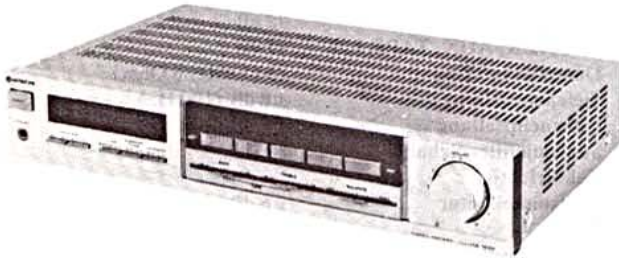


HITACHI SERVICE MANUAL

TY

No. 325EGF

HA-M33



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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 Δ 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

POWER output (Both channels driven)	40 watts* per channel, min. RMS, at 8 ohms from 20 Hz to 20 kHz, with no more than 0.05% total harmonic distortion.	Output level TAPE REC OUT	150 mV
RMS Rated Output power (Both channels driven)	40 Watts (1 kHz, 8 ohms T.H.D. 0.05%, SINUS) 40Watts (20 Hz - 20 kHz, 8 ohms T.H.D. 0.05%)	Phono overload level (at 1 kHz)	110 mV
Harmonic distortion (8 ohms) (at rated output)	0.05%	Signal-to-noise ratio (IHF, A network)	
Intermodulation distortion (at 1/2 rated output)	0.05%	PHONO (MM)	72 dB
Power bandwidth	10 Hz - 30 kHz (8 ohms, T.H.D. 0.1% 1/2 Rated)	TUNER, AUX, TAPE 1, 2	95 dB
Frequency characteristics		Damping factor	25 (1 kHz, 8 ohms)
TUNER, AUX, TAPE 1, 2	20 Hz - 40 kHz (+1, -3.0 dB)	Bass control	± 8 dB (100 Hz)
PHONO	30 Hz - 15 kHz, RIAA ± 0.5 dB	Treble control	± 8 dB (10 kHz)
Input sensitivity/Impedance		Subsonic filter	20 Hz
PHONO (MM)	2.5 mV/47 k-ohms	Loudness control	+6 dB (100 Hz) +4 dB (10 kHz)
TUNER, AUX	160 mV/45 k-ohms	Power supply	AC 120 V 60 Hz, ~220/240 V 50/60 Hz, ~120/220/240 V 50/60 Hz
TAPE PLAY 1, 2	160 mV/45 k-ohms	Power consumption	100 W (at 1/10 rated output) 150 W (at 1/3 rated output) 230W (at rated output)
		Dimensions	435 (W) \times 83 (H) \times 290 (D) mm
		Weight	5.5 kg

* Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Output Claims for Amplifiers.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

STEREO AMPLIFIER

May 1982 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 Schaltplattinen mit dem Symbol Δ 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

Ausgangsleistung Sinus	40 Watt /Kanal + 40 Watt /Kanal (1 kHz, 8 Ohm, T.H.D. 0,05%) 40 Watt (20 Hz – 20 kHz, 8 Ohm T.H.D. 0,05% SINUS)	Geräuschspannungsabstand (IHF, A-Netz) PHONO (MM)	72 dB
Klirrfaktor (8 Ohm) (bei Nennleistung)	0,05%	TUNER, AUX, TAPE 1, 2	95 dB
Intermodulations-Verzerrung (bei halber Nennleistung)	0,05%	Dämpfungsfaktor	25 (1 kHz, 8 Ohm)
Leistungsbandbreite	10 Hz – 30 kHz (8 Ohm, T.H.D., 0,1%, halber Nennleistung)	Tiefeneinstellung	±8 dB (100 Hz)
Frequenzcharakteristik TUNER, AUX, TAPE 1, 2 PHONO	20 Hz – 40 kHz (+1, –3,0 dB) 30 Hz – 15 kHz RIAA-Kennlinie ±0,5 dB	Höheneinstellung	±8 dB (10 kHz)
Eingangsempfindlichkeit/ Impedanz		Subsonicfilter-Schalter	20 Hz
PHONO (MM)	2,5 mV/47 k-Ohm	Gehörriechige	
TUNER, AUX	160 mV/45 k-Ohm	Lautstärkekontur	+6 dB (100 Hz) +4 dB (10 kHz)
TAPE PLAY 1, 2	160 mV/45 k-Ohm	Netzspannung	Wechselstrom 120 V 60 Hz ~220/240 V 50/60 Hz. ~120/220/240 V 50/60 Hz
Ausgangspegel		Leistungsaufnahme	100 W (bei 1/10 Nennleistung) 150 W (bei 1/3 Nennleistung) 230 W (bei Nennleistung)
TAPE REC OUT	150 mV	Abmessungen	435 (B) × 83 (H) × 290 (T) mm
Phonoüberlastungspegel (bei 1 kHz)	110 mV	Gerwicht	5,5 kg

Änderungen der Konstruktion und technischen Daten bleiben im Sinne der ständigen Verbesserung.

PRÉCAUTIONS DE SÉCURITÉ

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

1. Etant 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 Δ 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.

CARACTÉRISTIQUES TECHNIQUES

Puissance de sortie Sinus	40 W /can. + 40 W /can. (1 kHz, 8 ohms, D.H.T. 0,05%, 40 W /can. + 40 W /can. (20 Hz – 20 kHz, 8 ohms D.H.T. 0,05% SINUS)	Rapport signal/bruit (IHF, réseau A) PHONO (MM)	72 dB
Distorsion harmonique (8 ohms) (à la puissance nominale)	0,05%	TUNER, AUX, TAPE 1, 2	95 dB
Distorsion d'intermodulation (à la moitié de la puissance nominale)	0,05%	Facteur d'amortissement	25 (1 kHz, 8 ohms)
Bande passante	10 Hz – 30 kHz (8 ohms, D.H.T., 0,1% moitié de la puissance nominale)	Réglage de graves	±8 dB (100 Hz)
Caractéristiques de fréquence TUNER AUX, TAPE 1, 2 PHONO	20 Hz – 40 kHz (+1, –3,0 dB) 30 Hz – 15 kHz, RIAA ±0,5 dB	Réglage des aiguës	±8 dB (10 kHz)
Sensibilité d'entrée/Impédance		Filtre subsonique	20 Hz
PHONO (MM)	2,5 mV/47 k-ohms	Correction physiologique	+6 dB (100 Hz) +4 dB (10 kHz)
TUNER, AUX	160 mV/45 k-ohms	Alimentation	CA 120 V 60 Hz, ~220/240 V 50/60 Hz, ~120/220/240 V 50/60 Hz
TAPE PLAY 1, 2	160 mV/45 k-ohms	Consommation	100 W (a 1/10 de la puissance nominale) 150 W (a 1/3 de la puissance nominale) 230 W (a de la puissance nominale)
Niveau de sortie		Dimensions	435 (L) × 83 (H) × 290 (P) mm
TAPE REC OUT	150 mV	Poids	5,5 kg
Niveau de surcharge phono (à 1 kHz)	110 mV		

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

DISASSEMBLY AND REPLACEMENT · ZERLEGUNG UND AUSTAUCH- DEMONTAGE ET REMONTAGE

- Removing the cover, escutcheon & printed wiring board
- Ausbau der Abdeckung, Schildanbringung und der Leiterplatten
- Déposer le couvercle, cache-entrée et le plaquettes à circuit imprimé

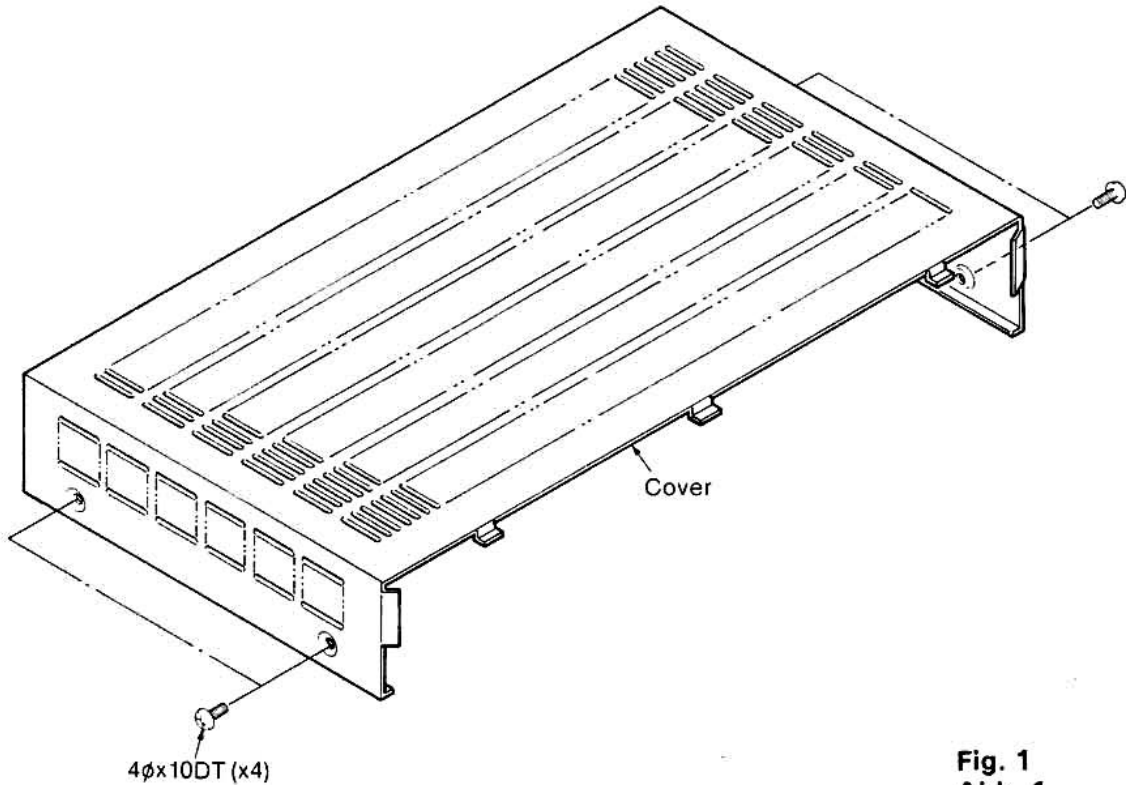


Fig. 1
Abb. 1

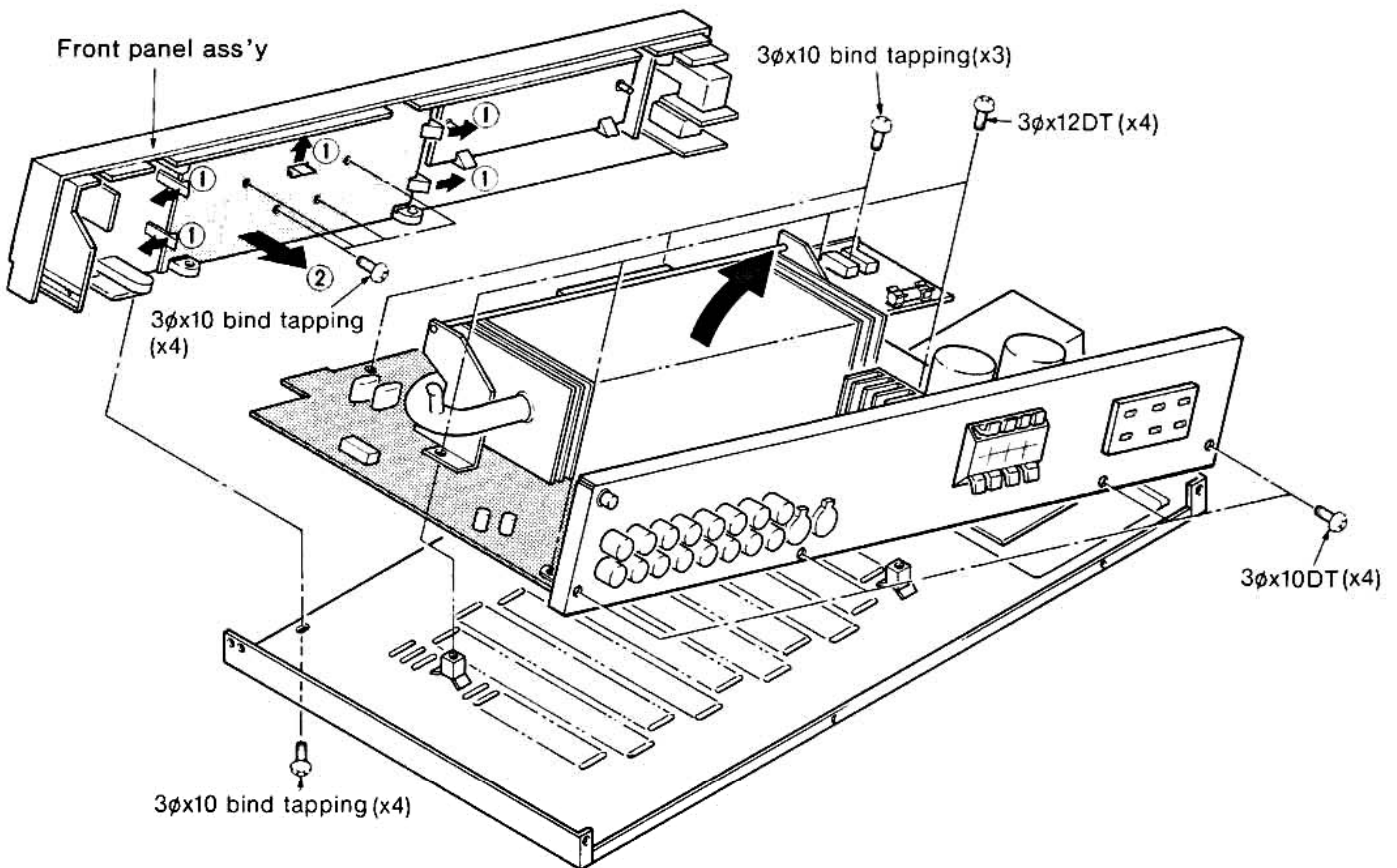
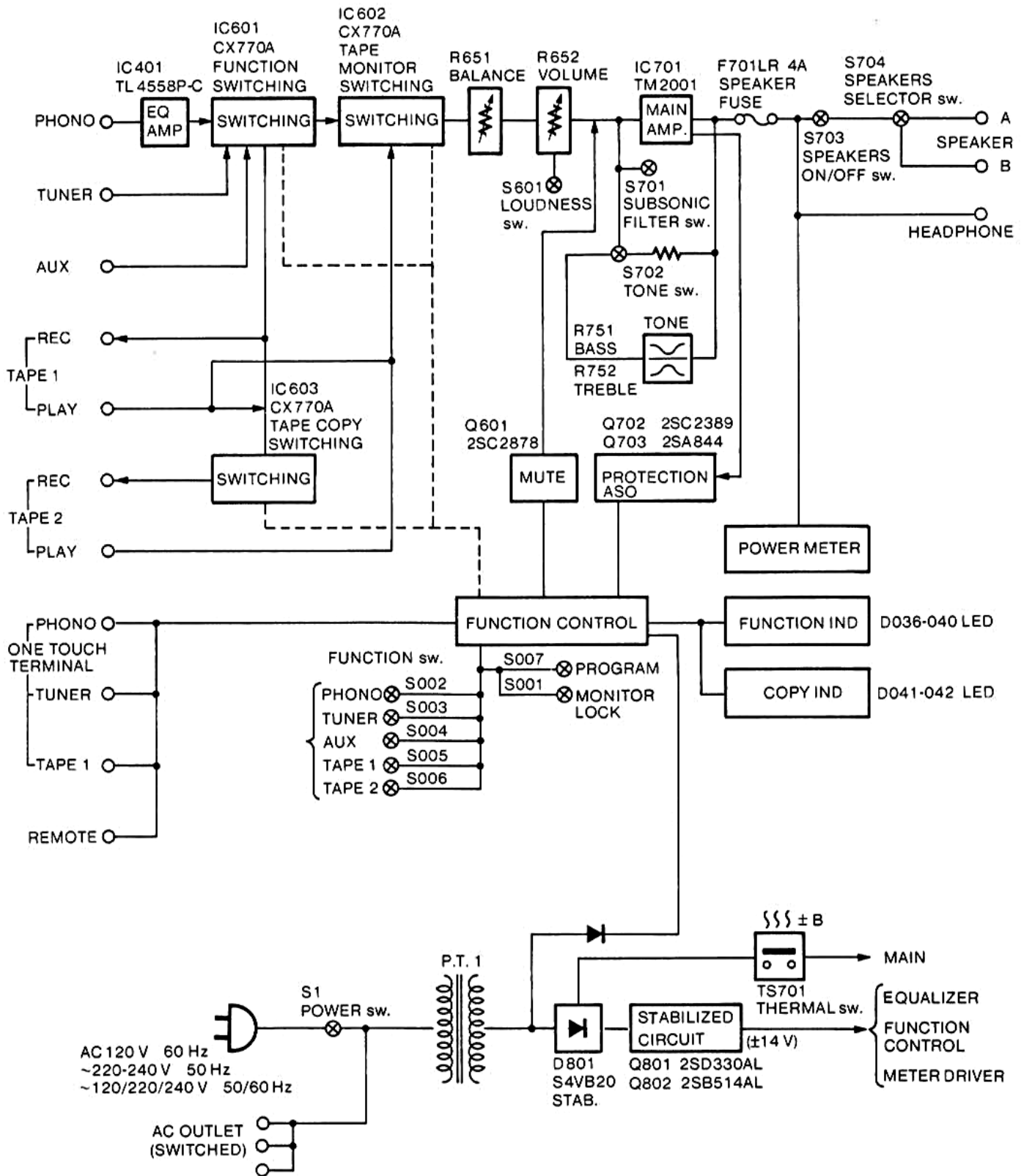


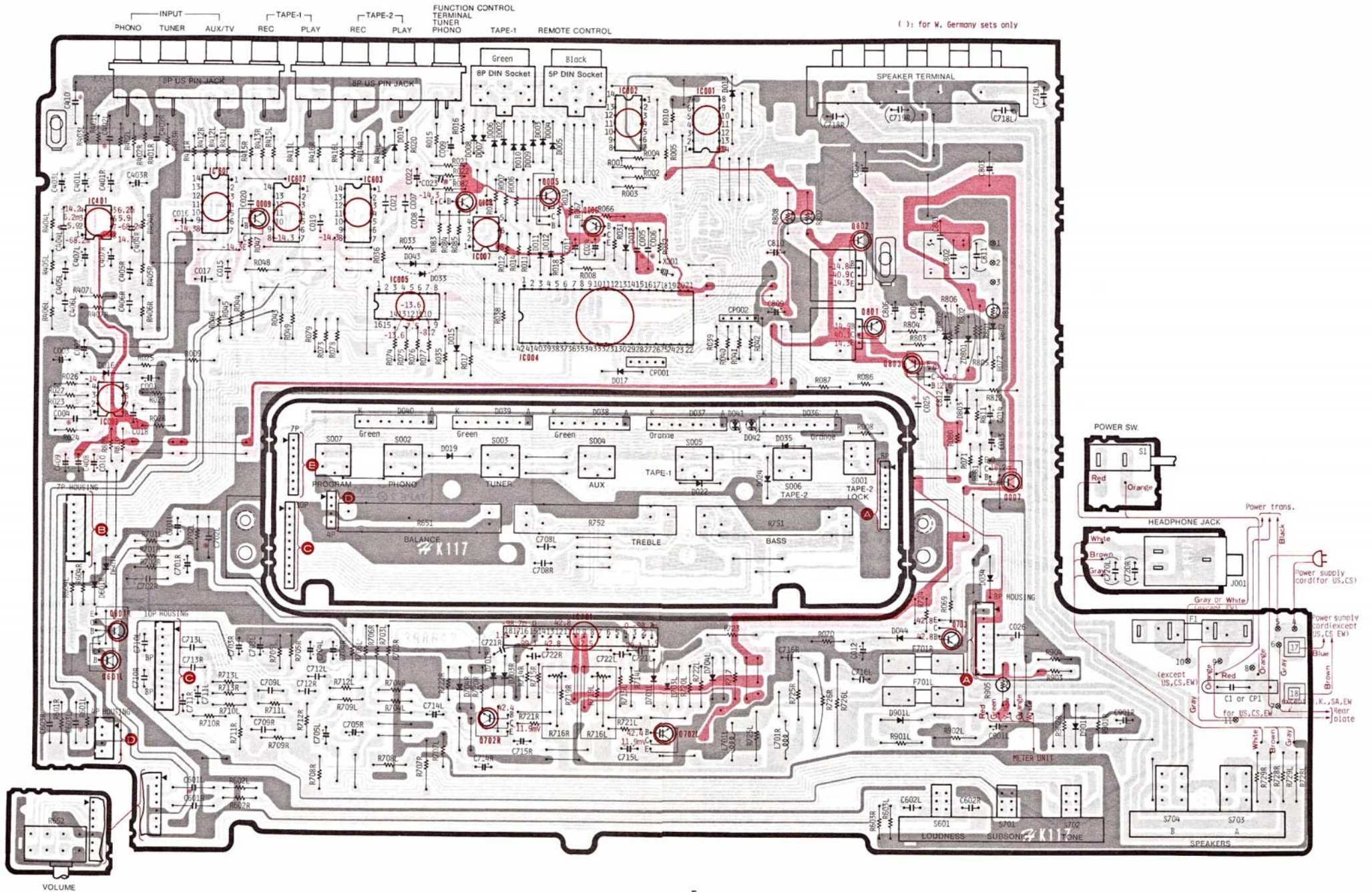
Fig. 2
Abb. 2

BLOCK DIAGRAM · BLOCK SCHEMA · SCHEMA



PRINTED WIRING BOARD · PRINTPLATTEN · PLAN DE BASE

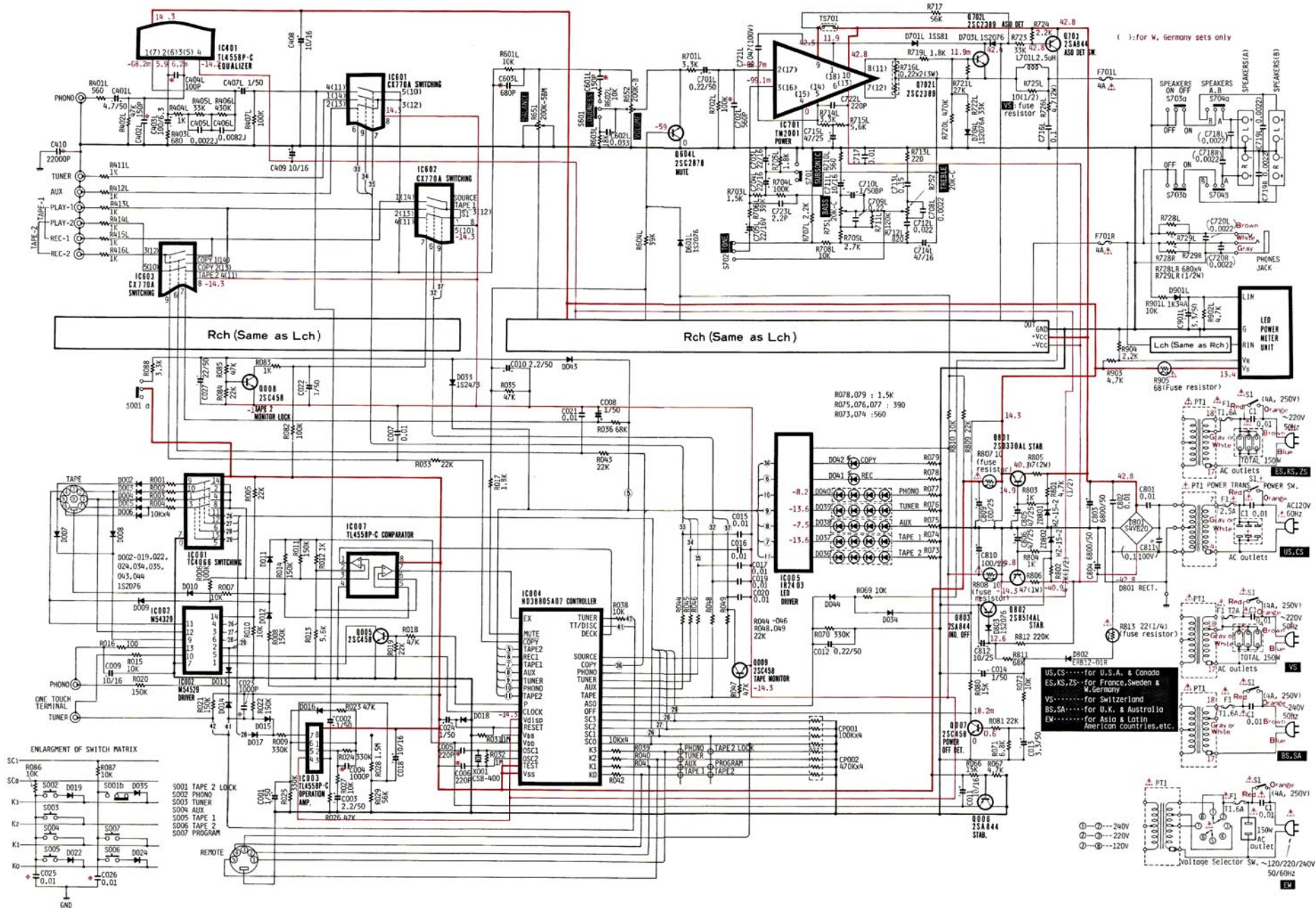
[:+B, :-B, :Earth, :Other]



CIRCUIT DIAGRAM · SCHALTPLAN · PLAN DE CIRCUIT

- * : Axial lead cylindrical ceramic capacitor
- * : Zylindrischer Ceramikkondensator mit axialer Zuleitung
- * : Condensateur céramique cylindrique à conducteur axial

CAUTION
Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10mm φ.



REPLACEMENT PARTS LIST · ERSATZTEILLISTE · TABLEAU DES PIÈCE

SYMBOL No.	PART No.	DESCRIPTION			SYMBOL No.	PART No.	DESCRIPTION		
CAPACITORS									
C 001	0252811	Electrolytic	1 μ F	50V	C 718 LR	0274013	Mylar, film (for W. Germany)	2200 pF \pm 10%	50V
C 002	0252811	Electrolytic	1 μ F	50V	?	?	?	?	?
C 003	0252812	Electrolytic	2.2 μ F	50V	C 720 LR	0274013	Mylar, film (for W. Germany)	2200 pF \pm 10%	50V
C 004	0240020	Cylindrical ceramic	1000 pF \pm 20%	50V	C 721 LR	0275515	Mylar, film	0.047 μ F \pm 10%	100V
C 005	0240004	Cylindrical ceramic	220 pF \pm 10%	50V	C 722 LR	0248732	Ceramic, discal	220 pF \pm 10%	50V
C 006	0240004	Cylindrical ceramic	220 pF \pm 10%	50V	C 723 LR	0230004	Cylindrical ceramic	2.2 pF \pm 10%	50V
C 007	0244171	Ceramic, discal	0.01 μ F $\begin{matrix} +80 \\ -20\% \end{matrix}$	50V	C 801	0245408	Ceramic, discal	0.01 μ F \pm 20%	500V
C 008	0252811	Electrolytic	1 μ F	50V	C 802	0245408	Ceramic, discal	0.01 μ F \pm 20%	500V
C 009	0252521	Electrolytic	10 μ F	16V	C 803	0259931	Electrolytic	6800 μ F	50V
C 010	0252812	Electrolytic	2.2 μ F	50V	C 804	0259931	Electrolytic	6800 μ F	50V
C 011	0252521	Electrolytic	10 μ F	16V	C 805	0252625	Electrolytic	47 μ F	25V
C 012	0252802	Electrolytic	0.22 μ F	50V	C 806	0252625	Electrolytic	47 μ F	25V
C 013	0252813	Electrolytic	3.3 μ F	50V	C 807	0252631	Electrolytic	100 μ F	25V
C 014	0252811	Electrolytic	1 μ F	50V	?	?	?	?	?
C 015	0244171	Ceramic, discal	0.01 μ F $\begin{matrix} +80 \\ -20\% \end{matrix}$	50V	C 810	0252631	Electrolytic	100 μ F	25V
?	?	?	?	?	C 811	0276511	Mylar, film (for W. Germany)	0.1 μ F \pm 10%	100V
C 017	0244171	Ceramic, discal	0.01 μ F $\begin{matrix} +80 \\ -20\% \end{matrix}$	50V	C 812	0252621	Electrolytic	10 μ F	16V
C 018	0252521	Electrolytic	10 μ F	16V	C 901 LR	0252813	Electrolytic	3.3 μ F	50V
C 019	0244171	Ceramic, discal	0.01 μ F $\begin{matrix} +80 \\ -20\% \end{matrix}$	50V	C 902 LR	0252805	Electrolytic	0.47 μ F	50V
?	?	?	?	?	△ C 1	0243899	Ceramic, discal (for U. S. A. & Canada)	0.01 μ F $\begin{matrix} +100 \\ -0\% \end{matrix}$	125V
C 021	0244171	Ceramic, discal	0.01 μ F $\begin{matrix} +80 \\ -20\% \end{matrix}$	50V	△ C 1	0243901	Ceramic, discal (except U. S. A. & Canada)	0.01 μ F $\begin{matrix} +100 \\ -0\% \end{matrix}$	400V
C 022	0252811	Electrolytic	1 μ F	50V	RESISTORS				
C 023	0240020	Cylindrical ceramic	1000 pF \pm 20%	50V	R 001	0129631	Carbon film	10k Ω \pm 5%	SRD 1/4 P
C 024	0252811	Electrolytic	1 μ F	50V	?	?	?	?	?
C 025	0240106	Cylindrical ceramic	0.01 μ F \pm 30%	25V	R 004	0129631	Carbon film	10k Ω \pm 5%	SRD 1/4 P
C 026	0240106	Cylindrical ceramic	0.01 μ F \pm 30%	25V	R 005	0129639	Carbon film	22k Ω \pm 5%	SRD 1/4 P
C 027	0252822	Electrolytic	22 μ F	50V	R 006	0129661	Carbon film	100k Ω \pm 5%	SRD 1/4 P
C 401 LR	0252815	Electrolytic	4.7 μ F	50V	R 007	0129631	Carbon film	10k Ω \pm 5%	SRD 1/4 P
C 402 LR	0240002	Cylindrical ceramic	150 pF \pm 10%	50V	R 008	0129665	Carbon film	150k Ω \pm 5%	SRD 1/4 P
C 403 LR	0252231	Electrolytic	100 μ F	6.3V	R 009	0129673	Carbon film	330k Ω \pm 5%	SRD 1/4 P
C 404 LR	0230036	Cylindrical ceramic	100 pF \pm 5%	50V	R 010	0129631	Carbon film	10k Ω \pm 5%	SRD 1/4 P
C 405 LR	1274213	Mylar, film	2200 pF \pm 5%	50V	R 011	0129665	Carbon film	220k Ω \pm 5%	SRD 1/4 P
C 406 LR	1274236	Mylar, film	8200 pF \pm 5%	50V	R 012	0129601	Carbon film	1k Ω \pm 5%	SRD 1/4 P
C 407 LR	0252811	Electrolytic	1 μ F	50V	R 013	0129619	Carbon film	5.6k Ω \pm 5%	SRD 1/4 P
C 408	0252521	Electrolytic	10 μ F	16V	R 014	0129665	Carbon film	220k Ω \pm 5%	SRD 1/4 P
C 409	0252521	Electrolytic	10 μ F	16V	R 015	0129631	Carbon film	10k Ω \pm 5%	SRD 1/4 P
C 410	0240108	Cylindrical ceramic	0.022 μ F \pm 30%	16V	R 016	0129561	Carbon film	100 Ω \pm 5%	SRD 1/4 P
C 601 LR	0240002	Cylindrical ceramic	150 pF \pm 10%	50V	R 017	0129607	Carbon film	1.8k Ω \pm 5%	SRD 1/4 P
C 602 LR	0275014	Mylar, film	0.033 μ F \pm 10%	50V	R 018	0129647	Carbon film	47k Ω \pm 5%	SRD 1/4 P
C 603 LR	0240010	Cylindrical ceramic	680 pF \pm 10%	50V	R 019	0129639	Carbon film	22k Ω \pm 5%	SRD 1/4 P
C 701 LR	0252802	Electrolytic	0.22 μ F	50V	R 020	0129665	Carbon film	150k Ω \pm 5%	SRD 1/4 P
C 702 LR	0240009	Cylindrical ceramic	560 pF \pm 10%	50V	R 021	0129665	Carbon film	150k Ω \pm 5%	SRD 1/4 P
C 703 LR	0252522	Electrolytic	22 μ F	16V	R 022	0129665	Carbon film	150k Ω \pm 5%	SRD 1/4 P
?	?	?	?	?	R 023	0129647	Carbon film	47k Ω \pm 5%	SRD 1/4 P
C 705 LR	0252522	Electrolytic	22 μ F	16V	R 024	0129673	Carbon film	330k Ω \pm 5%	SRD 1/4 P
C 708 LR	0274013	Mylar, film	2200 pF \pm 10%	50V	R 025	0129673	Carbon film	330k Ω \pm 5%	SRD 1/4 P
C 709 LR	0276013	Mylar, film	0.22 μ F \pm 10%	50V	R 026	0129647	Carbon film	47k Ω \pm 5%	SRD 1/4 P
C 710 LR	0257181	Electrolytic	1 μ F	50V	R 027	0129631	Carbon film	10k Ω \pm 5%	SRD 1/4 P
C 711 LR	0252521	Electrolytic	10 μ F	16V	R 028	0129705	Carbon film	1.5M Ω \pm 5%	SRD 1/4 P
C 712 LR	0275013	Mylar, film	0.022 μ F \pm 10%	50V	R 029	0129649	Carbon film	56k Ω \pm 5%	SRD 1/4 P
C 713 LR	0276012	Mylar, film	0.15 μ F \pm 10%	50V	R 031	0129701	Carbon film	1M Ω \pm 5%	SRD 1/4 P
C 714 LR	0252525	Electrolytic	47 μ F	16V	R 032	0129701	Carbon film	1M Ω \pm 5%	SRD 1/4 P
C 715 LR	0252625	Electrolytic	47 μ F	25V	R 033	0129639	Carbon film	22k Ω \pm 5%	SRD 1/4 P
C 716 LR	0276011	Mylar, film	0.1 μ F \pm 10%	50V	R 034	0129661	Carbon film	100k Ω \pm 5%	SRD 1/4 P
C 717	0244171	Ceramic, discal	0.01 μ F $\begin{matrix} +80 \\ -20\% \end{matrix}$	50V	R 035	0129681	Carbon film	680k Ω \pm 5%	SRD 1/4 P
					R 036	0129651	Carbon film	68k Ω \pm 5%	SRD 1/4 P

SYMBOL No.	PART No.	DESCRIPTION			
R037	0129661	Carbon film	100k Ω	$\pm 5\%$	SRD 1/4 P
R038	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
?	?	}	?	?	?
R042	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R043	0129639	Carbon film	22k Ω	$\pm 5\%$	SRD 1/4 P
?	?	}	?	?	?
R046	0129639	Carbon film	22k Ω	$\pm 5\%$	SRD 1/4 P
R047	0129647	Carbon film	47k Ω	$\pm 5\%$	SRD 1/4 P
R048	0129639	Carbon film	22k Ω	$\pm 5\%$	SRD 1/4 P
R049	0129639	Carbon film	22k Ω	$\pm 5\%$	SRD 1/4 P
R065	0129619	Carbon film	5.6k Ω	$\pm 5\%$	SRD 1/4 P
R066	0129635	Carbon film	15k Ω	$\pm 5\%$	SRD 1/4 P
R067	0129617	Carbon film	4.7k Ω	$\pm 5\%$	SRD 1/4 P
R068	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R069	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R070	0129673	Carbon film	330k Ω	$\pm 5\%$	SRD 1/4 P
R071	0129621	Carbon film	6.8k Ω	$\pm 5\%$	SRD 1/4 P
R072	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R073	0129579	Carbon film	560 Ω	$\pm 5\%$	SRD 1/4 P
R074	0129579	Carbon film	560 Ω	$\pm 5\%$	SRD 1/4 P
R075	0129575	Carbon film	390 Ω	$\pm 5\%$	SRD 1/4 P
?	?	}	?	?	?
R077	0129575	Carbon film	390 Ω	$\pm 5\%$	SRD 1/4 P
R078	0129605	Carbon film	1.5k Ω	$\pm 5\%$	SRD 1/4 P
R079	0129605	Carbon film	1.5k Ω	$\pm 5\%$	SRD 1/4 P
R080	0129635	Carbon film	15k Ω	$\pm 5\%$	SRD 1/4 P
R081	0129639	Carbon film	22k Ω	$\pm 5\%$	SRD 1/4 P
R082	0129661	Carbon film	100k Ω	$\pm 5\%$	SRD 1/4 P
R083	0129601	Carbon film	1k Ω	$\pm 5\%$	SRD 1/4 P
R084	0129639	Carbon film	22k Ω	$\pm 5\%$	SRD 1/4 P
R085	0129647	Carbon film	47k Ω	$\pm 5\%$	SRD 1/4 P
R086	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R087	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R088	0129613	Carbon film	3.3k Ω	$\pm 5\%$	SRD 1/4 P
R401 LR	0129579	Carbon film	560 Ω	$\pm 5\%$	SRD 1/4 P
R402 LR	0129647	Carbon film	47k Ω	$\pm 5\%$	SRD 1/4 P
R403 LR	0129581	Carbon film	680 Ω	$\pm 5\%$	SRD 1/4 P
R404 LR	0129601	Carbon film	1k Ω	$\pm 5\%$	SRD 1/4 P
R405 LR	0129643	Carbon film	33k Ω	$\pm 5\%$	SRD 1/4 P
R406 LR	0129676	Carbon film	430k Ω	$\pm 5\%$	SRD 1/4 P
R407 LR	0129661	Carbon film	100k Ω	$\pm 5\%$	SRD 1/4 P
R411 LR	0129601	Carbon film	1k Ω	$\pm 5\%$	SRD 1/4 P
?	?	}	?	?	?
R416 LR	0129601	Carbon film	1k Ω	$\pm 5\%$	SRD 1/4 P
R601 LR	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R602 LR	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R603 LR	0129637	Carbon film	18k Ω	$\pm 5\%$	SRD 1/4 P
R604 LR	0129635	Carbon film	15k Ω	$\pm 5\%$	SRD 1/4 P
R701 LR	0129613	Carbon film	3.3k Ω	$\pm 5\%$	SRD 1/4 P
R702 LR	0129661	Carbon film	100k Ω	$\pm 5\%$	SRD 1/4 P
R703 LR	0129605	Carbon film	1.5k Ω	$\pm 5\%$	SRD 1/4 P
R704 LR	0129661	Carbon film	100k Ω	$\pm 5\%$	SRD 1/4 P
R705 LR	0129607	Carbon film	1.8k Ω	$\pm 5\%$	SRD 1/4 P
R706 LR	0129645	Carbon film	39k Ω	$\pm 5\%$	SRD 1/4 P
R707 LR	0129609	Carbon film	2.2k Ω	$\pm 5\%$	SRD 1/4 P
R708 LR	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R709 LR	0129611	Carbon film	2.7k Ω	$\pm 5\%$	SRD 1/4 P
R710 LR	0129579	Carbon film	560 Ω	$\pm 5\%$	SRD 1/4 P
R711 LR	0129663	Carbon film	120k Ω	$\pm 5\%$	SRD 1/4 P
R712 LR	0129583	Carbon film	820 Ω	$\pm 5\%$	SRD 1/4 P

SYMBOL No.	PART No.	DESCRIPTION			
R713 LR	0129569	Carbon film	220 Ω	$\pm 5\%$	SRD 1/4 P
R714 LR	0129613	Carbon film	3.3k Ω	$\pm 5\%$	SRD 1/4 P
R715 LR	0129619	Carbon film	5.6k Ω	$\pm 5\%$	SRD 1/4 P
R716 LR	0149551	Wire - wound	0.22 Ω	$\pm 10\%$	3 W
R717	0129649	Carbon film	56k Ω	$\pm 5\%$	SRD 1/4 P
R719 LR	0129607	Carbon film	1.5k Ω	$\pm 5\%$	SRD 1/4 P
R720 LR	0129677	Carbon film	470k Ω	$\pm 5\%$	SRD 1/4 P
R721 LR	0129641	Carbon film	27k Ω	$\pm 5\%$	SRD 1/4 P
R722 LR	0129643	Carbon film	33k Ω	$\pm 5\%$	SRD 1/4 P
R723	0129643	Carbon film	33k Ω	$\pm 5\%$	SRD 1/4 P
R724	0129609	Carbon film	2.2k Ω	$\pm 5\%$	SRD 1/4 P
Δ R725 LR	0113830	Metal (fuse resistor)	10 Ω	$\pm 5\%$	RN 1/2 B
R726 LR	0119139	Metal	4.7 Ω	$\pm 10\%$	RN 2 B
R728 LR	0134371	Composition	680 Ω	$\pm 10\%$	RC 1/2GF
R729 LR	0134371	Composition	680 Ω	$\pm 10\%$	RC 1/2GF
R801	0134381	Composition	4.7k Ω	$\pm 10\%$	RC 1/2GF
R802	0134481	Composition	4.7k Ω	$\pm 10\%$	RC 1/2GF
R803	0129601	Carbon film	1k Ω	$\pm 5\%$	SRD 1/4 P
R804	0129601	Carbon film	1k Ω	$\pm 5\%$	SRD 1/4 P
R805	0119159	Metal	47 Ω	$\pm 10\%$	RN 2 B
R806	0119049	Metal	47 Ω	$\pm 5\%$	RN 1 B
Δ R807	0110601	Metal (fuse resistor)	10 Ω	$\pm 5\%$	RN 1/4B
Δ R808	0110601	Metal (fuse resistor)	10 Ω	$\pm 5\%$	RN 1/4B
R809	0129639	Carbon film	22k Ω	$\pm 5\%$	SRD 1/4 P
R810	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R811	0129651	Carbon film	68k Ω	$\pm 5\%$	SRD 1/4 P
R812	0129669	Carbon film	220k Ω	$\pm 5\%$	SRD 1/4 P
Δ R813	0110605	Metal (fuse resistor)	22 Ω	$\pm 5\%$	RN 1/4B
R901 LR	0129631	Carbon film	10k Ω	$\pm 5\%$	SRD 1/4 P
R902 LR	0129617	Carbon film	4.7k Ω	$\pm 5\%$	SRD 1/4 P
R903	0129617	Carbon film	4.7k Ω	$\pm 5\%$	SRD 1/4 P
R904	0129609	Carbon film	2.2k Ω	$\pm 5\%$	SRD 1/4 P
Δ R905	0110611	Metal (fuse resistor)	68 Ω	$\pm 5\%$	RN 1/4 B
Δ R906	0110611	Metal (fuse resistor)	68 Ω	$\pm 5\%$	RN 1/4 B
ICs & TRANSISTORS					
IC 001	2369701	TC 4066 BP			
IC 002	2369901	M 54529			
IC 003	2369121	TL4558 P -C			
IC 004	2369862	HD 38805A 07			
IC 005	2369891	IR 2403			
IC 007	2369121	TL4558 P -C			
IC 401	2369121	TL4558 P -C			
IC 402	2368831	CX 770 A			
IC 403	2368831	CX 770 A			
IC 404	2368831	CX 770 A			
IC 701	2377451	TM 2001A			
Q 005	2328282	2 SC 458	Ⓒ		
Q 006	2328082	2 SA 844	Ⓓ		
Q 007	2328282	2 SC 458	Ⓒ		
Q 008	2328282	2 SC 458	Ⓒ		
Q 009	2328282	2 SC 458	Ⓒ		
Q 601 LR	2317712	2 SC 2878	Ⓑ		
Q 702 LR	2328783	2 SC 2389	Ⓔ		
Q 703	2328082	2 SA 844	Ⓓ		
Q 801	2317738	2 SD 330 AL	Ⓔ		

SYMBOL No.	PART No.	DESCRIPTION
Q 802	2328963	2 SB 514 AL [ⓔ]
Q 803	2328082	2 SA 844 [ⓓ]
DIODES		
D 002	2337011	IS 2076
?	?	?
D 019	2337011	IS 2076
D 022	2337011	IS 2076
D 024	2337011	IS 2076
D 033.034	2337011	IS 2076
D 035	2337011	IS 2016
D 036	2339382	LED (Yellow)
D 037	2339382	LED (Yellow)
D 038	2339381	LED (Green)
?	?	?
D 040	2339381	LED (Green)
D 041	2339391	LED (Red)
D 042	2339391	LED (Red)
D 043	2337011	IS 2076
D 044	2337011	IS 2076
D 601 LR	2337011	IS 2076
D 701 LR	2337641	ISS 81
D 703 LR	2337011	IS 2076
D 704 LR	2337151	IS 2076A
D 801	2337461	S 4VB 20
D 802	2337762	ERB 12 - 01 R
D 803	2337011	IS 2076
D 901 LR	2337921	IK 34A
ZD 801	2337532	HZ-15-2
ZD 802	2337532	HZ-15-2
VARIABLE RESISTORS		
R 651	0166431	200k Ω - (B) (BALANCE)
R 652	0151857	200k Ω - (B) (VOLUME)
R 751	0166441	20k Ω - (C) (BASS)
R 752	0166441	20k Ω - (C) (TREBLE)
COILS		
L 701 LR	2227311	Audio trap coil - 2.5 μ H
MISCELLANEOUS		
X 001	2154421	Ceramic filter - 400kHz
CP 001	0189032	Resistor array (100k \times 4)
CP 002	0189033	Resistor array (470k \times 4)
R 057-060	0189032	Resistor array (100k \times 4)
R 061-064	0189032	Resistor array (100k \times 4)
J 001	2677751	Headphone jack
Δ S 1	2639512	Power switch (for U.S.A. & Canada)
Δ S 1	2639513	Power switch (except U.S.A. & Canada)
Δ F 1	2727564	Fuse - 2.5A, 125V (for U.S.A. & Canada)
Δ F 1	2727194	Fuse - T1.6A, 250V (except U.S.A., Canada, Asia & Latin American countries, etc.)
Δ F 002, 003	2727894	Fuse - 4A, 125V (for U.S.A. & Canada)
Δ F 002, 003	2727337	Fuse - 4A (except U.S.A. & Canada)
	2667549	5P connector
	2678341	8P US pin jack (Red, White)
	2678342	8P US pin jack (Red, White, Yellow, Brown)
	2688281	8P push terminal (SPEAKERS)
	2727161	Lamp holder (for U.S.A. & Canada)
	2638621	Push switch (SPEAKERS)
	2639541	Push switch (LOUDNESS, SUBSONIC, TONE)

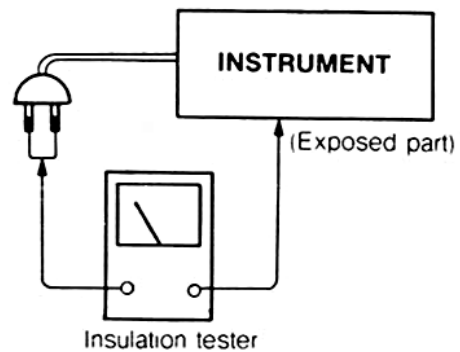
SYMBOL No.	PART No.	DESCRIPTION
S 001	2639092	Push switch (TAPE - 2 LOCK)
S 002-007	2639801	Tact switch
	4567412	3 ϕ \times 8DT bind screw (for PWB)
	4784106	3 ϕ \times 10 bind tapping screw, (for heat loop)
TS 701	4930407	Washer (for PWB)
	2788661	Thermal switch
for REAR PLATE ASSEMBLY		
Δ	0043793	Bushing (for power supply cord) (for U.S.A.)
Δ	3913006	Bushing (for power supply cord) (except U.S.A.)
Δ	2749471	Power supply cord (for U.S.A.)
Δ	2700122	Power supply cord (for Canada)
Δ	2749582	Power supply cord (for U.K.)
Δ	2749622	Power supply cord (for Australia)
Δ	2748752	Power supply cord (for Europe, Switzerland, Sweden, W. Germany, Asia & Latin American countries, etc.)
Δ	2658413	AC outlet (for U.S.A.)
Δ	2658414	AC outlet (for Canada)
Δ	2657741	AC outlet (for Europe, Switzerland, Sweden & W. Germany)
Δ	2658372	AC outlet
Δ	2618051	Voltage selector sw. } (for Asia & Latin American countries, etc.)
Δ	2727193	Fuse - T 2A, 250V
	4567432	3 ϕ \times 8DT bind screw
for FINAL ASSEMBLY		
	4020666	Escutcheon ass'y
	4581982	3 ϕ \times 10 tapping flat screw } (for escutcheon)
	4568853	3 ϕ \times 10 DT flat head screw
	4443754	Cover ass'y (for U.S.A. & Canada)
	4567443	4 ϕ \times 10DT bind screw
	4443751	Cover (for U.K.)
	4432077	Cover ass'y (except U.S.A., Canada & U.K.)
	4567463	4 ϕ \times 10DT bind screw
for DIAL MECHANISM ASSEMBLY		
	3952701	Sub panel
	3952792	Power indicator sheet
	3952741	Power button ass'y
	3294001	Function button ass'y
	3293901	Push button
	3294101	Push button (TAPE-2 LOCK)
	3293061	Slide button (BASS, TREBLE, BALANCE)
	3293091	Program button
	3294171	Push button ass'y
	3927411	Leg
Δ T 001	2247792	Power transformer (for U.S.A.)
Δ T 001	2247795	Power transformer (for Canada)
Δ T 001	2247793	Power transformer (for Europe, Switzerland, Sweden, U.K., Australia & W. Germany)
Δ T 001	2247794	Power transformer (for Asia & Latin American countries, etc.)

SYMBOL No.	PART No.	DESCRIPTION
	2339371	LED level meter
	4567412	3 ϕ \times 8 DT bind screw (for power holder , power sw .)
	4567413	3 ϕ \times 10 DT bind screw (Yellow) (for leg)
	4567433	3 ϕ \times 10 DT bind screw (Black) (for rear plate)
	4784106	3 ϕ \times 10 bind tapping screw (for US pin , others)
	4567454	3 ϕ \times 12 DT bind screw (Silver) (for heat sink , others)
	4567422	4 ϕ \times 8 DT bind screw (for heat sink , others)
for ACCESSORIES		
Δ	2658361	E socket adapter } (for Asia & Latin
	2727199	Fuse - T 2.5A , 250 V } American countries , etc .)
	2658441	8 P DIN socket (Green)
	2658442	5 P DIN socket (Black)

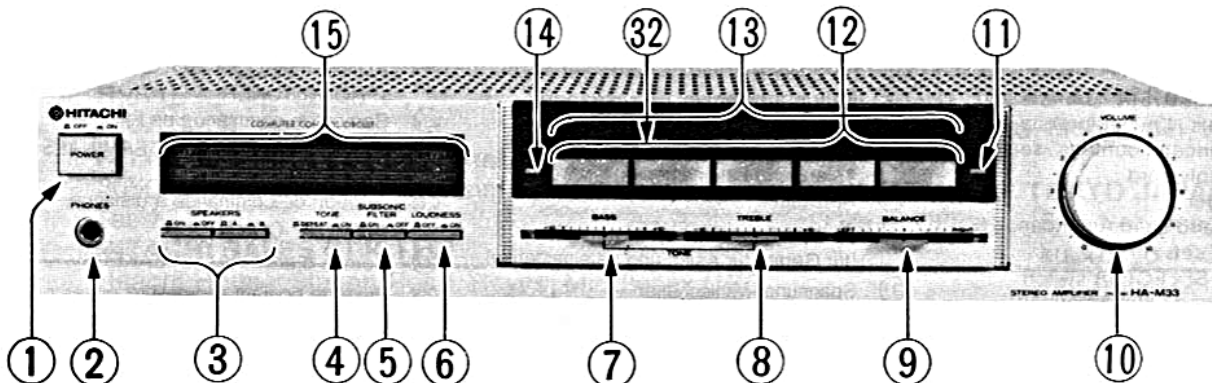
Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

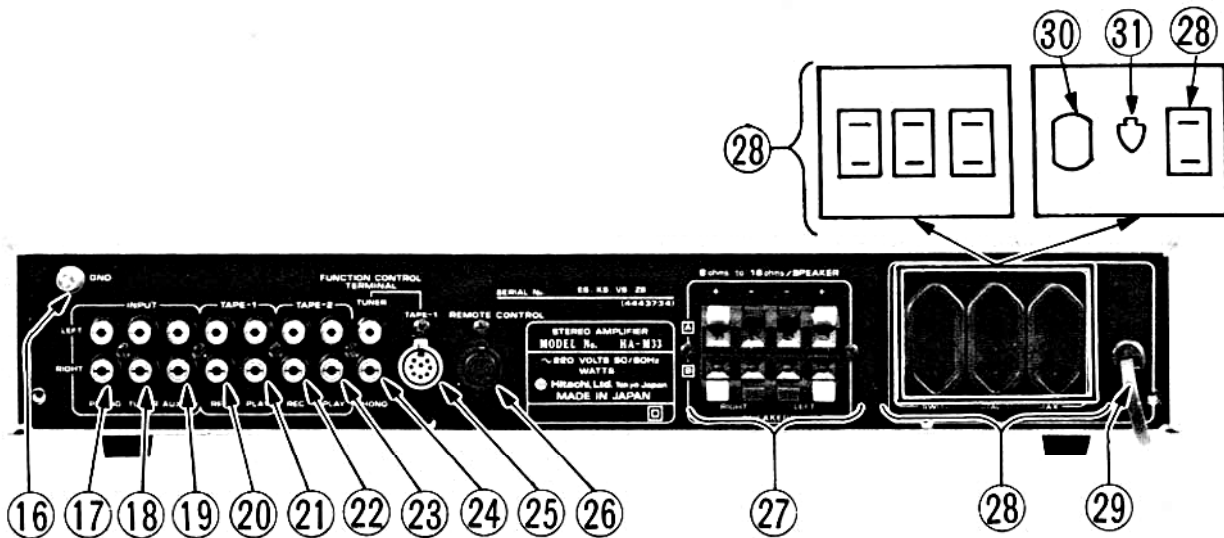
• **Checking method**

- Power switch is set to ON -
- Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts where the customer is easy to touch) and check that the resistance value is 500kohms or more.



FRONT AND REAR PANEL · VORDERE UND HINTERE BEDIENUNGS TAFEL · PANNEAUX AVANT ET ARRIERE





- ① POWER switch
- ② PHONES jack
- ③ SPEAKERS switch
- ④ TONE switch
- ⑤ SUBSONIC-FILTER switch
- ⑥ LOUDNESS switch
- ⑦ BASS control
- ⑧ TREBLE control
- ⑨ BALANCE control
- ⑩ VOLUME control
- ⑪ Program switch
- ⑫ FUNCTION switches
- ⑬ FUNCTION indicators
- ⑭ MONITOR LOCK switch (TAPE - 2)
- ⑮ Power level indicator
- ⑯ Ground terminal (GND)
- ⑰ PHONO INPUT jacks
- ⑱ TUNER INPUT jacks
- ⑲ AUX/TV jacks
- ⑳ TAPE - 1 REC jacks
- ㉑ TAPE - 1 PLAY jacks
- ㉒ TAPE - 2 REC jacks
- ㉓ TAPE - 2 PLAY jacks
- ㉔ FUNCTION CONTROL TERMINALS (PHONO, TUNER)
- ㉕ FUNCTION CONTROL TERMINAL (TAPE - 1)
- ㉖ REMOTE CONTROL socket
- ㉗ SPEAKERS terminals
- ㉘ AC outlet (3 outlets for U.S.A., Canada and Europe sets, 1 outlet for Asia and Latin American countries' sets)
- ㉙ Power supply cord
- ㉚ FUSE holder (For Asia and Latin American countries' sets)
- ㉛ VOLTAGE SELECTOR switch (For Asia and Latin American countries' sets)
- ㉜ Tape copy indicator

- ① Netzschalter (POWER)
- ② Kopfhörerbuchse (PHONES)
- ③ Lautsprecherschalter (SPEAKERS)
- ④ Klangregelschalter (TONE)
- ⑤ Infraschallfilter (SUBSONIC)
- ⑥ Gehörliche Lautstärke (LOUDNESS)
- ⑦ Tiefenregler (BASS)
- ⑧ Höhenregler (TREBLE)
- ⑨ Balanceregler (BALANCE)
- ⑩ Lautstärkeregl. (VOLUME)
- ⑪ Programmschalter
- ⑫ Funktionsschalter
- ⑬ Funktionsanzeigen
- ⑭ Monitorverriegelungsschalter (Tonband 2)
- ⑮ Aussteuerungsanzeige
- ⑯ Erdklemme (GND)
- ⑰ PHONOeingangsbuchsen
- ⑱ TUNEREingangsbuchsen
- ⑳ Tonband 1, Aufnahmebuchsen
- ㉑ Tonband 1, Wiedergabebuchsen
- ㉒ Tonband 2, Aufnahmebuchsen
- ㉓ Tonband 2, Wiedergabebuchsen
- ㉔ Funktionssteuerklemmen (PHONO, TUNER)
- ㉕ Funktionssteuerklemmen (TAPE - 1)
- ㉖ Fernbedienungsbuchse
- ㉗ Lautsprecher-Ausließklemmen (SPEAKERS)
- ㉘ Kaltgerätestecker (3 Ausgänge für Geräte für USA, Kanada und Europa, 1 Ausgang für Geräte für Asien und Lateinamerika)
- ㉙ Netzkabel
- ㉚ Sicherungshalter (FUSE) (für Geräte für Asien und Lateinamerika)
- ㉛ Spannungswahlschalter (für Geräte für Asien und Lateinamerika)
- ㉜ Tonbandkopieranzeige

- ① Interrupteur d'alimentation (POWER)
- ② Prise de casque d'écoute (PHONES)
- ③ Commutateurs d'enceintes (SPEAKERS)
- ④ Commutateur de tonalité (TONE)
- ⑤ Commutateur de filtre infra-acoustique (SUBSONIC)
- ⑥ Commutateur de correcteur physiologique (LOUDNESS)
- ⑦ Commande des tonalités graves (BASS)
- ⑧ Commande des tonalités aigües (TREBLE)
- ⑨ Commande d'équilibrage (BALANCE)
- ⑩ Commande de VOLUME
- ⑪ Commutateur de programme
- ⑫ Commutateurs de fonction (FUNCTION)
- ⑬ Témoins de fonction
- ⑭ Interrupteur de verrouillage de surveillance (MONITOR LOCK TAPE - 2)
- ⑮ Indicateur de niveau de puissance (POWER)
- ⑯ Borne de mise à la terre (GND)
- ⑰ Prise d'entrée PU (PHONO INPUT)
- ⑱ Prise d'entrée de tuner (TUNER INPUT)
- ⑲ Prise auxiliaire/ télé (AUX/TV)
- ⑳ Prise d'enregistrement TAPE - 1
- ㉑ Prise de lecture TAPE - 1
- ㉒ Prise d'enregistrement TAPE - 2
- ㉓ Prise d'entrée de lecture TAPE - 2
- ㉔ Bornes de commande de fonction FUNCTION CONTROL TERMINALS (PHONO, TUNER)
- ㉕ Bornes de commande de fonction FUNCTION CONTROL TERMINALS (TAPE - 1)
- ㉖ Support de commande à distance (REMOTE CONTROL)
- ㉗ Bornes d'enceintes (SPEAKERS)
- ㉘ Prise de courant alternatif (3 prises pour les Etats-Unis d'Amérique, le Canada et l'Europe 1 prise pour l'Asie et l'Amérique Latine)
- ㉙ Cordon d'alimentation en C.A.
- ㉚ Support de fusible (FUSE) (pour l'Asie et l'Amérique Latine)
- ㉛ Sélecteur de tension (VOLTAGE SELECTOR) (VOLTAGE SELECTOR) (pour l'Asie et l'Amérique Latine)
- ㉜ Indicateur de reproduction de bande

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