ORDER NO. HAD8612793C9

Service Manual

Stereo Integrated Amplifier

Amplifier

SU-V85A

SU-V85A

Color

(K) . . . . Black Type

Color	Areas
(K)	[E] . . . . . Continental Europe
(K)	[EH] . . . . Holland
(K)	[EB] . . . . Belgium
(K)	[EF] . . . . France
(K)	[EK] . . . . United Kingdom
(K)	[EG] . . . . F.R. Germany
(K)	[Ei] . . . . . Italy
(K)	[XL] . . . . Australia
(K)	[XA] . . . . Asia, Latin America, Middle Near East, Africa & Oceania
(K)	[PA] . . . . East PX.
(K)	[PE] . . . . European Military

SPECIFICATIONS (DIN 45 500)

■ AMPLIFIER SECTION

20 Hz–20 kHz continuous power output
both channels driven 2 × 100W (8Ω)
1 kHz continuous power output
both channels driven 2 × 150W (4Ω)
Total harmonic distortion
rated power at 20 Hz–20 kHz 0.002% (8Ω)
rated power at 1 kHz 0.0007% (8Ω)
half power at 20 Hz–20 kHz 0.002% (8Ω)
half power at 1 kHz 0.0007% (8Ω)
Intermodulation distortion
rated power at 250 Hz: 8 kHz=4:1, 4Ω 0.005%
rated power at 60 Hz: 7 kHz–4:1, SMPTE, 8Ω 0.005%
Power bandwidth
both channels driven, –3 dB 5 Hz–60 kHz (8Ω, 0.025%)
Residual hum and noise 0.8 mV
Damping factor 30 (4Ω), 60 (8Ω)
Input sensitivity and impedance
PHONO MM 2.5 mV/47kΩ
MC 170 μV/220Ω
TUNER, CD, AUX 1
AUX 2, TAPE 1/DA TAPE,
TAPE 2, TAPE 3/EXT 150 mV/18kΩ
PHONO maximum input voltage (1 kHz, RMS)
MM 160 mV
MC 12 mV

S/N
rated power
PHONO MM 79 dB (88 dB, IHF, A)
MC 70 dB (72 dB, 250μV, IHF, A)
TUNER, CD, AUX 1
AUX 2, TAPE 1/DA TAPE,
TAPE 2, TAPE 3/EXT 94 dB (IHF, A: 106 dB)
–26 dB power (4Ω)
PHONO MM 72 dB
MC 65 dB
TUNER, CD, AUX 1
AUX 2, TAPE 1/DA TAPE,
TAPE 2, TAPE 3/EXT 74 dB
50 mW power (4Ω)
PHONO MM 65 dB
MC 62 dB
TUNER, CD, AUX 1
AUX 2, TAPE 1/DA TAPE,
TAPE 2, TAPE 3/EXT 65 dB
Frequency response
PHONO RIAA standard curve ±0.2 dB (20 Hz–20 kHz)
TUNER, CD, AUX 1
AUX 2, TAPE 1/DA TAPE,
TAPE 2, TAPE 3/EXT 0.8 Hz–150 kHz (–3 dB) +0, –0.1 dB (20 Hz–20 kHz)
Tone controls
BASS 50 Hz, +10 dB––10 dB
TREBLE 20 kHz, +10 dB––10 dB
Subsonic filter 20 Hz, 6 dB/oct.
Loudness control (volume at –30 dB) 50 Hz, +9 dB
Muting –20 dB
Output voltage and impedance
TAPE 1, 2 REC OUT 150 mV

Channel balance, AUX 250 Hz–6,300 Hz ±1 dB
Channel separation, AUX 1 kHz 55 dB
Headphones output level and impedance 700 mV/330Ω
Load impedance
MAIN or REMOTE 4Ω–16Ω
MAIN and REMOTE 8Ω–16Ω

■ GENERAL

Power consumption 750W
Power supply
For United Kingdom and Australia
AC 50 Hz/60 Hz, 110V/127V/220V/240V
For continental Europe AC 50 Hz/60 Hz, 220V
For others
AC 50 Hz/60 Hz, 110V/127V/220V/240V
Dimensions (W×H×D) 430 × 158 × 393 mm (16-15/16" × 6-7/32" × 15-15/32")
Weight 11.7 kg (25.74 lb.)

Notes:
1. Specifications are subject to change without notice.
Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Specifications are subject to chnge without notice for further improvement.

Technics

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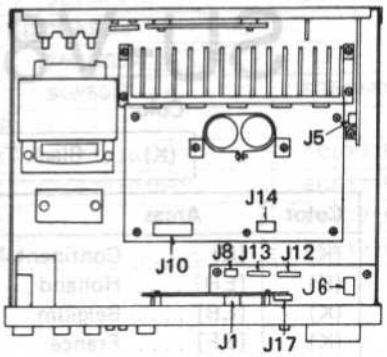
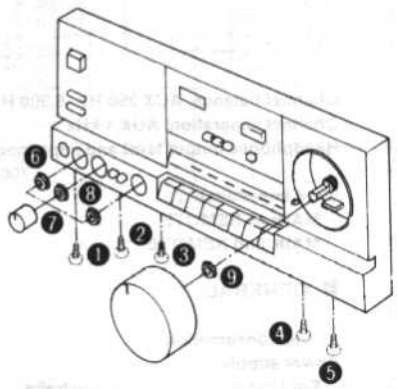
Ref. No. 1	How to remove the front panel and sub P.C.B.
Procedure 1	

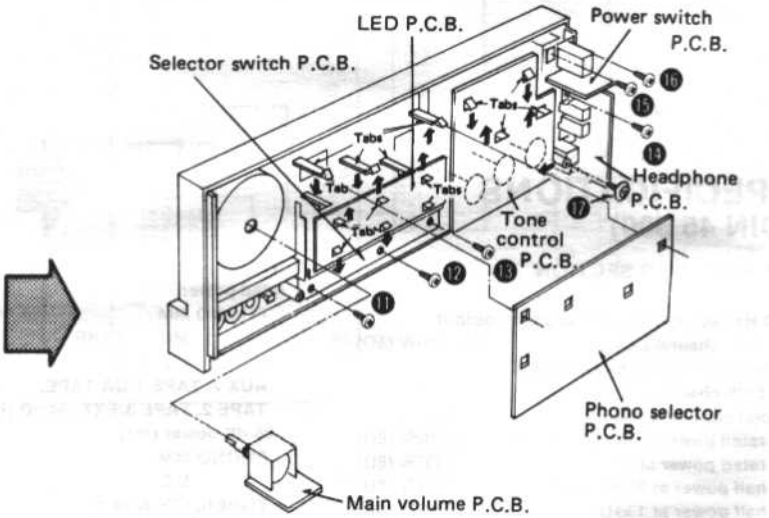
1. Remove the cabinet.
2. Remove the connectors J1, J2, J5, J6, J10 and J14.



3. Remove the 5 screws (❶ ~ ❺).
4. Remove the 3 nuts (❻ , ❽)
5. Remove the front panel.

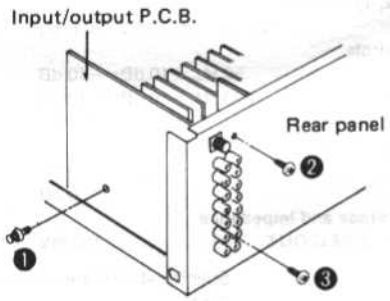


6. Remove the phono selector P.C.B. from the 5 tabs.
7. Remove the LED P.C.B. from the 6 tabs.
8. Remove the 3 setscrews (⓫ ~ ⓭) from the selector switch P.C.B.
9. Remove the tone control P.C.B. from the 4 tabs.
10. Remove the 2 setscrews (⓮, ⓱) from the headphone P.C.B. and then remove it from the tabs.
11. Remove the 2 setscrews (⓯, ⓰) from the power switch P.C.B.

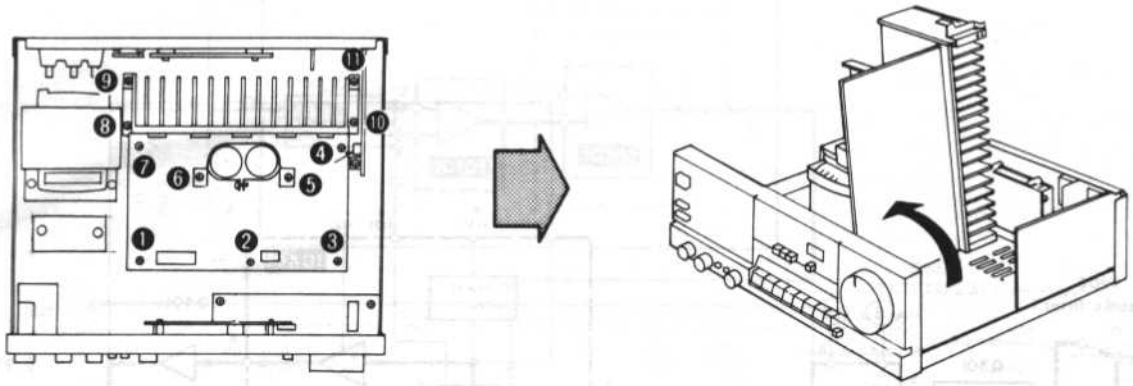


Ref. No. 2	How to remove the input/output P.C.B.
Procedure 2	

1. Remove the 3 setscrews (❶ ~ ❸) from the input/output P.C.B.



Ref. No. 3	How to remove the main P.C.B.
Procedure 3	1. Remove the 11 setscrews (❶ ~ ⓫) from the main P.C.B. and heat-sink. 2. Remove the P.C.B. by raising it in the direction of the arrow.



■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ BEFORE REPAIR AND ADJUSTMENT

(1) Turn off the power supply. Using a 10Ω, 5W resistor, shortcircuit both ends of power supply capacitors (C601, C602) in order to discharge the voltage.

(2) Before turning on the power switch of the set . . .

A. Connect the voltage controller to the primary side.

B. Connect the AC ampere meter to the primary side or connect the DC voltage metar to the "±B" circuit of the secondary side.

C. Turn the VR of ICQ (VR501 and VR502) to minimum (counterclockwise).

D. After setting the output to zero of the voltage contoller, turn on the power switch of the set.
And increase the output of voltage controller gradually.
Then, check carefully whether the current value of primary side become more than followings value or whether the DC voltage of secondary side is increasing slowly.

E. If the value of current is increasing unusually or the DC voltage is not increasing, lower the output level of voltage contoller immediately.

F. Check the transistors of voltage amplifier and current amplifier IC501.

G. After repairing, adjust the ICQ.

- The current value of the primary side at no signal. (Confirm the power supply voltage of each area and provided voltage of the set.)

Power supply voltage	AC110V	AC127V	AC220V	AC240V
Consumed current 50/60Hz	270 ~ 730mA	240 ~ 630mA	130 ~ 370mA	120 ~ 330mA

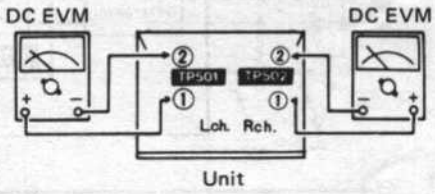
■ MEASUREMENTS AND ADJUSTMENTS

Control positions and equipment used.

- Volume knob . . . . . ∞ (Minimum)
- Main speaker selector . . . . . off
- Remote speaker selector . . . . . off
- DC electronic voltmeter (EVM)

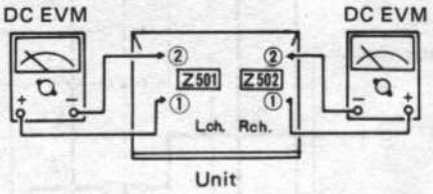
VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT

1. Test equipment connection is shown in figure. (Connect the DC EVM. on both channels.)
2. Completely turn the (V) amp. adjusting volumes **(VR451, VR452)** counter-clockwise.
3. Turn ON the set when it is cold, and immediately adjust **VR451** and **VR452** so that the voltage is **25mV.** Also, check that the voltage is **25 – 30mV** (standard: **27mV)** after lapse of **10 – 15 minutes.** (Below **30mV** after lapse of **20 min.)**



CURRENT DRIVE (C) AMP. IDLING (ICQ) ADJUSTMENT

1. Test equipment connection is shown in figure. (Connect the DC EVM. on both channels.)
2. Completely turn the (C) amp. adjusting volumes **(VR501, VR502)** counterclockwise.
3. Turn ON the set when it is cold, and after the adjustment of the (V) amp. ICQ, adjust **VR501** and **VR502** so that the voltage is **3mV.** Also, check that the voltage is **4 – 7mV** (standard: **5mV)** after lapse of **10 – 15 minutes.** (Below **10mV** after lapse of **20 min.)**



- **Adjustment points**