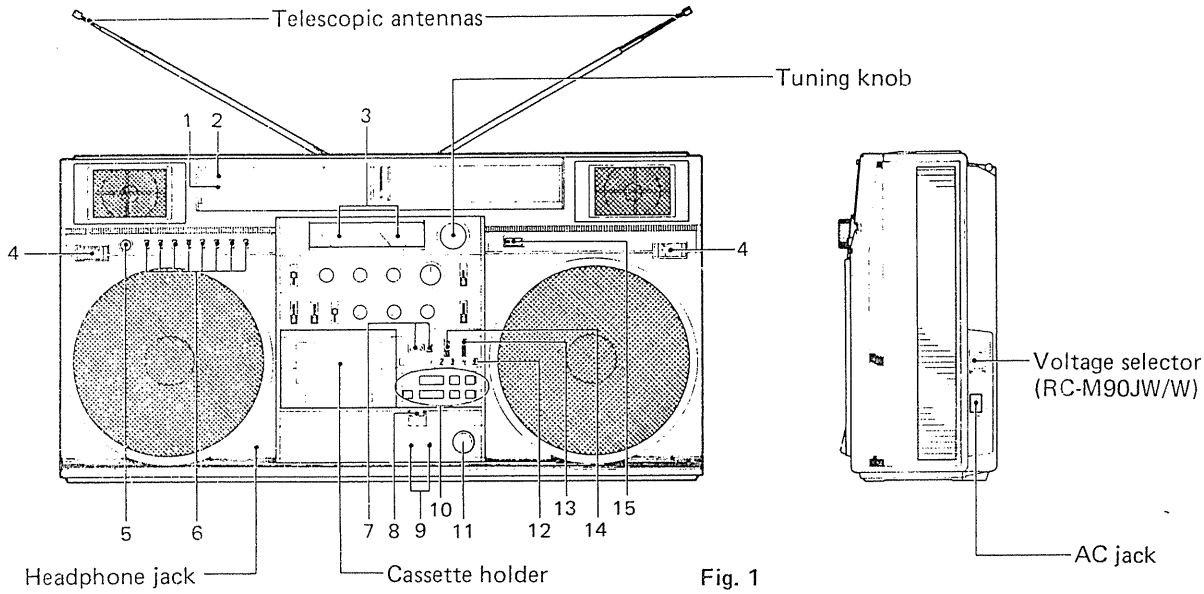


Fig. 1

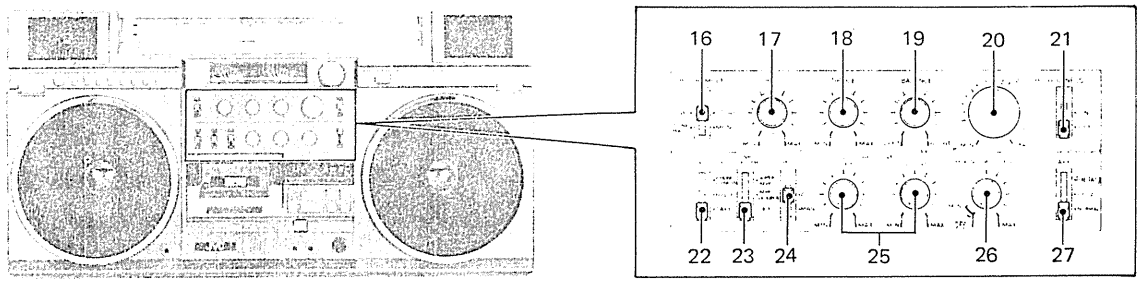


Fig. 2

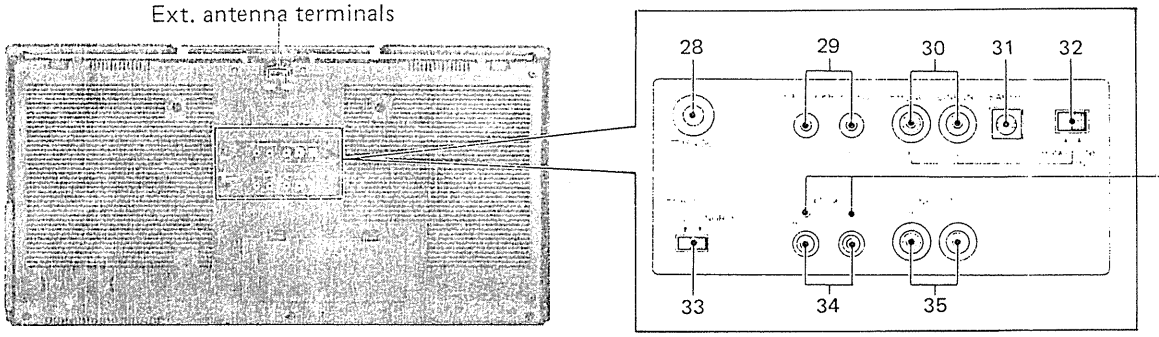


Fig. 3

1. POWER indicator
2. FM STEREO indicator
3. 3-way meter
4. Built-in microphones (L, R)
5. FINE TUNING knob
6. BAND select buttons
7. Tape counter with reset button
8. EJECT button
9. MIXING MIC jacks
10. Cassette operation buttons
    - ■ STOP button
    - ○ REC button
    - II PAUSE button
    - ◀◀ REVIEW button
    - ▶ PLAY button
    - ▶▶ CUE button
11. REMOTE jack
12. MULTI MUSIC SCANNER indicators
13. MULTI MUSIC SCANNER switch
14. TIMER STANDBY switch
15. POWER switch
16. METER/MODE switch
17. BASS control
18. TREBLE control
19. BALANCE control
20. VOLUME control
21. LOUDNESS switch
22. FUNCTION switch
23. NR SYSTEM switch
24. REC switch (AUTO – MANU)
25. REC LEVEL controls
26. MIXING MIC LEVEL control
27. TAPE switch
28. External DC input jack (DC 12 V = RC-M90JW, DC 15 V = RC-M90W/WH)
29. External speaker jacks (EXT SPKR – 6~16 Ω)
30. PHONO/LINE IN jacks
31. EARTH terminal
32. PHONO/LINE IN selector switch
33. BEAT CUT switch
34. External microphone jacks (EXT MIC)
35. Line output jacks (LINE OUT)

Main Parts Location

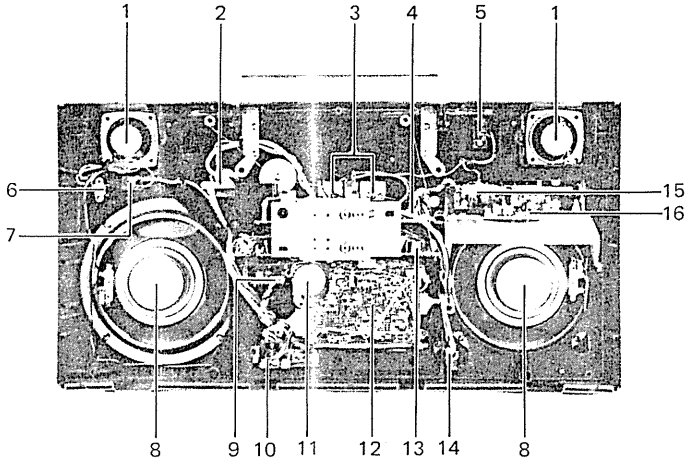


Fig. 4

1. Speakers (tweeter)
2. Power switch P.W. board ass'y
3. Indicators (meters)
4. Main amp. P.W. board ass'y
5. LED P.W. board ass'y
6. E.C. microphone
7. Connector board
8. Speakers (woofers)
9. M.M.S. P.W. board ass'y
10. Jack P.W. board
11. Capstan motor
12. Mecha. control P.W. board ass'y
13. Pre-amp. P.W. board ass'y
14. Phones (headphone) P. W. board
15. Tuner P.W. board ass'y
16. Bar antenna ass'y

Removal of the Main Parts

A. Rear cabinet and rod antennas (Fig. 5)

1. Remove the battery cover.
2. Remove 3 screws ① – SBSF4018R.
3. Remove 7 special screws ② – VKZ4008-002.
   To remove the rear cabinet, remove the rod antennas and power supply P.W. board wires connector.
4. To remove the rod antenna only, remove a screw ③ fixing the antenna holder (need not the rear cabinet).

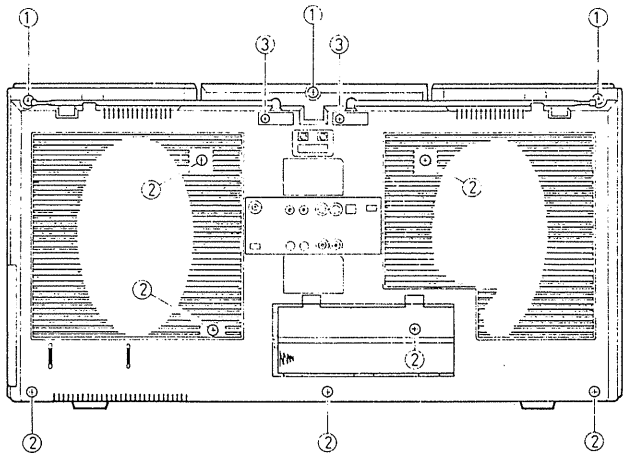


Fig. 5

B. Chassis (with cassette mechanical unit) (Fig. 6, 7)

1. Remove 2 screws ④ – SDSP3008RS (upper side on the front cabinet) and 2 screws ⑤ – SBSF3012R (lower side on the front cabinet).
2. Remove 7 screws ⑥ – SBSF3014C, and a screw – SBSF3030V.
3. Remove 8 connectors Ⓐ ~ Ⓗ.
4. Remove lever switch knobs, VR knobs and tuning knob.

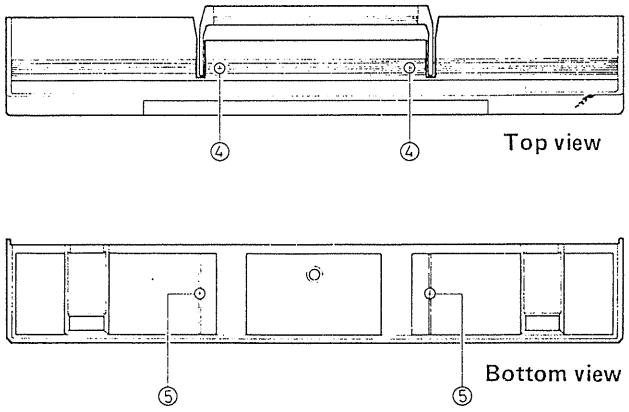


Fig. 6

C. Mechanical unit (Fig. 8)

1. Remove 4 screws (7) – SBSF3010V.
2. Remove a wire connector (I).
3. Unsolder head wires.

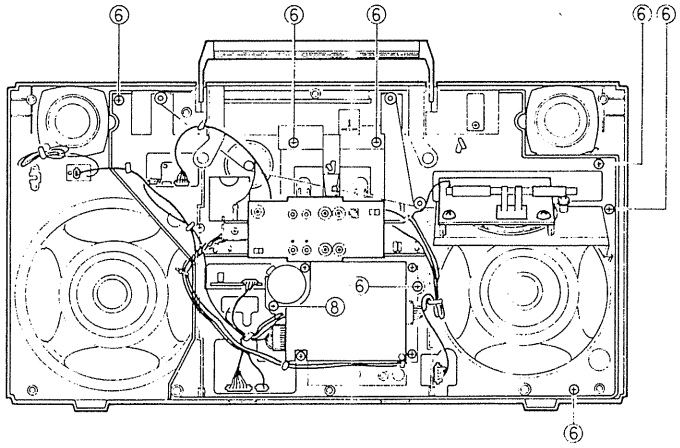


Fig. 7

D. Mechanical unit (How to remove directly from the front cabinet) (Fig. 7, 8)

1. Remove 4 screws (7) – SBSF3010V.
2. Remove a screw (8) – SBSF3030V.
3. Remove wire connectors (B), (D) ~ (F) and (I).
4. Unsolder head wires.

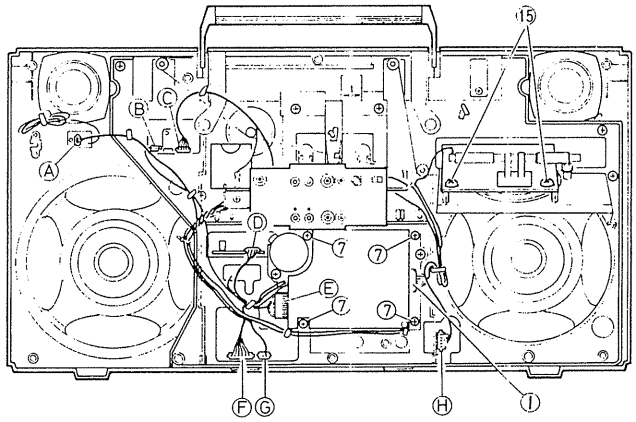


Fig. 8

E. Other parts (Fig. 8, 9)

1. Tweeters = remove 4 screws (9) – SBSF3008Z.
2. Woofers = remove 8 screws (10) – SBSF4010Z.
3. Connector P.W. boards and power switch P.W. board = remove 7 screws (11) – SBSF3010Z.
4. MMS jack and phones P.W. boards = remove 4 screws (12) – SBSF3008Z.
5. Mechanical operation button P.W. board = remove 2 screws (13) – SBSF2616Z.
6. Pre-amp. and main amp. P.W. board = remove 2 screws (14) – SBSF3012V.
7. Tuner P.W. board = remove 2 screws (15) – SBSF-3012V.

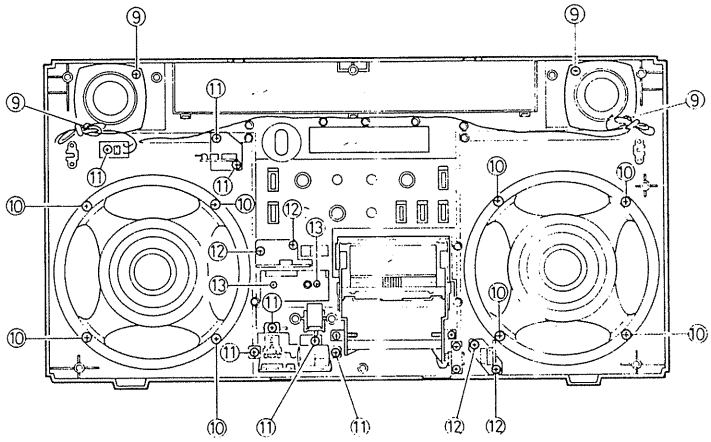


Fig. 9

Removal of the Mechanical Parts

(Refer to page 26 "Cassette Mechanical Component Parts".)

A. Pinch roller arm ass'y (96) (Fig. 10)

1. Remove E-ring (98).
2. Remove the pinch roller arm ass'y with its spring.

B. Heads (Fig. 10)

1. REC/PB head (45)
   Unsolder the head wires and remove 2 screws (49).
2. Erase head (47)
   Unsolder the head wires and remove 2 screws (51).

C. Cassette plate (Fig. 10)

1. Remove 2 screws – SDSB2605R.
2. To remove the cassette plate, hold upper side on the (A) and (B) points.

D. Tape counter (60) (Fig. 10)

1. Remove the counter belt (124).
2. Draw the counter ass'y to front side, pushing the mold part of the bracket lower side by screw driver.

E. Reel disk ass'y (Fig. 10)

1. Take-up reel disk ass'y (4)
   Remove the cassette plate and the counter belt (124).
   Remove the reel stopper (7).
2. Supply reel disk ass'y (5)
   Remove the reel stopper (7).
   When assembling the reel disk, the stopper need a new part, the stopper cannot be used again.

F. Mecha. control P.W. board ass'y (Fig. 11)

Remove 4 screws (142).

G. Flywheel holder (125) (Fig. 12)

Remove 3 screws (127).

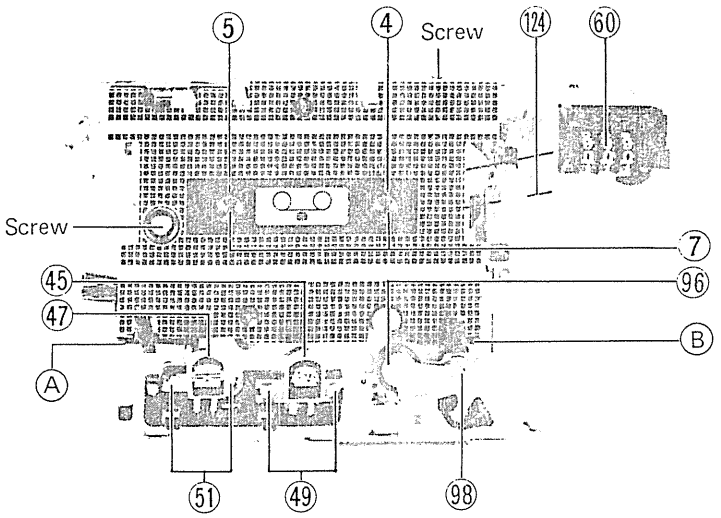


Fig. 10

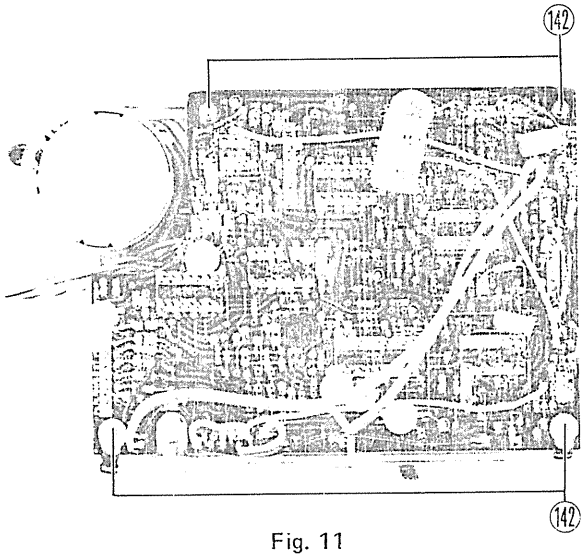


Fig. 11

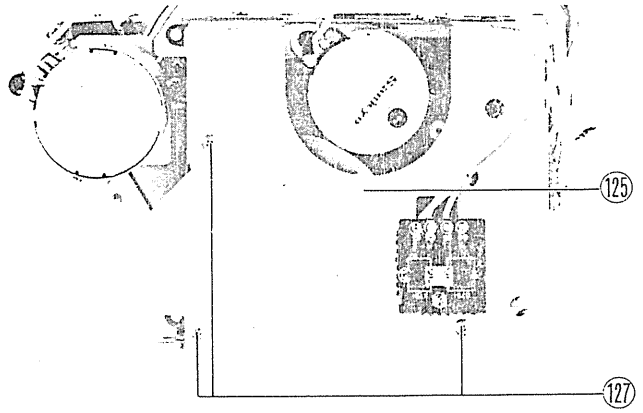


Fig. 12

H. Capstan motor (53) (Fig. 13)

1. Remove the capstan belt (122).
2. Remove 3 screws (61) with motor bracket.
3. Remove the rubber stopper, and then turn the motor to inside.

I. Reel motor (73) (Fig. 13)

Remove 2 screws (76).

J. Flywheel ass'y (117) (Fig. 13)

Remove the take-up belt and capstan belt.
(When replacing the flywheel, be sure to employ washers. Be careful not to soil the belt.)

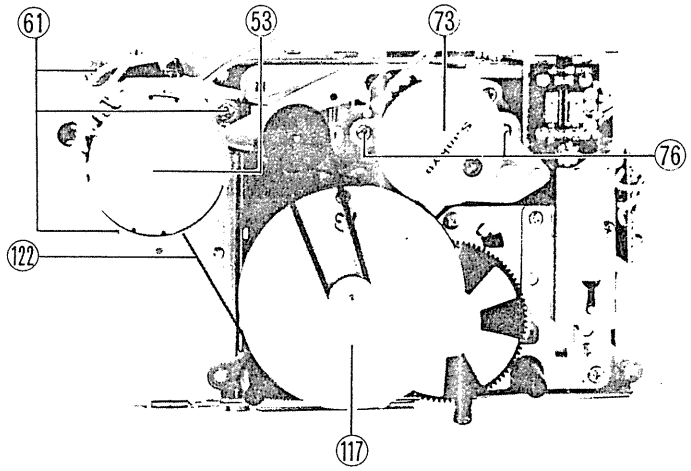


Fig. 13

K. Reel disk ass'y (2) (Fig. 14)

1. Remove the reel motor, flywheel ass'y and counter belt.
2. Remove 3 screws (77).

L. Drive gear ass'y (16) (Fig. 14)

1. Remove the flywheel ass'y.
2. Remove 3 screws (86).

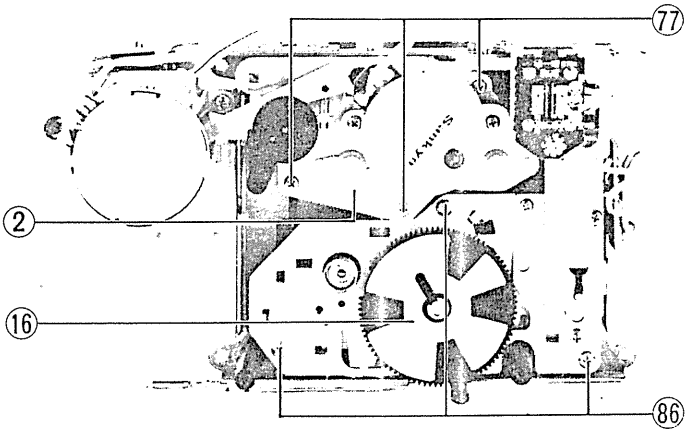


Fig. 14

How to Engage Dial Cord

1. Turn the dial drum fully counterclockwise (to the lowest frequency).
2. Use Kevlar cord (1,680 mm long and 0.5 mm in diameter).
3. Install the string in the sequence of the numbers.
4. Wind 2 turns to the tuning shaft and the drum.

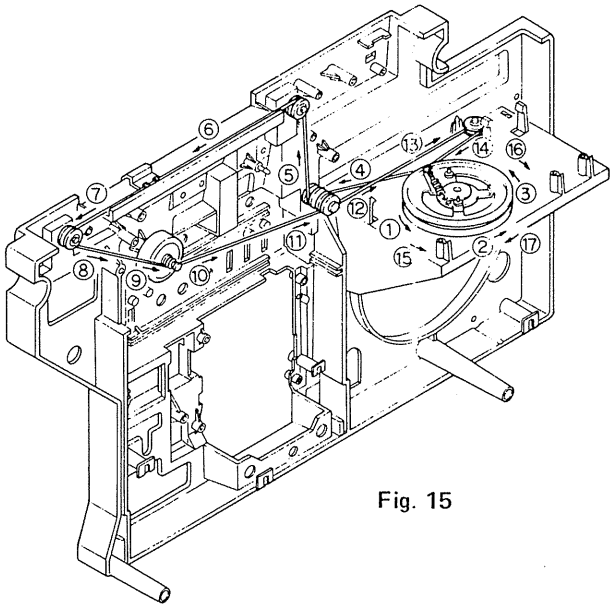


Fig. 15

Safety Precautions

⚠ Safety mark

Safety is very important with this unit. When replacing the parts marked ⚠, be sure to use only those designated parts. The designated resistors, diodes, transistors become hot in use. When replacing, be sure to secure them with a distance of more than 5 mm from the circuit board. In addition, they are banded together to avoid touching other wiring, recheck this point as well after repair.
The wiring of the primary side should be wound more than one and half times, then soldered.

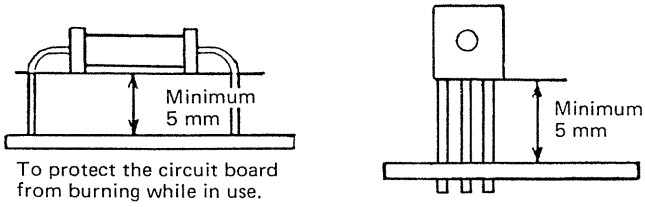


Fig. 16

Tuner Alignment

Output Measuring: Speaker terminal (Impedance = 6 Ω), output level 50 mW (0.55 V/6 Ω)

AM IF & RF Alignment

Input (SSG) Modulation 400 Hz, Modulated to 30%

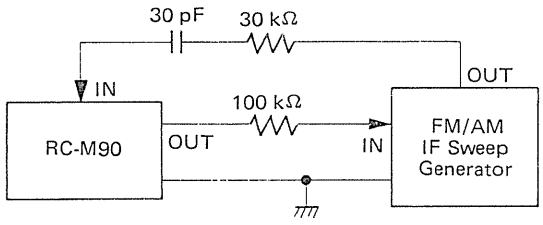
Step	Frequency Band	Input Signal		Place to be aligned	Set the V. Capacitor to
		Frequency	Given to		
1	AM (IF)	455 kHz	Loop Antenna	T3, 4, 5 (Input ; TP-3 Output; TP-4, TP-5)	Minimum
2		Repeat the Step 1, and adjust for no further improvement.			
3	AM	520 kHz	Loop Antenna	L8	Maximum
4		1650 kHz		TC8	Minimum
5		Repeat the Steps 3 & 4.			
6		620 kHz	Loop Antenna	L1	620 kHz Signal
7		1400 kHz		TC1	1400 kHz Signal
8		Repeat the Steps 6 & 7, and adjust for no further improvement.			
9	SW1	1.55 MHz	Loop Antenna	L9	Maximum
10		3.7 MHz		TC9	Minimum
11		Repeat the Steps 9 & 10.			
12		1.6 MHz	Loop Antenna	L2	1.6 MHz Signal
13		3.5 MHz		TC2	3.5 MHz Signal
14		Repeat the Steps 12 & 13, and adjust for no further improvement.			
15	SW2	3.4 MHz	Rod Antenna thorugh Dummy Antenna	L10	Maximum
16		6.3 MHz		TC10	Minimum
17		Repeat the Steps 15 & 16.			
18		3.5 MHz	Rod Antenna through Dummy Antenna	L3	3.5 MHz Signal
19		6.0 MHz		TC3	6.0 MHz Signal
20		Repeat the Steps 18 & 19, and adjust for no further improvement.			
21	SW3	5.9 MHz	Rod Antenna through Dummy Antenna	L11	Maximum
22		6.3 MHz		TC11	Minimum
23		Repeat the Steps 21 & 22.			
24		5.9 MHz	Rod Antenna through Dummy Antenna	L4	5.9 MHz Signal
25		6.3 MHz		TC4	6.3 MHz Signal
26		Repeat the Steps 24 & 25, and adjust for no further improvement.			
27	SW4	5.8 MHz	Rod Antenna through Dummy Antenna	L12	Maximum
28		11.5 MHz		TC12	Minimum
29		Repeat the Steps 27 & 28.			
30		6.0 MHz	Rod Antenna through Dummy Antenna	L5	6.0 MHz Signal
31		11.0 MHz		TC5	11.0 MHz Signal
32		Repeat the Steps 30 & 31, and adjust for no further improvement.			
33	SW5	10.7 MHz	Rod Antenna through Dummy Antenna	L13	Maximum
34		19.0 MHz		TC13	Minimum
35		Repeat the Steps 33 & 34.			
36		12.0 MHz	Rod Antenna through Dummy Antenna	L6	12.0 MHz Signal
37		18.0 MHz		TC6	18.0 MHz Signal
38		Repeat the Steps 36 & 37, and adjust for no further improvement.			

Step	Frequency Band	Input Signal		Place to be aligned	Set the V. Capacitor to
		Frequency	Given to		
39	SW6	18.0 MHz	Rod Antenna through Dummy Antenna	L14	Maximum
40		27.5 MHz		TC14	Minimum
41		Repeat the Steps 39 & 40.			
42		19.0 MHz	Rod Antenna through Dummy Antenna	L7	19.0 MHz Signal
43		26.0 MHz		TC7	26.0 MHz Signal
44		Repeat the Steps 42 & 43, and adjust for no further improvement.			

FM IF & Discriminator Alignment

Input (Sweep Generator) : TP1 (hot)
Output (Oscilloscope) : IF TP2 (hot) & TP5
Discriminator TP2 (hot) & TP5

Step	Mode	Place to be aligned	Wave form
1	IF	T1	Fig. A
2	Discriminator	T2	Fig. B



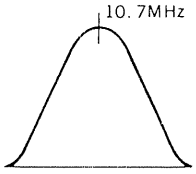


Fig. A

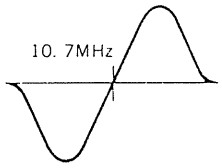


Fig. B

FM RF Alignment

Input (SSG): Use 75 Ω terminal, modulation 400 Hz modulated to 22.5 kHz deviation. Connect Hot side to TP6 and Cold side to TP7.

Step	Frequency Band	Input Signal		Place to be aligned	Set the V. Capacitor to
		Frequency	Given to		
1	FM	87.5 MHz	TP6 & TP7	L16	Maximum
2		109 MHz		TC16	Minimum
3		Repeat the Steps 1 & 2.			
4		90 MHz	TP6 & TP7	L15	90 MHz Signal
5		106 MHz		TC15	106 MHz Signal
6		Repeat the Steps 4 & 5, and adjust for no further improvement.			

FM MPX Alignment

A. 19 kHz Alignment (regular Method)
1. Connect a frequency counter to the test point TP8.
2. Adjust the variable resistor VR1 so that the frequency becomes 19 kHz ± 250 Hz.

B. 19 kHz Alignment (Simplified Method)
1. Turn to an FM stereo broadcast.
2. Set the variable resistor VR1 to the center position of the range in where the stereo indicator keeps lighting.

C. Separation Alignment
1. Connect an FM stereo signal generator across the test points TP2 (98 MHz, 60 dB).
2. Connect an Electronic voltmeter or oscilloscope across the test points TP8.
3. Adjust the variable resistor VR2 to minimize the output of right channel signal.

Parts Arrangement for Alignment

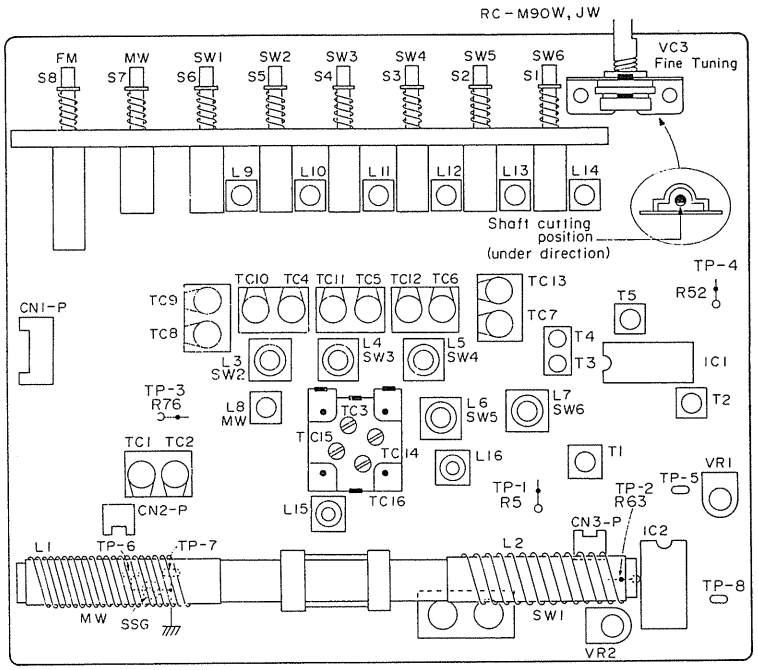
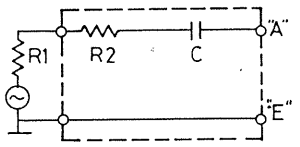


Fig. 17

Dummy Antenna



R1 + R2 = 80 Ω
C = 10 pF
R1 : Output impedance of S.S.G.

Adjustment of Cassette Recorder Amplifier

Basic conditions:

Source power : 15 V DC
Measurement : at LINE OUT terminals
Switch setting : Select SW ; TAPE
MODE SW ; STEREO
Beat cut ; "1" (Normal)
PHONO/LINE IN select SW ; LINE

Adjust in the following sequence.

1 Head azimuth
Connect an oscilloscope to the LINE OUT jacks. Using test tape VTT-658 (10 kHz, −15 dB), adjust so the phase differenc between the L and R output is 0° and maximize the output level at the same time.

2 Tape speed
Connect a frequency counter to the LINE OUT jacks. Playing back test tape VTT656 (3,000 Hz), adjust the semi-fixe resistor in the motor so that the frequency counter reads 3,010 ± 10 Hz.

3 Playback level
Connect an electronic voltmeter to the LINE OUT jacks. Playing back test tape VTT664 (1 kHz, 16 mM), adjust VR10 and VR201 so that the L and R output levels become 300 mV.

4 Level meter gain
After adjustment item 3, playback test tape VTT664 (1 kHz 16 mM).
Adjust VR301 and VR401 on the main amp. P.W. board so that level meter gain becomes 0 VU.

5 Erase current (METAL tape used)
Connect an electronic voltmeter to TP501 (R540 both sides).
Check erase current so that it becomes more than 95 mV/1 Ω (95 mA).
If its current becomes more than 120 mA, unsold R524 (10 Ω) to open the pattern circuit.

6 Bias frequency (Tape = METAL)
Connect a frequency counter TP101 (R159 both sides).
Adjust L501 so that the counter reads 68 kHz. After adjustment, connect R540 (1 Ω).

7 Bias current (1)
Connect an electronic voltmeter to TP101 (R159) and TP201 (R259).
Adjust following conditions.
[at metal tape ..... 7 mV/10 Ω (700 μA) — VR105, VR205
at normal tape ..... 3 mV/10 Ω (300 μA) — VR104, VR204]

8 Recording current (Tape = NORMAL) Volume control = MAX.
Apply 1 kHz (−16 dBs) to the LINE IN jacks.
Adjust VR103 and VR203 so that the level meter reads 0 VU.

9 Bias current (2)
Record 1 kHz, 10 kHz (−36 dBs) signals to the LINE IN jacks.
Play back the recorded part.
Adjust following conditions. 1 kHz (reference) ..... 10 kHz $-^{+1}_{-0}$ dB
at metal tape VR105, 205
at normal tape ..... VR104, 204) mini. adjustment

Adjustment location (Amplifier circuit)

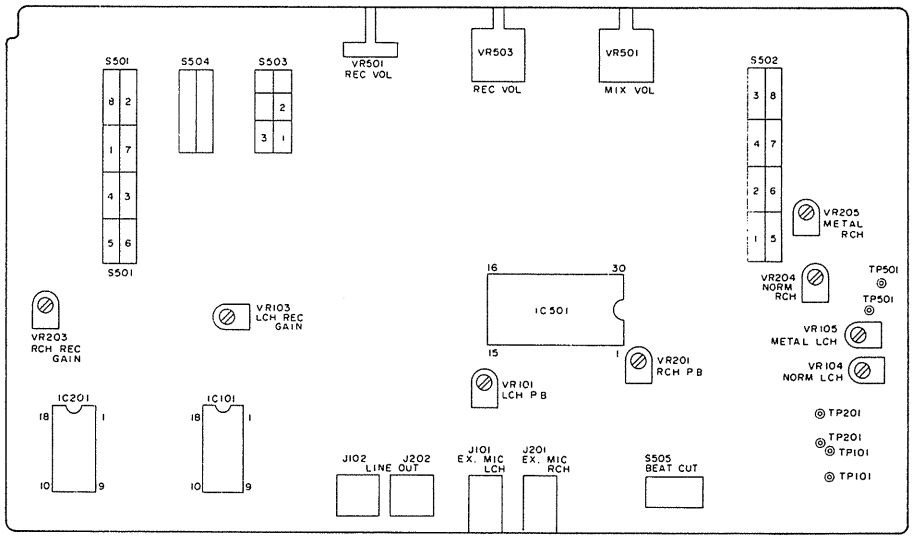


Fig. 18

No. 1462

Block Diagrams

A. Tuner Circuit

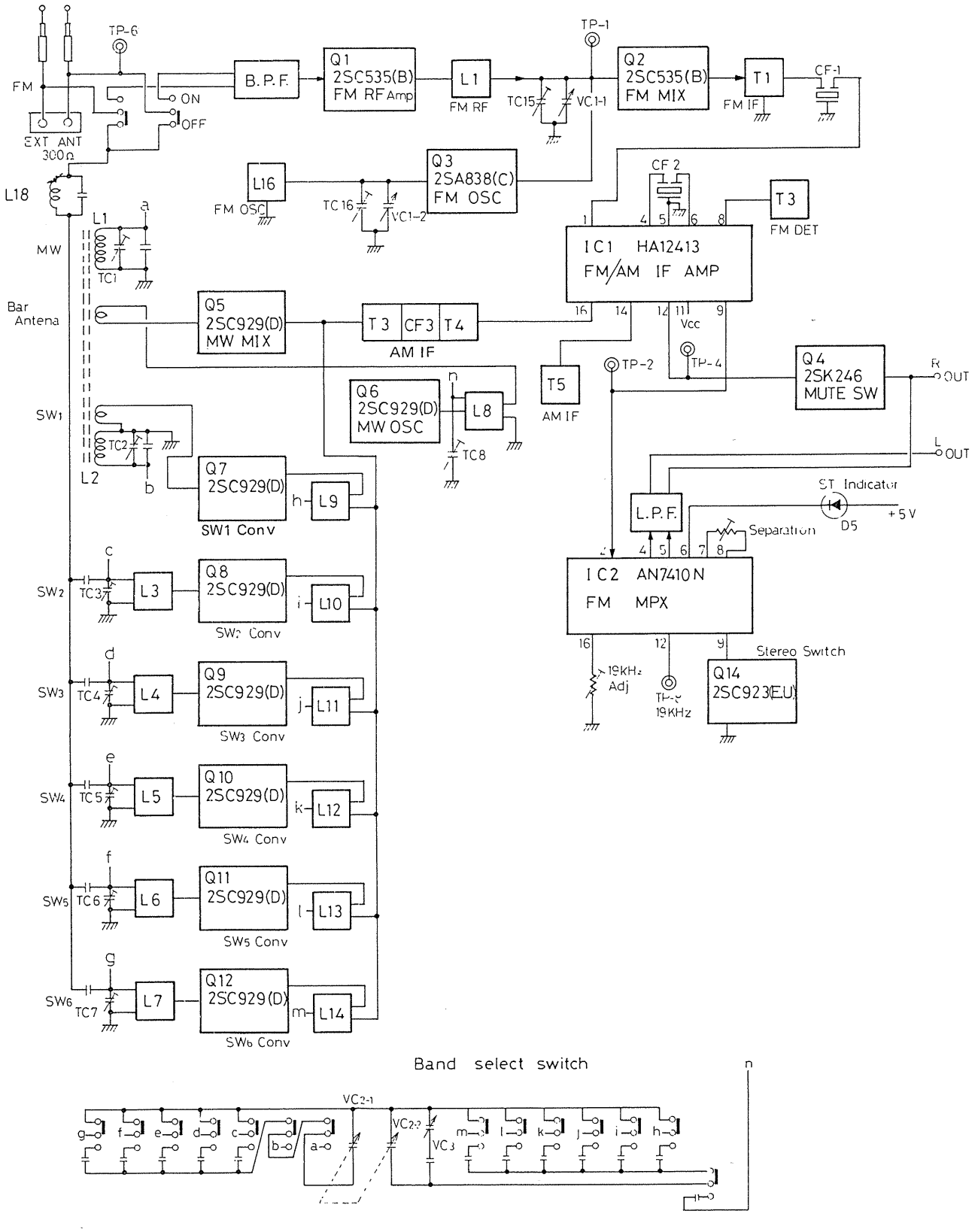


Fig. 19

B. Pre-Amplifier Circuit

At recording

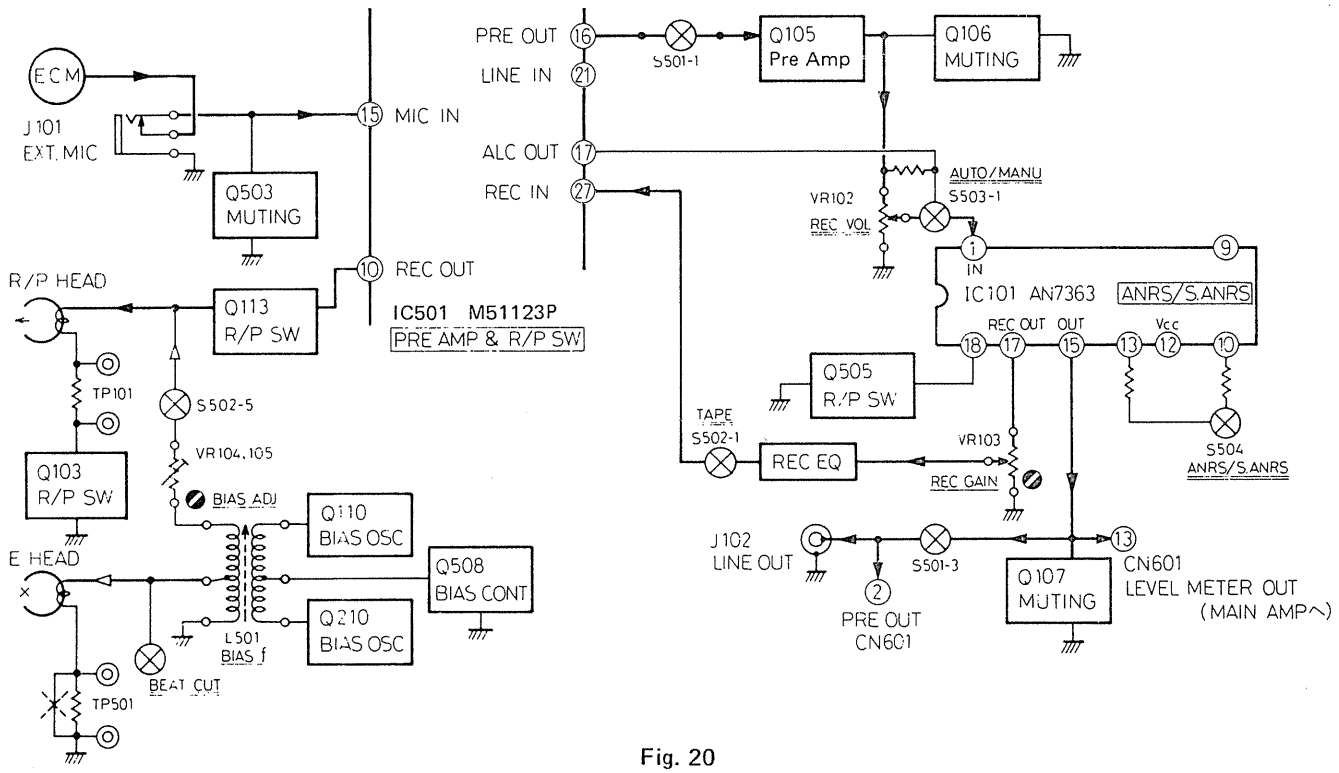


Fig. 20

At playback

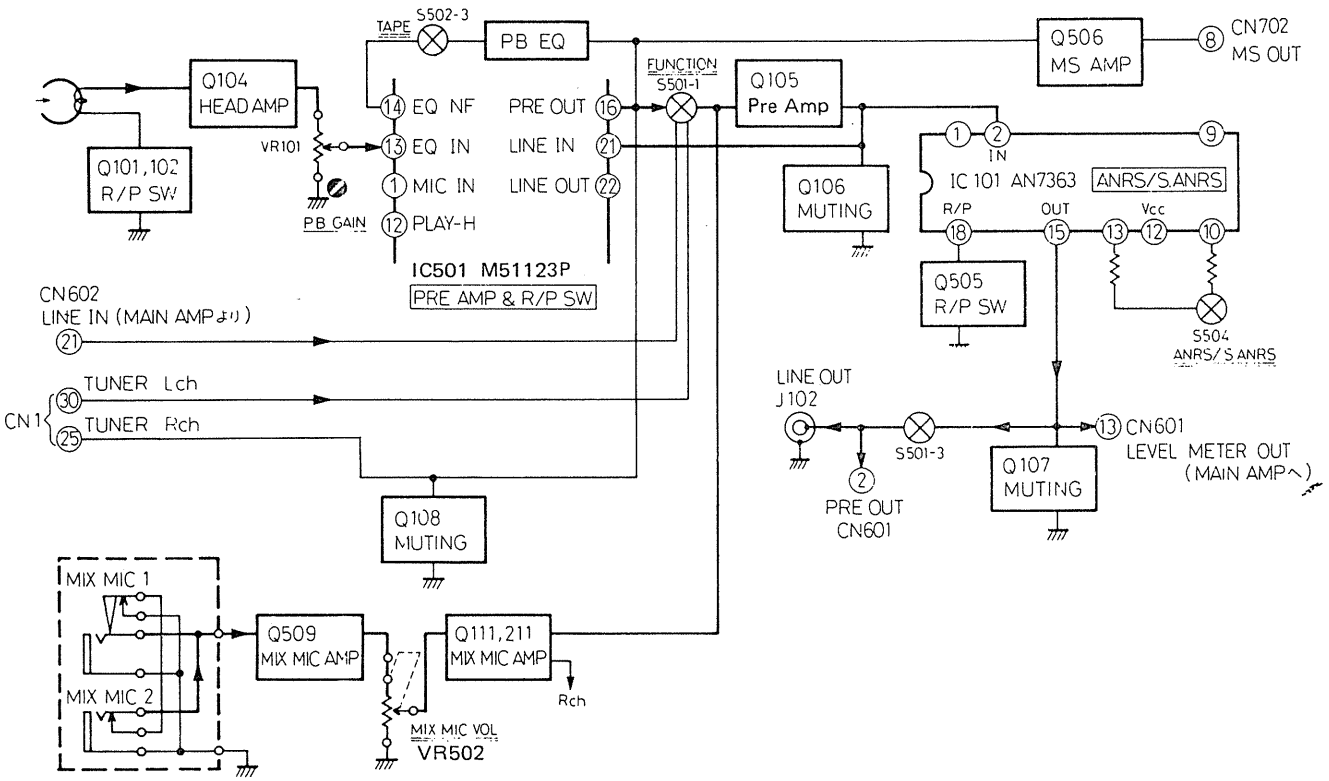


Fig. 21

C. Main Amplifier Circuit

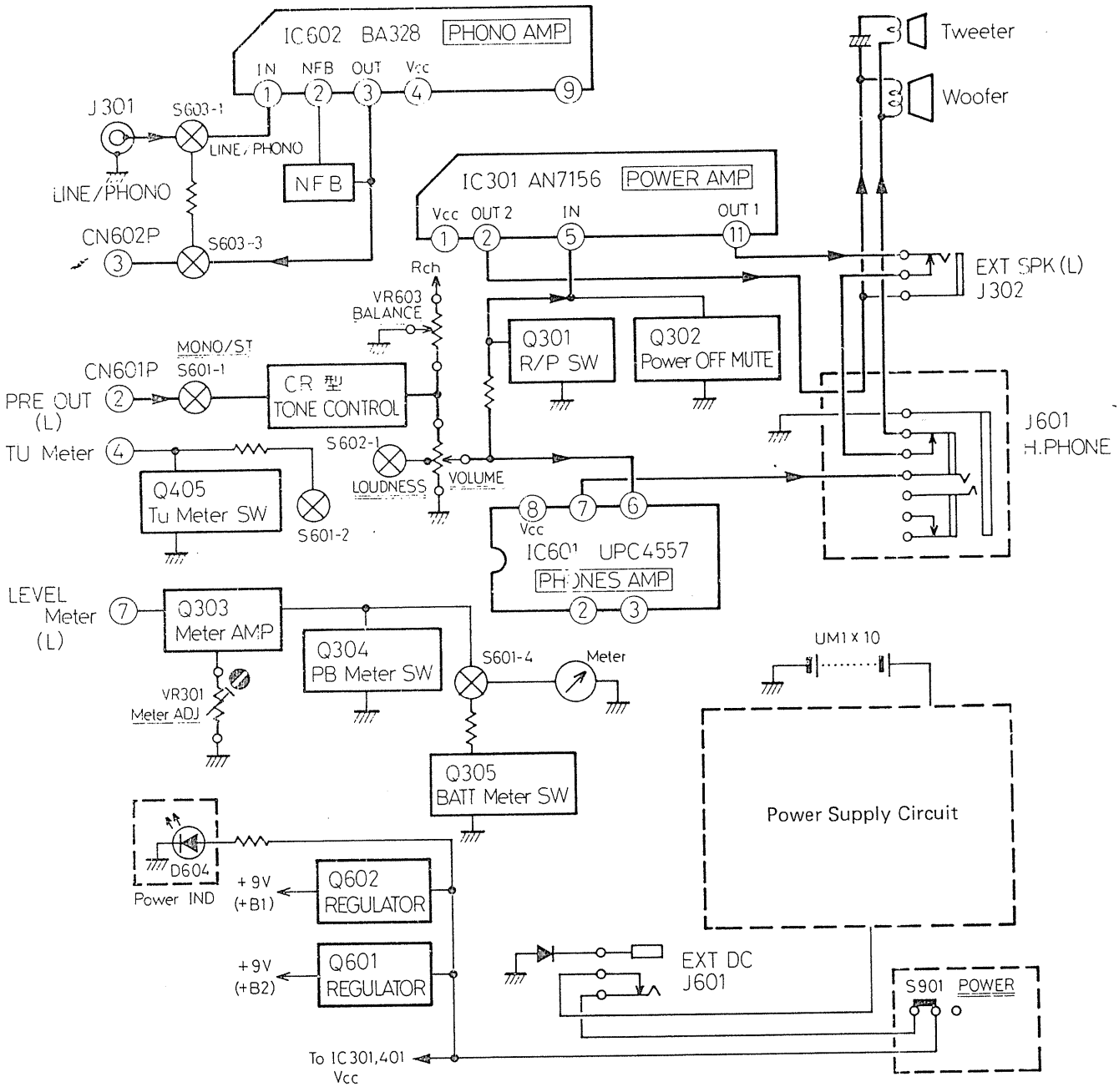


Fig. 22

D. Mecha. Control Circuit

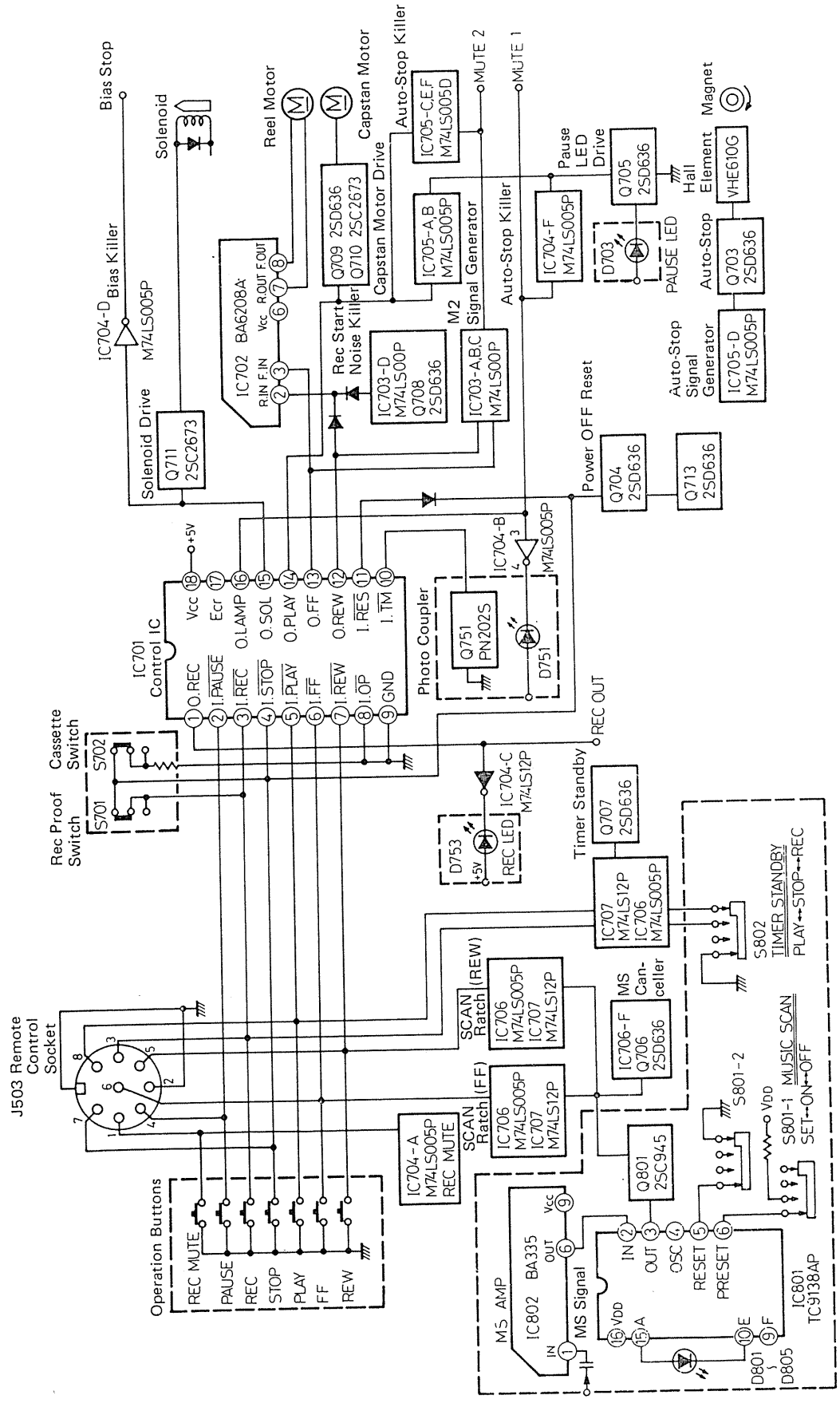
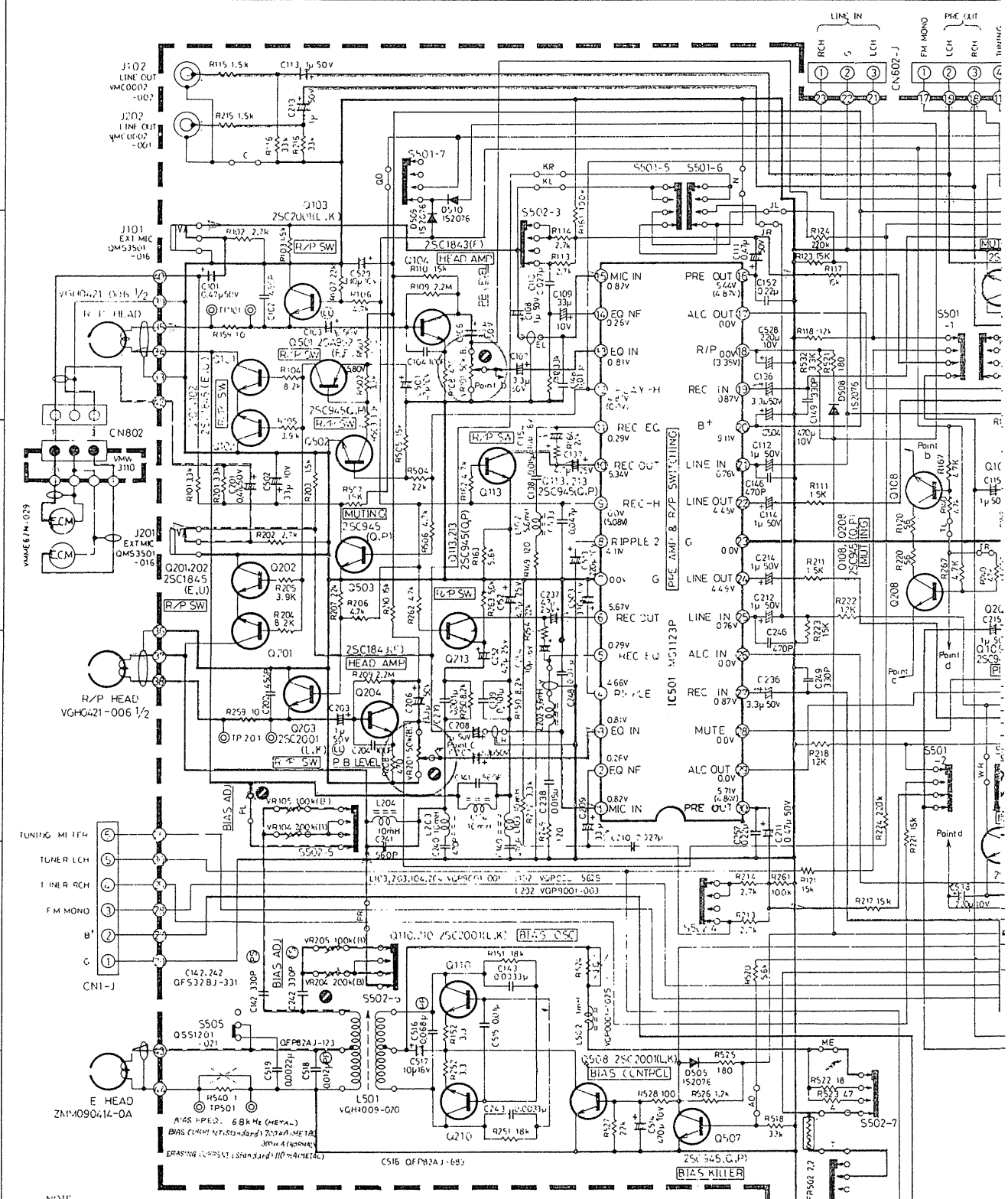


Fig. 23

Standard Schematic Diagram of RC-M90 (Pre-Amp Circuit)



NOTE

- Voltage values are measured with no signal by using electronic voltmeter in play back mode.
- Values in parentheses are in recording mode.
- Values with * are voltages for muting transistors when working on
- LAST NO. R 167, 267, 548
  C 157, 257, 538,
  Q 113, 213, 510,
- BLANK NO. R [illegible] 157, 158, 165, 256, 257, 258, 265, 534, 535, 538, 539, 545
  C 105, 146, 155, 205, 245, 255, 256, 511, 512, 526, 536
  Q 112, 212

6	7	8	9	10

Collector	Emitter
0 (0)	0 (0)
0 (0)	0 (0)
3.9 (3.9)	0.51 (0.51)
0 (0)	0 (0)
11.5 (0)	0 (0)
0 (0)	0 (0)
14.9	8.8
14.9	8.8

1 Measured by electronic voltmeter

2

Switch No.	Function	Mode	Parts No.
S601-1~4	MONO-STEREO	Stereo	QSL4210-103
S602-1~2	LOUDNESS	ON	QSL2210-101
S603-1~4	PHONO-LINE IN	LINE IN	QSS4201-072
S901 1~4	POWER ON OFF	ON	QSP0210-016

3 LAST NO R301~328 351~357 601~612 651
401~428 451~457
C301~328 351~357 601~616 381
401~428 451~457 481
C901 905

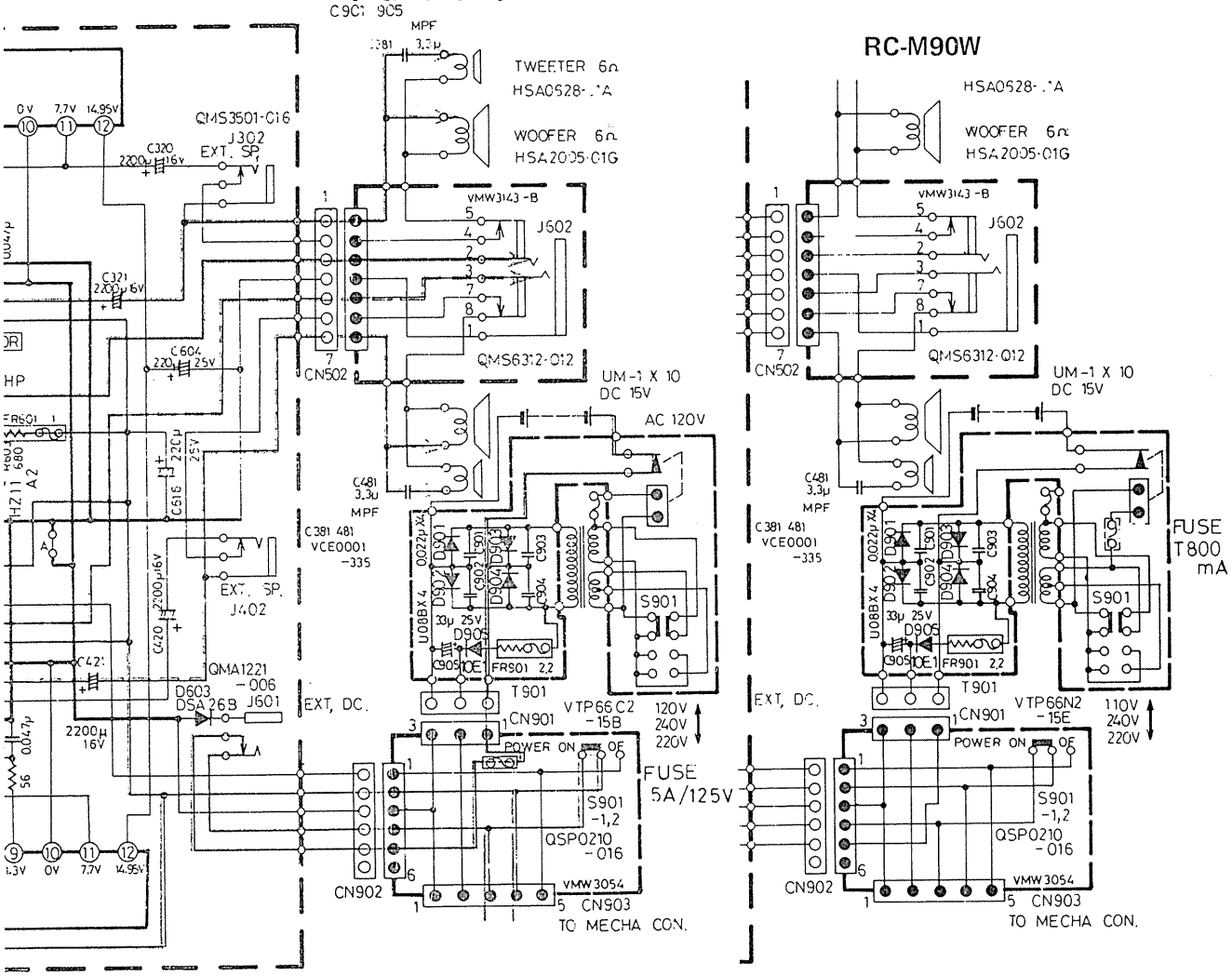
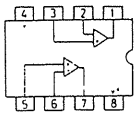


Fig. 26



Blue line shows the signal at playback.
Red line shows the signal at recording and +B circuits.
parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

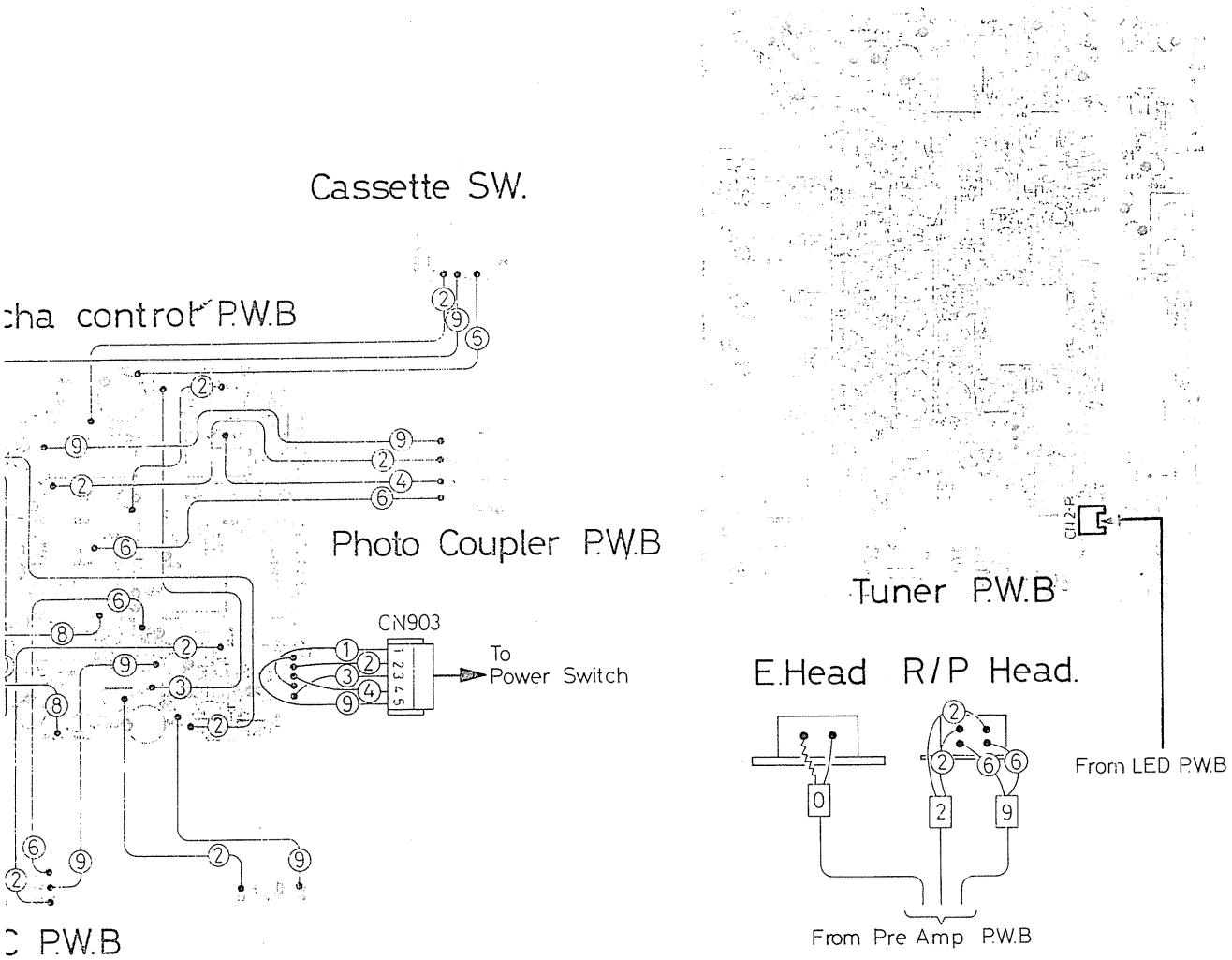
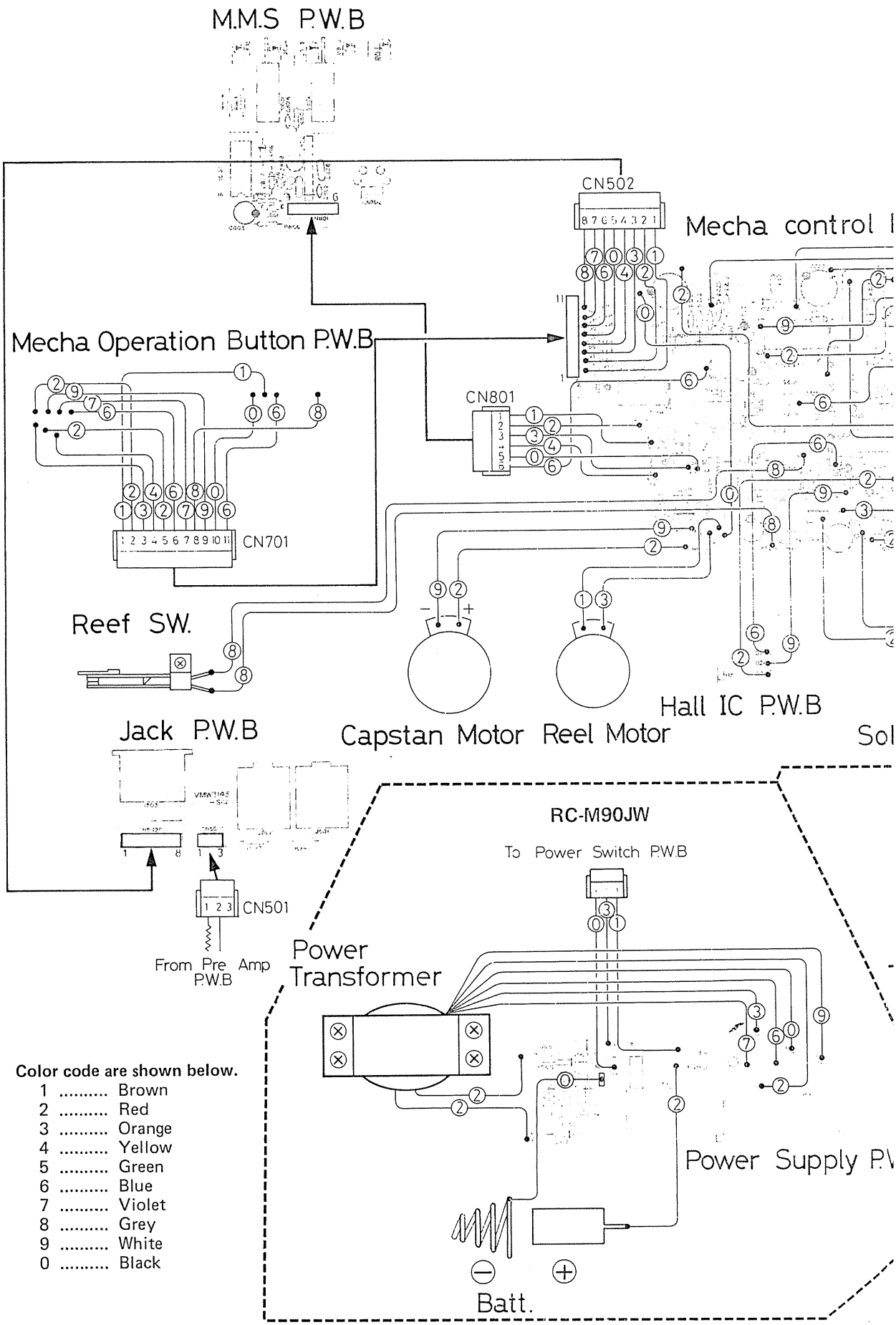

Cassette SW.
cha control P.W.B
Photo Coupler P.W.B
CN903
To
Power Switch
Tuner P.W.B
E.Head
R/P Head.
From LED P.W.B
From Pre Amp P.W.B
C P.W.B
Solenoid P.W.B
RC-M90W
Batt.
From Power Switch P.W.B
CN901
Power
Transformer
Power Supply P.W.B
er Supply P.W.B

Fig. 28

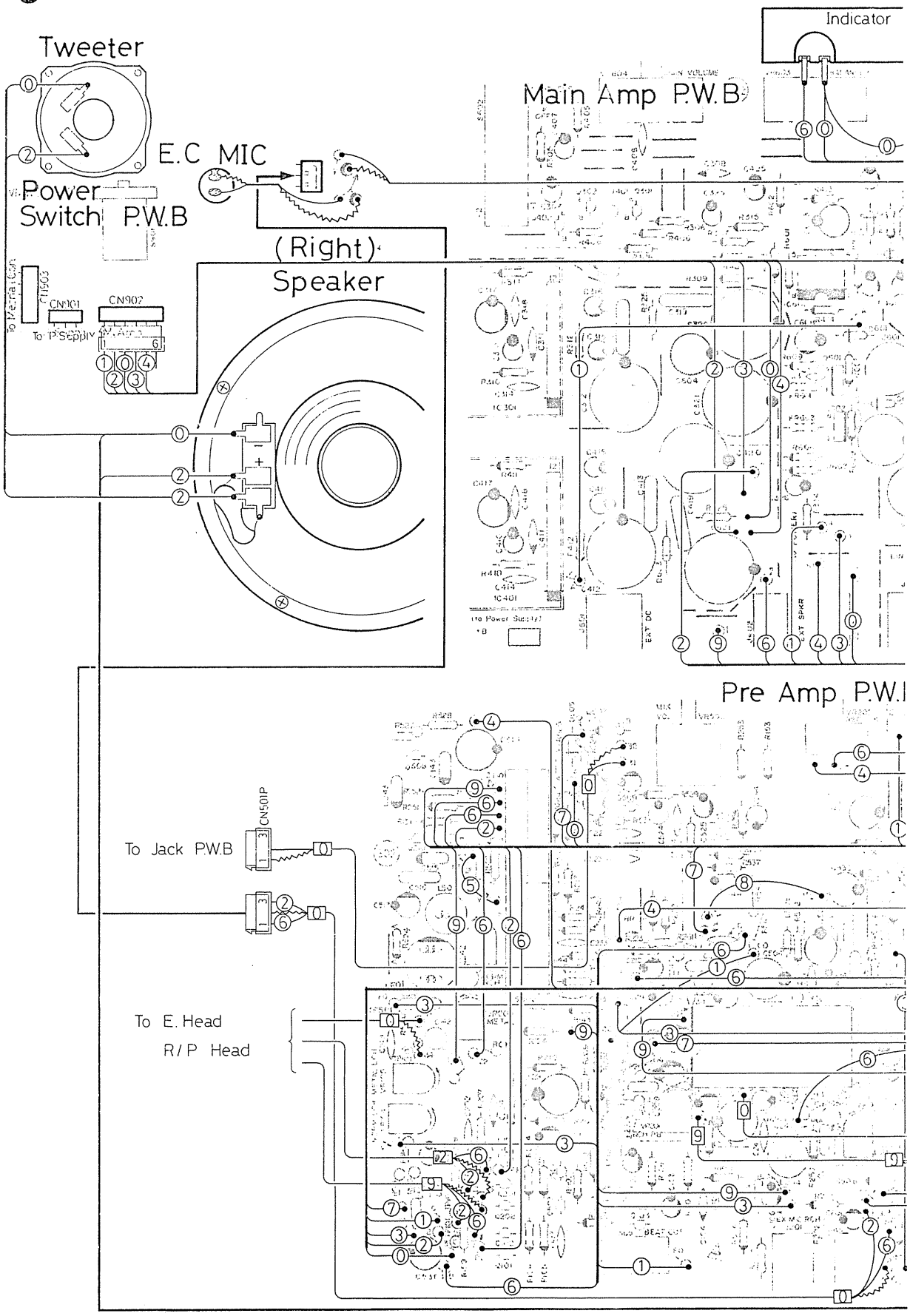
Wiring Connection of RC-M90 (1)

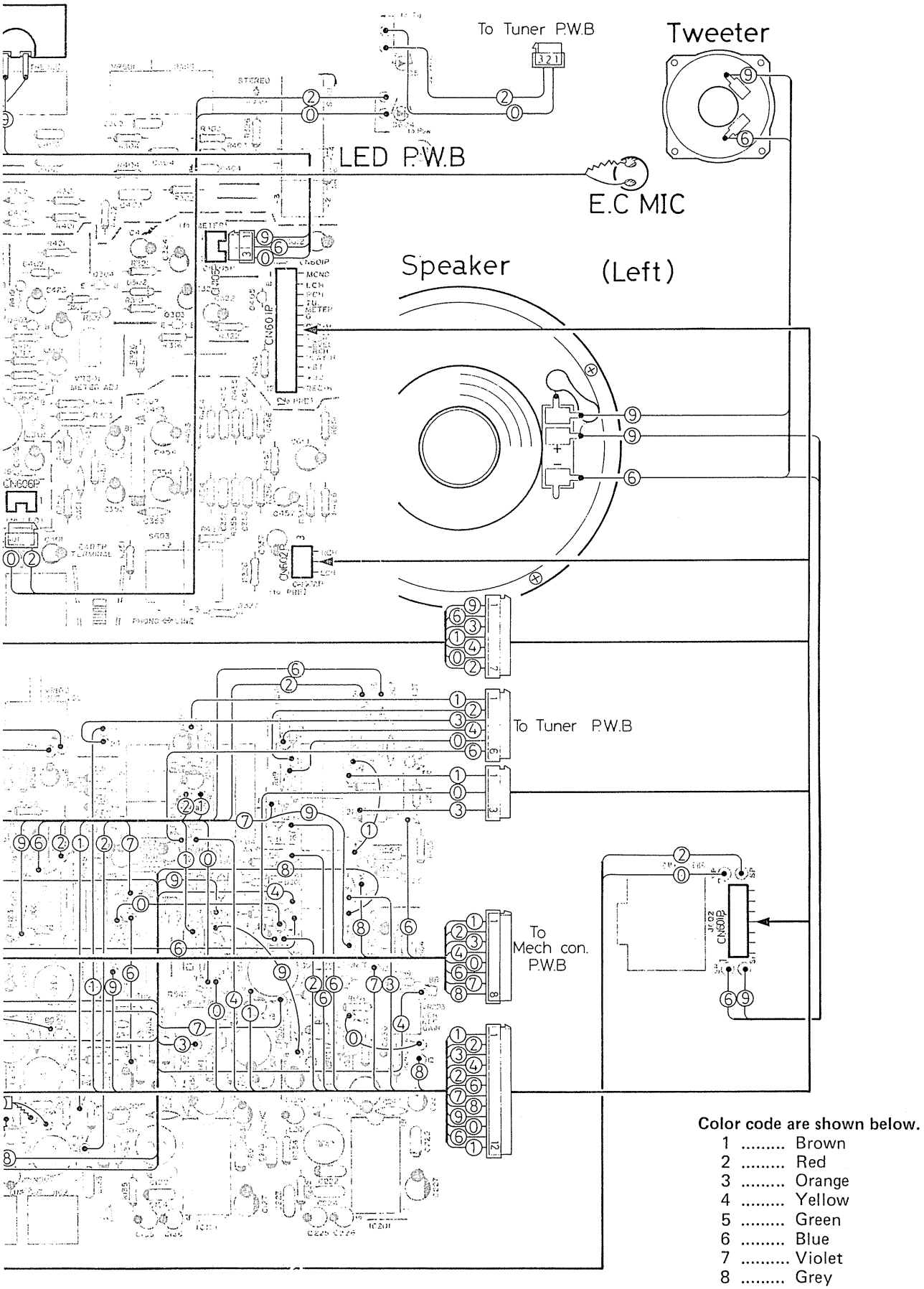


Color code are shown below.

1 ..... Brown
2 ..... Red
3 ..... Orange
4 ..... Yellow
5 ..... Green
6 ..... Blue
7 ..... Violet
8 ..... Grey
9 ..... White
0 ..... Black

Wiring Connection of RC-M90 (2)





Color code are shown below.

1 ..... Brown
2 ..... Red
3 ..... Orange
4 ..... Yellow
5 ..... Green
6 ..... Blue
7 ..... Violet
8 ..... Grey
9 ..... White
0 ..... Black

Fig. 29

Rear Cabinet Parts

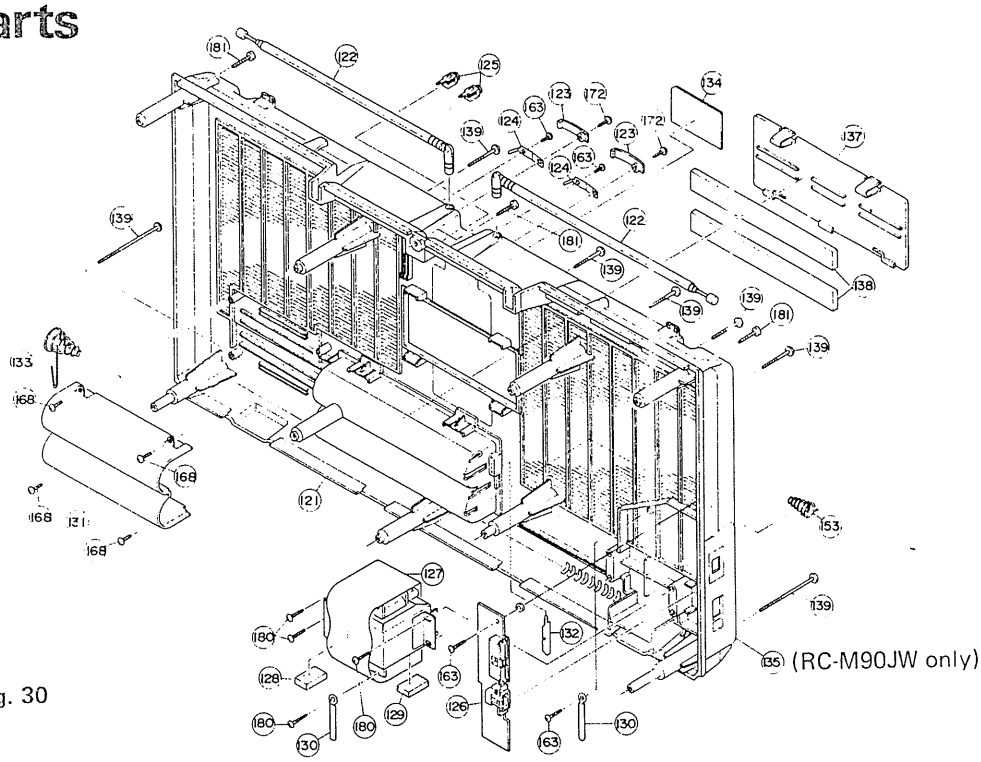


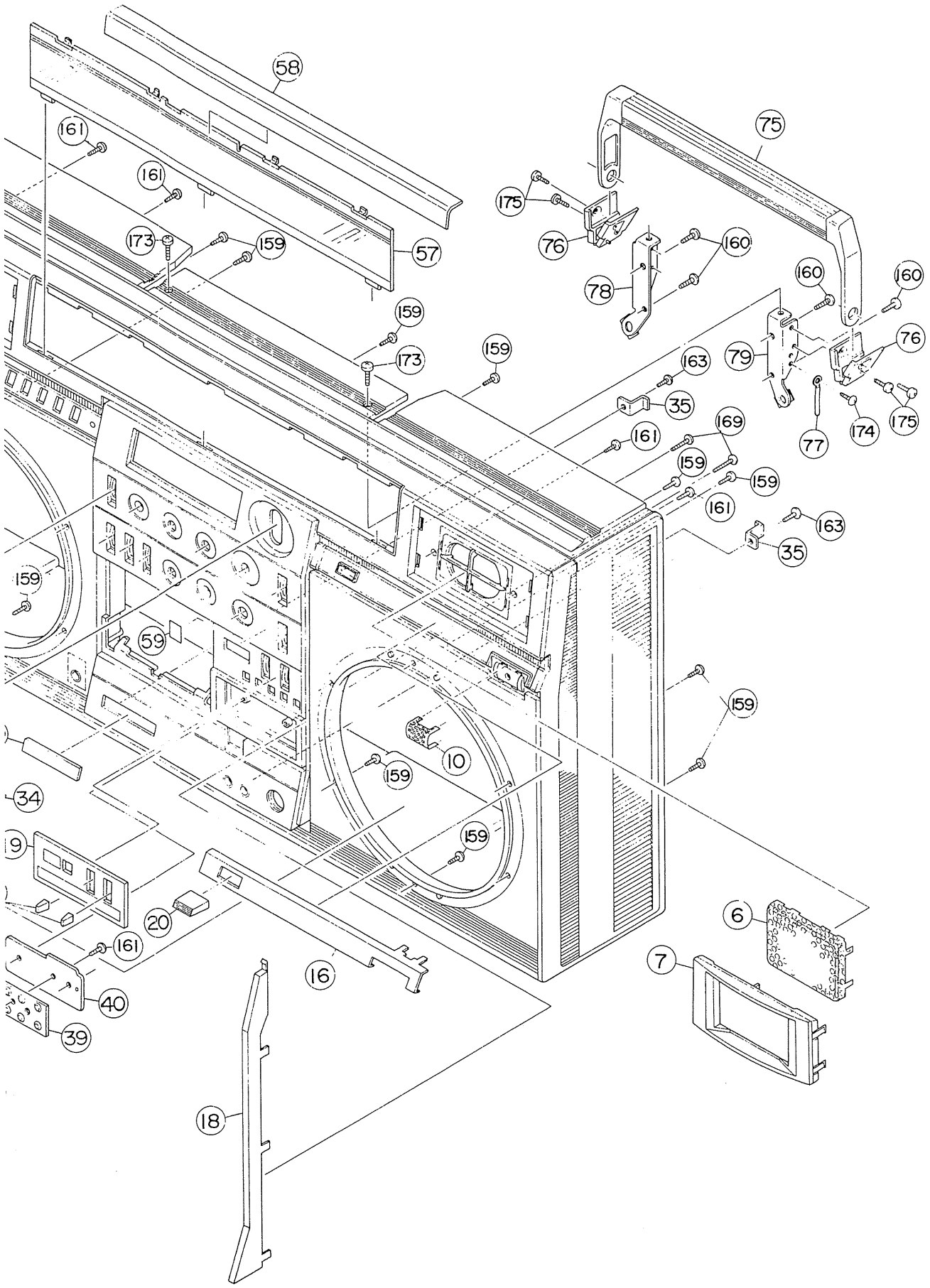
Fig. 30

Rear Cabinet Parts List

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
121, 134, 135,		ZCRCM90JW-CBR	Rear Cabinet Ass'y	RC-M90JW	1
121, 134		ZCRCM90W-CBR	"	RC-M90W	1
121		VJC0002-002UL	Rear Cabinet	RC-M90JW	1
		" -003	"	RC-M90W	1
122		QZR4234-001U	Rod Antenna		2
123		VJD4508-001	Ant. Cover		2
124		VYH4775-001	Rod Ant. Holder		2
125		V44814-00B	Terminal Ass'y		2
126		—	Power Supply P.W.B. Ass'y		1
127	⚠	VTP66N2-15C	Power Transformer	T901, RC-M90W	1
	⚠	VTP66C2-15B	"	T901, RC-M90JW	1
128		VYSR108-005	Spacer		1
129		VYSR105-005	"		1
130		VKZ4001-010	Wire Holder		1
131		VYH3198-001	Batt. Holder		1
132		VYH4010-001	Contact		1
133		VYH4011-001	Battery Spring		1
134		VYN5072-003Q	Name Plate	RC-M90JW	1
		" -002Q	"	RC-M90W	1
135		V44852-006	Plate	RC-M90W, -007Q (for PX)	1
136		VNC5005-002	LA Label	RC-M90JW	1
137		VJC3004-003	Batt. Cover		1
138		VYSH106-020	Spacer		2
139		VKZ4008-002	Special Screw		7
158		53738-1	Spring		1
163		SBSF3010Z	Screw	Power P.W.B. — Rear x 1 Rod Ant. Holder x 2	3
168		SBSF3012Z	"	Batt. Holder	4
172		SBSF3012R	"	Rear — Cover	2
180		SBSF4020C	"	Trans. — Rear	4
181		SBSF4018R	"	Rear — Front	3

Enclosure Assembly and Electrical Parts

Ref. No.		Parts No.	Parts Name	Remarks	Q'ty
1 ~		ZCRCM90JW-CBF	Front Cabinet Ass'y	RC-M90JW	1
		ZCRCM90W-CBF	"	RC-M90W	1
1		VJC0001-002UL	Front Cabinet	RC-M90JW	1
		" -003	"	RC-M90W	1
2		VJD2177-001	Speaker Ring		2
3		VJD3280-001	Punching Panel		2
4		HSA2005-01G	Speaker	Woofer	2
5		VKZ4001-002	Wire Holder		3
6		VJD4502-001	Tweeter Panel		2
7		VJD3281-001	Tweeter Frame		2
8		HSA0628-01A	Speaker	Tweeter	2
9		VCE0001-335	M.P.F. Capacitor	C381, 481 (3.3 μF)	2
10		VJD4503-001	Mic Panel		2
11		VMME62N-029	E.C. Mic		2
12		VYH4348-001	Mic Bushing		2
13		VYH4298-001	Holder		2
14		—	Connector P.W.B.		1
15		VJD4504-002	Plate (L)	BAND	1
16		VJD4505-002	Plate (R)	POWER	1
17		VJD3282-001	Side Fitting (L)		1
18		VJD3282-002	Side Fitting (R)		1
19		VJD4506-002	Counter Lens		1
20-1		—	Power Switch P.W.B. Ass'y		1
20		VXP4135-001	Push Knob		1
21		VYH4763-001	SW. Bracket		1
22		VKZ4001-010	Wire Holder		2
23		VYH4764-001	MMS. Bracket		1
23-1		—	MMS. Board P.W.B. Ass'y		1
24		VXQ4045-001	Eject Lever		1
25		VYH4765-001	Socket Bracket		1
26		QMC0888-010	DIN Socket		1
27		—	Socket P.W.B. Ass'y		1
28		VKZ4150-001	Special Nut		1
29		—	Jack P.W.B. Ass'y		1
30		VYH4766-001	Jack Holder		1
31		VKZ4150-001	Special Nut		1
32		VJT3069-00A	Cassette Door Ass'y		1
33		VJT3070-00A	Door Lens Ass'y		1
34		VKW4218-001	Door Spring		1
35		VYH4767-001	Door Holder		2
36		VYH4768-001	Damp Holder		1
37		VYH4769-001	Gear		1
38		VJD3284-002	Button Frame		1
39		VYH3195-001	Rubber		1
40		—	LED P.W.B. Ass'y		1
41		VXP4136-002	Button	FF	1
42		" -003	"	Rec	1
43		" -004	"	Pause	1
44		" -005	"	Rec Mute	1
45		VXP4137-001	"	Stop	1
46		" -002	"	Play	1
47		VXP4136-001	"	Rew.	1
48		VYH4770-001	Cap		9
49		QHX2075-001	Wire Clamp		1
50		VXL4152-001	Tuning Knob		1
51		VXL4153-001	Volume Knob		6
52		VXL4154-001	"	MAIN	1
53		VXQ4046-001	Lever Knob		6
54		VXQ4047-001	"	MMS Meter	2
55		VXL4161-001	Knob	FINE	1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Enclosure Assembly and Electrical Parts (1)

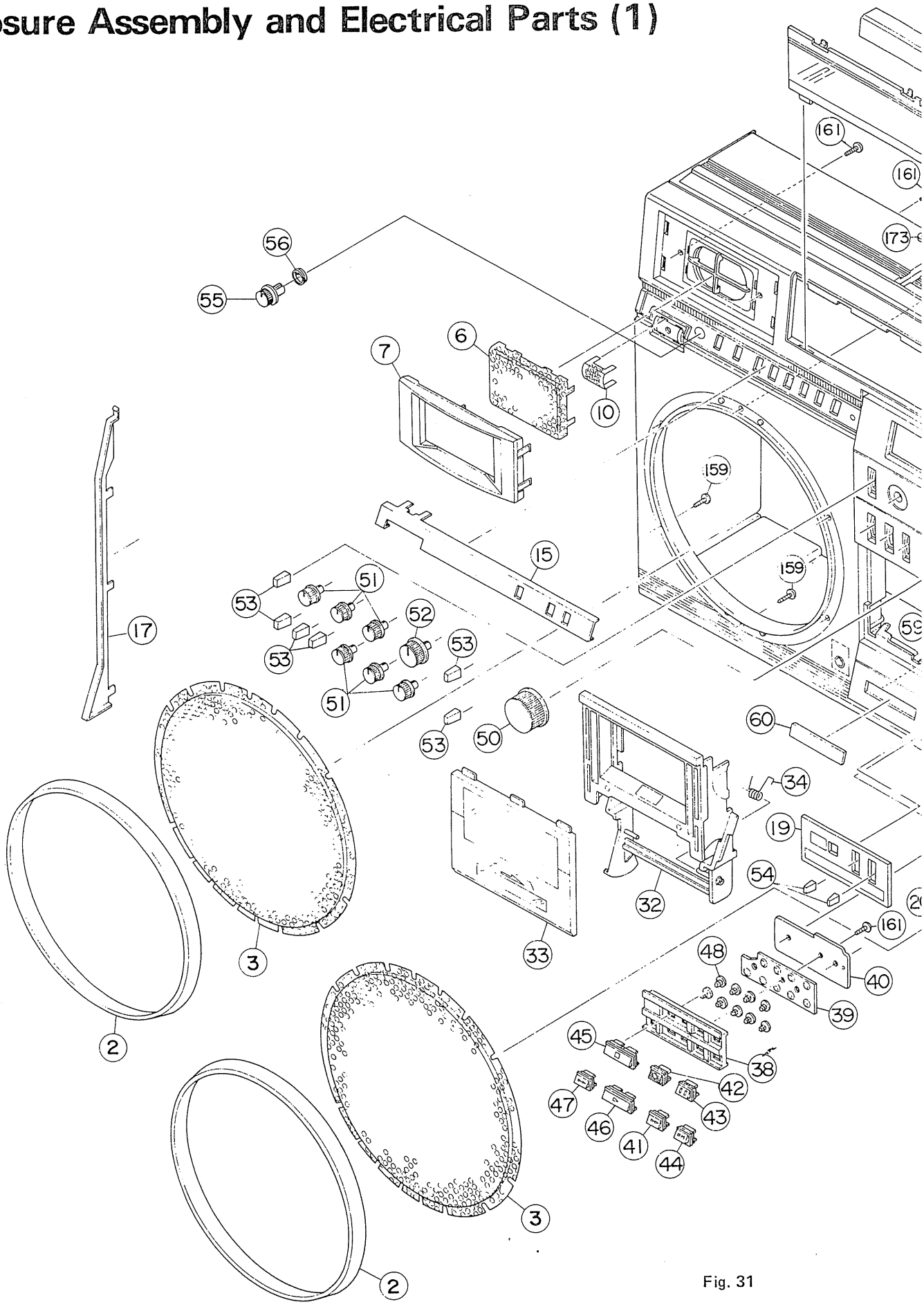
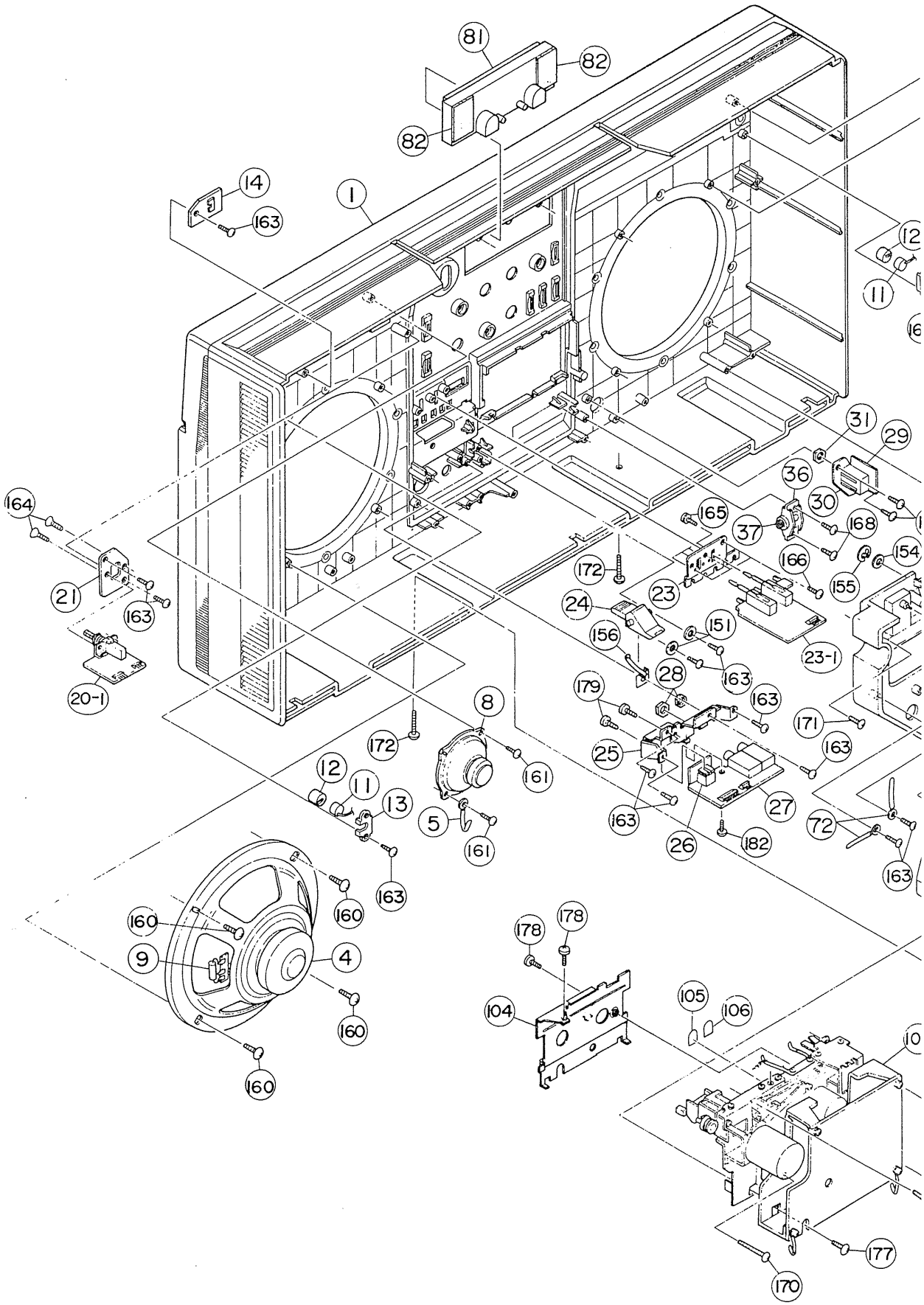


Fig. 31

E Enclosure Assembly and Electrical Parts (2)



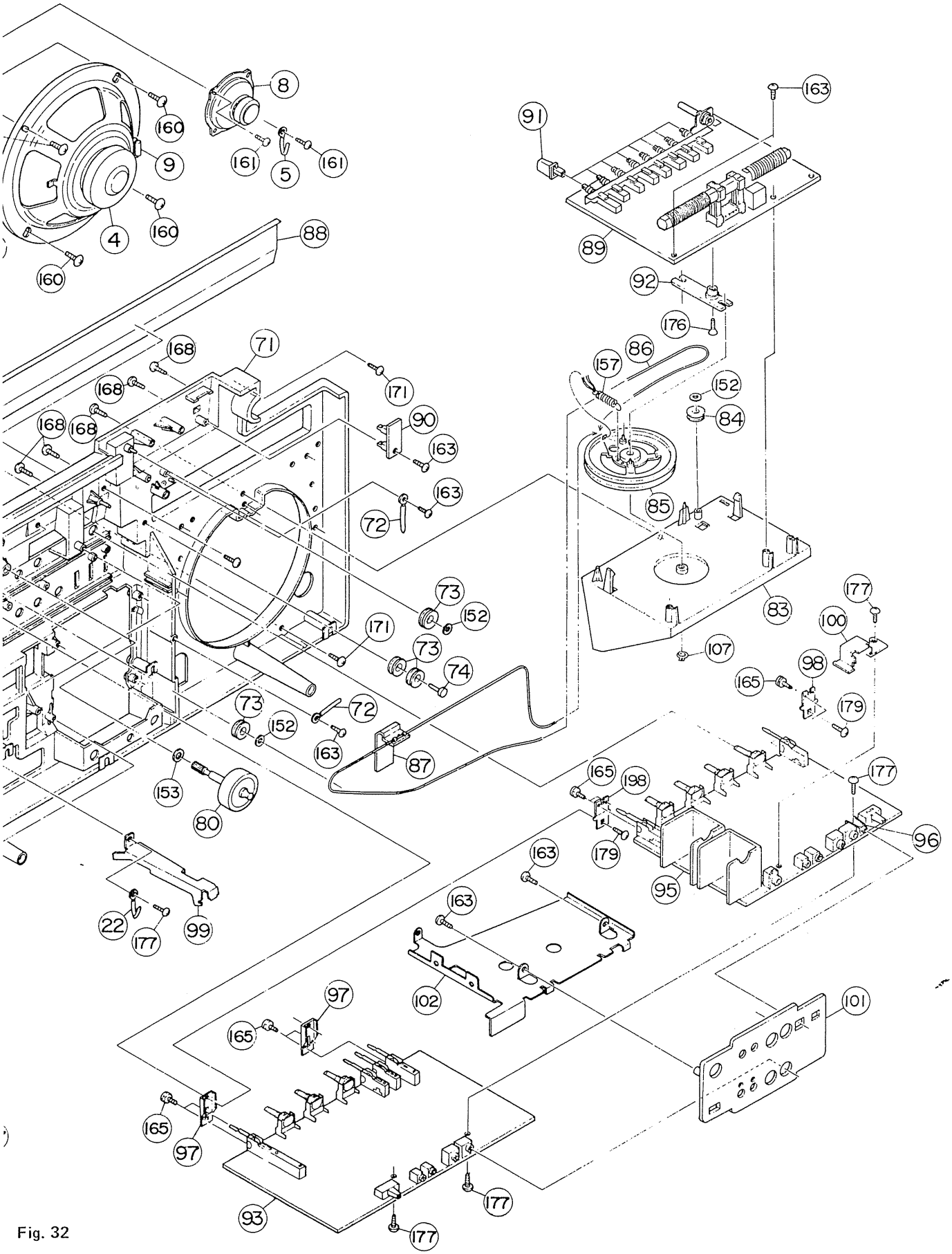

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Fig. 32

Ref. No.		Parts No.	Parts Name	Remarks	Q'ty
56		VYH4575-001	Knob Holder		1
57		VJK3178-001	Dial Lens		1
58		VJK4143-001	Lens Plate		1
59		VND4006-010	Caution Label		1
60		QXM2251-001	Mark		1
71		VYH1123-001	Chassis		1
72		VKZ4001-011	Wire Holder		4
73		VYH4032-001	Roller		4
74		VYH4774-001	Stud		1
75		VJH3005-00Q	Handle Ass'y		1
76		VYH4771-001	Supporter		2
77		VKZ4001-010	Wire Holder		1
78		VYH4772-001	Holder Bracket		1
79		VYH4772-002	"		1
80		VYH4777-00A	Tuning Shaft Ass'y		1
81		VGM5120-001	Indicator	IND301, 401	1
82		VYSR102-009	Spacer	t = 20, 20 x 40 mm, Rubber	2
83		VYH2130-002	Tuning Chassis Ass'y		1
84		VYH4032-001	Roller		1
85		VYH3196-001	Dial Drum		1
86		VHR2TK9-05AT	Dial Rope		1
87		VJN4058-001	Needle		1
88		VJK2132-002	Dial Scale		1
89		—	Tuner P.W.B. Ass'y		1
90		—	LED P.W.B. Ass'y		1
91		VXP4143-002	Push Button	Band	8
92		VYH4810-001	Arm		1
93		—	Pre-Amp. P.W.B. Ass'y		1
94		QHX2075-001	Wire Clamp	Pre-Amp. P.W.B. x 8, Amp. x 3	11
95		—	Main Amp. P.W.B. Ass'y		1
96		VMZ0001-001	Earth Terminal		1
97		VYH4816-001	C.B. Holder (1)		2
98		VYH4817-001	" (2)		2
99		VYH4901-001	Support Bracket		1
100		VYH4864-001	Bracket		1
101		VJD3283-003	Jack Board		1
102		VYH3207-001	Shield		1
103		—	Mecha. Ass'y		1
104		VJD4507-001	Cassette Plate		1
105		VND4012-002	Head Plate	R/P Head	1
106		THC037417-02	"	E. Head	1
107		RCSA6000	C. Ring		1
108		VKZ4001-011	Wire Holder	Dial Scale x 5, Jack Board x 1	6
109		VKC5145-003S	Counter Reset Button		1
151		Q03091-105	Washer		2
152		WNB2600N	"	Roller x 2, Tuning Chassis Ass'y x 1	3
153		Q03093-840	"		1
154		" -837	"		1
155		REE5000	E-Ring		1
156		VKY4175-001	Spring		1
157		50153-3	"		1
158		—	—		—
159		SBSF2610Z	Screw	Speaker Ring	12
160		SBSF4010Z	"	Speaker	8
161		SBSF2608Z	"	Tweeter Frame x 4, P.W.B. - Frame x 1	5
162		SBSF3010Z	"	E.C. Mic x 2, Connector P.W.B. x 1, Cabi. — P. SW. Ass'y x 2, Eject Lever x 2, Socket Ass'y — Cabi. x 4, Door Holder x 2	13
163		SBSF3010Z	"	LED Ass'y — Chassis x 1, Shield x 2, Wire Holder x 5	10
164		SSSP3006ZS	"	Power Switch Ass'y	2
165		SSSP3006M	"	SW. — Holder	8

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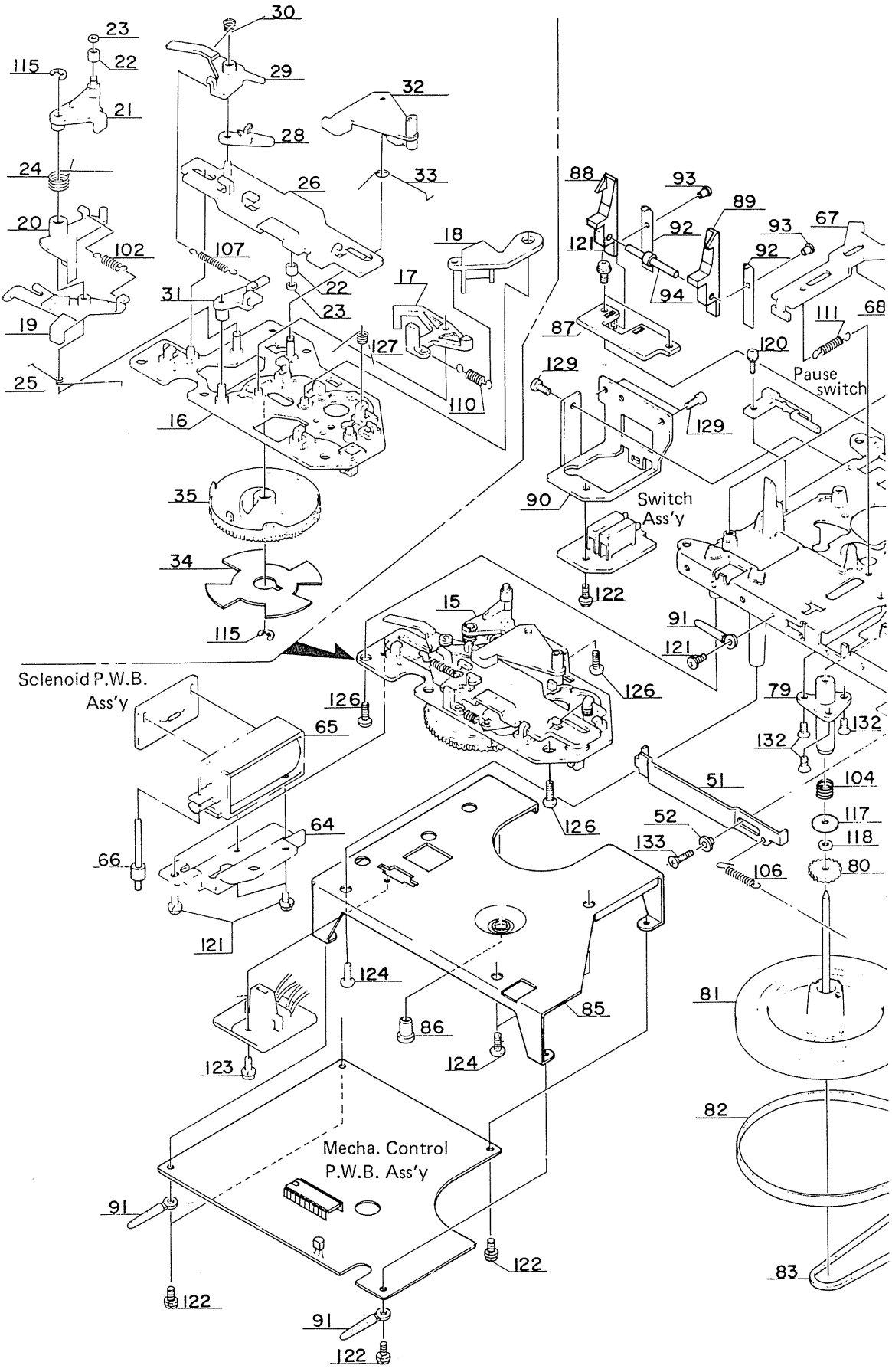
Ref. No.		Parts No.	Parts Name	Remarks	Q'ty
166		SBSF3008Z	Screw	Front – MMS. Ass'y x 2, Jack P.W.B. x 2, Speaker x 4	8
167		SPSP3006MS	"	Socket Ass'y	2
168		SBSF3012Z	"	Gear	2
169		SBSF2616Z	"	Frame – Cabi.	2
170		SBSF3030V	"	Mecha. – Chassis – F. Cabi.	1
171		SBSF3014C	"	Chassis – F. Cabi.	7
172		SBSF3012R	"	"	2
173		SDSP3008RS	"	"	2
174		SBSB3006Z	"	Wire Holder	1
175		DPSP3018ZS	"	Holder Bracket	4
176		SSSP2608Z	"	Arm	1
177		SBSF3010V	"	Mecha. – Chassis	4
178		SDSB2605R	"	Mecha. Ass'y	2
179		SBSF3012V	"	C.B. Holder – Chassis x 2, Jack Board x 4, Supporter Bracket x 1	7
182		SBSB3008Z	"	Socket Ass'y	1
183		SSSP3006M	"	Bracket – Switch	4

Mechanical Component Parts



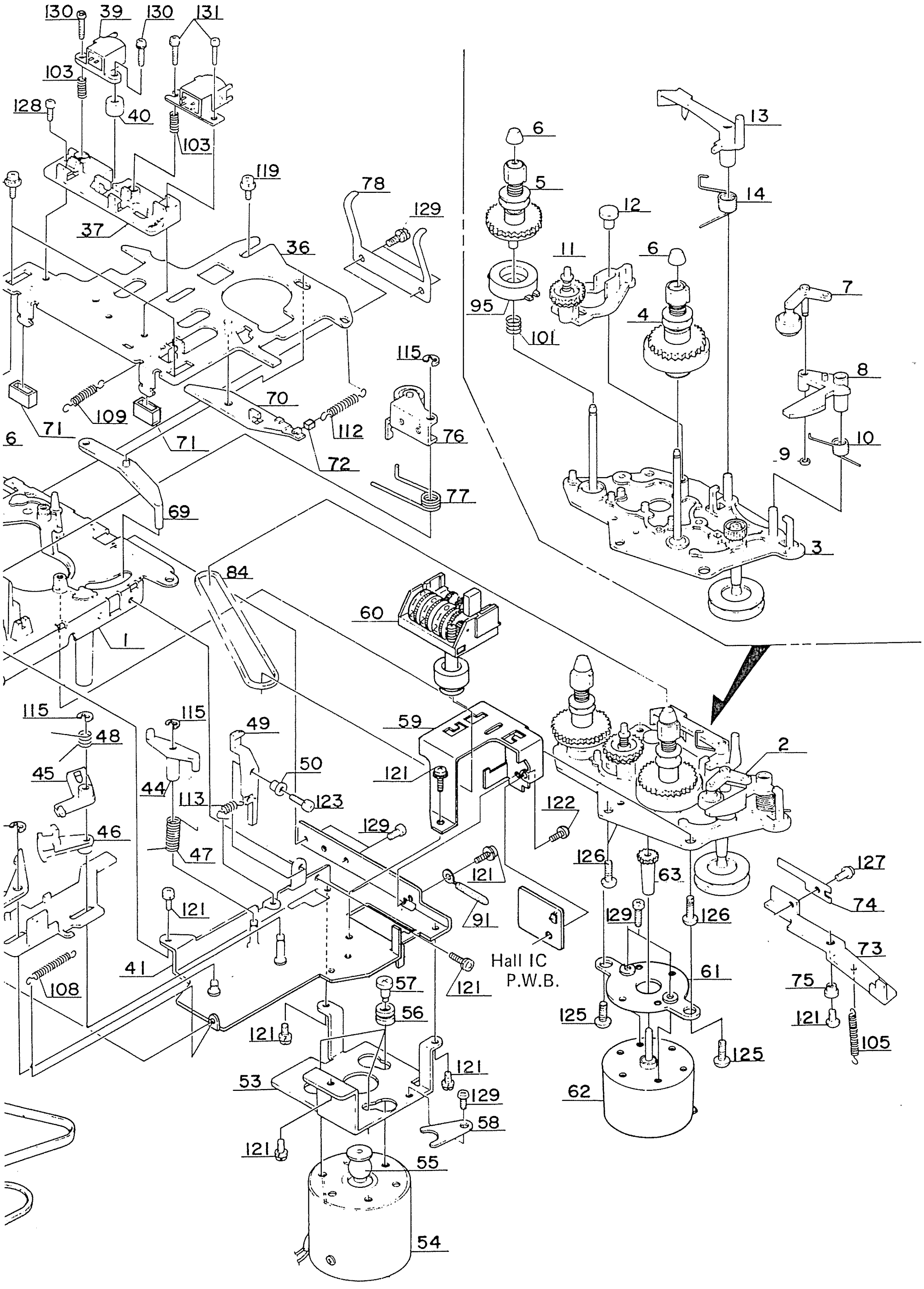

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Fig. 33

Mechanical Component Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VKL1162-00F	Chassis Base Ass'y		1
2	VKL3214-00F	Reel Disk Ass'y Unit		1
3	VKL3215-00B	Reel Disk Bracket Ass'y		1
4	VKR4246-00A	Reel Disk Ass'y	Take-up	1
5	VKR4247-00A	Reel Disk Ass'y	Supply	1
6	VKR4160-001	Reel Stopper		2
7	VKS4240-00A	Idler Arm Ass'y		1
8	VKS4170-001	Take-up Lever		1
9	TEP357421-05	Special Washer	Take-up Arm	1
10	VKW4181-001	Take-up Lever Spring		1
11	VKS4203-00B	FF. Rew. Gear Ass'y		1
12	VKS4174-001	Lock Pin		1
13	VKS4175-001	Neutral Arm		1
14	VKW4182-001	Neutral Arm Spring		1
15	VKL3217-00D	Drive Gear Ass'y Unit		1
16	VKL3218-00B	Gear Holder Ass'y		1
17	VKS4176-001	Stop Arm		1
18	VKS4177-001	Kick Arm		1
19	VKS4178-001	Pause Arm (3)		1
20	VKS4179-001	" (2)		1
21	VKS4180-00A	Pause Arm (1) Ass'y		1
22	VKH3000-031	Collar		2
23	VKZ4004-001	Special Washer		2
24	VKW4183-001	Pause Arm Spring	Pause Arm (1), (2)	1
25	VKW4184-001	"	Pause (3)	1
26	VKS4182-00B	Slide Bar Ass'y		1
27	VKW4185-001	Slide Bar Spring		1
28	VKS4184-001	Play Arm (2)		1
29	VKS4185-001	" (3)		1
30	VKW4186-001	Play Arm Spring		1
31	VKS4186-001	Brake Arm		1
32	VKS4187-001	Play Arm (1)		1
33	VKW4187-001	Play Arm (1) Spring		1
34	VKZ4134-002	Control Plate		1
35	VKS3114-002	Drive Gear		1
36	VKL3220-00C	Slide Bar Ass'y		1
37	VKS2102-001	Head Mount Base		1
38	VGH0421-006	R/P Head	VND4012-002 = Head Plate	1
39	ZMM090414-0A	E. Head	THC037417-02 = Head Plate	1
40	VKH4215-001	Head Collar		1
41	VKL3264-00B	Side Bracket Ass'y		1
42	VKS4190-001	Eject Arm		1
43	VKS4334-001	Eject Slide Bar		1
44	VKS4191-001	Safety Arm (1)		1
45	VKS4234-001	Safety Arm (2)		1
46	VKS4235-001	Safety Arm (3)		1
47	VKW4188-001	Safety Arm Spring		1
48	VKW4220-001	"		1
49	VKS4342-001	Lock Arm		1
50	VKH3001-039	Flange Collar		1
51	VKL4661-002	Stop Slide Bar		1
52	VKH4306-001	Collar		1
53	VKL4879-001	Motor Bracket		1
54	MHI-5E2LDPB	Motor	Capstan	1
55	VKS4188-004	Motor Pulley		1
56	VKZ4130-001	Cushion Rubber		3
57	VKZ4109-001	Motor Screw		3
58	TFB345469-01	Rubber Stopper		1
59	VKL5014-001	Counter Bracket		1
60	VKC5145-002S	Tape Counter		1
61	VKL4657-003	Reel Motor Bracket		1
62	BFT6B01	Reel Motor		1
63	VKS4193-002	Motor Gear		1
64	VKL4658-002	Solenoid Bracket		1
65	VGP0401-005	D.C. Solenoid		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
66	VKH4324-001	Solenoid Pin		1
67	VKL4659-001	Brake Bar		1
68	VKZ4129-001	Brake Rubber		2
69	VKS4353-001	Take-off Lever		1
70	VKS4277-001	Slide Base Arm		1
71	T44341-001	Rubber Tire		2
72	TJN265559-04	Silencer		1
73	VKL4925-001	Kick Lever		1
74	VKY4204-002	Spring Plate		1
75	VKH3001-024	Flange Collar		1
76	VKP4106-00B	Pinch Roller Arm Ass'y		1
77	VKW4189-001	Pinch Roller Spring		1
78	VKY4171-001	Pack Spring		1
79	VKF4108-00A	Capstan Metal Ass'y		1
80	VKS4199-001	Flywheel Gear		1
81	VKF3114-00B	Flywheel Ass'y		1
82	VKB3001-012	Belt	Capstan	1
83	VKB3000-017H	"	Take-up	1
84	" -031H	"	Counter	1
85	VKL3305-001	Flywheel Holder		1
86	TEP357456-01	Thrust Bearing		1
87	VKS4271-001	Arm Holder		1
88	VKS4322-001	Rec. Safety Arm		1
89	VKS4323-001	Cassette Switch Arm		1
90	VKL4881-003	SW. Bracket		1
91	VKZ4001-007	Wire Holder		4
92	VKY4204-001	Safety Plate		2
93	VKS4324-001	Pin		2
94	VKH4291-001	Shaft		1
95	VKS4247-001	Back Tension Base		1
101	THIS DWG.	Comp. Spring	Back Tension	1
102	VKW3000-014	Tension Spring	Pause Arm (2), (3)	1
103	VKW3001-020	Comp. Spring	R/P, E. Head	2
104	VKW3001-044	"	Thrust	1
105	VKW3002-011	Tension Spring		1
106	" -020	"	Stop S. Bar	1
107	" -022	"	Play Arm (3), Brake Arm	1
108	" -038	"	Eject S. Bar	1
109	" -042	"	Slide Base	1
110	" -046	"	Kick Arm	1
111	" -054	"	Brake Bar	1
112	" -060	"	Slide B. Arm	1
113	" -066	"	Lock Arm	1
115	REE2500	E-Ring	Pause Arm (1) Ass'y x 1, Drive Gear x 1, Eject Slide Bar x 3, Pinch Roller Spring x 1	6
116	Q03093-522	Washer	Oil Cut	1
117	" -628	"	Thrust	1
118	" -827	"	"	1
119	DPSP2605Z	Screw	Slide Base	3
120	LPSP2004Z	Ass'y Screw	Pause SW.	1
121	LPSP2604Z	"	Motor Bracket, Counter Barcket x 5, Side Bracket x 2, Solenoid, Solenoid Bracket x 4, Flange Collar x 1, Wire Holder x 1	13
122	LPSP2605Z	"	Mecha. Con, Auto Stop, Rec. Safety	6
123	LPSP2606Z	"	Lock Arm x 1, Photo C. x 1	2
124	SBSB2608Z	Tapping Screw	Flywheel Holder	3
125	SPSA2608Z	"	Motor Bracket	2
126	SPSB2608Z	"	Reel Unit x 3, Gear Ass'y Unit x 3	6
127	SPSP2003Z	Screw	Spring Plate	1
128	SPSP2004N	"	H. Mount Base	1
129	SPSP2603Z	"	Rubber Stopper x 1, Side Bracket x 2, Reel Motor x 2, Pack Spring x 2, SW. Bracket x 3	10
130	SPSX2008N	"	E. Head	2
131	SPSX2010N	"	R/P Head	2
132	SSSP2605Z	"	Capstan Metal	3
133	SSSP2606Z	"	Stop Slide Bar	1

Tuner P.W. Board Parts

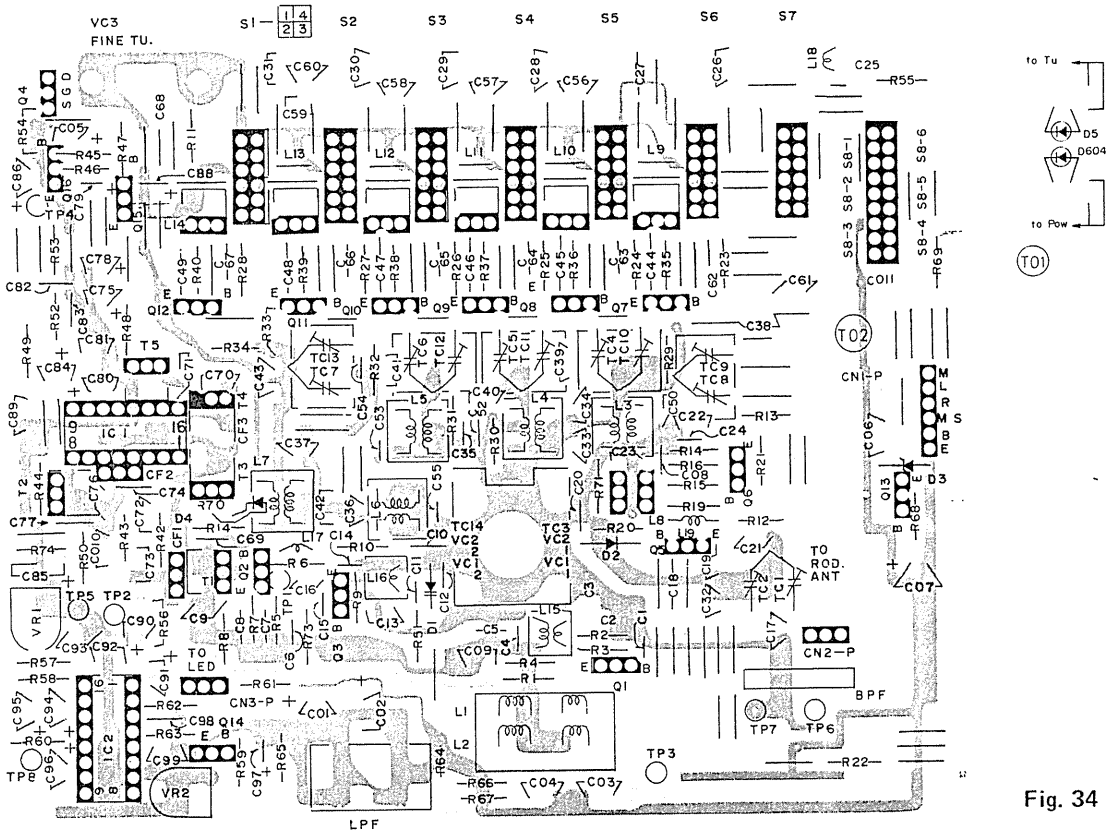

Fig. 34

Tuner P.W. Board Parts List

Ref. No.		Parts No.	Parts Name	Remarks	Q'ty
		VMW2171-002	P.W. Board		1
Q1, 2		2SC535(B)	Transistor		2
Q3		2SA838(C)	"		1
Q4		2SK246(GR, BL)	"		1
Q5–12		2SC929(D)	"		8
Q13		2SD468(C)	"		1
Q14, 15, 16		2SC923(E,U)	"		3
IC1		HA12413	IC		1
IC2		AN7410N	"		1
D1		1S553T	Vari. Cap.		1
D2		1K34A	Ge. Diode		1
D3		HZ6C1L	Zener Diode		1
D4		MA150	Si. Diode		1
D5		1K34A	Ge. Diode		1
BPF		VBP3M4E-001	B.P. Filter		1
CF1, 2		V03059-013	C. Filter		2
LPF		VQZ0011-001	L.P. Filter		1
VR1, 2		QVP8A0B-014	V. Resistor	10 kΩ	2
T1		VQT7F12-104	I.F.T.		1
T2		VQT7F07-501	"		1
T3, 4, CF3		VQT7A31-104	"		1
T5		VQT7A11-301	"		1
L1, 2		VQB014A-304	Bar Ant. Ass y	MW, SW1	1
L3		VQR1001-311	ANT. Coil	SW2	1
L4		" -312	"	SW3	1
L5		" -202	"	SW4	1
L6		" -313	"	SW5	1
L7		" -302	"	SW6	1
L8		VQM7T03-301	OSC Coil	MW	1
L9		VQS7S02-301	"	SW1	1
L10, 11		" -302	"	SW2, SW3	2
L12		" -303	"	SW4	1
L13		" -305	"	SW5	1
L14		" -305	"	SW6	1
L15		VQF1B12-001	RF Coil	FM	1
L16		V03105-029	OSC Coil	FM	1
L17		V03047-6	Coil	FM	1
L18		V03047-21	"	SW	1
L19, 20		VQP0003-471	Inductor		2

No. 1462

Ref. No.		Parts No.	Parts Name	Remarks	Q'ty
R1		QRD161J-334	C. Resistor	330 kΩ 1/6 W	1
R2		" -332	"	3.3 kΩ "	1
R3		" -680	"	68 Ω "	1
R4, 8		" -271	"	270 Ω "	2
R5		QRD141J-103S	"	10 kΩ 1/4 W	1
R43, 47		QRD161J-103	"	10 kΩ 1/6 W	2
R6, 70		" -273	"	27 kΩ "	2
R7, 14, 58, 75		" -102	"	1 kΩ "	4
R9, 48		" -474	"	470 kΩ "	2
R10, 35		" -561	"	560 Ω "	2
R11		" -154	"	150 kΩ "	1
R12		" -153	"	15 kΩ "	1
R26		" -105	"	1 MΩ "	2
R13		" -564	"	560 kΩ "	1
R15,19,21,36,37,39,71,73		" -101	"	100 Ω "	8
R16		" -470	"	47 Ω "	1
R17, 41, 61		" -331	"	330 Ω "	3
R44, 49, 76		" -562	"	5.6 kΩ "	3
R78		" -820	"	82 Ω "	1
R20		" -392	"	3.9 kΩ "	1
R22		" -182	"	1.8 kΩ "	1
R23–25, 27, 28		" -684	"	680 kΩ "	5
R29–34, 66–68		" -152	"	1.5 kΩ "	9
R38		" -471	"	470 Ω "	1
R45		" -472	"	4.7 kΩ "	1
R46		" -563	"	56 kΩ "	1
R50, 51		" -104	"	100 kΩ "	2
R52		QRD141J-222S	"	2.2 kΩ 1/4 W	1
R55		QRD161J-222	"	2.2 kΩ 1/6 W	1
R53, 62, 69		" -273	"	2.7 kΩ "	3
R54		" -473	"	47 kΩ "	1
R56		" -100	"	10 Ω "	1
R57		" -183	"	18 kΩ "	1
R59		" -223	"	22 kΩ "	1
R60, 79		" -682	"	6.8 kΩ "	2
R63		QRD141J-272	"	2.7 kΩ 1/4 W	1
R64, 65		QRD161J-103	"	10 kΩ 1/6 W	2
R42		" -221	"	220 Ω "	1
R72		" -823	"	82 kΩ "	1
R74		" -330	"	33 Ω "	1
TC1, 2, 4–13		QAT2002-001	T. Capacitor		6
VC1-1, 2, 2-1, 2		QAP1224-521	V. Capacitor		1
TC3, 14, 15, 16					
C1, 15, 37		QCS11HJ-180	C. Capacitor	18 pF 50 V	3
C2, 3, 8, 9, 09		QCF11HP-103	"	0.01 μF "	5
C4		QCS11HJ-240	"	24 pF "	2
C5		" -6R0	"	6 pF "	1
C6, 016		" -100	"	10 pF "	2
C7		" -471	"	470 pF "	1
C10		QCC11EM-103	"	0.01 μF "	1
C11		QCT05CH-7R0	"	7 pF "	1
C12		" -240	"	24 pF "	1
C13, 14, 25		" -8R0	"	8 pF "	3
C16, 26, 026		QCS11HJ-5R0	"	5 pF "	3
C019		" -8R0	"	8 pF "	1
C017, 020, 025, 024		" -3R0	"	3 pF "	4
C18, 38–43, 41		QCY41HK-222	"	0.0022 μF "	8
C19,20,69,73,74,76,82, 92,08,83		QCC11EM-473	"	0.047 μF "	10
C21		QCS11HJ-271	"	270 pF "	1
C22,72,77,06,018		QCC11EM-223	"	0.022 μF "	5
C23		QCY41HK-472	"	0.0047 μF "	1
C24		QCT05ZL-5R0	"	5 pF "	1
C33, 51		" -120	"	12 pF "	2
C024		" -100	"	10 pF "	1
C17, 021		" -2R0	"	2 pF "	2

Ref. No.		Parts No.	Parts Name	Remarks	Q'ty
C27–31		QCS11HJ-390	C. Capacitor	39 pF 50 V	4
C32		" -330	"	33 pF "	1
C34		" -300	"	30 pF "	1
C35		" -180	"	18 pF "	1
C44–47		QCY41HK-182	"	0.0018 μF "	4
C49		QCT41HK-272	"	0.0027 μF "	1
C50		QCT05WK-150	"	15 pF "	1
C55		" -150	"	15 pF "	1
C53		QCS11HJ-200	"	20 pF "	1
C52		" -240	"	240 pF "	1
C54		" -510	"	51 pF "	1
C56		QCY41HK-471	"	470 pF "	1
C57, 64		QCT05CH-240	"	24 pF "	2
C58		QCY41HK-821	"	820 pF "	1
C59		" -681	"	680 pF "	1
C60		" -151	"	150 pF "	1
C61		QCS11HJ-361	"	360 pF "	1
C62		QFS41HJ-122	P. Capacitor	0.0012 μF "	1
C63		" -331	"	330 pF "	1
C65		" -561	"	560 pF "	1
C66		" -681	"	680 pF "	1
C67		" -151	"	150 pF "	1
C68		QCS11HJ-470	C. Capacitor	47 pF "	1
C70, 48		QCY41HK-152	"	0.0015 μF "	2
C75		QET41AR-476	E.Capacitor	47 μF 10 V	1
C78, 88, 05, 91		QET41ER-475	"	4.7 μF 25 V	4
C79		QET41AR-336	"	33 μF 10 V	1
C81		" -477	"	470 μF "	1
C84		QET41HR-105	"	1 μF "	1
C85, 86		" -104N	"	0.1 μF "	2
C97		QET41CR-226	"	22 μF 16 V	1
C89		QCS11HJ-121	C.Capacitor	120 pF "	1
C90		QET41AR-107	E.Capacitor	100 μF "	1
C93		QFS41HJ-471	"	470 pF "	1
C94		QEB41HM-224	"	0.22 μF "	1
C95		" -474M	"	0.47 μF "	1
C96, 01, 02		QET41HR-474	"	0.47 μF "	3
C98, 99		QFM41HK-153	M. Capacitor	0.015 μF 50 V(RC-M90JW)	2
C98, 99		" -103	"	0.01 μF 50 V (RC-M90W)	2
C03, 04		QCY41HK-472	C. Capacitor	0.0047 μF 50 V	2
C012		QCS11HJ-151	"	150 pF "	1
C013		QCC11EM-333	"	0.033 μF 25 V	1
C014		QCS11HJ-151	"	150 pF 50 V	1
C015		QCC11EM-473	"	0.047 μF 25 V	1
C07		QET41AR-477	E. Capacitor	470 μF 10 V	1
C011		QCY41HK-272	C. Capacitor	0.0027 μF 50 V	1
C010		QCS11HJ-151	"	150 pF "	1
C023		" -4R0	"	4 pF "	1
VC3		QAT5001-201	M.V. Capacitor	200 pF	1
		VYH4776-001	Bracket		1
		LPSP3008ZS	Ass'y Screw		2
S1-1...4, 2-1...4, 3-1...4, 4-1...4, 5-1...4, 6-1...4, 7-1...4, 8-1...6		QST3841-V01	Push Switch		1
		VKL3143-001	Board in Tab		4
CN1-P		QMV5005-006	Connector	to Pre Amp.	1
CN2-P		" -003	"	to ANT.	1
CN3-P		" -003	"	LED	1
		VYH4906-001	Shield		1
(LED)		VMW3156-001	P.W. Board		1
D5, 603		SLP141B	LED		2

Pre-Amp P.W. Board Parts

→ Front

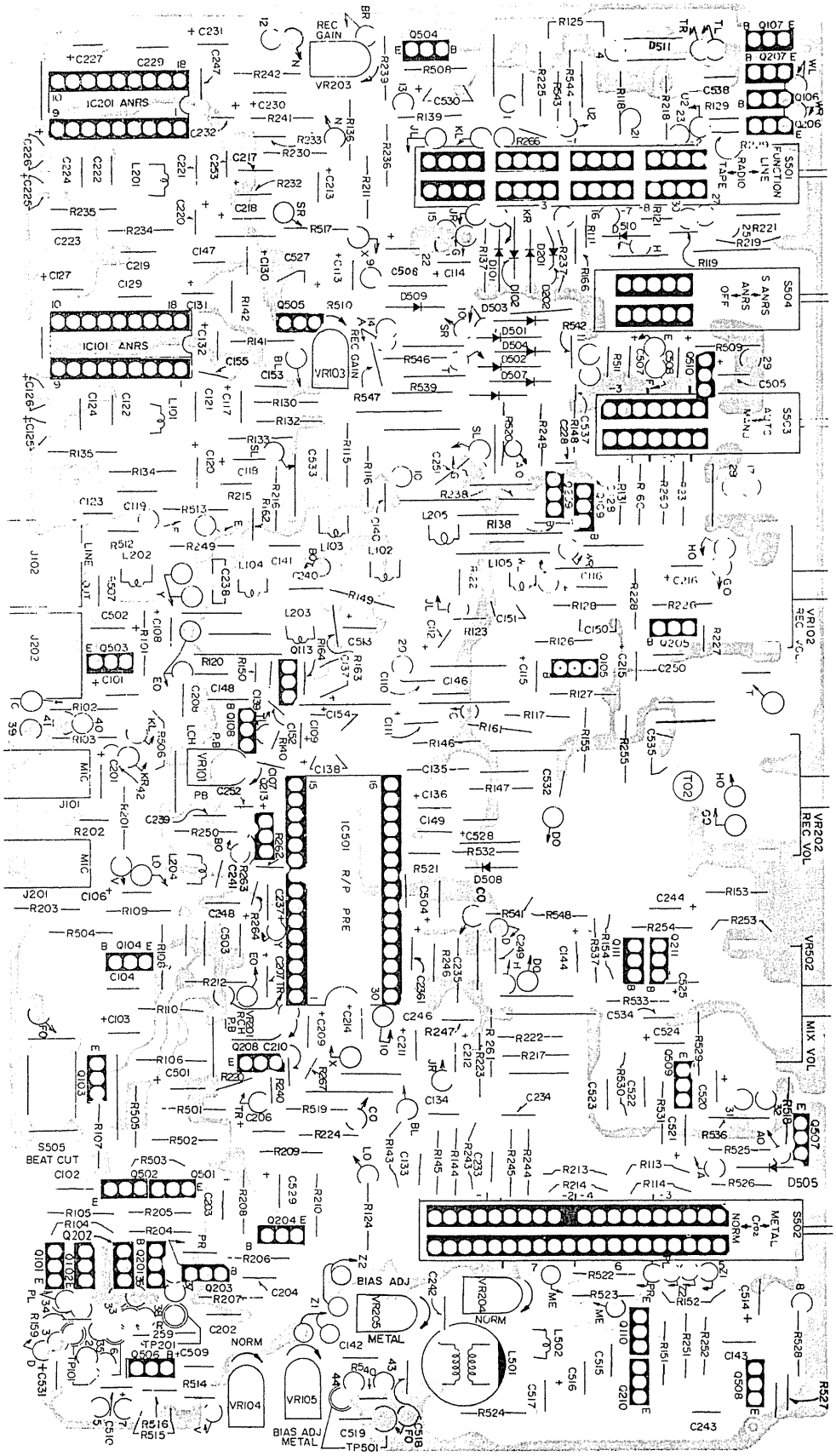

Fig. 35

Pre Amp. P.W. Board Parts List

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
		VMW1037-001	P.W. Board		1
S501-1...6		QSL8310-103V	Lever Switch	FUNCTION	1
S502-1...7		" -101	"	TAPE	1
S503-1...3		QSL4210-103	"	AUTO/MANU	1
S504		QSL2310-102	"	ANRS	1
S505		QSS1201-021	Slide Switch	BEAT CUT	1
VR101, 201		QVP8A0B-054	V. Resistor	PB LEVEL	1
VR102, 202		QVF0A2A-054M	"	REC VOL.	2
VR103, 203		QVP8A0B-014	"	REC LEVEL	2
VR104, 204		" -025	"	BIAS (NORM)	2
		" -015	"	" (METAL)	2
VR105, 205		QVF0E2A-024M	"	MIC MIX	1
VR502		VDE6028-A01	Volume Kit		1
		QMS3501-016	Jack	MIC	2
J101, 201		VMC0002-002	Pin Jack	LINE OUT	1
J102		" -001	"	"	1
J202		VQH1009-020	OSC Coil	BIAS	1
L501		VQP0001-102S	Inductor		1
L502		" -183S	"		2
L101, 201		" -562S	"		1
L102		VQP9001-003	"		1
L202		" -001	"		4
L103, 203, 104, 204		" -001	"		2
L105, 205		M51123P	IC		1
IC501		AN7363	"		2
IC101, 201		2SC1845(E,U)	Transistor		4
Q101, 201, 102, 202		2SC2001(L,K)	"		7
Q103, 203, 109, 209, 110, 210, 508		2SC1845(F)	"	or 2SC1843(F)	2
Q104, 204		2SC945L(Q,P)	"		4
Q105,205,111,211		2SC945(Q,P)			14
Q106,206,107,207,108, 208,113,213,502,503, 505, 506, 507, 510		2SA992(E,F)	"		2
Q501, 504		2SC945L(P)	"		1
Q509		1S2076	Si. Diode		15
D101,201,102,202, 501—511		QRD141J-332S	C. Resistor	3.3 kΩ 1/4 W	8
R101,201,112,212,502, 503,510,532		" -272S	"	2.7 kΩ "	8
R102,202,113,213,114, 214,136,236		" -152S	"	1.5 kΩ "	7
R103,203,115,127,141, 241,211					
R104, 204, 250, 531, 150		" -822S	"	8.2 kΩ "	5
R105, 205, 144, 244		" -392S	"	3.9 kΩ "	4
R106,206,125,225,128, 228,134,234,140,240, 506		" -472S	"	4.7 kΩ "	11
R107,207,223,164,264, 504		" -223S	"	22 kΩ "	6
R108, 208		" -471S	"	470 Ω "	3
R109, 209, 533		" -225S	"	2.2 MΩ "	3
R110,210,130,230,221, 146,117,217,160,260, 505,123,223		" -153S	"	15 kΩ "	13
R111		QRD161J-152	"	1.5 kΩ 1/6 W	1
R116,216,137,237,143, 243,518,219		QRD141J-333S	"	33 kΩ 1/4 W	8
R118,218,222,154,254		" -123S	"	12 kΩ "	5
R119		QRD161J-103	"	10 kΩ 1/6 W	1
R120, 220		QRD141J-560S	"	56 Ω 1/4 W	2
R121		QRD161J-153	"	15 kΩ 1/6 W	1
R122		QRD143J-123S	"	12 kΩ 1/4 W	1
R164,264,527		" -223S	"	22 kΩ "	3
R124, 224		" -224S	"	220 kΩ "	2

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Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
R126, 226		QRD141J-684S	C. Resistor	680 kΩ 1/4 W	2
R129, 229, 167, 267		" -472	"	4.7 kΩ "	4
R131, 231, 155, 255, 133		" -393S	"	39 kΩ "	5
R132		" -473S	"	47 kΩ "	1
R135, 235		" -680S	"	68 Ω "	2
R138, 238, 511, 543		QRD143J-472S	"	4.7 kΩ "	4
R139, 239		QRD141J-222S	"	2.2 kΩ "	2
R142		QRD143J-392S	"	3.9 kΩ "	1
R145, 245, 151, 251		QRD141J-183S	"	18 kΩ "	4
R147, 242		" -273S	"	27 kΩ "	2
R148, 248, 520		" -562S	"	5.6 kΩ "	3
R149, 249		" -121S	"	120 Ω "	2
R152, 252		QRD141J-3R3S	"	3.3 Ω "	2
R153, 253		" -821S	"	820 Ω "	2
R536		" -561S	"	560 Ω "	1
R537		" -331S	"	330 Ω "	1
R159, 259		" -100S	"	10 Ω "	2
R161, 261, 508		" -104S	"	100 kΩ "	3
R162, 262, 232		QRD143J-473S	"	47 kΩ "	3
R163, 263, 248, 166, 266, 542		" -562S	"	5.6 kΩ "	6
R215, 227, 507		" -152S	"	1.5 kΩ "	3
R233		" -393S	"	39 kΩ "	1
R246		" -153S	"	15 kΩ "	1
R247		" -273S	"	27 kΩ "	1
R501, 528		" -101S	"	100 Ω "	2
R509, 530		QRD141J-105S	"	1 MΩ "	2
R512		QRD143J-103S	"	10 kΩ "	1
R513		QRD141J-103S	"	10 kΩ "	1
R514		QRD143J-272S	"	2.7 kΩ "	1
R515		" -221S	"	220 Ω "	1
R516		" -684S	"	680 kΩ "	1
R517		QRH141J-4R7	"	4.7 Ω "	1
R519		QRD141J-471S	"	470 Ω "	1
R521, 541		QRD143J-181S	"	180 Ω "	2
R522	⚠	QRD149J-180S	Fusible Resistor	18 Ω "	1
R523	⚠	" -470S	"	47 Ω "	1
R524	⚠	" -100S	"	10 Ω "	1
R525	⚠	QRD141J-181S	C. Resistor	180 Ω "	1
R526		" -122S	"	1.2 kΩ "	1
R529		" -271S	"	270 Ω "	1
R540		QRD143J-1R0S	"	1 Ω "	1
R544		QRD141J-682S	"	6.8 kΩ "	1
R546		QRH141J-2R2	"	2.2 Ω "	1
R547		QRD143J-222S	C. Resistor	2.2 kΩ "	1
R548		" -151S	"	150 Ω "	1
		VMZ0015-001	Post Pin		6
C101, 201, 111, 211, 520, 525		QET61HR-474ZM	E. Capacitor	0.47 μF 50 V	6
C102, 202		QCS11HJ-451	C. Capacitor	450 pF "	2
C103, 203		QEB41HM-105	E. Capacitor (Low Peak)	1 μF "	2
C104, 204, 522		QCS31HJ-101Z	C. Capacitor	100 pF "	3
C106, 206, 207, 217, 130, 230, 131, 231, 136, 236, 107, 117		QET41HR-335	E. Capacitor	3.3 F "	12
C108, 208, 212, 113, 213, 114, 214, 115, 215, 116, 216, 118, 218, 120, 144, 509		QET41HR-105	"	1 μF "	16
C109, 128, 228, 502		QET41AR-336	"	33 μF 10 V	4
C110, 210		QFM31HJ-273Z	M. Capacitor	0.027 μF 50 V	2
C119, 219, 515		" -103Z	"	0.01 μF "	3
C121, 221		QCS11HJ-301	C. Capacitor	300 pF "	2
C122, 222, 129, 229		QFM31HJ-152Z	M. Capacitor	0.0015 μF "	4
C123, 223		QFM41HJ-683	"	0.068 μF "	2
C124		QFM31HJ-272Z	"	0.0027 μF "	1

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
C125, 225		QEB41HM-104	E. Capacitor (Low Leak)	0.1 μF 50 V	2
C126, 226		" -475M	" "	4.7 μF "	2
C127, 227		QET41AR-107	E. Capacitor	100 μF 10 V	2
C132, 232, 513, 528, 532, 535		" -227	"	220 μF "	6
C133, 233		QCS11HJ-681	C. Capacitor	680 pF 50 V	2
C134, 234		QFM31HJ-122Z	M. Capacitor	0.0012 μF "	2
C135, 235		QFM41HJ-184	"	0.18 μF "	2
C137, 237, 152, 252		QET41ER-475	E. Capacitor	4.7 μF 25 V	4
C138, 238		QFM41HJ-153	M. Capacitor	0.015 μF 50 V	1
C139, 239		" -102	"	0.001 μF "	2
C140, 240, 146, 246		QCS11HJ-471	C. Capacitor	470 pF "	4
C141, 241		" -561	"	560 pF "	2
C142, 242		QFS32BJ-331	P.S. Capacitor	330 pF 125 V	2
C143, 243		QFM31HJ-332Z	M. Capacitor	0.0033 μF 50 V	2
C147,247,150,250,153,253		QCS11HJ-221	C. Capacitor	220 pF "	6
C148, 248		QCC11EH-103	"	0.01 μF 25 V	2
C149, 249		QCS11HJ-331	"	330 pF 50 V	2
C151, 251		" -501	"	500 pF "	2
C154, 254, 530		QET41CR-106	E. Capacitor	10 μF 16 V	3
C156		QCS11HJ-301	C. Capacitor	300 pF 50 V	1
C157, 257		QFN41HJ-224	M. Capacitor	0.22 μF "	2
C209		QET61AR-336ZM	E. Capacitor	33 μF 10 V	1
C238		QFM41HJ-153	M. Capacitor	0.015 μF 50 V	1
C501, 507		QET61AR-476ZM	E. Capacitor	47 μF 10 V	2
C503, 529		QET41AR-337	"	330 μF "	2
C504, 514, 527		" -477	"	470 μF "	3
C505, 508		QET61AR-476ZM	"	47 μF "	2
C506		QET41AR-108	"	1000 μF "	1
C510		QFM41HJ-103	M. Capacitor	0.01 μF 50 V	1
C516		QFP82AJ-683	P.P. Capacitor	0.068 μF 100 V	1
C517		QET61CR-106ZM	E. Capacitor	10 μF 16 V	1
C518		QFP82AJ-123	P.P. Capacitor	0.012 μF 100 V	1
C519		QCY41HK-222	C. Capacitor	0.0022 μF 50 V	1
C521, 531		QET41AR-107	E. Capacitor	100 μF 10 V	2
C523		QCS11HJ-680	C. Capacitor	68 pF 50 V	1
C524		QET41HR-474	E. Capacitor	0.47 μF "	1
C533		QCC11EM-473	C. Capacitor	0.047 μF 25 V	1
C534		QCY41HK-182	"	0.0018 μF 50 V	1
C537		QET41AR-476	E. Capacitor	47 μF 16 V	1
C538		QET41AR-227	"	220 μF "	1
		VYH3208-002	Shield Plate		1

Main Amp P.W. Board Parts

Front

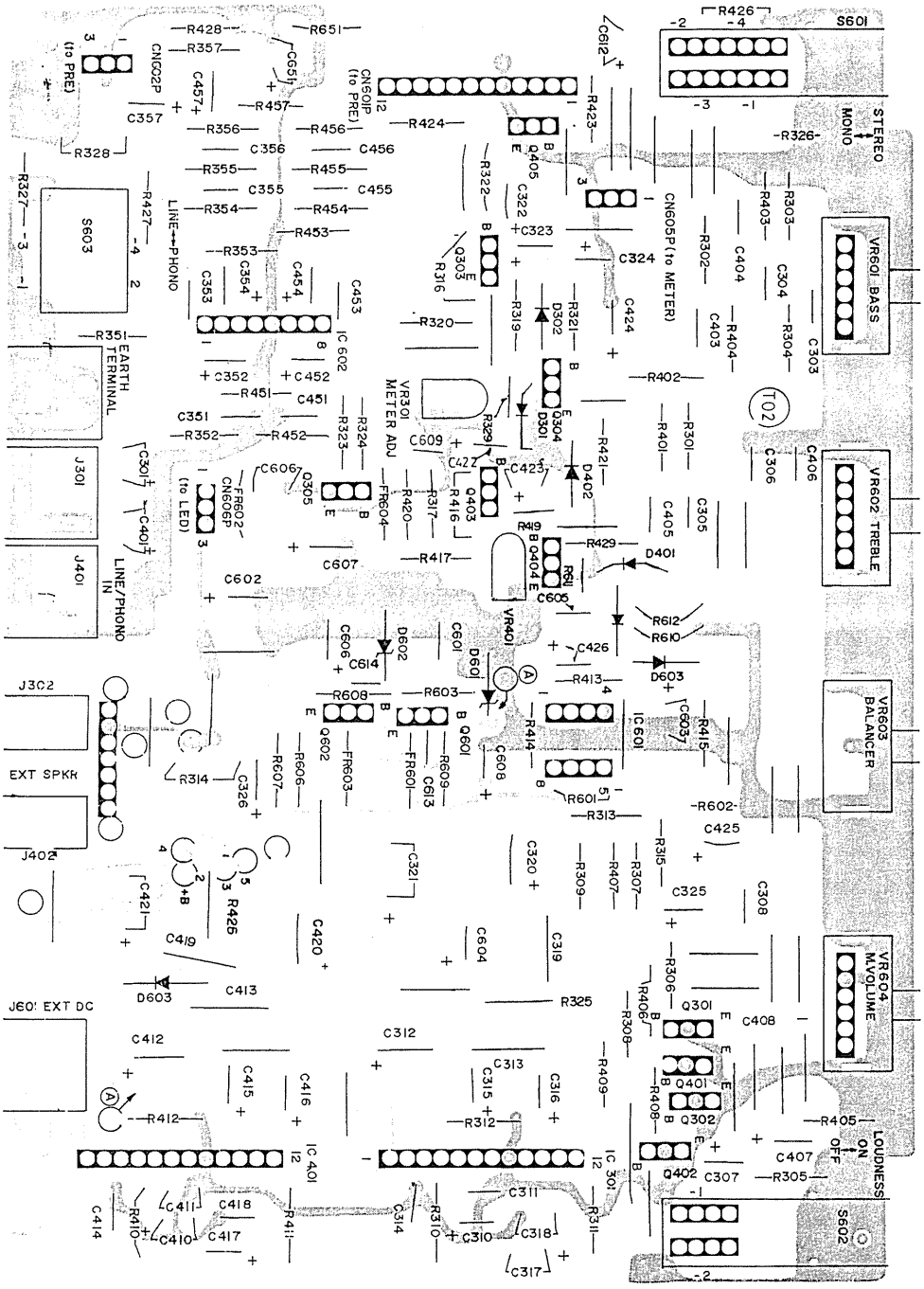


Fig. 36

Main Amp. P.W. Board Parts List

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
		VMW2168-002	P.W. Board		1
S601-1...4		QSL4210-103	Lever Switch	MONO-STEREO	1
S602-1...2		QSL2210-101	"	LOUDNESS	1
S603-1...4		QSS4201-072	Slide Switch	LINE-PHONO	1
VR301, 401		QVP8A0B-013	V. Resistor	1 kΩ METER ADJ.	2
VR601-1...2, 602-1...2		QVD4A2A-015M	"	100 kΩ BASS, TREBLE	2
VR603		QVF0A2G-054M	"	50 kΩ BALANCE	1
VR604-1...2		QVN3A2B-A54M	"	50 kΩ MAIN VOL.	1
J301		VMC0002-002	Pin Jack	LINE IN	1
J302, 402		QMS3501-016	Jack	EXT. SPKR OUT	2
J401		VMC0002-001	Pin Jack	LINE IN	1
J601		QMA1221-006	DC Jack	EXT. DC IN	1
IC301, 401		AN7156N	IC		1
IC601		μPC4557(C)	"		1
IC602		BA328	"		1
Q301, 401, 302, 402		2SC536(H)	Transistor	or 2SC2001(L,K)	4
Q303, 403, 304, 404		2SC536(F,G)	"		4
Q305, 405		2SC945(Q,P)	"		2
Q601		2SD439(E)	"		1
Q602		2SD325(E)HP	"		1
D301, 401, 604, 605		1S2076	Si. Diode		4
D302, 402		1K34A	Ge. Diode		2
D601		HZ11A2	Zener Diode		1
D602		HZ9C2	"		1
D603		DSA26B	Si. Diode		1
R301, 401, 307, 407, 309, 409, 612		QRD141J-472S	C. Resistor	4.7 kΩ 1/4 W	7
R302, 402		" -822S	"	8.2 kΩ "	2
R303, 403, 607, 305, 405		" -222S	"	2.2 kΩ "	5
R304, 404, 601, 602		" -562S	"	5.6 kΩ "	4
R306, 406, 329, 429		" -152S	"	1.5 kΩ "	4
R308, 408, 604, 354, 454		" -102S	"	1 kΩ "	5
R310, 410, 311, 411		" -560S	"	56 Ω "	4
R312, 412, 352, 452		" -473S	"	47 kΩ "	4
R313, 413		" -105S	"	1 MΩ "	2
R314, 414		" -330S	"	33 Ω "	2
R315, 415		" -183S	"	18 kΩ "	2
R316, 416		" -684S	"	680 kΩ "	2
R317, 417, 322, 422, 326 426, 605		" -332S	"	3.3 kΩ "	7
R319		" -331S	"	330 Ω "	1
R320, 420, 324, 424		" -682S	"	6.8 kΩ "	4
R321, 421		" -391S	"	390 Ω "	2
R323, 423		" -122S	"	1.2 kΩ "	2
R325		QRD121J-2R2	"	2.2 Ω 1/2 W	1
R327, 427		QRD141J-104S	"	100 kΩ 1/4 W	2
R328		" -563S	"	56 kΩ "	1
R351, 451		QRD143J-182S	"	1.8 kΩ "	2
R353, 453		QRD141J-471S	"	470 Ω "	2
R355, 455		" -103S	"	10 kΩ "	2
R356, 456		" -124S	"	120 kΩ "	2
R357, 457, 606		" -683S	"	68 kΩ "	3
R419		QRD143J-331S	"	330 Ω "	1
R425		QRD123J-2R2	"	2.2 Ω 1/2 W	1
R428		QRD141J-393S	"	39 kΩ 1/4 W	1
R609		" -101S	"	100 Ω "	1
R610		" -153S	"	15 kΩ "	1
R611		QRD143J-222S	"	2.2 kΩ "	1
FR601, 603	⚠	QRH141J-1R0	Fusible Resistor	1 Ω "	2
FR602	⚠	" -2R2	"	2.2 Ω "	1

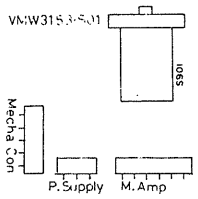
No. 1462

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
FR604	⚠	QRH141J-4R7	Fusible Resistor	4.7 Ω 1/4 W	1
C301, 401, 605		QET61HR-335ZM	E. Capacitor	3.3 μF 50 V	3
C302, 402		QET41HR-335	"	3.3 μF "	2
C303		QFM31HK-473Z	M. Capacitor	0.047 μF "	1
C403		QFM41HK-473	"	0.047 μF "	1
C304, 404		QFM31HK-104Z	"	0.1 μF "	2
C305, 405		QCY41HK-222	C. Capacitor	0.0022 μF "	2
C306, 406		QFM31HK-223Z	M. Capacitor	0.022 μF "	2
C307, 407		QEB41EM-224	E. Capacitor	0.22 μF 25 V	2
C308, 408		QCY41HK-182	C. Capacitor	0.0018 μF 50 V	2
C309, 409		QET41HR-474	E. Capacitor	0.47 μF "	2
C310, 410		QET41ER-475	"	4.7 μF 25 V	2
C311, 411, 353, 453		QCY41HK-102	C. Capacitor	0.001 μF 50 V	4
C312, 412		QET41ER-228	E. Capacitor	2200 μF 25 V	2
C313, 413		QFM41HJ-224	M. Capacitor	0.22 μF 50 V	2
C314, 414, 318, 418		QCC11EM-473	C. Capacitor	0.047 μF 25 V	4
C315, 316, 354, 454		QET61AR-476ZM	E. Capacitor	47 μF 10 V	4
C415, 416		QET41AR-476	"	47 μF "	2
C317, 417, 608, 651		QET61AR-107ZM	"	100 μF "	4
C391, 419		QFM41HJ-224	M. Capacitor	0.22 μF 50 V	2
C320, 420, 321, 421		QET41CR-228	E. Capacitor	2200 μF 16 V	4
C322, 422, 323, 423, 457		QET61HR-105ZM	"	1 μF 50 V	5
C351, 451		QCS11HJ-471	C. Capacitor	470 pF "	2
C355, 455		QFM31HJ-822Z	M. Capacitor	0.082 μF "	2
C356, 456		" -273Z	"	0.027 μF "	2
C357		QET41HR-105	E. Capacitor	1 μF "	1
C326		QET41CR-226	"	22 μF "	1
C426		QET61CR-226ZM	"	22 μF "	1
C601, 606		QET41AR-477	"	470 μF 10 V	2
C602, 607		" -108	"	1000 μF "	2
C603		" -107	"	100 μF "	1
C604, 616		QET41ER-227	"	220 μF 25 V	1
C609, 352, 452		QET61HR-474ZM	"	0.47 μF 50 V	3
C610		QET41ER-476	"	47 μF 25 V	1
C611		" -106	"	10 μF "	1
C612		QET41CR-106	"	10 μF 16 V	1
C613, 614		QCC11EM-103	C. Capacitor	0.01 μF 25 V	2
C615		" -104	"	0.1 μF "	1
C617		QCY41HK-152	"	0.0015 μF 50 V	1
CN601P		QMV5004-012	Connector	to PRE	1
CN602P		" -003	"	to LINE IN	1
CN605P		QMV5005-003	"	to METER	1
CN606P		" -002	"		1
		VYH3197-001	Radiation		2
		SBSB3008Z	Screw		2
		SBSB3010Z	"	IC + Radiation	2
		VMZ0001-001	Earth Terminal		1
		VYH4905-001	Heat Sink		1
		VYSP1R5-024	Spacer		1

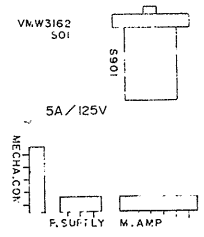
Other P.W. Board Parts

Mecha. Operation buttons

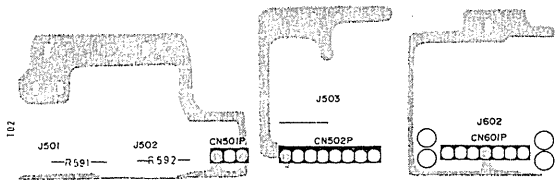
Power Switch (RC-M90W)



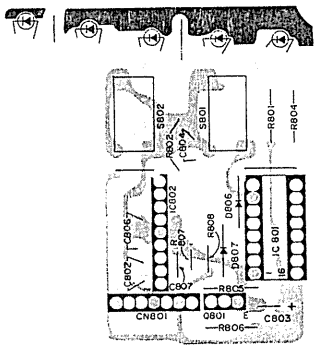
Power Switch (RC-M90JW)



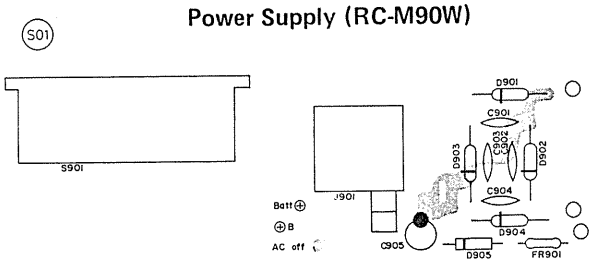
MIX Mic jacks



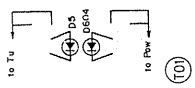
MMS



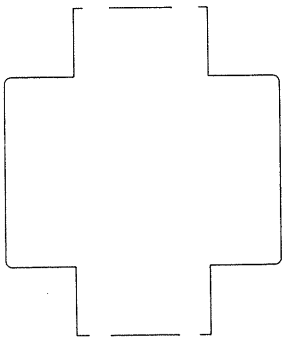
Power Supply (RC-M90W)



L.E.D



Mic wire connector



Power Supply (RC-M90JW)

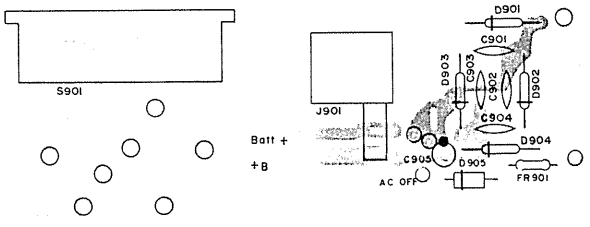


Fig. 37

No. 1462

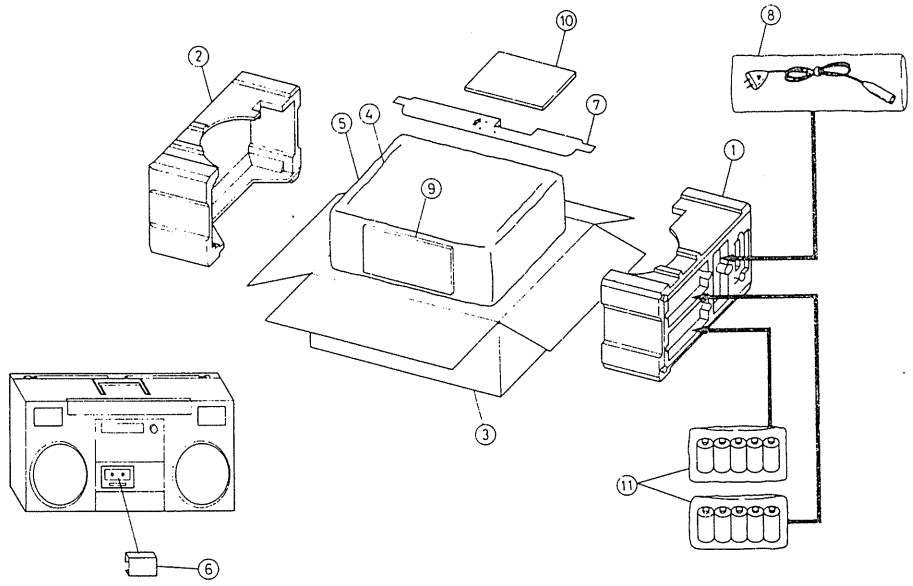
Other P.W. Board Parts List

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
(M.M.S.)		VMW3144-001	P.W. Board		1
S801-1...2		QSL2309-004	Lever Switch		1
S802		" -003	"		1
IC801		TC9138AP	I.C.		1
IC802		BA335	"		1
Q801		2SC945(Q,P)	Transistor		1
D801–805		LN21RP, HL	LED		5
D806, 807		1S2076	Si. Diode		2
R801		QRD141J-102S	C. Resistor	1 kΩ 1/4 W	1
R802		" -563S	"	56 kΩ "	1
R803		" -105S	"	1 MΩ "	1
R804		" -151S	"	150 Ω "	1
R805		" -332S	"	3.3 kΩ "	1
R806		" -222S	"	2.2 kΩ "	1
R807		QRD143J-474S	"	470 kΩ "	1
R808		" -473S	"	47 kΩ "	1
C802		QCY41HK-102	C. Capacitor	0.001 μF 50 V	1
C803		QET41CR-107	E. Capacitor	100 μF 16 V	1
C804		QCY41HK-103	C. Capacitor	0.01 μF 50 V	1
C805		QCF11EZ-103	"	0.01 μF "	1
C806		QFM41HK-223	M. Capacitor	0.022 μF "	1
C807		" -823	"	0.082 μF "	1
C808		QET41CR-226	E. Capacitor	22 μF 16 V	1
C809		QFM41HJ-103	M. Capacitor	0.01 μF 50 V	1
C810		QCF11HP-223	C. Capacitor	0.022 μF "	1
CN801P		QMV5004-006	Connector	to MECHA.CON	1
(Power Switch)		VMW3153-002	P.W. Board	RC-M90W	1
		VMW3162-001	P.W. Board	RC-M90JW	1
S901-1...2	⚠	QSP0210-016	Push Switch		1
CN901P		QMV5004-003	Connector		1
CN902P		" -006	"		1
CN903P		" -005	"		1
	⚠	A44594-001	Fuse Clip	RC-M90JW	2
	⚠	QMF51U1-5R0	Fuse	RC-M90JW	1
(MIX MIC Jacks)		VMW3143-002A	P.W. Board		1
J501		QMS6305-001	Jack	MIX MIC	1
J502		QMS6303-013	"		1
J503		QMC0888-010	DIN Socket		1
CN501P		QMV5004-003	Connector		1
CN502P		" -008	"		1
R591, 592		QRD141J-102S	C. Resistor	1 kΩ 1/4 W	2
(PHONES Jack)		VMW3143-002B	P.W. Board		1
J602		QMS6312-012	Jack	PHONES	1
CN601P		QMV5004-007	Connector		1
(Mecha. Operation buttons)		VMW3146-002	P.W. Board		1
D752		SLP144B	LED	Rec.	1
D753		SLP244B	"	Pause	1
(Power Supply)		VMW3154-001	P.W. Board	RC-M90W	1
		VMW3161-002	P.W. Board	RC-M90JW	1
D901–904	⚠	U08B-F	Si. Diode		4
D905		10E1	"		1
FR901	⚠	QRH141J-2R2	Fusible Resistor	2.2 Ω 1/4 W	1
R901		QRC121K-225	Comp. Resistor	2.2 MΩ 1/2 W	1
C901–904		QCF11EZ-223	C. Capacitor	0.022 μF 25 V	4
C905		QET41ER-336	E. Capacitor	33 μF "	1
S901, J901	⚠	QMC0262-003	AC Socket		1
S902-1...2	⚠	QSS2325-101	Slide Switch	RC-M90W	1
	⚠	" -102	"	RC-M90JW	1
T901	⚠	VTP66N2-15E	P. Transformer	RC-M90W	1
	⚠	VTP66C2-15B	"	RC-M90JW	1
	⚠	A44594-001	Fuse Clip	RC-M90W	2
	⚠	QMF51A2-R80	Fuse	RC-M90W	1
		VND4003-026	Fuse Label	RC-M90W	1
(LED)		VMW3156-001	P.W. Board	LED	1
(Mic Wire Connector)		VMW3110	P.W. Board	Mic Wire Connector	1

Packing

Position of controls and switch knobs at renewed packing

Fine tuning knob : Center
Band selector : MW
Tuning : 600 kHz
Power switch : OFF
METER/MODE switch : MONO
BASS control : Center
TREBLE control : Center
BALANCE control : Center
VOLUME control : Center
LOUDNESS switch : OFF
FUNCTION switch : TAPE
NR SYSTEM switch : OFF
REC switch : MANU
REC level controls : Center
MIXING MIC LEVEL control: Center
TIMER STANDBY switch: PLAY
MULTI MUSIC SCANNER switch: ON
BEAT CUT switch : "1" Normal
PHONO/LINE IN selector switch: LINE IN



Packing Material Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1–3	VDP5072-002A	Carton Ass'y	RC-M90JW	1
	" -003A	"	RC-M90W	1
1	VPH1226-001	Cushion (L)		1
2	VPH1227-001	" (R)		1
3	VPD5072-J02	Carton	RC-M90W	1
	" -J03	"	RC-M90JW	1
4	VHPJ109-039	White Paper		1
5	OPGA085-06505	Poly Bag	for Unit	1
6	VPH4106-001	Door Protector		1
7	VPK4136-004	Spacer		1
8	QPGA012-01505	Poly Bag	for Power Cord	1
9	QPGB024-03404	"	for Instruction	1
10	V30859-007	Catalog Sack	for Warranty Card (RC-M90JW)	1
11	UM1HJ	Battery	for PX (RC-M90W)	1
	QPGA010-03003	Poly Bag	for PX (RC-M90W)	1