



# HITACHI

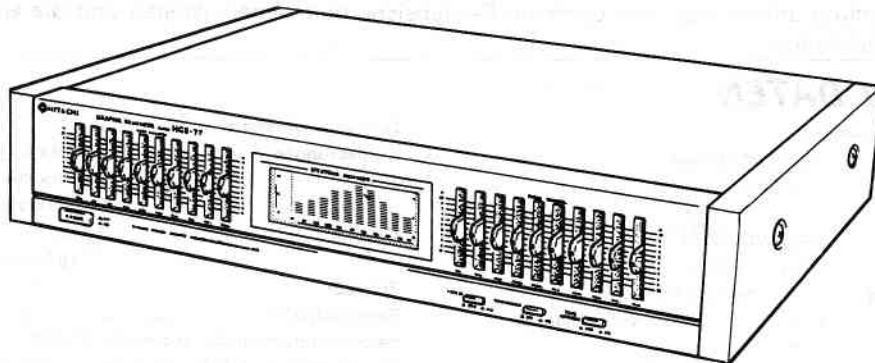
## SERVICE MANUAL

TY

No. 551 EGF

# HGE-77

(US, CS, BS, VK, ZS, EW)



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### SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with  $\Delta$  in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

### SPECIFICATIONS

#### Input Sensitivity/impedance

**INPUT:** 200mV/45 kohms  
**TAPE PLAY:** 200mV/45 kohms

#### Output level/impedance

**OUTPUT:** 200mV/1 kohms  
**TAPE REC:** 200mV/1 kohms

#### Power output:

3V (T.H.D. 0.1%)

#### Total harmonic distortion:

0.05% (20 Hz~20 kHz Output sensitivity)

#### Gain:

0 dB

#### Frequency response:

10~20 kHz  $\pm$  1 dB

#### Signal-to-noise ratio:

96 dB (for rated output, IHF A network)

#### Equalizer center frequencies:

10 elements 31.5 Hz, 63 Hz, 125 Hz, 250 Hz

500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz

#### Variable range of adjustment:

left, right independent  $\pm$  10 dB

#### Power supply voltage:

~120V, 60 Hz (for US), ~240V, 50 Hz (for BK)

~220V, 50 Hz (for VK, ZS), ~110V/220V/240V,

50/60 Hz (for EW)

#### Power consumption:

15W

#### Dimensions:

370(W) x 85(H) x 276(D) mm

400(W) x 85(H) x 276(D) mm (With included side wood panels)

#### Weight:

3.3 kg

3.7 kg (With included side wood panels)

#### Accessories

Side wood .....	2
Side wood installing screw .....	4
Side wood installing washer .....	4
Side wood installing flat spring washer .....	4
Connecting pin cord .....	2

\* All value given in this specification refer to equalizer in the "flat" condition.

For the purpose of improvement, design and specification are subject to change without notice.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

# GRAPHIC EQUALIZER

April 1987

TOYOKAWA WORKS

## SICHERHEITSMASSNAHMEN

Die folgenden Vorsichtsmaßnahmen sind einzuhalten, wenn Wartungsarbeiten an diesem Modell ausgeführt werden.

- Da verschiedene Teile dieses Gerätes besondere Sicherheitsfunktionen aufweisen, nur Hitachi Original-Ersatzteile verwenden. Besonders kritische Teile im Netzteil dürfen nicht durch Teile anderer Hersteller ersetzt werden.

Die kritischen Teile sind in den Schaltplänen und Leiterplatten-Diagrammen mit dem Symbol  $\triangle$  gekennzeichnet.

- Bevor das reparierte Gerät an den Kunden ausgeliefert wird, muß der Wartungstechniker das Gerät einer gründlichen Prüfung unterziehen, um optimale Betriebsicherheit sicherzustellen und die Gefahr elektrischer Schläge auszuschließen.

## TECHNISCHEN DATEN

<b>Eingangsempfindlichkeit/Impedanz</b>		<b>Leistungsaufnahme</b>	15W
<b>INPUT:</b>	200mV/45 kOhms	<b>Abmessungen</b>	370(B) x 85(H) x 276(T) mm
<b>TAPE PLAY:</b>	200mV/45 kOhms		400(B) x 85(H) x 276(T) mm (einschließlich Seitenholztafeln)
<b>Ausgangspegel/Impedanz</b>		<b>Gewicht</b>	3.3 kg
<b>OUTPUT:</b>	200mV/1 kOhms		3.7 kg (einschließlich Seitenholztafeln)
<b>TAPE REC:</b>	200mV/1 kOhms	<b>Zubehör</b>	
<b>Maximale Ausgangsleistung</b>	3V (Klirrfaktor 0.1%)	Seitenholztafeln .....	2
<b>Klirrfaktor</b>	0.5% (20 Hz ~ 20 kHz Nennausgang)	Befestigungsschraube für Seitenholztafeln .....	4
<b>Verstärkungsfaktor</b>	0 dB	Unterlegscheibe zur Befestigung der Seitenholztafeln .....	4
<b>Frequenzgang</b>	10 Hz ~ 20 kHz $\pm$ 1 dB	Flache Federscheibe zur Befestigung der Seitenholztafeln .....	4
<b>Rauschabstand</b>	96 dB (für Nennausgang, IHF-A-Nets)	Anschluß-Stiftsteckerkabel .....	2
<b>Equalizer-Mittelfrequenzen</b>	10 Elemente 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz		
<b>Variabler Einstellbereich</b>	links, rechts unabhängig $\pm$ 10 dB		
<b>Betriebsstrom</b>	120V, 60 Hz (für US)		
	240V, 50 Hz (für BK)		
	220V, 50 Hz (für VK, ZS)		
	110V/220V/240V, 50/60 Hz (für EW)		

\* Alle unter Technischen Daten angegebenen Werte gelten für den Betriebszustand bei linearer Equalizereinstellung. Änderungen von technischen Daten und Design Swecks Produktverbesserung ohne Vorankündigung vorbehalten.

## PRÉCAUTIONS DE SÉCURITÉ

Les précautions suivantes doivent être observées chaque fois qu'une réparation doit être faite.

- Étant donné que de nombreux composants de l'appareil possèdent des caractéristiques relatives à la sécurité, utiliser uniquement des pièces de rechange d'origine Hitachi pour effectuer un remplacement. Ceci se rapporte notamment aux pièces critiques du bloc d'alimentation qui ne doivent en aucun cas être remplacées par celles d'autres fabricants. Les pièces critiques sont accompagnées du symbole  $\triangle$  dans le plan de circuit et sur le plan de base.
- Avant de retourner l'appareil réparé au client, le technicien doit procéder à un essai complet pour s'assurer qu'il ne présente aucun danger de chocs électriques.

## CARCTÉRISTIQUES TECHNIQUES

<b>Sensibilité d'entrée impédance</b>		<b>Consommation</b>	15W
<b>Entrée:</b>	200mV/45 kohms	<b>Dimensions</b>	370(L) x 85(H) x 276(P) mm
<b>Lecture bande:</b>	200mV/45 kohms		400(L) x 85(H) x 276(P) mm (y compris les panneaux latéraux en bois)
<b>Niveau de sortie/impédance</b>		<b>Poids</b>	3.3 kg
<b>Sortie:</b>	200mV/1 kohms		3.7 kg (y compris les panneaux latéraux en bois)
<b>Enregistrement bande:</b>	200mV/1 kohms	<b>Accessories</b>	
<b>Sortie maximale</b>	3V (distorsion harmonique totale 0.1%)	Panneaux latéraux en bois .....	2
<b>Distorsion harmonique total</b>	0.5% (20 Hz ~ 20 kHz puissance nominale)	Vis de pose des panneaux latéraux en bois .....	4
<b>Gain</b>	0 dB	Rondelle de pose des panneaux latéraux en bois .....	4
<b>Réponse en fréquence</b>	10 Hz ~ 20 kHz $\pm$ 1 dB	Rondelle de ressort plat des panneaux latéraux en bois .....	4
<b>Rapport signal/bruit</b>	96 dB (puissance nominale, réseau IHF A)	Cordon d'axe de liaison .....	2
<b>Fréquences centrales d'égaliseur</b>	10 gammes 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz		
<b>Plage de réglage</b>	$\pm$ 10 dB à gauche et à droite		
<b>Alimentation</b>	120V, 60 Hz (pour US)		
	240V, 50 Hz (pour BK)		
	220V, 50 Hz (pour VK, ZS)		
	110V/220V/240V, 50/60 Hz (pour EW)		

\* Toutes les valeurs figurant dans les caractéristiques techniques s'appliquent avec l'égaliseur avec réglages "plats". Dans les but d'améliorer le produit, la présentation et les caractéristiques techniques sont sujettes à modification sans préavis.

## DISASSEMBLY

### 1. Top Cover (Fig. 1)

After the four screws ① are removed the casing is eased out of place as indicated by Arrow (A). Jiggle the back of the casing right and left and lift off in the direction indicated by Arrow (B).

### 2. Escutcheon Assembly (Fig. 2)

First remove the twenty small slide knobs then the eight screws ② which hold the Escutcheon Plate in place.

### 3. GE BLOCK VR (Fig. 3)

Remove the eight screws ③ from the Slide Volume P.W.B.

### 4. FL C.B.A. (Fig. 3)

Remove the four connectors from the top of the main P.W.B., then the two screws ④.

### 5. Mechanical Plate (Fig. 3)

Remove two screws ⑤, and five screws ⑥, as indicated in diagram.

### 6. Rear Panel (Fig. 4)

Remove two screws ⑦, four screws ⑧, then pull up in direction indicated by arrow.

### 7. Main P.W.B. (Fig. 5)

Remove three screws ⑨ and three screws ⑩ at points indicated on diagram.

### 8. Power supply P.W.B. (Fig. 6)

Remove two screws ⑪.

## DEMONTAGE

### 1. Obere Abdeckung (Abb. 1)

Nachdem die vier Schrauben ① entfernt worden sind, kann der Rahmen in der durch Pfeil (A) angezeigten Richtung vorsichtig herausgezogen werden. Die Rückseite des Rahmens abwechselnd nach links und rechts drücken und so in Pfeilrichtung (B) abziehen.

### 2. Schlossblech-Baugruppe (Abb. 2)

Zuerst die zwanzig kleinen Schieberegler abnehmen, dann die acht Schrauben ②, die das Schloßblech halten.

### 3. Graphic Equalizer-Lautstärke (Abb. 3)

Die acht Schrauben ③ von der Lautstärkeschieber-Grundplatte entfernen.

### 4. Platinenbaugruppe der Leuchtröhrenanzeige (Abb.3)

Die vier Stecker von der Oberseite der Hauptplatte abziehen, und dann die beiden Schrauben ④ abnehmen.

### 5. Mechanikplatte (Abb. 3)

Die beiden Schrauben ⑤ und die fünf Schrauben ⑥ abnehmen, wie in der Zeichnung dargestellt.

### 6. Rückplatte (Abb. 4)

Die beiden Schrauben ⑦, anschließend die vier Schrauben ⑧ entfernen, und dann in Pfeilrichtung abziehen.

### 7. Hauptplatte (Abb. 5)

Die drei Schrauben ⑨ und die drei Schrauben ⑩ an den in der Zeichnung dargestellten Punkten entfernen.

### 8. Netzspannung-Leiterplatte (Abb.6)

Die beiden Schrauben ⑪ entfernen.

## DÉMONTAGE

### 1. Couvercle supérieur (Fig. 1)

Après avoir enlevé les quatre vis ①, dégagé le coffret comme indiqué par la flèche (A). Secouer légèrement l'arrière du coffret de gauche à droite et le soulever dans la direction indiquée par la flèche (B).

### 2. Panneau avant (Fig. 2)

Enlever tout d'abord les vingt petits curseurs latéraux puis les huit vis ② qui maintiennent le panneau avant en place.

### 3. Volume de l'égaliseur graphique (Fig. 3)

Enlever les huit vis ③ de la plaque de base des curseurs de volume.

### 4. Plaquette de circuits du tube fluorescent d'affichage (Fig. 3)

Enlever les quatre connecteurs du haut de la carte à circuit imprimés principale, puis les deux vis ④.

**5. Plaque mécanique (Fig. 3)**

Enlever deux vis ⑤ et cinq vis ⑥, comme indiqué sur le schéma.

**6. Panneau arrière (Fig. 4)**

Enlever deux vis ⑦, quatre vis ⑧, puis tirer vers le haut dans la direction indiquée par la flèche.

**7. Carte à circuits imprimés principale (Fig. 5)**

Enlever trois vis ⑨ et trois vis ⑩ aux points indiqués sur le schéma.

**8. Carte à circuits imprimés d'alimentation. (Fig. 6)**

Retirer les deux vis de fixation ⑪.

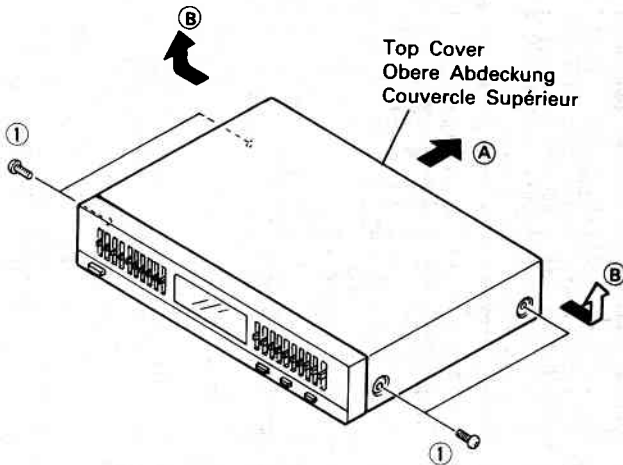


Fig. 1 Abb. 1

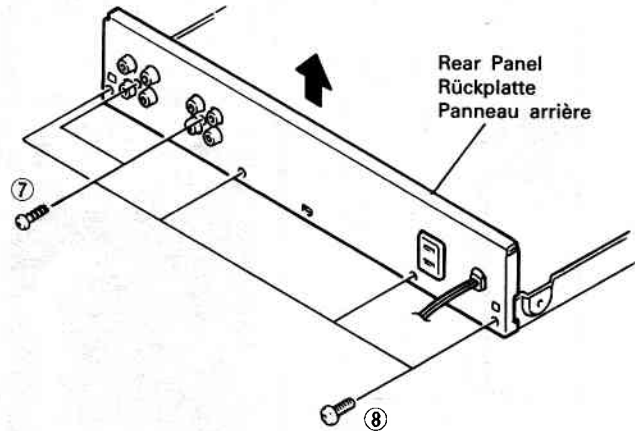


Fig. 4 Abb. 4

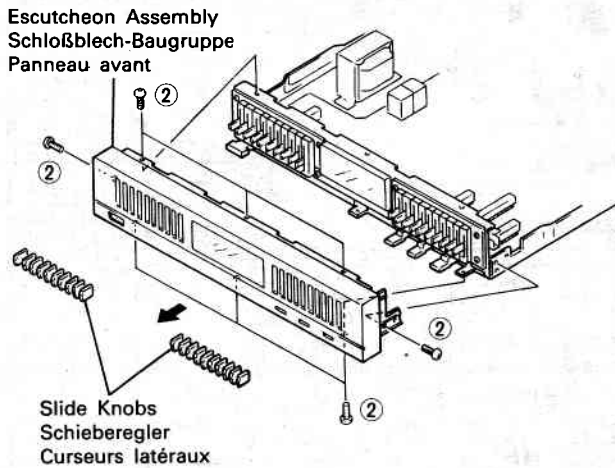


Fig. 2 Abb. 2

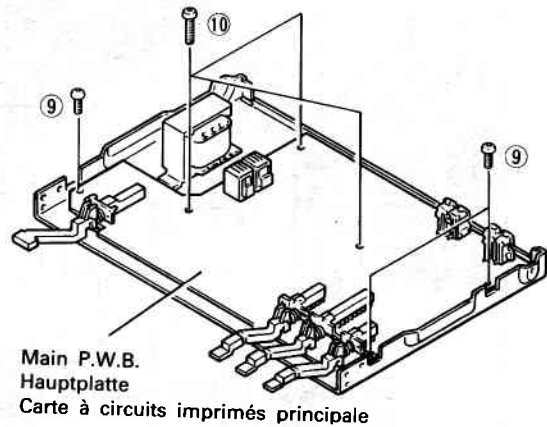


Fig. 5 Abb. 5

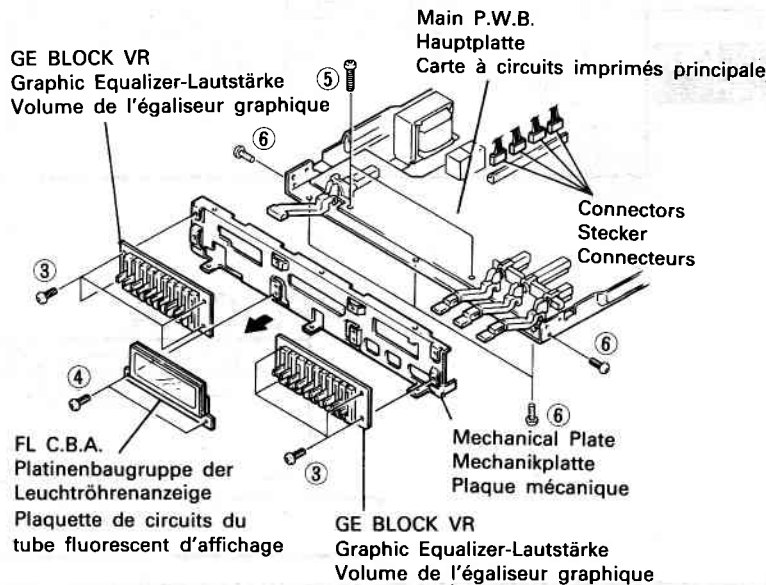


Fig. 3 Abb. 3

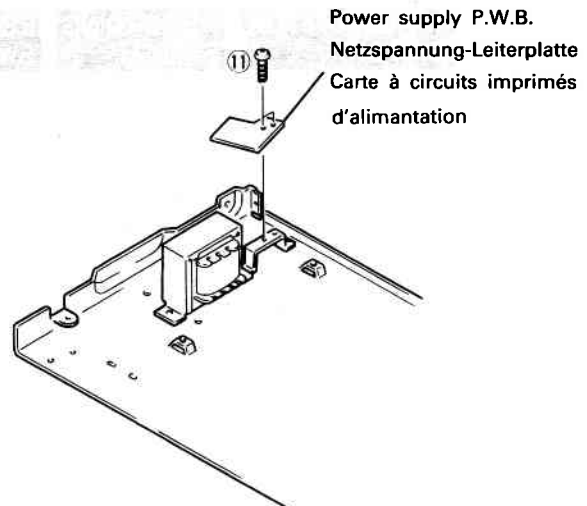
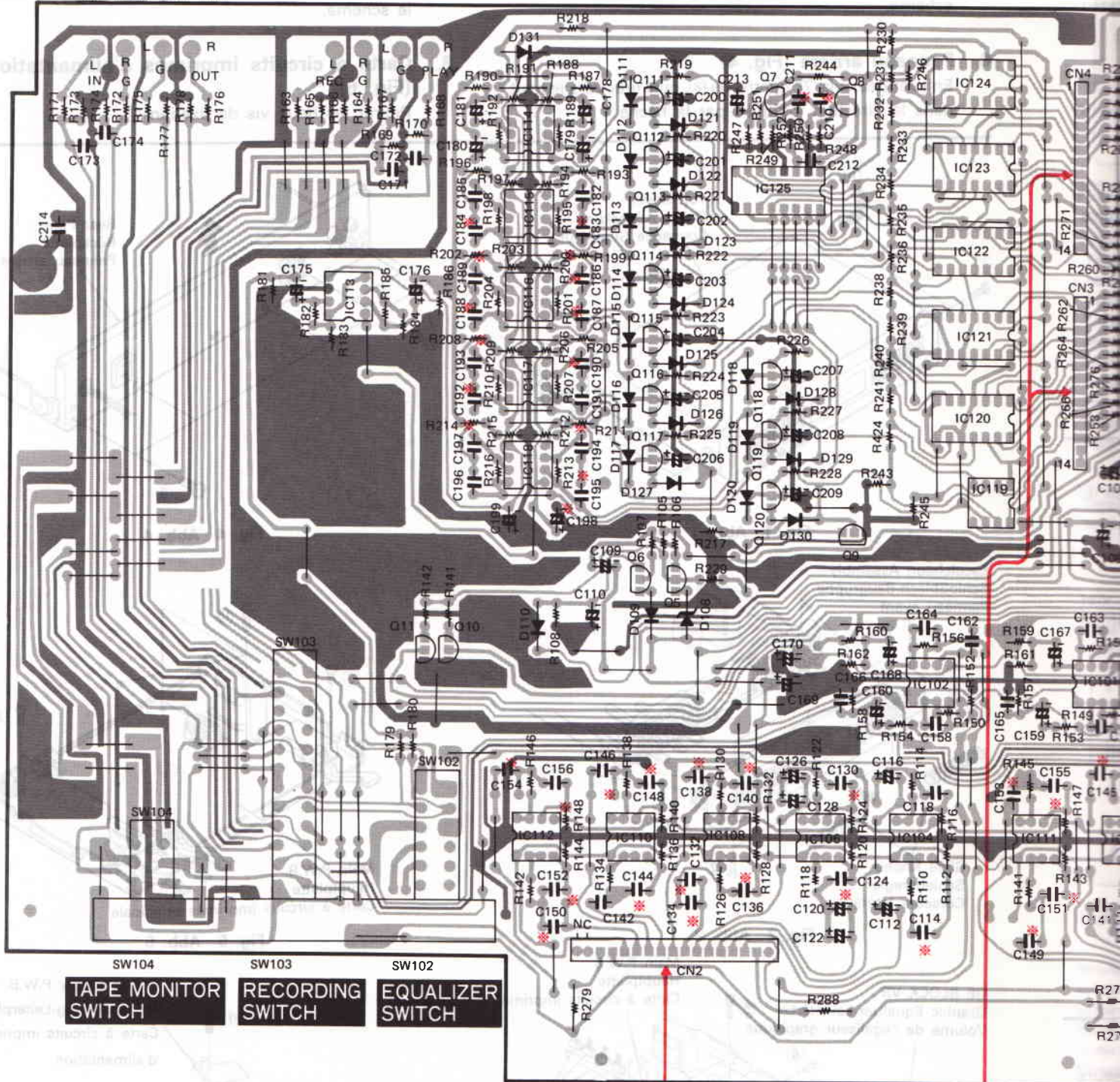


Fig. 6 Abb. 6

A  
B  
C  
D  
E  
F  
G

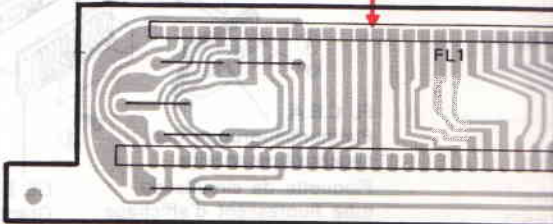
LINE                      TAPE  
 IN    OUT                REC    PLAY  
 Lch Rch Lch Rch      Lch Rch Lch Rch

# MAIN P.W.B.



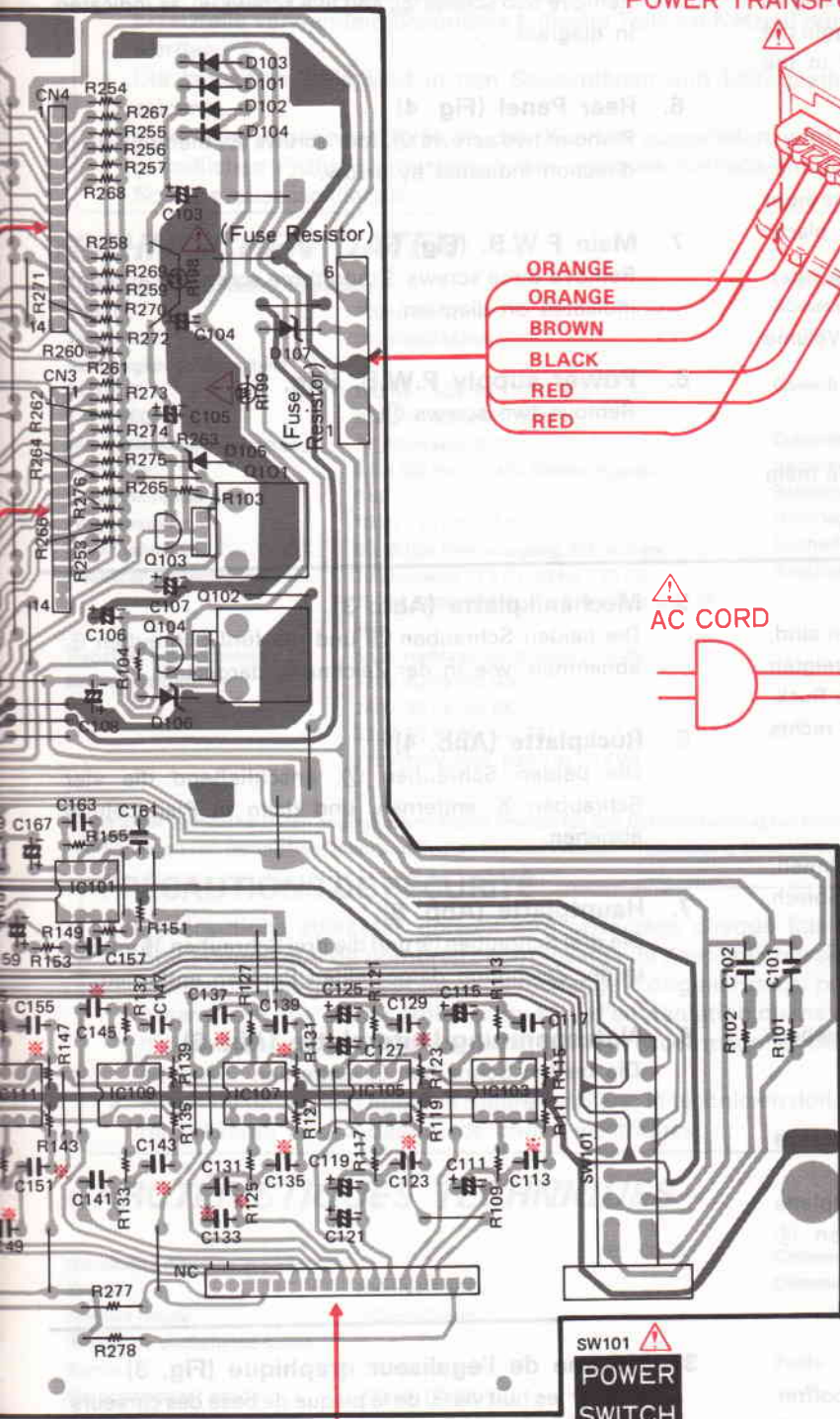
SW104      SW103      SW102  
**TAPE MONITOR SWITCH**    **RECORDING SWITCH**    **EQUALIZER SWITCH**

To GE BLOCK VR **FL C.B.A.**

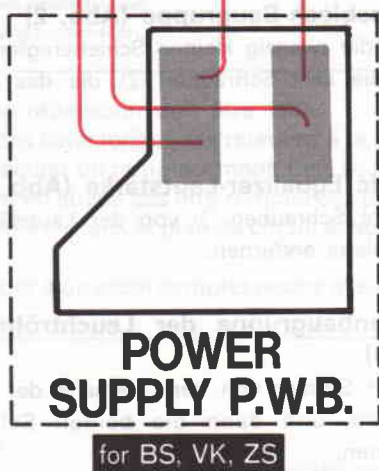
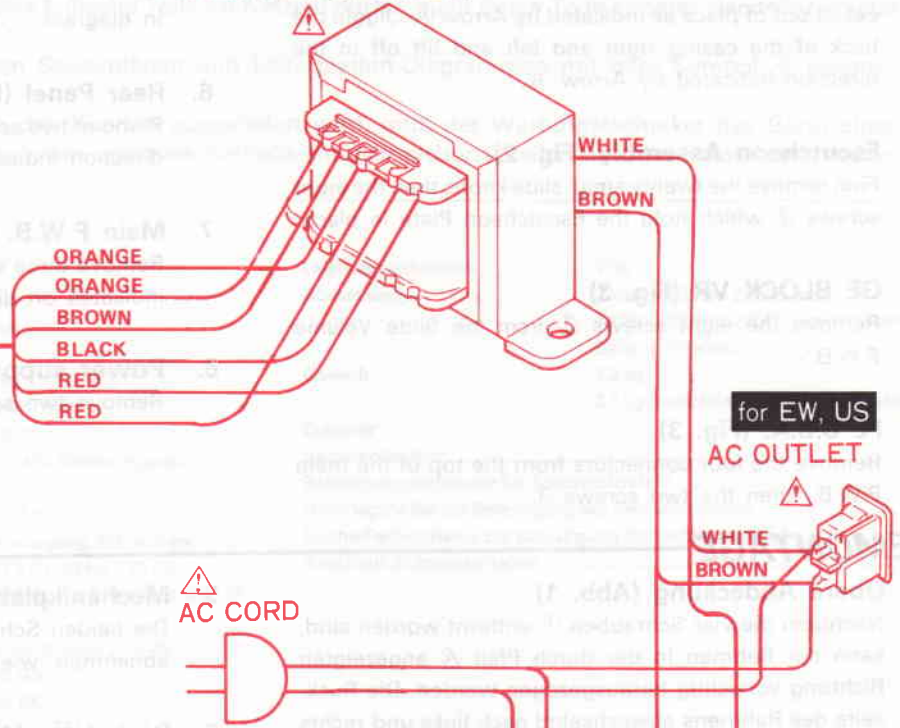


- ※ : Axial lead cylindrical ceramic capacitor.
- ※ : Zylindrischer keramikkondensator mit axialer Zuleitung.
- ※ : Condensateur ceramique cilindrique a conducteur axial.

, [Others]



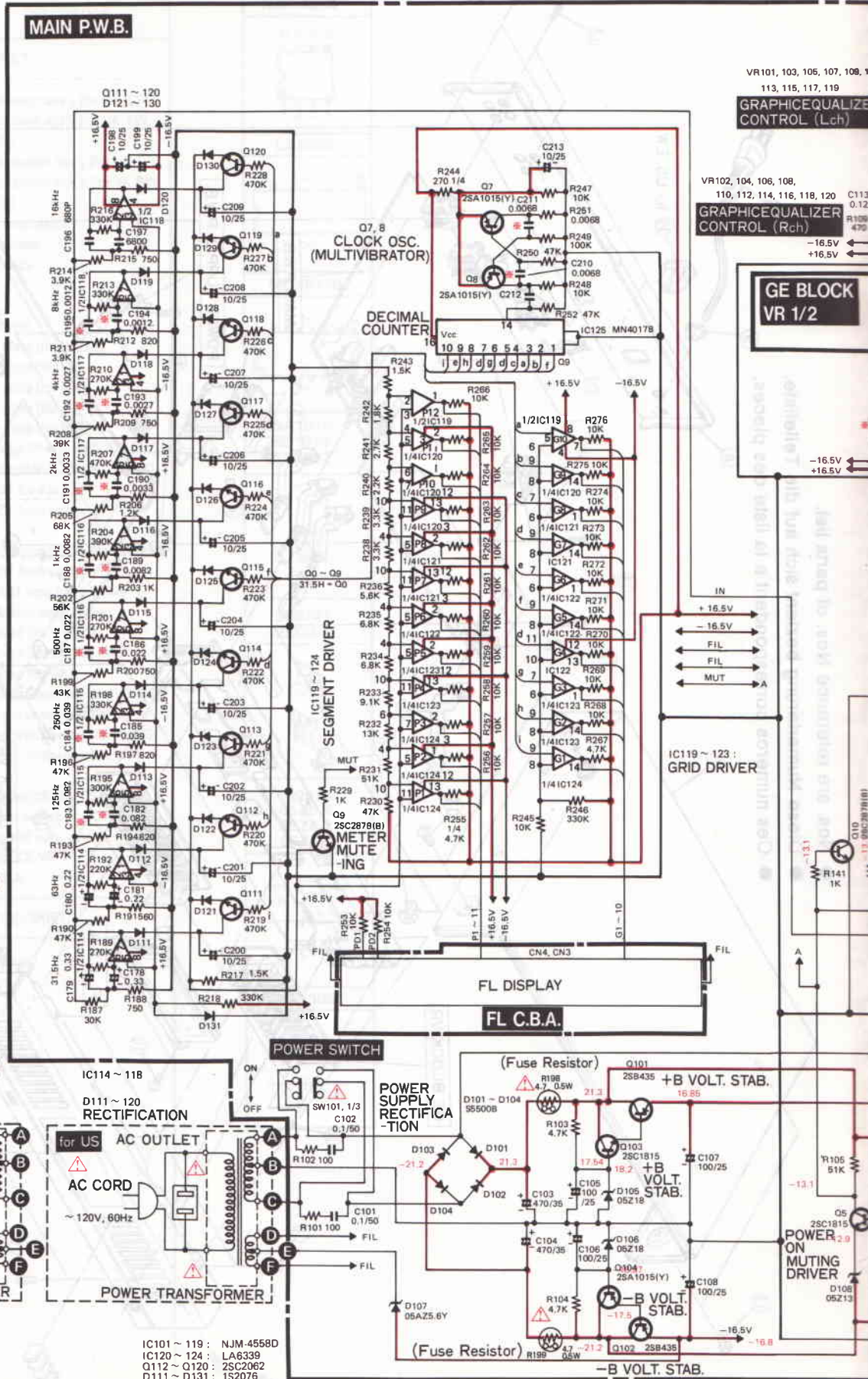
**POWER TRANSFORMER**



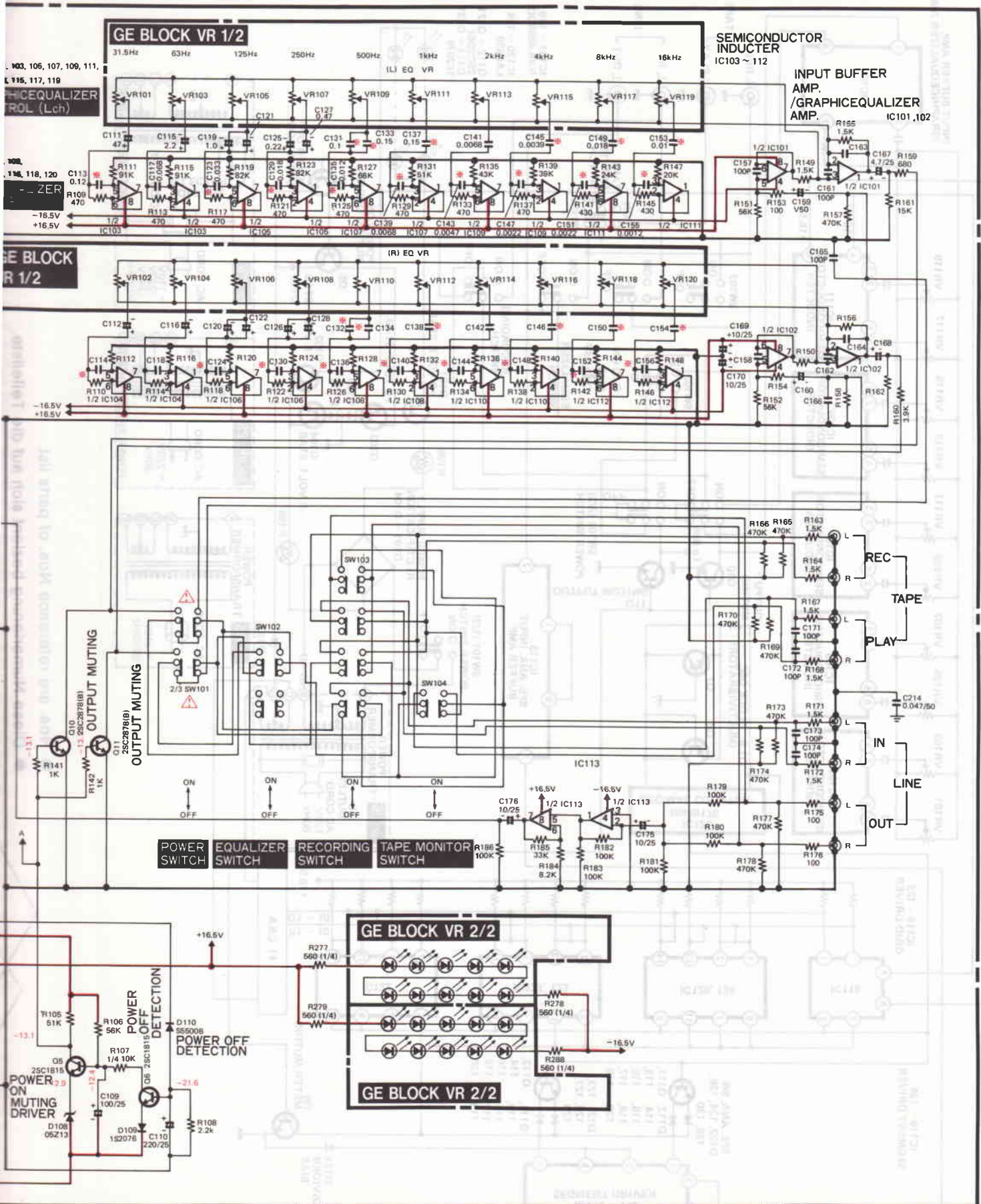
SW101  
**POWER SWITCH**

To GE BLOCK VR

	E	C	B
Q101	16.85	21.3	17.54
Q102	-16.8	-21.2	-17.5
Q103	17.54	21.3	18.2
Q104	-17.5	-21.2	-18.07
Q105	-12.9	-13.1	-12.4
Q106	-	-	-21.6
Q107	0	-	-13.1
Q108	0	-	-13.1



- ⊗ : Axial lead cylindrical ceramic capacitor.
- ⊗ : Zylindrischer keramikkondensator mit axialer Zuleitung.
- ⊗ : Condensateur ceramique cylindrique a conducteur axial.



A

B

C

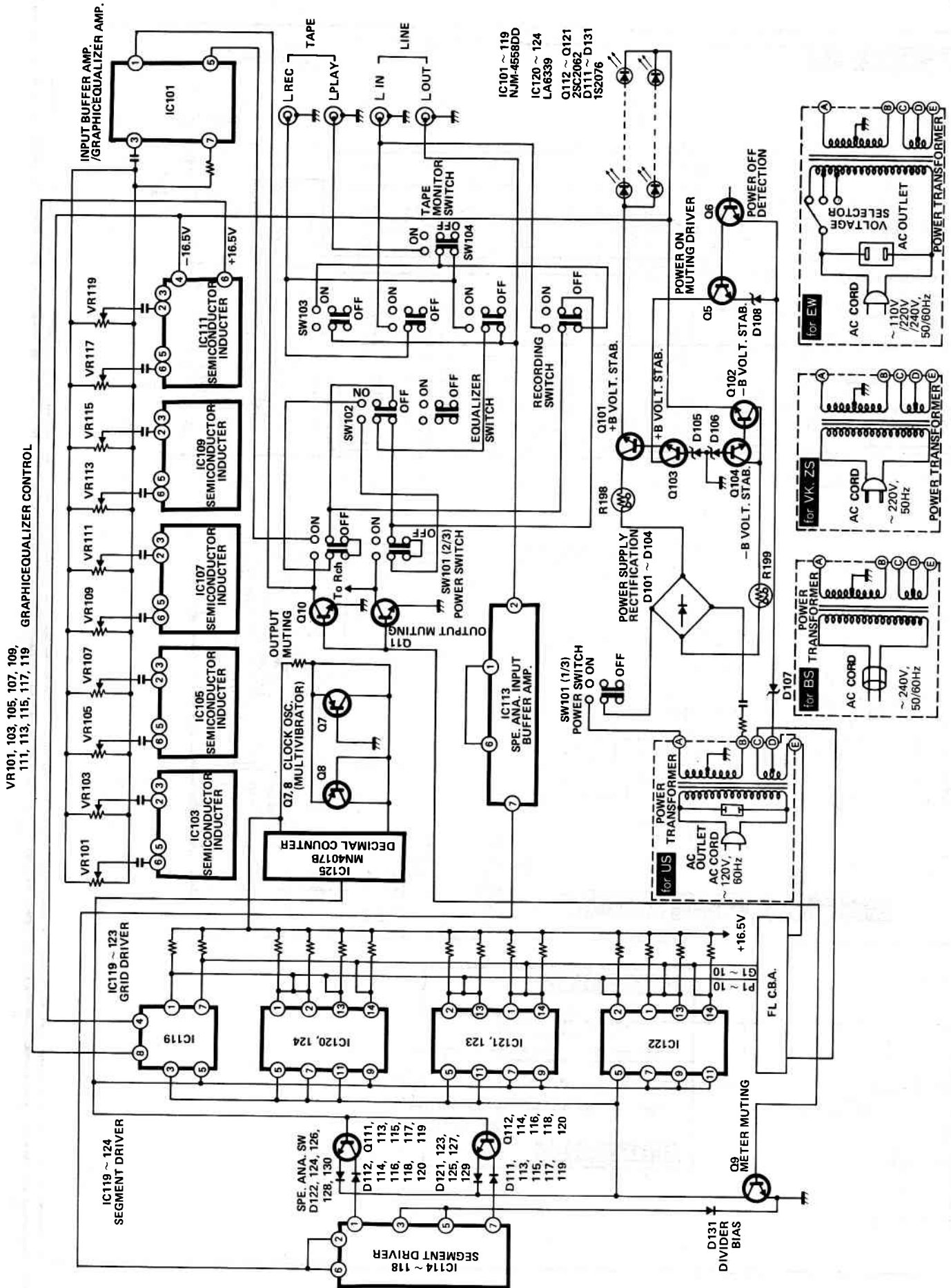
D

E

F

G

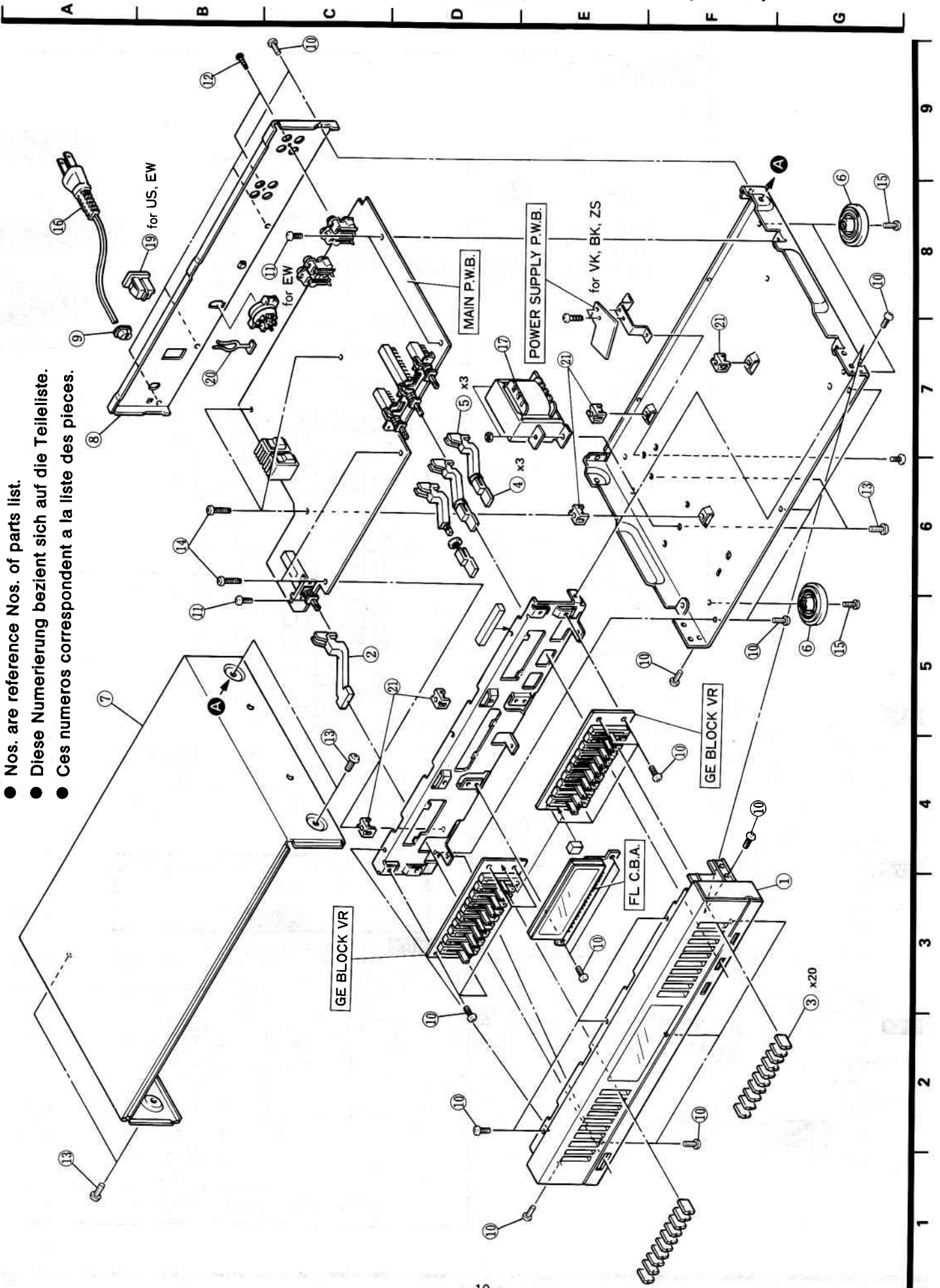




**EXPLODED VIEW  
(Cabinet)**

**EXPLOSIONSANSICHT  
(Chassis)**

**VUE EXPLOSEE  
(Coffret)**



- Nos. are reference Nos. of parts list.
- Diese Numerierung bezieht sich auf die Teileliste.
- Ces numeros correspondent a la liste des pieces.

## REPLACEMENT PARTS LIST · ERSATZTEILLISTE · TABLEAU DES PIÈCES

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
CAPACITORS			C160	02528112	EL 1 $\mu$ F $\pm$ 20% 50V	R108	0129609	CF 2.2K $\Omega$ $\pm$ 5% SRD1/4P
C101	4845461	CD 0.1 $\mu$ F $\pm$ 10% 50V	C161	4845491	CD 100PF $\pm$ 10% 50V	R109	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C102	4845461	CD 0.1 $\mu$ F $\pm$ 10% 50V	C162	4845491	CD 100PF $\pm$ 10% 50V	R110	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C103	4845431	EL 470 $\mu$ F $\pm$ 20% 35V	C163	4845481	CD 470PF $\pm$ 10% 50V	R111	4845509	CF 91K $\Omega$ $\pm$ 5% SRD1/6P
C104	4845431	EL 470 $\mu$ F $\pm$ 20% 35V	C164	4845481	CD 470PF $\pm$ 10% 50V	R112	4845509	CF 91K $\Omega$ $\pm$ 5% SRD1/6P
C105	02526312	EL 100 $\mu$ F $\pm$ 20% 25V	C165	4845491	CD 100PF $\pm$ 10% 50V	R113	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C106	02526312	EL 100 $\mu$ F $\pm$ 20% 25V	C166	4845491	CD 100PF $\pm$ 10% 50V	R114	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C107	02526312	EL 100 $\mu$ F $\pm$ 20% 25V	C167	02526152	EL 4.7 $\mu$ F $\pm$ 20% 25V	R115	4845509	CF 91K $\Omega$ $\pm$ 5% SRD1/6P
C108	02526312	EL 100 $\mu$ F $\pm$ 20% 25V	C168	02526152	EL 4.7 $\mu$ F $\pm$ 20% 25V	R116	4845509	CF 91K $\Omega$ $\pm$ 5% SRD1/6P
C109	02526312	EL 100 $\mu$ F $\pm$ 20% 25V	C169	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R117	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C110	0252427	EL 220 $\mu$ F $\pm$ 20% 25V	C170	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R118	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C111	02528152	EL 4.7 $\mu$ F $\pm$ 20% 50V	C171	4845491	CD 100PF $\pm$ 10% 50V	R119	0113661	CF 82K $\Omega$ $\pm$ 5% SRD1/6P
C112	02528152	EL 4.7 $\mu$ F $\pm$ 20% 50V	C172	4845491	CD 100PF $\pm$ 10% 50V	R120	0113661	CF 82K $\Omega$ $\pm$ 5% SRD1/6P
C113	4848421	CC 0.12 $\mu$ F $\pm$ 10% 50V	C173	4845491	CD 100PF $\pm$ 10% 50V	R121	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C114	4848421	CC 0.12 $\mu$ F $\pm$ 10% 50V	C174	4845491	CD 100PF $\pm$ 10% 50V	R122	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C115	02528122	EL 2.2 $\mu$ F $\pm$ 20% 50V	C175	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R123	0113661	CF 82K $\Omega$ $\pm$ 5% SRD1/6P
C116	02528122	EL 2.2 $\mu$ F $\pm$ 20% 50V	C176	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R124	0113661	CF 82K $\Omega$ $\pm$ 5% SRD1/6P
C117	0275216	MF 0.068 $\mu$ F $\pm$ 5% 50V	C178	0252803	EL 0.33 $\mu$ F $\pm$ 20% 50V	R125	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C118	0275216	MF 0.068 $\mu$ F $\pm$ 5% 50V	C179	0252803	EL 0.33 $\mu$ F $\pm$ 20% 50V	R126	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C119	02528112	EL 1 $\mu$ F $\pm$ 20% 50V	C180	0252802	EL 0.22 $\mu$ F $\pm$ 20% 50V	R127	0113659	CF 68K $\Omega$ $\pm$ 5% SRD1/6P
C120	02528112	EL 1 $\mu$ F $\pm$ 20% 50V	C181	0252802	EL 0.22 $\mu$ F $\pm$ 20% 50V	R128	0113659	CF 68K $\Omega$ $\pm$ 5% SRD1/6P
C121	0252802	EL 0.22 $\mu$ F $\pm$ 20% 50V	C182	0275036	CC 0.082 $\mu$ F $\pm$ 10% 50V	R129	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C122	0252802	EL 0.22 $\mu$ F $\pm$ 20% 50V	C183	0275036	CC 0.082 $\mu$ F $\pm$ 10% 50V	R130	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C123	02750142	MF 0.033 $\mu$ F $\pm$ 10% 50V	C184	0275034	CC 0.039 $\mu$ F $\pm$ 10% 50V	R131	4845508	CF 51K $\Omega$ $\pm$ 5% SRD1/6P
C124	02750142	MF 0.033 $\mu$ F $\pm$ 10% 50V	C185	0275034	CC 0.039 $\mu$ F $\pm$ 10% 50V	R132	4845508	CF 51K $\Omega$ $\pm$ 5% SRD1/6P
C125	0252801	EL 0.1 $\mu$ F $\pm$ 20% 50V	C186	02750132	CC 0.022 $\mu$ F $\pm$ 10% 50V	R133	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C126	0252801	EL 0.1 $\mu$ F $\pm$ 20% 50V	C187	02750132	CC 0.022 $\mu$ F $\pm$ 10% 50V	R134	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C127	02528052	EL 0.47 $\mu$ F $\pm$ 20% 50V	C188	0274036	CC 8200PF $\pm$ 10% 50V	R135	4845507	CF 43K $\Omega$ $\pm$ 5% SRD1/6P
C128	02528052	EL 0.47 $\mu$ F $\pm$ 20% 50V	C189	0274036	CC 8200PF $\pm$ 10% 50V	R136	4845507	CF 43K $\Omega$ $\pm$ 5% SRD1/6P
C129	0275032	CC 0.018 $\mu$ F $\pm$ 10% 50V	C190	02740142	CC 3300PF $\pm$ 10% 50V	R137	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C130	0275032	CC 0.018 $\mu$ F $\pm$ 10% 50V	C191	02740142	CC 3300PF $\pm$ 10% 50V	R138	0113607	CF 470 $\Omega$ $\pm$ 5% SRD1/6P
C131	02760112	CC 0.1 $\mu$ F $\pm$ 10% 50V	C192	0274033	CC 2700PF $\pm$ 10% 50V	R139	0113653	CF 39K $\Omega$ $\pm$ 5% SRD1/6P
C132	02760112	CC 0.1 $\mu$ F $\pm$ 10% 50V	C193	0274033	CC 2700PF $\pm$ 10% 50V	R140	0113653	CF 39K $\Omega$ $\pm$ 5% SRD1/6P
C133	02760122	CC 0.15 $\mu$ F $\pm$ 10% 50V	C194	0274231	CC 1200PF $\pm$ 5% 50V	R141	4845511	CF 430 $\Omega$ $\pm$ 5% SRD1/6P
C134	02760122	CC 0.15 $\mu$ F $\pm$ 10% 50V	C195	0274231	CC 1200PF $\pm$ 5% 50V	R142	4845511	CF 430 $\Omega$ $\pm$ 5% SRD1/6P
C135	0275031	CC 0.012 $\mu$ F $\pm$ 10% 50V	C198	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R143	4845503	CF 13K $\Omega$ $\pm$ 5% SRD1/6P
C136	0275031	CC 0.012 $\mu$ F $\pm$ 10% 50V	C199	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R144	4845503	CF 13K $\Omega$ $\pm$ 5% SRD1/6P
C137	02760122	CC 0.15 $\mu$ F $\pm$ 10% 50V	C200	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R145	4845511	CF 430 $\Omega$ $\pm$ 5% SRD1/6P
C138	02760122	CC 0.15 $\mu$ F $\pm$ 10% 50V	C201	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R146	4845511	CF 430 $\Omega$ $\pm$ 5% SRD1/6P
C139	0274016	CC 6800PF $\pm$ 10% 50V	C202	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R147	4845504	CF 20K $\Omega$ $\pm$ 5% SRD1/6P
C140	0274016	CC 6800PF $\pm$ 10% 50V	C203	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R148	4845504	CF 20K $\Omega$ $\pm$ 5% SRD1/6P
C141	0275216	MF 0.068 $\mu$ F $\pm$ 10% 50V	C204	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R149	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P
C142	0275216	MF 0.068 $\mu$ F $\pm$ 10% 50V	C205	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R150	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P
C143	02740152	CC 4700PF $\pm$ 10% 50V	C206	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R151	0113657	CF 56K $\Omega$ $\pm$ 5% SRD1/6P
C144	02740152	CC 4700PF $\pm$ 10% 50V	C207	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R152	0113657	CF 56K $\Omega$ $\pm$ 5% SRD1/6P
C145	0275034	CC 0.039 $\mu$ F $\pm$ 10% 50V	C208	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R153	0113591	CF 100 $\Omega$ $\pm$ 5% SRD1/6P
C146	0275034	CC 0.039 $\mu$ F $\pm$ 10% 50V	C209	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R154	0113591	CF 100 $\Omega$ $\pm$ 5% SRD1/6P
C147	02740132	CC 2200PF $\pm$ 10% 50V	C210	02740162	CC 6800PF $\pm$ 10% 50V	R155	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P
C148	02740132	CC 2200PF $\pm$ 10% 50V	C211	02740162	CC 6800PF $\pm$ 10% 50V	R156	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P
C149	0275032	CC 0.018 $\mu$ F $\pm$ 10% 50V	C212	4845491	CD 100PF $\pm$ 10% 50V	R159	0113611	CF 680 $\Omega$ $\pm$ 5% SRD1/6P
C150	0275032	CC 0.018 $\mu$ F $\pm$ 10% 50V	C213	02526212	EL 10 $\mu$ F $\pm$ 20% 25V	R160	0113611	CF 680 $\Omega$ $\pm$ 5% SRD1/6P
C151	02740132	CC 2200PF $\pm$ 10% 50V	C214	4845461	CD 0.1 $\mu$ F $\pm$ 10% 50V	R161	0113643	CF 15K $\Omega$ $\pm$ 5% SRD1/6P
C152	02740132	CC 2200PF $\pm$ 10% 50V	RESISTORS			R162	0113643	CF 15K $\Omega$ $\pm$ 5% SRD1/6P
C153	02750112	CC 0.01 $\mu$ F $\pm$ 10% 50V	R101	0113591	CF 100 $\Omega$ $\pm$ 5% SRD1/6P	R163	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P
C154	02750112	CC 0.01 $\mu$ F $\pm$ 10% 50V	R102	0113591	CF 100 $\Omega$ $\pm$ 5% SRD1/6P	R164	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P
C155	0274231	CC 1200PF $\pm$ 5% 50V	R103	0113631	CF 4.7K $\Omega$ $\pm$ 5% SRD1/6P	R165	0113679	CF 470K $\Omega$ $\pm$ 5% SRD1/6P
C156	0274231	CC 1200PF $\pm$ 5% 50V	R104	0113631	CF 4.7K $\Omega$ $\pm$ 5% SRD1/6P	R166	0113679	CF 470K $\Omega$ $\pm$ 5% SRD1/6P
C157	4845491	CD 100PF $\pm$ 10% 50V	R105	4845508	CF 51K $\Omega$ $\pm$ 5% SRD1/6P	R167	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P
C158	4845491	CD 100PF $\pm$ 10% 50V	R106	0113657	CF 56K $\Omega$ $\pm$ 5% SRD1/6P	R168	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P
C159	02528112	EL 1 $\mu$ F $\pm$ 20% 50V	R107	0129631	CF 10K $\Omega$ $\pm$ 5% SRD1/4P	R169	0113679	CF 470K $\Omega$ $\pm$ 5% SRD1/6P
						R170	0113679	CF 470K $\Omega$ $\pm$ 5% SRD1/6P

CD : Ceramic discal    EL : Electrolytic  
 CC : Cylindrical ceramic    CF : Carbon film  
 MF : Mylar film    FR : Fuse resistor

SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION	SYMBOL No.	PART No.	DESCRIPTION
R171	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P	R244	0129571	CF 270 $\Omega$ $\pm$ 5% SRD1/4P	IC123	4836921	LA6339
R172	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P	R245	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	IC124	4836921	LA6339
R173	0113679	CF 470K $\Omega$ $\pm$ 5% SRD1/6P	R246	0113675	CF 330K $\Omega$ $\pm$ 5% SRD1/6P	IC125	4836931	MN4017B
R174	0113679	CF 470K $\Omega$ $\pm$ 5% SRD1/6P	R247	0113655	CF 47K $\Omega$ $\pm$ 5% SRD1/6P	Q5	2319041	2SC1815
R175	0113591	CF 100 $\Omega$ $\pm$ 5% SRD1/6P	R248	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q6	2319041	2SC1815
R176	0113591	CF 100 $\Omega$ $\pm$ 5% SRD1/6P	R249	0113663	CF 100K $\Omega$ $\pm$ 5% SRD1/6P	Q7	2317682	2SA1015
R177	0113679	CF 470K $\Omega$ $\pm$ 5% SRD1/6P	R250	0113663	CF 100K $\Omega$ $\pm$ 5% SRD1/6P	Q8	2317682	2SA1015
R178	0113679	CF 470K $\Omega$ $\pm$ 5% SRD1/6P	R251	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q101	4817121	2SD856
R179	0113663	CF 100K $\Omega$ $\pm$ 5% SRD1/6P	R252	0113655	CF 47K $\Omega$ $\pm$ 5% SRD1/6P	Q102	4817131	2SB761
R180	0113663	CF 100K $\Omega$ $\pm$ 5% SRD1/6P	R253	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q103	2319041	2SC1815
R181	0113663	CF 100K $\Omega$ $\pm$ 5% SRD1/6P	R254	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q104	2317682	2SA1015
R182	0113663	CF 100K $\Omega$ $\pm$ 5% SRD1/6P	R255	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q111	4838831	2SC2062
R183	0113663	CF 100K $\Omega$ $\pm$ 5% SRD1/6P	R256	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q112	4838831	2SC2062
R184	0129892	CF 8.2K $\Omega$ $\pm$ 5% SRD1/4P	R257	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q113	4838831	2SC2062
R185	0113651	CF 33K $\Omega$ $\pm$ 5% SRD1/6P	R258	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q114	4838831	2SC2062
R186	0113663	CF 100K $\Omega$ $\pm$ 5% SRD1/6P	R259	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q115	4838831	2SC2062
R187	4845506	CF 30K $\Omega$ $\pm$ 5% SRD1/6P	R260	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q116	4838831	2SC2062
R188	4845513	CF 750 $\Omega$ $\pm$ 5% SRD1/6P	R261	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q117	4838831	2SC2062
R189	0113673	CF 270K $\Omega$ $\pm$ 5% SRD1/6P	R262	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q118	4838831	2SC2062
R190	4845505	CF 24K $\Omega$ $\pm$ 5% SRD1/6P	R263	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q119	4838831	2SC2062
R191	0113609	CF 560 $\Omega$ $\pm$ 5% SRD1/6P	R264	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	Q120	4838831	2SC2062
R192	0113671	CF 220K $\Omega$ $\pm$ 5% SRD1/6P	R265	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	DIODES		
R193	0113655	CF 47K $\Omega$ $\pm$ 5% SRD1/6P	R266	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D101	4825101	S5500B
R194	0113613	CF 820 $\Omega$ $\pm$ 5% SRD1/6P	R267	0129617	CF 4.7K $\Omega$ $\pm$ 5% SRD1/4P	D102	4825101	S5500B
R195	4845512	CF 300K $\Omega$ $\pm$ 5% SRD1/6P	R268	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D103	4825101	S5500B
R196	0113655	CF 47K $\Omega$ $\pm$ 5% SRD1/6P	R269	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D104	4825101	S5500B
R197	0113613	CF 820 $\Omega$ $\pm$ 5% SRD1/6P	R270	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D105	4836891	05Z18
$\Delta$ R198	1113825	FR 4.7 $\Omega$ $\pm$ 5% RN1/2B	R271	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D106	4836891	05Z18
$\Delta$ R199	1113825	FR 4.7 $\Omega$ $\pm$ 5% RN1/2B	R272	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D107	4845421	05Z5.6
R200	4845513	CF 750 $\Omega$ $\pm$ 5% SRD1/6P	R273	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D108	4845411	05Z8.2
R201	0113673	CF 270K $\Omega$ $\pm$ 5% SRD1/6P	R274	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D109	2337011	1S2076
R202	0113657	CF 56K $\Omega$ $\pm$ 5% SRD1/6P	R275	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D110	4825101	S5500B
R203	0113615	CF 1K $\Omega$ $\pm$ 5% SRD1/6P	R276	0113639	CF 10K $\Omega$ $\pm$ 5% SRD1/6P	D111	2337011	1S2076
R204	0113677	CF 390K $\Omega$ $\pm$ 5% SRD1/6P	R278	0129579	CF 560 $\Omega$ $\pm$ 5% SRD1/4P	D112	2337011	1S2076
R205	0113659	CF 68K $\Omega$ $\pm$ 5% SRD1/6P	R282	0113615	CF 1K $\Omega$ $\pm$ 5% SRD1/6P	D113	2337011	1S2076
R206	0113617	CF 1.2K $\Omega$ $\pm$ 5% SRD1/6P	R283	0113615	CF 1K $\Omega$ $\pm$ 5% SRD1/6P	D114	2337011	1S2076
R208	0113653	CF 39K $\Omega$ $\pm$ 5% SRD1/6P	R288	0129579	CF 560 $\Omega$ $\pm$ 5% SRD1/4P	D115	2337011	1S2076
R209	4845513	CF 750 $\Omega$ $\pm$ 5% SRD1/6P	ICs & TRANSISTORS			D116	2337011	1S2076
R210	0113673	CF 270K $\Omega$ $\pm$ 5% SRD1/6P	IC101	2369551	NJM4558	D118	2337011	1S2076
R211	0113653	CF 39K $\Omega$ $\pm$ 5% SRD1/6P	IC102	2369551	NJM4558	D119	2337011	1S2076
R212	0113613	CF 820 $\Omega$ $\pm$ 5% SRD1/6P	IC103	2369551	NJM4558	D120	2337011	1S2076
R213	0113675	CF 330K $\Omega$ $\pm$ 5% SRD1/6P	IC104	2369551	NJM4558	D121	2337011	1S2076
R214	0113653	CF 39K $\Omega$ $\pm$ 5% SRD1/6P	IC105	2369551	NJM4558	D122	2337011	1S2076
R215	4845513	CF 750 $\Omega$ $\pm$ 5% SRD1/6P	IC106	2369551	NJM4558	D123	2337011	1S2076
R216	0113673	CF 270K $\Omega$ $\pm$ 5% SRD1/6P	IC107	2369551	NJM4558	D124	2337011	1S2076
R217	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P	IC108	2369551	NJM4558	D125	2337011	1S2076
R218	0113675	CF 330K $\Omega$ $\pm$ 5% SRD1/6P	IC109	2369551	NJM4558	D126	2337011	1S2076
R229	0113615	CF 1K $\Omega$ $\pm$ 5% SRD1/6P	IC110	2369551	NJM4558	D127	2337011	1S2076
R230	0113655	CF 47K $\Omega$ $\pm$ 5% SRD1/6P	IC111	2369551	NJM4558	D128	2337011	1S2076
R231	4845508	CF 51K $\Omega$ $\pm$ 5% SRD1/6P	IC112	2369551	NJM4558	D129	2337011	1S2076
R232	4845503	CF 13K $\Omega$ $\pm$ 5% SRD1/6P	IC113	2369551	NJM4558	D130	2337011	1S2076
R234	0113635	CF 6.8K $\Omega$ $\pm$ 5% SRD1/6P	IC114	2369551	NJM4558	D131	2337011	1S2076
R235	0113635	CF 6.8K $\Omega$ $\pm$ 5% SRD1/6P	IC115	2369551	NJM4558	D170	2337011	1S2076
R236	0113633	CF 5.6K $\Omega$ $\pm$ 5% SRD1/6P	IC116	2369551	NJM4558	MISCELLANEOUS		
R238	0113627	CF 3.3K $\Omega$ $\pm$ 5% SRD1/6P	IC117	2369551	NJM4558		4836851	Power SW
R239	0113627	CF 3.3K $\Omega$ $\pm$ 5% SRD1/6P	IC118	2369551	NJM4558		4839021	FUNCTION SW
R240	0113623	CF 2.2K $\Omega$ $\pm$ 5% SRD1/6P	IC119	2369551	NJM4558		2678344	4P US pin jack
R241	0113625	CF 2.2K $\Omega$ $\pm$ 5% SRD1/6P	IC120	4836921	LA6339			
R242	0113621	CF 1.8K $\Omega$ $\pm$ 5% SRD1/6P	IC121	4836921	LA6339			
R243	0113619	CF 1.5K $\Omega$ $\pm$ 5% SRD1/6P	IC121	4836921	LA6339			

SYMBOL No.	PART No.	DESCRIPTION
<b>CABINET</b>		
1	4839072 4839073	Escutcheon ass'y [for US, CS] Escutcheon ass'y [for VK, EW, BK, ZS]
2	3308162 3308163	Power button ass'y [for US, CS] Power button ass'y [for VK, EW, BK, ZS]
3	3307851	Slide knob ass'y
4	3307771	Push button
5	3960371	Joint stick
6	4029294	Foot
7	4839832	Top cover
8	4474033 4474034 4474035 4474036 4474037	Rear plate [for US, CS] Rear plate [for VK] Rear plate [for EW] Rear plate [for ZS] Rear plate [for BK]
9	00437932 3913006	Bushing(3P-4) [for US, CS, EW] Bushing(4N-4) [for VK, ZS, BK]
10	4567431	3 x 6BT bind screw
11	4567451	3 x 6DT bind screw
12	4784106	3 x 10 tapping bind head screw
13	4567442	3 x 8DT bind screw
14	4567455	3 x 14DT bind head screw
15	4567413	3 x 10 bind head screw
△16	4845541	AC coad [for US, CS]
△	2712101	AC coad [for VK, ZS, EW]
△	2749582	AC coad [for BK]
△17	4844921	Power transformer [for US, CS]
△	4847551	Power transformer [for BK]
△	4847931	Power transformer [for VK, ZS]
△	4848431	Power transformer [for EW]
△18	2658372	AC outlet [for US, CS, EW]
△19	2618053 47702552 4847571 4845273	Voltage switch 4 Flanged nut GE BLOCK VR FL C.B.A.
<b>for ACCESSORIES</b>		
	9004057	Side wood

<p><b>NJM 4558</b></p>
<p><b>LA6339</b></p>
<p><b>MN4017B</b></p>
<p><b>2SA1015</b> <b>2SC1815</b> <b>2SC2062</b></p>
<p><b>2SB761</b> <b>2SD856</b></p>
<p><b>1S2076</b> <b>05Z5.6</b> <b>05Z8.2</b> <b>05Z18</b></p>
<p><b>S5500B</b></p>



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