

# Service Manual

Portable Stereo Component System

Radio Cassette

## RX-CW55F

(Black)



This is the Service Manual for the following areas.

[X]... For Asia, Latin America, Middle East and Africa areas.

[XC]... For Saudi Arabia

### RX-C66F MECHANISM SERIES

#### SPECIFICATIONS

##### General:

Power Requirement: AC; 110-127, 200-220, 230-250V, 50/60HZ  
 Battery; 15V (Ten "D" Size Flashlight Battery)  
 (National UM-1 or equivalent)  
 Car Battery; With optional car battery cord RP-9550

Power Consumption: 38W

Power Output: 60W (30X2).... PMPO  
 28W (14X2).... RMS (max)

Speaker: Woofer; 10cm x 10cm  
 PM Dynamic speaker (3Ω)  
 Tweeter; 2cm Ceramic speaker (1kΩ)  
 Extra Bass; 5cm x 13cm

Input: Mix Mic; sensitivity 2.2mV/ applicable  
 microphone impedance 200~600Ω (Ø3.5)  
 CD/Line in; sensitivity 400mV/50KΩ over

Output: Headphones; 32Ω (8~50Ω). Ø3.5  
 EXT SP; 3~8Ω

Dimensions: Total Size;  
 725(W) x 163(H) x 188(D) mm  
 Main Unit;  
 355(W) x 163(H) x 188(D) mm  
 Speaker Box;  
 191(W) x 163(H) x 168(D) mm

Weight; 6.0kg Without batteries

##### Radio Section;

Radio Frequency Range;  
 FM; 88~108MHz  
 MW; 530~1605KHz (566~187m)  
 SW1; 2.3~7.0MHz (130~42.9m)  
 SW2; 7.0~22.0MHz (42.9~13.6m)

##### Intermediate frequency;

FM; 10.7MHz  
 AM (MW/SW1/SW2); 455KHz  
 FM; 4.2μV/500mW output  
 (-3db limit Sens)  
 MW; 112μV/m/50mW output  
 SW1; 89μV/m/50mW output  
 SW2; 10μV/50mW output

##### Sensitivity:

##### Tape Deck Section:

Frequency Response: Tape 1  
 60~12,000Hz (with normal tape)  
 60~13,000Hz (with CrO2 tape)

Recording System: AC bias, Magnet erase

Tape Speed: 4.8cm/s

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

##### Tape Deck Section:

Frequency Response: Tape 2  
 60~12,000Hz (with normal tape)  
 60~13,000Hz (with CrO2 tape)

Tape Speed: 4.8cm/s

Track System: 4-track 2-channel stereo playback

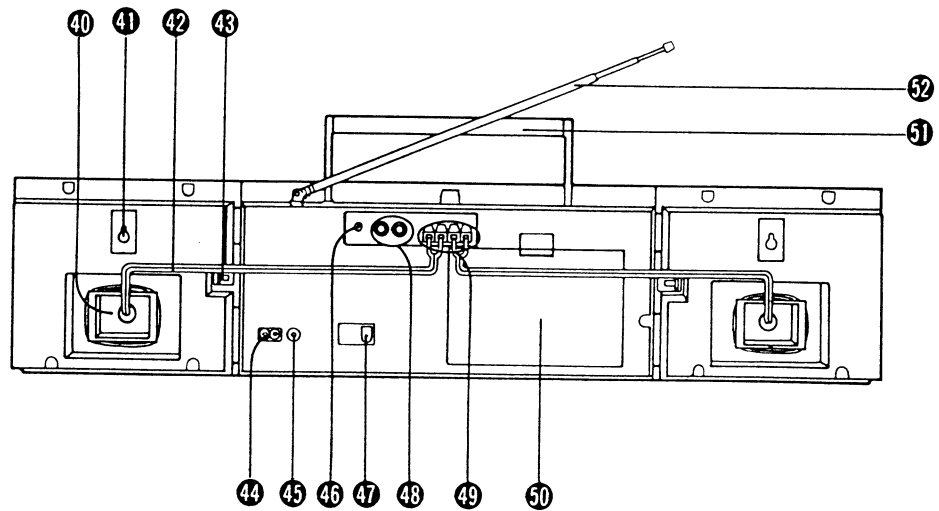
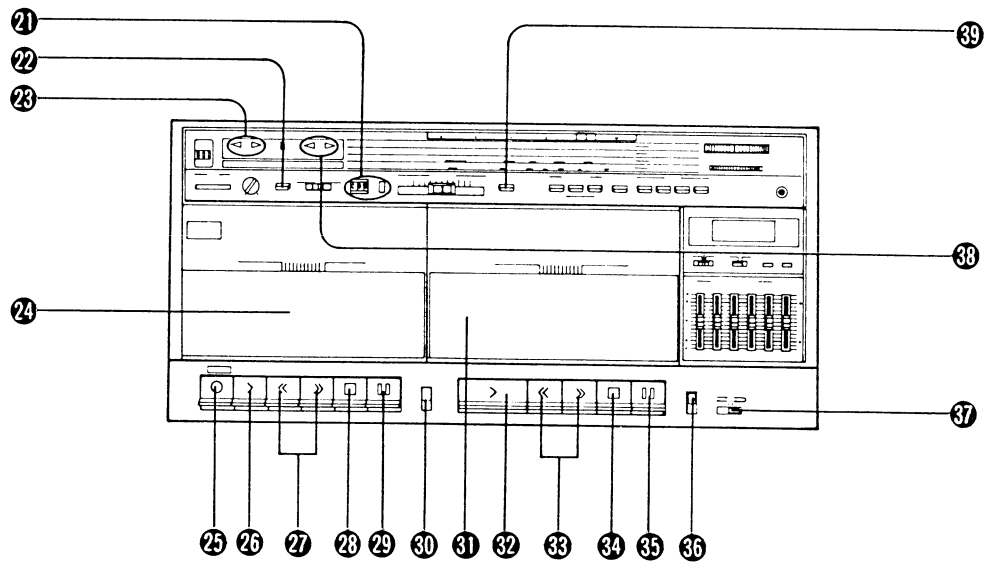
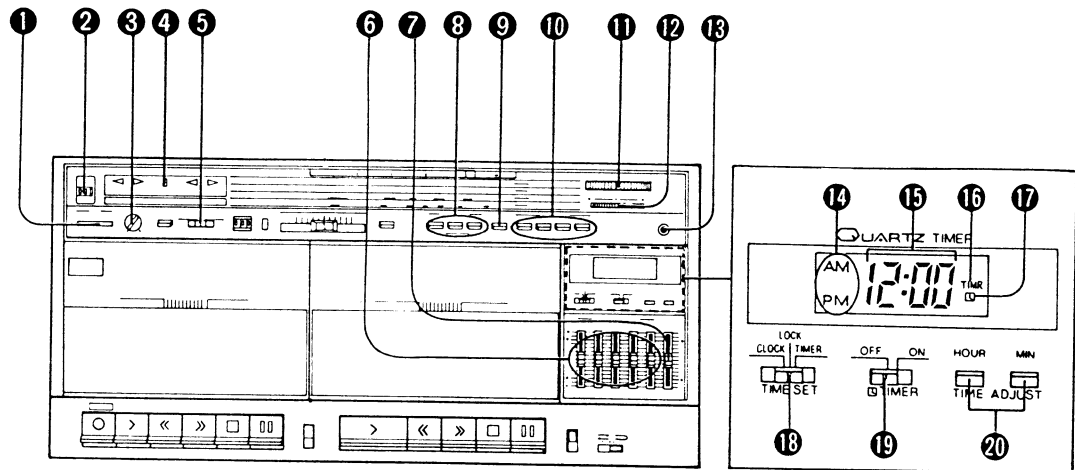
##### TIMER/CLOCK:

Power Requirement: Battery; DC 1.5V  
 (One "AA" Size Battery)

Accuracy: ±20seconds (+25°C)

Design and specifications are subject to change without notice.

# LOCATION OF CONTROLS



# Service Manual

Portable Stereo Component System

Radio Cassette

## RX-CW55F

(Black)

This is the Service Manual  
for the following areas.

**[ME]**....For AAFES EUROPE.

**[MF]**....For AAFES PACIFIC.

● Please use this manual together with the service manual for Model No.RX-CW55F  
order No.GAD8705087C3.

● This Service Manual indicates the main differences between;Original RX-CW55F  
(for [X]mark area) and RX-CW55F[ME] [MF] for AAFES PACIFIC & EUROPE.

## CHANGES OF PARTS

### ■ PARTS COMPARISON TABLE

| Ref.No. | Description         | Parts Number          |                   | Remarks |
|---------|---------------------|-----------------------|-------------------|---------|
|         |                     | RX-CW55F[X](Original) | RX-CW55F[ME] [MF] |         |
| K72     | Rear Cabinet Ass'y  | RYF1XCW55FX           | RYF1XCW55FME      |         |
| K72F    | Name Plate          | RGT63ZA               | RGTK63SA-0        |         |
| K73     | Front Cabinet Ass'y | RYM1XCW55FX           | RYM1XCW55FME      |         |
| P3      | Gift Box            | RPKK1090ZA            | RPKK1103ZA        |         |
| A3      | Tape                | RJN48Z                | -----             | Deleted |
| A4      | Instruction Book    | RQXK4076ZA            | RQXK4086ZA        |         |

# Panasonic

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

Panasonic Tokyo Office  
Matsushita Electric Trading Co., Ltd.  
6th Floor, World Trade Center Bldg.,  
No. 4-1, Hamamatsu-cho 2-Chome, Minato-ku,  
Tokyo 105, Japan

Printed in Japan  
870600600FHS/YW

# DISASSEMBLY INSTRUCTIONS

## GENERAL

- 1 Extra Bass Switch (XBS)
- 2 Built-in Microphone (MIC)
- 3 Mixing Level Control (MIXING LEVEL)
- 4 FM Stereo Indicator (FM STEREO)
- 5 Dubbing Mode Selector (DUBBING)
- 6 Volume Control (VOLUME)
- 7 Graphic Equalizer Controls (GRAPHIC EQUALIZER)
- "100 Hz" Control functions as an XBS Level Control.
- 8 Function Selector (SELECTOR)
- 9 FM Mode Selector/Beat Proof Switch (FM MODE/B.P.)
- 10 Band Selector (BAND)
- 11 Tuning Control (TUNING)
- 12 Fine Tuning Control (FINE TUNING)
- 13 Headphones Jack (PHONES) 32Ω (8~50Ω) Ø3.5

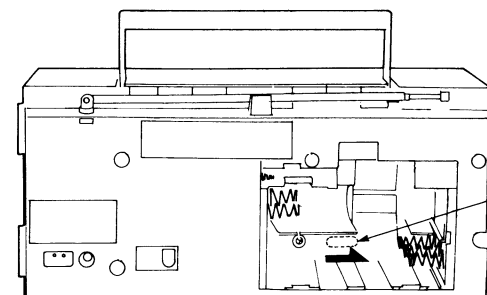
When using the headphones (EAH-S12, optional), avoid listening to sound at excessive volume levels, because it may injure your ears.

## CLOCK/TIMER

- 14 AM-PM Indicators (AM-PM)
- 15 Clock/Timer Display
- 16 Timer On Indicator (TIMER)
- 17 Timer Set Indicator (□)
- 18 Time Set Selector (TIME SET)
- 19 Timer Switch (□ TIMER)

The Timer Switch does not function during SW broadcast reception.

- 20 Time Adjust Buttons (TIME ADJUST)



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

## TAPE 1

- 21 Tape Counter and Reset Button (COUNTER)
- 22 Tape Selector (TAPE 1)
- 23 Power/Battery Check/Tape Direction
- 24 Indicators (POWER/BATT/TAPE DIRECTION)
- Cassette Compartment
- 25 Record Button (○ RECORD)
- 26 Playback Button (▶ PLAY)
- 27 Fast/Cue Buttons (◀▶ FAST/CUE)
- 28 Stop/Eject Button (□ STOP/EJECT)
- 29 Pause Button (⏸ PAUSE)
- 30 Direction Button (DIRECTION TAPE 1)

## TAPE 2

- 31 Cassette Compartment
- 32 Playback Button (▶ PLAY)
- 33 Fast/Cue Buttons (◀▶ FAST/CUE)
- 34 Stop/Eject Button (□ STOP/EJECT)
- 35 Pause Button (⏸ PAUSE)
- 36 Direction Button (DIRECTION TAPE 2)
- 37 Reverse Mode Selector (REVERSE MODE)
- 38 Power/Battery Check/Tape Direction
- 39 Indicators (POWER/BATT/TAPE DIRECTION)
- Tape Selector (TAPE 2)

## REAR PANEL

- 40 Speaker Cable Compartments
- 41 Speaker Wall Mounts
- 42 Speaker Cables
- 43 Speaker Release Levers (RELEASE)
- 44 AC Socket (AC IN ~)
- 45 DC Input Jack [DC IN 13.2V (12~15V) ⊖ ⊕]
- 46 Mixing Microphone Jack (MIXING MIC) 2.2 mV/200~600Ω, Ø3.5
- 47 Voltage Selector (VOLTAGE SELECTOR)  
Not provided for the model for 240 V, 50 Hz areas.
- 48 CD/Line Input Jacks (CD/LINE IN)  
400 mV/50 kΩ over
- 49 Speaker Terminals (SPEAKER IMP 3~8 Ω)
- 50 Battery Compartment
- 51 Handle
- 52 Telescopic Antenna

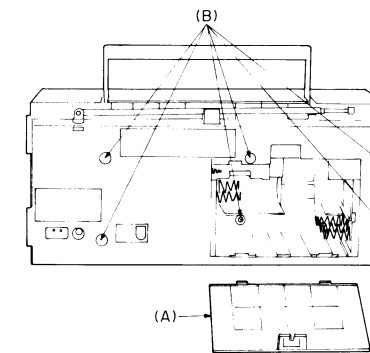


Fig. 1

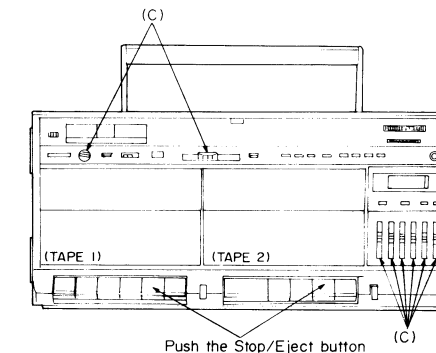


Fig. 2

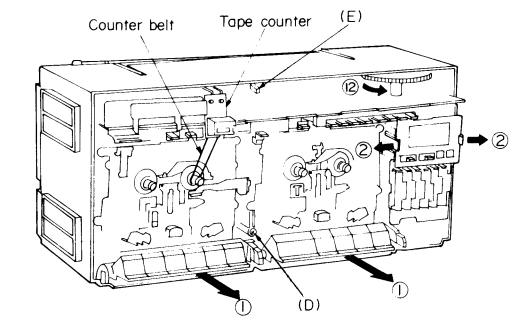


Fig. 3

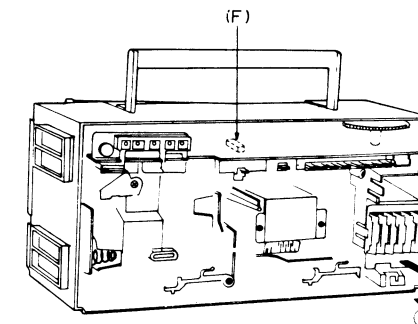


Fig. 4

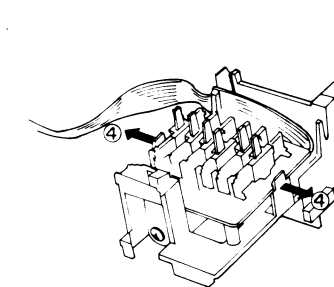


Fig. 5

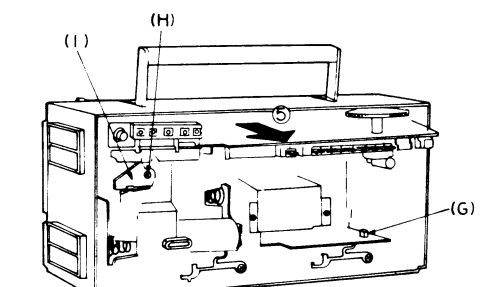


Fig. 6

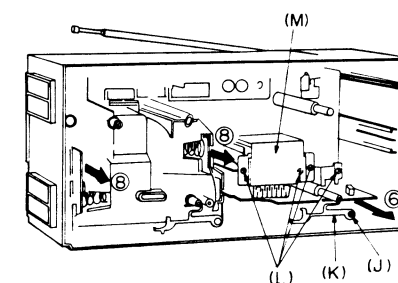


Fig. 7

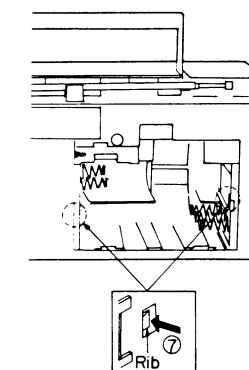


Fig. 8

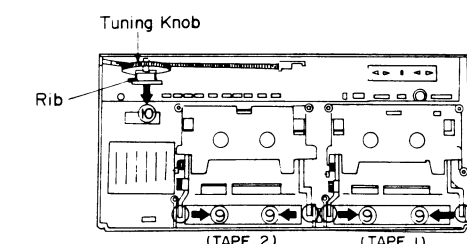
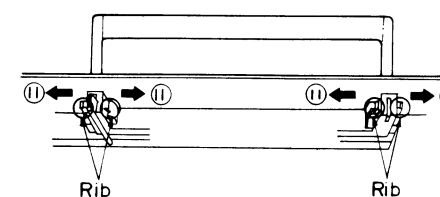


Fig. 9



(Rear Cabinet in Side)

Fig. 10

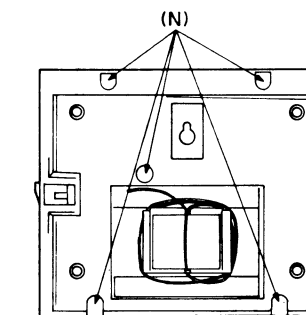


Fig. 11

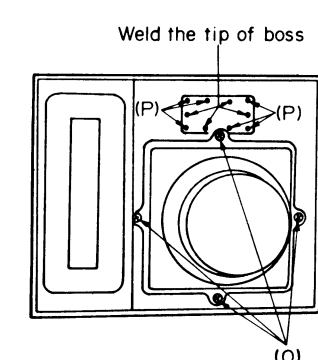


Fig. 12

DISASSEMBLY INSTRUCTIONS

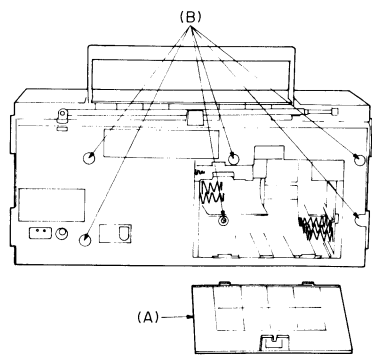


Fig. 1

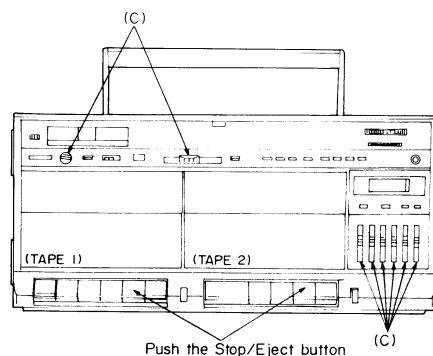


Fig. 2

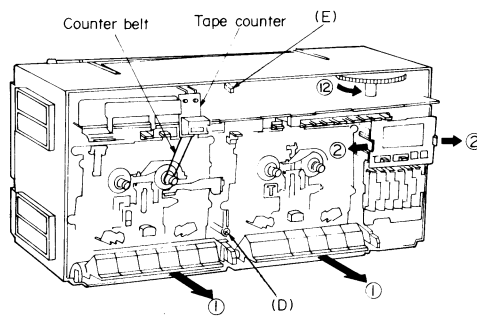


Fig. 3

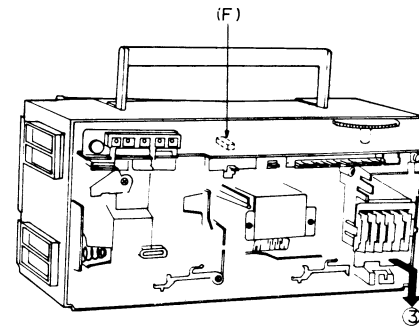


Fig. 4

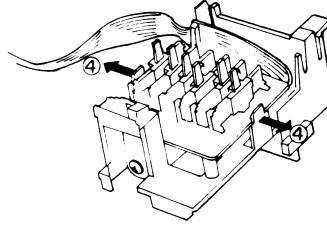


Fig. 5

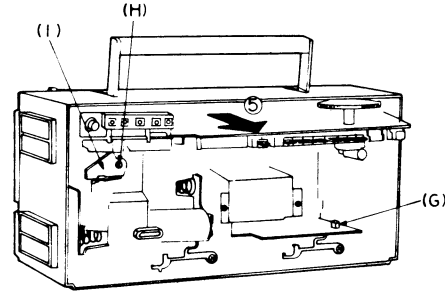


Fig. 6

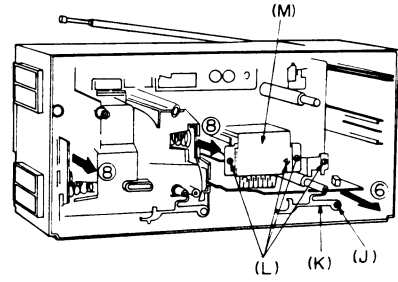


Fig. 7

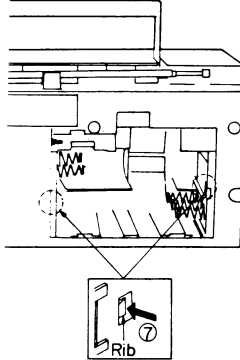


Fig. 8

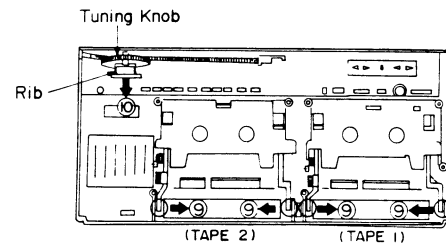


Fig. 9

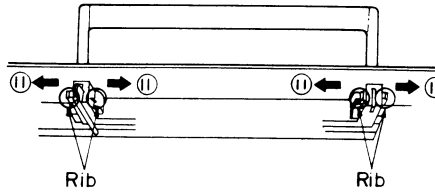


Fig. 10

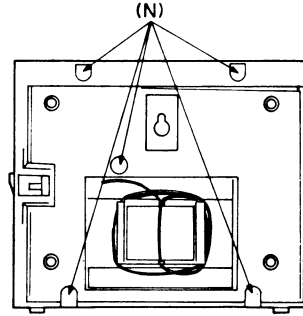


Fig. 11

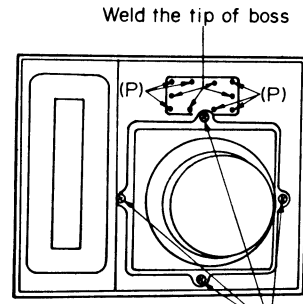


Fig. 12

MAIN UNIT SECTION

| Steps | Shown in Fig.—. | To remove—.                                 | Remove—.                                                                                                                                                                      |
|-------|-----------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | 1               | Front Cabinet Ass'y                         | Remove the battery cover ..... (A)×1                                                                                                                                          |
| 2     |                 |                                             | Screw (3×60) mm ..... (B)×6                                                                                                                                                   |
| 3     | 2               |                                             | Knob ..... (C)×8                                                                                                                                                              |
| 4     |                 |                                             | Push the Stop/Eject button (Tape 1, Tape 2)                                                                                                                                   |
| 5     | 3               | Mechanism Unit (Tape 1, Tape 2)             | Remove the counter belt and pull out the tape counter.                                                                                                                        |
| 6     |                 |                                             | Remove the button chassis ass'y (tape 1, tape 2) in the direction of the arrow ①.                                                                                             |
| 7     |                 |                                             | Screw (3×25) mm ..... (D)×1                                                                                                                                                   |
| 8     | 3               | LCD Circuit Board                           | Connector (CN7) ..... (E)×1                                                                                                                                                   |
| 9     |                 |                                             | Push the rib in the direction of arrow ② and remove the LCD circuit board.                                                                                                    |
| 10    | 4               | Graphic EQ Circuit Board                    | Connector (CN101) ..... (F)×1                                                                                                                                                 |
| 11    |                 |                                             | Remove the graphic EQ holder in the direction of arrow ③.                                                                                                                     |
| 12    | 5               |                                             | Push the rib in the direction of arrow ④ and remove the graphic EQ circuit board.                                                                                             |
| 13    | 6               | Main Circuit Board                          | Connector (CN100) ..... (G)×1                                                                                                                                                 |
| 14    |                 |                                             | Screw (3×8) mm ..... (H)×1                                                                                                                                                    |
| 15    |                 |                                             | Record/playback lever ..... (I)×1                                                                                                                                             |
| 16    |                 |                                             | Pull out the main circuit board in the direction of arrow ⑤.                                                                                                                  |
| 17    | 7               | Power Supply Circuit Board                  | Screw (3×8) mm ..... (J)×1                                                                                                                                                    |
| 18    |                 |                                             | Direction lever-B ..... (K)×1                                                                                                                                                 |
| 19    |                 |                                             | Screw (3×10) mm ..... (L)×4                                                                                                                                                   |
| 20    |                 |                                             | Shield plate ..... (M)×1                                                                                                                                                      |
| 21    |                 |                                             | Pull out the power supply circuit board in the direction of arrow ⑥.                                                                                                          |
| 22    | 7, 8            | Battery Circuit Board                       | Push rib in the direction of the arrow ⑦ and remove the battery circuit board in the direction of the arrow ⑧.                                                                |
| 23    | 9               | Cassette Compartment Cover (Tape 1, Tape 2) | Remove the cassette compartment cover by pulling one side at a time toward the front of the set while pushing it with a standard screwdriver in the direction of the arrow ⑨. |
| 24    | 9               | Tuning Knob                                 | Push the rib in the direction of the arrow ⑩.                                                                                                                                 |
| 25    | 10              | Handle                                      | Remove the rib in the direction of the arrow ⑪.                                                                                                                               |

SPEAKER BOX SECTION

| Steps | Shown in Fig.— | To remove—         | Remove—                         |
|-------|----------------|--------------------|---------------------------------|
| 26    | 11             | Rear Cabinet Ass'y | Screw (3×50) mm ..... (N)×5     |
| 27    | 12             | Speaker (Woofer)   | Screw (3×8) mm ..... (O)×4      |
| 28    | 12             | Tweeter Ass'y (※1) | Cut the tip of boss ..... (P)×6 |

(※1)When replacing the tweeter, attach the tweeter to the speaker cabinet by welding it to the remainder of the boss.

0 (ZERO) POINT ADJUSTMENT

- Line up the dial point in the front cabinet assembly with the "0" point graduation as shown in Fig. 13.
- Turn the variable capacitor gear on the main circuit board all the way in the direction of arrow ⑫. (Fig. 3)
- Next, assemble the front and rear cabinets, and the 0 (zero) point adjustment is complete.

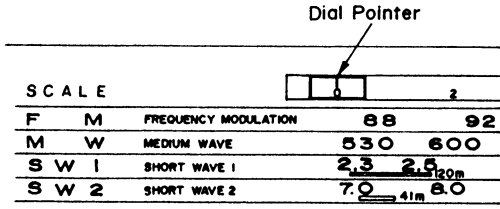


Fig. 13

Mounting of the mechanism operation buttons

Mount the mechanism operation buttons and levers as shown in Fig. 14.

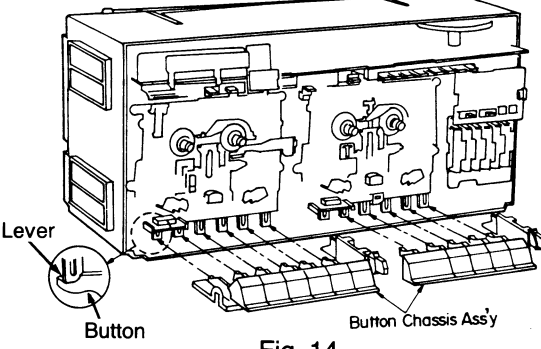
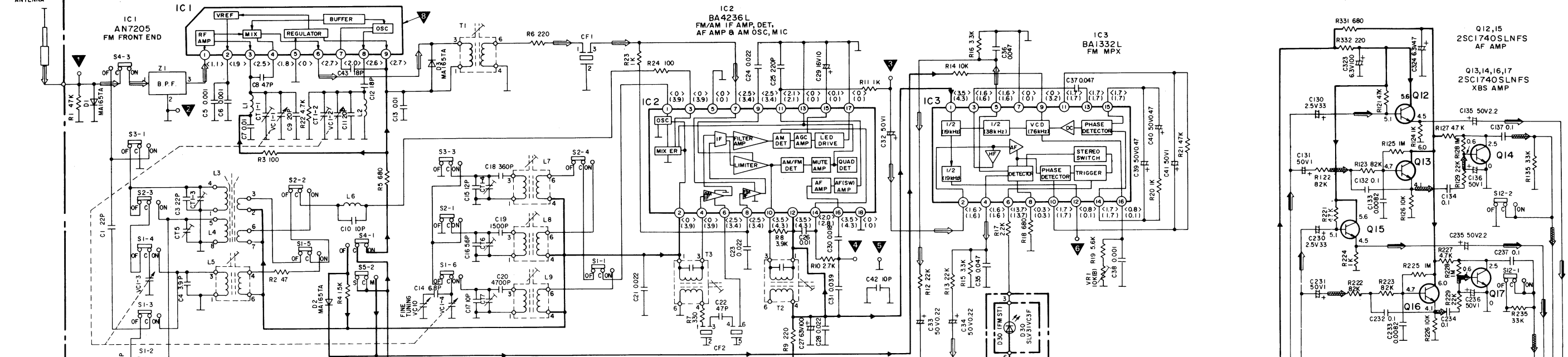


Fig. 14

# SCHEMATIC DIAGRAM

## MAIN CIRCUIT



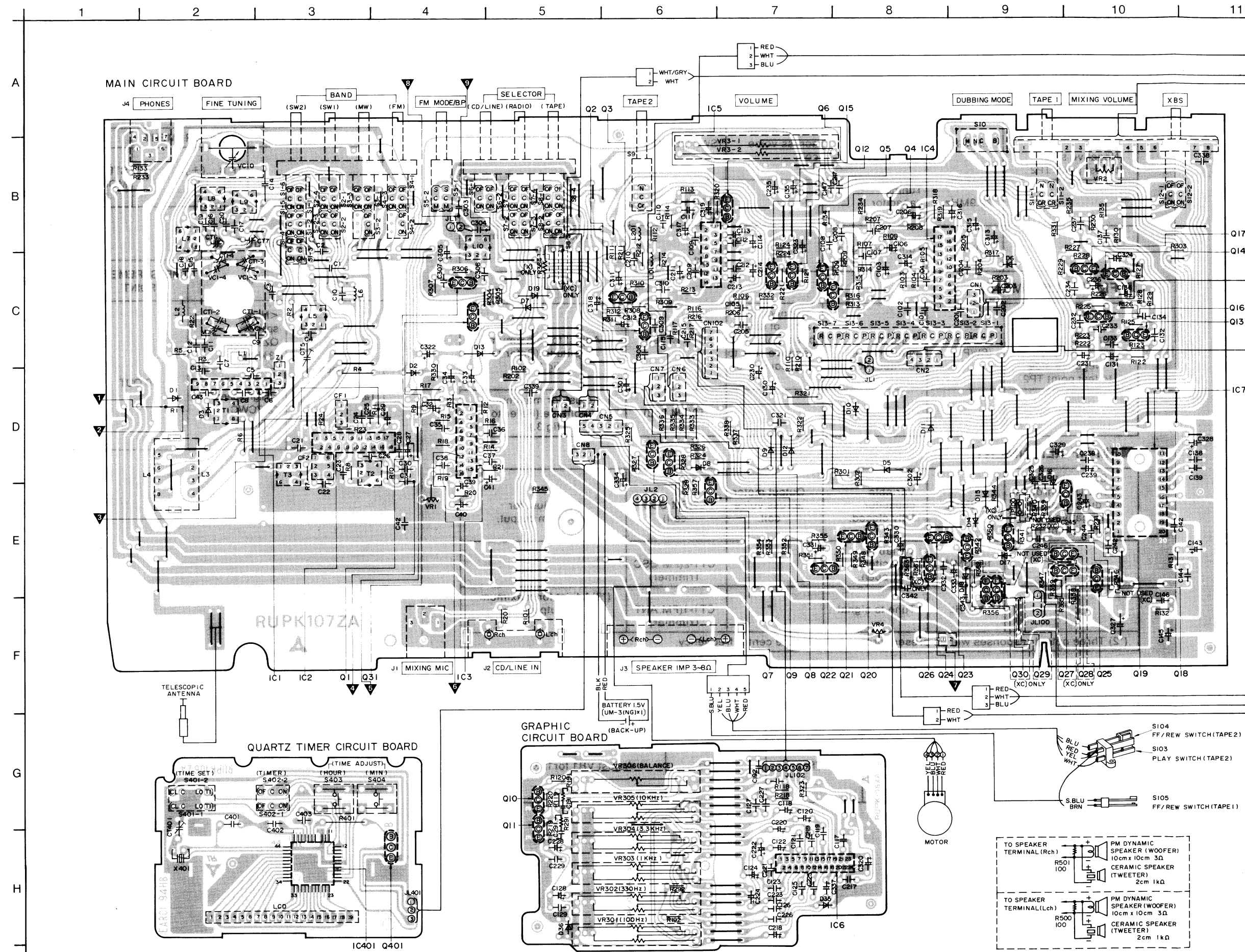
A horizontal number line with tick marks at every integer from 6 to 19. The numbers are labeled above the line.



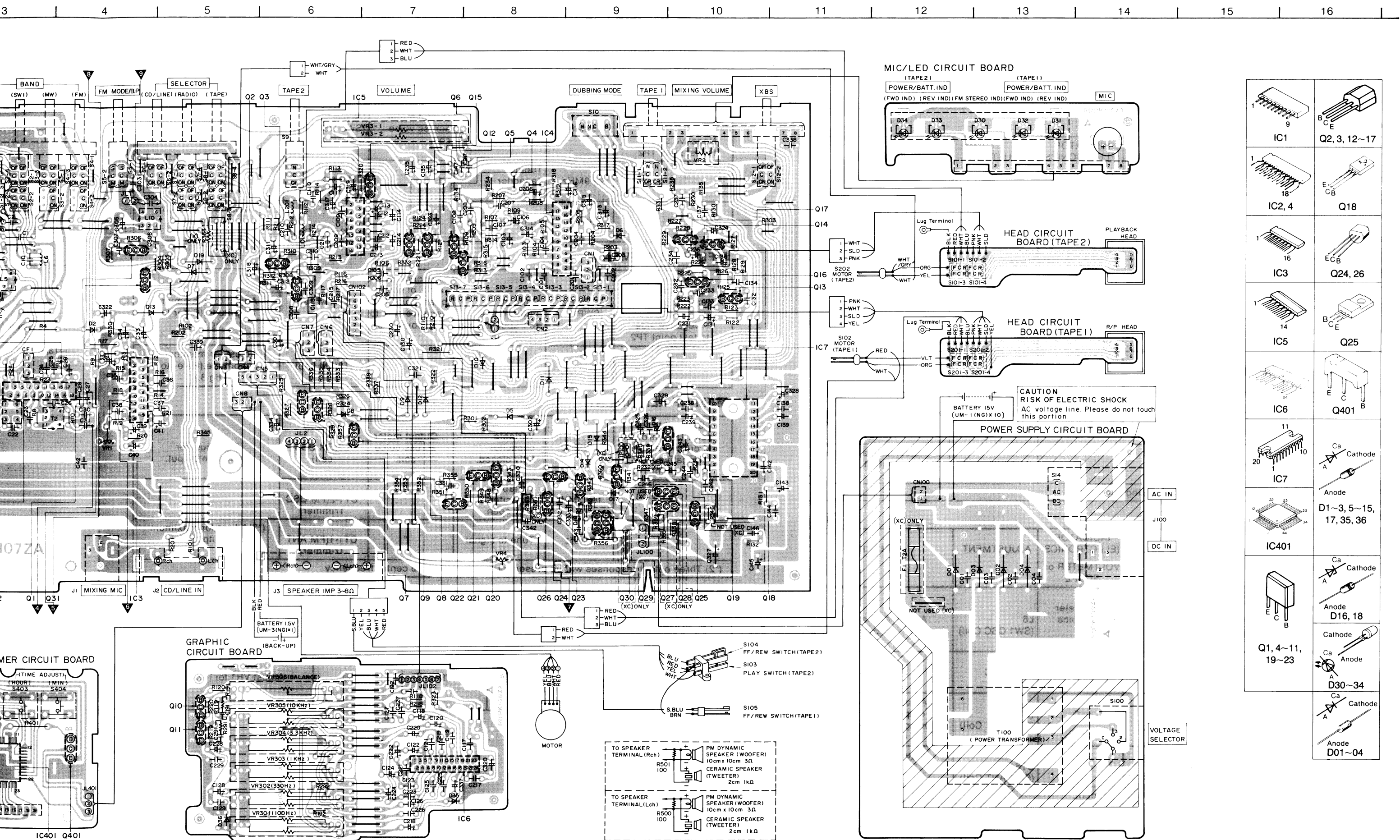
# CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

## Notes: (For schematic diagram)

- S1~S4: Band select switch in "FM" position.  
(S1-1~S1-4...SW1, S2-1~S2-4...SW2,  
S3-1~S3-4...MW, S4-1~S4-4...FM)
- S5-1, S5-2: FM mode/B.P select switch in  
"STEREO/I" position.  
(S...STEREO/I, M...MONO/II)
- S6~S8: Function select switch in "TAPE/  
POWER OFF" position.  
(S6-1, S6-2...RADIO, S7-1~S7-4...CD/  
LINE, S8-1~S8-3...TAPE/POWER OFF)
- S9-1, S9-2: Tape select switch in "NORMAL"  
position. (TAPE 2)  
(N...NORMAL, Cr...CrO<sub>2</sub>/METAL)
- S10: Dubbing mode select switch in "BUILT  
IN MIC" position.  
(B...BUILT IN MIC, N...NORMAL,  
H...HIGH)
- S11-1, S11-2: Tape select switch in "NORMAL"  
position. (TAPE 1)
- S12-1, S12-2: XBS select switch in "ON" position.  
(ON...ON, OF...OFF)
- S13-1~S13-7: Record/playback switch in playback  
position.  
(R...RECORD, P...PLAYBACK)
- S100: Voltage select switch.
- S101-1~S101-3: Delection switch in "FWD" position.  
(TAPE 2)  
(F...FWD, R...REV)
- S102: Motor switch (TAPE 1)
- S103: Play switch (TAPE 2)
- S104: FF/REW switch (TAPE 2)
- S105: FF/REW switch (TAPE 1)
- S201-1~S201-3: Delection switch in "FWD" position.  
(TAPE 1)
- S202: Motor switch (TAPE 2)
- S401: Time set switch in "CLOCK" position.  
(CL...CLOCK, LO...LOCK, TI...TIMER)
- S402-1, S402-2: Timer switch in "OFF" position.
- S403: Time adjust switch, HOUR.
- S404: Time adjust switch, MIN.
- VR1: FM MPX adjustment VR.
- VR2: Mic mixing control VR.
- VR3-1, VR3-2: Volume control VR.
- VR4: Tape speed adjustment VR.
- VR301~VR3-5: G. EQ control VR.
- VR306: Balance control VR.
- DC voltage measurement are taken with electronics  
voltmeter from negative terminal of battery.  
[ ]...Record position.  
No mark...Playback position,  
<< >>...FM, ( )...AM  
<< ( )...TIMER LOCK, << >>...DUBBING (HIGH)
- Battery Current: No signal ..... 134 mA  
Maximum output Radio ..... 920 mA  
Tape/Playback ..... 1350 mA  
Tape/Recording ..... 1540 mA
- The mark (▼) shows test point. e.g. ▼ = test point 1.
- Important safety notice  
Components identified by Δ mark have special  
characteristics important for safety.  
When replacing any of these components, use only  
manufacturer's specified parts.
- The supply parts number is described alone in the  
replacement parts list.  
● This schematic diagram may be modified at any time  
with the development of new technology.



# CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



|  |                 |  |                        |
|--|-----------------|--|------------------------|
|  | IC1             |  | Q2, 3, 12~17           |
|  | IC2, 4          |  | Q18                    |
|  | IC3             |  | Q24, 26                |
|  | IC5             |  | Q25                    |
|  | IC6             |  | Q401                   |
|  | IC7             |  | D1~3, 5~15, 17, 35, 36 |
|  | IC401           |  | D16, 18                |
|  | Q1, 4~11, 19~23 |  | D30~34                 |
|  |                 |  | D01~04                 |

# MEASUREMENTS AND ADJUSTMENTS

## ■ ALIGNMENT INSTRUCTION

| READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT                                                                                                                                            |  |  |                                                                                                                                                                               |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 1.Set volume control to maximum.<br>2.Set graphic equalizer to center.<br>3.Set band switch to MW,SW1,SW2,FM-ST.<br>4.Set function selector to radio.<br>5.Set fine tuning to center. |  |  | 6.Set dubbing select switch to normal.<br>7.Set power source voltage to 15 V DC.<br>8.Output of signal generator should no higher than necessary to obtain an output reading. |  |  |

## ■ AM-IF ALIGNMENT

| SIGNAL GENERATOR or SWEEP GENERATOR                                             |                                | RADIO DIAL SETTING                              | INDICATOR (ELECTRONICS VOLTMETER or SCOPE | ADJUSTMENT  | REMARKS                     |
|---------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------|-------------------------------------------|-------------|-----------------------------|
| CONNECTIONS                                                                     | FREQUENCY                      |                                                 |                                           |             |                             |
| Fashion loop of several turns of wire and radiate signal into loop of receiver. | 455kHz<br>30% Mod.<br>at 400Hz | Point of non-interference.<br>(on/about 600kHz) | Output meter across voice coil.           | T3 (AM IFT) | Adjust for maximum out put. |

## ■ MW-RF ALIGNMENT

|                                                                                |          |                                |                                |                        |                                                                               |
|--------------------------------------------------------------------------------|----------|--------------------------------|--------------------------------|------------------------|-------------------------------------------------------------------------------|
| Fashion loop of several turns of wire and radiate signal into loop of reciver. | 511kHz   | Tuning capacitor fully closed. | Output meter across voice coil | L7(MW OSC Coil)        | Adjust for maximum output.                                                    |
| "                                                                              | 1,670kHz | Tuning capacitor fully open.   | "                              | CT1-4 (MW OSC Trimmer) | "                                                                             |
| "                                                                              | 550kHz   | Tune to signal                 | "                              | (*)L3(MW ANT Coil)     | Adjust for maximum output.Adjust L3 by moving coil bobbin along ferrite core. |
| "                                                                              | 1,500kHz | "                              | "                              | CT1-3(MW ANT Trimmer)  | Adjust for maximum output.                                                    |
| (*1) Cement antenna bobbin with wax after completing alignment.                |          |                                |                                |                        |                                                                               |

## ■ SW1-RF ALIGNMENT

| SIGNAL GENERATOR or SWEEP GENERATOR                                             |           | RADIO DIAL SETTING             | INDICATOR (ELECTRONICS VOLTMETER or SCOPE | ADJUSTMENT            | REMARKS                                                                       |
|---------------------------------------------------------------------------------|-----------|--------------------------------|-------------------------------------------|-----------------------|-------------------------------------------------------------------------------|
| CONNECTIONS                                                                     | FREQUENCY |                                |                                           |                       |                                                                               |
| Fashion loop of several turns of wire and radiate signal into loop of receiver. | 2.25MHz   | Tuning capacitor fully closed. | Output meter across voice coil.           | L8 (SW1 OSC Coil)     | Adjust for maximum output.                                                    |
| "                                                                               | 7.3MHz    | Tuning capacitor fully open.   | "                                         | CT6 (SW1 OSC Trimmer) | "                                                                             |
| "                                                                               | 2.3MHz    | Tune to signal                 | "                                         | (*1)L4 (SW1 ANT Coil) | Adjust for maximum output.Adjust L4 by moving coil bobbin along ferrite core. |
| "                                                                               | 7MHz      | "                              | "                                         | CT5 (SW1 ANT Coil)    | Adjust for maximum output.                                                    |
| (*1)Cement antenna bobbin with wax after completing alignment.                  |           |                                |                                           |                       |                                                                               |

## ■ SW2-RF ALIGNMENT

| SIGNAL GENERATOR or SWEEP GENERATOR                                                           |           | RADIO DIAL SETTING             | INDICATOR (ELECTRONICS VOLTMETER or SCOPE | ADJUSTMENT           | REMARKS                    |
|-----------------------------------------------------------------------------------------------|-----------|--------------------------------|-------------------------------------------|----------------------|----------------------------|
| CONNECTIONS                                                                                   | FREQUENCY |                                |                                           |                      |                            |
| Connect to test point TP1 through ceramic capacitor (10pF)<br>Negative side to test point TP2 | 6.84MHz   | Tuning capacitor fully closed. | Output meter across voice coil.           | L9 (SW2 OSC Coil)    | Adjust for maximum output. |
| "                                                                                             | 22.9MHz   | Tuning capacitor fully open.   | "                                         | CT7(SW2 OSC Trimmer) | "                          |
| "                                                                                             | 7MHz      | Tuning to signal.              | "                                         | L5 (SW2 OSC Coil)    | Adjust for maximum output. |

## ■ FM-IF ALIGNMENT

|                                                                                                |               |                                        |                                                                                    |            |                                                |
|------------------------------------------------------------------------------------------------|---------------|----------------------------------------|------------------------------------------------------------------------------------|------------|------------------------------------------------|
| Connect to test point 3through ceramic capacitor (0.001μF)<br>Negative side to test point TP2. | 10.7MHz (SWP) | Point of interference (on/about 90MHz) | Connect vert. amp. of scope to test point TP3.<br>Negative side to test point TP5. | T1(FM 1st) | Adjust for maximum amplitude.(Refer to fig.2.) |
| "                                                                                              | "             | "                                      | "                                                                                  | T2(FM 2nd) | Adjust for maximum amplitude.(Refer to fig.3.) |

## ■ FM-RF ALIGNMENT

|                                                                                          |          |                                  |                                 |                       |                                |
|------------------------------------------------------------------------------------------|----------|----------------------------------|---------------------------------|-----------------------|--------------------------------|
| Connect to test point TP1. through FM dummy antenna.<br>Negative side to test point TP2. | 86.2MHz  | Variable capacitor fully closed. | Output meter across voice coil. | L2(FM OSC coil)       | (*2)Adjust for maximum output. |
| "                                                                                        | 109.3MHz | Variable capacitor fully open.   | "                               | CT1-2(FM OSC Trimmer) | "                              |
| "                                                                                        | 106MHz   | Tune to signal                   | "                               | CT1-1(FM ANT Trimmer) | (*2)Adjust for maximum output. |
| (*2) Three output responses will be present;proper tuning is the center frequency.       |          |                                  |                                 |                       |                                |

## ■ SEPARATION ALIGNMENT

| FM SIGNAL GENERATOR SOURCE CONNECTION                                                                 | EQUIPMENT CONNECTION ELECTRONIC COUNTER | ADJUSTMENT | SPECIFICATION | REMARKS                |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|---------------|------------------------|
| 98MHz,60dB(CW) Connect to test point TP1. through FM dummy antenna.<br>Negative side to test point 2. | TP 6...(+) TP 5...(-)                   | VR1        | 19kHz         | Adjust VR1,for19±01KHz |

## ■ AZIMUTH

| INPUT               |
|---------------------|
| QZZCFM (8kHz,-20dB) |

## ■ BIAS OSC

| INPUT |
|-------|
| ----- |

## ■ TAPE SPEED

| ITEM                                |
|-------------------------------------|
| Tape speed adjustment<br>Tape 1 & 2 |

SW2-RF ALIGNMENT

| SIGNAL GENERATOR or SWEEP GENERATOR                                                           |           | RADIO DIAL SETTING             | INDICATOR (ELECTRONICS VOLTMETER or SCOPE | ADJUSTMENT           | REMARKS                    |
|-----------------------------------------------------------------------------------------------|-----------|--------------------------------|-------------------------------------------|----------------------|----------------------------|
| CONNECTIONS                                                                                   | FREQUENCY |                                |                                           |                      |                            |
| Connect to test point TP1 through ceramic capacitor (10pF)<br>Negative side to test point TP2 | 6.84MHz   | Tuning capacitor fully closed. | Output meter across voice coil.           | L9 (SW2 OSC Coil)    | Adjust for maximum output. |
| "                                                                                             | 22.9MHz   | Tuning capacitor fully open.   | "                                         | CT7(SW2 OSC Trimmer) | "                          |
| "                                                                                             | 7MHz      | Tuning to signal.              | "                                         | L5 (SW2 OSC Coil)    | Adjust for maximum output. |

FM-IF ALIGNMENT

|                                                                                                 |               |                                        |                                                                                    |            |                                                |
|-------------------------------------------------------------------------------------------------|---------------|----------------------------------------|------------------------------------------------------------------------------------|------------|------------------------------------------------|
| Connect to test point 3 through ceramic capacitor (0.001µF)<br>Negative side to test point TP2. | 10.7MHz (SWP) | Point of interference (on/about 90MHz) | Connect vert. amp. of scope to test point TP3.<br>Negative side to test point TP5. | T1(FM 1st) | Adjust for maximum amplitude.(Refer to fig.2.) |
| "                                                                                               | "             | "                                      | "                                                                                  | T2(FM 2nd) | Adjust for maximum amplitude.(Refer to fig.3.) |

FM-RF ALIGNMENT

|                                                                                          |          |                                  |                                 |                       |                                |
|------------------------------------------------------------------------------------------|----------|----------------------------------|---------------------------------|-----------------------|--------------------------------|
| Connect to test point TP1. through FM dummy antenna.<br>Negative side to test point TP2. | 86.2MHz  | Variable capacitor fully closed. | Output meter across voice coil. | L2(FM OSC coil)       | (*2)Adjust for maximum output. |
| "                                                                                        | 109.3MHz | Variable capacitor fully open.   | "                               | CT1-2(FM OSC Trimmer) | "                              |
| "                                                                                        | 106MHz   | Tune to signal                   | "                               | CT1-1(FM ANT Trimmer) | (*2)Adjust for maximum output. |

(\*2) Three output responses will be present;proper tuning is the center frequency.

SEPARATION ALIGNMENT

| FM SIGNAL GENERATOR SOURCE CONNECTION                                                                 | EQUIPMENT CONNECTION ELECTRONIC COUNTER | ADJUSTMENT | SPECIFICATION | REMARKS                |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|---------------|------------------------|
| 98MHz,60dB(CW) Connect to test point TP1. through FM dummy antenna.<br>Negative side to test point 2. | TP 6...(+) TP 5...(-)                   | VR1        | 19kHz         | Adjust VR1,for19±01KHz |

AZIMUTH ALIGNMENT

| INPUT               | MEASUREMENT    | SPCIFICATION    | ADJUSTMENT                     | REMARKS                                                    |
|---------------------|----------------|-----------------|--------------------------------|------------------------------------------------------------|
| QZZCFM (8kHz,-20dB) | Headphone Jack | Maximum output. | Azimuth screw (Refer to Fig.5) | Playback mode<br>FWD And REV Playback<br>Tape 1 and Tape 2 |

BIAS OSCILLATION FREQUENCY ALIGNMENT

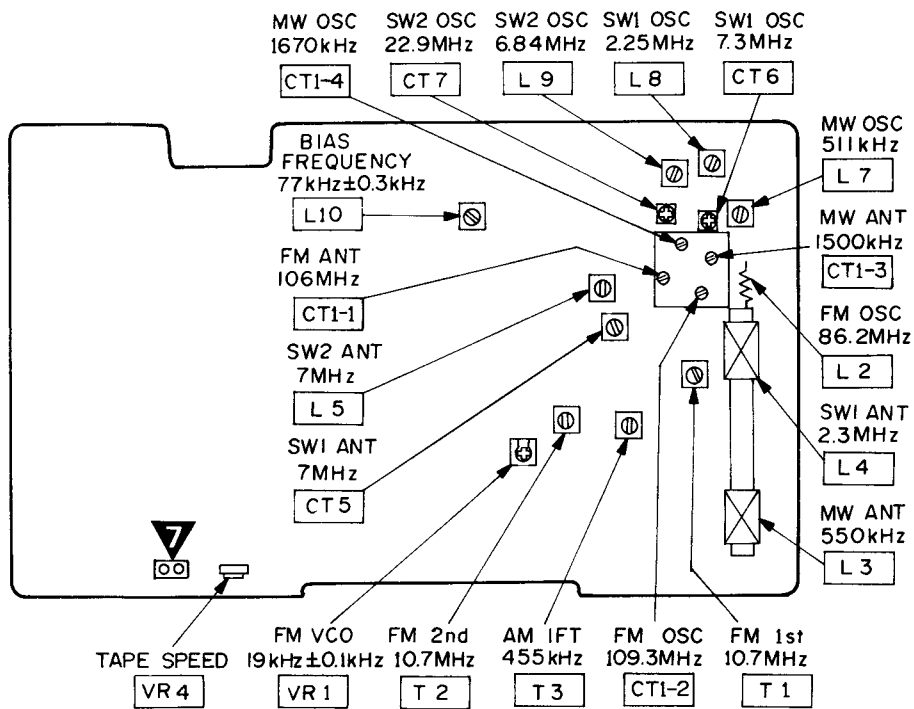
| INPUT | MEASUREMENT            | SPCIFICATION                            | ADJUSTMENT | REMARKS                                                         |
|-------|------------------------|-----------------------------------------|------------|-----------------------------------------------------------------|
| ----- | TP 8....(+) TP9....(-) | STERO..77±0.3kHz<br>MONO.. 73.5~75.5KHz | L10        | Record mode<br>Beet proof switch...I<br>Tape selector....Normal |

TAPE SPEED ADJUSTMENT

| ITEM                                | INPUT                             | MEASUREMENT POINT | ADJUSTMENT | REMARKS                                                                                                                                                                                                                         |
|-------------------------------------|-----------------------------------|-------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tape speed adjustment<br>Tape 1 & 2 | <Normal speed><br>QZZCWAT (3 kHz) | SP OUT            | VR4        | <Normal speed adjustment><br>1. Set the tape speed to normal<br>2. Tape 2...3,010±10 Hz<br>Tape 1...-20 <sup>+30</sup> <sub>-70</sub> Hz of tape speed of tape 2                                                                |
|                                     | <High speed><br>QZZCWC (1.5 kHz)  |                   |            | <High speed adjustment><br>1. Short  as shown in the Fig. 4 above to enter the high speed mode.<br>2. Tape 2...2,709 Hz<br>Tape 1...2,691 Hz |

## ■ ALIGNMENT POINT

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



Note: Short ▼ to adjust the high speed mode

Fig. 1

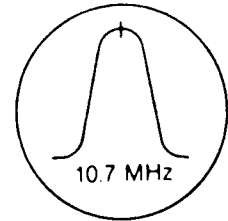


Fig. 2

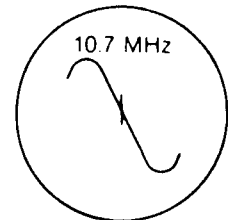


Fig. 3

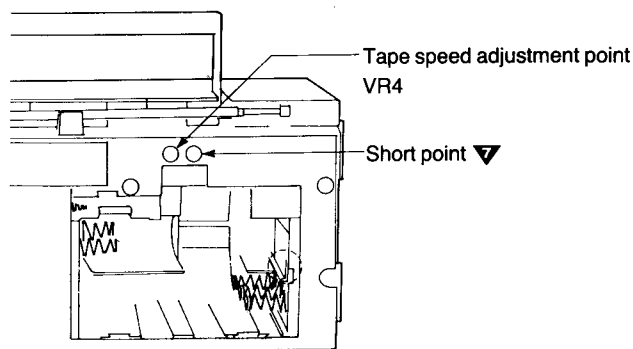


Fig. 4

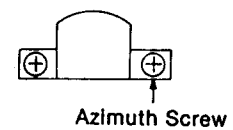
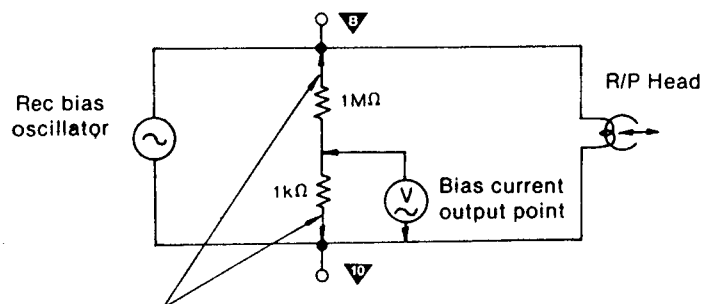


Fig. 5



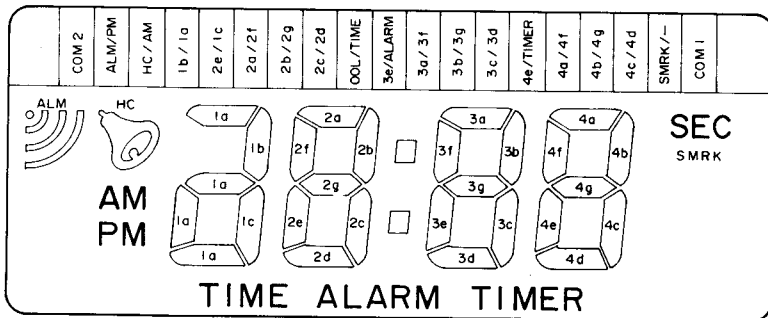
Keep these cords short. (Line capacitance: 3pF or less)

• In-order not to influence the bias osillation, divide the voltage with 1MΩ and 1kΩ resistors, and measure the voltage across the 1kΩ resistor.

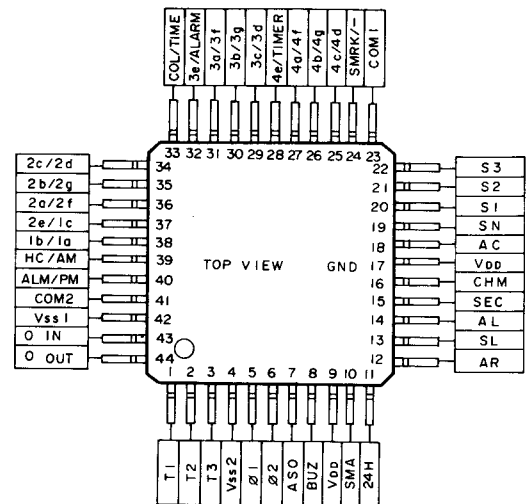
Fig. 6

# IC104 (TC8215UF-US) EACH TERMINAL FUNCTION

LCD TERMINAL

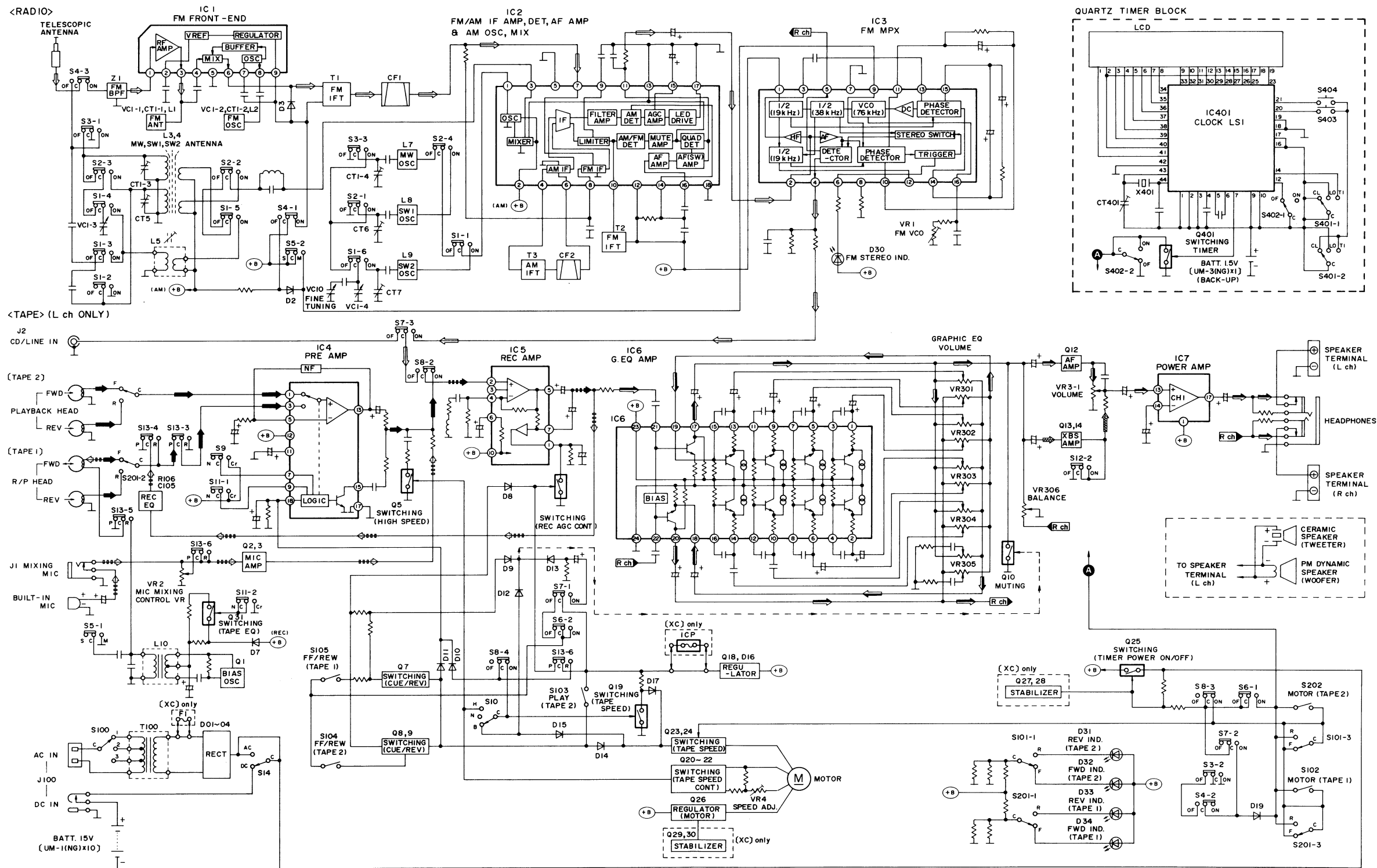


IC104 TERMINAL



| Pin No.     | Pin Name                                           | Function                          | Description                                                                                                                                              |
|-------------|----------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1<br>2<br>3 | T <sub>1</sub><br>T <sub>2</sub><br>T <sub>3</sub> | Test input                        | _____                                                                                                                                                    |
| 4           | V <sub>SS2</sub>                                   | LCD driver power supply input     | Accepts LCD driver power supply                                                                                                                          |
| 5<br>6      | Ø1<br>Ø2                                           | Boost capacitor input             | Boost capacitor C403 input for the -1.5 V LCD driver power supply                                                                                        |
| 7           | ASO                                                | Timer on/off output               | High or low signal at this pin switches Q401 (switching transistor).<br>High: One hour timer active<br>Low: One hour timer inactive                      |
| 8           | Buz                                                | Buzzer signal output              | _____                                                                                                                                                    |
| 9           | V <sub>DD</sub>                                    | Power supply input                | Accepts a +1.5 V power supply.                                                                                                                           |
| 10          | SMA                                                | Colon blink selection input       | This pin causes the colon on the display to blink.<br>High: Colon blinks (KX-CW55F)<br>Low: Colon permanent (on)                                         |
| 11          | 24H                                                | 12/24 hour clock selection input  | This pin is used to switch between 12 and 24 hour clock.<br>High: 24 hour clock<br>Low: 12 hour clock (RX-CW55F)                                         |
| 12          | AR                                                 | Timer selection (on/off) input    | Controls the timer (on/off).<br>High: Timer inactive<br>Low: Timer active<br>(Switched by timer switch S402.)                                            |
| 13          | SL                                                 | Sleep mode input pin              | _____                                                                                                                                                    |
| 14          | AL                                                 | Mode selection input              | This pin is used to switch between clock and timer display modes:<br>High: Timer display mode<br>Low: Clock display mode (locked)<br>(Switched by S401.) |
| 15          | SEC                                                | Second mode input                 | _____                                                                                                                                                    |
| 16          | CHM                                                | Alarm select input                | _____                                                                                                                                                    |
| 17          | V <sub>DD</sub>                                    | Power supply input                | Accepts +1.5 V power                                                                                                                                     |
| 18          | AC                                                 | System reset input                | _____                                                                                                                                                    |
| 19          | SN                                                 | Snooze on/off input               | _____                                                                                                                                                    |
| 20          | S <sub>1</sub>                                     | Hour set/correction input         | Applying a high to this pin (S403 closed) increments the hour counter.                                                                                   |
| 21          | S <sub>2</sub>                                     | Minute set/correction input       | Applying a high to this pin (S404 closed) increments the minute counter.                                                                                 |
| 22          | S <sub>3</sub>                                     | Second zero reset                 | _____                                                                                                                                                    |
| 23<br>41    | COM1<br>COM2                                       | Segment and common signal outputs | LCD driver signals                                                                                                                                       |
| 42          | V <sub>SS1</sub>                                   | Ground connection                 | Connect to GND.                                                                                                                                          |
| 43<br>44    | O IN<br>O OUT                                      | Crystal oscillator inputs         | Accept a 32 kHz crystal oscillator.                                                                                                                      |

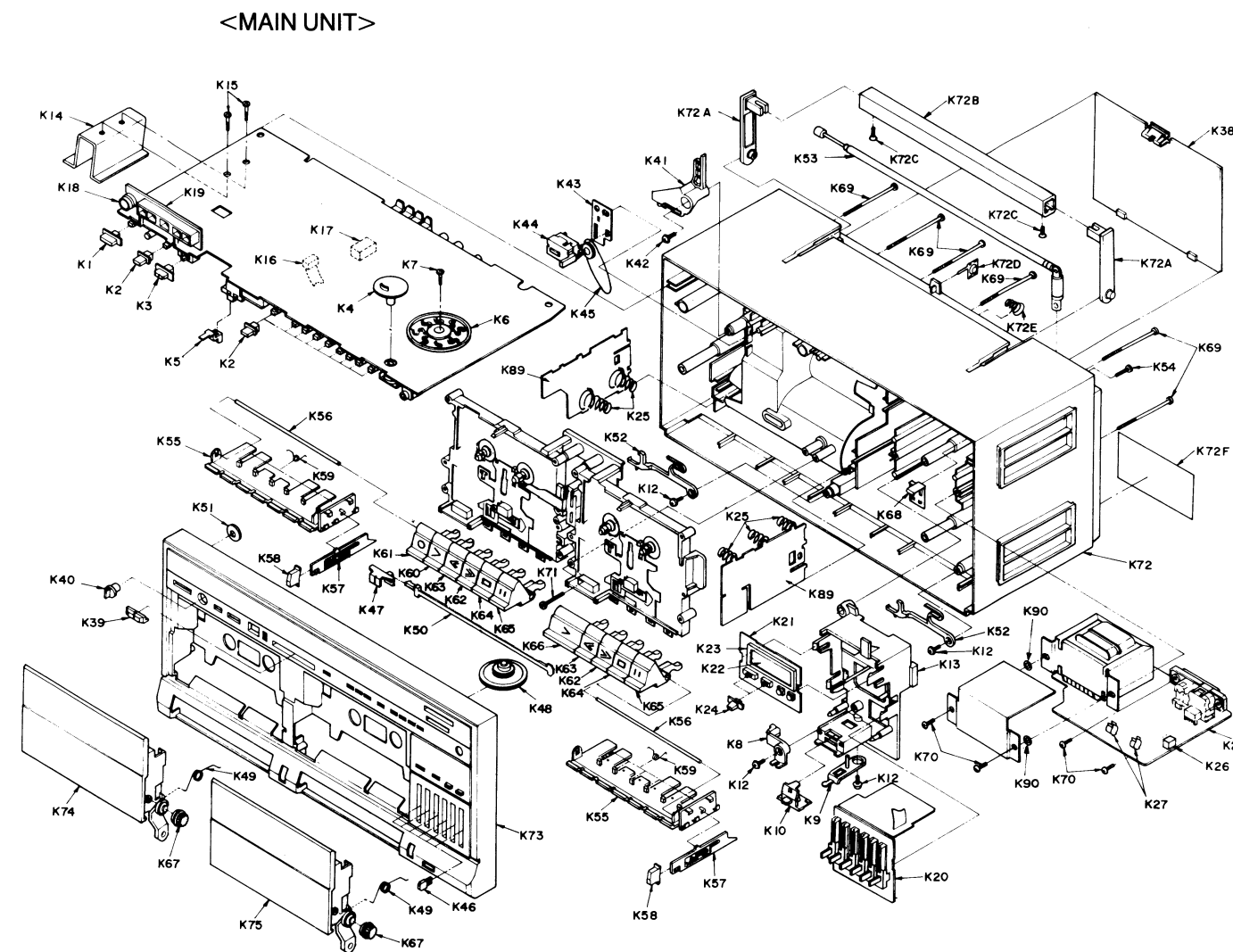
BLOCK DIAGRAM



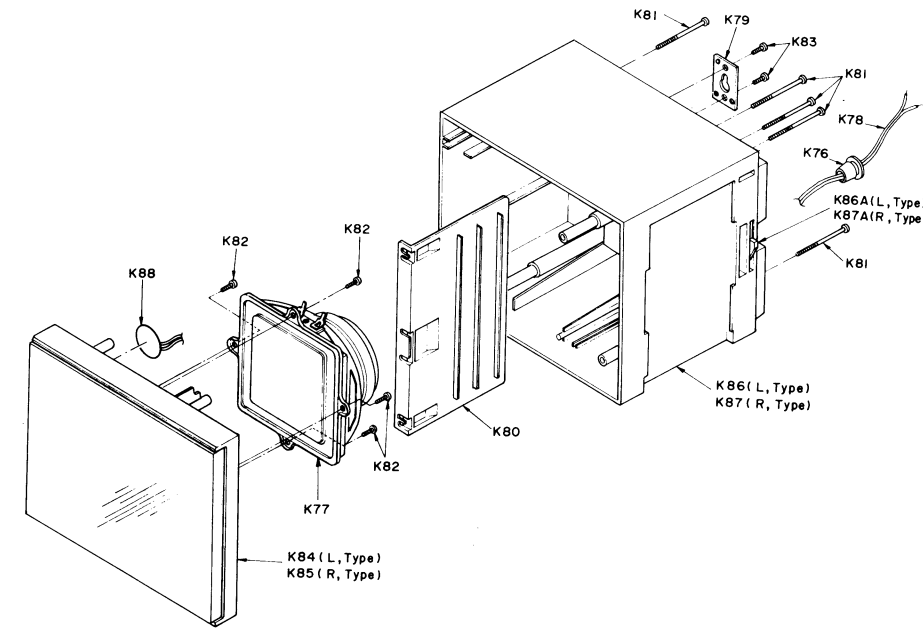
Notes:

- |                  |                                                        |                    |                                              |                     |                                              |                   |                           |
|------------------|--------------------------------------------------------|--------------------|----------------------------------------------|---------------------|----------------------------------------------|-------------------|---------------------------|
| 1. S1~S4:        | Band select switch in "FM" position.                   | 7. S12-1, S12-2:   | XBS select switch in "ON" position.          | 14. S105:           | FF/REW switch (TAPE 1)                       | 20. S404:         | Time adjust switch, MIN.  |
| 2. S5-1, S5-2:   | FM mode/B.P select switch in "STEREO/I" position.      | 8. S13-1~S13-7:    | Record/playback switch in playback position. | 15. S201-1~S201-3:  | Delection switch in "FWD" position. (TAPE 1) | 21. VR1:          | FM MPX adjustment VR.     |
| 3. S6~S8:        | Function select switch in "TAPE/POWER OFF" position.   | 9. S100:           | Voltage select switch.                       | 16. S202:           | Motor switch (TAPE 2)                        | 22. VR2:          | Mic mixing control VR.    |
| 4. S9-1, S9-2:   | Tape select switch in "NORMAL" position. (TAPE 2)      | 10. S101-1~S101-3: | Delection switch in "FWD" position. (TAPE 2) | 17. S401:           | Time set switch in "CLOCK" position.         | 23. VR3-1, VR3-2: | Volume control VR.        |
| 5. S10:          | Dubbing mode select switch in "BUILT IN MIC" position. | 11. S102:          | Motor switch (TAPE 1)                        | 18. S402-1, S402-2: | Timer switch in "OFF" position.              | 24. VR4:          | Tape speed adjustment VR. |
| 6. S11-1, S11-2: | Tape select switch in "NORMAL" position. (TAPE 1)      | 12. S103:          | Play switch (TAPE 2)                         | 19. S403:           | Time adjust switch, HOUR.                    | 25. VR301~VR305:  | G. EQ control VR.         |
|                  |                                                        | 13. S104:          | FF/REW switch (TAPE 2)                       |                     |                                              | 26. VR306:        | Balance control VR.       |

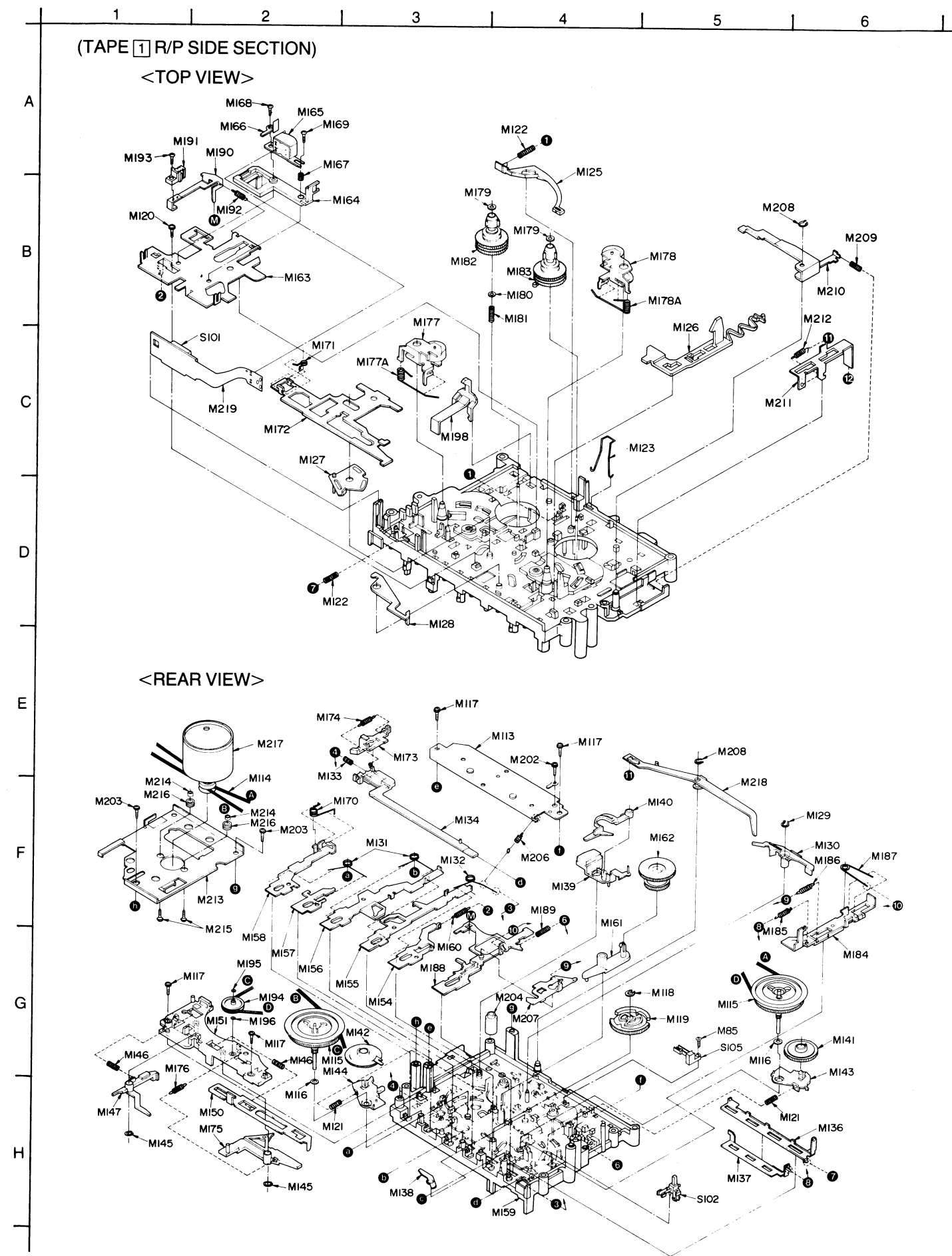
CABINET PARTS LOCATION



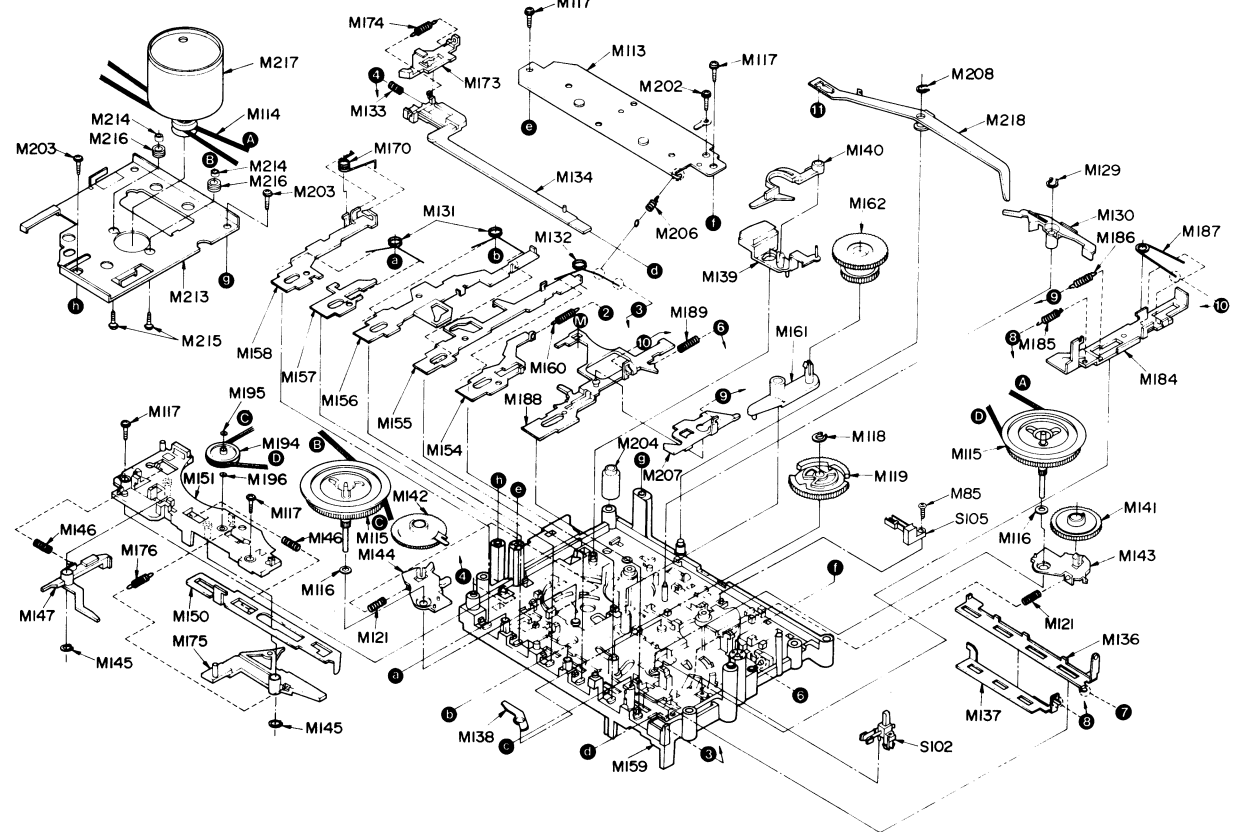
<SPEAKER UNIT>



MECHANISM PARTS LOCATION



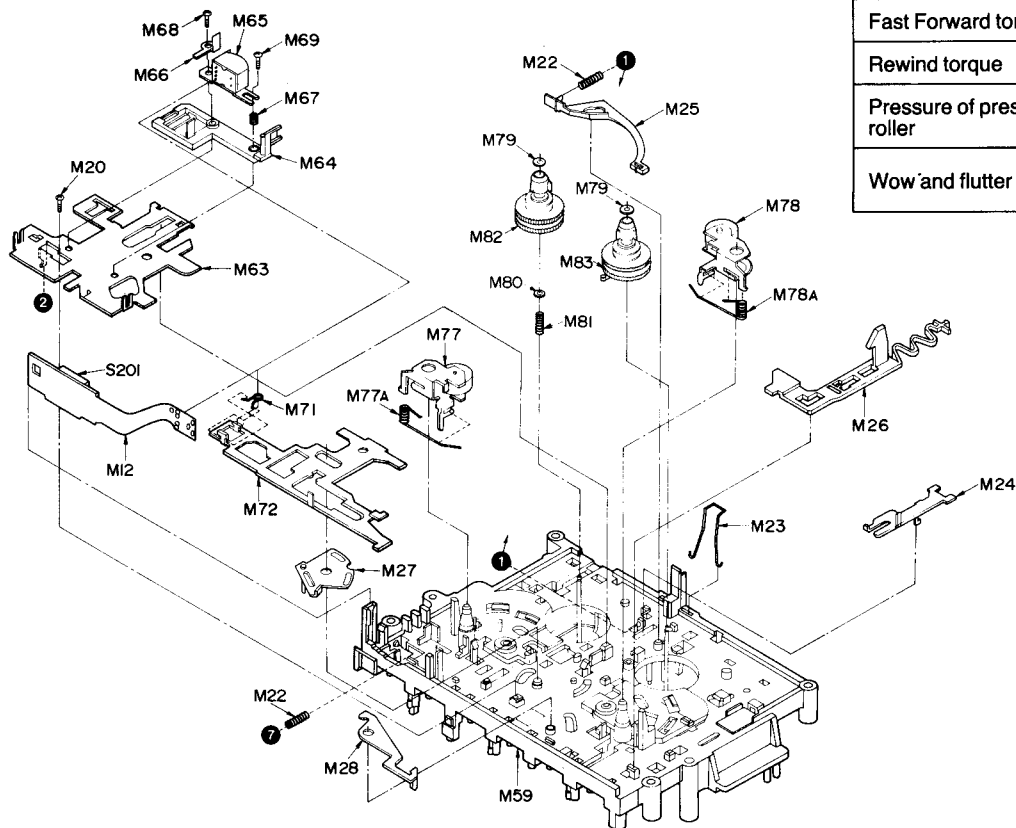
<REAR VIEW>



# MECHANISM PARTS LOCATION

(TAPE 2 PLAY SIDE SECTION)

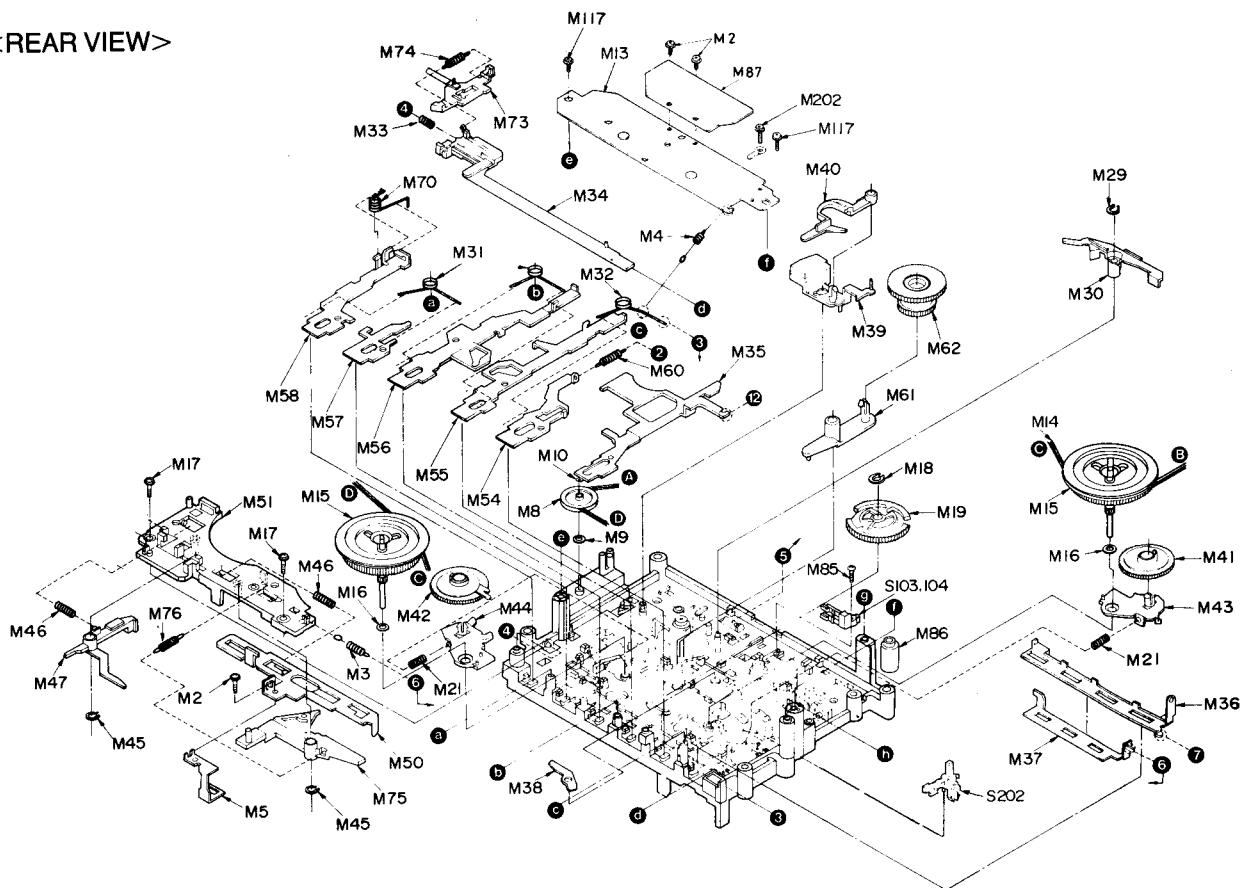
<TOP VIEW>



## Specifications

|                             |                                           |
|-----------------------------|-------------------------------------------|
| Playback torque             | $30^{+15}_{-5} \text{ g} \cdot \text{cm}$ |
| Fast Forward torque         | $80 \pm 20 \text{ g} \cdot \text{cm}$     |
| Rewind torque               | $80 \pm 20 \text{ g} \cdot \text{cm}$     |
| Pressure of pressure roller | $170 \pm 40 \text{ g}$                    |
| Wow and flutter             | Less than 0.35% (WRMS)                    |

<REAR VIEW>



**Notes:**
**1. Important safety notice**

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

When replacing any of these components, use only manufacturer's specified parts.

**2. The letter in square brackets in the Ref. No. column indicates the shipping destination.**

[X]...For Asia, Latin America, Middle East and Africa areas.

[XC]...For Saudi Arabia.

| Ref. No.                   | Part No.     | Part Code      | Description    | Ref. No.                      | Part No.     | Part Code      | Description               |
|----------------------------|--------------|----------------|----------------|-------------------------------|--------------|----------------|---------------------------|
| <b>INTEGRATED CIRCUITS</b> |              |                |                | VR301, VR302                  | EWAGQ2C95G54 | 001 174 9054 3 | V.R. G.E.Q                |
| IC1                        | AN7205       | 001 061 0362 8 | I.C. FM FRONT  | VR303, VR304                  | EWAGQ2C95G54 | 001 174 9054 3 | V.R. G.E.Q                |
| IC2                        | BA4236L      | 001 061 0259 6 | I.C. FM/AM I.F | VR305                         | EWAGQ2C95G54 | 001 174 9054 3 | V.R. G.E.Q                |
| IC3                        | BA1332L      | 001 061 3992 2 | I.C. FM MPX    | VR306                         | EWAGU2C95G54 | 001 174 9057 0 | V.R. BALANCE              |
| IC4                        | BA3416L      | 001 061 5744 8 | I.C. PRE AMP   | <b>VARIABLE CAPACITORS</b>    |              |                |                           |
| IC5                        | M51160AL     | 001 060 7732 7 | I.C. EQ/REC    | CT5                           | RCV081CF1-A  | 001 142 0677 2 | TRIMMER                   |
| IC6                        | BA3822LS     | 001 061 1434 5 | I.C. G.E.Q AMP | CT6, CT7                      | ECRLA010A11  | 001 141 0687 8 | TRIMMER                   |
| IC7                        | LA4108R      | 001 060 7747 2 | I.C. POWER AMP | CT401                         | ECRLA020E11  | 001 191 0935 8 | TRIMMER                   |
| IC401                      | TC8215UF-US  | 001 061 5747 5 | I.C. CLOCK     | VC1-4                         | RCV4RC2V1K   | 001 141 0612 4 | VARIABLE CAPACITOR        |
| <b>TRANSISTORS</b>         |              |                |                | VC10                          | RCVMFTPC7B   | 001 141 0367 8 | VARIABLE CAPACITOR        |
| Q1                         | 2SC3311S     | 001 030 4314 3 | TRANSISTOR     | <b>COILS AND TRANSFORMERS</b> |              |                |                           |
| Q2, Q3                     | 2SC1740SLNST | 001 030 4248 6 | TRANSISTOR     | L2                            | RL04N184     | 001 211 0924 2 | COIL                      |
| Q4, Q5                     | 2SC3311S     | 001 030 4314 3 | TRANSISTOR     | L3, L4                        | RLF5W20-0    | 001 214 1633 1 | ANTENNA COIL              |
| Q6, Q7                     | 2SC3311S     | 001 030 4314 3 | TRANSISTOR     | L5                            | RLA3B44      | 001 210 9289 5 | COIL                      |
| Q8                         | 2SA1309R     | 001 030 4059 9 | TRANSISTOR     | L6                            | RLQY32S1     | 001 210 9813 7 | COIL                      |
| Q9, Q10                    | 2SC3311S     | 001 030 4314 3 | TRANSISTOR     | L7                            | RL02B108     | 001 211 0900 0 | COIL                      |
| Q11                        | 2SC3311S     | 001 030 4314 3 | TRANSISTOR     | L8                            | RL03B91      | 001 211 0914 4 | COIL                      |
| Q12, Q13                   | 2SC1740SLNST | 001 030 4248 6 | TRANSISTOR     | L9                            | RL03B90      | 001 211 0913 5 | COIL                      |
| Q14, Q15                   | 2SC1740SLNST | 001 030 4248 6 | TRANSISTOR     | L10                           | RL09B13      | 003 439 1592 6 | OSCILLATOR COIL           |
| Q16, Q17                   | 2SC1740SLNST | 001 030 4248 6 | TRANSISTOR     | L101, L201                    | RLQZW102KT-G | 001 211 4383 3 | COIL                      |
| Q18                        | 2SD1776Q     | 001 030 7615 1 | TRANSISTOR     | T1, T2                        | RL14B153     | 001 215 2499 0 | I.F. TRANSFORMER          |
| Q19, Q20                   | 2SC3311S     | 001 030 4314 3 | TRANSISTOR     | T3                            | RL12B153     | 001 215 2349 3 | I.F. TRANSFORMER          |
| Q21                        | 2SC3311S     | 001 030 4314 3 | TRANSISTOR     | T100 $\Delta$                 | RLT5U5G1A-X  | 001 202 9199 2 | POWER TRANSFORMER         |
| Q22                        | 2SA1309R     | 001 030 4059 9 | TRANSISTOR     | (XC)                          |              |                |                           |
| Q23                        | RVTDTA114EST | 001 030 6872 0 | TRANSISTOR     | T100 $\Delta$                 | RLT5U5X1A-X  | 001 202 9200 6 | POWER TRANSFORMER         |
| Q24                        | 2SD1302R     | 001 030 5064 8 | TRANSISTOR     | (X)                           |              |                |                           |
| Q25                        | 2SB953P      | 001 030 7118 3 | TRANSISTOR     | <b>FILTERS</b>                |              |                |                           |
| Q26                        | 2SC1846R     | 001 030 1134 7 | TRANSISTOR     | CF1                           | RVF107HRWZ   | 001 241 0833 6 | CERAMIC FILTER            |
| Q27                        | 2SD1302R     | 001 030 5064 8 | TRANSISTOR     | CF2                           | RVFSFZ455BCA | 001 241 0708 0 | CERAMIC FILTER            |
| (XC)                       |              |                |                | Z1                            | RXABPWB5TA   |                | FILTER, B.P.F             |
| Q28, Q29                   | 2SA1309R     | 001 030 4059 9 | TRANSISTOR     | <b>OSCILLATORS</b>            |              |                |                           |
| (XC)                       |              |                |                | X401                          | RVQC32NYF    | 001 250 2228 2 | OSCILLATOR                |
| Q30                        | 2SC3311S     | 001 030 4314 3 | TRANSISTOR     | <b>FUSES</b>                  |              |                |                           |
| (XC)                       |              |                |                | F1 $\Delta$                   | XBA2C20TB0U  | 002 380 1556 0 | FUSE T2.0A                |
| Q31                        | RVTDTA114EST | 001 030 6872 0 | TRANSISTOR     | (XC)                          |              |                |                           |
| Q401                       | 2SC2021FS    | 001 030 1207 7 | TRANSISTOR     | <b>SWITCHES</b>               |              |                |                           |
| <b>DIODES</b>              |              |                |                | S1-4                          | RSHX084ZA-Q  | 003 435 6481 2 | SW. BAND                  |
| D1, D2                     | MA165        | 001 032 0494 0 | DIODE          | S5                            | RSH2B40ZAQ   | 003 435 6246 1 | SW. FM MODE               |
| D3                         | MA165        | 001 032 0494 0 | DIODE          | S6-8                          | RSHX083ZA-Q  | 003 435 6480 3 | SW. FUNCTION              |
| D5                         | MA27WA       | 001 032 3385 2 | DIODE          | S9                            | RSH2B40ZAQ   | 003 435 6246 1 | SW. TAPE                  |
| D6                         | MA165        | 001 032 0494 0 | DIODE          | S10                           | RSS3B38Z     | 003 431 3872 3 | SW. DUBBING               |
| D7                         | MA1500DFV    | 001 032 3489 5 | DIODE          | S11, S12                      | RSH2B40ZAQ   | 003 435 6246 1 | SW. TAPE/XBS              |
| D8                         | MA165        | 001 032 0494 0 | DIODE          | S13                           | RSH2G02Y     | 003 435 4636 9 | SW. R/P                   |
| D9                         | MA1500DFV    | 001 032 3489 5 | DIODE          | S100 $\Delta$                 | RSR3A01Z     | 003 430 2008 4 | VOLTAGE SELECTOR          |
| D01, D02                   | RVDDSB15C    | 001 032 7587 8 | DIODE          | S101                          | RSS2D26Z     | 003 431 3448 5 | SW. FWD/REV 2             |
| D03, D04                   | RVDDSB15C    | 001 032 7587 8 | DIODE          | S102                          | RSH1A67Z     | 003 435 5527 9 | SW. MOTOR 1               |
| D10                        | MA165        | 001 032 0494 0 | DIODE          | S103, S104                    | QSB0254      | 003 434 0741 0 | SW. PLAY 2                |
| D11, D12                   | MA1500DFV    | 001 032 3489 5 | DIODE          | S105                          | RSH1A57Z     | 003 434 0868 6 | SWITCH, FF/REW 1          |
| D13                        | MA1500DFV    | 001 032 3489 5 | DIODE          | S201                          | RSS2D26Z     | 003 431 3448 5 | SW. FWD/REV 1             |
| D14                        | MA165        | 001 032 0494 0 | DIODE          | S202                          | RSH1A67Z     | 003 435 5527 9 | SW. MOTOR 2               |
| D15                        | MA1500DFV    | 001 032 3489 5 | DIODE          | S401                          | RSS3B44ZA-A  | 003 431 3965 9 | SW. TIME SET              |
| D16                        | MTZ8R2B      | 001 032 4210 0 | DIODE          | S402                          | RSS2B69ZA-A  | 003 431 3964 0 | SW. TIMER                 |
| D17                        | MA165        | 001 032 0494 0 | DIODE          | S403, S404                    | EVQQA04M     | 003 439 2124 6 | SW. TIME ADJ              |
| D18                        | MTZ20CT      | 001 033 0433 8 | DIODE          | <b>OTHERS</b>                 |              |                |                           |
| (XC)                       |              |                |                | IP100                         | RAH1CPN10    | 001 061 5194 6 | I.C. PROTECTOR            |
| D19                        | MA150TA5     | 001 032 6502 3 | DIODE          | J1                            | QJA0172      | 003 400 5150 5 | JACK, MIXING              |
| D30, D31                   | SLV31VC3F    | 001 033 0435 6 | DIODE          | J2                            | RJF1099YA-C  | 003 410 8019 9 | JACK, CD/LINE             |
| D32, D33                   | SLV31VC3F    | 001 033 0435 6 | DIODE          | J3                            | RJF1098Y     | 003 410 7365 8 | JACK, SPEAKER             |
| D34                        | SLV31VC3F    | 001 033 0435 6 | DIODE          | J4                            | RJJDT52Z     | 003 400 6898 4 | JACK, PHONES              |
| D35, D36                   | MA165        | 001 032 0494 0 | DIODE          | J100 $\Delta$                 | RJJ1FTY      | 003 400 5373 2 | JACK (WITH SWITCH), AC/DC |
| <b>VARIABLE RESISTORS</b>  |              |                |                | (XC)                          |              |                |                           |
| VR1                        | EVND4AA00B14 | 001 180 2242 3 | V.R. FM VCO    | J100 $\Delta$                 | RJJ1F3Z      | 003 400 5378 7 | JACK (WITH SWITCH), AC/DC |
| VR2                        | RVV1H11A54-A | 001 174 9228 9 | V.R. MIXING    |                               |              |                |                           |
| VR3                        | EWAH52750A54 | 001 174 9066 9 | V.R. VOLUME    |                               |              |                |                           |
| VR4                        | EVND1AA00B53 | 001 180 2566 6 | V.R. TAPESPEED |                               |              |                |                           |

**MECHANISM PARTS LIST** • See page 20, 21 regarding the illustrations.

| Ref. No.         | Part No.    | Part Code      | Description        | Ref. No.         | Part No.    | Part Code      | Description    |
|------------------|-------------|----------------|--------------------|------------------|-------------|----------------|----------------|
| TAPE DECK 1      |             |                |                    | M191             | RJH2C04XZ   | 001 270 1115 2 | HEAD           |
| MECHANICAL PARTS |             |                |                    | M192             | QBT1989     | 015 726 1748 9 | SPRING         |
| M113             | 1MQAK5165ZD | 015 652 1469 2 | FLYWHEEL BASE      | M193             | XQN17+C6    | 005 500 4610 9 | SCREW          |
| M114             | RDVK31ZA    | 015 754 0363 8 | BELT               | M194             | QDP1948-3   | 015 741 3498 3 | PULLEY         |
| M115             | 1DWAKFW47ZA | 015 756 0456 4 | FLYWHEEL ASS'Y     | M195             | QBW2137     | 005 513 3144 7 | WASHER         |
| M116             | QBK40047    | 005 513 2955 4 | WASHER             | M196             | QBK92030    | 005 513 3065 5 | WASHER         |
| M117             | XTW2+10S    | 005 501 2295 3 | SCREW              | M198             | RNLK10Z     | 015 718 4273 7 | LEVER          |
| M118             | XUEV3VW     | 005 512 0246 9 | C RING             | M202             | XTW2+4L     | 005 501 4711 0 | SCREW          |
| M119             | RNGK6ZB     | 015 745 1115 9 | GEAR               | M203             | XTW26+10S   | 005 501 1336 5 | SCREW          |
| M120             | XTW2+5S     | 005 501 2296 2 | SCREW              | M204             | RNBK4ZA     | 015 653 1163 2 | RUBBER SPACER  |
| M121             | RUQK7Z      | 015 726 2834 8 | SPRING             | M207             | RNLK41Z     | 015 718 4326 1 | LEVER          |
| M122             | RUQK9Z      | 015 726 2833 9 | SPRING             | M208             | XUEV4VW     |                | C RING         |
| M123             | RUMK12Z     | 015 728 1489 9 | SPRING             | M209             | RUQK34ZA    | 015 726 3032 0 | SPRING         |
| M125             | RNLK8Z      | 015 718 4271 9 | LEVER              | M210             | RNLK74ZA    | 015 718 4622 6 | LEVER          |
| M126             | RNLK9Z      | 015 718 4270 0 | LEVER              | M211             | RNLK75ZB    | 015 718 4789 4 | LEVER          |
| M127             | 7NLAK5165Z  | 015 718 4282 6 | LEVER ASS'Y        | M212             | QBT2082     | 015 726 1877 1 | SPRING         |
| M128             | RNLK25Z     | 015 718 4269 3 | LEVER              | M213             | RULK20ZA    | 015 632 6641 0 | ANGLE          |
| M129             | XUEV25VW    | 005 512 0283 4 | C RING             | M214             | QMN40027    | 015 713 0987 1 | PIPE           |
| M130             | RNLK11YA    | 015 718 4618 2 | LEVER              | M215             | XYN26+B6    | 005 503 0552 3 | SCREW          |
| M131             | RUMK13Z     | 015 728 1487 1 | SPRING             | M216             | QBG1539     | 015 653 0319 4 | RUBBER         |
| M132             | RUMK74ZA    | 015 727 1011 8 | SPRING             | M217             | 1JQAKCW55ZA | 002 310 2619 0 | DC MOTOR       |
| M133             | RUQK10Z     | 015 726 2831 1 | SPRING             | M218             | RNLK77ZA    | 015 718 4625 3 | LEVER          |
| M134             | RNRK3ZB     | 015 712 2429 3 | ROD                | M219             | RUPK38Z     | 003 482 6685 7 | F.P.C          |
| M136             | RNLK26YA    | 015 718 4620 8 | LEVER              | TAPE DECK 2      |             |                |                |
| M137             | RNLK30Z     | 015 718 4268 4 | LEVER              | MECHANICAL PARTS |             |                |                |
| M138             | RNLK39ZA    | 015 718 4809 7 | LEVER              | M2               | XTW2+4L     | 005 501 4711 0 | SCREW          |
| M139             | RNLK6Z      | 015 718 4266 6 | LEVER              | M3               | RUDK31ZA    | 015 727 0965 1 | SPRING         |
| M140             | RNLK7ZA-1   | 015 718 4634 2 | LEVER              | M4               | RUDK5Z      | 015 727 0982 0 | SPRING         |
| M141             | RNGK5Z      | 015 742 0271 7 | IDLER              | M5               | RNLK79ZA    | 015 718 4627 1 | LEVER          |
| M142             | 1NGAK5165Z  | 015 742 0272 6 | IDLER ASS'Y        | M8               | RDRK20ZA    | 015 740 3242 0 | PULLEY         |
| M143             | RNLK5Z      | 015 718 4263 9 | LEVER              | M9               | QBW2137     | 005 513 3144 7 | WASHER         |
| M144             | RNLK4Z      | 015 718 4262 0 | LEVER              | M10              | QBK92030    | 005 513 3065 5 | WASHER         |
| M145             | XUEV3VW     | 005 512 0246 9 | C RING             | M12              | RUPK38Z     | 003 482 6685 7 | F.P.C          |
| M146             | RUQK8Z      | 015 726 2839 3 | SPRING             | M13              | 1MQAK5165ZD | 015 652 1469 2 | FLYWHEEL BASE  |
| M147             | RNLK14Z     | 015 718 4281 7 | LEVER              | M14              | RDVK20ZA    | 015 754 0338 9 | BELT           |
| M150             | RNLK27YA    | 015 718 4538 1 | LEVER              | M15              | 1DWAKFW47ZA | 015 756 0456 4 | FLYWHEEL ASS'Y |
| M151             | 1UEAKCW55ZA | 015 632 6733 7 | ANGLE              | M16              | QBK40047    | 005 513 2955 4 | WASHER         |
| M154             | RNRK63ZA    | 015 712 2472 0 | ROD                | M17              | XTW2+10S    | 005 501 2295 3 | SCREW          |
| M155             | RNRK66ZA    | 015 712 2466 8 | ROD                | M18              | XUEV3VW     | 005 512 0246 9 | C RING         |
| M156             | RNRK67ZA    | 015 712 2467 7 | ROD                | M19              | RNGK6ZB     | 015 745 1115 9 | GEAR           |
| M157             | RNRK68ZA    | 015 712 2468 6 | ROD                | M20              | XTW2+5S     | 005 501 2296 2 | SCREW          |
| M158             | RNRK69ZA    | 015 712 2470 2 | ROD                | M21              | RUQK7Z      | 015 726 2834 8 | SPRING         |
| M159             | 4UAAKFW47YA | 015 630 2661 2 | CHASSIS ASSY       | M22              | RUQK9Z      | 015 726 2833 9 | SPRING         |
| M160             | RUDK2Z      | 015 726 2835 7 | SPRING             | M23              | RUMK12Z     | 015 728 1489 9 | SPRING         |
| M161             | RNLK3Z      | 015 718 4277 3 | LEVER              | M24              | RNLK80ZA    | 015 718 4628 0 | LEVER          |
| M162             | NGAKFW47ZB  | 015 745 1180 0 | GEAR               | M25              | RNLK8Z      | 015 718 4271 9 | LEVER          |
| M163             | RUAK12YB    | 015 630 2409 2 | CHASSIS            | M26              | RNLK9Z      | 015 718 4270 0 | LEVER          |
| M164             | RUEK1YA     | 015 643 1083 7 | SPACER             | M27              | 7NLAK5165Z  | 015 718 4282 6 | LEVER ASS'Y    |
| M165             | RJH4C14YZ   | 001 270 1177 8 | R/P HEAD           | M28              | RNLK25Z     | 015 718 4269 3 | LEVER          |
| M166             | RULK8ZB     | 015 632 6639 4 | EARTH PLATE        | M29              | XUEV25VW    | 005 512 0283 4 | C RING         |
| M167             | QBA51322    | 015 726 0529 2 | SPRING             | M30              | RNLK11YA    | 015 718 4618 2 | LEVER          |
| M168             | XSB206      | 005 500 3465 4 | SCREW              | M31              | RUMK13Z     | 015 728 1487 1 | SPRING         |
| M169             | XSB207      | 005 500 1001 0 | SCREW              | M32              | RUMK74ZA    | 015 727 1011 8 | SPRING         |
| M170             | RUMK17Z     | 015 728 1491 5 | SPRING             | M33              | RUQK10Z     | 015 726 2831 1 | SPRING         |
| M171             | RUMK11ZB    | 015 726 3031 1 | SPRING             | M34              | RNRK3ZB     | 015 712 2429 3 | ROD            |
| M172             | RNLK28YA    | 015 718 4621 7 | LEVER              | M35              | RNLK76ZA    | 015 718 4624 4 | LEVER          |
| M173             | RNLK84ZA    | 015 718 4629 9 | LEVER              | M36              | RNLK26YB    | 015 718 4806 0 | LEVER          |
| M174             | QBT2089     | 015 726 2837 5 | SPRING             | M37              | RNLK30Z     | 015 718 4268 4 | LEVER          |
| M175             | RNLK12Z     | 015 718 4278 2 | LEVER              | M38              | RNLK39ZA    | 015 718 4809 7 | LEVER          |
| M176             | RUDK4ZA     | 015 726 2838 4 | SPRING             | M39              | RNLK6Z      | 015 718 4266 6 | LEVER          |
| M177             | 6NLAK5165Z  | 015 740 3214 4 | PINCH ROLLER ASS'Y | M40              | RNLK7ZA-1   | 015 718 4634 2 | LEVER          |
| M177A            | RUMK15Z     | 015 728 1494 2 | SPRING             | M41              | RNGK5Z      | 015 742 0271 7 | IDLER          |
| M178             | 5NLAK5165Z  | 015 740 3213 5 | PINCH ROLLER ASS'Y | M42              | 1NGAK5165Z  | 015 742 0272 6 | IDLER ASS'Y    |
| M178A            | RUMK18Z     | 015 728 1493 3 | SPRING             | M43              | RNLK5Z      | 015 718 4263 9 | LEVER          |
| M179             | QBK92008    | 005 513 0693 5 | WASHER             | M44              | RNLK4Z      | 015 718 4262 0 | LEVER          |
| M180             | RNMK208Z    | 005 513 4010 6 | WASHER             | M45              | XUEV3VW     | 005 512 0246 9 | C RING         |
| M181             | RUQK17ZD    | 015 726 3033 9 | SPRING             | M46              | RUQK8Z      | 015 726 2839 3 | SPRING         |
| M182             | 1DMAK5165Z  | 015 765 0539 1 | REEL TABLE ASS'Y   | M47              | RNLK14Z     | 015 718 4281 7 | LEVER          |
| M183             | 2DMAK5165Z  | 015 765 0540 8 | REEL TABLE ASS'Y   | M50              | RNLK78ZB    | 015 718 4790 1 | LEVER          |
| M184             | RNLK40Z     | 015 718 4364 5 | LEVER              | M51              | RUEK3YB     | 015 632 6643 8 | PLATE          |
| M185             | RUDK3Z      | 015 726 2836 6 | SPRING             | M54              | RNRK65ZA    | 015 712 2469 5 | ROD            |
| M186             | RUDK8Z      | 015 727 0916 0 | SPRING             | M55              | RNRK66ZA    | 015 712 2466 8 | ROD            |
| M187             | RUMK79ZA    | 015 727 1012 7 | SPRING             | M56              | RNRK67ZA    | 015 712 2467 7 | ROD            |
| M188             | 4NRKACW55ZA | 015 712 2471 1 | ROD                | M57              | RNRK68ZA    | 015 712 2468 6 | ROD            |
| M189             | RUQK11Z     | 015 726 2832 0 | SPRING             | M58              | RNRK69ZA    | 015 712 2470 2 | ROD            |
| M190             | RNLK18Z     | 015 718 4279 1 | LEVER              | M59              | 2UAAKFW47YA | 015 630 2677 4 | CHASSIS ASS'Y  |

| Ref. No. | Part No.    | Part Code      | Description | Ref. No. | Part No.   | Part Code      | Description        |
|----------|-------------|----------------|-------------|----------|------------|----------------|--------------------|
| M60      | RUDK2Z      | 015 726 2835 7 | SPRING      | M75      | RNLK12Z    | 015 718 4278 2 | LEVER              |
| M61      | RNLK3Z      | 015 718 4277 3 | LEVER       | M76      | RUDK4ZA    | 015 726 2838 4 | SPRING             |
| M62      | NGAKFW47ZB  | 015 745 1180 0 | GEAR        | M77      | 6NLAK5165Z | 015 740 3214 4 | PINCH ROLLER ASS'Y |
| M63      | RUAK12YB    | 015 630 2409 2 | CHASSIS     | M77A     | RUWK15Z    | 015 728 1494 2 | SPRING             |
| M64      | RUEK1YA     | 015 643 1083 7 | SPACER      | M78      | 5NLAK5165Z | 015 740 3213 5 | PINCH ROLLER ASS'Y |
| M65      | RJH4C51XZAM | 001 270 1791 2 | HEAD        | M78A     | RUWK18Z    | 015 728 1493 3 | SPRING             |
| M66      | RULK8ZB     | 015 632 6639 4 | EARTH PLATE | M79      | Q8BK92008  | 005 513 0693 5 | WASHER             |
| M67      | QBA5132Z    | 015 726 0529 2 | SPRING      | M80      | RNWK208Z   | 005 513 4010 6 | WASHER             |
| M68      | XSB2D6      | 005 500 3465 4 | SCREW       | M81      | RUQK17ZD   | 015 726 3033 9 | SPRING             |
| M69      | XSB2D7      | 005 500 1001 0 | SCREW       | M82      | 1DMAK5165Z | 015 765 0539 1 | REEL TABLE ASS'Y   |
| M70      | RUWK17Z     | 015 728 1491 5 | SPRING      | M83      | 2DMAK5165Z | 015 765 0540 8 | REEL TABLE ASS'Y   |
| M71      | RUWK112B    | 015 726 3031 1 | SPRING      | M85      | XTN2+6J    | 005 501 1524 3 | SCREW              |
| M72      | RNLK28YA    | 015 718 4621 7 | LEVER       | M86      | RNBK4ZA    | 015 653 1163 2 | RUBBER SPACER      |
| M73      | RNLK132B    | 015 718 4619 1 | LEVER       | M87      | RUPK109ZA  | 015 630 2680 9 | P.C.B              |
| M74      | QBT2089     | 015 726 2837 5 | SPRING      |          |            |                |                    |

## ■ CABINET PARTS LIST ●See page 19 regarding the illustrations.

| Ref. No.            | Part No.     | Part Code      | Description            | Ref. No. | Part No.     | Part Code      | Description                |
|---------------------|--------------|----------------|------------------------|----------|--------------|----------------|----------------------------|
| CABINET AND CHASSIS |              |                |                        | K57      | RNLK87ZA     | 015 718 4810 4 | LEVER                      |
| K1                  | RBCK159ZA-0  | 015 702 4963 4 | BUTTON, XBS            | K58      | RBCK161ZA-0  | 015 702 4965 2 | BUTTON, DIRECTION          |
| K2                  | RBCK160ZA-0  | 015 702 4964 3 | BUTTON, SELECT         | K59      | RUMK60ZA     | 015 727 1017 2 | LEAF SPRING                |
| K3                  | RBDK37ZA-0   | 015 700 4770 1 | KNOB, DUBBING          | K60      | RBCK184ZA-0  | 015 702 4969 8 | BUTTON, PLAY (1)           |
| K4                  | RBT114ZA-0   | 015 700 4773 8 | KNOB, FUIN TUN         | K61      | RBCK183ZA-0  | 015 702 4966 1 | BUTTON, REC (1)            |
| K5                  | RHRK529ZA    | 015 652 1534 0 | HOLDER                 | K62      | RBCK186ZA-0  | 015 702 4967 0 | BUTTON, FF (1.2)           |
| K6                  | RDGK5615ZA   | 015 745 1193 5 | GEAR                   | K63      | RBCK185ZA-0  | 015 702 4968 9 | BUTTON, REW (1.2)          |
| K7                  | XSN26+W6     | 005 500 1364 6 | SCREW                  | K64      | RBCK187ZA-0  | 015 702 4970 5 | BUTTON, STOP(1.2)          |
| K8                  | RNLK89ZA     | 015 718 4808 8 | LEVER                  | K65      | RBCK188ZA-0  | 015 702 4971 4 | BUTTON, PAUSE 1.2          |
| K9                  | RNLK90ZA     | 015 718 4807 9 | LEVER                  | K66      | RBCK189ZA-0  | 015 702 4972 3 | BUTTON, PLAY(1.2)          |
| K10                 | RBDK39ZA-0   | 015 700 4774 7 | KNOB, REVERSE          | K67      | RDG5700Z     | 015 745 0678 3 | GEAR                       |
| K12                 | XTW3+8Q      | 005 501 1357 0 | SCREW                  | K68      | RJTK307ZA    | 003 410 8311 8 | TERMINAL PLATE             |
| K13                 | RUAK38ZA     | 015 630 2676 5 | CHASSIS                | K69      | XTN3+60G     | 005 501 2633 5 | SCREW                      |
| K14                 | RMVK2ZA      | 015 610 0022 7 | OPTICAL SHIELD         | K70      | XTV3+12G     | 005 501 0844 4 | SCREW                      |
| K15                 | XTV3+12F     | 005 501 0837 3 | SCREW                  | K71      | XTN3+25G     | 005 501 1265 3 | TAPPING SCREW              |
| K16                 | RJSK7T1ZA    | 003 400 7770 5 | CONNECTOR              | K72      | RYF1XCW55FX  | 015 802 3285 6 | REAR CABINET ASS'Y         |
| K17                 | RJSK5T1ZA    | 003 400 7691 3 | SOCKET                 | (X)      |              |                |                            |
| K18                 | RJM165Z      | 001 275 0578 4 | MICROPHONE             | K72      | RYF1XCW55FXC | 015 802 3284 7 | REAR CABINET ASS'Y         |
| K19                 | RHRK528ZA    | 015 652 1535 9 | HOLDER                 | (XC)     |              |                |                            |
| K20                 | RUPK108ZA    | 015 630 2678 3 | P.C. BOARD W/COMPONENT | K72A     | RKX361Z      | 015 826 1110 4 | ARM, HANDLE                |
| K21                 | RUPK106ZA    | 015 630 2679 2 | P.C. BOARD W/COMPONENT | K72B     | RKXK14ZA-0   | 015 826 1256 7 | HANDLE                     |
| K22                 | EDD052C84A2P | 001 080 0404 8 | DISPLAY                | K72C     | XTS3+10GZ    | 005 501 2257 9 | TAPPING SCREW              |
| K23                 | RGEK31ZA     | 015 846 3257 6 | ORNAMENT               | K72D     | RJC717A      | 003 413 0332 0 | BATTERY SPRING             |
| K24                 | RBDK40ZA-0   | 015 700 4772 9 | KNOB, CLOCK            | K72E     | RJCK70002ZA  | 003 413 1630 9 | BATTERY TERMINAL           |
| K25                 | RJC511Z      | 003 413 1086 1 | BATTERY TERMINAL       | K72F     | RGTK63VA     | 015 861 2203 7 | NAME PLATE                 |
| K26                 | RJS12T1Z     | 003 400 7305 6 | SOCKET(12P)            | (XC)     |              |                |                            |
| K27                 | QTF1054      | 003 415 0168 4 | FUSE HOLDER            | K72F     | RGTK63ZA     | 015 861 2202 8 | NAME PLATE                 |
| (XC)                |              |                |                        | (X)      |              |                |                            |
| K28                 | RUPK109ZA    | 015 630 2680 9 | P.C.B                  | K73      | RYM1XCW55FX  | 015 800 6805 2 | FRONT CABINET ASS'Y        |
| K38                 | RKKK162ZA    | 015 820 8883 8 | BATTERY COVER ASS'Y    | K74      | RYQ1XCW55FX  | 015 820 8885 6 | CASSETTE LID ASS'Y         |
| K39                 | RBDK38ZA-0   | 015 700 4771 0 | KNOB, VOLUME           | K75      | RYQ2XCW55FX  | 015 820 8884 7 | CASSETTE LID ASS'Y         |
| K40                 | RBNK15ZA-0   | 015 700 4769 4 | KNOB, MIXING           | K76      | RHG3011Z     | 015 653 0702 1 | BUSHING, SP.CORD           |
| K41                 | RNLK37Z      | 015 718 4381 4 | R/P LEVER              | K77      | EAS10S05D    | 001 260 3871 1 | SPEAKER                    |
| K42                 | XTW3+10Q     | 005 501 0994 1 | SCREW                  | K78      | RJEK1Z       | 003 492 6315 4 | SPEAKER CORD               |
| K43                 | RMUK1ZA      | 015 650 0152 4 | BRACKET                | K79      | RUL661Z      | 015 632 6008 9 | BRACKET                    |
| K44                 | RSE244ZA     | 015 892 0372 6 | TAPE COUNTER           | K80      | RMCK29ZA     | 015 601 1144 5 | SHIELD PLATE               |
| K45                 | RDVK28ZA     | 015 754 0365 6 | ANGULAR BELT           | K81      | XTN3+50G     | 005 501 1854 8 | SCREW                      |
| K46                 | RBD248YA-0   | 015 700 4697 3 | KNOB, G.EQ             | K82      | XTV3+8G      | 005 501 0913 8 | SCREW                      |
| K47                 | RDPK519ZA-0  | 015 710 0777 4 | POINTER                | K83      | XTN3+8G      | 005 501 0457 1 | TAPPING SCREW              |
| K48                 | RBT262Z      | 015 700 4086 4 | KNOB, TUNING(BK)       | K84      | RYM2XCW55FX  | 015 800 6806 1 | FRONT CABINET ASS'Y, SP. L |
| K49                 | RUMK61ZA     | 015 727 1018 1 | LEAF SPRING            | K85      | RYM3XCW55FX  | 015 800 6807 0 | FRONT CABINET ASS'Y, SP. R |
| K50                 | RDEK1ZA      | 015 652 1533 1 | HOLDER                 | K86      | RYF2XCW55FX  | 015 802 3286 5 | REAR CABINET ASS'Y, SP. L  |
| K51                 | RHG720Z      | 015 653 0904 3 | RUBBER                 | K86A     | RGE76Y       | 015 632 4918 8 | STOPPER(L)                 |
| K52                 | RNLK88ZA     | 015 718 4811 3 | LEVER                  | K87      | RYF3XCW55FX  | 015 802 3287 4 | REAR CABINET ASS'Y, SP. R  |
| K53                 | XEARR225CAY  | 002 390 1541 1 | TELESCOPIC ANTENNA     | K87A     | RGE76X       | 015 846 1432 7 | STOPPER(R)                 |
| K54                 | XSN3+12FY    | 005 500 6074 3 | SCREW                  | K88      | EFBS77D41    | 001 260 3803 3 | SPEAKER                    |
| K55                 | RUAK39ZA     | 015 632 6736 4 | ANGLE                  | K89      | RUPK109ZA    |                | P.C.B                      |
| K56                 | RDFK3004Z    | 015 713 2010 1 | SHAFT                  | K90      | XWG3D10      |                | WASHER                     |

## ■ ACCESSORY AND PACKING PARTS LIST

| Ref. No.    | Part No.   | Part Code      | Description            | Ref. No. | Part No. | Part Code  | Description                     |
|-------------|------------|----------------|------------------------|----------|----------|------------|---------------------------------|
| PACKINGS    |            |                |                        | (X)      |          |            |                                 |
| P1          | RPNK9017ZA | 015 977 3517 5 | CUSHION                | A1       | △        | RJA103Z    | 003 490 4815 7 AC CORD          |
| P2          | RPEK146ZA  | 015 979 0444 7 | SHEET                  | (XC)     |          |            |                                 |
| P3          | RPKK1090ZA | 015 972 2179 2 | GIFT BOX               | A2       | △        | RJP120ZDS  | AC PLUG ADAPTOR                 |
| ACCESSORIES |            |                |                        | A3       |          | RJN48Z     | 015 912 0220 2 TAPE             |
| A1          | △          | QFC1081        | 003 490 0913 2 AC CORD | A4       |          | RQXK4076ZA | 015 983 5109 3 INSTRUCTION BOOK |

# RESISTORS & CAPACITORS

## Numbering System of Resistor

Example:

|      |         |       |           |              |
|------|---------|-------|-----------|--------------|
| ERD  | 25      | F     | J         | 101          |
| Type | Wattage | Shape | Tolerance | Value (100Ω) |
| ERJ  | 6G      | C     | J         | 2R2          |
| Type | Wattage | Shape | Tolerance | Value (2.2Ω) |

## Numbering System of Capacitor

Example:

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

| Resistor Type                                     | Wattage                                               | Tolerance                       |
|---------------------------------------------------|-------------------------------------------------------|---------------------------------|
| ERD: Carbon Resistor                              | 10 : 1/8 W                                            | F : ±1%                         |
| ERC: Solid Resistor                               | 25 : 1/4 W                                            | G : ±2%                         |
| ERF: Incombustible Box-Shaped Wire-Wound Resistor | 50 : 1/2 W<br>18 : 1/4 W<br>14 : 1/8 W<br>12 : 1/2 W  | J : ±5%<br>K : ±10%<br>M : ±20% |
| ERG: Metal Oxide-Film Resistor                    | 1 : 1W<br>2 : 2W<br>3 : 3W                            |                                 |
| ERM: Wire-Wound Resistor                          | S1 : 1/2 W<br>S2 : 1/4 W<br>6G : 1/10 W<br>8G : 1/8 W |                                 |
| ERO: Superstable Metal Film Resistor              |                                                       |                                 |
| ERX: Metal-Film Resistor                          |                                                       |                                 |
| RRJ: Chip Resistor                                |                                                       |                                 |

| Capacitor Type                              | Voltage                                                                                                          | Tolerance                                 |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| ECCD: Ceramic Capacitor (Chitacon)          | (ECCD, ECKD Type)<br>1H : 50V DC 2H : 500V DC                                                                    | K : ±10%<br>M : ±20%                      |
| ECKD: Ceramic Capacitor (Chitabari)         | (ECFD Type)<br>C : 12V DC D : 25V DC                                                                             | Z : +80%<br>J : ±5%<br>G : ±2%<br>F : ±1% |
| ECFD: Semiconductor Ceramic Capacitor       | E : 50V DC (ECQ Type)                                                                                            | D : ±0.5pF                                |
| ECE□: Electrolytic Capacitor                | 05 : 50WV DC 1 : 100WV DC                                                                                        |                                           |
| ECS□: Tantalum Fixed Electrolytic Capacitor | (ECE, ECS Type)<br>0G : 4V 0J : 6.3V<br>1A : 10V 1C : 16V<br>1E : 25V 1V : 35V<br>1H : 50V 1J : 63V<br>2A : 100V |                                           |
| ECQ□: Polystyrene Film Capacitor            |                                                                                                                  |                                           |
| ECQS: Polystyrene Film Capacitor            |                                                                                                                  |                                           |
| ECQV: Polypropylene Film Capacitor          |                                                                                                                  |                                           |
| ECU□: T.F. Capacitor                        |                                                                                                                  |                                           |
| RCU□: Chip Capacitor                        |                                                                                                                  |                                           |
| ECBT: Cylindrical Ceramic Capacitor         |                                                                                                                  |                                           |

\* Capacity are in microfarads (μF) unless specified otherwise, P=Pico-farads.  
\* Resistance are in ohms (Ω), unless specified otherwise, 1K=1,000Ω, 1M=1,000KΩ

| Ref. No.   | Part No.    | Part Code      | Ref. No.   | Part No.    | Part Code      | Ref. No.   | Part No.    | Part Code      |
|------------|-------------|----------------|------------|-------------|----------------|------------|-------------|----------------|
| RESISTORS  |             |                | R125       | ERD16TJ105T | 001 152 3967 7 | R232       | ERD16TJ2R2T | 001 152 3976 6 |
| R1         | ERD16TJ473T | 001 152 3991 7 | R126       | ERD16TJ103T | 001 152 2920 6 | R233       | ERD16TJ101T | 001 152 2738 2 |
| R2         | ERD16TJ470T | 001 152 2933 1 | R127       | ERD16TJ472T | 001 152 3990 8 | R234       | ERD16TJ273T | 001 152 6607 6 |
| R3         | ERD16TJ101T | 001 152 2738 2 | R128       | ERD16TJ105T | 001 152 3967 7 | R235       | ERD16TJ333T | 001 152 2930 4 |
| R4         | ERD25TJ152  | 001 152 2915 3 | R129       | ERD16TJ223T | 001 152 3977 5 | R291       | ERD16TJ102  | 001 152 2919 9 |
| R5         | ERD16TJ681T | 001 152 1522 0 | R130       | ERD16TJ153T | 001 152 2924 2 | R292       | ERD16TJ222T | 001 152 2928 8 |
| R6         | ERD25TJ221  | 001 152 1860 5 | R131       | ERD16TJ2R2T | 001 152 3976 6 | R301       | ERD16TJ472T | 001 152 3990 8 |
| R7         | ERD16TJ331T | 001 152 2744 4 | (X)        |             |                | R302       | ERD16TJ332T | 001 152 2929 7 |
| R8         | ERD16TJ392T | 001 152 6703 7 | R132       | ERD16TJ2R2T | 001 152 3976 6 | R303       | ERD16TJ822T | 001 152 6613 8 |
| R9         | ERD16TJ221T | 001 152 2927 9 | R133       | ERD16TJ101T | 001 152 2738 2 | R304       | ERD16TJ221T | 001 152 2927 9 |
| R10        | ERD16TJ272  | 001 152 3981 9 | R134       | ERD16TJ273T | 001 152 6607 6 | R305       | ERD16TJ471T | 001 152 3989 1 |
| R11        | ERD16TJ102  | 001 152 2919 9 | R135       | ERD16TJ333T | 001 152 2930 4 | R306       | ERD16TJ104T | 001 152 2739 1 |
| R12, R13   | ERD16TJ223T | 001 152 3977 5 | R191       | ERD16TJ102  | 001 152 2919 9 | R307       | ERD16TJ150T | 001 152 5662 3 |
| R14        | ERD16TJ103T | 001 152 2920 6 | R192       | ERD16TJ222T | 001 152 2928 8 | R308       | ERD16TJ474T | 001 152 3992 6 |
| R15, R16   | ERD16TJ332T | 001 152 2929 7 | R193       | ERD16TJ102  | 001 152 2919 9 | R309       | ERD16TJ470T | 001 152 2933 1 |
| R17        | ERD25FJ222  | 001 152 0261 6 | R201       | ERD16TJ683T | 001 152 6763 5 | R310       | ERD16TJ222T | 001 152 2928 8 |
| R18        | ERD16TJ681T | 001 152 1522 0 | R202       | ERD16TJ102  | 001 152 2919 9 | R311       | ERD16TJ471T | 001 152 3989 1 |
| R19        | ERD16TJ562T | 001 152 2934 0 | R203       | ERD16TJ470T | 001 152 2933 1 | R312       | ERD16TJ681T | 001 152 1522 0 |
| R20        | ERD16TJ102  | 001 152 2919 9 | R204       | ERD16TJ104T | 001 152 2739 1 | R313, R314 | ERD16TJ223T | 001 152 3977 5 |
| R21        | ERD16TJ473T | 001 152 3991 7 | R205       | ERD16TJ332T | 001 152 2929 7 | R315, R316 | ERD16TJ223T | 001 152 3977 5 |
| R22        | ERD16TJ472T | 001 152 3990 8 | R206       | ERD16TJ103T | 001 152 2920 6 | R317       | ERD16TJ561T | 001 152 2746 2 |
| R23        | ERD16TJ102  | 001 152 2919 9 | R207       | ERD16TJ153T | 001 152 2924 2 | R318       | ERD16TJ153T | 001 152 2924 2 |
| R24        | ERD16TJ101T | 001 152 2738 2 | R208       | ERD16TJ152T | 001 152 3971 1 | R319       | ERD16TJ223T | 001 152 3977 5 |
| R101       | ERD16TJ683T | 001 152 6763 5 | R209       | ERD16TJ391T | 001 152 6608 5 | R320       | ERD16TJ225T | 001 152 6761 7 |
| R102       | ERD16TJ102  | 001 152 2919 9 | R210, R211 | ERD16TJ103T | 001 152 2920 6 | R321       | ERD25FJ103  | 001 152 0216 1 |
| R103       | ERD16TJ470T | 001 152 2933 1 | R212       | ERD16TJ101T | 001 152 2738 2 | R322       | ERD16TJ103T | 001 152 2920 6 |
| R104       | ERD16TJ104T | 001 152 2739 1 | R213       | ERD16TJ122T | 001 152 6604 9 | R323       | ERD16TJ221T | 001 152 2927 9 |
| R105       | ERD16TJ332T | 001 152 2929 7 | R214       | ERD16TJ331T | 001 152 2744 4 | R324, R325 | ERD16TJ473T | 001 152 3991 7 |
| R106       | ERD16TJ103T | 001 152 2920 6 | R216       | ERD16TJ822T | 001 152 6613 8 | R326       | ERD16TJ223T | 001 152 3977 5 |
| R107       | ERD16TJ153T | 001 152 2924 2 | R217, R218 | ERD16TJ122T | 001 152 6604 9 | R327, R328 | ERD16TJ103T | 001 152 2920 6 |
| R108       | ERD16TJ152T | 001 152 3971 1 | R219       | ERD16TJ153T | 001 152 2924 2 | R329       | ERD16TJ103T | 001 152 2920 6 |
| R109       | ERD16TJ391T | 001 152 6608 5 | R220       | ERD16TJ472T | 001 152 3990 8 | R330       | ERD16TJ123T | 001 152 2923 3 |
| R110, R111 | ERD16TJ103T | 001 152 2920 6 | R221       | ERD16TJ473T | 001 152 3991 7 | R331       | ERD16TJ681T | 001 152 1522 0 |
| R112       | ERD16TJ101T | 001 152 2738 2 | R222, R223 | ERD16TJ823T | 001 152 6764 4 | R332       | ERD16TJ221T | 001 152 2927 9 |
| R113       | ERD16TJ122T | 001 152 6604 9 | R224       | ERD16TJ102  | 001 152 2919 9 | R333       | ERD25FJ152  | 001 152 2915 3 |
| R114       | ERD16TJ331T | 001 152 2744 4 | R225       | ERD16TJ105T | 001 152 3967 7 | R334       | ERD25FJ182  | 001 152 0248 3 |
| R116       | ERD16TJ822T | 001 152 6613 8 | R226       | ERD16TJ103T | 001 152 2920 6 | R335       | ERD25FJ152  | 001 152 2915 3 |
| R117, R118 | ERD16TJ122T | 001 152 6604 9 | R227       | ERD16TJ472T | 001 152 3990 8 | R336       | ERD25FJ182  | 001 152 0248 3 |
| R119       | ERD16TJ153T | 001 152 2924 2 | R228       | ERD16TJ105T | 001 152 3967 7 | R337, R338 | ERD16TJ181T | 001 152 6605 8 |
| R120       | ERD16TJ472T | 001 152 3990 8 | R229       | ERD16TJ223T | 001 152 3977 5 | R339       | ERD16TJ391T | 001 152 6608 5 |
| R121       | ERD16TJ473T | 001 152 3991 7 | R230       | ERD16TJ153T | 001 152 2924 2 | R340       | ERD16TJ102  | 001 152 2919 9 |
| R122, R123 | ERD16TJ823T | 001 152 6764 4 | R231       | ERD16TJ2R2T | 001 152 3976 6 | R341, R342 | ERD16TJ182T | 001 152 3974 8 |
| R124       | ERD16TJ102  | 001 152 2919 9 | (X)        |             |                | R343       | ERD16TJ103T | 001 152 2920 6 |

| Ref. No.   | Part No.     | Part Code      | Ref. No.   | Part No.     | Part Code      | Ref. No.   | Part No.     | Part Code      |
|------------|--------------|----------------|------------|--------------|----------------|------------|--------------|----------------|
| R344       | ERD25FJ103   | 001 152 0216 1 | C35, C36   | ECFZ1C473MDY | 001 108 0997 3 | C221       | ECFZ1C103MDY | 001 108 0995 5 |
| R345       | ERD16TJ562T  | 001 152 2934 0 | C37        | ECFZ1C473MDY | 001 108 0997 3 | C222       | ECEA1HUR33   | 001 120 3248 9 |
| R346       | ERD16TJ472T  | 001 152 3990 8 | C38        | ECQM1H102KV  | 001 106 3489 6 | C223       | RCBC1C332MXY | 001 103 7086 0 |
| (X)        |              |                | C39, C40   | ECEA50ZR47E  | 001 120 1287 0 | C224       | ECEA1HU0R1   | 001 120 3250 5 |
| R347       | ERD25FJ391   | 001 152 0299 2 | C41        | ECEA1HU010   | 001 120 2960 6 | C225       | RCBS1H102KB  | 001 103 5571 0 |
| (X)        |              |                | C42        | RCBS1H100JY  | 001 103 5567 6 | C226       | ECFZ1C333MDY | 001 108 1078 9 |
| R347       | ERD25FJ472   | 001 152 0311 3 | C43        | RCBS1H180JY  | 001 103 7096 8 | C227       | ECFZ1C153MDY | 001 108 1075 2 |
| (XC)       |              |                | C101, C102 | RCBS1H561KB  | 001 103 5637 9 | C228       | ECEA1HU010   | 001 120 2960 6 |
| R348, R349 | ERD16TJ104T  | 001 152 2739 1 | C103       | ECEA0JU101B  | 001 120 2958 8 | C229       | RCBS1H102KB  | 001 103 5571 0 |
| R350       | ERD16TJ104T  | 001 152 2739 1 | C104       | ECFZ1C333MDY | 001 108 1078 9 | C230       | ECEA1EU3R3B  | 001 120 3839 2 |
| R351       | ERD16TJ222T  | 001 152 2928 8 | C105       | RCBS1H102KB  | 001 103 5571 0 | C231       | ECEA1HU010   | 001 120 2960 6 |
| R352       | ERD16TJ183T  | 001 152 6606 7 | C106       | ECEA1HU010   | 001 120 2960 6 | C232       | ECFZ1C104MDY | 001 108 0996 4 |
| R353       | ERD16TJ273T  | 001 152 6607 6 | C107, C108 | ECFZ1C473MDY | 001 108 0997 3 | C233       | ECFZ1C822MDY | 001 108 1109 9 |
| R354       | ERD16TJ152T  | 001 152 3971 1 | C109       | RCBS1H102KB  | 001 103 5571 0 | C234       | ECFZ1C104MDY | 001 108 0996 4 |
| R355       | ERD16TJ102   | 001 152 2919 9 | C110       | ECFZ1C473MDY | 001 108 0997 3 | C235       | ECEA1HU2R2   | 001 120 3253 2 |
| R356       | ERD25TJ101   | 001 152 2295 8 | C111       | ECEA0JU470   | 001 120 3858 9 | C236       | ECEA1HU010   | 001 120 2960 6 |
| (X)        |              |                | C112       | RCBS1H102KB  | 001 103 5571 0 | C237       | ECFZ1C104MDY | 001 108 0996 4 |
| R356       | ERD25TJ221   | 001 152 1860 5 | C113       | ECEA1CU100   | 001 120 2958 0 | C238       | RCBS1H102KB  | 001 103 5571 0 |
| (XC)       |              |                | C114       | ECEA1HU0R1   | 001 120 2960 5 | C239       | ECEA0JU101B  | 001 120 2829 8 |
| R357       | ERD16TJ103T  | 001 152 2920 6 | C115       | ECFZ1C273MDY | 001 108 1077 0 | C242       | RCBS1C103NYY | 001 103 5545 2 |
| R358       | ERD16TJ104T  | 001 152 2739 1 | C117       | ECFZ1C683MDY | 001 108 1079 8 | C243       | ECEA1EU101   | 001 120 2837 8 |
| (XC)       |              |                | C118       | ECEA1CU100   | 001 120 2958 0 | C244       | ECFZ1C473MDY | 001 108 0997 3 |
| R359       | ERD16TJ152T  | 001 152 3971 1 | C119       | ECFZ1C473MDY | 001 108 0997 3 | C245       | ECEA1CS102   | 001 120 0254 3 |
| (XC)       |              |                | C120       | ECEA1HU010   | 001 120 2960 6 | C246       | ECQV1H224JZ  | 001 106 3625 6 |
| R360       | ERD16TJ103T  | 001 152 2920 6 | C121       | ECFZ1C103MDY | 001 108 0996 5 | C247       | RCBS1H102KB  | 001 103 5571 0 |
| R361, R362 | ERD16TJ103T  | 001 152 2920 6 | C122       | ECEA1HUR33   | 001 120 3248 9 | C291       | ECFZ1C183MDY | 001 108 1000 1 |
| (XC)       |              |                | C123       | RCBC1C332MXY | 001 103 7086 0 | C292       | RCBS1C222MX  | 001 103 8858 6 |
| R363       | ERD16TJ224T  | 001 152 3978 4 | C124       | ECEA1HU0R1   | 001 120 3250 5 | C301       | ECEA1HUR22   | 001 120 3247 0 |
| (XC)       |              |                | C125       | RCBS1H102KB  | 001 103 5571 0 | C302       | ECEA0JU470   | 001 120 3858 9 |
| R364       | ERD25FJ391   | 001 152 0299 2 | C126       | ECFZ1C333MDY | 001 108 1078 9 | C303       | RCBS1H560JY  | 001 103 7106 3 |
| R365       | ERD16TJ152T  | 001 152 3971 1 | C127       | ECFZ1C153MDY | 001 108 1075 2 | C304       | ECQP1561JZ3  | 001 106 5504 6 |
| R401       | ERD25TJ103   | 001 152 1820 3 | C128       | ECEA1HU010   | 001 120 2960 6 | C305       | ECEA1AU221   | 001 120 3131 1 |
| R500, R501 | ERD25TJ101   | 001 152 2295 8 | C129       | RCBS1H102KB  | 001 103 5571 0 | C306       | ECFZ1C103MDY | 001 108 0995 5 |
| CAPACITORS |              |                | C130       | ECEA1EU3R3B  | 001 120 3839 2 | C307       | RCBS1H102KB  | 001 103 5571 0 |
| C1         | ECBT1H220J   | 001 103 0092 0 | C131       | ECEA1HU010   | 001 120 2960 6 | C308       | ECFZ1C333MDY | 001 108 1078 9 |
| C2         | RCBS1H566KY  | 001 103 5633 3 | C132       | ECFZ1C104MDY | 001 108 0996 4 | C309       | RCBS1H102KB  | 001 103 5571 0 |
| C3         | RCBS1H220JY  | 001 103 5602 0 | C133       | RCBS1C822MY  | 001 103 8327 8 | C310       | ECFZ1C563MDY | 001 108 1002 9 |
| C4         | RCBS1H3R9KY  | 001 103 7103 6 | C134       | ECFZ1C104MDY | 001 108 0996 4 | C311       | ECEA1HU010   | 001 120 2960 6 |
| C5, C6     | RCBS1H102KB  | 001 103 5571 0 | C135       | ECEA1HU2R2   | 001 120 3253 2 | C312       | ECEA0JU470   | 001 120 3858 9 |
| C7         | RCBS1C103NYY | 001 103 5545 2 | C136       | ECEA1HU010   | 001 120 2960 6 | C313, C314 | ECEA1CU100   | 001 120 2958 0 |
| C8         | RCBS1H4R7KY  | 001 103 5625 3 | C137       | ECFZ1C104MDY | 001 108 0996 4 | C315       | ECEA0JU101B  | 001 120 2829 8 |
| C9         | RCBS1H200JC  | 001 103 5599 8 | C138       | RCBS1H102KB  | 001 103 5571 0 | C316       | ECEA0JU470   | 001 120 3858 9 |
| C01, C02   | ECKD1H103ZF  | 001 103 1449 7 | C139       | ECEA0JU101B  | 001 120 2829 8 | C317       | ECEA1CU100   | 001 120 2958 0 |
| C03, C04   | ECKD1H103ZF  | 001 103 1449 7 | C142       | RCBS1C103NYY | 001 103 5545 2 | C318       | ECEA1AU471   | 001 120 3728 8 |
| C10        | RCBS1H100JY  | 001 103 5567 6 | C143       | ECEA1EU101   | 001 120 2837 8 | C319       | ECEA0JU470   | 001 120 3858 9 |
| C11        | RCBS1H200JC  | 001 103 5599 8 | C144       | ECFZ1C473MDY | 001 108 0997 3 | C320       | ECEA1AU101   | 001 120 2830 5 |
| C12        | RCBS1H180JY  | 001 103 7096 8 | C145       | ECEA1CS102   | 001 120 0254 3 | C321       | RCBS1C103NYY | 001 103 5545 2 |
| C13        | RCBS1C103NYY | 001 103 5545 2 | C146       | ECQV1H224JZ  | 001 106 3625 6 | C322       | ECEA1HU2R2   | 001 120 3253 2 |
| C14        | ECBT1H6R8K   |                | C147       | RCBS1H102KB  | 001 103 5571 0 | C323       | ECEA0JU101B  | 001 120 2829 8 |
| C15        | RCBS1H120JY  | 001 103 5573 2 | C191       | ECFZ1C183MDY | 001 108 1000 1 | C324       | ECEA0JU470   | 001 120 3858 9 |
| G16        | RCBS1H566KC  | 001 103 5631 5 | C192       | RCBS1C222MX  | 001 103 8858 6 | C325       | ECEA1AU470   | 001 120 3870 3 |
| C17        | RCBS1H100JY  | 001 103 5567 6 | C201, C202 | RCBS1H561KB  | 001 103 5637 9 | C326       | RCBS1C103NYY | 001 103 5545 2 |
| C18        | ECQP1361JZ   | 001 106 3508 0 | C203       | ECEA0JU101B  | 001 120 2829 8 | C327       | ECEA1EU332E  | 001 120 6079 6 |
| C19        | ECQP1152JZ   | 001 106 3504 4 | C204       | ECFZ1C333MDY | 001 108 1078 9 | C328       | ECEA0JU101B  | 001 120 2829 8 |
| C20        | ECQP1472JZ   | 001 106 3511 5 | C205       | RCBS1H102KB  | 001 103 5571 0 | C329, C330 | ECEA1EU221   | 001 120 3821 2 |
| C21        | RCBS1E223ZF  | 001 103 7093 1 | C206       | ECEA1HU010   | 001 120 2960 6 | C331       | ECEA1EU330   | 001 120 3896 3 |
| C22        | RCBS1H470JY  | 001 103 7105 4 | C207, C208 | ECFZ1C473MDY | 001 108 0997 3 | C332       | RCBS1C103NYY | 001 103 5545 2 |
| C23, C24   | ECFZ1C223MDY | 001 108 1076 1 | C209       | RCBS1H102KB  | 001 103 5571 0 | C333       | ECEA1EU330   | 001 120 3896 3 |
| C25        | ECBA1H221KBY | 001 103 0038 6 | C210       | ECFZ1C473MDY | 001 108 0997 3 | C334       | ECEA0JU101B  | 001 120 2829 8 |
| C26        | RCBS1C103NYY | 001 103 5545 2 | C211       | ECEA0JU470   | 001 120 3858 9 | C337       | ECEA1CU100   | 001 120 2958 0 |
| C27        | ECEA0JU101B  | 001 120 2829 8 | C212       | RCBS1H102KB  | 001 103 5571 0 | C338, C339 | RCBS1H101KB  | 001 103 8003 5 |
| C28        | RCBS1E223ZF  | 001 103 7093 1 | C213       | ECEA1CU100   | 001 120 2958 0 | C341       | RCBS1H102KB  | 001 103 5571 0 |
| C29        | ECEA1CU100   | 001 120 2958 0 | C214       | ECEA1HU0R1   | 001 120 3250 5 | C342       | ECEA1AU220B  | 001 120 3563 1 |
| C30        | ECFZ1C183MDY | 001 108 1000 1 | C215       | ECFZ1C273MDY | 001 108 1077 0 | C343       | RCBS1H102KB  | 001 103 5571 0 |
| C31        | ECFZ1C393MDY | 001 108 1001 0 | C217       | ECFZ1C683MDY | 001 108 1079 8 | C362       | RCBS1H101KB  | 001 103 8003 5 |
| C32        | ECEA1HU010   | 001 120 2960 6 | C218       | ECEA1CU100   | 001 120 2958 0 | (X)        |              |                |
| C33, C34   | ECEA1HUR22   | 001 120 3247 0 | C219       | ECFZ1C473MDY | 001 108 0997 3 | C401       | RCBS1H330JY  | 001 103 5618 2 |
|            |              |                | C220       | ECEA1HU010   | 001 120 2960 6 | C402, C403 | ECUV1E104ZF  | 001 103 8758 9 |

08160328 91610789  
SM-RXCW55MM  
SVC MNL , PX

10  
1 ST