HITACHI

HA-3500

SERVICE MANUAL

English
Deutsch
Français

No. 170

SPECIFICATIONS

Specifications and designs may be changed without notice for improvement.

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

Power output	30 watts* per channel, min. RMS, at 8 ohms from 20 Hz to 20kHz, with no more than 0.05% total harmonic distortion. 33 W/ch + 33 W/ch (Both channels driven into 8 ohms, 20–20,000 Hz, T.H.D. 0.05%) 36 W/ch + 36 W/ch (8 ohms, 1 kHz, T.H.D. 0.05%) 38 W/ch + 38 W/ch (4 ohms, 1 kHz, T.H.D. 0.15%)
Power bandwidth	10 Hz – 50 kHz
Frequency characteristics	
TUNER, TAPE 1, 2	10 Hz – 40 kHz (+0.5, –1.5 dB)
PHONO	RIAA ±0.3 dB
Harmonic distortion (8 ohms) (at rated output)	Less than 0.05%
(at 1/2 rated output)	Less than 0.03%
Intermodulation distortion (at 1/2 rated output)	Less than 0.03%
Input sensitivity (Impedance)	
PHONO	2.5 mV (47 k-ohms)
TUNER	150 mV (33 k-ohms)
TAPE 1, 2	150 mV (33 k-ohms)
Output level	
TAPE OUT	150 mV (PHONO, TUNER)
Phono overload level (at 1 kHz, T.H.D. 0.05%)	200 mV
Signal-to-noise ratio (IHF, A network)	
PHONO	75 dB
TUNER, TAPE 1,2	90 dB
Damping factor	30 (1 kHz, 8 ohms)
Bass control	±10 dB (100 Hz)
Treble control	±10 dB (10 kHz)
Loudness control	+9 dB (100 Hz) +4 dB (10 kHz)
Subsonic filter	20 Hz (–12 dB/oct)
Semi-conductors	4 ICs, 24 transistors and 18 diodes (2 LEDs)
Power supply	AC 120 V 60 Hz, ~220 V 50/60 Hz, ~240 V 50/60 Hz or ~120 V/220 V/240 V 50/60 Hz)
Power consumption	160 W (at 1/3 rated output) 240 W (at rated output)
Dimensions	435 (W) x 110 (H) x 275 (D) mm
Weight	6 kg

FEATURES

1. Low-distortion power amplifier
2. Power level meters for output power readout
3. Connection facilities for two pairs of speakers
4. New ICs in the Equalizer and Pre-amplifier
5. Subsonic filter that cuts out rumble and wow in the ultra-low frequencies without impairing the sound quality.
6. LED program source indicators.

STEREO AMPLIFIER

April 1979

TECHNISCHE DATEN

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

Ausgangsleistung	33 Watt/Kanal +33 Watt/Kanal (beide Kanäle ausgesteuert) in 8 Ohm, 20 Hz-20 kHz, T.H.D. 0,05%.
DIN 8 Ohm	36 Watt/Kanal + 36 Watt/Kanal (8 Ohm, 1 kHz, T.H.D. 0,05%)
DIN 4 Ohm	38 Watt/Kanal + 38 Watt/Kanal (4 Ohm, 1 kHz, T.H.D. 0,15%)
Leistungsbandbreite	10 Hz – 50 kHz
Frequenzcharakteristik	
TUNER, TAPE 1, 2	10 Hz – 40 kHz (+0,5, –1,5 dB)
PHONO	RIAA-Kennlinie ±0,3 dB
Klirrfaktor (8 Ohm) (bei Nennleistung)	Kleiner als 0,05%
(bei halber Nennleistung)	Kleiner als 0,03%
Intermodulations-Verzerung (bei halber Nennleistung)	Kleiner als 0,03%
Eingangsempfindlichkeit (Impedanz)	
PHONO	2,5 mV (47 kOhm)
TUNER	150 mV (33 kOhm)
TAPE 1, 2	150 mV (33 kOhm)
Ausgangspegel TAPE OUT	150 mV (PHONO, TUNER)
Phonoüberlastungspegel (bei 1 kHz, 0,5% T.H.D.)	200 mV
Geräuschspannungsabstand (IHF, A-Netz)	
PHONO	75 dB
TUNER, TAPE 1, 2	90 dB
Dämpfungsfaktor	30 (1 kHz, 8 Ohm)
Tiefeneinstellung	±10 dB (100 Hz)
Höheneinstellung	±10 dB (10 kHz)
Gehörrichtige Lautstärkekontur	+9 dB (100 Hz) +4 dB (10 kHz)
Subsonicfilter-Schalter	20 Hz (–12 dB/oct)
Bestückung	4 ICs, 24 Transistoren und 18 Dioden (2 LED)
Netzspannung	Wechselstrom 120/60 Hz, ~220 V 50/60 Hz, ~240 V 50/60 Hz oder, ~120 V/220 V/240 V 50/60 Hz
Leistungsaufnahme	160 W (bei 1/3 Nennleistung) 240 W (bei Nennleistung)
Abmessungen	435 (B) x 110 (H) x 275 (T) mm
Grewicht	6,0 kg

MERKMALE

1. **Verzerrungsarmer Leistungsverstärker**
2. **Leistungspegelmesser zur Ablesung der Ausgangsleistung**
3. **Anschlußeinrichtungen für zwei Lautsprecherpaare**
4. **Neue integrierte Schaltkreise (ICs) im Phono-Entzerrer und Vorverstärker**
5. **Subsonic-Filter, unterdrückt Rumpeln und Jaulen in den extrem niedrigen Frequenzen, ohne die Klangqualität zu beeinträchtigen**
6. **Programmquellen-LED Lichtsegmente**

CARACTERISTIQUES TECHNIQUES

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

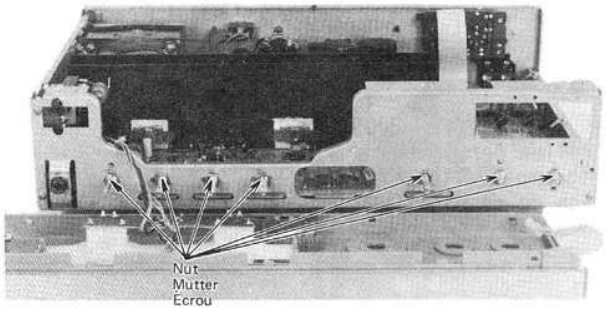
Puissance de sortie	33 W/can.+33 W/can.(deux canaux en fonction sous 8 ohms, 20 – 20,000 Hz, D.H.T. 0,05%).
	36 W/can.+36 W/can.(8 ohms, 1 kHz, D.H.T. 0,05%)
	38 W/can.+38 W/can.(14 ohms, 1 kHz, D.H.T. 0,15%)
Bande passante	10 Hz – 50 kHz
Caractéristiques de fréquence	
TUNER, TAPE 1, 2	10 Hz – 40 kHz (+0,5, –1,5 dB)
PHONO	RIAA ±0,3 dB
Distortion harmonique (8 ohms)	
(à la puissance nominale)	Inférieure à 0,05%
(à la motie de la puisance nominale)	Inférieure à 0,03%
Distorsion d'intermodulation (à la moitié de la puissance nominale)	Inférieure à 0,03%
Sensibilité d'entrée (Impédance)	
PHONO	2,5 mV (47 k-ohms)
TUNER	150 mV (33 k-ohms)
TAPE 1, 2	150 mV (33 k-ohms)
Niveau de sortie TAPE OUT	150 mV (PHONO, TUNER)
Niveau de surcharge phono (à 1 kHz, D.H.T. 0,05%)	200 mV
Rapport signal/bruit (IHF, réseau A)	
PHONO	75 dB
TUNER, TAPE	90 dB
Facteur d'atténuation	30 (1 kHz, 8 ohms)
Réglage de graves	±10 dB (100 Hz)
Réglage des aiguës	±10 dB (10 kHz)
Correction physiologique	+9 dB (100 Hz)
	+4 dB (10 kHz)
Filtre subsonique	20 Hz (–12 dB/oct)
Semiconducteurs	4 CI, 24 transistors et 18 diodes (2 LED)
Alimentation	CA 120 V 60 Hz, ~ 220 V 50/60 Hz, ~ 240 V 50/60 Hz ou ~ 120 V/220 V/240 V 50/60 Hz
Consommation	160 W (à 1/3 de la puissance nominale) 240 W (à la puissance nominale)
Dimensions	435 (L) x 110 (H) x 275 (P) mm
Poids	6,0 kg

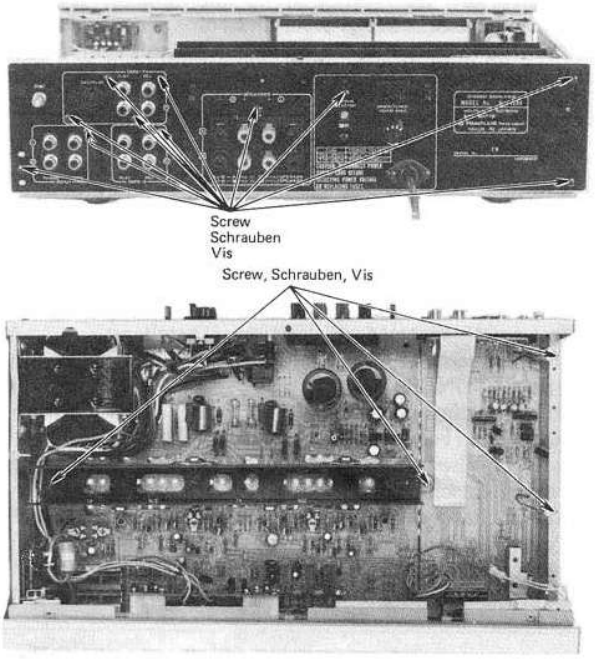
CARACTERISTIQUES

1. **Amplificateur de puissance à faible distorsion**
2. **Indicateurs de dèbit de puissance à lecture directe**
3. **Possibilitè de raccordement de deux paires d'enceintes**
4. **De nouveaux circuits intégrés dans le correcteur et le pré-amplificateur**
5. **Un filtre subsonique qui permet de supprimer le rumble et le pleurage dans les très basses fréquences sans réduire la qualité du son**
6. **Témoin de fonction LED**

DISASSEMBLY AND REPLACEMENT · ZERLEGUNG UND AUSTAUSCH · DEMONTAGE ET REMONTAGE

- **Removing the printed wiring boards**
- **Ausbau der Leitterplatten**
- **Déposer des plaquettes à circuit imprimé**





ADJUSTMENT · ABGLEICH · REGLAGE

- **IDLE CURRENT**

Adjust R751 so that the voltage of both terminals of the emitter resistor R720 (0.22 ohms) of the output transistor Q710 become 8.8 mV $^{+6.6}_{-4.4}$ mV (current value 40 mA $^{+30}_{-20}$ mA).

[Note] This adjustment should be performed more than 5 minutes after the power switch is turned ON.

- **BLINDSTROM**

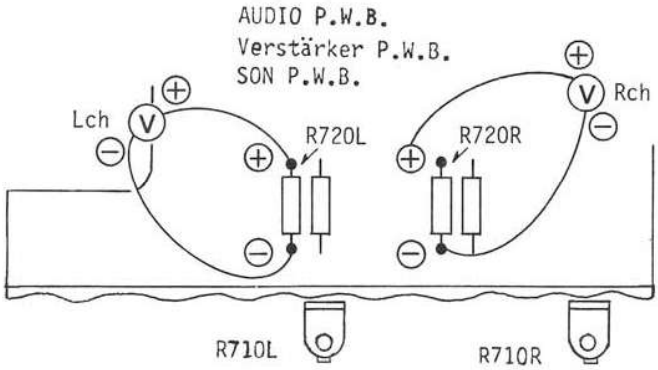
R751 ist so einzustellen, daß die Spannung an beiden Klemmen des Emitter-Widerstandes R720 (0,22 Ohm) des Leistungstransistors Q710 8,8 mV $^{+6,6}_{-4,4}$ mV beträgt (Stromstärke 40 mA $^{+30}_{-20}$ mA).

[Hinweis] Dieser Abgleich ist mindestens fünf Minuten nach dem Einschalten des Netzschalters durchzufünren.

- **COURANT DEWATTE**

Ajuster R751 de telle sorte que la tension des deux bornes de la résistance d'émetteur R720 (0,22 ohms) du transistor de sortie Q710 atteigne 8,8 mV $^{+6,6}_{-4,4}$ mV (valeur du courant: 40 mA $^{+30}_{-20}$ mA).

[Remarque] Ce réglage doit ètre fait plus de 5 minutes après la mise en marche de l'interrupteur général.



• METER SENSITIVITY

1. Set the volume control to (O) position.
2. Set the power switch to ON. (FUNCTION switch: TUNER)
3. Connect the OSC output to the TUNER input. (Frequency: 1 kHz)
4. Connect the AC voltmeter to the speaker terminals.
5. Adjust the OSC output level and volume control so that the output voltage at the speaker terminals is 8.94V rms without speaker connections.

Item	Measuring instrument	Adjust	Deviation of needle
Meter adjustment	Oscillator AC voltmeter	R553L,R	10W

• ANZEIGEEMPFINDLICHKEIT

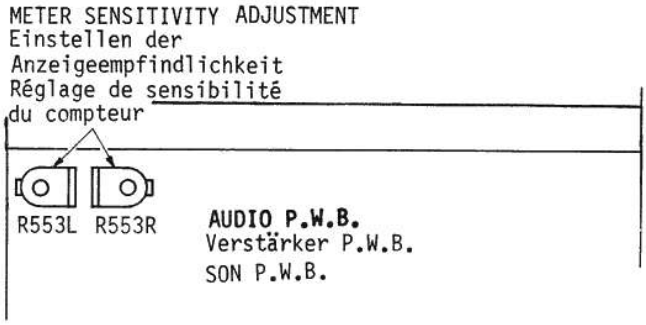
1. Den Lautstärkeregler auf Position (O) stellen.
2. Den Netzschalter einschalten (Funktionsschalter auf Position : TUNER).
3. Den Oszillatorausgang an den TUNER-Eingang anschließen (Frequenz : 1 kHz).
4. Ein Wechselspannungs-Voltmeter an die Lautsprecherklemmen anschließen.
5. Den Oszillator-Ausgangspegel und den Lautstäkeregler so einstellen, daß die Ausgangsspannung an den Lautsprecherklemmen 8,94V beträgt, wenn die Lautsprecher nicht angeschlossen sind.

Benennung	Meßinstrument	Anzeige	Nadel-ausschlag
Abgleich des Blindstromes	Wechselspannungsmesser	R553L,R	10W

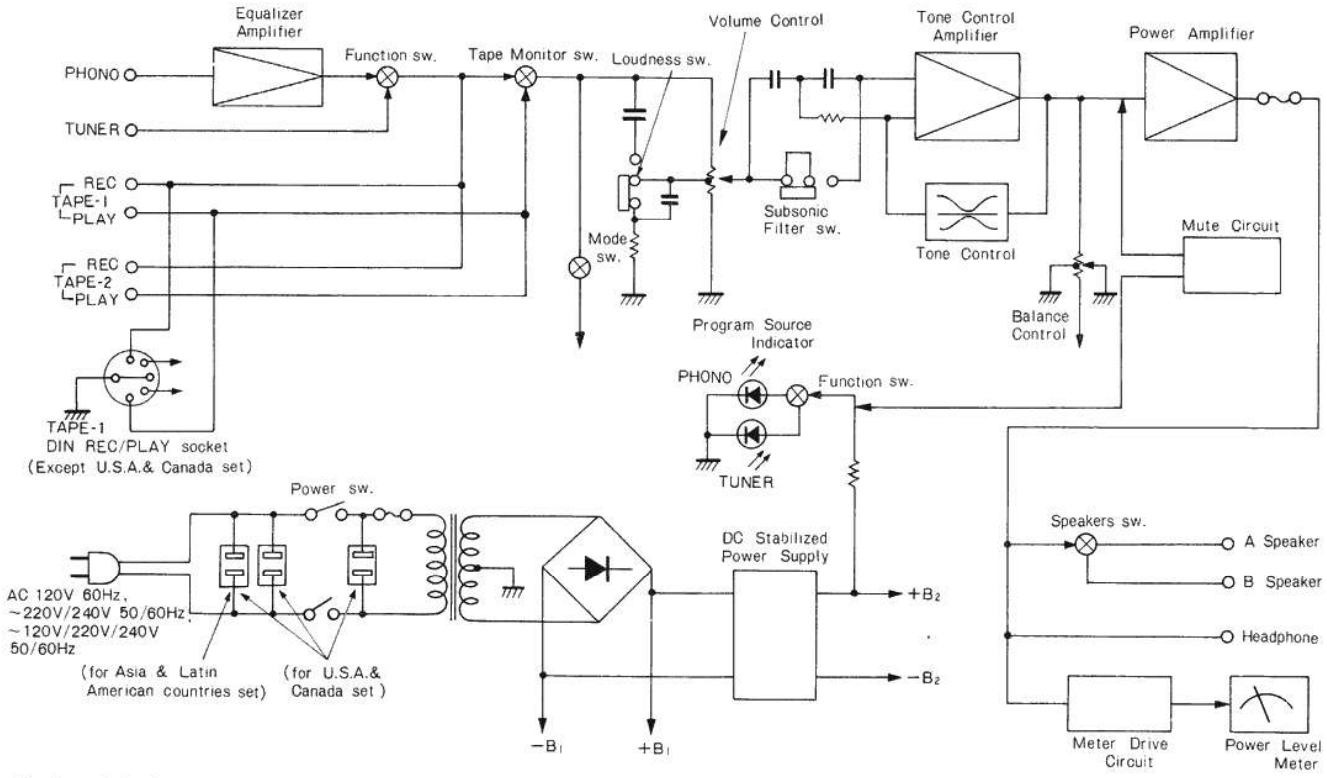
• SENSIBILITE DE COMPTEUR

1. Régler la commande de volume sur la position (O).
2. Régler l'interrupteur général sur la position de marche "ON" (le sélecteur de fonction sur TUNER).
3. Raccorder la sortie OSC à l'entrée TUNER (fréquence: 1 kHz).
4. Brancher un voltmètre C.A. aux bornes de haut-parleurs.
5. Ajuster le niveau de sortie OSC et la commande de volume pour que la tension de sortie aux bornes de haut-parleurs soit de 8.94V efficaces sans que les haut-parleurs ne soient branchés.

Désignation	Appareil de mesure	Réglage	Course de l'aiguille
Courant déwatté	Voltmètre à courant alternatif	R553L,R	10W



BLOCK DIAGRAM · BLOCK SCHEMA · SCHEMA



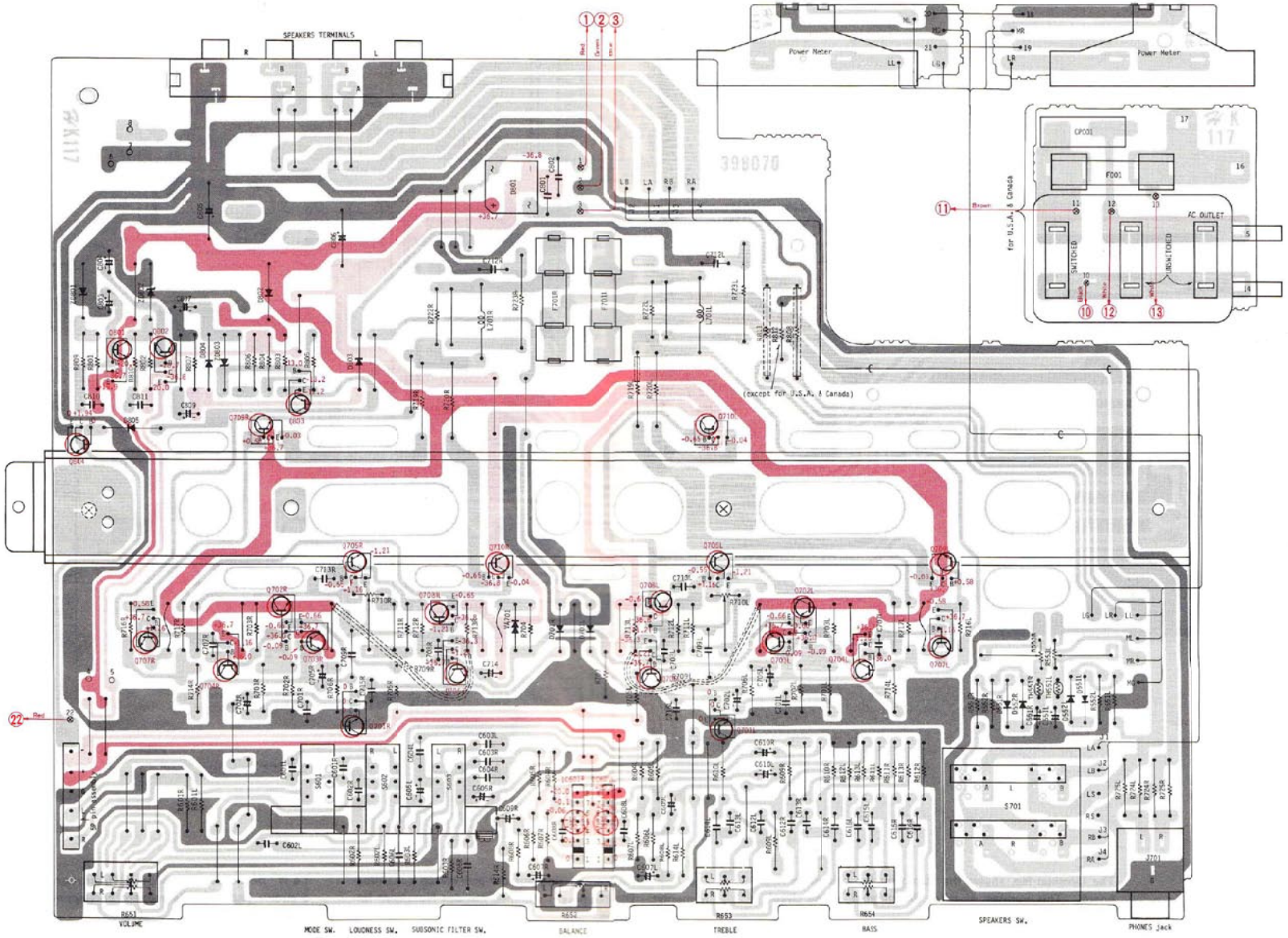
One channel only shown.

PRINTED WIRING BOARD · PRINTPLATTEN · PLAN DE BASE

[: + B, : – B, : Earth, : Other]

Audio P.W.B.

*: Axial lead cylindrical ceramic capacitor
*: Zylindrischer Keramikkondensator mit axialer zuleitung
*: Condensateur céramique cylindrique à conducteur axial



The terminal No. shows the stamp on the printed wiring board. This number matches the number in the circuit diagram.

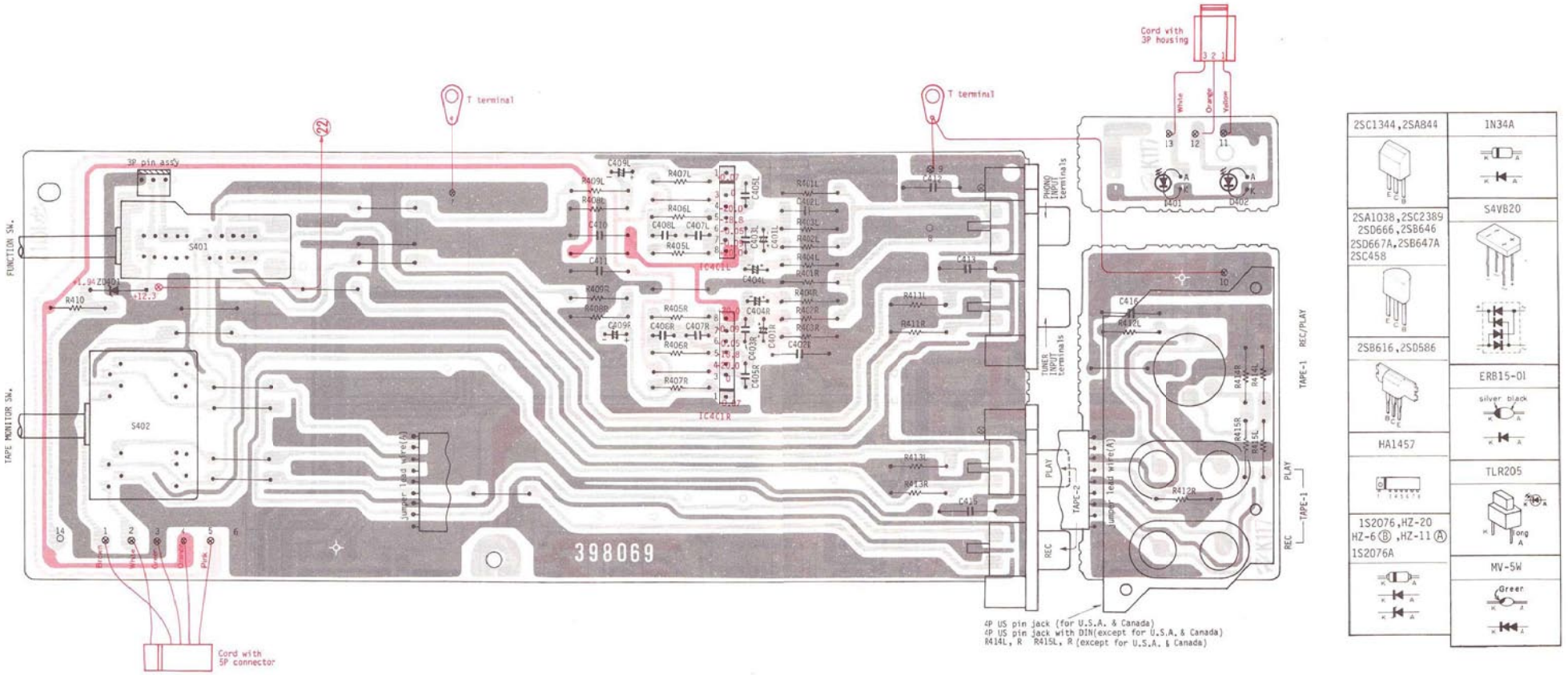
Die Anschlussklemmen sind auf der gedruckten Schaltung numeriert. Die Nummern stimmen mit den Nummern im Schaltplan überein.

Le N° de borne correspond à l'indication de la plaquette à circuit imprimé. Ce numéro correspond au numéro du schéma de montage.

PRINTED WIRING BOARD · PRINTPLATTEN · PLAN DE BASE

[: + B, : – B, : Earth, : Other]

Equalizer P.W.B.



2SC1344, 2SA844	1N34A
2SA1038, 2SC2389 2SD666, 2SB646 2SD667A, 2SB647A 2SC458	S4VB20
2SB616, 2SD586	ERB15-01 (silver black)
HA1457	TLR205
1S2076, HZ-20 HZ-6Ⓑ, HZ-11Ⓐ 1S2076A	MV-5W (Green)

∗: Axial lead cylindrical ceramic capacitor
∗: Zylindrischer Keramikkondensator mit axialer zuleitung
∗: Condensateur céramique cylindrique à conducteur axial

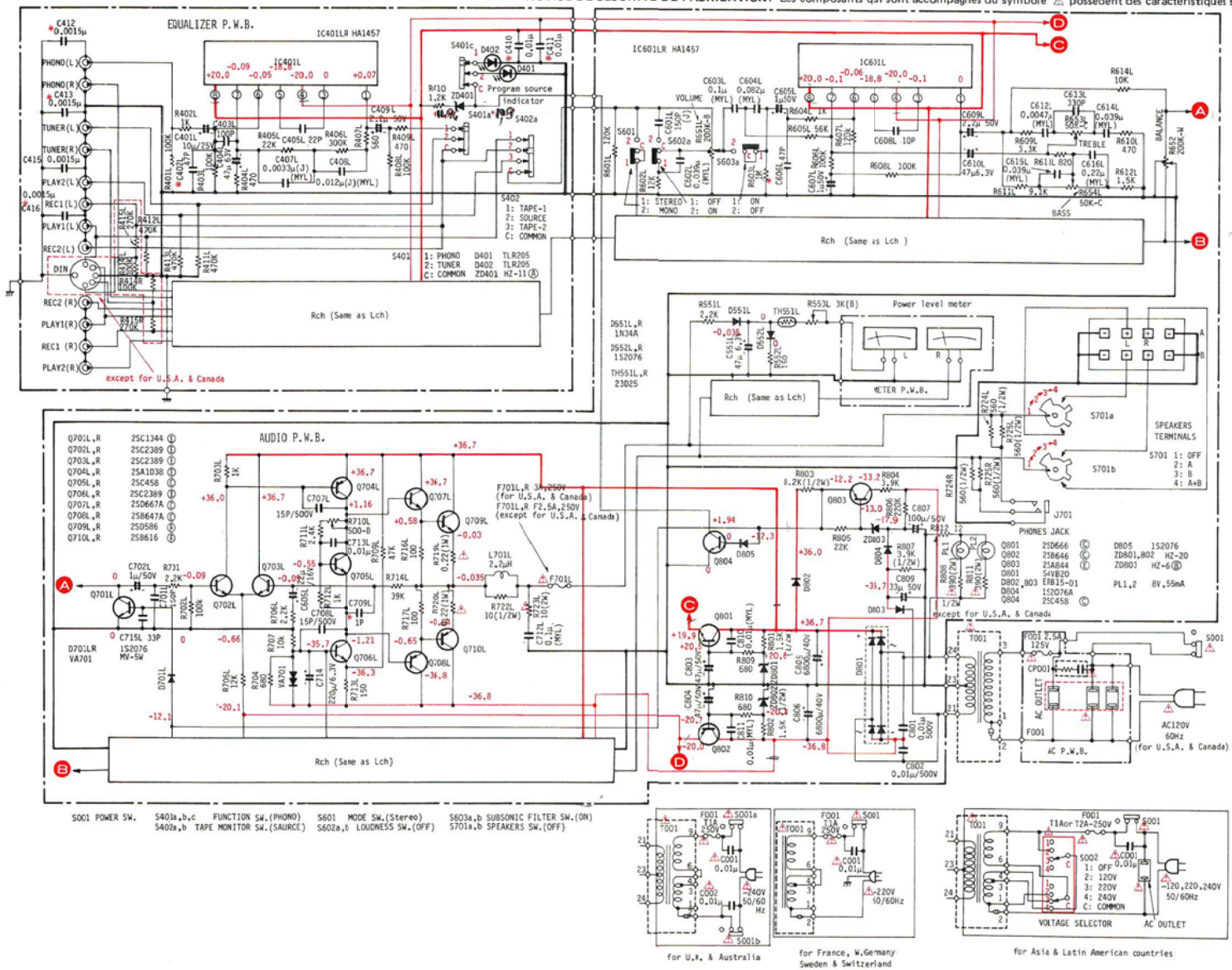
The terminal No. shows the stamp on the printed wiring board. This number matches the number in the circuit diagram.

Die Anschlussklemmen sind auf der gedruckten Schaltung numeriert. Die Nummern stimmen mit den Nummern im Schaltplan überein.

Le N° de borne correspond à l'indication de la plaquette à circuit imprimé. Ce numéro correspond au numéro du schéma de montage.

CIRCUIT DIAGRAM · SCHALTPLAN · PLAN DE CIRCUIT

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety.
SICHERHEITSHINWEIS: Die mit ⚠ gekennzeichneten Komponenten haben wichtige Sicherheitsaufgaben.
NOTICE DE SECURITE DE FABRICATION: Les composants qui sont accompagnés du symbole ⚠ possèdent des caractéristiques spéciales.



∗: Axial lead cylindrical ceramic capacitor
∗: Zylindrischer Keramikkondensator mit axialer zuleitung
∗: Condensateur céramique cylindrique à conducteur axial

The circuit diagram is subject to change for improvement without notice.
Änderungen des Schaltplans im Sinne ständiger Verbesserung vorbehalten.
Le schéma de montage est sujet à modification sans préavis, pour des raisons d'amélioration.

REPLACEMENT PARTS · LIST · ERSATSTEILLISTE · TABLEAU DES PIECE

CAPACITORS

for EQUALIZER PRINTED WIRING BOARD

SYMBOL No.	STOCK No.	DESCRIPTION		
C401L, R	1252621	Electrolytic	10μF	25V
C402L, R	H230028	Ceramic, discal	47pF ± 5%	50V
C403L, R	1248684	Ceramic, discal	100pF ± 5%	50V
C404L, R	1252225	Electrolytic	47μF	6.3V
C405L, R	1248668	Ceramic, discal	22pF ± 5%	50V
C407L, R	1274214	Mylar, film	3300pF ± 5%	50V
C408L, R	1275231	Mylar, film	0.012μF ± 5%	50V
C409L, R	1252812	Electrolytic	2.2μF	50V
C410	H240106	Ceramic, discal	0.01μF ± 30%	25V
C411	H240106	Ceramic, discal	0.01μF ± 30%	25V
C412	H240101	Ceramic, discal	1500pF ± 30%	25V
C413	H240101	Ceramic, discal	1500pF ± 30%	25V
C415	H240101	Ceramic, discal	1500pF ± 30%	25V
C416	H240101	Ceramic, discal	1500pF ± 30%	25V

for AUDIO PRINTED WIRING BOARD

SYMBOL No.	STOCK No.	DESCRIPTION		
C551L, R	0252225	Electrolytic	47μF	6.3V
C601L, R	1248688	Ceramic, discal	150pF ± 10%	50V
C602L, R	0275034	Mylar, film	0.039μF ± 10%	50V
C603L, R	1276011	Mylar, film	0.1μF ± 10%	50V
C604L, R	1275036	Mylar, film	0.082μF ± 10%	50V
C605L, R	0252811	Electrolytic	1μF	50V
C606L, R	H230028	Ceramic, discal	47pF ± 5%	50V
C607L, R	0252811	Electrolytic	1μF	50V
C608L, R	1248650	Ceramic, discal	10pF ± 0.5pF	50V
C609L, R	0252812	Electrolytic	2.2μF	50V
C610L, R	1252225	Electrolytic	47μF	6.3V
C612L, R	0274015	Mylar, film	4700pF ± 10%	50V
C613L, R	1248736	Ceramic, discal	330pF ± 10%	50V
C614L, R	1275034	Mylar, film	0.039μF ± 10%	50V
C615L, R	1275034	Mylar, film	0.039μF ± 10%	50V
C616L, R	1276013	Mylar, film	0.22μF ± 10%	50V
C701L, R	1248688	Ceramic, discal	150pF ± 5%	50V
C702L, R	0252811	Electrolytic	1μF	50V
C705L, R	0252522	Electrolytic	22μF	16V
C706L, R	0252231	Electrolytic	100μF	6.3V
C707L, R	0247834	Ceramic, discal	15pF ± 5%	500V
C708L, R	0247834	Ceramic, discal	15pF ± 5%	500V
C709L, R	H230000	Ceramic, discal	1pF ± 20%	50V
C712L, R	1276011	Mylar, film	0.1μF ± 10%	50V
C713L, R	0245017	Ceramic, discal	0.01μF $^{+80\%}_{-20\%}$	25V
C714	1252232	Electrolytic	220μF	6.3V
C715L, R	1248672	Ceramic, discal	33pF ± 5%	50V
C801	0245408	Ceramic, discal	0.01μF ± 20%	500V
C802	0245408	Ceramic, discal	0.01μF ± 20%	500V
C803	1252825	Electrolytic	47μF	50V
C804	1252825	Electrolytic	47μF	50V
C805	0250488	Electrolytic	6800μF	40V
C806	0250488	Electrolytic	6800μF	40V
C807	0252831	Electrolytic	100μF	50V
C809	0252823	Electrolytic	33μF	50V
C810	0275011	Mylar, film	0.01μF ± 10%	50V
C811	0275011	Mylar, film	0.01μF ± 10%	50V

for DIAL MECHANISM ASSEMBLY

C001	0214481	Paper	0.01μF ± 20% (except for U.S.A. & Canada)	400V
C002	0214481	Paper	0.01μF ± 20% (for U.K. & Australia)	400V

RESISTORS

for EQUALIZER PRINTED WIRING BOARD

SYMBOL No.	STOCK No.	DESCRIPTION		
R401L, R	H129661	Carbon film	100kΩ ± 5%	SRD1/8P
R402L, R	H129601	Carbon film	1kΩ ± 5%	SRD1/8P
R403L, R	H129661	Carbon film	100kΩ ± 5%	SRD1/8P
R404L, R	H129577	Carbon film	470Ω ± 5%	SRD1/8P
R405L, R	H129639	Carbon film	22kΩ ± 5%	SRD1/8P
R406L, R	0129672	Carbon film	300kΩ ± 5%	SRD1/8P
R407L, R	H129579	Carbon film	560Ω ± 5%	SRD1/8P
R408L, R	H129661	Carbon film	100kΩ ± 5%	SRD1/8P
R409L, R	H129577	Carbon film	470Ω ± 5%	SRD1/8P
R410	H129603	Carbon film	1.2kΩ ± 5%	SRD1/8P
R411L, R	H129677	Carbon film	470kΩ ± 5%	SRD1/8P
R412L, R	H129677	Carbon film	470kΩ ± 5%	SRD1/8P
R413L, R	H129677	Carbon film	470kΩ ± 5%	SRD1/8P
R414L, R	H129661	Carbon film	100kΩ ± 5% (except for U.S.A. & Canada)	SRD1/8P
R415L, R	H129671	Carbon film	270kΩ ± 5% (except for U.S.A. & Canada)	SRD1/8P

for AUDIO PRINTED WIRING BOARD

SYMBOL No.	STOCK No.	DESCRIPTION		
R551L, R	0114169	Carbon film	2.2kΩ ± 5%	SRD1/4P
R552L, R	0114135	Carbon film	150Ω ± 5%	SRD1/4P
R601L, R	0114283	Carbon film	120kΩ ± 5%	SRD1/4P
R602L, R	0114203	Carbon film	12kΩ ± 5%	SRD1/4P
R603L, R	0114311	Carbon film	1MΩ ± 5%	SRD1/4P
R604L, R	0114161	Carbon film	1kΩ ± 5%	SRD1/4P
R605L, R	0114219	Carbon film	56kΩ ± 5%	SRD1/4P
R606L, R	0114281	Carbon film	100kΩ ± 5%	SRD1/4P
R607L, R	0114283	Carbon film	120kΩ ± 5%	SRD1/4P
R608L, R	0114281	Carbon film	100kΩ ± 5%	SRD1/4P
R609L, R	0114173	Carbon film	3.3kΩ ± 5%	SRD1/4P
R610L, R	0114147	Carbon film	470Ω ± 5%	SRD1/4P
R611L, R	1114184	Carbon film	9.1kΩ ± 5%	SRD1/4P
R612L, R	0114165	Carbon film	1.5kΩ ± 5%	SRD1/4P
R613L, R	0114153	Carbon film	820Ω ± 5%	SRD1/4P
R614L, R	0114201	Carbon film	10kΩ ± 5%	SRD1/4P
R701L, R	0114169	Carbon film	2.2kΩ ± 5%	SRD1/4P
R702L, R	0114281	Carbon film	100kΩ ± 5%	SRD1/4P
R703L, R	0114161	Carbon film	1kΩ ± 5%	SRD1/4P
R704	0114151	Carbon film	680Ω ± 5%	SRD1/4P
R705L, R	0114203	Carbon film	12kΩ ± 5%	SRD1/4P

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SYMBOL No.	STOCK No.	DESCRIPTION		
R706L, R	0114169	Carbon film	2.2kΩ ± 5%	SRD1/4P
R707	0114201	Carbon film	10kΩ ± 5%	SRD1/4P
R708	0114135	Carbon film	150Ω ± 5%	SRD1/4P
R709L, R	0114217	Carbon film	47kΩ ± 5%	SRD1/4P
R711L, R	0114170	Carbon film	2.4kΩ ± 5%	SRD1/4P
R712L, R	0114161	Carbon film	1kΩ ± 5%	SRD1/4P
R713L, R	0114135	Carbon film	150Ω ± 5%	SRD1/4P
R714L, R	0114215	Carbon film	39kΩ ± 5%	SRD1/4P
R716L, R	0114131	Carbon film	100Ω ± 5%	SRD1/4P
R717L, R	0114131	Carbon film	100Ω ± 5%	SRD1/4P
⚠R719L, R	0119013	Metal	0.22Ω ± 10%	RN1B
⚠R720L, R	0119013	Metal	0.22Ω ± 10%	RN1B
R722L, R	0134289	Composition	10Ω ± 10%	RC1/2GF
⚠R723L, R	1119151	Metal	10Ω ± 10%	RN2B
R724L, R	0134370	Composition	560Ω ± 10%	RC1/2GF
R725L, R	0134370	Composition	560Ω ± 10%	RC1/2GF
R801	0134375	Composition	1.5kΩ ± 10%	RC1/2GF
R802	0134375	Composition	1.5kΩ ± 10%	RC1/2GF
R803	0134384	Composition	8.2kΩ ± 10%	RC1/2GF
R804	0114175	Carbon film	3.9kΩ ± 5%	SRD1/4P
R805	0114209	Carbon film	22kΩ ± 5%	SRD1/4P
R806	0114289	Carbon film	220kΩ ± 5%	SRD1/4P
R807	0134380	Composition	3.9kΩ ± 10%	RC1/2GF
R808	0119528	Metal oxide	390Ω ± 10%	RS2PA
R809	0114151	Carbon film	680Ω ± 5%	SRD1/4P
R810	0114151	Carbon film	680Ω ± 5%	SRD1/4P
R811	0119528	Metal oxide	390Ω ± 10%	RS2PA
R812	0114043	Carbon film	12Ω ± 5% (except for U.S.A. & Canada)	SRD1/4P

ICs & TRANSISTORS

for EQUALIZER PRINTED WIRING BOARD

IC401L, R	23647341	HA1457

for AUDIO PRINTED WIRING BOARD

IC601L, R	2367341	HA1457
Q701L, R	2328282	2SC1344 Ⓔ
Q702L,R	2328783	2SC2389 Ⓔ
Q703L, R	2328783	2SC2389 Ⓔ
Q704L, R	2328773	2SA1038 Ⓔ
Q705L, R	2328282	2SC458 Ⓒ
Q706L, R	2328783	2SC2389 Ⓔ
Q707L, R	2328632	2SD667A Ⓒ
Q708L, R	2328622	2SB647A Ⓒ
Q709L, R	2328112	2SD586 Ⓡ
Q710L, R	2328102	2SB616 Ⓡ
Q801	2328442	2SD666 Ⓒ
Q802	2328452	2SB646 Ⓒ
Q803	2328083	2SA844 Ⓔ
Q804	2328282	2SC458 Ⓒ

DIODES, VARISTOR & THYRISTORS

for EQUALIZER PRINTED WIRING BOARD

D401	2337731	LED
D402	2337731	LED
ZD401	2337321	HZ-11Ⓐ

for AUDIO PRINTED WIRING BOARD

D551L, R	0575002	1N34A
D552L, R	2337011	1S2076
D701L, R	2337011	1S2076
VA701	2347042	Varistor MV-5W
D801	2337461	S4VB20
D802	2337421	ERB15-01
D803	2337421	ERB15-01
D804	2337151	1S2076A
D805	2337011	1S2076
ZD801	2337183	HZ-20
ZD802	2337183	HZ-20
ZD803	2337122	HZ-6 Ⓑ
TH551L, R	0576041	Thyristor 23D25

VARIABLE RESISTORS

for AUDIO PRINTED WIRING BOARD

R553L, R	0151255	3kΩ – (B) (for meter sensitivity adj.)
R651	0151856	200 kΩ – (B) (VOLUME)
R652	0151679	200kΩ – (B) (BALANCE)
R653	0151673	50kΩ – (C) (TREBLE)
R654	0151673	50kΩ – (C) (BASS)
R710L, R	0151241	500Ω – (B) (for idle current adj.)

COILS

for AUDIO PRINTED WIRING BOARD

L701L, R	2227143	Audio trap coil (2.2μH)

MISCELLANEOUS

S401	2617921	Switch-rotary switch (FUNCTION)
S402	2617931	Switch-rotary switch (TAPE)
	2677392	4P US pin jack
	2748801	Cord with 5P connector
	2667572	Pin ass'y (3P)
	2667621	Cord with 3P housing
	4405651	Transistor holder
J701	2677501	Jack-headphone jack
S701	2617942	Switch-rotary switch (SPEAKERS)
S601–603	2638196	Switch–push switch (MODE, others)
	2688051	Terminal-speaker terminal
	4567411	3φ x 6DT bind screw
	2667284	Pin ass'y (5P)
	2577481	Meter

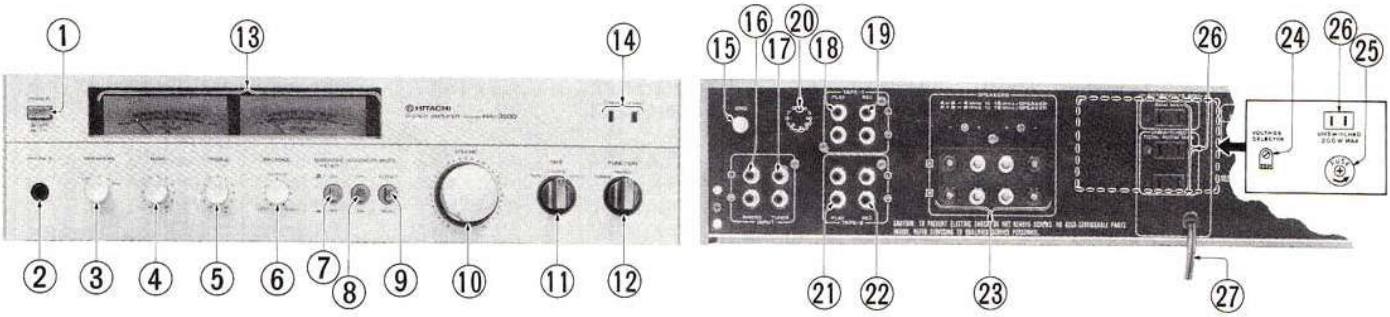
for FINAL ASSEMBLY

	3246071	Escutcheon ass'y
	3285751	Knob-push Knob (POWER)
	3338598	Spring
	3285681	Knob-squarish push knob (MODE, others)
	3339592	Spring
	3285741	Knob ass'y (VOLUME)

SYMBOL No.	STOCK No.	DESCRIPTION
	3285711	Knob (TAPE, FUNCTION)
	3284858	Knob ass'y (SPEAKERS, BASS, others)
	4743855	Knob ring
	4567412	3φ x 8DT bind screw (yellow)
	0812114	3φ washer
	4567413	3φ x 10DT bind screw
	0645587	3φ special washer
	4408763	Cover
	4567462	4φ x 8DT bind screw
	4399022	4φ washer
	3160401	Bottom board
		for DIAL MECHANISM ASSEMBLY
	4567422	4φ x 8DT bind screw
	4567432	3φ x 8DT bind screw (black)
	4567412	3φ x 8DT bind screw (yellow)
	0812114	3φ washer
	4567411	3φ x 6DT bind screw (yellow)
	4572315	3φ x 12 bind tapping screw
	4567413	3φ x 10DT bind screw
	4568832	3φ x 8DT flat head screw
	4567451	3φ x 6DT bind screw (silver)
		for REAR PLATE ASSEMBLY
	4575661	Ground screw
	4408861	Washer
	4567432	3φ x 8DT bind screw (for Asia & Latin American countries)
	4574231	Nut (except for U.S. A. & Canada)
	4567411	3φ x 6DT bind screw (except for U.S.A. & Canada)

SYMBOL No.	STOCK No.	DESCRIPTION	U.S.A. & Canada	France & W. Germany	Sweden & Switzerland	U.K.	Australia	Asia & Latin American countries
	2507591	Equalizer P.W.B. ass'y	○					
	2507592	Equalizer P.W.B. ass'y		○	○	○	○	○
	2507601	Audio P.W.B. ass'y	○					
	2507602	Audio P.W.B. ass'y		○	○	○	○	○
	2677441	4P US pin jack with DIN		○	○	○	○	○
	2677431	4P US pin jack	○					
⚠F701L, R	2727223	Fuse-3A, 250V	○					
⚠F701L, R	2727335	Fuse-F2.5A, 250V		○	○	○	○	○
⚠F001	2727191	Fuse-T1A, 250V		○	○	○	○	○
⚠F001	2727564	Fuse-2.5A, 125V	○					
⚠	2657461	AC outlet	○					
⚠	2657281	AC outlet						○
CP001	0269019	Spark killer	○					
⚠T001	2218941	Power transformer	○					
⚠T001	2218951	Power transformer		○	○	○	○	○
	3925791	Capacitor cover		○	○	○	○	○
⚠S001	2638222	Switch-power switch	○					
⚠S001	2638221	Switch-power switch		○	○	○	○	○
⚠S002	2627361	Voltage selector switch						○
	0043793	Bushing (for patch cord)	○					
	3913001	Bushing (for patch cord)		○	○			○
	3715183	Bushing (for patch cord)				○	○	
⚠	2748862	AC line cord	○					
⚠	2748751	AC line cord		○	○			○
⚠	2748741	AC line cord				○		
⚠	2747302	AC line cord					○	
	2727181	Fuse holder		○	○	○	○	
	2727121	Fuse holder						○
	2687831	5P terminal board		○	○	○	○	

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



① POWER switch
② PHONES jack
③ SPEAKERS switch
④ BASS control
⑤ TREBLE control
⑥ BALANCE control
⑦ SUBSONIC FILTER switch
⑧ LOUDNESS switch
⑨ MODE switch
⑩ VOLUME control
⑪ TAPE monitor switch
⑫ FUNCTION switch
⑬ Power level meters
⑭ Program source indicators
⑮ Ground terminal (GND)
⑯ PHONO INPUT terminals
⑰ TUNER INPUT terminals
⑱ TAPE-1 PLAY terminals
⑲ TAPE-1 REC terminals
⑳ TAPE-1 DIN REC/PLAY socket (except U.S.A. & Canada set)
㉑ TAPE-2 PLAY terminals
㉒ TAPE-2 REC terminals
㉓ SPEAKERS terminals
㉔ VOLTAGE SELECTOR (for Asia and Latin American countries)
㉕ FUSE holder (for Asia and Latin American countries)
㉖ AC outlet (3 outlets for U.S.A. & Canada sets, 1 outlet for Asia & Latin American countries sets)
㉗ Power supply cord

① Netzschalter (POWER)
② Kopfhörer-Buchse (PHONES)
③ Lautsprecherschalter (SPEAKERS)
④ BASS-Regler
⑤ Höhenregler (TREBLE)
⑥ BALANCE-Regler
⑦ SUBSONIC-FILTER-Schalter
⑧ Schalter für gehörrichtige Klangkorrektur (LOUDNESS)
⑨ Stereo/Mono-Schalter (MODE)
⑩ Lautstärkeregler (VOLUME)
⑪ Schalter für Hinterbandkontrolle (TAPE)
⑫ Funktionsschalter (FUNCTION)
⑬ Leistungspegel-Anzeigeinstrumente
⑭ Programmquellen-Leuchtanzeigen
⑮ Erdung (GND)
⑯ Plattenspieler-Eingangsanschluß (PHONO INPUT)
⑰ TUNER-Eingangsanschluß
⑱ Wiedergabe-Anschlüsse für Tonbandgerät 1 (TAPE-1 PLAY)
⑲ Aufnahme-Anschlüsse für Tonbandgerät 1 (TAPE-1 REC)
⑳ DIN-Normbuchse für Aufnahme/Wiedergabe (TAPE-1 REC/PLAY) (außer Modell für USA und Kanada)
㉑ Wiedergabe-Anschlüsse für Tonbandgerät 2 TAPE-2 PLAY)
㉒ Aufnahme-Anschlüsse für Tonbandgerät 2 (TAPE-2 REC)
㉓ Lautsprecher-Klemmen (SPEAKERS)
㉔ Netzspannungswähler (VOLTAGE SELECTOR) (für Asien und Lateinamerika)
㉕ Halter für Sicherung (FUSE) (für Asien und Lateinamerika)
㉖ Wechselstrom-Steckdose (3 Steckdosen bei Geräten für USA und Kanada) (1 Steckdose bei Geräten für Asien und Lateinamerika)
㉗ Netzkabel

① Interrupteur d'alimentation (POWER)
② Prise de casque (PHONES)
③ Commutateur d'enceintes (SPEAKERS)
④ Commande des graves (BASS)
⑤ Commande des aiguës (TREBLE)
⑥ Commande d'équilibrage (BALANCE)
⑦ Commutateur de filtre subsonique (SUBSONIC FILTER)
⑧ Commutateur de correction physiologique (LOUDNESS)
⑨ Commutateur de MODE
⑩ Commande de VOLUME
⑪ Commutateur de contrôle de bande (TAPE)
⑫ Commutateur de fonction (FUNCTION)
⑬ Indicateurs de niveau de puissance
⑭ Témoin de source de programme
⑮ Borne de terre (GND)
⑯ Bornes d'entrée phono (PHONO INPUT)
⑰ Bornes d'entrée TUNER
⑱ Bornes de reproduction de bande 1 (TAPE-1 PLAY)
⑲ Bornes d'enregistrement de bande (TAPE-1 REC)
⑳ Prise DIN de bande 1 (TAPE-1 REC/PLAY) (sauf appreil aux U.S.A. et au Canada)
㉑ Bornes de reproduction de bande 2 (TAPE-2 PLAY)
㉒ Bornes d'enregistrement de bande (TAPE-2 REC)
㉓ Bornes d'enceintes (SPEAKERS)
㉔ Sélecteur de tension (VOLTAGE SELECTOR) (pour l'Asie et les pays d'Amérique Latine)
㉕ Support de fusible (FUSE) (pour l'Asie et l'Amérique Latine)
㉖ Prises C.A. (3 prises pour appareils vendus aux U.S.A. et au Canada, 1 prise pour l'Asie et les pays d'Amérique latine)
㉗ Cordon d'alimentation C.A.

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