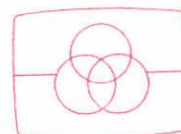
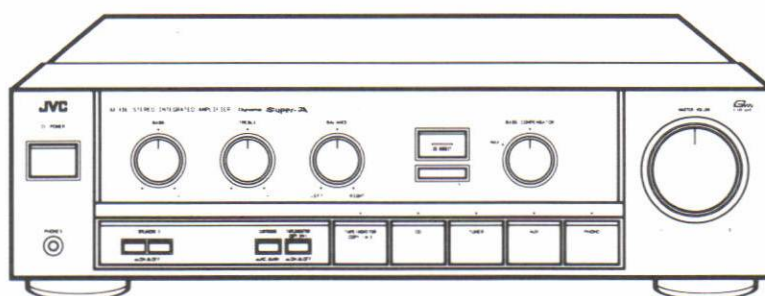


# JVC

## SERVICE MANUAL

### STEREO INTEGRATED AMPLIFIER

MODEL No. **AX-435TN**



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## Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purpose. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (  $\Delta$  ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

### 5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

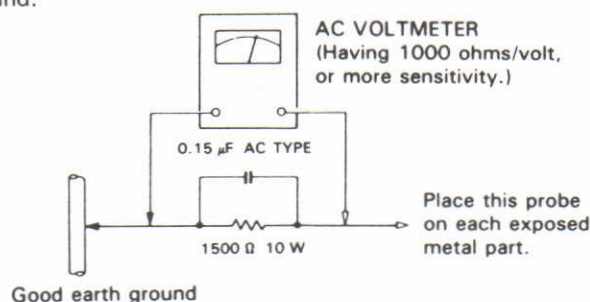
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500  $\Omega$  10 W resistor paralleled by a 0.15  $\mu$ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

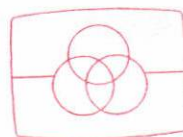
Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



## Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

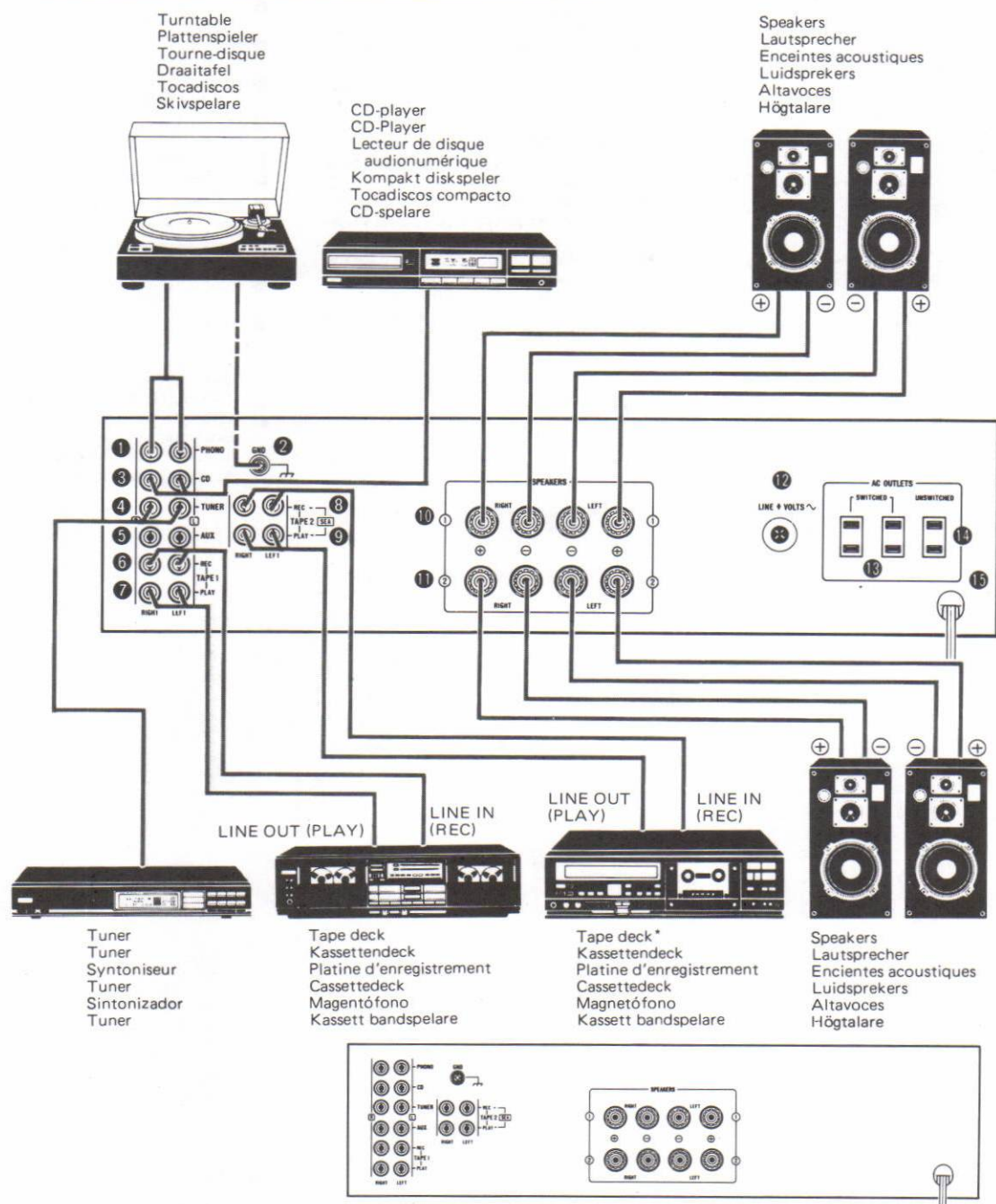
# CONNECTION DIAGRAM ANSCHLUSSDIAGRAMM SCHEMA DE RACCORDEMENTS AANSluitingSSchema DIAGRAMA DE CONEXIONES ANSLUTNINGSSchema



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Provided on units for Continental Europe, the United Kingdom and Australia.  
Vorhanden an Geräten für Kontinentaleuropa, Großbritannien und Australien.  
Fourni sur les appareils pour l'Europe Continentale, le Royaume-Uni et l'Australie.  
Aanwezig op apparaten voor het Europese Vasteland, Groot-Brittannië en Australië.  
Se provee en las unidades para Europa Continental, el Reino Unido y Australia.  
För kontinentala Europa, Storbritannien och Australien.

## REAR PANEL

- ① PHONO terminals
- ② GND terminal  
If your turntable has a ground lead, connect it to the GND terminal.
- ③ CD terminals
- ④ TUNER terminals
- ⑤ AUX terminals
- ⑥ TAPE 1 REC terminals
- ⑦ TAPE 1 PLAY terminals
- ⑧ TAPE 2 REC terminals\*
- ⑨ TAPE 2 PLAY terminals\*
- ⑩ SPEAKERS 1 terminals
- ⑪ SPEAKERS 2 terminals
- ⑫ AC line voltage selector (LINE ↓ VOLTS ~) \*\*
- ⑬ SWITCHED AC OUTLETS\*\*
- ⑭ UNSWITCHED AC OUTLET\*\*
- ⑮ Power cord

\* The TAPE2 terminals of the AX-335TN or AX-435TN can be used for connecting the S.E.A. Graphic Equalizer.

\*\* Not provided on units for Continental Europe, the United Kingdom and Australia.

### Notes:

1. Switch the power off when connecting any component.
2. Connect source components with left and right channels connected correctly. Reversed channels may degrade the stereo effect.
3. Connect speakers with correct polarity; (+) to (+) and (-) to (-). Reversed polarity may degrade the stereo effect.
4. Connect plugs or wires firmly. Poor contact may result in hum.
5. Do not connect equipment requiring more than the rated power to the AC outlets on the rear panel.
6. Use speakers with the correct impedance. The correct impedance is indicated on the rear panel of the AX-335TN/AX-435TN.
7. The SWITCHED AC outlets are switched off when the front-panel POWER button is switched off.
8. The UNSWITCHED AC outlet is not switched off when the front-panel POWER button is switched off.
9. An MC or MM cartridge can be used for the turntable connected to the AX-435TN. However, only an MM cartridge can be used for the turntable connected to the AX-335TN.

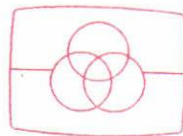
## RÜCKSEITE

- ① Plattenspieler-Anschlüsse (PHONO)
- ② Erdungsanschluß (GND)  
Hier das Erdungskabel des Plattenspielers anschließen, falls vorhanden.
- ③ CD-Anschlüsse
- ④ Tuner-Anschlüsse (TUNER)
- ⑤ AUX-Anschlüsse
- ⑥ Tonband 1-Aufnahmeanschlüsse (TAPE 1 REC)
- ⑦ Tonband 1-Wiedergabeanschlüsse (TAPE 1 PLAY)
- ⑧ Tonband 2-Aufnahmeanschlüsse (TAPE 2 REC)\*
- ⑨ Tonband 2-Wiedergabeanschlüsse (TAPE 2 PLAY)\*
- ⑩ Lautsprecher-1-Anschlüsse (SPEAKER 1)
- ⑪ Lautsprecher 2-Anschlüsse (SPEAKERS 2)
- ⑫ Netzspannungswähler (LINE ↓ VOLTS ~) \*\*
- ⑬ Beschaltete Netzausgänge (SWITCHED AC OUTLETS)\*\*
- ⑭ Unbeschalteter Netzausgang (UNSWITCHED AC OUTLET)\*\*
- ⑮ Netzkabel.

\* Die Kassette 2-Buchsen (TAPE 2) der Modelle AX-335TN oder AX-435TN können zum Anschließen des S.E.A. Graphic Equalizers verwendet werden.

\*\* Nicht vorhanden an Geräten für Kontinental-Europa, Großbritannien und Australien.

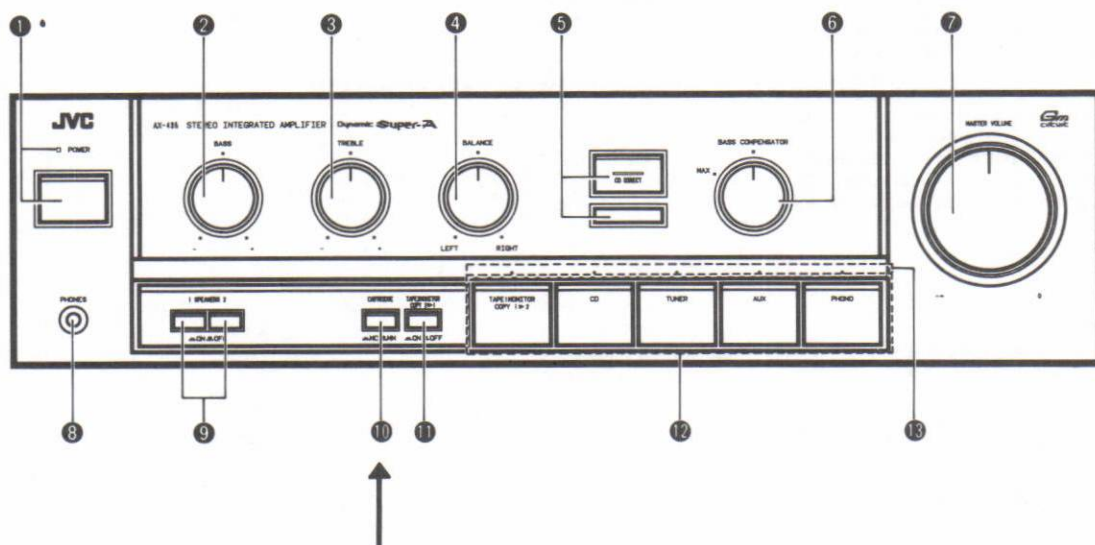
FRONT PANEL  
FRONTPLATTE  
PANNEAU AVANT  
VOORPANEEL  
PANEL DELANTERO  
FRAMPANEL



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AX-435TN only  
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AX-435TN solamente  
endast AX-435TN

## FRONT PANEL

These instructions are prepared for two models: AX-335TN/AX-435TN.  
Therefore, read the items below concerning each model.

### 1 POWER and indicator

Press this button to turn the power on.  
To turn the power off, press it again.  
The indicator lights when the POWER button is pressed to on.

#### Notes:

- When power is not supplied to this amplifier for 2 — 3 days, the source select button pressed before the power was switched off may be lost when the power is switched on again. If this happens, set the buttons, etc. again.
- An electronic source selector is used in this unit. When the POWER button is first switched on, two or more sources or no source may be selected. Make sure to input the source select data by pressing one of the source selectors.
- If the POWER button is pressed repeatedly to switch on and off too quickly, the same phenomenon as the above will occur.

### 2 BASS

Turn clockwise to boost bass response and counterclockwise to decrease it.

### 3 TREBLE

Turn clockwise to boost treble response and counterclockwise to decrease it.

### 4 BALANCE

Balances the volume between the left and right speakers. Usually set it to the center click position.

### 5 CD DIRECT and indicator

Press this button to enjoy listening to the CD with good sound quality. The indicator lights and the signal fed from the CD terminals is directly connected to the volume, bypassing the circuits on the way, thus allowing you to enjoy listening to an improved sound quality.

#### Note:

- While the CD DIRECT button is pressed, the reproduced sound does not change even if the source selector (including TAPE 2 MONITOR) and BALANCE volume are operated, press the CD DIRECT button again to turn the indicator off when using these.

### 6 BASS COMPENSATOR

When sound volume is turned down, the human ear tends to become less aware of bass sound. At low sound levels the BASS COMPENSATOR knob can be used to emphasize the bass sound. For ordinary use, the knob should be set to the normal position.

### 7 MASTER VOLUME

Controls the volume of the speakers and headphones.

### 8 PHONES (Headphones jack)

Plug stereo headphones into this jack for private listening.

If you want to listen to sound from the headphone only, press the SPEAKERS buttons to "OFF".

### 9 SPEAKERS

Press to switch the speakers connected to the SPEAKERS 1 or 2 terminals on (  ) and off (  ).

### 10 CARTRIDGE (AX-435TN only)

MC (  ): Press in when using an MC cartridge having an output of less than 0.5 mV.

MM (  ): Press again when using an MM or MC cartridge having an output of more than 0.5 mV.

### 11 TAPE 2 MONITOR

ON (  ): Set to this position to listen to the tape deck connected to the TAPE 2 terminals of this unit. If your tape deck is of the 3-head type, you can monitor the recorded sound while recording by setting this button to ON.

OFF (  ): Keep this button set to this position, except when you want to listen to the tape deck connected to the TAPE 2 terminals of this unit.

### 12 Source selector

#### TAPE 1 MONITOR

Press to listen to a tape deck connected to the TAPE 1 terminals.

#### CD

Press to listen to the source connected to the CD terminals.

#### TUNER

Press to listen to radio broadcasts by a tuner connected to the TUNER terminals.

#### AUX

Press to listen to the source connected to the AUX terminals.

#### PHONO

Press to listen to records played by a turntable connected to the PHONO terminals.

### 13 Source indicator

The indicator corresponding to the source select button pressed lights.

## OPERATION

Before operation, always be sure to set **VOLUME** at minimum.

When the volume is increased after selecting a source position with no equipment connected to the input terminal, other connected devices (such as speakers) may be adversely affected by external noise and inductive hum.

### Listening to CD

1. Connect a CD to the CD terminals on the rear panel.
2. Press the **POWER** button on.
3. Press the **CD** button and make sure that the **TAPE 1 MONITOR** and **TAPE 2 MONITOR** buttons are set to off.
4. Select the speaker system with the **SPEAKERS** switches.
5. Operate the CD according to its instruction manual.
6. Adjust the **VOLUME**, **BALANCE** and **BASS/TREBLE/BASS COMPENSATOR** controls.

### Listening to broadcasts

1. Connect a tuner to the **TUNER** terminals on the rear panel.
2. Press the **POWER** button on.
3. Press the **TUNER** button and make sure that the **TAPE 1 MONITOR** and **TAPE 2 MONITOR** buttons are set to off.
4. Select the speaker system with the **SPEAKERS** switches.
5. Operate the tuner according to its instruction manual.
6. Adjust the **VOLUME**, **BALANCE** and **BASS/TREBLE/BASS COMPENSATOR** controls.

### Listening to records

1. Connect a turntable to the **PHONO** terminals on the rear panel.
2. Press the **POWER** button on.
3. Set the **CARTRIDGE** button of this unit according to the cartridge in use. (AX-435TN only)
4. Press the **PHONO** button and make sure that the **TAPE 1 MONITOR** and **TAPE 2 MONITOR** buttons are set to off.
5. Select the speaker system with the **SPEAKERS** switches.
6. Operate the turntable according to its instruction manual.
7. Adjust the **VOLUME**, **BALANCE** and **BASS/TREBLE/BASS COMPENSATOR** controls.

### Listening to tapes

1. Connect a tape deck to the **PLAY** terminals of **TAPE 1** or **TAPE 2**.
2. Press the **POWER** button on.
3. Press the **TAPE 1 MONITOR** button to play back the **TAPE 1** deck. For playback of the **TAPE 2** deck, press the **TAPE 2 MONITOR** button to **ON** (  ).
4. Select the speaker system with the **SPEAKERS** switches.
5. Operate the tape deck for playback according to its instruction manual.
6. Adjust the playback sound controls as required.

#### Note:

- Do not place the tape deck directly on the amplifier, because it may cause the amplifier to malfunction.

### Using stereo headphones

Stereo headphones can be plugged into the front panel jack. Plugging headphones into the **PHONES** jack does not switch off the speaker sound.

### Recording tapes

1. Connect a tape deck to the **REC** terminals of the **TAPE 1** or **TAPE 2** terminals.
2. Press the **POWER** button on.
3. Select a speaker system if you wish to hear the sound while recording.
4. Press the **SOURCE SELECTOR** button for the source you want to play.
5. Play the source.
6. Operate the tape deck for recording.

#### Note:

- A CD can be played while recording another source .  
The **CD DIRECT** feature allows you to play a CD while recording another source. If you want to listen to any source other than the CD, press the **CD DIRECT** button again to cancel the **CD DIRECT** feature.

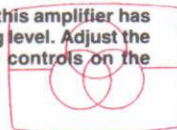
### Tape dubbing

Dubbing from the **TAPE 1** to **TAPE 2** is carried out as follows:

1. Press the **TAPE 1 MONITOR** button.
  2. Play back the **TAPE 1** deck.
  3. Operate the **TAPE 2** deck for recording.
- You can perform tape dubbing while listening to the CD by pressing the **CD DIRECT** button in addition to the above operations.

#### Notes:

- The sound you hear from the speakers or headphones is the source sound, not that being recorded on the tape.
- You can also perform tape dubbing from **TAPE 2** to **TAPE 1** by substituting **TAPE 2** for **TAPE 1** and **TAPE 1** for **TAPE 2** same as the above operation.
- The **VOLUME** control of this amplifier has no effect on the recording level. Adjust the recording level with the controls on the tape deck.



### How to operate the monitor while recording on the tape deck

1. Connect a 3-head tape deck to the **TAPE 1** or **TAPE 2** terminals.
2. Make sure to connect the signal cords to the **PLAY** and **REC** terminals.
3. Select the source from which you want to record by depressing the source select button on this unit.
4. Operate the tape deck for recording as described in its operating manual.
5. By playing the source component, you can record on the tape deck.
6. While recording on the tape deck, the recorded sound can be heard by depressing the **TAPE 1 MONITOR** or **TAPE 2 MONITOR** button on this unit.

### Use of S.E.A. Graphic Equalizer

By allowing you to independently boost or lower the response of finely divided sections of the frequency spectrum: the **S.E.A.** gives you much greater control over the sound quality of your stereo system. With an optionally available **S.E.A. Graphic Equalizer**, you can tailor the sound to your own taste for different types of music or to compensate for the particular acoustic characteristics of your audio components and listening room. The **TAPE 2** terminals of the **AX-335TN** or **AX-435TN** can be used for connecting the **S.E.A. Graphic Equalizer**.

#### Note:

- Even if the **S.E.A. Graphic Equalizer** is operated while the **CD DIRECT** button is pressed, reproduced sound is neither adjusted nor compensated. When using the **S.E.A. Graphic Equalizer**, press the **CD DIRECT** button once again to turn the indicator off.

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## TROUBLESHOOTING

**What appears to be a malfunction may not always be serious.**  
**Make sure first . . . .**

**No sound and no light**

Is the AC plug connected properly?  
 Are the connections made correctly?  
 Are the inter-component connections correct?

**No sound from speakers**

Are speaker cords connected?  
 Are the SPEAKERS buttons correctly set?  
 Is the VOLUME control properly set?  
 Is your source component correctly set?  
 Check that TAPE 2 MONITOR is not on.

**Sound from one speaker only**

Are speaker cords connected correctly?  
 Is BALANCE control set to one extreme or the other?

**Loud hum during record playing**

Is turntable grounded?

Try to change cord path.

Insert the plugs by interchanging their positions.

**Howling noise during record playing**

Is turntable too close to a speaker?

## STÖRUNGSSUCHE

**Die meisten Betriebsstörungen sind auf einfache Ursachen zurückzuführen.**  
**Überprüfen Sie deshalb noch einmal . . . .**

**Kein Ton und keine Anzeige**

Ist der Netzstecker richtig eingesteckt?  
 Wurden alle Anschlüsse richtig vorgenommen?  
 Sind die Verbindungen zwischen den Geräten richtig hergestellt?

**Kein Ton von beiden Lautsprechern**

Sind die Lautsprecherkabel angeschlossen?  
 Sind die Lautsprecher-Tasten (SPEAKERS) korrekt eingestellt?

Ist die Lautstärke (VOLUME) korrekt eingestellt?

Ist die Signalquelle richtig eingestellt?

Sicherstellen, daß die Taste TAPE 2 MONITOR nicht in Ein-Stellung steht.

**Ton kommt nur von einem Lautsprecher**

Sind die Lautsprecherkabel richtig angeschlossen?

Ist der Balanceregler (BALANCE) zu weit nach rechts oder zu weit nach links gedreht?

**Lautes Brummgeräusch beim Abspielen einer Schallplatte**

Ist der Plattenspieler geerdet?

Evtl. die Kabel anders verlegen.

Die Stecker vertauscht einstecken.

**Rückkopplung beim Abspielen einer Schallplatte**

Steht der Plattenspieler zu nahe am Lautsprecher?

## EN CAS DE DIFFICULTE

**Ce qui semble au départ être un mauvais fonctionnement n'est pas toujours très sérieux.**

**Assurez-vous d'abord que . . . .**

**Aucun son et pas d'éclairage**

La prise CA est-elle correctement branchée?  
 Les raccordements sont-ils bien faits?  
 Les connexions entre les divers composants sont-elles correctes?

**Pas de son des haut-parleurs**

Les câbles des haut-parleurs sont-ils raccordés?  
 Les sélecteurs SPEAKERS sont-ils réglés correctement?

La commande VOLUME est-elle réglée correctement?

Vos appareils de source sont-ils correctement installés?

Vérifier que TAPE 2 MONITOR n'est pas réglé sur ON.

**Le son ne provient que d'un seul haut-parleur**

Les câbles de haut-parleurs sont-ils raccordés correctement?

La commande BALANCE est-elle tournée à fond dans un sens ou dans l'autre?

**Bourdonnement sourd pendant la lecture de disques**

La platine est-elle mise à la terre?

Essayer de changer l'emplacement du cordon.

Insérer les fiches en interchangeant leur position.

**Hurlement pendant la lecture de disques**

La platine tourne-disque est-elle trop près des haut-parleurs?

## SPECIFICATIONS

### AX-335TN

#### OVERALL CHARACTERISTICS

##### Output power:

85 watts per channel into 4 ohms at 1 kHz (DIN).

65 watts per channel into 8 ohms at 1 kHz (DIN).

55 watts per channel, min. RMS, both channels driven, into 8 ohms from 30 Hz to 20 kHz, with no more than 0.007% total harmonic distortion.

55 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz with no more than 0.003% total harmonic distortion. (measured by JVC Audio Analyzer System)

Total harmonic distortion : 0.007% (30 Hz — 20 kHz, 8 ohms) at 55 watts

Intermodulation distortion : 0.007% (60 Hz : 7 kHz = 4 : 1, 8 ohms) at 55 watts

Power band width : 5 Hz — 50 kHz (IHF, 0.05%, 8 ohms both channels driven)

Frequency response : 5 Hz — 80 kHz +0, -3 dB (8 ohms)

Damping factor : 90 (1 kHz, 8 ohms)

##### Input terminals

Input sensitivity/impedance (1 kHz)

PHONO : 2.5 mV/47 kohms

CD/AUX/ : 210 mV/35 kohms

TUNER/TAPE 1, 2

Signal-to-noise ratio : 71 dB ('66 IHF)

CD/AUX/ : 104 dB ('66 IHF)

TUNER/TAPE 1, 2

PHONO : 67 dB (DIN)

CD/AUX/ : 68 dB (DIN)

TUNER/TAPE 1, 2

Tone controls : TREBLE: +8 ±1 dB  
-8 ±1 dB  
(at 10 kHz)  
BASS: +8 ±1 dB  
-8 ±1 dB  
(at 100 Hz)

BASS COMPENSATOR: +5 dB (at 100 Hz)  
(Volume control at -30 dB position) +8 dB (at 60 Hz)

### AX-435TN

#### OVERALL CHARACTERISTICS

##### Output power:

105 watts per channel into 4 ohms at 1 kHz (DIN).

75 watts per channel into 8 ohms at 1 kHz (DIN).

65 watts per channel, min. RMS, both channels driven, into 8 ohms from 20 Hz to 20 kHz, with no more than 0.007% total harmonic distortion.

65 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz with no more than 0.003% total harmonic distortion. (measured by JVC Audio Analyzer System)

Total harmonic distortion : 0.007% (20 Hz — 20 kHz, 8 ohms) at 65 watts

Intermodulation distortion : 0.007% (60 Hz : 7 kHz = 4 : 1, 8 ohms) at 65 watts

Power band width : 5 Hz — 50 kHz (IHF, 0.05%, 8 ohms both channels driven)

Frequency response : 5 Hz — 80 kHz +0, -3 dB (8 ohms)

Damping factor : 90 (1 kHz, 8 ohms)

##### Input terminals

Input sensitivity/impedance (1 kHz)

PHONO (MM) : 2.5 mV/47 kohms

PHONO (MC) : 210 μV/100 ohms

CD/AUX/ : 210 mV/35 kohms

TUNER/TAPE 1, 2

Signal-to-noise ratio : 85 dB ('66 IHF)

PHONO (MC) : 66 dB ('66 IHF)

CD/AUX/ : 104 dB ('66 IHF)

TUNER/TAPE 1, 2

PHONO (MM) : 67 dB (DIN)

CD/AUX/ : 68 dB (DIN)

TUNER/TAPE 1, 2

Tone controls : TREBLE: +8 ±1 dB  
-8 ±1 dB  
(at 10 kHz)  
BASS: +8 ±1 dB  
-8 ±1 dB  
(at 100 Hz)

BASS COMPENSATOR: +5 dB (at 100 Hz)  
(Volume control at -30 dB position) +8 dB (at 60 Hz)

#### EQUALIZER

PHONO overload capacity : 95 mV (0.02% THD)  
PHONO RIAA deviation :  $\pm 0.5$  dB (20 Hz — 20 kHz)

Recording output  
Output level/impedance : 210 mV/Maximum 2 kohms  
TAPE REC-1, 2

#### GENERAL

Dimensions : 435 (W) x 127 (H) x 310 (D) mm (17-3/16" x 4-15/16" x 12-1/16")  
Weight : 7.2 kg (15.9 lbs.)

Design and specifications subject to change without notice.

#### EQUALIZER

PHONO overload capacity : 100 mV (0.02% THD)  
PHONO (MM) : 8 mV (0.04% THD)  
PHONO (MC)

PHONO RIAA deviation :  $\pm 0.3$  dB (20 Hz — 20 kHz)  
PHONO (MM) :  $\pm 0.5$  dB (20 Hz — 20 kHz)  
PHONO (MC)

Recording output  
Output level/impedance : 210 mV/Maximum 2 kohms  
TAPE REC-1, 2

#### GENERAL

Dimensions : 435 (W) x 127 (H) x 310 (D) mm (17-3/16" x 4-15/16" x 12-1/16")  
Weight : 7.5 kg (16.5 lbs.)

Design and specifications subject to change without notice.

#### POWER SPECIFICATIONS

| Areas              | Line voltage & frequency                   | Power consumption |           |
|--------------------|--------------------------------------------|-------------------|-----------|
|                    |                                            | AX-335TN          | AX-435TN  |
| Continental Europe | AC 220 V~, 50 Hz                           | 230 watts         | 250 watts |
| U.K.               | AC 240 V~, 50 Hz                           | 520 watts         | 610 watts |
| Australia          |                                            |                   |           |
| Other areas        | AC 110/127/220/240 V~ selectable, 50/60 Hz | 240 watts         | 270 watts |



#### OPEN-AIR STEREO HEADPHONES HA-CD7

The JVC HA-CD7 Open-Air high-quality Stereo Headphones (optionally available) are recommended for use with this unit.

## Removal Procedures

### ■ Removing the metal cover

1. Remove the 4 screws on both sides.
2. Remove the 2 screws located on the top of rear panel.
3. Slightly open both sides of the metal cover, to the left and right, and raise the rear side. Then slowly lift it up and straight backward.

### ■ Removing the bottom plate

1. Remove the metal cover.
2. Remove the 18 screws (A). See Fig.1.

\* When installing the bottom plate, properly insert the protect cover between the power transformer and the AC primary PC board.  
See Fig.3.

### ■ Removing the front panel

1. Remove the metal cover.
  2. Remove the 3 screws (B) and 2 plastic rivets (C).
- See Fig-1 & Fig-2.
3. Pull out the main volume knob.

### ■ Removing the power transistors

1. Remove the metal cover and the bottom plate.
2. Unsolder the defective power transistor.
3. Remove the screw holding the power transistor using a pair of pliers, a wrench or a bent screwdriver.

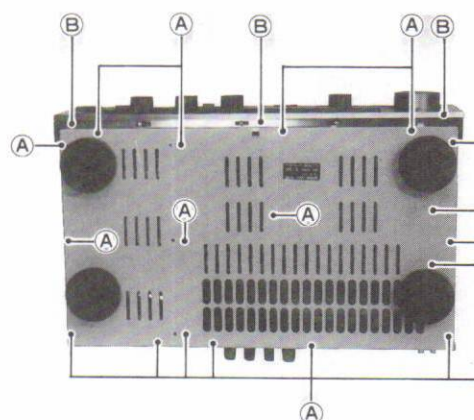


Fig. 1

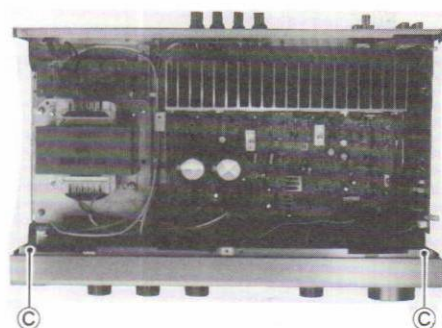


Fig. 2

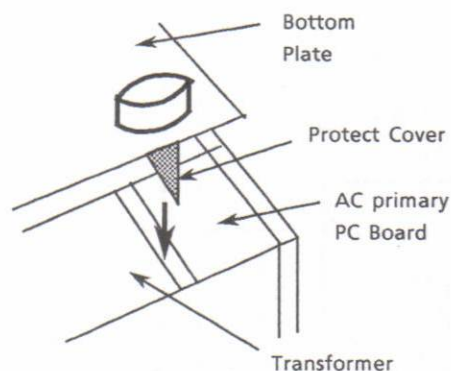
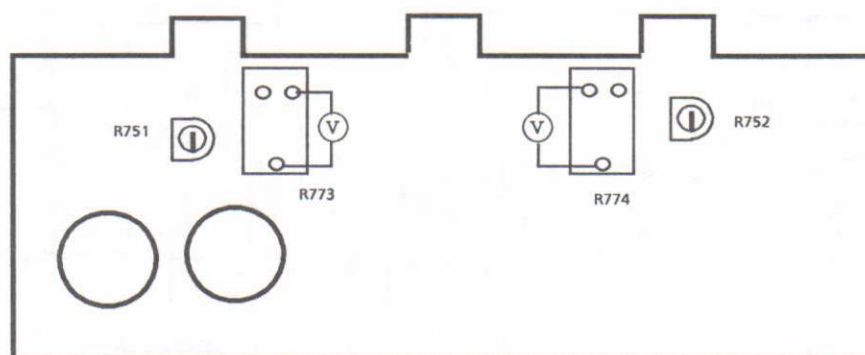


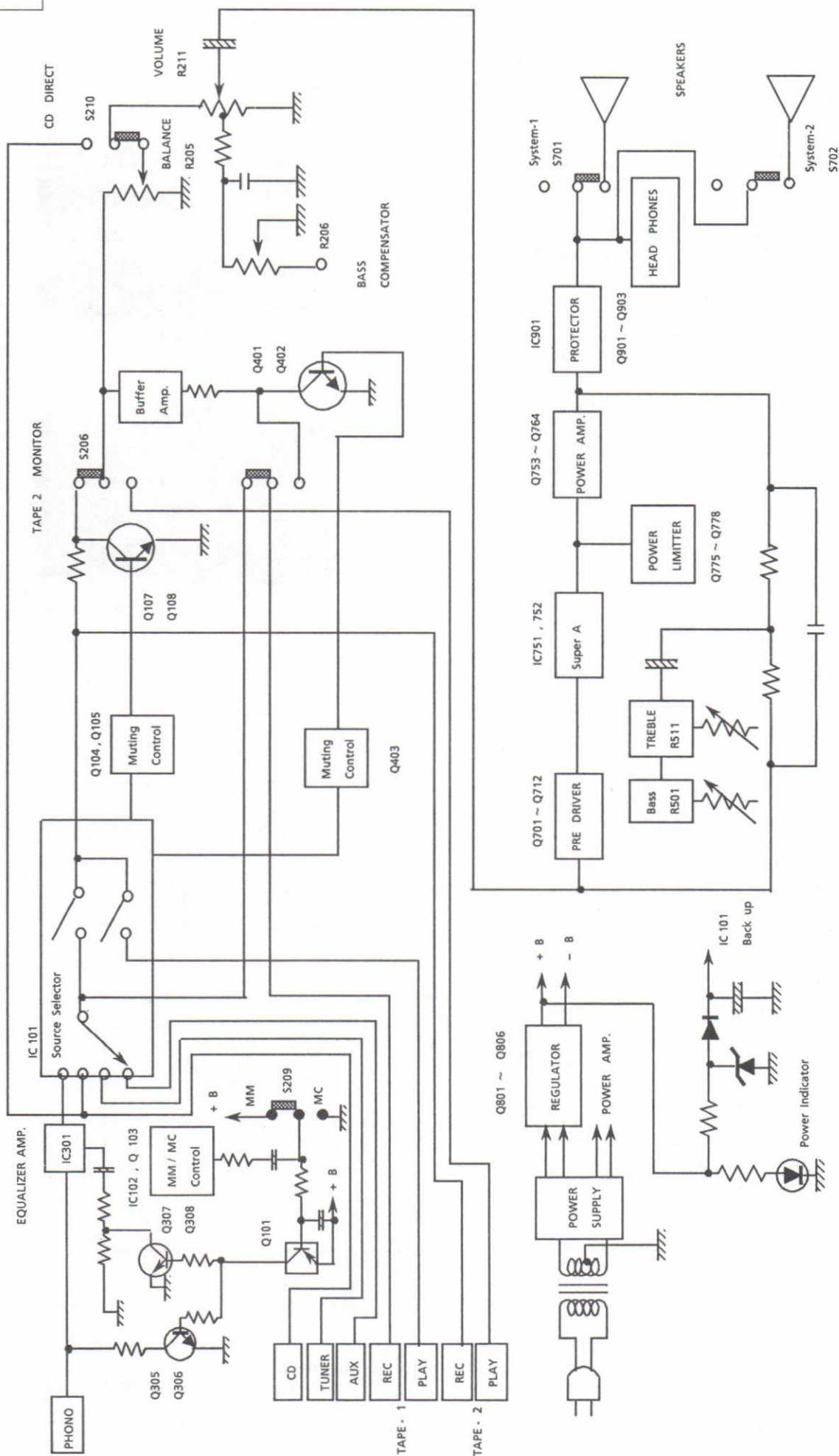
Fig. 3

## Idling Adjustment



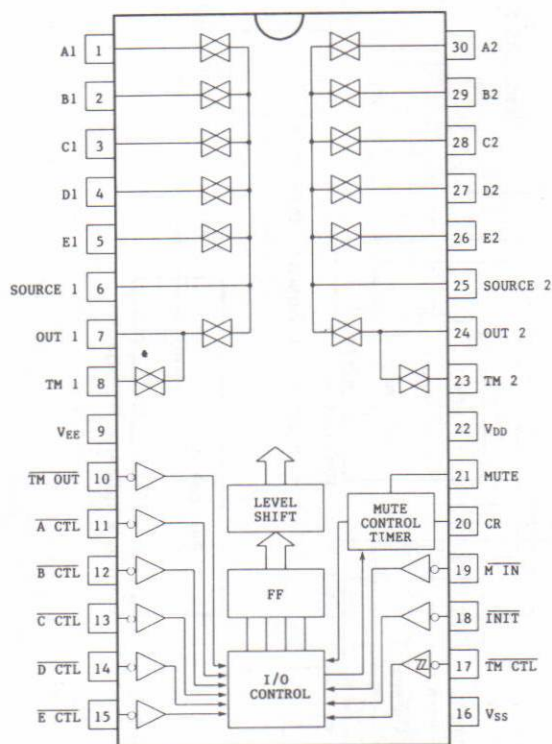
1. Turn R751 and R752 fully counterclockwise before the power switch on.
2. Warm up at least 5 minutes before adjustment.
3. Must keep the heatsink to prevent overheating before adjustment.
4. Set the volume control to minimum during this adjustment.
5. Connect a DC voltmeter to R773 resistor's leads for left channel, or to R774 for right channel.
6. Adjust R751 for left channel, or R752 for right channel, so that the DC voltmeter becomes 7mV ~ 13mV.

# Block Diagram

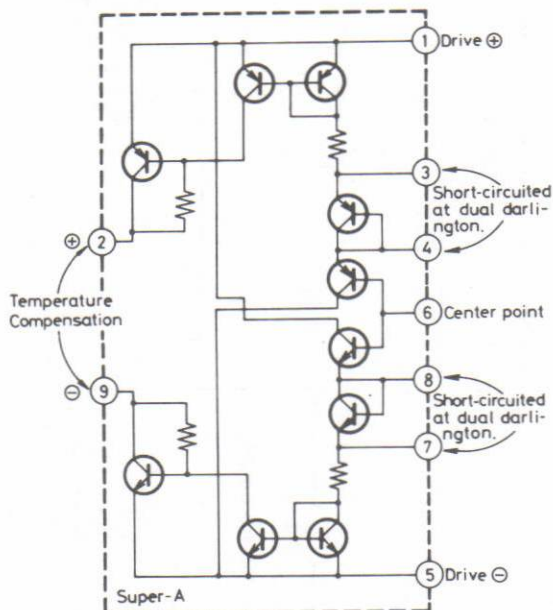


# Internal Block Diagrams of ICs

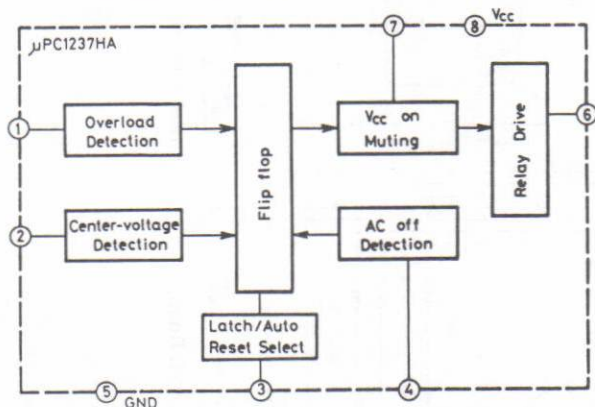
## ■ LC7818 (IC101): Analog Switch



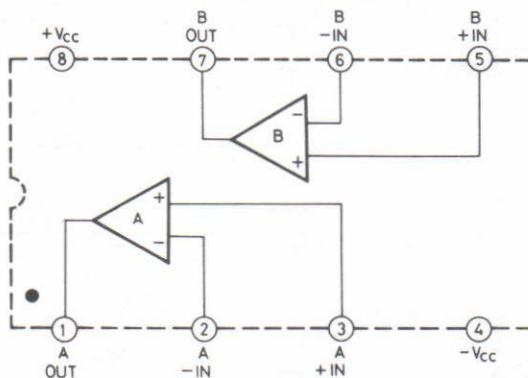
## ■ VC5022 [X, Y] (IC751, IC752): Super-A



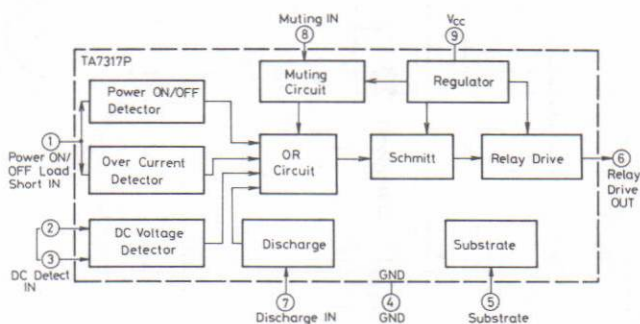
## ■ $\mu$ PC1237HA (IC901): Relay Driver



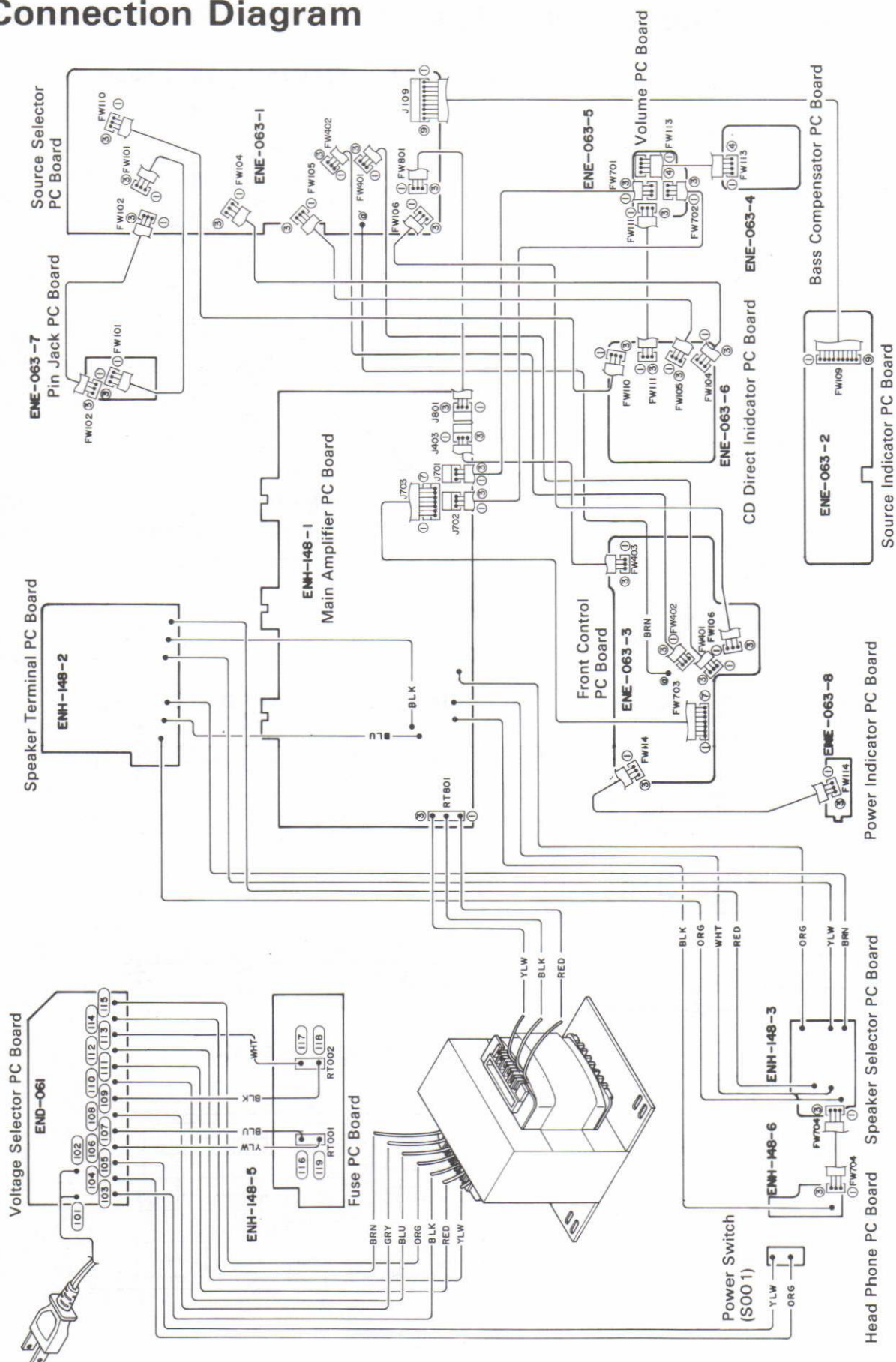
## ■ NJM4560DD (IC301): Dual OP Amp.



## ■ TA7317P (IC102): Driver



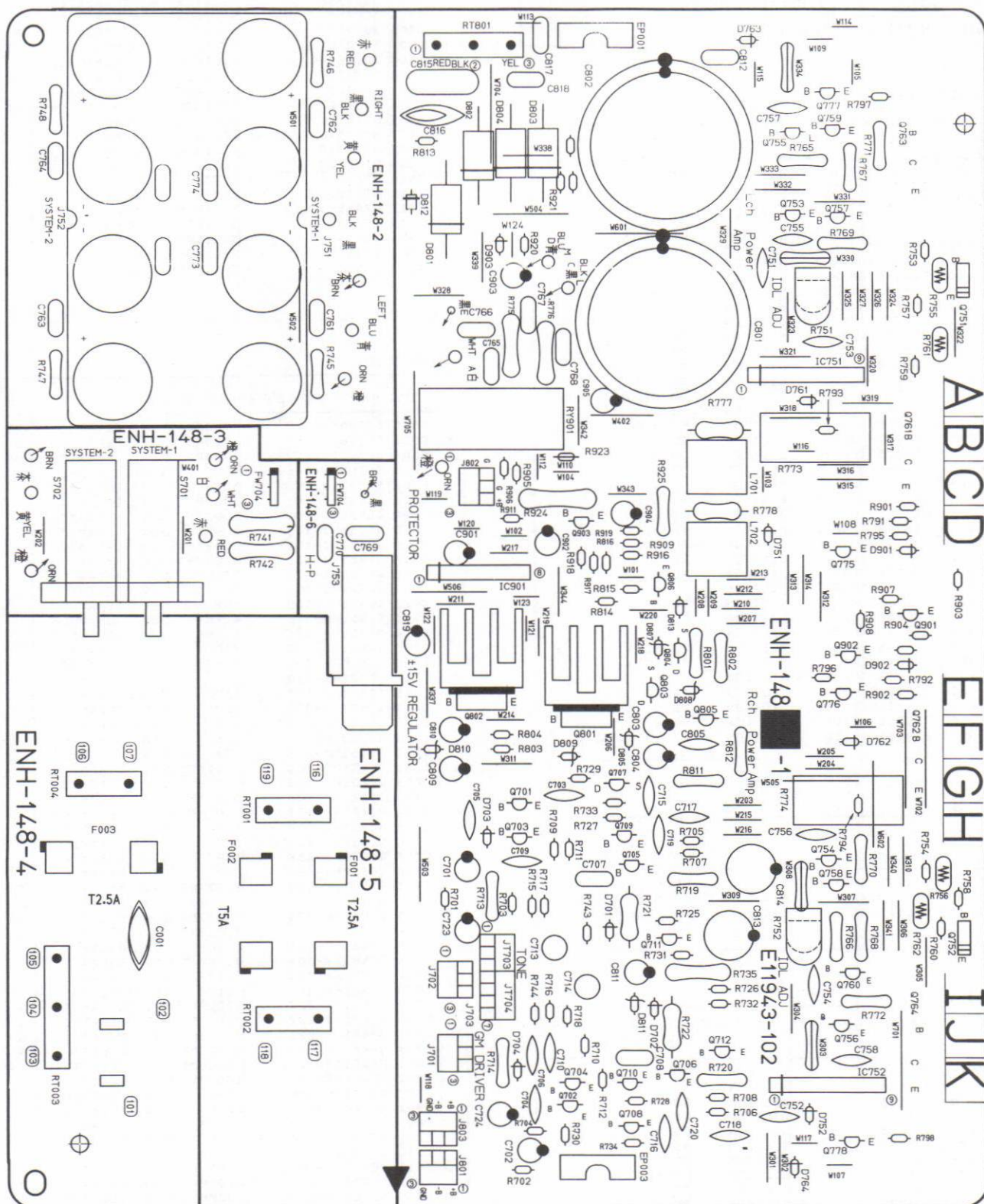
# Connection Diagram



# Printed Circuit Board Ass'y and Parts List

■ ENH-148 □ Main Amplifier PC Board Ass'y

Note: ENH-148 □ varies according to the areas employed. See note (1) when placing an order.



# Note (1)

| PC Board Ass'y      | Designated Areas               |
|---------------------|--------------------------------|
| ENH-148 <b>E</b>    | Other Countries                |
| ENH-148 <b>F</b>    | Continental Europe , Austraria |
| ENH-148 <b>G</b>    | West Germany                   |
| ENH-148 <b>H</b> BS | the U.K.                       |

# Transistors

| ITEM | PART NUMBER    | DESCRIPTION        | AREA |
|------|----------------|--------------------|------|
|      |                | MAKER              |      |
| Q701 | 2SC2240(A,B)   | SILICON TOSHIBA    |      |
| Q702 | 2SC2240(A,B)   | SILICON TOSHIBA    |      |
| Q703 | 2SC2240(A,B)   | SILICON TOSHIBA    |      |
| Q704 | 2SC2240(A,B)   | SILICON TOSHIBA    |      |
| Q705 | 2SA970(GR,BL)  | SILICON TOSHIBA    |      |
| Q706 | 2SA970(GR,BL)  | SILICON TOSHIBA    |      |
| Q707 | 2SA970(GR,BL)  | SILICON TOSHIBA    |      |
| Q708 | 2SA970(GR,BL)  | SILICON TOSHIBA    |      |
| Q709 | 2SA933LN(R,S)  | SILICON ROHM       |      |
| Q710 | 2SA933LN(R,S)  | SILICON ROHM       |      |
| Q711 | 2SC2240(GR,BL) | SILICON TOSHIBA    |      |
| Q712 | 2SC2240(GR,BL) | SILICON TOSHIBA    |      |
| Q751 | 2SD636(Q,R)    | SILICON MATSUSHITA |      |
| Q752 | 2SD636(Q,R)    | SILICON MATSUSHITA |      |
| Q753 | 2SC2240(BL)    | SILICON TOSHIBA    |      |
| Q754 | 2SC2240(BL)    | SILICON TOSHIBA    |      |
| Q755 | 2SA970(BL)     | SILICON TOSHIBA    |      |
| Q756 | 2SA970(BL)     | SILICON TOSHIBA    |      |
| Q757 | 2SC2235(O,Y)   | SILICON TOSHIBA    |      |
| Q758 | 2SC2235(O,Y)   | SILICON TOSHIBA    |      |
| Q759 | 2SA965(O,Y)    | SILICON TOSHIBA    |      |
| Q760 | 2SA965(O,Y)    | SILICON TOSHIBA    |      |
| Q761 | 2SD2155LB(R,O) | SILICON TOSHIBA    |      |
| Q762 | 2SD2155LB(R,O) | SILICON TOSHIBA    |      |
| Q763 | 2SB1429LB(R,O) | SILICON TOSHIBA    |      |
| Q764 | 2SB1429LB(R,O) | SILICON TOSHIBA    |      |
| Q775 | 2SC1740S(R,S)  | SILICON ROHM       |      |
| Q776 | 2SC1740S(R,S)  | SILICON ROHM       |      |
| Q777 | 2SA933S(R,S)   | SILICON ROHM       |      |
| Q778 | 2SA933S(R,S)   | SILICON ROHM       |      |
| Q801 | 2SD2061(E,F)   | SILICON ROHM       |      |
| Q802 | 2SB1187(E,F)   | SILICON ROHM       |      |
| Q803 | 2SK246(GR)     | F.E.T TOSHIBA      |      |
| Q804 | 2SK246(GR)     | F.E.T TOSHIBA      |      |
| Q805 | 2SA933S(R,S)   | SILICON ROHM       |      |
| Q806 | 2SC3068        | SILICON SANYO      |      |
| Q901 | 2SC2389(S,E)   | SILICON ROHM       |      |
| Q902 | 2SC2389(S,E)   | SILICON ROHM       |      |
| Q903 | 2SA564A(R,S)   | SILICON MATSUSHITA |      |

# I. C. S.

| ITEM  | PART NUMBER | DESCRIPTION | AREA |
|-------|-------------|-------------|------|
|       |             | MAKER       |      |
| IC751 | VC5022(X,Y) | I.C. ROHM   |      |
| IC752 | VC5022(X,Y) | I.C. ROHM   |      |
| IC901 | UPC1237HA   | I.C. NEC    |      |

# Diodes

| ITEM | PART NUMBER | DESCRIPTION        | AREA |
|------|-------------|--------------------|------|
|      |             | MAKER              |      |
| D701 | 1SS133      | SILICON ROHM       |      |
| D702 | 1SS133      | SILICON ROHM       |      |
| D703 | 1SS133      | SILICON ROHM       |      |
| D704 | 1SS133      | SILICON ROHM       |      |
| D751 | 1SS133      | SILICON ROHM       |      |
| D752 | 1SS133      | SILICON ROHM       |      |
| D761 | 1SS133      | SILICON ROHM       |      |
| D762 | 1SS133      | SILICON ROHM       |      |
| D763 | 1SS133      | SILICON ROHM       |      |
| D764 | 1SS133      | SILICON ROHM       |      |
| D801 | 30DF2SFC    | SILICON NIHONINTER | G    |
| D801 | 30D2FC      | SILICON NIHONINTER | E    |
| D801 | 30D2FC      | SILICON NIHONINTER | F    |
| D801 | 30D2FC      | SILICON NIHONINTER | HBS  |
| D802 | 30DF2SFC    | SILICON NIHONINTER | G    |

# Diodes

| ITEM | PART NUMBER | DESCRIPTION        | AREA |
|------|-------------|--------------------|------|
|      |             | MAKER              |      |
| D802 | 30D2FC      | SILICON NIHONINTER | E    |
| D802 | 30D2FC      | SILICON NIHONINTER | F    |
| D802 | 30D2FC      | SILICON NIHONINTER | HBS  |
| D803 | 30DF2SFC    | SILICON NIHONINTER | G    |
| D803 | 30D2FC      | SILICON NIHONINTER | E    |
| D803 | 30D2FC      | SILICON NIHONINTER | F    |
| D803 | 30D2FC      | SILICON NIHONINTER | HBS  |
| D804 | 30DF2SFC    | SILICON NIHONINTER | G    |
| D804 | 30D2FC      | SILICON NIHONINTER | E    |
| D804 | 30D2FC      | SILICON NIHONINTER | F    |
| D804 | 30D2FC      | SILICON NIHONINTER | HBS  |
| D805 | MTZ15JC     | ZENER ROHM         |      |
| D807 | MTZ13JC     | ZENER ROHM         |      |
| D808 | MTZ13JC     | ZENER ROHM         |      |
| D809 | MTZ18JC     | ZENER ROHM         |      |
| D810 | MTZ18JC     | ZENER ROHM         |      |
| D811 | MTZ18JC     | ZENER ROHM         |      |
| D812 | ERA15-02L19 | SILICON KYOUDOU    |      |
| D813 | 1SS133      | SILICON ROHM       |      |
| D901 | 1SS133      | SILICON ROHM       |      |
| D902 | 1SS133      | SILICON ROHM       |      |
| D903 | 1SS133      | SILICON ROHM       |      |

# Capacitors

| ITEM | PART NUMBER   | DESCRIPTION        | AREA |
|------|---------------|--------------------|------|
|      |               |                    |      |
| C001 | QCZ9019-472   | 4700PF CERAMIC     | F    |
| C001 | QCZ9019-472   | 4700PF CERAMIC     | G    |
| C001 | QCZ9019-472BS | 4700PF CERAMIC     | HBS  |
| C701 | EETB2AM-106E  | 10MF 100V ELECTRO  |      |
| C702 | EETB2AM-106E  | 10MF 100V ELECTRO  |      |
| C703 | QCS21HJ-101   | 100PF 50V CERAMIC  |      |
| C704 | QCS21HJ-101   | 100PF 50V CERAMIC  |      |
| C705 | QCS21HJ-101   | 100PF 50V CERAMIC  |      |
| C706 | QCS21HJ-101   | 100PF 50V CERAMIC  |      |
| C707 | QFN81HK-332   | 3300PF 50V MYLAR   |      |
| C708 | QFN81HK-332   | 3300PF 50V MYLAR   |      |
| C709 | QCS21HJ-100   | 10PF 50V CERAMIC   |      |
| C710 | QCS21HJ-100   | 10PF 50V CERAMIC   |      |
| C713 | QEN51HM-475   | 4.7MF 50V NON POLE |      |
| C714 | QEN51HM-475   | 4.7MF 50V NON POLE |      |
| C715 | QCS21HJ-330   | 33PF 50V CERAMIC   |      |
| C716 | QCS21HJ-330   | 33PF 50V CERAMIC   |      |
| C717 | QCS21HJ-330   | 33PF 50V CERAMIC   |      |
| C718 | QCS21HJ-330   | 33PF 50V CERAMIC   |      |
| C719 | QCS32HJ-220   | 22PF 500V CERAMIC  |      |
| C720 | QCS32HJ-220   | 22PF 500V CERAMIC  |      |
| C723 | QETB1CM-476   | 47MF 16V ELECTRO   |      |
| C724 | QETB1CM-476   | 47MF 16V ELECTRO   |      |
| C751 | QCF21HP-103   | 0.01MF 50V CERAMIC |      |
| C752 | QCF21HP-103   | 0.01MF 50V CERAMIC |      |
| C753 | QCF21HP-103   | 0.01MF 50V CERAMIC |      |
| C754 | QCF21HP-103   | 0.01MF 50V CERAMIC |      |
| C755 | QCS32HJ-680   | 68PF 500V CERAMIC  |      |
| C756 | QCS32HJ-680   | 68PF 500V CERAMIC  |      |
| C757 | QCS32HJ-680   | 68PF 500V CERAMIC  |      |
| C758 | QCS32HJ-680   | 68PF 500V CERAMIC  |      |
| C761 | QFN81HK-223   | 0.022MF 50V MYLAR  | G    |
| C762 | QFN81HK-223   | 0.022MF 50V MYLAR  | G    |
| C763 | QFN81HK-223   | 0.022MF 50V MYLAR  | G    |
| C764 | QFN81HK-223   | 0.022MF 50V MYLAR  | G    |
| C765 | QFN81HK-104   | 0.1MF 50V MYLAR    |      |
| C766 | QFN81HK-104   | 0.1MF 50V MYLAR    |      |
| C767 | QFN81HK-104   | 0.1MF 50V MYLAR    |      |
| C768 | QFN81HK-104   | 0.1MF 50V MYLAR    |      |
| C769 | QCF21HP-222   | 2200PF 50V CERAMIC | G    |
| C770 | QCF21HP-222   | 2200PF 50V CERAMIC | G    |
| C773 | QFN81HK-223   | 0.022MF 50V MYLAR  | G    |
| C774 | QFN81HK-223   | 0.022MF 50V MYLAR  | G    |
| C801 | EEW7103-109T  | 10000MF ELECTRO    |      |
| C802 | EEW7103-109T  | 10000MF ELECTRO    |      |
| C803 | QETB1HM-476   | 47MF 50V ELECTRO   |      |
| C804 | QETB1HM-476   | 47MF 50V ELECTRO   |      |
| C805 | QCS21HJ-101   | 100PF 50V CERAMIC  |      |
| C809 | QETB1EM-476   | 47MF 25V ELECTRO   |      |
| C810 | QETB1EM-476   | 47MF 25V ELECTRO   |      |
| C811 | QETB1EM-106   | 10MF 25V ELECTRO   |      |
| C812 | QFN32AK-472   | 4700PF 100V MYLAR  | G    |
| C813 | QETB1JM-107   | 100MF 63V ELECTRO  |      |
| C814 | QETB1JM-107   | 100MF 63V ELECTRO  |      |
| C815 | QFH42EK-104   | 0.1MF 250V M.MYLAR |      |

Δ : SAFETY PARTS

## Capacitors

| △ | ITEM | PART NUMBER  | DESCRIPTION |      |         | AREA |
|---|------|--------------|-------------|------|---------|------|
|   | C816 | QCE22HP-103A | 0.01MF      | 500V | CERAMIC |      |
|   | C817 | QFN82AK-472  | 4700PF      | 100V | MYLAR   | G    |
|   | C818 | QFN82AK-104  | 0.1MF       | 100V | MYLAR   | G    |
|   | C819 | QETB1HM-105  | 1MF         | 50V  | ELECTRO |      |
|   | C901 | QETB1AM-227  | 220MF       | 10V  | ELECTRO |      |
|   | C902 | QETB1CM-226  | 22MF        | 16V  | ELECTRO |      |
|   | C903 | QETB1HM-475  | 4.7MF       | 50V  | ELECTRO |      |
|   | C904 | QETB1HM-226  | 22MF        | 50V  | ELECTRO |      |
|   | C905 | QETB1HM-105  | 1MF         | 50V  | ELECTRO |      |

## Resistors

| △ | ITEM | PART NUMBER   | DESCRIPTION |       |             | AREA |
|---|------|---------------|-------------|-------|-------------|------|
|   | R701 | QRD167J-222   | 2.2K        | 1/6W  | CARBON      |      |
|   | R702 | QRD167J-222   | 2.2K        | 1/6W  | CARBON      |      |
|   | R703 | QRD167J-104   | 100K        | 1/6W  | CARBON      |      |
|   | R704 | QRD167J-104   | 100K        | 1/6W  | CARBON      |      |
|   | R705 | QRD167J-202   | 2K          | 1/6W  | CARBON      |      |
|   | R706 | QRD167J-202   | 2K          | 1/6W  | CARBON      |      |
|   | R707 | QRD167J-202   | 2K          | 1/6W  | CARBON      |      |
|   | R708 | QRD167J-202   | 2K          | 1/6W  | CARBON      |      |
|   | R709 | QRD167J-103   | 10K         | 1/6W  | CARBON      |      |
|   | R710 | QRD167J-103   | 10K         | 1/6W  | CARBON      |      |
|   | R711 | QRD167J-101   | 100         | 1/6W  | CARBON      |      |
|   | R712 | QRD167J-101   | 100         | 1/6W  | CARBON      |      |
| △ | R713 | QRD14CJ-911S  | 910         | 1/4W  | UNF. CARBON |      |
| △ | R714 | QRD14CJ-911S  | 910         | 1/4W  | UNF. CARBON |      |
|   | R715 | QRD167J-163   | 16K         | 1/6W  | CARBON      |      |
|   | R716 | QRD167J-163   | 16K         | 1/6W  | CARBON      |      |
|   | R717 | QRD167J-823   | 82K         | 1/6W  | CARBON      |      |
|   | R718 | QRD167J-823   | 82K         | 1/6W  | CARBON      |      |
| △ | R719 | QRD14CJ-121S  | 120         | 1/4W  | UNF. CARBON |      |
|   | R720 | QRD14CJ-121S  | 120         | 1/4W  | UNF. CARBON |      |
| △ | R721 | QRG012J-103A  | 10K         | 1W    | O.M. FILM   |      |
| △ | R722 | QRG012J-103A  | 10K         | 1W    | O.M. FILM   |      |
|   | R725 | QRD167J-391   | 390         | 1/6W  | CARBON      |      |
|   | R726 | QRD167J-391   | 390         | 1/6W  | CARBON      |      |
|   | R727 | QRD167J-152   | 1.5K        | 1/6W  | CARBON      |      |
|   | R728 | QRD167J-152   | 1.5K        | 1/6W  | CARBON      |      |
|   | R729 | QRD167J-333   | 33K         | 1/6W  | CARBON      |      |
|   | R730 | QRD167J-333   | 33K         | 1/6W  | CARBON      |      |
|   | R731 | QRD167J-391   | 390         | 1/6W  | CARBON      |      |
|   | R732 | QRD167J-391   | 390         | 1/6W  | CARBON      |      |
|   | R733 | QRD167J-152   | 1.5K        | 1/6W  | CARBON      |      |
|   | R734 | QRD167J-152   | 1.5K        | 1/6W  | CARBON      |      |
| △ | R735 | QRG01CJ-392A  | 3.9K        | 1W    | O.M. FILM   |      |
| △ | R741 | QRG01CJ-331A  | 330         | 1W    | O.M. FILM   |      |
| △ | R742 | QRG01CJ-331A  | 330         | 1W    | O.M. FILM   |      |
|   | R743 | QRD167J-104   | 100K        | 1/6W  | CARBON      |      |
|   | R744 | QRD167J-104   | 100K        | 1/6W  | CARBON      |      |
| △ | R745 | QRZ0077-4R7   | 4.7         | 1/4W  | FUSIBLE     | G    |
| △ | R746 | QRZ0077-4R7   | 4.7         | 1/4W  | FUSIBLE     | G    |
| △ | R747 | QRZ0077-4R7   | 4.7         | 1/4W  | FUSIBLE     | G    |
| △ | R748 | QRZ0077-4R7   | 4.7         | 1/4W  | FUSIBLE     | G    |
|   | R751 | QVPE601-501   | 500         | 0.15W | VARIABLE    |      |
|   | R752 | QVPE601-501   | 500         | 0.15W | VARIABLE    |      |
|   | R753 | QRD167J-101   | 100         | 1/6W  | CARBON      |      |
|   | R754 | QRD167J-101   | 100         | 1/6W  | CARBON      |      |
|   | R755 | ERT-D2WFL351S | 350         | 1/4W  | THERMISTOR  |      |
|   | R756 | ERT-D2WFL351S | 350         | 1/4W  | THERMISTOR  |      |
|   | R757 | QRD167J-471   | 470         | 1/6W  | CARBON      |      |
|   | R758 | QRD167J-471   | 470         | 1/6W  | CARBON      |      |
|   | R759 | QRD167J-391   | 390         | 1/6W  | CARBON      |      |
|   | R760 | QRD167J-391   | 390         | 1/6W  | CARBON      |      |
|   | R761 | ERT-D2WHL202S | 2K          | 1/4W  | THERMISTOR  |      |
|   | R762 | ERT-D2WHL202S | 2K          | 1/4W  | THERMISTOR  |      |
| △ | R765 | QRZ0077-272   | 2.7K        | 1/4W  | FUSIBLE     |      |
| △ | R766 | QRZ0077-272   | 2.7K        | 1/4W  | FUSIBLE     |      |
| △ | R767 | QRZ0077-471   | 470         | 1/4W  | FUSIBLE     |      |
| △ | R768 | QRZ0077-471   | 470         | 1/4W  | FUSIBLE     |      |
| △ | R769 | QRZ0077-100   | 10          | 1/4W  | FUSIBLE     |      |
| △ | R770 | QRZ0077-100   | 10          | 1/4W  | FUSIBLE     |      |
| △ | R771 | QRZ0077-100   | 10          | 1/4W  | FUSIBLE     |      |
| △ | R772 | QRZ0077-100   | 10          | 1/4W  | FUSIBLE     |      |
| △ | R773 | ERF032K-R22   | 0.22        | 3W    | CEMENT      |      |
| △ | R774 | ERF032K-R22   | 0.22        | 3W    | CEMENT      |      |
| △ | R775 | QRG01CJ-100A  | 10          | 1W    | O.M. FILM   |      |
| △ | R776 | QRG01CJ-100A  | 10          | 1W    | O.M. FILM   |      |
| △ | R777 | QRD125J-101   | 100         | 1/2W  | UNF. CARBON | G    |
| △ | R777 | QRD125J-330   | 33          | 1/2W  | UNF. CARBON | F    |
| △ | R777 | QRD125J-330   | 33          | 1/2W  | UNF. CARBON | F    |
| △ | R777 | QRD125J-330   | 33          | 1/2W  | UNF. CARBON | HBS  |
| △ | R778 | QRD125J-101   | 100         | 1/2W  | UNF. CARBON | G    |

## Resistors

| △ | ITEM | PART NUMBER  | DESCRIPTION |      |             | AREA |
|---|------|--------------|-------------|------|-------------|------|
| △ | R778 | QRD125J-330  | 33          | 1/2W | UNF. CARBON | E    |
| △ | R778 | QRD125J-330  | 33          | 1/2W | UNF. CARBON | F    |
| △ | R778 | QRD125J-330  | 33          | 1/2W | UNF. CARBON | HBS  |
|   | R791 | QRD167J-621  | 620         | 1/6W | CARBON      |      |
|   | R792 | QRD167J-621  | 620         | 1/6W | CARBON      |      |
|   | R793 | QRD167J-621  | 620         | 1/6W | CARBON      |      |
|   | R794 | QRD167J-621  | 620         | 1/6W | CARBON      |      |
|   | R795 | QRD167J-151  | 150         | 1/6W | CARBON      |      |
|   | R796 | QRD167J-151  | 150         | 1/6W | CARBON      |      |
|   | R797 | QRD167J-151  | 150         | 1/6W | CARBON      |      |
|   | R798 | QRD167J-151  | 150         | 1/6W | CARBON      |      |
| △ | R801 | QRZ0077-100  | 10          | 1/4W | FUSIBLE     |      |
| △ | R802 | QRZ0077-330  | 33          | 1/4W | FUSIBLE     |      |
|   | R803 | QRD167J-223  | 22K         | 1/6W | CARBON      |      |
|   | R804 | QRD167J-203  | 20K         | 1/6W | CARBON      |      |
| △ | R811 | QRZ0077-330  | 33          | 1/4W | FUSIBLE     |      |
| △ | R812 | QRZ0077-330  | 33          | 1/4W | FUSIBLE     |      |
|   | R813 | QRD167J-123  | 12K         | 1/6W | CARBON      |      |
|   | R814 | QRD167J-563  | 56K         | 1/6W | CARBON      |      |
|   | R815 | QRD167J-221  | 220         | 1/6W | CARBON      |      |
|   | R816 | QRD167J-393  | 39K         | 1/6W | CARBON      |      |
|   | R901 | QRD167J-272  | 2.7K        | 1/6W | CARBON      |      |
|   | R902 | QRD167J-272  | 2.7K        | 1/6W | CARBON      |      |
|   | R903 | QRD167J-153  | 15K         | 1/6W | CARBON      |      |
|   | R904 | QRD167J-153  | 15K         | 1/6W | CARBON      |      |
|   | R905 | QRD167J-104  | 100K        | 1/6W | CARBON      |      |
|   | R906 | QRD167J-813  | 82K         | 1/6W | CARBON      |      |
|   | R907 | QRD167J-223  | 22K         | 1/6W | CARBON      |      |
|   | R908 | QRD167J-223  | 22K         | 1/6W | CARBON      |      |
|   | R909 | QRD167J-103  | 10K         | 1/6W | CARBON      |      |
|   | R911 | QRD167J-473  | 47K         | 1/6W | CARBON      |      |
|   | R916 | QRD167J-103  | 10K         | 1/6W | CARBON      |      |
|   | R917 | QRD167J-103  | 10K         | 1/6W | CARBON      |      |
|   | R918 | QRD167J-224  | 220K        | 1/6W | CARBON      |      |
|   | R919 | QRD167J-332  | 3.3K        | 1/6W | CARBON      |      |
|   | R920 | QRD167J-273  | 27K         | 1/6W | CARBON      |      |
|   | R921 | QRD167J-153  | 15K         | 1/6W | CARBON      |      |
|   | R923 | QRD167J-101  | 100         | 1/6W | CARBON      |      |
| △ | R924 | QRG02CJ-122A | 1.2K        | 2W   | O.M. FILM   |      |
| △ | R925 | QRZ0077-100  | 10          | 1/4W | FUSIBLE     |      |

## Others

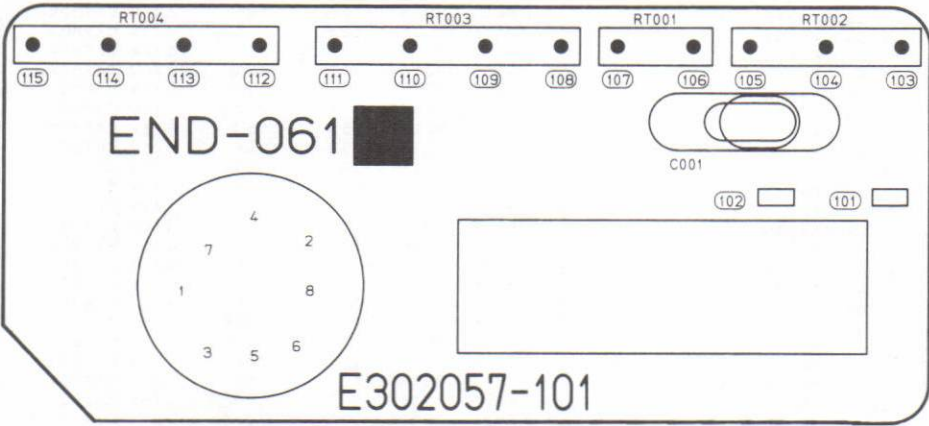
| △ | ITEM  | PART NUMBER  | DESCRIPTION       |  |  | AREA |
|---|-------|--------------|-------------------|--|--|------|
|   |       | EMG7331-002  | FUSE CLIP         |  |  |      |
|   |       | EWT011-078   | TERMINAL WIRE     |  |  | G    |
|   |       | EWT011-112   | TERMINAL WIRE     |  |  | G    |
|   |       | E11943-102   | CIRCUIT BOARD     |  |  | E    |
|   |       | E11943-102   | CIRCUIT BOARD     |  |  | F    |
|   |       | E11943-102   | CIRCUIT BOARD     |  |  | G    |
|   |       | E11943-102BS | CIRCUIT BOARD     |  |  | HBS  |
|   |       | E300209-030  | HEAT SINK         |  |  |      |
|   |       | E305804-001  | HOLDER            |  |  |      |
|   |       | E305805-001  | HOLDER            |  |  |      |
|   |       | E33754-001   | TIE BAND          |  |  |      |
|   |       | E65508-002   | TAB               |  |  | F    |
|   |       | E65508-002   | TAB               |  |  | G    |
|   |       | E65508-002   | TAB               |  |  | HBS  |
|   |       | E70945-H25   | HEAT SINK         |  |  |      |
|   |       | E73525-003   | SCREW             |  |  |      |
|   |       | E74266-002   | SCREW             |  |  |      |
|   |       | GBS83008CC   | SCREW             |  |  |      |
|   |       | SBS83008CC   | SCREW             |  |  |      |
|   |       | SBS83008CC   | SCREW             |  |  |      |
|   | J701  | EMV7122-003  | CONNECTOR         |  |  |      |
|   | J702  | EMV7122-003  | CONNECTOR         |  |  |      |
|   | J751  | EMB00TP-801C | SPEAKER TERMINAL  |  |  |      |
|   | J752  | EMB00TP-801C | SPEAKER TERMINAL  |  |  |      |
|   | J753  | QMS6A40-021  | HEADPHONE JACK    |  |  |      |
|   | J801  | EMV7122-003  | CONNECTOR         |  |  |      |
|   | J803  | EMV7122-003  | CONNECTOR         |  |  |      |
|   | L701  | EQL0001-1R0  | INDUCTOR          |  |  |      |
|   | L702  | EQL0001-1R0  | INDUCTOR          |  |  |      |
|   | S701  | QST4231-E04  | PUSH SWITCH       |  |  |      |
|   | S702  | QST4231-E04  | PUSH SWITCH       |  |  |      |
|   | EP001 | E70859-001   | EARTH PLATE       |  |  | G    |
|   | EP003 | E70859-001   | EARTH PLATE       |  |  |      |
|   | FW704 | EWR33B-08SST | FLAT WIRE         |  |  |      |
|   | JT703 | EMV7122-003  | CONNECTOR         |  |  |      |
|   | JT704 | EMV7122-004  | CONNECTOR         |  |  |      |
|   | RT001 | E67764-202   | WRAPPING TERMINAL |  |  | E    |
|   | RT002 | E67764-202   | WRAPPING TERMINAL |  |  | E    |
|   | RT003 | E67764-203   | WRAPPING TERMINAL |  |  | F    |
|   | RT003 | E67764-203   | WRAPPING TERMINAL |  |  | G    |

△ : SAFETY PARTS

Others

| ITEM  | PART NUMBER | DESCRIPTION       | AREA |
|-------|-------------|-------------------|------|
| RT003 | E67764-203  | WRAPPING TERMINAL | HBS  |
| RT004 | E67764-202  | WRAPPING TERMINAL | F    |
| RT004 | E67764-202  | WRAPPING TERMINAL | G    |
| RT004 | E67764-202  | WRAPPING TERMINAL | HBS  |
| RT801 | E67764-103  | WRAPPING TERMINAL |      |
| RY901 | ESK5024-218 | RELAY             |      |

■END-061 B Voltage Selector PC Board Ass'y ( for Other Countries Only)



Capacitors

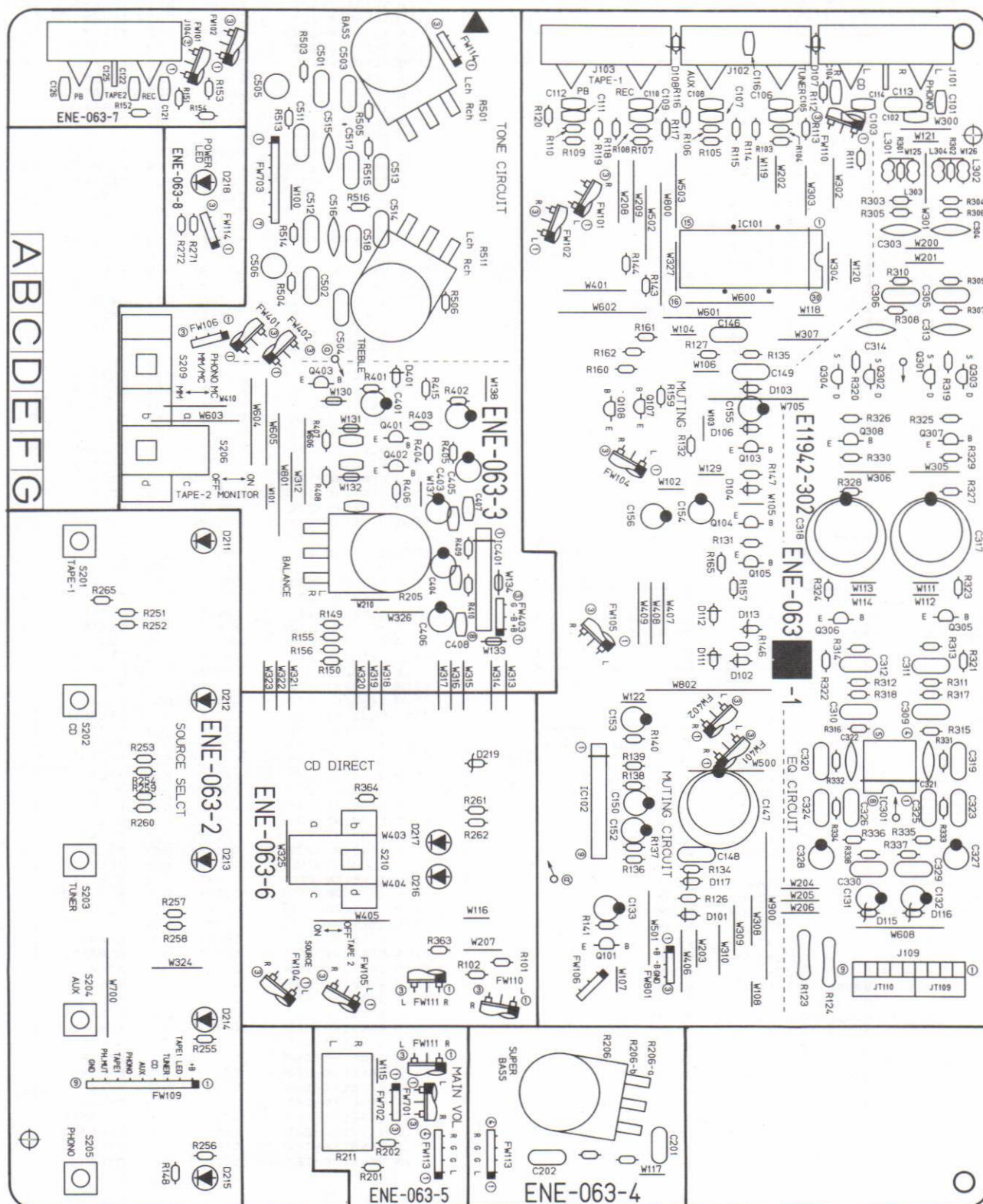
| ITEM | PART NUMBER | DESCRIPTION    | AREA |
|------|-------------|----------------|------|
| C001 | QCZ9018-103 | 0.01MF CERAMIC |      |

Others

| ITEM | PART NUMBER | DESCRIPTION       | AREA |
|------|-------------|-------------------|------|
|      | E302057-101 | CIRCUIT BOARD     |      |
|      | E65508-002  | TAB               |      |
|      | E67764-302  | WRAPPING TERMINAL |      |
|      | E67764-303  | WRAPPING TERMINAL |      |
|      | E67764-304  | WRAPPING TERMINAL |      |
|      | QMC0637-004 | AC OUTLET         |      |
|      | QSR0085-018 | VOLTAGE SELECTOR  |      |

■ ENE-063 ☐ Source Selector PC Board Ass'y

**Note:** ENE-063 ☐ varies according to the areas employed . See note (1) when placing an order.



# Note (1)

| PC Board Ass'y   | Designated Areas                          |
|------------------|-------------------------------------------|
| ENE-063 <b>A</b> | Other Countries                           |
| ENE-063 <b>B</b> | Continental Europe, Austraria<br>the U.K. |
| ENE-063 <b>C</b> | West Germany                              |

## Transistors

| Δ | ITEM | PART NUMBER  | DESCRIPTION     | AREA |
|---|------|--------------|-----------------|------|
|   |      |              | MAKER           |      |
|   | Q101 | DTA144ES     | SILICON ROHM    |      |
|   | Q103 | 2SC2389(S,E) | SILICON ROHM    |      |
|   | Q104 | DTA144ES     | SILICON ROHM    |      |
|   | Q105 | DTA144ES     | SILICON ROHM    |      |
|   | Q107 | 2SC3792      | SILICON SANYO   |      |
|   | Q108 | 2SC3792      | SILICON SANYO   |      |
|   | Q301 | 2SK170(BL)   | F.E.T TOSHIBA   |      |
|   | Q302 | 2SK170(BL)   | F.E.T TOSHIBA   |      |
|   | Q303 | 2SK170(BL)   | F.E.T TOSHIBA   |      |
|   | Q304 | 2SK170(BL)   | F.E.T TOSHIBA   |      |
|   | Q305 | 2SD655(E,F)  | SILICON HITACHI |      |
|   | Q306 | 2SD655(E,F)  | SILICON HITACHI |      |
|   | Q307 | 2SD655(E,F)  | SILICON HITACHI |      |
|   | Q308 | 2SD655(E,F)  | SILICON HITACHI |      |
|   | Q401 | 2SC3792      | SILICON SANYO   |      |
|   | Q402 | 2SC3792      | SILICON SANYO   |      |
|   | Q403 | DTA144ES     | SILICON ROHM    |      |

## I. C. S.

| Δ | ITEM  | PART NUMBER | DESCRIPTION   | AREA |
|---|-------|-------------|---------------|------|
|   |       |             | MAKER         |      |
|   | IC101 | LC7818      | I.C. SANYO    |      |
|   | IC102 | TA7317P     | I.C. TOSHIBA  |      |
|   | IC301 | NJM4560DD   | I.C. DAINICHI |      |
|   | IC401 | BA15218N    | I.C. ROHM     |      |

## Diodes

| Δ | ITEM | PART NUMBER     | DESCRIPTION  | AREA |
|---|------|-----------------|--------------|------|
|   |      |                 | MAKER        |      |
|   | D101 | 1SS133          | SILICON ROHM |      |
|   | D102 | 1SS133          | SILICON ROHM |      |
|   | D103 | 1SS133          | SILICON ROHM |      |
|   | D104 | 1SS133          | SILICON ROHM |      |
|   | D106 | 1SS133          | SILICON ROHM |      |
|   | D107 | MT23.3JB        | ZENER ROHM   |      |
|   | D108 | MT23.3JB        | ZENER ROHM   |      |
|   | D111 | 1SS133          | SILICON ROHM |      |
|   | D112 | 1SS133          | SILICON ROHM |      |
|   | D113 | MT25.6JC        | ZENER ROHM   |      |
|   | D115 | MT213JC         | ZENER ROHM   |      |
|   | D116 | MT213JC         | ZENER ROHM   |      |
|   | D117 | MT26.8JC        | ZENER ROHM   |      |
|   | D211 | SLR-331VR50F070 | L.E.D. ROHM  |      |
|   | D212 | SLR-331DU50F070 | L.E.D. ROHM  |      |
|   | D213 | SLR-331DU50F070 | L.E.D. ROHM  |      |
|   | D214 | SLR-331DU50F070 | L.E.D. ROHM  |      |
|   | D215 | SLR-331DU50F070 | L.E.D. ROHM  |      |
|   | D216 | SLR-34YC50F165  | L.E.D. ROHM  |      |
|   | D217 | SLR-34YC50F165  | L.E.D. ROHM  |      |
|   | D218 | SLR-331DU50F070 | L.E.D. ROHM  |      |
|   | D219 | MT25.1JC        | ZENER ROHM   |      |
|   | D401 | 1SS133          | SILICON ROHM |      |

## Capacitors

| Δ | ITEM | PART NUMBER  | DESCRIPTION         | AREA |
|---|------|--------------|---------------------|------|
|   | C101 | QCBB1HK-471  | 470PF 50V CERAMIC   | C    |
|   | C102 | QCBB1HK-471  | 470PF 50V CERAMIC   | C    |
|   | C103 | QCBB1HK-471  | 470PF 50V CERAMIC   | C    |
|   | C104 | QCBB1HK-471  | 470PF 50V CERAMIC   | C    |
|   | C105 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C106 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C107 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C108 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C109 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C110 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C111 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C112 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C113 | QFN81HJ-103  | 0.01MF 50V MYLAR    |      |
|   | C114 | QCHB1EZ-223  | 0.022MF 25V CERAMIC |      |
|   | C121 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C122 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C125 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C126 | QCBB1HK-221  | 220PF 50V CERAMIC   | C    |
|   | C131 | QETB1EM-107  | 100MF 25V ELECTRO   |      |
|   | C132 | QETB1EM-107  | 100MF 25V ELECTRO   |      |
|   | C133 | QETB1HM-106  | 10MF 50V ELECTRO    |      |
|   | C146 | QFN81HJ-562  | 5600PF 50V MYLAR    |      |
|   | C147 | QETB0JM-228  | 2200MF 6.3V ELECTRO |      |
|   | C148 | QFN81HJ-562  | 5600PF 50V MYLAR    |      |
|   | C149 | QFN81HK-473  | 0.047MF 50V MYLAR   |      |
|   | C150 | QETB1HM-225  | 2.2MF 50V ELECTRO   |      |
|   | C152 | QETB1CM-226  | 22MF 16V ELECTRO    |      |
|   | C153 | QETB1HM-475  | 4.7MF 50V ELECTRO   |      |
|   | C154 | QETB1CM-107  | 100MF 16V ELECTRO   |      |
|   | C155 | QETB1HM-474  | 0.47MF 50V ELECTRO  |      |
|   | C156 | QETB1HM-475  | 4.7MF 50V ELECTRO   |      |
|   | C201 | QFV81HJ-104  | 0.1MF 50V T.FILM    |      |
|   | C202 | QFV81HJ-104  | 0.1MF 50V T.FILM    |      |
|   | C303 | QCS21HJ-151  | 150PF 50V CERAMIC   |      |
|   | C304 | QCS21HJ-151  | 150PF 50V CERAMIC   |      |
|   | C305 | QFN81HK-103  | 0.01MF 50V MYLAR    |      |
|   | C306 | QFN81HK-103  | 0.01MF 50V MYLAR    |      |
|   | C309 | QFN81HK-392  | 3900PF 50V MYLAR    |      |
|   | C310 | QFN81HK-392  | 3900PF 50V MYLAR    |      |
|   | C311 | QFN81HK-822  | 8200PF 50V MYLAR    |      |
|   | C312 | QFN81HK-822  | 8200PF 50V MYLAR    |      |
|   | C313 | QCS21HJ-101  | 100PF 50V CERAMIC   | C    |
|   | C313 | QCS21HJ-680  | 68PF 50V CERAMIC    | A    |
|   | C313 | QCS21HJ-680  | 68PF 50V CERAMIC    | B    |
|   | C314 | QCS21HJ-101  | 100PF 50V CERAMIC   | C    |
|   | C314 | QCS21HJ-680  | 68PF 50V CERAMIC    | A    |
|   | C314 | QCS21HJ-680  | 68PF 50V CERAMIC    | B    |
|   | C317 | QETB0JM-228  | 2200MF 6.3V ELECTRO |      |
|   | C318 | QETB0JM-228  | 2200MF 6.3V ELECTRO |      |
|   | C319 | QFN81HJ-472  | 4700PF 50V MYLAR    |      |
|   | C320 | QFN81HJ-472  | 4700PF 50V MYLAR    |      |
|   | C321 | QCS21HJ-331  | 330PF 50V CERAMIC   |      |
|   | C322 | QCS21HJ-331  | 330PF 50V CERAMIC   |      |
|   | C323 | QFN81HJ-153  | 0.015MF 50V MYLAR   |      |
|   | C324 | QFN81HJ-153  | 0.015MF 50V MYLAR   |      |
|   | C325 | QFN81HJ-272  | 2700PF 50V MYLAR    |      |
|   | C326 | QFN81HJ-272  | 2700PF 50V MYLAR    |      |
|   | C327 | EETB2AM-106E | 10MF 100V ELECTRO   |      |
|   | C328 | EETB2AM-106E | 10MF 100V ELECTRO   |      |
|   | C329 | QFN81HJ-222  | 2200PF 50V MYLAR    | C    |
|   | C330 | QFN81HJ-222  | 2200PF 50V MYLAR    | C    |
|   | C401 | QEK51HM-474G | 0.47MF 50V ELECTRO  |      |
|   | C403 | QEK51EM-475G | 4.7MF 25V ELECTRO   |      |
|   | C404 | QEK51EM-475G | 4.7MF 25V ELECTRO   |      |
|   | C405 | QEK51EM-475G | 4.7MF 25V ELECTRO   |      |
|   | C406 | QEK51EM-475G | 4.7MF 25V ELECTRO   |      |
|   | C407 | QCBB1HK-101  | 100PF 50V CERAMIC   |      |
|   | C408 | QCBB1HK-101  | 100PF 50V CERAMIC   |      |
|   | C501 | QFN81HK-153  | 0.015MF 50V MYLAR   |      |
|   | C502 | QFN81HK-153  | 0.015MF 50V MYLAR   |      |
|   | C503 | QFN81HK-823  | 0.082MF 50V MYLAR   |      |
|   | C504 | QFN81HK-823  | 0.082MF 50V MYLAR   |      |
|   | C505 | QEN51HM-475  | 4.7MF 50V NON POLE  |      |
|   | C506 | QEN51HM-475  | 4.7MF 50V NON POLE  |      |
|   | C511 | QFN81HK-332  | 3300PF 50V MYLAR    |      |
|   | C512 | QFN81HK-332  | 3300PF 50V MYLAR    |      |
|   | C513 | QFN81HK-183  | 0.018MF 50V MYLAR   |      |
|   | C514 | QFN81HK-183  | 0.018MF 50V MYLAR   |      |
|   | C515 | QCS21HJ-221  | 220PF 50V CERAMIC   |      |
|   | C516 | QCS21HJ-221  | 220PF 50V CERAMIC   |      |
|   | C517 | QFN81HK-122  | 1200PF 50V MYLAR    |      |
|   | C518 | QFN81HK-122  | 1200PF 50V MYLAR    |      |

## Resistors

| ITEM | PART NUMBER   | DESCRIPTION      | AREA |
|------|---------------|------------------|------|
| R101 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R102 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R103 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R104 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R105 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R106 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R107 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R108 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R109 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R110 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R111 | QRD167J-471   | 470 1/6W CARBON  |      |
| R112 | QRD167J-471   | 470 1/6W CARBON  |      |
| R113 | QRD167J-471   | 470 1/6W CARBON  |      |
| R114 | QRD167J-471   | 470 1/6W CARBON  |      |
| R115 | QRD167J-471   | 470 1/6W CARBON  |      |
| R116 | QRD167J-471   | 470 1/6W CARBON  |      |
| R117 | QRD167J-471   | 470 1/6W CARBON  |      |
| R118 | QRD167J-471   | 470 1/6W CARBON  |      |
| R119 | QRD167J-471   | 470 1/6W CARBON  |      |
| R120 | QRD167J-471   | 470 1/6W CARBON  |      |
| R123 | QRZ0077-680   | 68 1/4W FUSIBLE  |      |
| R124 | QRZ0077-680   | 68 1/4W FUSIBLE  |      |
| R126 | QRD167J-104   | 100K 1/6W CARBON |      |
| R127 | QRD167J-104   | 100K 1/6W CARBON |      |
| R131 | QRD167J-103   | 10K 1/6W CARBON  |      |
| R132 | QRD167J-103   | 10K 1/6W CARBON  |      |
| R134 | QRD167J-103   | 10K 1/6W CARBON  |      |
| R135 | QRD167J-474   | 470K 1/6W CARBON |      |
| R136 | QRD167J-562   | 5.6K 1/6W CARBON |      |
| R137 | QRD167J-473   | 47K 1/6W CARBON  |      |
| R138 | QRD167J-392   | 3.9K 1/6W CARBON |      |
| R139 | QRD167J-104   | 100K 1/6W CARBON |      |
| R140 | QRD167J-104   | 100K 1/6W CARBON |      |
| R141 | QRD167J-223   | 22K 1/6W CARBON  |      |
| R143 | QRD167J-102   | 1K 1/6W CARBON   |      |
| R144 | QRD167J-102   | 1K 1/6W CARBON   |      |
| R146 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R147 | QRD167J-473   | 47K 1/6W CARBON  |      |
| R148 | QRD167J-273   | 27K 1/6W CARBON  |      |
| R149 | QRD167J-471   | 470 1/6W CARBON  |      |
| R150 | QRD167J-471   | 470 1/6W CARBON  |      |
| R151 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R152 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R153 | QRD167J-471   | 470 1/6W CARBON  |      |
| R154 | QRD167J-471   | 470 1/6W CARBON  |      |
| R155 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R156 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R157 | QRD167J-102   | 1K 1/6W CARBON   |      |
| R159 | QRD167J-333   | 33K 1/6W CARBON  |      |
| R160 | QRD167J-333   | 33K 1/6W CARBON  |      |
| R161 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R162 | QRD167J-105   | 1M 1/6W CARBON   |      |
| R201 | QRD167J-103   | 10K 1/6W CARBON  |      |
| R202 | QRD167J-103   | 10K 1/6W CARBON  |      |
| R205 | QVDB87M-EF5B  | 250K VARIABLE    |      |
| R206 | QVDB87A-E15B  | 100K VARIABLE    |      |
| R211 | QVDB87B-AF5VA | 250K VARIABLE    |      |
| R251 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R252 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R253 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R254 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R255 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R256 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R257 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R258 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R259 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R260 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R261 | QRD167J-122   | 1.2K 1/6W CARBON |      |
| R262 | QRD167J-112   | 1.1K 1/6W CARBON |      |
| R265 | QRD167J-104   | 100K 1/6W CARBON |      |
| R271 | QRD167J-132   | 1.3K 1/6W CARBON |      |
| R272 | QRD167J-152   | 1.5K 1/6W CARBON |      |
| R301 | QRD167J-202   | 2K 1/6W CARBON   | C    |
| R302 | QRD167J-202   | 2K 1/6W CARBON   | C    |
| R303 | QRD167J-473   | 47K 1/6W CARBON  |      |
| R304 | QRD167J-473   | 47K 1/6W CARBON  |      |
| R305 | QRD167J-471   | 470 1/6W CARBON  |      |
| R306 | QRD167J-471   | 470 1/6W CARBON  |      |
| R307 | QRD167J-5R6   | 5.6 1/6W CARBON  |      |
| R308 | QRD167J-5R6   | 5.6 1/6W CARBON  |      |
| R309 | QRD167J-101   | 100 1/6W CARBON  |      |
| R310 | QRD167J-101   | 100 1/6W CARBON  |      |
| R311 | QRD167J-562   | 5.6K 1/6W CARBON |      |
| R312 | QRD167J-562   | 5.6K 1/6W CARBON |      |
| R313 | QRD167J-270   | 27 1/6W CARBON   |      |
| R314 | QRD167J-270   | 27 1/6W CARBON   |      |
| R315 | QRD167J-561   | 560 1/6W CARBON  |      |
| R316 | QRD167J-561   | 560 1/6W CARBON  |      |
| R317 | QRD167J-562   | 5.6K 1/6W CARBON |      |
| R318 | QRD167J-562   | 5.6K 1/6W CARBON |      |

## Resistors

| ITEM | PART NUMBER  | DESCRIPTION      | AREA |
|------|--------------|------------------|------|
| R319 | QRD167J-222  | 2.2K 1/6W CARBON |      |
| R320 | QRD167J-222  | 2.2K 1/6W CARBON |      |
| R321 | QRD167J-272  | 2.7K 1/6W CARBON |      |
| R322 | QRD167J-272  | 2.7K 1/6W CARBON |      |
| R323 | QRD167J-273  | 27K 1/6W CARBON  |      |
| R324 | QRD167J-273  | 27K 1/6W CARBON  |      |
| R325 | QRD167J-273  | 27K 1/6W CARBON  |      |
| R326 | QRD167J-273  | 27K 1/6W CARBON  |      |
| R327 | QRD167J-180  | 18 1/6W CARBON   |      |
| R328 | QRD167J-180  | 18 1/6W CARBON   |      |
| R329 | QRD167J-221  | 220 1/6W CARBON  |      |
| R330 | QRD167J-221  | 220 1/6W CARBON  |      |
| R331 | QRD167J-153  | 15K 1/6W CARBON  |      |
| R332 | QRD167J-153  | 15K 1/6W CARBON  |      |
| R333 | QRD167J-184  | 180K 1/6W CARBON |      |
| R334 | QRD167J-184  | 180K 1/6W CARBON |      |
| R335 | QRD167J-471  | 470 1/6W CARBON  |      |
| R336 | QRD167J-471  | 470 1/6W CARBON  |      |
| R337 | QRD167J-104  | 100K 1/6W CARBON |      |
| R338 | QRD167J-104  | 100K 1/6W CARBON |      |
| R363 | QRD167J-471  | 470 1/6W CARBON  |      |
| R364 | QRD167J-471  | 470 1/6W CARBON  |      |
| R401 | QRD167J-102  | 1K 1/6W CARBON   |      |
| R402 | QRD167J-474  | 470K 1/6W CARBON |      |
| R403 | QRD167J-223  | 22K 1/6W CARBON  |      |
| R404 | QRD167J-223  | 22K 1/6W CARBON  |      |
| R405 | QRD167J-102  | 1K 1/6W CARBON   |      |
| R406 | QRD167J-102  | 1K 1/6W CARBON   |      |
| R407 | QRD167J-104  | 100K 1/6W CARBON |      |
| R408 | QRD167J-104  | 100K 1/6W CARBON |      |
| R409 | QRD167J-105  | 1M 1/6W CARBON   |      |
| R410 | QRD167J-105  | 1M 1/6W CARBON   |      |
| R501 | QVDB87C-E15B | 100K VARIABLE    |      |
| R503 | QRD167J-203  | 20K 1/6W CARBON  |      |
| R504 | QRD167J-203  | 20K 1/6W CARBON  |      |
| R505 | QRD167J-362  | 3.6K 1/6W CARBON |      |
| R506 | QRD167J-362  | 3.6K 1/6W CARBON |      |
| R511 | QVDB87C-E15B | 100K VARIABLE    |      |
| R513 | QRD167J-472  | 4.7K 1/6W CARBON |      |
| R514 | QRD167J-472  | 4.7K 1/6W CARBON |      |
| R515 | QRD167J-821  | 820 1/6W CARBON  |      |
| R516 | QRD167J-821  | 820 1/6W CARBON  |      |

△ : SAFETY PARTS

## Others

| ITEM        | PART NUMBER  | DESCRIPTION   | AREA |
|-------------|--------------|---------------|------|
| E11942-302  |              | CIRCUIT BOARD |      |
| E305983-002 |              | LED HOLDER    |      |
| E33754-001  |              | TIE BAND      |      |
| J101        | EMN00TV-405A | 4P PIN JACK   |      |
| J102        | EMN00TV-402A | 4P PIN JACK   |      |
| J103        | EMN00TV-402A | 4P PIN JACK   |      |
| J104        | EMN00TV-402A | 4P PIN JACK   |      |
| L301        | EQL4004-150  | INDUCTOR      | C    |
| L302        | EQL4004-150  | INDUCTOR      | C    |
| L303        | EQL4004-120  | INDUCTOR      | C    |
| L304        | EQL4004-120  | INDUCTOR      | C    |
| S201        | ESP0001-018  | TACT SWITCH   |      |
| S202        | ESP0001-018  | TACT SWITCH   |      |
| S203        | ESP0001-018  | TACT SWITCH   |      |
| S204        | ESP0001-018  | TACT SWITCH   |      |
| S205        | ESP0001-018  | TACT SWITCH   |      |
| S206        | QSTL251-E01  | PUSH SWITCH   |      |
| S210        | QSTL101-E05  | PUSH SWITCH   |      |
| FW101       | EWR23C-20NN  | FLAT WIRE     |      |
| FW102       | EWR23C-20NN  | FLAT WIRE     |      |
| FW104       | EWR23C-30NN  | FLAT WIRE     |      |
| FW105       | EWR23C-25NN  | FLAT WIRE     |      |
| FW106       | EWR33B-35SST | FLAT WIRE     |      |
| FW109       | EWR39B-20KST | FLAT WIRE     |      |
| FW110       | EWR23C-35NN  | FLAT WIRE     |      |
| FW111       | EWR23C-16NN  | FLAT WIRE     |      |
| FW113       | EWR34B-20SST | FLAT WIRE     |      |
| FW114       | EWR33B-13SST | FLAT WIRE     |      |
| FW401       | EWR23C-40NN  | FLAT WIRE     |      |
| FW402       | EWR23C-40NN  | FLAT WIRE     |      |
| FW403       | EWR33B-30LST | FLAT WIRE     |      |
| FW701       | EWR23C-10JN  | FLAT WIRE     |      |
| FW702       | EWR33B-13KST | FLAT WIRE     |      |
| FW703       | EWR37B-35KST | FLAT WIRE     |      |
| FW801       | EWR33B-10KST | FLAT WIRE     |      |
| JT109       | EMV7122-004  | CONNECTOR     |      |
| JT110       | EMV7122-005  | CONNECTOR     |      |

## Accessories List

|  | Part Number    | Part Name             | Q'ty | Description     | Areas     |
|---------------------------------------------------------------------------------|----------------|-----------------------|------|-----------------|-----------|
|                                                                                 | E30580-1601B   | Instruction Book      | 1    |                 | Except BS |
|                                                                                 | E30580-1601BBS | Instruction Book      | 1    |                 | BS        |
|                                                                                 | BT20117        | Warranty Card         | 1    |                 | G         |
|                                                                                 | BT20029C       | Warranty Card         | 1    | for Australia   | A         |
|                                                                                 | BT20119        | Warranty Card         | 1    | for New Zealand | A         |
|                                                                                 | BT20060        | Warranty Card         | 1    |                 | BS        |
|                                                                                 | BT20066A       | EEC Agency            | 1    |                 | BS        |
|                                                                                 | E43486-340A    | Safety Sheet          | 1    |                 | BS        |
|  | QZL1008-001    | FTZ Information Sheet | 1    |                 | G         |
|                                                                                 | E04056         | Siemens Plug          | 1    |                 | U         |
|                                                                                 | E35497-019     | Caution Sheet         | 1    | 220V            | U         |
|                                                                                 | E41202-2       | Envelope              | 1    |                 | Except BS |
|                                                                                 | E41202-2B      | Envelope              | 1    |                 | BS        |

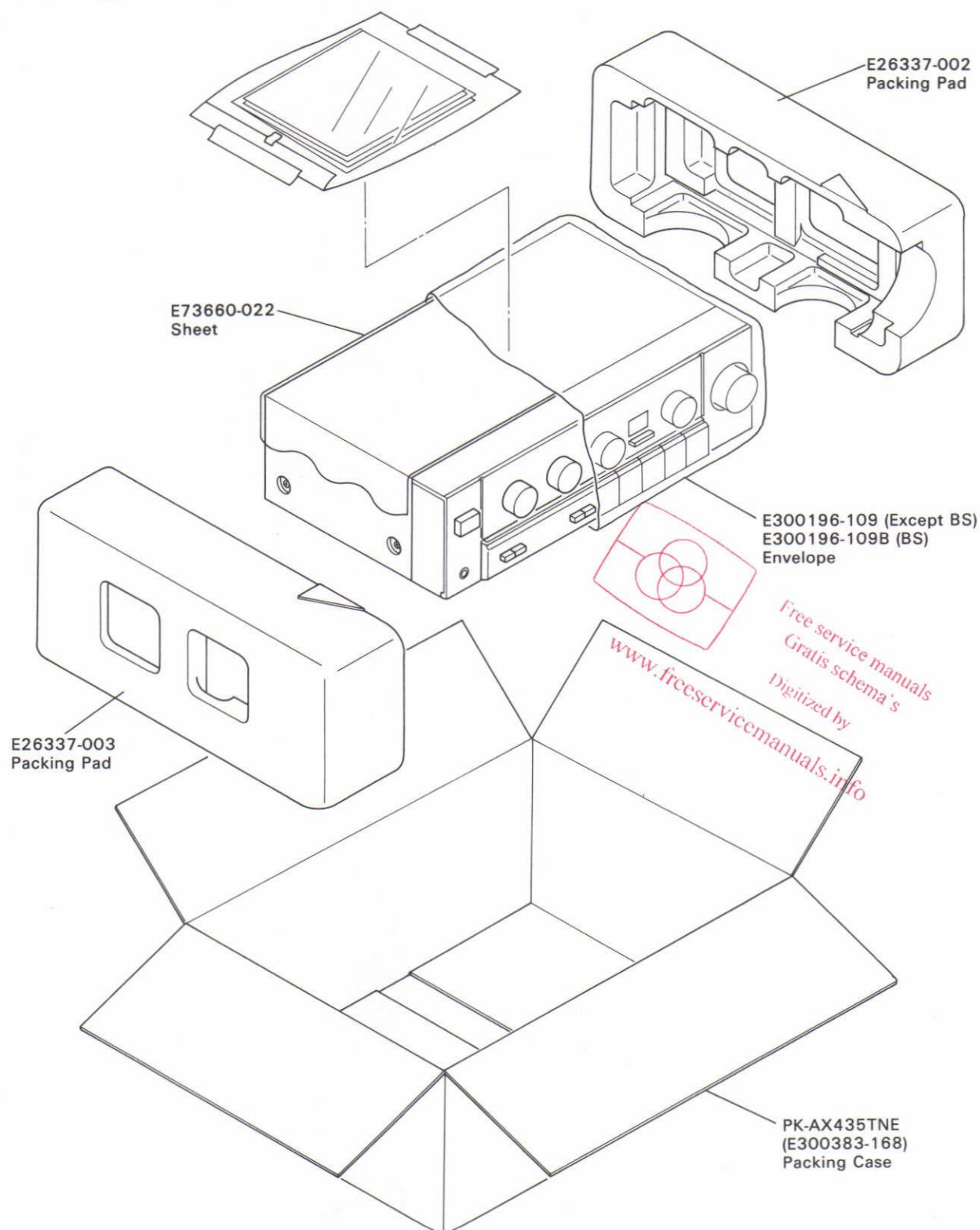
: Safety parts

### The Marks Designated Areas

A.....Australia  
G.....West Germany  
E, EF.....Continental Europe

BS.....the U.K.  
U.....Other Countries  
No mark indicates all areas.

## Packing Materials and Part Numbers



### The Marks Designated Areas

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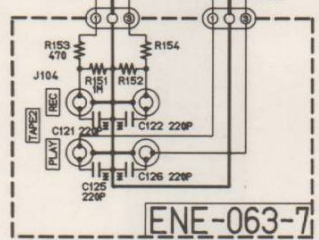
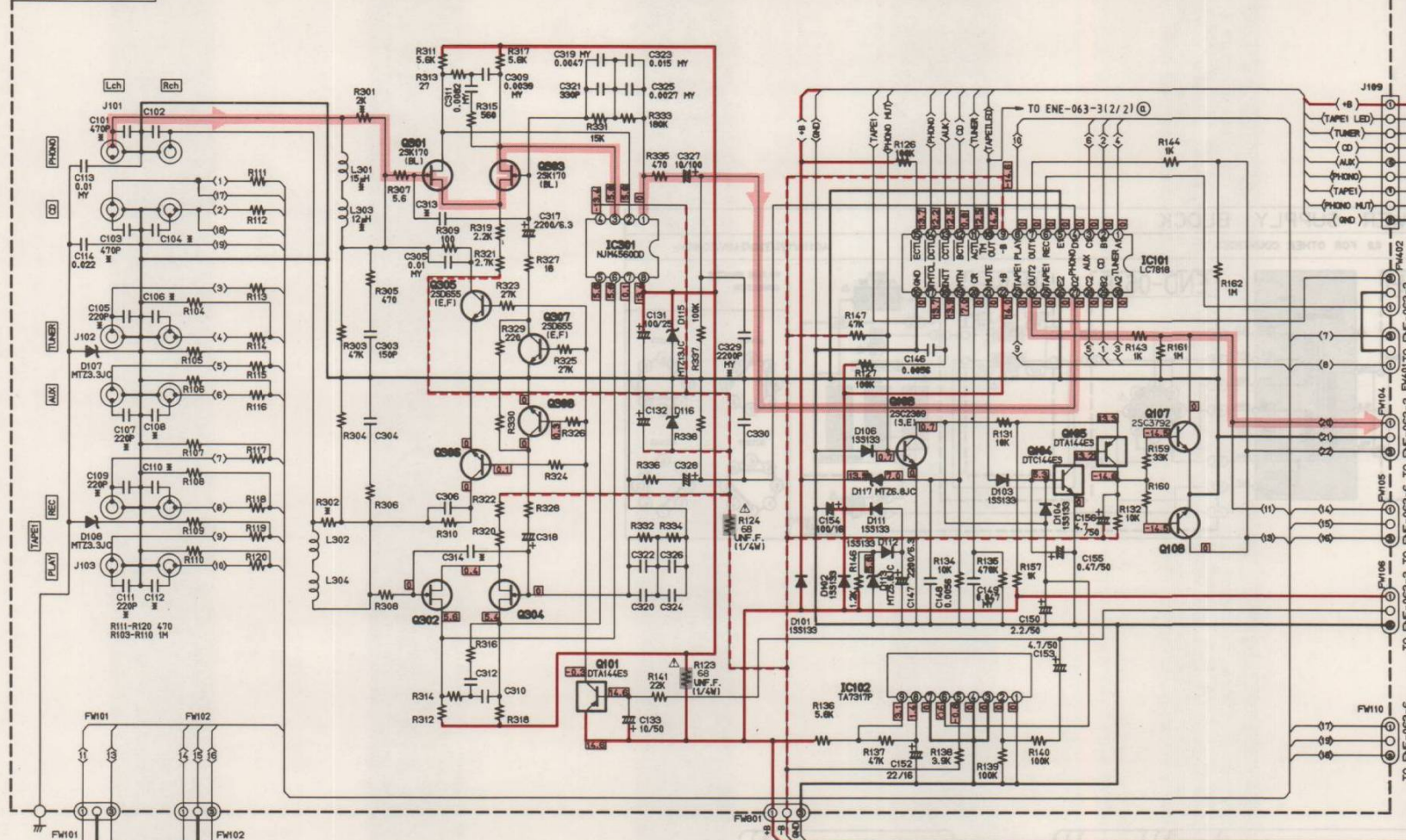
- MEMO -

**- MEMO -**

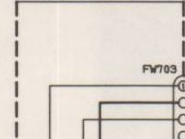
**- MEMO -**

## Schematic Diagrams

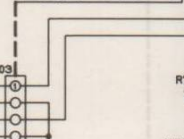
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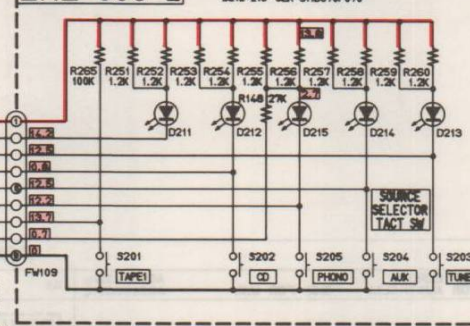
ENE-063-3(1/2)



ENH-148-1



ENE-063-2

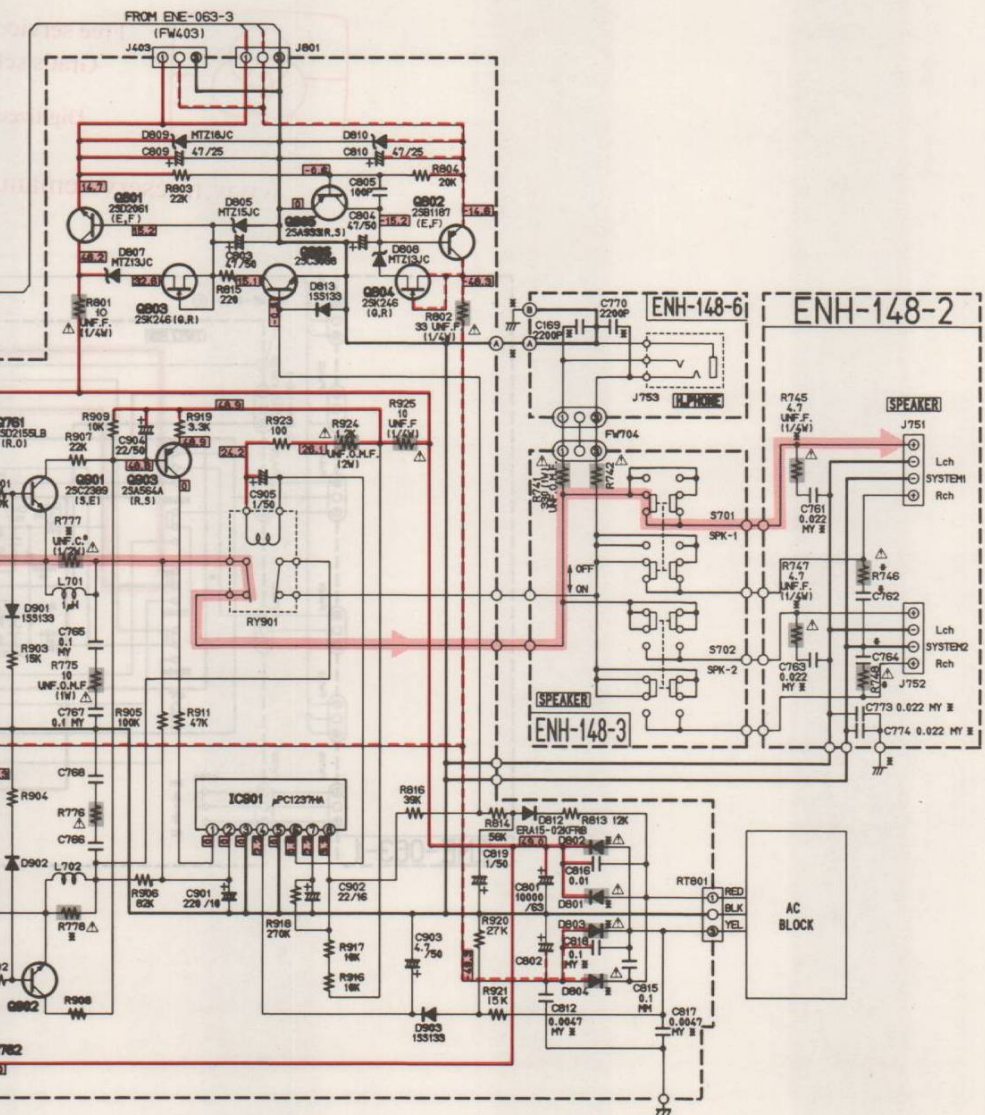


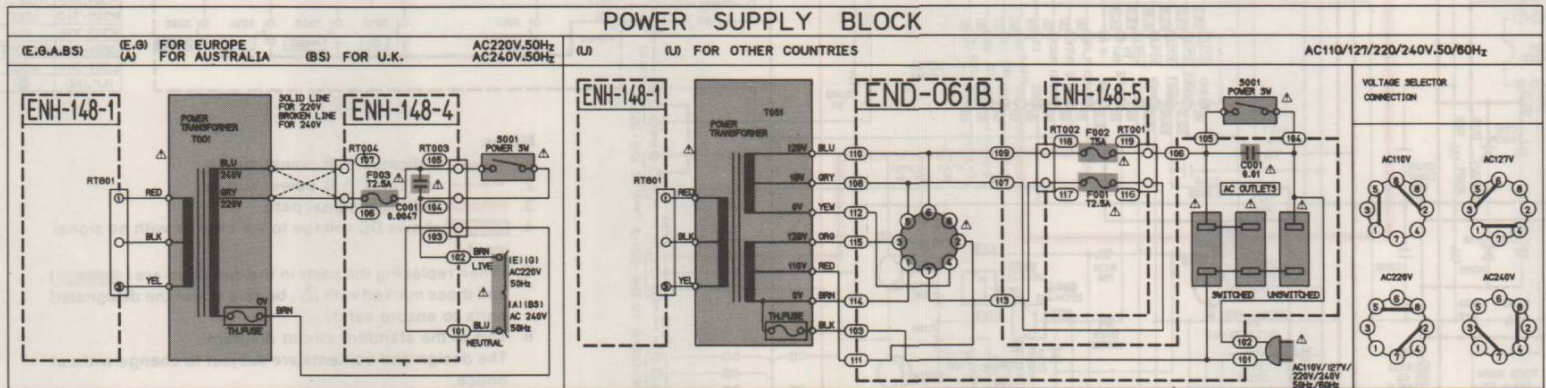
## Notes:

1. — indicates + B power supply.
  2. - - - indicates - B power supply.
  3. — indicates signal path.
  4. — shows DC voltage to the chassis with no signal input.
  5. When replacing the parts in the darkened are ( ) and those marked with  $\Delta$ , be sure to use the designated parts to ensure safety.
  6. This is the standard circuit diagram.
- The design and contents are subject to change without notice.

## MARK

|          | (G)<br>WEST GERMANY | (E.A.B.S)<br>EUROPE | (U)<br>OTHER AREAS |
|----------|---------------------|---------------------|--------------------|
| C101,102 | USED                | NONE                | NONE               |
| C103-112 | USED                | NONE                | NONE               |
| C121,122 | USED                | NONE                | NONE               |
| C125,126 | USED                | NONE                | NONE               |
| C313,314 | 100P                | 68P                 | 68P                |
| C329,330 | USED                | NONE                | NONE               |
| C761-764 | USED                | NONE                | NONE               |
| C769-771 | USED                | NONE                | NONE               |
| C773,774 | USED                | NONE                | NONE               |
| C812     | USED                | NONE                | NONE               |
| C817     | USED                | NONE                | NONE               |
| C818     | USED                | NONE                | NONE               |
| R301,302 | USED                | SHORT               | SHORT              |
| R745-748 | USED                | NONE                | NONE               |
| R777,778 | 100                 | 33                  | 33                 |
| D801-804 | 300F25FC            | 300F25FC            | 300F25FC           |
| L301-304 | USED                | NONE                | NONE               |
| H.P.GND  | (G)                 | (A)                 | (A)                |

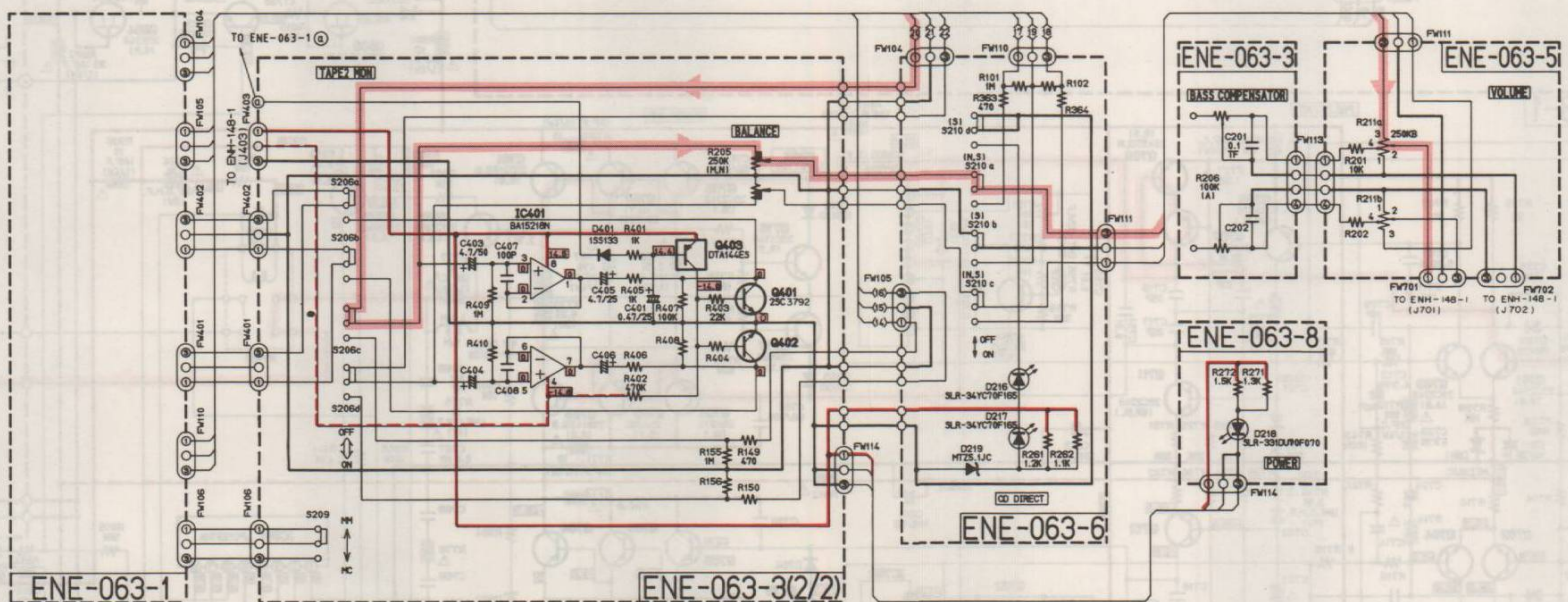




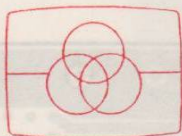
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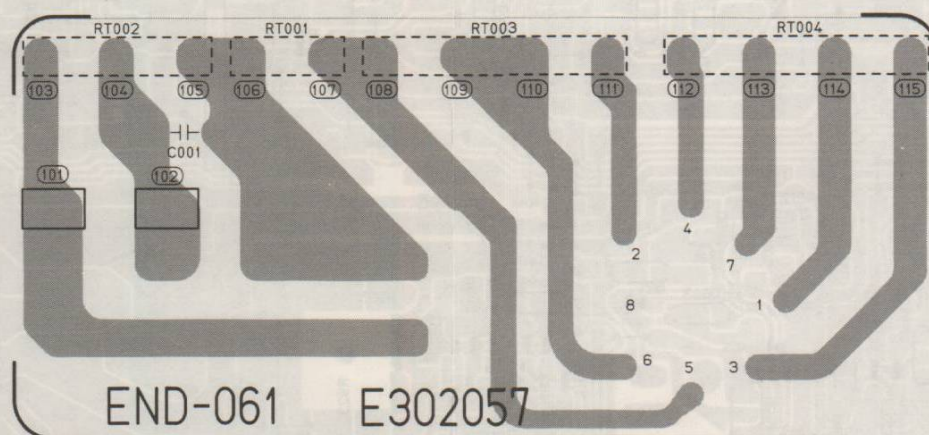
### ■ Main Amplifer P.C. Board (ENH-148)



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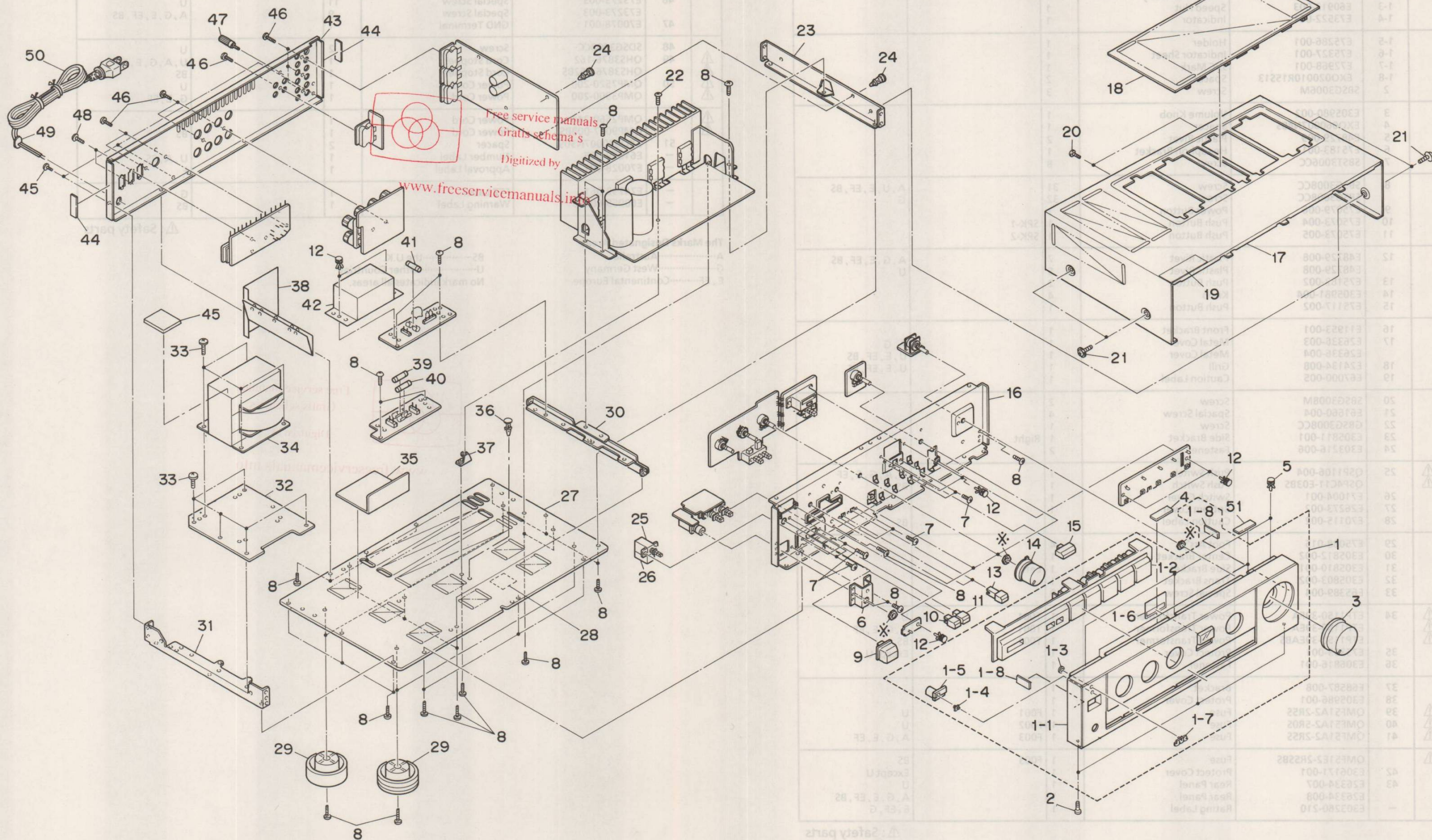
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## General Exploded View and Parts List



\* mark indicates attached part.

# PartsList

| Item | Part Number     | Part Name         | Q'ty | Description | Areas           |
|------|-----------------|-------------------|------|-------------|-----------------|
| 1    | EFP-AX435TNE    | Front Panel Ass'y | 1    |             |                 |
| 1-1  | E26391-004      | Front Panel       | 1    |             |                 |
| 1-2  | E26332-011      | Push Button Ass'y | 1    |             |                 |
| 1-3  | E60912-003      | Speed Nut         | 1    |             |                 |
| 1-4  | E73522-001      | Indicator         | 1    |             |                 |
| 1-5  | E75286-001      | Holder            | 1    |             |                 |
| 1-6  | E75327-001      | Indicator Sheet   | 1    |             |                 |
| 1-7  | E72968-001      | JVC Mark          | 1    |             |                 |
| 1-8  | EXO020010R15S13 | Spacer            | 2    |             |                 |
| 2    | SBSG3006M       | Screw             | 3    |             |                 |
| 3    | E305980-002     | Volume Knob       | 1    |             |                 |
| 4    | EXO060007N40S   | Spacer            | 1    |             |                 |
| 5    | E48729-009      | Plastic Rivet     | 2    |             |                 |
| 6    | E75183-001      | Headphon Bracket  | 1    |             |                 |
| 7    | SBST3006CC      | Screw             | 8    |             |                 |
| 8    | SBSG3008CC      | Screw             | 31   |             | A, U, E, EF, BS |
| 9    | SBSG3008CC      | Screw             | 32   |             | G               |
| 10   | E75079-006      | Power Button      | 1    |             |                 |
| 11   | E75073-004      | Push Button       | 1    | SPK-1       |                 |
| 11   | E75073-005      | Push Button       | 1    | SPK-2       |                 |
| 12   | E48729-008      | Plastic Rivet     | 7    |             | A, G, E, EF, BS |
| 13   | E48729-008      | Plastic Rivet     | 5    |             | U               |
| 14   | E75182-002      | Push Button       | 2    |             |                 |
| 15   | E305981-004     | Knob              | 4    |             |                 |
| 15   | E75117-002      | Push Button       | 1    |             |                 |
| 16   | E11953-001      | Front Bracket     | 1    |             |                 |
| 17   | E26336-003      | Metal Cover       | 1    |             | A, G            |
| 18   | E26336-004      | Metal Cover       | 1    |             | U, E, EF, BS    |
| 19   | E24134-008      | Grill             | 1    |             | U, E, EF, BS    |
| 19   | E67000-005      | Caution Label     | 1    |             |                 |
| 20   | SBSG3008M       | Screw             | 2    |             |                 |
| 21   | E61660-004      | Spacial Screw     | 4    |             |                 |
| 22   | GBSG3008CC      | Screw             | 1    |             |                 |
| 23   | E305811-001     | Side Bracket      | 1    | Right       |                 |
| 24   | E303216-006     | Fastener          | 2    |             |                 |
| 25   | QSP1106-004     | Push Switch       | 1    |             | U, A, G, E, EF  |
| 26   | QSP4C11-E03BS   | Push Switch       | 1    |             | BS              |
| 27   | E71004-001      | Switch Cover      | 1    |             |                 |
| 28   | E26273-002      | Bottom Cover      | 1    |             |                 |
| 28   | E70115-002      | Caution Label     | 1    |             | BS              |
| 29   | E75088-015      | Foot Ass'y        | 4    |             |                 |
| 30   | E305812-002     | Center Bracket    | 1    |             |                 |
| 31   | E305810-001     | Side Bracket      | 1    | Left        |                 |
| 32   | E305803-002     | Trans Bracket     | 1    |             |                 |
| 33   | E65389-004      | Special Screw     | 9    |             |                 |
| 34   | ETP1150-39FA    | Power Transformer | 1    | T001        | U               |
| 35   | ETP1150-39EA    | Power Transformer | 1    | T001        | A, G, E, EF     |
| 36   | ETP1150-39EABS  | Power Transformer | 1    | T001        | BS              |
| 37   | E75353-001      | Protect Cover     | 1    |             | Except U        |
| 38   | E306816-001     | Fastener          | 1    |             |                 |
| 39   | E68587-008      | Bracket           | 1    |             |                 |
| 40   | E305986-001     | Protect Cover     | 1    |             |                 |
| 41   | QMF51A2-2R5S    | Fuse              | 1    | F001        | U               |
| 42   | QMF51A2-5R0S    | Fuse              | 1    | F002        | U               |
| 43   | QMF51A2-2R5S    | Fuse              | 1    | F003        | A, G, E, EF     |
| 44   | QMF51E2-2R5SBS  | Fuse              | 1    | F003        | BS              |
| 45   | E306171-001     | Protect Cover     | 1    |             | Except U        |
| 46   | E26334-007      | Rear Panel        | 1    |             | U               |
| 47   | E26334-008      | Rear Panel        | 1    |             | A, G, E, EF, BS |
| 48   | E303260-210     | Rating Label      | 1    |             | E, EF, G        |

⚠: Safety parts

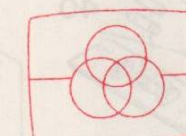
| Item | Part Number     | Part Name      | Q'ty | Description | Areas           |
|------|-----------------|----------------|------|-------------|-----------------|
| 44   | EXO020010R10S10 | Spacer         | 2    |             |                 |
| 45   | EXO050050N30S02 | Spacer         | 1    |             |                 |
| 46   | E73273-003      | Special Screw  | 11   |             | U               |
| 47   | E73273-003      | Special Screw  | 9    |             | A, G, E, EF, BS |
| 47   | E70078-001      | GND Terminal   | 1    |             |                 |
| 48   | SDSG3008CC      | Screw          | 2    |             | U               |
| 49   | QHS3876-162     | Cord Stopper   | 1    |             | U, A, G, E, EF  |
| 50   | QHS3876-162BS   | Cord Stopper   | 1    |             | BS              |
| 50   | QMP7520-200     | Power Cord     | 1    |             | U               |
| 50   | QMP3900-200     | Power Cord     | 1    |             | G, E, EF        |
| 51   | QMP2560-244     | Power Cord     | 1    |             | A               |
| 51   | QMP9017-008BS   | Power Cord     | 1    |             | BS              |
| 51   | EXO030007N50S   | Spacer         | 2    |             |                 |
| 51   | E61029-005      | Number Label   | 1    |             | U, A, BS        |
| 51   | E70028-001      | Approval Label | 1    |             | E               |
| 51   | E74792-061      | FTZ Label      | 1    |             | G               |
| 51   | E60965-001BS    | Warning Label  | 1    |             | BS              |

⚠: Safety parts

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MEMO

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VICTOR COMPANY OF JAPAN LIMITED  
AUDIO PRODUCTS DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN