

STEREO INTEGRATED AMPLIFIER

AX-700/AX-700U

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).


IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

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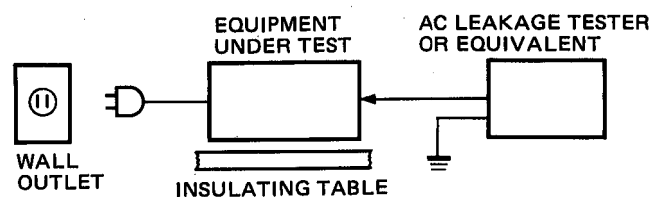
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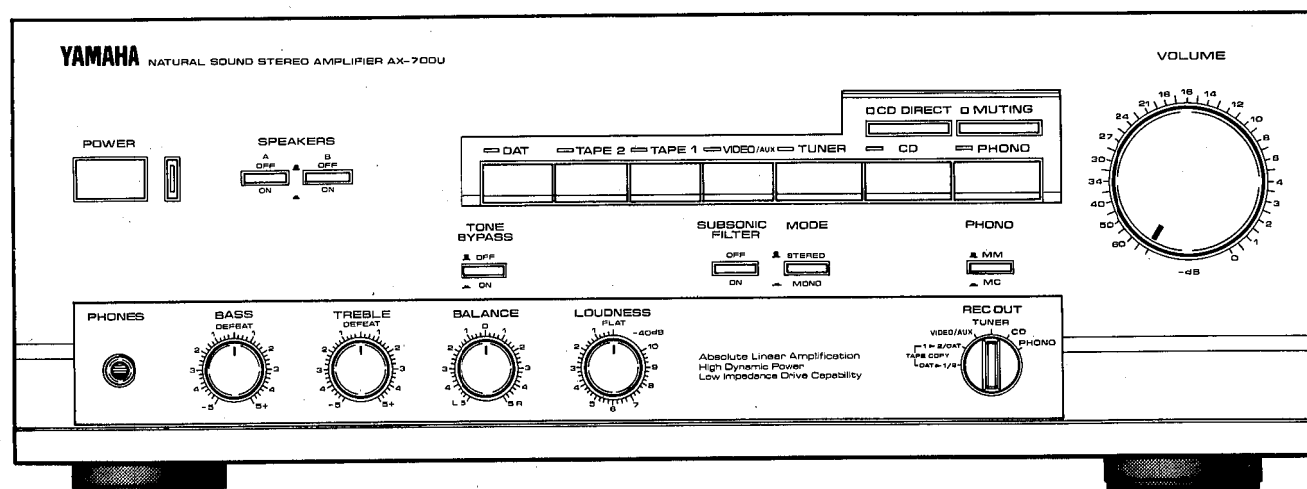
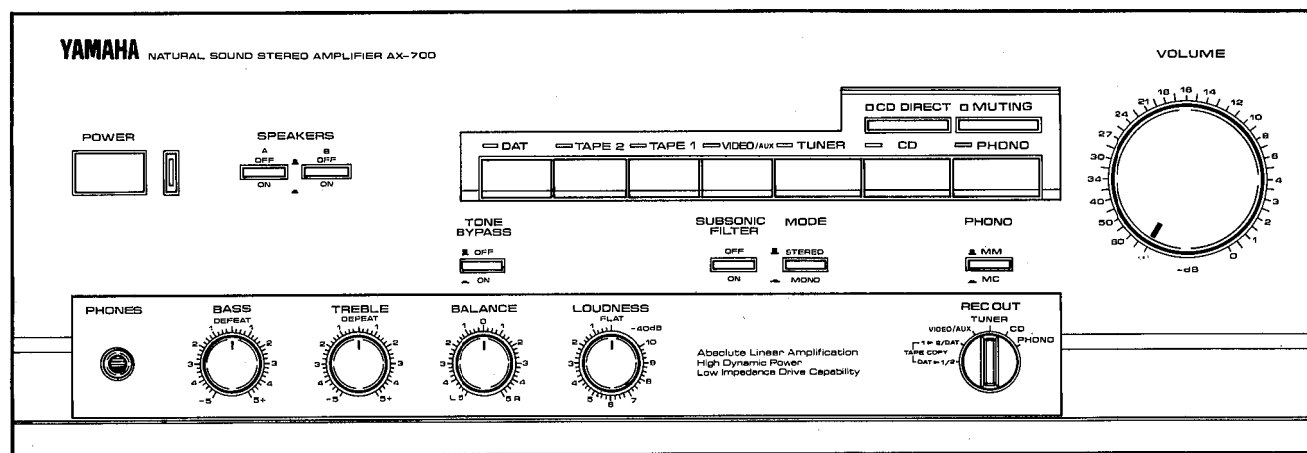
■ TO SERVICE PERSONNEL

- Critical Components Information.**
Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
- Leakage Current Measurement (For 120V Model Only).**
When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.
 - Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF.
 - Leakage current must not exceed 0.5mA.
 - Be sure to test for leakage with the AC plug in both polarities.
- POLARIZATION**

This tuner product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. (U.C model only)

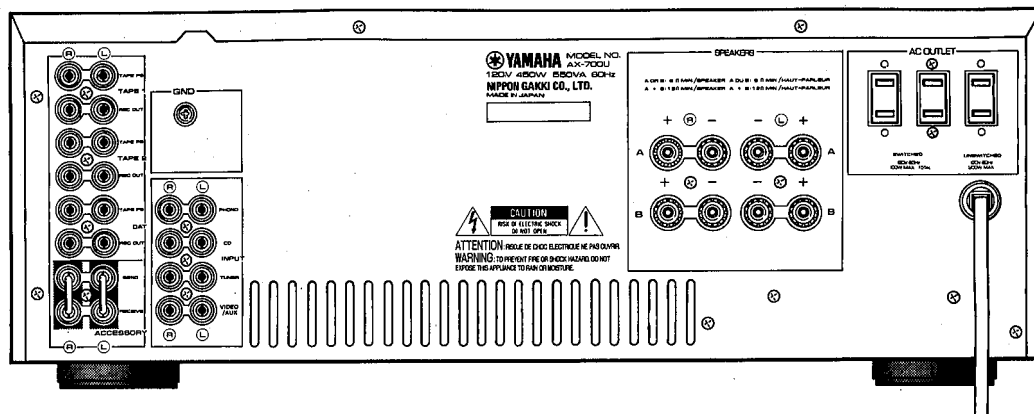


■ FRONT PANELS

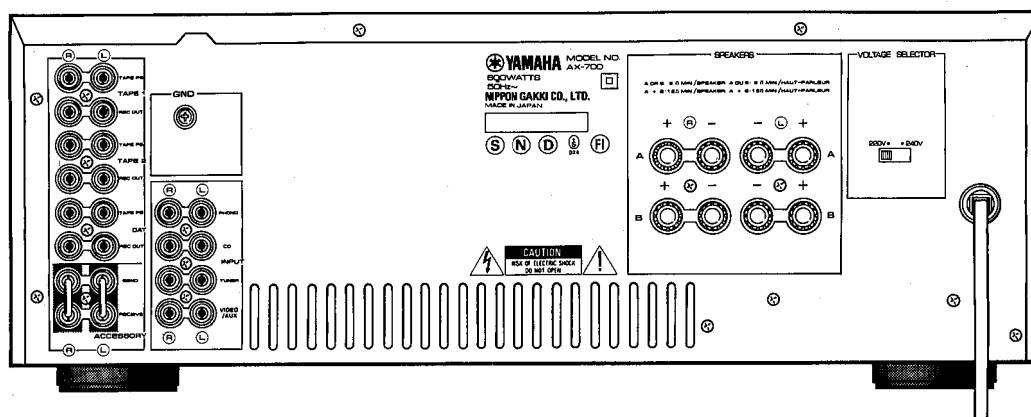


REAR PANELS

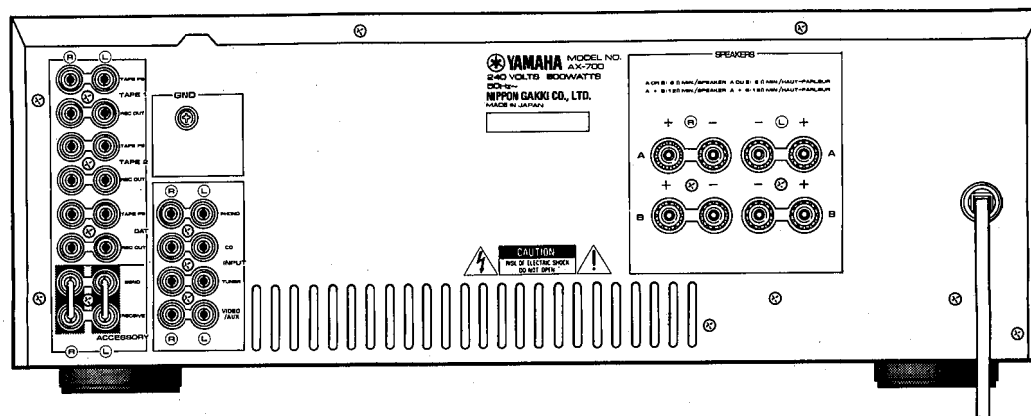
U.S.A. & Canadian models



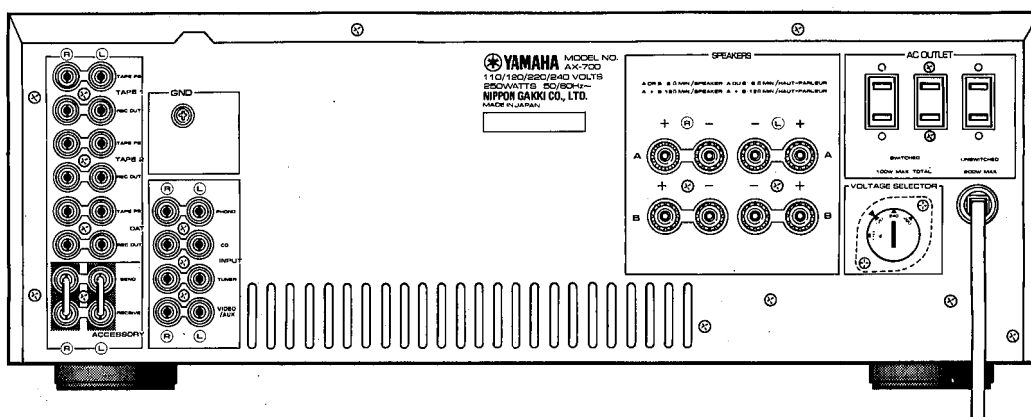
European & British models



Australian model



General model



AX-700/700U

SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power Per Channel

20Hz~20kHz, 0.005% THD, 8Ω	110W (R)(U)(C)
	110W (A)(G)(B)
0.008% THD, 6Ω	130W (R)(U)(C)

Dynamic Power Per Channel

8Ω	160W
6Ω	210W
4Ω	280W
2Ω	350W
1Ω	400W

Power Band Width

0.03%THD, 55W, 8Ω	10Hz~50kHz
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IEC Power

1kHz 0.01%THD8Ω	120W (A)(G)(B)
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Damping Factor

1kHz, 8Ω	100
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Input Sensitivity/Impedance

Phono MC	160μV/220Ω
Phono MM	2.5mV/47kΩ
CD/etc.	150mV/47kΩ

Input Sensitivity (New IHF)

Phono MC	16μV
Phono MM	0.25mV
CD/etc.	15mV

Maximum Input Signal

Phono, 1kHz, 0.01% THD (MC)	10mV
(MM)	160mV

Output Level/Impedance

REC OUT	150mV/470Ω
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Headphone Jack Rated Output/Impedance

0.0x% THD (xxΩ)	0.85V/8Ω
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Frequency Response

20Hz~20kHz, CD/etc.	0± _{0.5} dB
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RIAA Equalization Deviation

20Hz~20kHz Phono MC	0±0.3dB
MM	0±0.2dB
20Hz~100kHz Phono MC	0±0.5dB
MM	

Total Harmonic Distortion (20Hz~20kHz)

Phono MC to Rec Out 3V	0.006%
Phono MM to Rec Out 3V	0.003%
CD/etc. to SP Out 55W/8Ω	0.005%

Intermodulation Distortion

CD/etc. to Rated Output/8Ω	0.002%
1W/8Ω	0.003%

Signal to Noise Ratio (IHF-A-Network)

Phono	
MC (500μV Input Shorted)	76dB
MM (5mV Input Shorted)	92dB
CD/etc. (Input Shorted)	106dB

Signal to Noise Ratio (New IHF)

Phono MC	75dB
MM	75dB
CD/etc.	86dB

Residual Noise (IHF-A-Network)

(TONE BYPASS ON)	150μV
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Channel Separation (Vol. -30dB)

Phono Input Shorted, 1kHz	70dB
CD/etc. Input 5.1kΩ, 1kHz	65dB

Tone Control Characteristics

BASS boost/cut	0±10dB (at 20Hz)
turnover frequency	350Hz
TREBLE boost/cut	0±10dB (at 20kHz)
turnover frequency	3.5kHz

Filter Characteristics

Subsonic	15Hz (-12dB/oct.)
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Continuous Loudness Control (Level related equalization)

Attenuation	-40dB (at 1kHz)
Audio Muting	-20dB

GENERAL

Power Supply

U.S. & Canadian Models	120VAC, 60Hz
European & British Models	220V/240VAC, 50Hz
Australian Model	240VAC, 50Hz
Others Model	110/120/220/ 240VAC 50/60Hz

Power Consumption

450W (U)
550VA (C)
250W (R)
600W (A,G,B)

AC Outlet

Switched x 1	100W Max (R)(U)(C)
Unswitched x 1	200W Max (R)(U)(C)

Dimensions (W x H x D)

435x165x416mm (17-1/8"x6-1/2"x16-3/8")

Weight

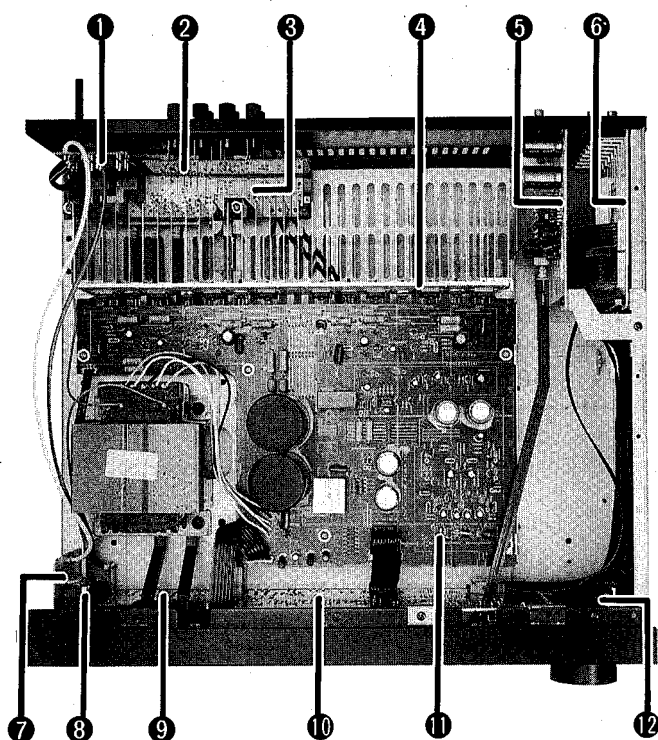
11.5kg (25 lbs 5 oz)

CD/etc.; CD/VIDEO/TUNER/AUX/TAPE/VCR

(U)	U.S.A. model
(C)	Canadian model
(A)	Australian model
(G)	European model
(B)	British model
(R)	General model

Specifications subject to change without notice.

INTERNAL VIEW



- ① Main Circuit Board (6)
- ② Main Circuit Board (4)
- ③ Main Circuit Board (3)
- ④ Radiator Unit
- ⑤ Function Circuit Board (1)
- ⑥ Function Circuit Board (2)
- ⑦ Main Circuit Board (7)
- ⑧ Main Circuit Board (5)
- ⑨ Main Circuit Board (2)
- ⑩ Function Circuit Board (3)
- ⑪ Main Circuit Board (1)
- ⑫ Function Circuit Board (4)

DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered)

1. Removal of Top Cover

Remove 6 screws (①) in Fig. 1, and slide the Top Cover back.

2. Removal of Front Panel

Remove 6 screws (②, ③) in Fig. 1, and pull the Front Panel forward.

3. Removal of Bottom Cover

Remove 9 screws (③, ④) in Fig. 1.

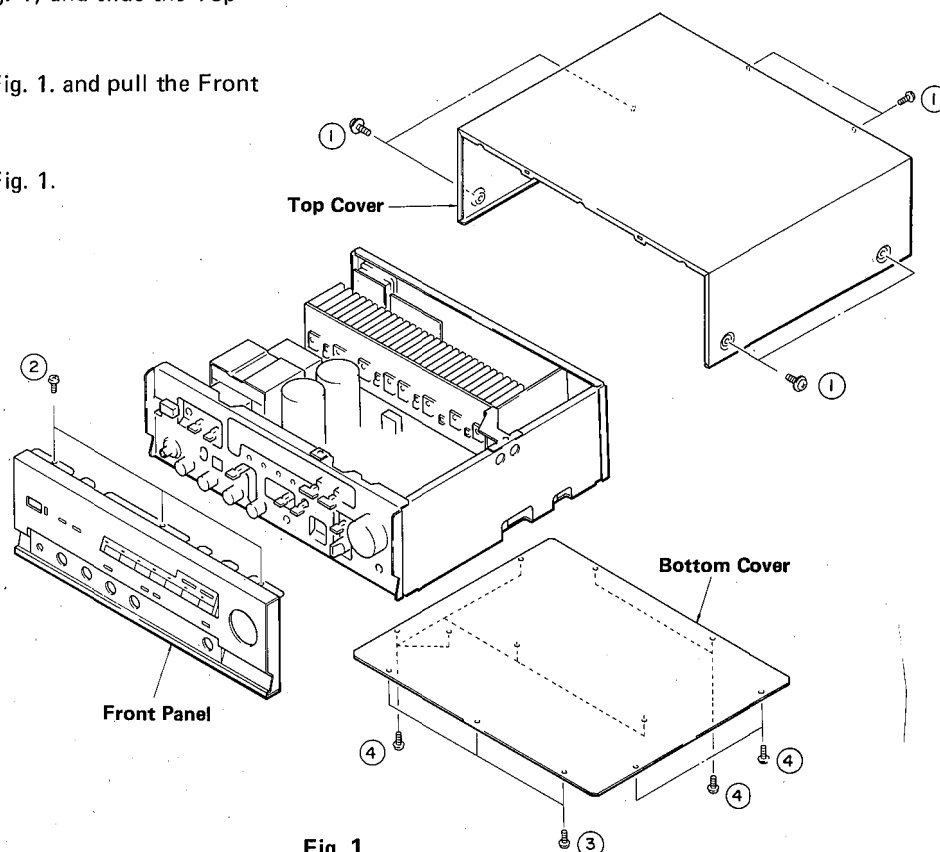


Fig. 1

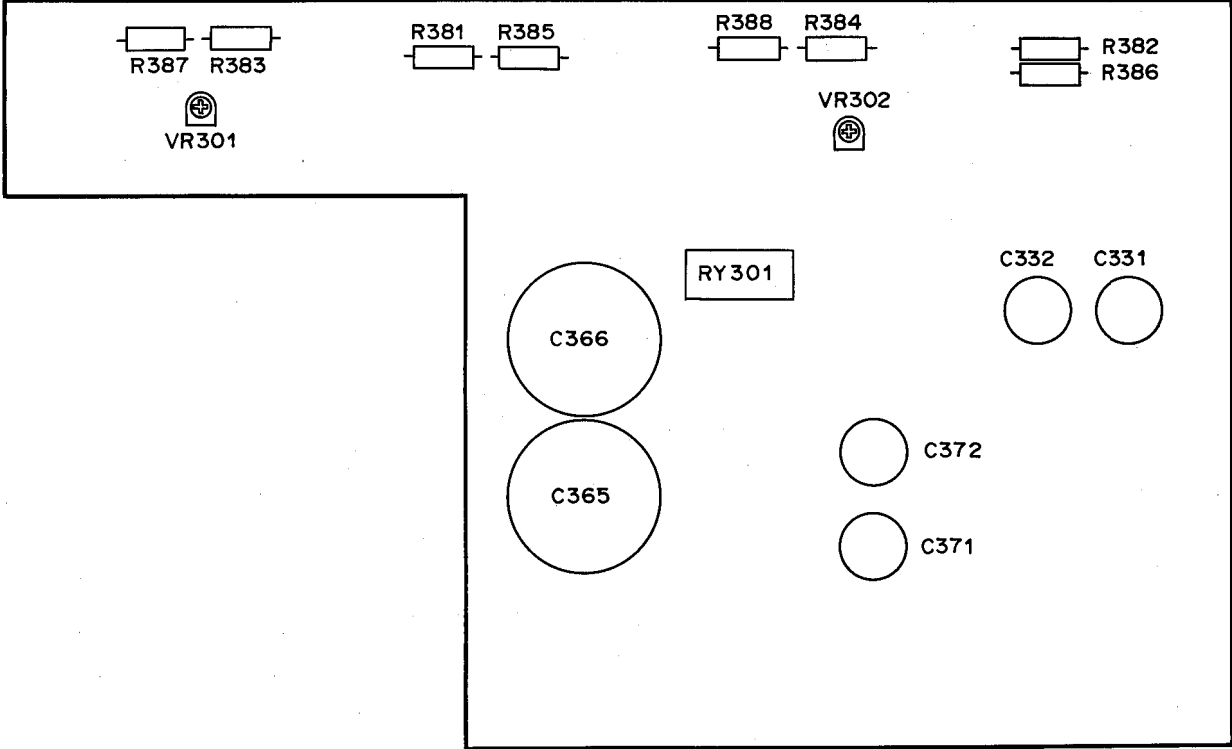
■ ADJUSTMENTS

● IDLING CURRENT ADJUSTMENT

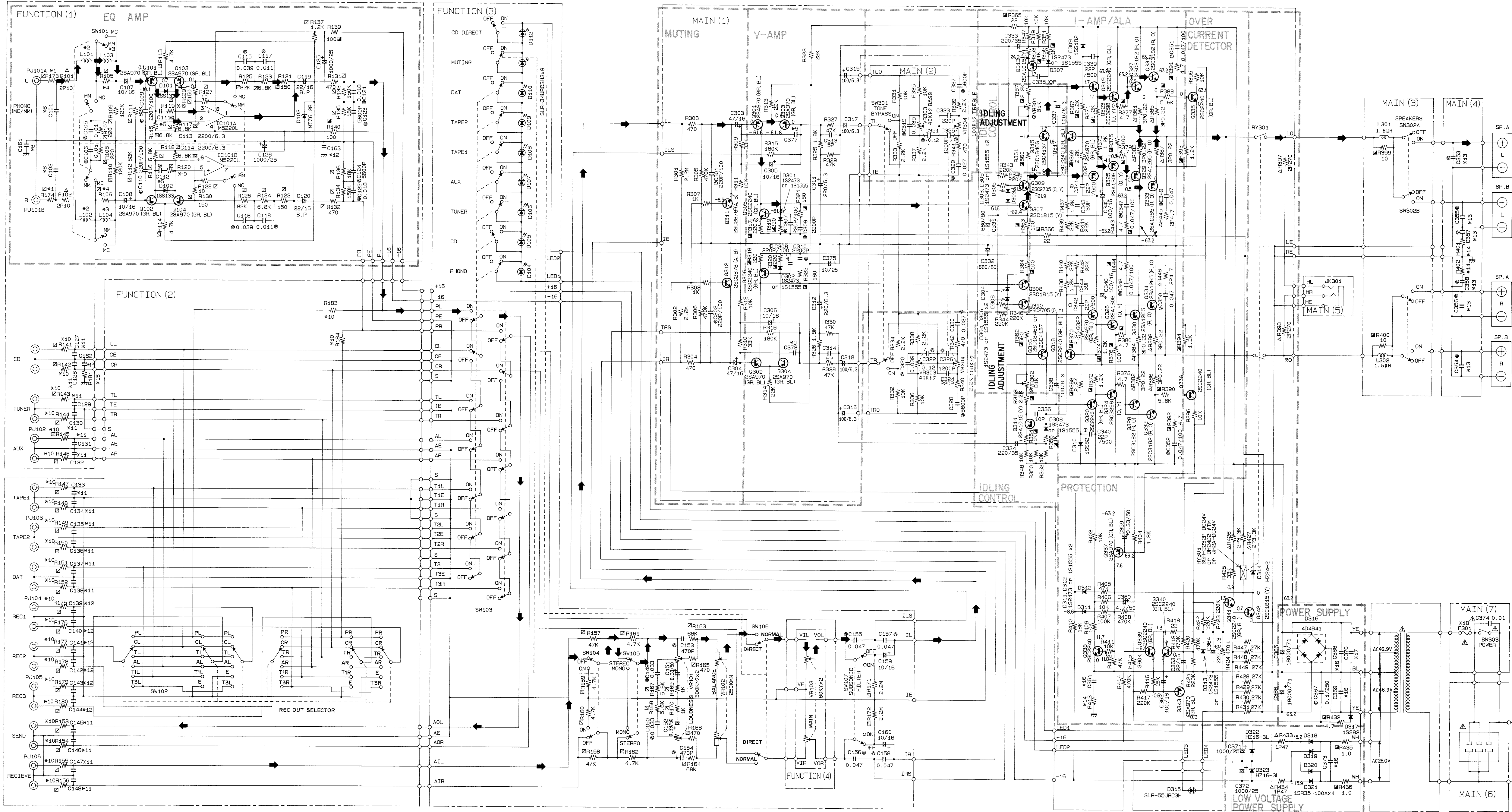
When replacing the power and drive transistors, adjust idling current.
After the power has been turned on, age about 2 minutes in non loaded condition.
Adjust VR301 (Lch) and VR302 (Rch) so that the voltage across the terminals of R381, 383, 385 or 387 and R382, 384, 386 or 388 comes to 10mV±2mV DC.

	Test Points	Adjustment Points	Rating
Lch	Across the terminals of R381, 383, 385 or 387	VR301	10 mV±2 mV DC
Rch	Across the terminals of R382, 384, 386 or 388	VR302	10 mV±2 mV DC

MAIN P.C (1)



SCHEMATIC DIAGRAM



	R	U, C	A	B, G
*1	SHORT			22
*2	SHORT			15 uH
*3	OPEN			470 uH
*4	33			4.7K
*5	@1500P			@2700P
*6	OPEN			@150P/100
*8	OPEN			0.01
*9	OPEN			150P
*10	SHORT			220

	R	U, C	A	B, G
*11	OPEN			220P
*12	OPEN			470P
*13	OPEN			@ 0.01
*14	OPEN			10
*15	OPEN			4.7
*16	OPEN			0.1/250
*17	0.1/250			OPEN
*18	10A 250V			14.0A 250V
*19	100			180

RESISTOR

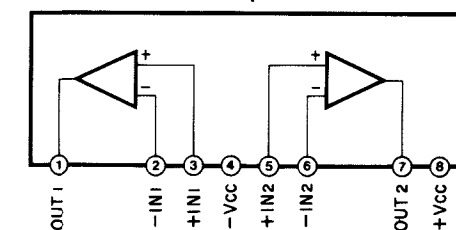
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
□	CARBON FILM RESISTOR (1/6W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
■	METAL PLATE RESISTOR
▣	FIRE PROOF CARBON FILM RESISTOR
□	SEMENT MOLDED RESISTOR
⊗	SEMI VARIABLE RESISTOR

CAPACITOR

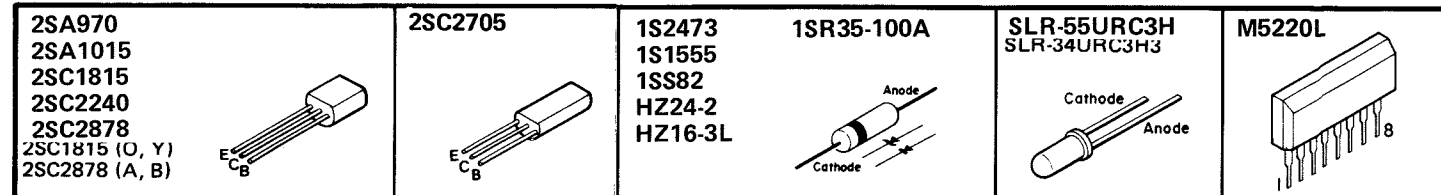
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊖	MICA CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

IC BLOCK

IC101: M5220L (Dual Low-Noise Pre-Amp.)



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



* All voltages are measured with a 10MΩ/DC electric volt meter.
* Components having special characteristics are marked with a triangle and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.