

# HITACHI

## SERVICE MANUAL

TY

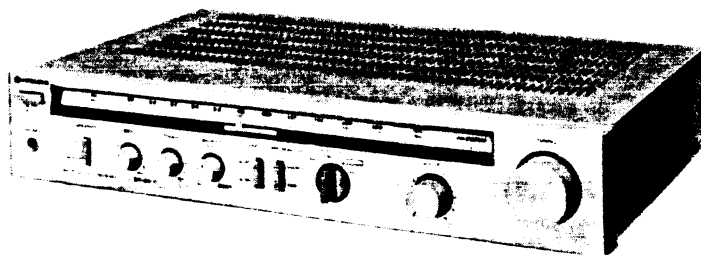
No. 247 EGF

# SR-2000

MARIAN SZALA

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### SAFETY PRECAUTION

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi's 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 schematic diagram and circuit board diagram.
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

### FM SECTION

|                                   |                                       |                              |
|-----------------------------------|---------------------------------------|------------------------------|
| Frequency range                   | 88 — 108 MHz                          | ( ) is indicated IHF '58     |
| Usable sensitivity                | Mono: 10.8 dBf (1.9 $\mu$ V)          | Stereo: 20 dBf (5.5 $\mu$ V) |
| 50 dB quieting sensitivity        | Mono: 17 dBf (3.9 $\mu$ V)            | Stereo: 37 dBf (39 $\mu$ V)  |
| Signal-to-noise ratio (at 65 dBf) | Mono: 74 dB                           | Stereo: 68 dB                |
| Harmonic distortion (at 65 dBf)   |                                       |                              |
| 100 Hz                            | Mono: 0.2%                            | Stereo: 0.3%                 |
| 1 kHz                             | Mono: 0.15%                           | Stereo: 0.3%                 |
| 6 kHz                             | Mono: 0.25%                           | Stereo: 0.3%                 |
| Frequency response                | 30 Hz — 12 kHz ( $\pm 2$ dB)          |                              |
| Image response ratio              | 98 MHz: 50 dB                         |                              |
| Spurious response ratio           | 80 dB                                 |                              |
| IF response ratio                 | 80 dB                                 |                              |
| Alternate channel selectivity     | 55 dB ( $\pm 400$ kHz)                |                              |
| Capture ratio                     | 1 dB                                  |                              |
| AM suppression ratio              | 50 dB                                 |                              |
| Stereo separation                 | 40 dB (1 kHz)                         |                              |
| Muting threshold                  | 20 dBf (5.5 $\mu$ V)                  |                              |
| Antenna input                     | 300 ohms balanced, 75 ohms unbalanced |                              |

### AM SECTION

|                       |                                    |
|-----------------------|------------------------------------|
| Frequency range       | 530 — 1,605 kHz                    |
| Sensitivity           | 15 $\mu$ V (IHF, ext. Antenna)     |
| Image rejection       | 48 dB                              |
| IF rejection          | 37 dB                              |
| Selectivity           | 34 dB ( $\pm 10$ kHz)              |
| Signal-to-noise ratio | 53 dB                              |
| Antenna               | Loop antenna and separate terminal |

### AUDIO SECTION

|                                     |                                                                                                                                                                                                                |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output                              |                                                                                                                                                                                                                |
| RMS Power<br>(Both channels driven) | 25 Watts per channel, min. RMS, at<br>8 ohms from 40 Hz to 20 kHz, with<br>no more than 0.3% total harmonic<br>distortion.<br>27W + 27W (8 ohms, 1 kHz, T.H.D. 0.3%)<br>30W + 30W (4 ohms, 1 kHz, T.H.D. 0.3%) |

### Power bandwidth

20 Hz — 20 kHz (1/2 RMS power, T.H.D. 0.3%  
at 8 ohms)

### Frequency characteristics

20 Hz — 30 kHz ( $\pm 2$  dB)

### Harmonic distortion

Less than 0.3%  
Less than 0.05%

### (at rated output)

### (at 1/2 rated output)

### Intermodulation distortion

0.3%

### (at rated output)

### (at 1/2 rated output)

0.05%

### Input sensitivity

### (at 25 W output, 1 kHz)

### PHONO

2.5 mV (46 k ohms)

### TAPE

150 mV (36 k ohms)

### Max. input level (PHONO)

120 mV (T.H.D. 0.3% at 1 kHz)

### Output level

### TAPE OUT

150 mV (PHONO at rated input)  
150 mV (FM 400 Hz, 30% dev. input: 1 mV)  
150 mV (AM 400 Hz, 30% mod. input: 5 mV/m)

### Signal-to-noise ratio

### (IHF, A network, rated power)

### PHONO

70 dB

### TAPE

92 dB

### Damping factor

25 (50 Hz, 8 ohms)

### Equalizer

RIAA  $\pm 0.5$  dB

### Bass control

$\pm 10$  dB (100 Hz)

### Treble control

$\pm 8$  dB (10 kHz)

### Loudness control

+9 dB (100 Hz)

### FM Muting

Provided

### Tape monitor

1

### VECTOR TUNING indicators

3 LEDs

### Speakers switch

MAIN, REMOTE

### AC outlet

1 (50 W unswitched) (for U.S.A., Canada and  
some other countries)

### Power requirements

AC 120 V 60 Hz, ~220V 50/60 Hz,

~240 V 50/60 Hz or

~120 V/220 V/240 V 50/60 Hz

### Power consumption

140W (at 1/3 rated output), 210 W (at rated output)

### Dimensions

435 (W)  $\times$  83 (H)  $\times$  290 (D) mm

### Weight

17-1/8 (W)  $\times$  3-1/4 (H)  $\times$  11-13/32 (D) in.

5.7 kg (12.5 lbs)

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

## STEREO RECEIVER

February 1981

TOYOKAWA WORKS

**SICHERHEITSMASSNAHMEN**

Bei Wartungsarbeiten sind die folgenden Sicherheitsmaßnahmen zu beachten:

1. Da verschiedene Teile dieses Gerätes Sicherheitsfunktionen aufweisen, nur Original-Hitachi-Ersatzteile verwenden. Kritische Teile im Netzteil sollten nicht durch ähnliche Teile anderer Hersteller ersetzt werden. Alle kritischen Teile sind im Schaltplan und im Diagramm der Schaltplatinen mit dem Symbol  gekennzeichnet.
2. Vor der Auslieferung eines reparierten Gerätes an den Kunden muß der Wartungstechniker das Gerät einer gründlichen Prüfung unterziehen, um sicherzustellen, daß sicherer Betrieb ohne die Gefahr von elektrischen Schlägen gewährleistet ist.

**TECHNISCHE DATEN**

Änderungen der technischen Daten bleiben im Sinne der ständigen Verbesserung vorbehalten.

|                                    |                                                                 |                        |  |
|------------------------------------|-----------------------------------------------------------------|------------------------|--|
| <b>FM-TEIL</b>                     |                                                                 |                        |  |
| Frequenzbereich                    | 88 - 108 MHz                                                    | ( ) IHF 58             |  |
| Nutzempfindlichkeit                | Mono: 10,8 dBf (1 µV)                                           | Stereo: 20 dBf (5 µV)  |  |
| 50 dB-Empfindlichkeitsschwelle     | Mono: 17 dBf (3 µV)                                             | Stereo: 37 dBf (39 µV) |  |
| Signal/Rausch-Abstand (bei 65 dBf) |                                                                 |                        |  |
| Klirrfaktor (bei 65 dBf)           |                                                                 |                        |  |
| 100 Hz                             | Mono: 74 dB                                                     | Stereo: 68 dB          |  |
| 1 kHz                              | Mono: 0,2%                                                      | Stereo: 0,3%           |  |
| 6 kHz                              | Mono: 0,15%                                                     | Stereo: 0,3%           |  |
| 30 Hz - 12 kHz (±2 dB)             | Mono: 0,25%                                                     | Stereo: 0,3%           |  |
| Spiegelfrequenzgangsgrad           | 98 MHz - 50 dB                                                  |                        |  |
| Unselektivitätsgrad                | 80 dB                                                           |                        |  |
| Zwischenfrequenzgangsgrad          | 80 dB                                                           |                        |  |
| Drittkanalselektivität             | 55 dB                                                           |                        |  |
| Einfangsgrad                       | 1 dB                                                            |                        |  |
| AM-Entstörung                      | 50 dB (±400 kHz)                                                |                        |  |
| Stereotrennung                     | 40 dB (1 kHz)                                                   |                        |  |
| Zwischenfrequenzunterdrückung      | 40 dB                                                           |                        |  |
| Geräuschsperre                     | 20 dBf (5 µV)                                                   |                        |  |
| Antenneneingang                    | 300 Ohm abgeglichen, 75 Ohm nicht abgeglichen                   |                        |  |
| <b>AM-TEIL</b>                     |                                                                 |                        |  |
| Frequenzbereich                    | 530 - 1.605 kHz                                                 |                        |  |
| Empfindlichkeit                    | 15 µV (IHF, ext. Antenne)                                       |                        |  |
| Spiegelsperre                      | 43 dB                                                           |                        |  |
| ZF-Sperre                          | 37 dB                                                           |                        |  |
| Trennschärfe                       | 34 dB (±10 kHz)                                                 |                        |  |
| Signal/Rausch-Abstand              | 53 dB                                                           |                        |  |
| Antenne                            | Zusammenfassung und Separatanschluß                             |                        |  |
| <b>AUDIO-TEIL</b>                  |                                                                 |                        |  |
| Ausgangsleistung                   | DIN 8 Ohm: 27 W + 27 W (1 kHz, T.H.D. 0,3%)                     |                        |  |
|                                    | DIN 4 Ohm: 30 W + 30 W (1 kHz, T.H.D. 0,3%)                     |                        |  |
| Leistungsbandbreite                | 20 Hz - 20 kHz (1/2 RMS Sinusleistung)                          |                        |  |
|                                    | T.H.D. 0,3% bei 8 Ohm                                           |                        |  |
| Frequenzcharakteristiken           | 20 Hz - 20 kHz (±2 dB)                                          |                        |  |
| <b>Klirrfaktor</b>                 |                                                                 |                        |  |
| (bei Nennleistung)                 | Weniger als 0,3%                                                |                        |  |
| (bei 1/2 Nennleistung)             | Weniger als 0,05%                                               |                        |  |
| <b>Intermodulationsverzerrung</b>  |                                                                 |                        |  |
| (bei Nennleistung)                 | 0,3%                                                            |                        |  |
| (bei 1/2 Nennleistung)             | 0,05%                                                           |                        |  |
| <b>Eingangsempfindlichkeit</b>     |                                                                 |                        |  |
| (bei 15 W Abgabeleistung, 1 kHz)   |                                                                 |                        |  |
| PHONO                              | 2,5 mV (16 k Ohm)                                               |                        |  |
| Band (TAPE)                        | 150 mV (36 k Ohm)                                               |                        |  |
| Max. Eingangspegel (PHONO)         | 120 mV (T.H.D. 0,3% bei 1 kHz)                                  |                        |  |
| <b>Ausgangspegel</b>               |                                                                 |                        |  |
| Tonband-Ausgang (TAPE OUT)         | 150 mV (PHONO bei Nennleistung)                                 |                        |  |
|                                    | 150 mV (FM 400 Hz 30% Abw. Eingang 1 mV)                        |                        |  |
|                                    | 150 mV (AM 400 Hz 30% Mod. Eingang 5 mV/m)                      |                        |  |
| <b>Geräuschspannungsabstand</b>    |                                                                 |                        |  |
| (IHF, A Netz, Nennleistung)        |                                                                 |                        |  |
| PHONO                              | 70 dB                                                           |                        |  |
| TAPE                               | 92 dB                                                           |                        |  |
| Dämpfungsfaktor                    | 25 (±1 Hz, 8 Ohm)                                               |                        |  |
| Entzerrer                          | RIAA ± 0,5 dB                                                   |                        |  |
| Baßregler                          | ± 10 dB (100 Hz)                                                |                        |  |
| Höhenregler                        | ± 8 dB (10 kHz)                                                 |                        |  |
| Gehörrichtige Lautstärkeregelung   | ± 9 dB (100 Hz)                                                 |                        |  |
| FM Dämpfung                        | Verhanden                                                       |                        |  |
| Hinterbandkontrolle                | 1                                                               |                        |  |
| Vektor-Abstimmungsanzeige          | 3 LEDs                                                          |                        |  |
| Lautsprecherschalter               | MAIN, REMOTE                                                    |                        |  |
| Wechselstromanschluß               | 1 (50 W abschaltbar) (für USA, Kanada und einige andere Länder) |                        |  |
| <b>Strombedarf</b>                 |                                                                 |                        |  |
|                                    | Wechselstrom 120 V 60 Hz, ~ 220 V 50/60 Hz                      |                        |  |
|                                    | ~ 240 V 50/60 Hz oder ~ 120 V/220 V/240 V 50/60 Hz              |                        |  |
|                                    | 140 W (bei 1/3 Nennleistung), 210 W (bei Nennleistung)          |                        |  |
|                                    | 43,5 (W) x 83 (H) x 290 (D) mm                                  |                        |  |
|                                    | 5,7 kg (12,5 lbs)                                               |                        |  |
| <b>Stromverbrauch</b>              |                                                                 |                        |  |
| Abmessungen                        |                                                                 |                        |  |
| Gewicht                            |                                                                 |                        |  |

**FEATURES**

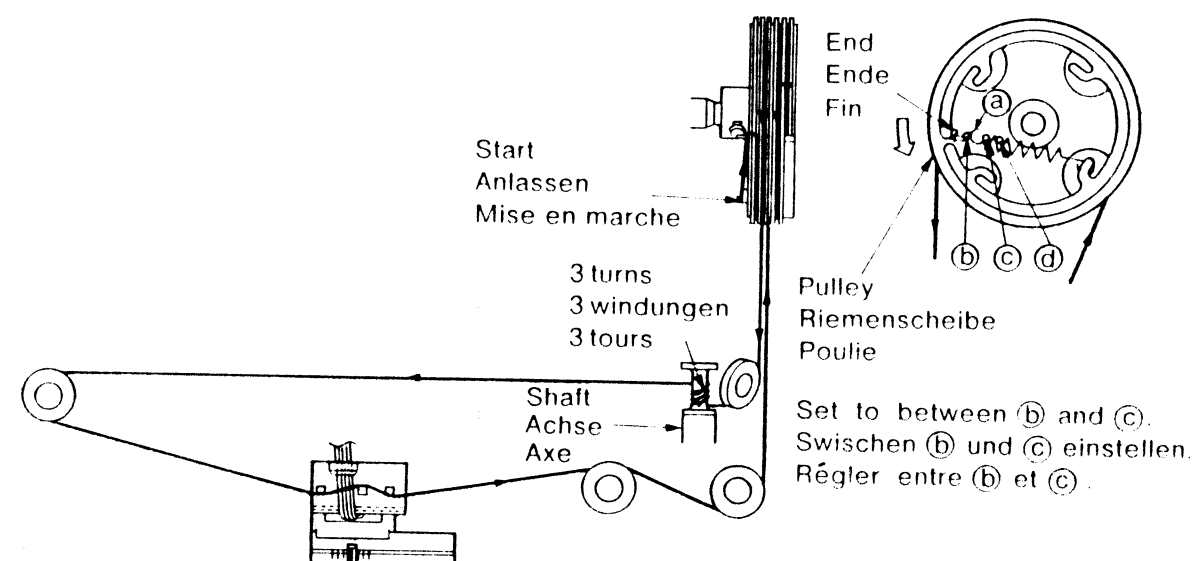
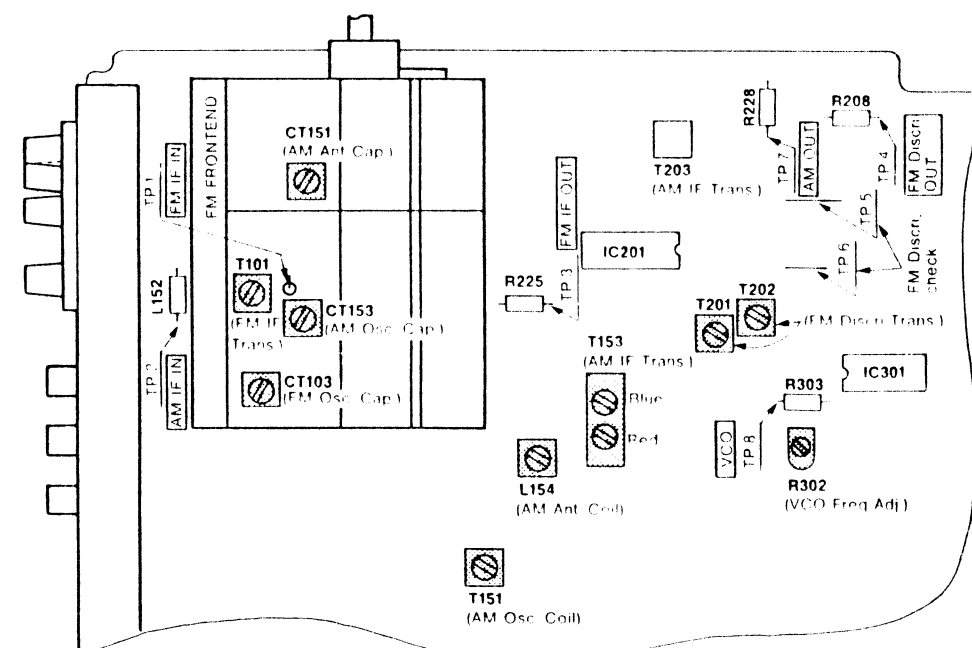
1. VECTOR TUNING system
2. Integrated Power Output Stage
3. High-gain AM Loop antenna circuitry
4. High Quality FM frontend
5. Equalizer circuit with high-performance IC
6. Connection facilities for two speaker systems

**MERKMALE**

1. Vektor-Abstimmsystem (VECTOR TUNING)
2. Integrierte Hochleistungsausgangsstufe
3. MW-Rahmenantenne mit hohem Gewinn
4. Hochwertige UKW-Eingangsstufe
5. Entzerrerschaltkreis mit / Hochleistungs-IC
6. Anschlußeinrichtungen für zwei Lautsprechersysteme

**CARACTERISTIQUES**

1. Dispositif d'accord à accord vectoriel
2. Etage de sortie intégré
3. Circuit d'antenne en cadre AM à gain élevé
4. Etage d'entrée FM de haute qualité
5. Un circuit de correction acoustique avec circuit intégré de haute performance
6. Branchements possibles pour deux systèmes d'enceintes

**DIAL CORD SETTING • SKALENSEILEINSTELLUNG • EQUIPEMENT DE CADRAN****GENERAL ALIGNMENT INSTRUCTION • ALLGEMEINE ABGLEICHANLEITUNG • INSTRUCTION GENERALE DE REGLAGE****PRÉCAUTIONS DE SÉCURITÉ**

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

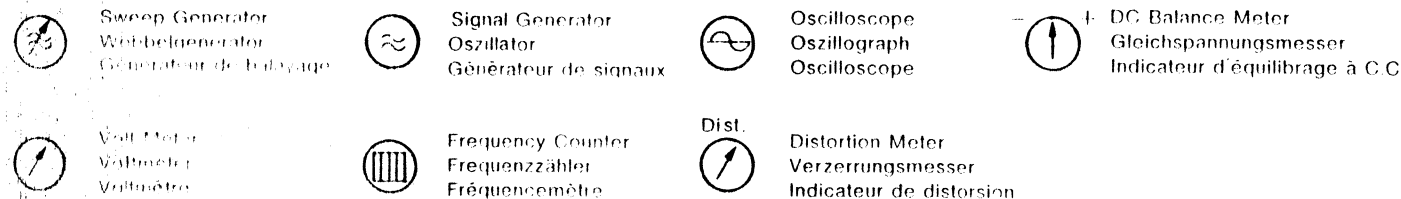
1. Étant donné que de nombreux composants de l'appareil possèdent des caractéristiques relatives à la sécurité, utiliser uniquement des pièces de rechange d'origine Hitachi pour effectuer un remplacement. Ceci se rapporte notamment aux pièces critiques du bloc d'alimentation qui ne doivent en aucun cas être remplacées par celles d'autres fabricants. Les pièces critiques sont accompagnées du symbole  dans le schéma de montage et sur le schéma de plaque de câblage.
2. 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.

**CARACTERISTIQUES TECHNIQUES**

Les caractéristiques techniques et la présentation peuvent être modifiées sans préavis pour des raisons d'améliorations.

|                                      |                                                                                      |                        |  |
|--------------------------------------|--------------------------------------------------------------------------------------|------------------------|--|
| <b>SECTION FM</b>                    |                                                                                      |                        |  |
| Bande de fréquences                  | 88 - 108 MHz                                                                         | ( ) IHF 58             |  |
| Sensibilité utilisable               | Mono: 10,8 dBf (1 µV)                                                                | Stereo: 20 dBf (5 µV)  |  |
| Seuil de sensibilité 50 dB           | Mono: 17 dBf (3 µV)                                                                  | Stereo: 37 dBf (39 µV) |  |
| Rapport signal/bruit (65 dBf)        | Mono: 74 dB                                                                          | Stereo: 68 dB          |  |
| Distorsion harmonique (65 dBf)       |                                                                                      |                        |  |
| 100 Hz                               | Mono: 0,2%                                                                           | Stereo: 0,3%           |  |
| 1 kHz                                | Mono: 0,15%                                                                          | Stereo: 0,3%           |  |
| 6 kHz                                | Mono: 0,25%                                                                          | Stereo: 0,3%           |  |
| Réponse en fréquence                 | 30 Hz - 12 kHz (±2 dB)                                                               |                        |  |
| Rapport de sélectivité               | 98 MHz - 50 dB                                                                       |                        |  |
| Rapport de réception non sélective   | 80 dB                                                                                |                        |  |
| Taux de réponse FI                   | 80 dB                                                                                |                        |  |
| Sélectivité du canal de rechange     | 55 dB (±400 kHz)                                                                     |                        |  |
| Rapport de captage                   | 1 dB                                                                                 |                        |  |
| Suppression AM                       | 50 dB                                                                                |                        |  |
| Séparation stéréo                    | 40 dB (1 kHz)                                                                        |                        |  |
| Seuil de sourdine                    | 20 dBf (5 µV)                                                                        |                        |  |
| Entrée de l'antenne                  | 300 ohms pondérés, 75 ohms non-équilibrés                                            |                        |  |
| <b>SECTION AM</b>                    |                                                                                      |                        |  |
| Bande de fréquence                   | 530 - 1.605 kHz                                                                      |                        |  |
| Sensibilité                          | 15 µV (Antenne ext., IHF)                                                            |                        |  |
| Rejet image                          | 48 dB                                                                                |                        |  |
| Rejet FI                             | 37 dB                                                                                |                        |  |
| Sélectivité                          | 34 dB (±10 kHz)                                                                      |                        |  |
| Rapport signal/bruit                 | 53 dB                                                                                |                        |  |
| Antenne                              | Bornes d'antenne-cadre et borne séparée                                              |                        |  |
| <b>SECTION AUDIO</b>                 |                                                                                      |                        |  |
| Sortie                               | 27 W + 27 W (8 ohms, 1 kHz, D.H.T. 0,3%)                                             |                        |  |
|                                      | 30 W + 30 W (4 ohms, 1 kHz, D.H.T. 0,3%)                                             |                        |  |
| Bande passante                       | 20 Hz - 20 kHz (Puissance 1/2 RMS, D.H.T. 0,3%)                                      |                        |  |
|                                      | à 8 ohms                                                                             |                        |  |
| Courbe de fréquence                  | 20 Hz - 20 kHz (±2 dB)                                                               |                        |  |
| <b>Distorsion harmonique</b>         |                                                                                      |                        |  |
| (à la puissance réelle)              | Intérieure à 0,3%                                                                    |                        |  |
| (à la moitié de la puissance réelle) | Intérieure à 0,05%                                                                   |                        |  |
| <b>Distorsion d'intermodulation</b>  |                                                                                      |                        |  |
| (à la puissance réelle)              | 0,3%                                                                                 |                        |  |
| (à la moitié de la puissance réelle) | 0,05%                                                                                |                        |  |
| <b>Sensibilité d'entrée</b>          |                                                                                      |                        |  |
| (sous 15 W, 1 kHz de sortie)         |                                                                                      |                        |  |
| PHONO                                | 2,5 mV (16 k ohms)                                                                   |                        |  |
| TAPE                                 | 150 mV (36 k ohms)                                                                   |                        |  |
| Niveau d'entrée maximum (PHONO)      | 120 mV (avec une D.H.T. de 0,3% à 1 kHz)                                             |                        |  |
| <b>Niveau de sortie</b>              |                                                                                      |                        |  |
| TAPE OUT                             | 150 mV (PHONO, à l'entrée nominale)                                                  |                        |  |
|                                      | 150 mV (FM 400 Hz, 30% d'entrée dev. 1 mV)                                           |                        |  |
|                                      | 150 mV (AM 400 Hz, 30% d'entrée mod. 5 mV/m)                                         |                        |  |
| <b>Rapport signal/bruit</b>          |                                                                                      |                        |  |
| (IHF, réseau A, puissance nominale)  |                                                                                      |                        |  |
| PHONO                                | 70 dB                                                                                |                        |  |
| TAPE                                 | 92 dB                                                                                |                        |  |
| Facteur d'atténuation                | 25 (±1 Hz, 8 ohms)                                                                   |                        |  |
| Compensateur                         | RIAA ± 0,5 dB                                                                        |                        |  |
| Commande des graves                  | ± 10 dB (100 Hz)                                                                     |                        |  |
| Commande des aigus                   | ± 8 dB (10 kHz)                                                                      |                        |  |
| Correction sonore physiologique      | ± 9 dB (100 Hz)                                                                      |                        |  |
| Sonorité FM                          | Incorpore                                                                            |                        |  |
| Contrôle de bande                    | 1                                                                                    |                        |  |
| Indicateurs d'accord vectoriel       | 3 LEDs                                                                               |                        |  |
| Interrupteur d'enceintes             | MAIN, REMOTE                                                                         |                        |  |
| Sortie C.A.                          | 1 (50 W non commutable) (Pour les USA, le Canada et autres pays)                     |                        |  |
| <b>Alimentation</b>                  |                                                                                      |                        |  |
|                                      | C.A. 120 V 60 Hz, ~ 220 V 50/60 Hz, ~ 240 V 50/60 Hz ou ~ 120 V/220 V/240 V 50/60 Hz |                        |  |
| <b>Consommation</b>                  |                                                                                      |                        |  |
|                                      | 140 W (à 1/3 de la puissance réelle), 210 W (à la puissance réelle)                  |                        |  |
| <b>Dimensions</b>                    |                                                                                      |                        |  |
| Poids                                | 43,5 (W) x 83 (H) x 290 (D) mm                                                       |                        |  |
|                                      | 5,7 kg (12,5 lbs)                                                                    |                        |  |

# FM TUNER ALIGNMENT • ABGLEICH DES UKW-TUNERS • REGLAGE DU CIRCUIT SON



Condition Function: FM MONO  
FM Muting: OFF  
Modulation: 400 Hz, 100%  
(Unless otherwise notified)

Bedingung Funktion: FM (UKW) MONO  
FM (UKW) Muting: OFF  
Modulation: 400 Hz, 100%  
(Falls nicht anders angegeben)

Condition Function: FM MONO  
Sourcine FM: OFF  
Modulation: 400 Hz, 100%  
(Sauf Indication contraire)

| Sequence<br>Reihenfolge<br>Séquence | Connection<br>Anschluß<br>Connexion                                                                                              | Setting<br>Setzen<br>Montage                         | Adjust for<br>Einstellen für<br>Réglage pour |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------|
| 1                                   | IF Amp<br>ZF-Verstärker<br>Amplificateur de fréquence intermédiaire                                                              | TP 3<br>100k 0.1µ                                    | 10.7 MHz                                     |
| 2                                   | S-curve<br>S-Kurve<br>Courbe S                                                                                                   | TP 4<br>100k 0.1µ                                    | 10.7 MHz                                     |
| 3                                   | Covering<br>Abgleich<br>Coupage                                                                                                  | ANT Terminal<br>Antennen-Anschluß<br>Borne d'antenne | 109 MHz                                      |
| 4                                   | Tracking<br>Vorstufe<br>Alignement                                                                                               | REC or SPEAKER<br>OUTPUT                             | 90 MHz<br>106 MHz                            |
| 5                                   | Dist. Def.<br>Dist. (MUTE OFF)                                                                                                   | Dist.<br>Verzerrung<br>Distorsion                    | 98 MHz                                       |
| 6                                   | Distortion<br>Verzerrung<br>Distorsion                                                                                           | REC or SPEAKER<br>OUTPUT                             | 98 MHz                                       |
| 7                                   | Function FM STEREO<br>Funktion UKW Stereo<br>Fonction Stereo FM<br>76 kHz                                                        | Non-modulated<br>Nicht moduliert<br>Non modulé       | 98 MHz                                       |
| 8                                   | Function FM STEREO<br>Funktion UKW Stereo<br>Fonction Stereo FM<br>Stereo Distortion<br>Stereo Verzerrungen<br>Distorsion Stereo | L + R 46%<br>L + R 46% Mod.<br>Pilot 8% Mod          | 98 MHz                                       |

## CAUTION

- Input low level signals (such that noises are mixed together is shown in Fig. 1) from the sweep generator. Setting the gain to maximum with T101, adjust the waveform until it appears like that shown in Fig. 1. The ground side of the sweep generator output dummy should be connected to the local oscillator shielded plate.
- Inputting high level signals from the sweep generator, adjust the waveform with T101 until it becomes like that shown in Fig. 2.
- Adjusting the T201, obtain an S-curve as shown in Fig. 3. Then adjust the T202 to make the amplitude of the S-curve maximum with points A and B symmetrical with respect to point C and the slope as linear as possible.
- As the result of the adjustment step 6, the best point of adjustment from step 5 will be shifted a bit. Repeat the adjustment of step 5 and 6 until the deterioration becomes minimum and the DC balance meter shows 0±30mV.

## VORSICHT

- Niederpegelige Signale (gemischtes Rauschen gemäß Abb. 1) von einem Wobbelgenerator eingeben. Den Gewinn mit T101 auf ein Maximum einstellen und die Wellenform so einjustieren, daß sie Abb. 1 entspricht. Die Erdungsseite des Wobbelgenerator-Ausganges sollte an die abgeschirmte Platte des Empfangsoszillators angeschlossen werden.
- Hochpegelige Signale von einem Wobbelgenerator eingeben und mit Hilfe von T201 die Wellenform so einstellen, daß sie Abb. 2 entspricht.
- Den Sekundärkern von T201 so einstellen, daß eine S-Kurve gemäß Abb. 3 erhalten wird. Danach Primärkern von T202 so einstellen, daß die Amplitude der S-Kurve ein Maximum annimmt, wobei die Punkte A und B symmetrisch zu C liegen müssen und die Kurven flanke möglichst linear verlaufen sollte.
- Aufgrund des Einstellschrittes 6 wird sich der optimale Einstellpunkt für Schritt 5 etwas verändern. Die Einstellungen der Schritte wiederholen, bis sich bei einer Anzeige von 0±30mV der Gleichstrom-Balanceanzeige minimale Verzerrungen ergeben.

## ATTENTION

- Appliquer des signaux à faible niveau à l'aide d'un générateur de balayage (de telle sorte que les bruits soient mélangés comme indiqué sur la Fig. 1). Régler le gain au maximum avec T101, ajuster la forme d'onde pour qu'elle prenne la forme indiquée sur la Fig. 1. La terre de la sortie fictive du générateur de balayage doit être reliée à la plaque blindée de l'oscillateur local.
- Appliquer des signaux à niveau élevé à l'aide d'un générateur de balayage, ajuster la forme d'onde avec T101 pour qu'elle prenne la forme indiquée sur la Fig. 2.
- Ajuster le noyau secondaire de T201 pour obtenir la courbe en S indiquée sur la Fig. 3. Ajuster ensuite le noyau primaire de T202 pour faire en sorte que l'amplitude maximale de la courbe en S ait les points A et B symétriques par rapport au point C et que la pente soit la plus linéaire possible.
- A la suite du réglage décrit en 6, le meilleur réglage décrit en 5 sera légèrement décalé. Renouveler les réglages 5 et 6 jusqu'à ce que les détériorations soient minimum et que l'indicateur d'équilibrage C.C. indique 0±30mV.

# AM TUNER ALIGNMENT • ABGLEICH DES AM TUNER • REGLAGE DU TUNER AM

Condition Function: AM  
Modulation: 400 Hz, 30%

Bedingung Funktion: AM  
Modulation: 400 Hz, 30%

Condition Function: AM  
Modulation: 400 Hz, 30%

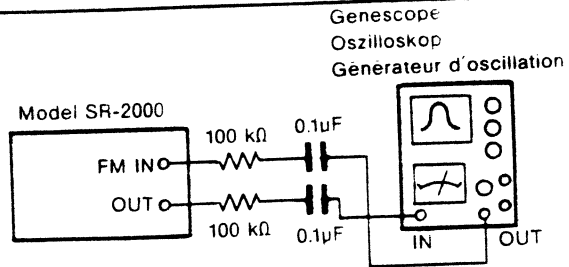
| Sequence<br>Reihenfolge<br>Séquence | Connection<br>Anschluß<br>Connexion                            | Setting<br>Setzen<br>Montage | Adjust for<br>Einstellen für<br>Réglage pour |
|-------------------------------------|----------------------------------------------------------------|------------------------------|----------------------------------------------|
| 1                                   | IF Amp<br>ZF-Stufe<br>Amplificateur de fréquence intermédiaire | TP 2<br>0.1µ 100k            | 455 KHz                                      |
| 2                                   | Covering<br>Abgleich<br>Coupage                                | Loop ANT                     | 515 KHz<br>1650 KHz                          |
| 3                                   | Tracking<br>Vorstufe<br>Alignement                             | REC or SPEAKER<br>OUTPUT     | 600 KHz<br>1400 KHz                          |

- Connect the ground side of the sweep generator output dummy to the local oscillator shielded plate. Adjust the variable capacitor so that it has minimum capacitance.
- Adjusting L154 core, make a waveform as in Fig. 4. Because of the ceramic filter used, the markers may be out of position. If this happens, neglect the markers.
- Set the input level to 74dB in coarse adjustment. Reduce the input level to minimum (52dB) as adjustment proceeds.

- Die Erdungsseite des Wobbelgenerator-Ausganges an die abgeschirmte Platte des Empfangsoszillators anschließen. Den Regelkondensator auf minimale Kapazität einstellen.
- Den Kern von L154 so einstellen, daß die in Abb. 4 gezeigte Wellenform erhalten wird. Aufgrund der verwendeten Keramikfilter könnten die Markierer aus der richtigen Position verschoben werden. Falls dies der Fall ist, die Markierer nicht beachten.
- Eine Grobeinstellung auf einen Eingangspegel von 74dB vornehmen. Im Verlauf der Einstellungen den Eingangspegel auf ein Minimum (52dB) absenken.

- Raccorder la terre de la sortie fictive du générateur de balayage à la plaque blindée de l'oscillateur local. Ajuster le condensateur variable de telle sorte que la capacitance obtenue soit minimale.
- Ajuster le noyau L154 pour obtenir la forme d'onde indiquée sur la Fig. 4. L'intégration de filtres céramiques peut provoquer un dérèglement des indicateurs. Ne pas tenir compte de la position des indicateurs si le cas se produit.
- Ajuster le niveau d'entrée sur 74dB en procédant à un réglage approximatif. Réduire le niveau d'entrée à son minimum (52dB) au fur et à mesure que le réglage est fait.

Fig. 5 FM IF Discriminator and AM IF alignments  
(AM and FM Step.1)  
Abb.5 UKW-ZF-Diskriminator und AM-ZF-Abgleich  
(AM: Schritt 1. UKW: Schritt 1)  
Fig.5 Réglages de discriminateur FM IF et AM IF  
(Operations 1 FM et 1 AM)



AM Signal generator  
AM Signalgenerator  
Générateur de signal AM

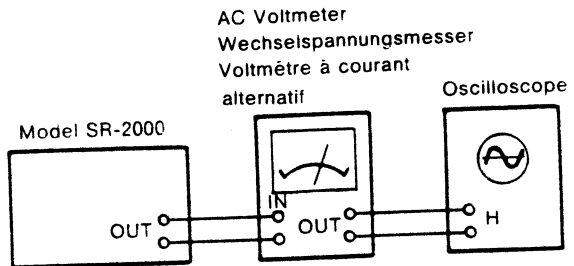
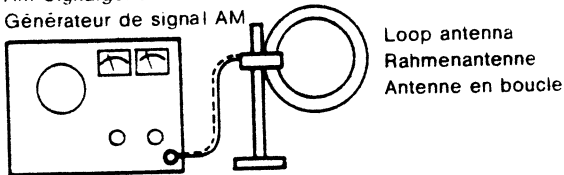


Fig.6 AM frequency covering and tracking alignments (Step.2 and 3)  
Abb.6 AM-Bereich- und -Nachführungsabgleich (Schritte 2 und 3)  
Fig.6 Réglages de poursuite et détendue de fréquence AM (Operations 2 et 3)

FM Signal generator  
UKW Signalgenerator  
Générateur de signal FM

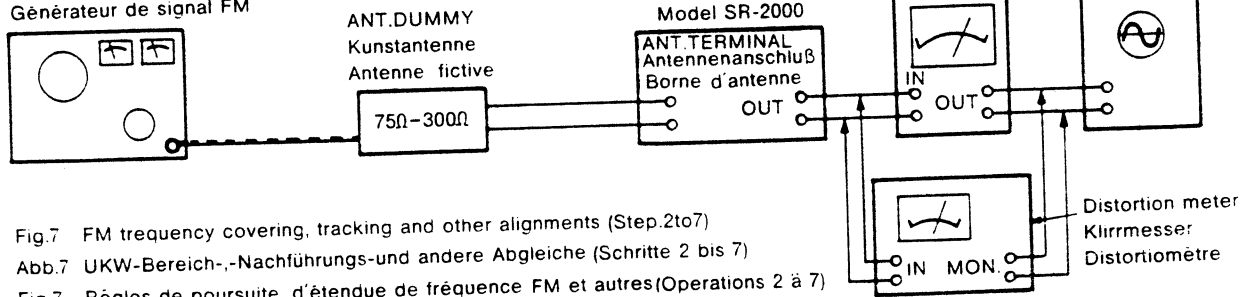
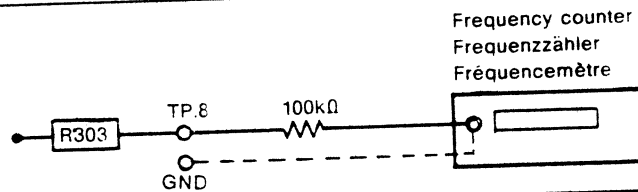


Fig.7 FM frequency covering, tracking and other alignments (Step.2to7)  
Abb.7 UKW-Bereich-, -Nachführungs- und andere Abgleiche (Schritte 2 bis 7)  
Fig.7 Règles de poursuite, d'étendue de fréquence FM et autres (Operations 2 à 7)

Fig.8 FM MPX 76kHz adjustment  
(Step. 7)  
Abb.8 UKW-Dekoder 76-kHz-Abgleich  
(Schritt 7)  
Fig.8 Réglage de 76kHz MPX FM  
(Operation 7)



FM Stereo Signal generator  
UKW Stereo Signalgenerator  
Générateur de signal stereo FM

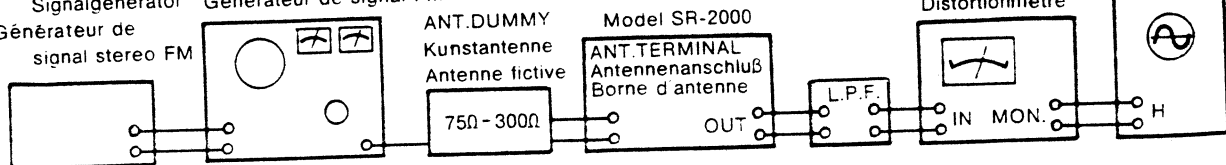


Fig.9 Stereo Distortion adjustments (Step.8)  
Abb.9 Stereo-Distorsion-Abgleich (Schritt 8)  
Fig.9 Réglage de stereo (Operation 8)



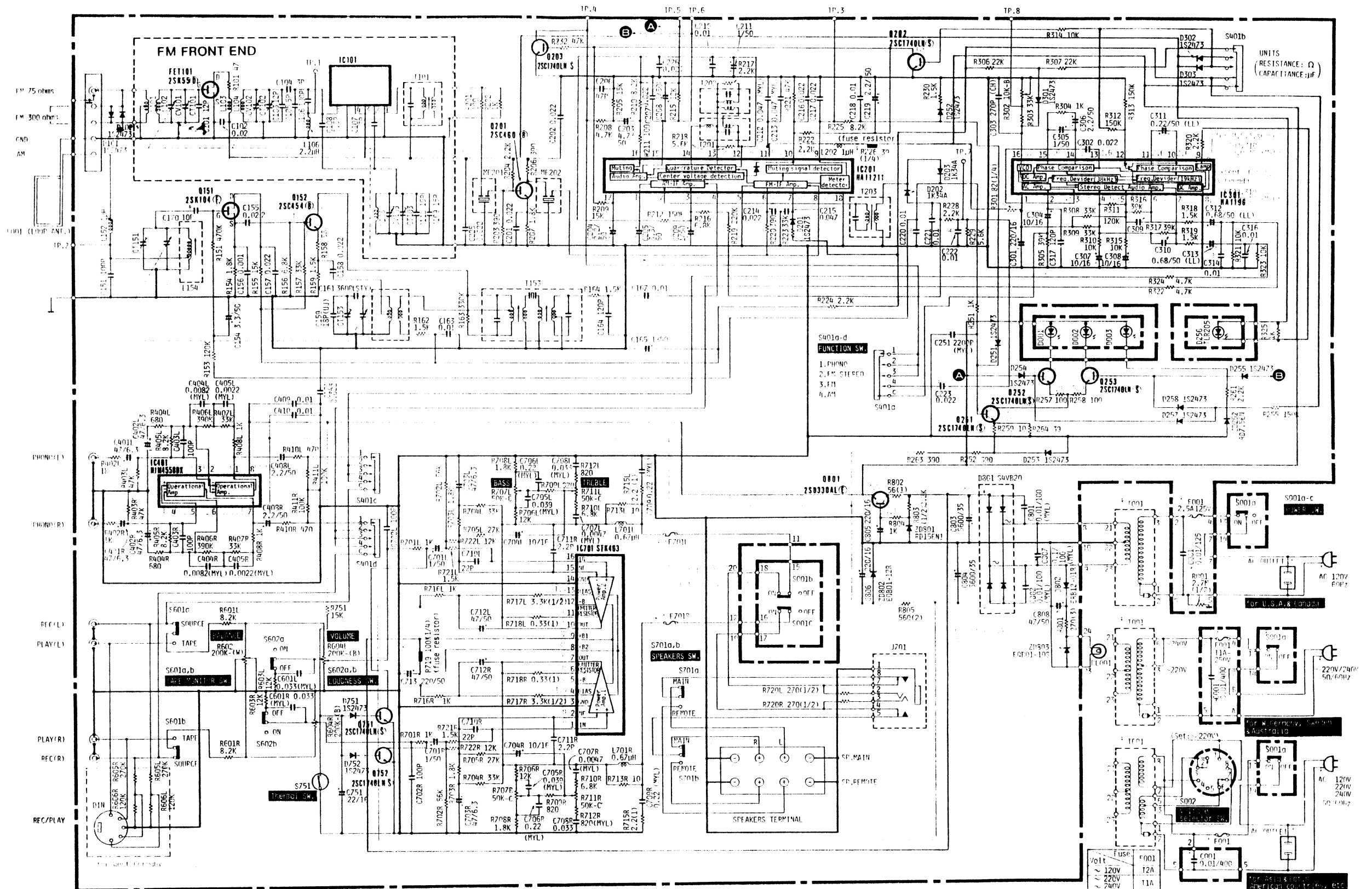


# CIRCUIT DIAGRAM • SCHALTPLAN • PLAN DE CIRCUIT

**CAUTION :** Fuse resistors are used to improve safety (to protect the circuit). When replacing them with new ones, be sure to use the designated type. Always use the designated fuse without fail.

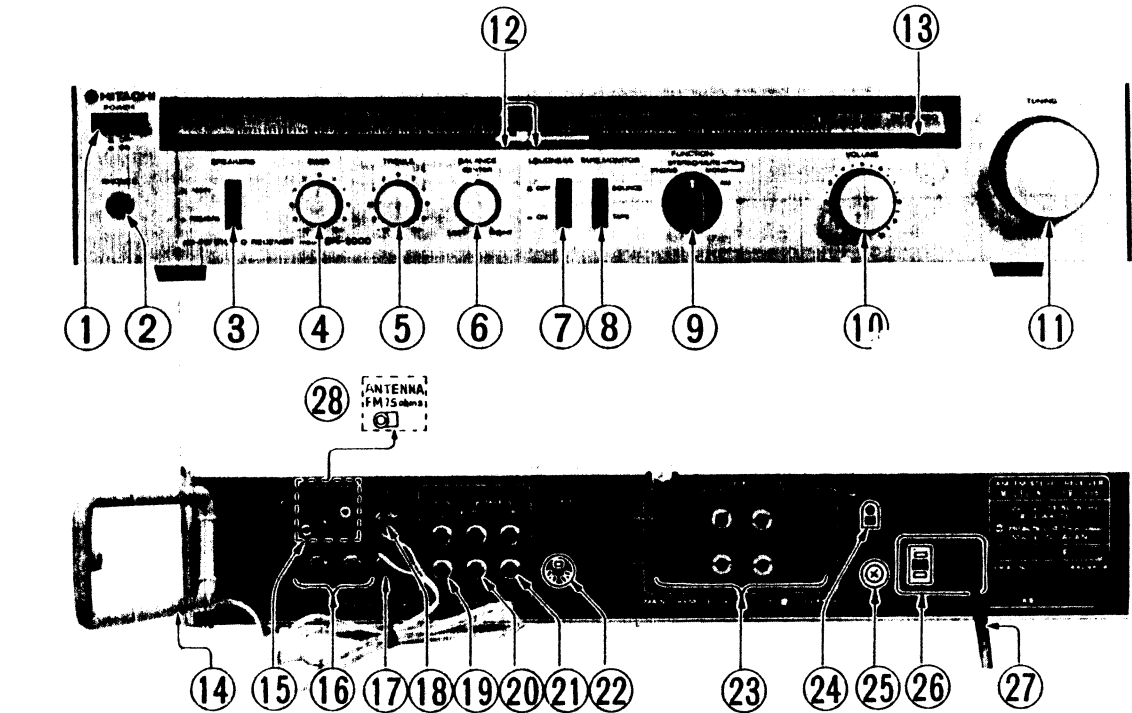
**ZUR BEACHTUNG :** Schmelzwiderstände sind zur Erhöhung der Sicherheit vor gesehen (zum Schutz Schaltung). Bei Austausch bitte die vorgeschriebene Type benutzen. Vergewissern Sie sich, daß die richtige Type gewählt ist.

**ATTENTION :** Les résistances à fusible sont faites pour améliorer la sécurité de l'appareil (protection de circuit). Pour les remplacer, utilisez même type. Utilisez toujours le modèle de fusible spécifié pour effectuer le remplacement.



- \* Axial lead cylindrical ceramic capacitor
- \* Zylindrischer Keramik Kondensator mit axialer Zuleitung
- \* Condensateur céramique cylindrique à conducteur axial

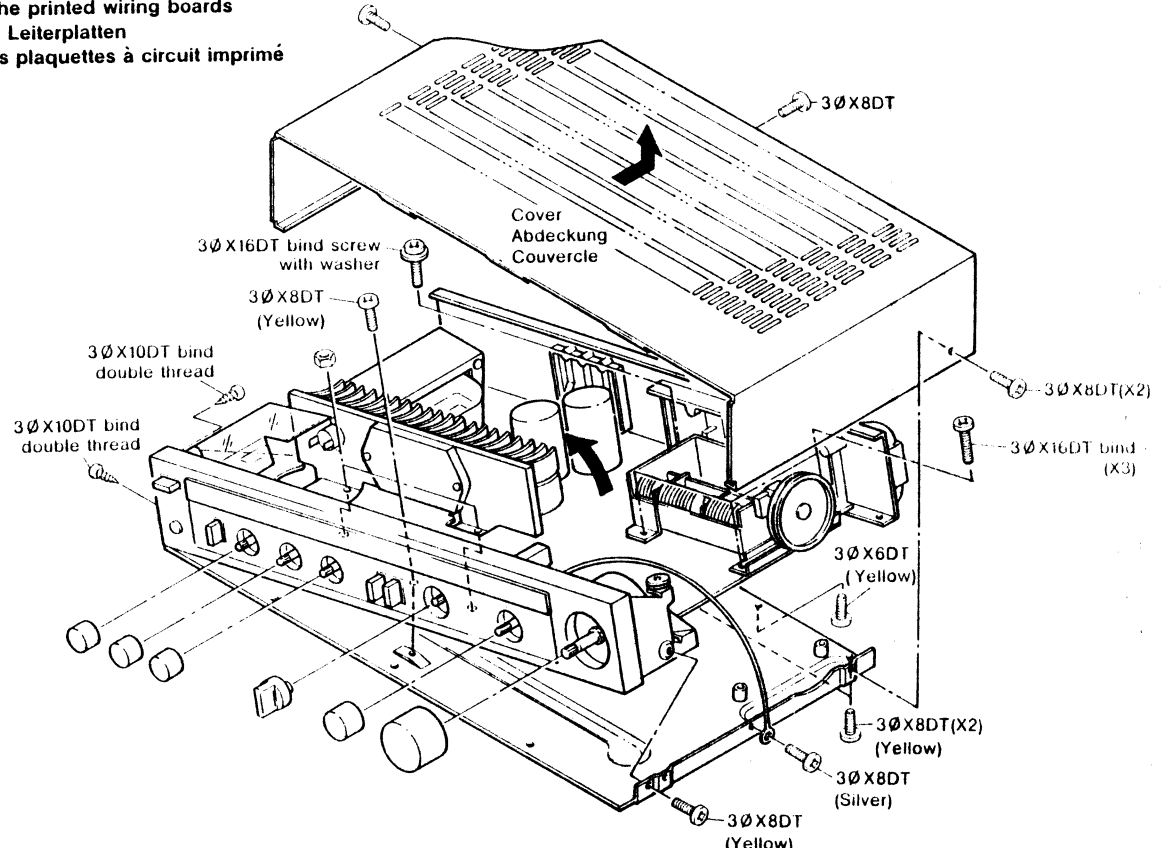
KEY TO ILLUSTRATIONS • BEZEICHNUNG DER BEDIENUNGSELEMENTE • GUIDE DES ILLUSTRATIONS



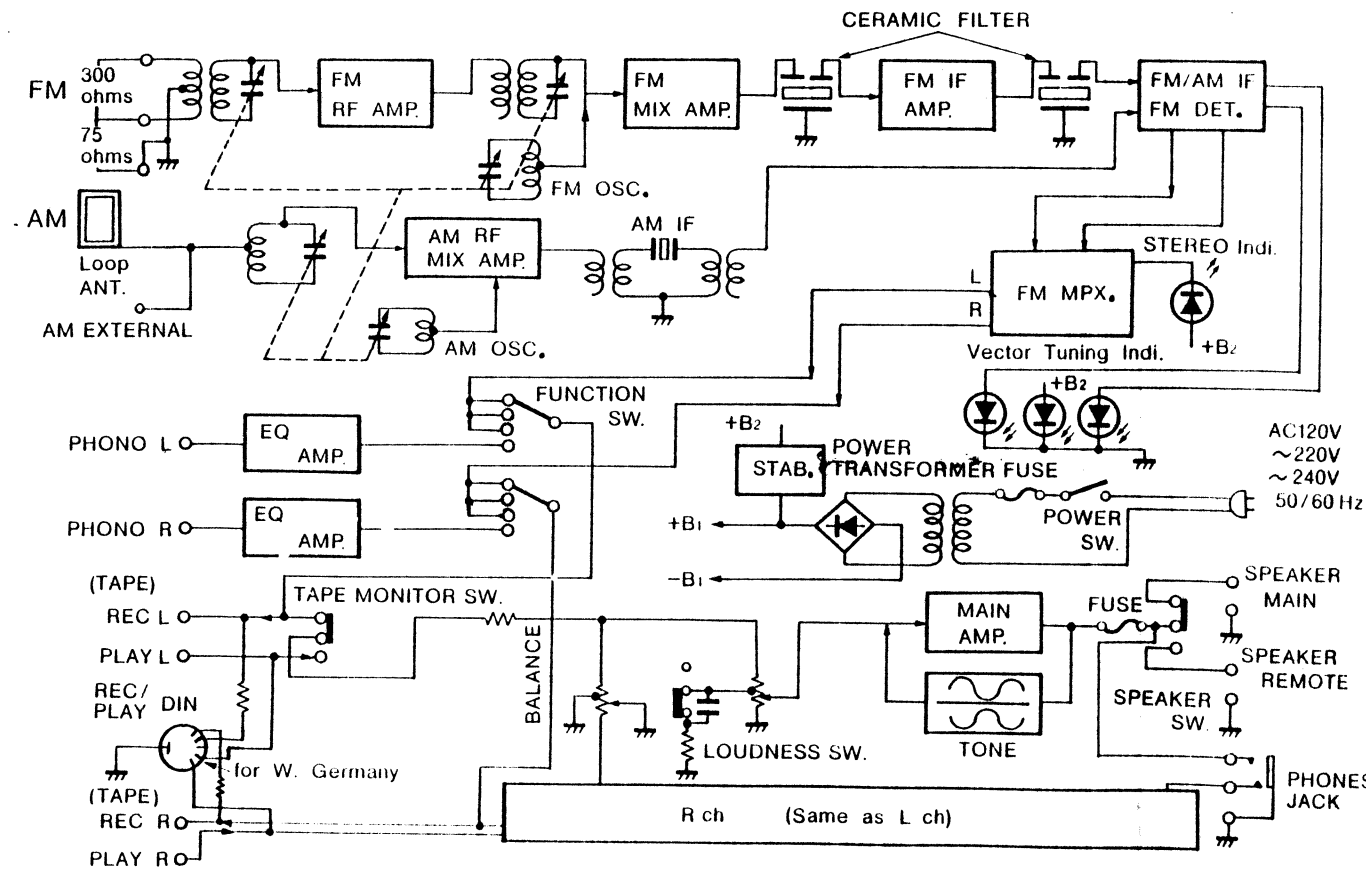
- |                                                                   |                                                                                      |                                                                                          |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| (1) POWER switch                                                  | (1) Netzschalter (POWER)                                                             | (1) Interrupteur d'alimentation (POWER)                                                  |
| (2) PHONES jack                                                   | (2) Kopfhörer-Buchse (PHONES)                                                        | (2) Casque stéréophonique (PHONES)                                                       |
| (3) SPEAKERS switch                                               | (3) Lautsprecherschalter (SPEAKERS)                                                  | (3) Interrupteur d'enceintes (SPEAKERS)                                                  |
| (4) BASS control                                                  | (4) Tiefenregler (BASS)                                                              | (4) Commande de graves (BASS)                                                            |
| (5) TREBLE control                                                | (5) Höhenregler (TREBLE)                                                             | (5) Commande d'aiguës (TREBLE)                                                           |
| (6) BALANCE control                                               | (6) BALANCE-Regler                                                                   | (6) Commande d'équilibrage (BALANCE)                                                     |
| (7) LOUDNESS switch                                               | (7) Schalter für gehörrichtige Lautstärke (LOUDNESS)                                 | (7) Correcteur physiologique (LOUDNESS)                                                  |
| (8) TAPE MONITOR switch                                           | (8) Bandmithörschalter (TAPE MONITOR)                                                | (8) Commutateur de contrôle de bande                                                     |
| (9) FUNCTION switch                                               | (9) Funktionsschalter (TAPE MONITOR)                                                 | (9) Commutateur de fonction (FUNCTION)                                                   |
| (10) VOLUME control                                               | (10) Lautstärkeregler (VOLUME)                                                       | (10) Commande de VOLUME                                                                  |
| (11) TUNING knob                                                  | (11) Abstimmknopf (TUNING)                                                           | (11) Bouton d'accord (TUNING)                                                            |
| (12) VECTOR TUNING indicators                                     | (12) Vektor-Abstimmanzeige                                                           | (12) Indicateurs d'accord vectoriel (VECTOR TUNING)                                      |
| (13) FM STEREO indicator                                          | (13) FM-STEREO-Anzeiger                                                              | (13) Indicateur FM STEREO                                                                |
| (14) AM Loop Antenna                                              | (14) AM-Zimmerantenne                                                                | (14) Bornes d'antenne-cadre AM (AM LOOP ANTENNA)                                         |
| (15) FM ANTENNA terminal : 75 ohms (except U.S.A. and Canada)     | (15) UKW-Antennenanschluß (FM ANTENNA) : 75 Ohm (außer das Gerät für USA und Kanada) | (15) Bornes d'antenne FM (75 ohms) (FM ANTENNA)                                          |
| (16) FM ANTENNA terminals : 300 ohms                              | (16) UKW-Antennenklemme (FM ANTENNA) : 300 Ohm                                       | (16) Bornes d'antenne FM (300 ohms) (FM ANTENNA)                                         |
| (17) AM ANTENNA terminal                                          | (17) MW-Antennenklemme (AM ANTENNA)                                                  | (17) Bornes d'antenne AM (AM ANTENNA)                                                    |
| (18) Ground terminal (GND)                                        | (18) Erdungsklemme (GND)                                                             | (18) Prise de terre (GND)                                                                |
| (19) PHONO input terminals                                        | (19) Plattenspieler-Eingangsanschluß (PHONO)                                         | (19) Bornes d'entrée PHONO                                                               |
| (20) TAPE REC OUT terminals                                       | (20) Ausgang-Anschlüsse für Tonbandgerät (TAPE REC OUT)                              | (20) Bornes d'enregistrement de bande (TAPE REC OUT)                                     |
| (21) TAPE PLAY terminals                                          | (21) Wiedergabe-Anschlüsse für Tonbandgerät (TAPE PLAY)                              | (21) Bornes de reproduction de bande (TAPE PLAY)                                         |
| (22) Tape DIN REC/PLAY socket (for West Germany)                  | (22) DIN-Normbuchse (TAPE REC/PLAY) (für)                                            | (22) Prise DIN de bande (TAPE REC/PLAY) (pour)                                           |
| (23) SPEAKERS terminals                                           | (23) Lautsprecher-Klemmen (SPEAKERS)                                                 | (23) Bornes d'enceintes (SPEAKERS)                                                       |
| (24) VOLTAGE SELECTOR (For Asia & Latin American countries, etc.) | (24) Netzspannungswähler (VOLTAGE SELECTOR) (Für Asien und Südamerika)               | (24) Selecteur de tension (VOLTAGE SELECTOR) (pour l'Asie et l'Amérique Latine)          |
| (25) FUSE holder (For Asia & Latin American countries, etc.)      | (25) Halter für Sicherung (FUSE) (Für Asien und Südamerika)                          | (25) Support de fusible (FUSE) (pour l'Asie et l'Amérique Latine)                        |
| (26) AC outlet (for U.S.A., Canada and some other countries)      | (26) Wechselstromausgang (für USA, Kanada und einige andere Länder)                  | (26) Sortie C.A. (pour les USA, le Canada et autres pays)                                |
| (27) Power supply cord                                            | (27) Wechselstrom-Netzkabel                                                          | (27) Cordon d'alimentation C.A.                                                          |
| (28) FM ANTENNA terminals : 75 ohms (for U.S.A. and Canada)       | (28) UKW-Antennenklemme : (75 Ohm) (für USA und Kanada)                              | (28) Bornes d'antenne FM (75 ohms) (FM ANTENNA) (pour les USA, le Canada et autres pays) |

DISASSEMBLY AND REPLACEMENT • ZERLEGUNG UND AUSTAUSCH • DEMONTAGE ET REMONTAGE

- Removing the printed wiring boards
- Ausbau der Leiterplatten
- Deposier des plaquettes à circuit imprimé



BLOCK DIAGRAM • BLOCK DIAGRAMM • SCHEMA DE CÂBLAGE



| RE MI | SYM No |
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# REPLACEMENT PARTS LIST • ERSATZTEILLISTE • LISTE DE REMPLACEMENT DES PIÈCES

| SYMBOL No. |          |                     |                                        |      | STOCK No. |          |                     |                                        |         | DESCRIPTION |          |                     |                                        |         |
|------------|----------|---------------------|----------------------------------------|------|-----------|----------|---------------------|----------------------------------------|---------|-------------|----------|---------------------|----------------------------------------|---------|
| CAPACITORS |          |                     |                                        |      |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C151       | 0230036  | Cylindrical ceramic | 100pF±5%                               | 50V  | C402L,R   | 0252225K | Electrolytic        | 47μF                                   | 6.3V    | C403L,R     | 0230036  | Cylindrical ceramic | 100pF±5%                               | 50V     |
| C154       | 0252813  | Electrolytic        | 3.3μF                                  | 50V  | C404L,R   | 0274236  | Mylar, film         | 3200pF±5%                              | 50V     | C405L,R     | 0274013  | Mylar, film         | 2200pF±10%                             | 50V     |
| C155       | 0245018  | Ceramic, discal     | 0.022μF± <sup>80%</sup> <sub>20%</sub> | 25V  | C408L,R   | 0252812  | Electrolytic        | 2.2μF                                  | 50V     | C409        | 0245018  | Ceramic, discal     | 0.022μF± <sup>80%</sup> <sub>20%</sub> | 25V     |
| C156       | 0240020  | Cylindrical ceramic | 1000pF±20%                             | 50V  | C410      | 0245018  | Ceramic, discal     | 0.022μF± <sup>80%</sup> <sub>20%</sub> | 25V     | C601L,R     | 0275014  | Mylar, film         | 0.033μF±10%                            | 50V     |
| C157       | 0245018  | Ceramic, discal     | 0.022μF± <sup>80%</sup> <sub>20%</sub> | 25V  | C701L,R   | 0252811  | Electrolytic        | 1μF                                    | 50V     | C702L,R     | 0230036  | Cylindrical ceramic | 100pF±5%                               | 50V     |
| C158       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  | C703L,R   | 0252225K | Electrolytic        | 47μF                                   | 6.3V    | C704L,R     | 0252521K | Electrolytic        | 10μF                                   | 16V     |
| C159       | 0248496  | Ceramic, discal     | 18pF±5%                                | 50V  | C705L,R   | 0275034  | Mylar, film         | 0.039μF±10%                            | 50V     | C706L,R     | 0276013  | Mylar, film         | 0.22μF±10%                             | 50V     |
| C161       | 0228324  | Styrol              | 360pF±5%                               | 50V  | C707L,R   | 0274015  | Mylar, film         | 4700pF±10%                             | 50V     | C708L,R     | 0274015  | Mylar, film         | 4700pF±10%                             | 50V     |
| C163       | 0240106  | Cylindrical ceramic | 0.01μF±30%                             | 25V  | C709L,R   | 0276013  | Mylar, film         | 0.22μF±10%                             | 50V     | C710L,R     | 0230020  | Cylindrical ceramic | 22pF±5%                                | 50V     |
| C164       | 0248686  | Ceramic, discal     | 120pF±5%                               | 50V  | C711L,R   | 0230004  | Cylindrical ceramic | 2.2pF±10%                              | 50V     | C712L,R     | 0252825K | Electrolytic        | 47μF                                   | 50V     |
| C165       | 0252811  | Electrolytic        | 1μF                                    | 50V  | C713      | 0252732K | Electrolytic        | 220μF                                  | 35V     | C751        | 0252521K | Electrolytic        | 22μF                                   | 16V     |
| C167       | 0240106  | Cylindrical ceramic | 0.01μF±30%                             | 25V  | C801      | 0275511  | Mylar, film         | 0.01μF±10%                             | 100V    | C802        | 0275511  | Mylar, film         | 0.01μF±10%                             | 100V    |
| C170       | 0230012  | Cylindrical ceramic | 10pF±5%                                | 50V  | C803      | 0259946  | Electrolytic        | 5600μF                                 | 35V     | C804        | 0259946  | Electrolytic        | 5600μF                                 | 35V     |
| C171       | 0245018  | Ceramic, discal     | 0.022μF± <sup>80%</sup> <sub>20%</sub> | 25V  | C805      | 0252532K | Electrolytic        | 220μF                                  | 16V     | C806        | 0252532K | Electrolytic        | 220μF                                  | 16V     |
| C201       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  | C807      | 0276511  | Mylar, film         | 0.1μF±10%                              | 100V    | C808        | 0252825K | Electrolytic        | 47μF                                   | 50V     |
| C202       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  | △C001     | 0243899  | Ceramic, discal     | 0.01μF± <sup>100%</sup> <sub>10%</sub> | 125V    | △C001       | 0243901  | Ceramic, discal     | 0.01μF± <sup>100%</sup> <sub>10%</sub> | 400V    |
| C203       | 0252815  | Electrolytic        | 4.7μF                                  | 50V  |           |          |                     | (for U.S.A. & Canada)                  |         |             |          |                     | (except U.S.A. & Canada)               |         |
| C204       | 0252812  | Electrolytic        | 2.2μF                                  | 50V  | RESISTORS |          |                     |                                        |         |             |          |                     |                                        |         |
| C205       | 0252813  | Electrolytic        | 3.3μF                                  | 50V  | R151      | 0129677  | Carbon film         | 470kΩ±5%                               | SRD1/8P | R153        | 0129663  | Carbon film         | 120kΩ±5%                               | SRD1/8P |
| C206       | 0230028  | Cylindrical ceramic | 47pF±10%                               | 50V  | R154      | 0129607  | Carbon film         | 1.8kΩ±5%                               | SRD1/8P | R155        | 0129635  | Carbon film         | 15kΩ±5%                                | SRD1/8P |
| C207       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  | R156      | 0129621  | Carbon film         | 6.8kΩ±5%                               | SRD1/8P | R157        | 0129643  | Carbon film         | 33kΩ±5%                                | SRD1/8P |
| C208       | 0252811  | Electrolytic        | 1μF                                    | 50V  | R158      | 0129549  | Carbon film         | 56Ω±5%                                 | SRD1/8P | R159        | 0129605  | Carbon film         | 1.5kΩ±5%                               | SRD1/8P |
| C209       | 0252811  | Electrolytic        | 1μF                                    | 50V  | R162      | 0129605  | Carbon film         | 1.5kΩ±5%                               | SRD1/8P | R163        | 0129673  | Carbon film         | 330kΩ±5%                               | SRD1/8P |
| C210       | 0240106  | Cylindrical ceramic | 0.01μF±30%                             | 25V  | R164      | 0129605  | Carbon film         | 1.5kΩ±5%                               | SRD1/8P | R201        | 0129561  | Carbon film         | 100Ω±5%                                | SRD1/8P |
| C211       | 0252811  | Electrolytic        | 1μF                                    | 50V  | R202      | 0129601  | Carbon film         | 1kΩ±5%                                 | SRD1/8P | R203        | 0129575  | Carbon film         | 390Ω±5%                                | SRD1/8P |
| C212       | 0275015  | Mylar film          | 0.047μF±10%                            | 50V  | R204      | 0129609  | Carbon film         | 2.2kΩ±5%                               | SRD1/8P | R205        | 0129635  | Carbon film         | 15kΩ±5%                                | SRD1/8P |
| C213       | 0275015  | Mylar film          | 0.047μF±10%                            | 50V  | R206      | 0129575  | Carbon film         | 390Ω±5%                                | SRD1/8P | R207        | 0129607  | Carbon film         | 1.8kΩ±5%                               | SRD1/8P |
| C214       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  | R208      | 0129617  | Carbon film         | 4.7kΩ±5%                               | SRD1/8P | R209        | 0129635  | Carbon film         | 15kΩ±5%                                | SRD1/8P |
| C215       | 0244175  | Ceramic discal      | 0.047μF± <sup>80%</sup> <sub>20%</sub> | 50V  | R210      | 0129623  | Carbon film         | 8.2kΩ±5%                               | SRD1/8P | R211        | 0129561  | Carbon film         | 100Ω±5%                                | SRD1/8P |
| C216       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  | R212      | 0129665  | Carbon film         | 150kΩ±5%                               | SRD1/8P |             |          |                     |                                        |         |
| C217       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C218       | 0240106  | Cylindrical ceramic | 0.01μF±30%                             | 25V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C219       | 0252812  | Electrolytic        | 2.2μF                                  | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C220       | 0240106  | Cylindrical ceramic | 0.01μF±30%                             | 25V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C221       | 0240106  | Cylindrical ceramic | 0.01μF±30%                             | 25V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C222       | 0240106  | Cylindrical ceramic | 0.01μF±30%                             | 25V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C223       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C225       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C226       | 0245018  | Ceramic, discal     | 0.022μF± <sup>80%</sup> <sub>20%</sub> | 25V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C251       | 0274013  | Mylar, film         | 2200pF±10%                             | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C301       | 0252532K | Electrolytic        | 220μF                                  | 16V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C302       | 0240108  | Cylindrical ceramic | 0.022μF±30%                            | 16V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C303       | 0246470  | Ceramic, discal     | 270pF±5%                               | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C304       | 0252521K | Electrolytic        | 10μF                                   | 16V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C305       | 0252811  | Electrolytic        | 1μF                                    | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C306       | 0252812  | Electrolytic        | 2.2μF                                  | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C307       | 0252521K | Electrolytic        | 10μF                                   | 16V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C308       | 0252521K | Electrolytic        | 10μF                                   | 16V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C309       | 0274232  | Mylar, film         | 1800pF±5%                              | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C310       | 0274232  | Mylar, film         | 1800pF±5%                              | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C309       | 0274231  | Mylar, film         | 1200pF±10%                             | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C310       | 0274231  | Mylar, film         | 1200pF±10%                             | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C311       | 0252873  | Electrolytic        | 0.22μF                                 | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C312       | 0252876  | Electrolytic        | 0.68μF                                 | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C313       | 0252876  | Electrolytic        | 0.68μF                                 | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C314       | 0240106  | Electrolytic        | 0.01μF±30%                             | 25V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C316       | 0240106  | Electrolytic        | 0.01μF±30%                             | 25V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C317       | 0248686  | Ceramic, discal     | 120pF±5%                               | 50V  |           |          |                     |                                        |         |             |          |                     |                                        |         |
| C401L,R    | 0252225K | Electrolytic        | 47μF                                   | 6.3V |           |          |                     |                                        |         |             |          |                     |                                        |         |

## RESISTORS

|      |         |             |          |         |
|------|---------|-------------|----------|---------|
| R151 | 0129677 | Carbon film | 470kΩ±5% | SRD1/8P |
| R153 | 0129663 | Carbon film | 120kΩ±5% | SRD1/8P |
| R154 | 0129607 | Carbon film | 1.8kΩ±5% | SRD1/8P |
| R155 | 0129635 | Carbon film | 15kΩ±5%  | SRD1/8P |
| R156 | 0129621 | Carbon film | 6.8kΩ±5% | SRD1/8P |
| R157 | 0129643 | Carbon film | 33kΩ±5%  | SRD1/8P |
| R158 | 0129549 | Carbon film | 56Ω±5%   | SRD1/8P |
| R159 | 0129605 | Carbon film | 1.5kΩ±5% | SRD1/8P |
|      |         |             |          |         |
| R162 | 0129605 | Carbon film | 1.5kΩ±5% | SRD1/8P |
| R163 | 0129673 | Carbon film | 330kΩ±5% | SRD1/8P |
| R164 | 0129605 | Carbon film | 1.5kΩ±5% | SRD1/8P |
|      |         |             |          |         |
| R201 | 0129561 | Carbon film | 100Ω±5%  | SRD1/8P |
| R202 | 0129601 | Carbon film | 1kΩ±5%   | SRD1/8P |
| R203 | 0129575 | Carbon film | 390Ω±5%  | SRD1/8P |
| R204 | 0129609 | Carbon film | 2.2kΩ±5% | SRD1/8P |
| R205 | 0129635 | Carbon film | 15kΩ±5%  | SRD1/8P |
| R206 | 0129575 | Carbon film | 390Ω±5%  | SRD1/8P |
| R207 | 0129607 | Carbon film | 1.8kΩ±5% | SRD1/8P |
| R208 | 0129617 | Carbon film | 4.7kΩ±5% | SRD1/8P |
| R209 | 0129635 | Carbon film | 15kΩ±5%  | SRD1/8P |
| R210 | 0129623 | Carbon film | 8.2kΩ±5% | SRD1/8P |
| R211 | 0129561 | Carbon film | 100Ω±5%  | SRD1/8P |
| R212 | 0129665 | Carbon film | 150kΩ±5% | SRD1/8P |



| <b>SYMBOL<br/>No.</b>           | <b>STOCK<br/>No.</b> | <b>DESCRIPTION</b>                                            |
|---------------------------------|----------------------|---------------------------------------------------------------|
| D301                            | 2337601              | 1S2473                                                        |
| D302                            | 2337601              | 1S2473                                                        |
| D303                            | 0337601              | 1S2473                                                        |
| D751                            | 2337601              | 1S2473                                                        |
| D752                            | 2337601              | 1S2473                                                        |
| D801                            | 2337461              | S4VB20                                                        |
| D802                            | 2337761              | ERB12-01                                                      |
| ZD252                           | 2338561              | RD7.5EN                                                       |
| ZD801                           | 2338630              | RD15EN1                                                       |
| ZD802                           | 2337783              | EQB01-12R                                                     |
| ZD803                           | 2337778              | EQB01-10S                                                     |
| <b>VARIABLE RESISTORS</b>       |                      |                                                               |
| R302                            | 0151333              | 10k $\Omega$ -(B)(for free running adj.)                      |
| R602L,R                         | 0151679              | 200k $\Omega$ -(W) (BALANCE)                                  |
| R604L,R                         | 0151857              | 200k $\Omega$ -(B) (VOLUME)                                   |
| R707L,R                         | 0151713              | 50k $\Omega$ -(C) (BASS)                                      |
| R711L,R                         | 0151713              | 50k $\Omega$ -(C) (TREBLE)                                    |
| <b>COILS &amp; TRANSFORMERS</b> |                      |                                                               |
| L152                            | 2227351              | Choke coil-1 $\mu$ H                                          |
| L154                            | 2135061              | AM RF coil                                                    |
| L202                            | 2227351              | Choke coil-1 $\mu$ H                                          |
| L701L,R                         | 2227361              | Audio trap coil-0.67 $\mu$ H                                  |
| T151                            | 2135121              | AM OSC coil                                                   |
| T153                            | 2154341              | AM IF transformer                                             |
| T201                            | 2154433              | FM discri. transformer                                        |
| T202                            | 2154432              | FM discri. transformer                                        |
| T203                            | 2154122              | AM IF transformer                                             |
| <b>MISCELLANEOUS</b>            |                      |                                                               |
| MF201                           | 2134981              | Ceramic filter } (for U.S.A., Canada, Asia                    |
| MF202                           | 2134981              | Ceramic filter } & Latin American                             |
|                                 |                      | countries, etc.)                                              |
| MF201                           | 2135001              | Ceramic filter } (except U.S.A., Canada,                      |
| MF202                           | 2135001              | Ceramic filter } Asia & Latin American                        |
|                                 |                      | countries, etc.)                                              |
|                                 | 2425121              | FM frontend                                                   |
| S401                            | 2627491              | Switch-rotary SW.(FUNCTION)                                   |
| S601,602                        | 2638439              | Switch-push SW.(LOUDNESS,TAPE MONITOR,                        |
|                                 | 2638625              | Switch-push SW.(SPEAKERS)                                     |
| S751                            | 2787452              | Thermal SW.                                                   |
|                                 | 2677643              | Headphone jack                                                |
|                                 | 2688051              | Speaker terminal                                              |
|                                 | 2688071              | Terminal board(for U.S.A. & Canada)                           |
|                                 | 2688073              | Terminal board(except U.S.A. & Canada)                        |
|                                 | 4567432              | 3 $\phi$ x 8DT bind screw(for heat sink,<br>P.W.B. fixing)    |
|                                 | 4567456              | 3 $\phi$ x 16DT bind screw(for IC power<br>transistor fixing) |
|                                 | 3924472              | Plastic rivet(for FM indi. P.W.B. fixing)                     |
| <b>for FINAL ASSEMBLY</b>       |                      |                                                               |
|                                 | 4428911              | Cover(for U.S.A. & Canada)                                    |
|                                 | 4428912              | Cover(Gray)(except U.S.A. & Canada)                           |
|                                 | 3290331              | Knob ass'y(BASS, TREBLE, BALANCE)                             |
|                                 | 3290361              | Knob ass'y(VOLUME)                                            |
|                                 | 3290371              | Knob(FUNCTION)                                                |
|                                 | 3290601              | Knob ass'y(TUNING)                                            |

U.S.A. & Canada  
K. Germany & Sweden  
Australia  
Asia & Latin America countries, etc.)

| <b>SYMBOL<br/>No.</b>              | <b>STOCK<br/>No.</b> | <b>DESCRIPTION</b>                                                                         |
|------------------------------------|----------------------|--------------------------------------------------------------------------------------------|
| <b>for DIAL MECHANISM ASSEMBLY</b> |                      |                                                                                            |
| PL801                              | 3932291              | Knob(POWER)                                                                                |
|                                    | 3942551              | Knob                                                                                       |
|                                    | 3943641              | Escutcheon ass'y                                                                           |
|                                    | 3356261              | Flywheel ass'y                                                                             |
|                                    | 4429212              | Dial scale                                                                                 |
|                                    | 3387541              | Dial pointer ass'y                                                                         |
|                                    | 3920804              | Pulley                                                                                     |
|                                    | 3337201              | Spring                                                                                     |
|                                    | 2767612              | Lamp with lead wire                                                                        |
|                                    | 3928651              | Leg                                                                                        |
|                                    | 3931571              | Antenna holder                                                                             |
|                                    | 2757462              | AM loop antenna                                                                            |
|                                    | 4567432              | 3 $\phi$ x 8DT bind screw(for leg fixing)                                                  |
|                                    | 4567456              | 3 $\phi$ x 16DT bind screw<br>(for P.W.B. holder fixing)                                   |
|                                    | 4567443              | 4 $\phi$ x 10DT bind screw<br>(for heat sink, P.trans. fixing)                             |
|                                    | 4575472              | 3 $\phi$ x 8DT screw with washer<br>(for voltage selector SW.)                             |
|                                    | 4574603              | 3 $\phi$ x 10 bind double thread screw<br>(for speaker terminal, terminal board<br>fixing) |
| T001                               | A2219103             | Power transformer                                                                          |
| T001                               | A2219104             | Power transformer                                                                          |
| T001                               | A2219105             | Power transformer                                                                          |
|                                    | A0043793             | Bushing(for power supply cord)                                                             |
|                                    | A3913006             | Bushing(for power supply cord)                                                             |
|                                    | A2618051             | Voltage selector SW.                                                                       |
|                                    | A2657281             | AC outlet                                                                                  |
|                                    | A2727121             | Fuse holder                                                                                |
| F701L,R                            | A2727223             | Fuse-3A, 250V                                                                              |
| F701L,R                            | A2727335             | Fuse-F2.5A, 250V                                                                           |
| F001                               | A2727564             | Fuse-2.5A, 125V                                                                            |
| F001                               | A2727191             | Fuse-T1A, 250V                                                                             |
|                                    | A2749471             | Power supply cord                                                                          |
|                                    | A2748752             | Power supply cord                                                                          |
|                                    | A2749622             | Power supply cord                                                                          |
|                                    | 2718541              | FM antenna                                                                                 |
|                                    | A2727193             | E socket adaptor }                                                                         |
|                                    |                      | ((for ACCESSORIES))                                                                        |
|                                    |                      | Fuse-T2A, 250V                                                                             |