HITACHI

INTEGRATED AMPLIFIER
INTEGRIERTER VERSTÄRKER
AMPLIFICATEUR INTÉGRÉ

MODEL
MODELL
MODÈLE HA-610

HA-610

SERVICE MANUAL
SERVICE ANLEITUNG
SERVICE MANUAL

No. 84

1975
(additional print '76)

1. SPECIFICATIONS, TECHNISCHE DATEN, CARACTERISTIQUES TECHNIQUES

Main amplifier

Circuit system. . . . . . Differential 2-stage, all stage direct coupled emitter-grounded inverted Darlington pure complementary OCL Circuit

Dynamic power. . . . . . 180W (IHF 8 ohms)

Output . . .75W/75W (Single channel driven 8 ohms, 1kHz)
100W/100W (Single channel driven 4 ohms, 1kHz)
70W + 70W (Dual channels driven 8 ohms, 1kHz)
90W + 90W (Dual channels driven 4 ohms, 1kHz)
60W + 60W (Dual channels driven 8 ohms, 20Hz-20kHz)
70W + 70W (Dual channels driven 4 ohms, 20Hz-20kHz)

Frequency characteristics . . . . . 7Hz –70 kHz ($^{+0}_{-1}$ dB)

Power bandwidth . . . . . 7Hz – 50kHz (IHF)

Total harmonic distortion factor (1kHz, 8 ohms load) . . . . .0.3% (at rated output)
0.006% (at ½ rated output)

Intermodulation distortion factor (70Hz: 7kHz = 4:1) . . . . . .0.3% (at rated output)
0.05% (at 1W output)

Damping factor. . . . . .More than 60 (1kHz, 8 ohms)

Input sensitivity (Impedance) . . . . . 0.8V (70k ohms)

Output terminals. . . . . .Speaker terminals: A·B (4-16 ohms), A + B (8-16 ohms)
Headphone terminals: 4-16 ohms

S/N (IHF, A network) . . . . . .More than 100dB

Pre-amplifier

Circuit system. . . . . . Equalizer amplifier: Differential 1-stage, 3-stage direct coupled, with FET
Control amplifier: Initial stage FET, NF type

Input sensitivity (Impedance) PHONO-1: 2mV (50k ohms)
PHONO-2: 1.6-6mV (50 k ohms) (variable continuously)
TUNER/AUX-1, 2: 100mV (50k ohms)
TAPE-1/TAPE-2: 100mV (50k ohms)

PHONO max. permissible input (1kHz) PHONO-1: 280mV/0.3%
PHONO-2: 200 – 750mV/0.3%

Output terminals (Level/Impedance) . . . . . .TAPE REC OUT (Pin jack): 100mV/1k ohms
TAPE REC OUT (DIN): 30mV/80k ohms
PRE OUT: Rating 0.8V/4.7k ohms Max. 6V/4.7k ohms

Frequency characteristics . . . . PHONO (RIAA deviation): 30Hz – 15kHz (±0.3dB)

Tone control . . . . BASS: ±10dB (50Hz, 100Hz, Turnover frequency 150Hz, 300Hz)
TREBLE: ±10dB (10kHz, 20kHz, Turnover frequency 3kHz, 6kHz)

Filter . . . LOW: 20Hz (12dB/oct) HIGH: 8kHz (6dB/oct)

Loudness control. . . . . +13dB (100Hz)
(Volume – 30dB) +7dB (10kHz)

S/N (IHF, A network) . . . . . PHONO: 70dB
TUNER, AUX, TAPE: 90dB

Gain selector . . . . . –5, –10, –20dB, addition possible

Semi-conductors . . . . FETs: 4, Transistors: 55, Diodes: 29

Power source . . . . AC120V 60Hz or AC220V, 240V 50Hz

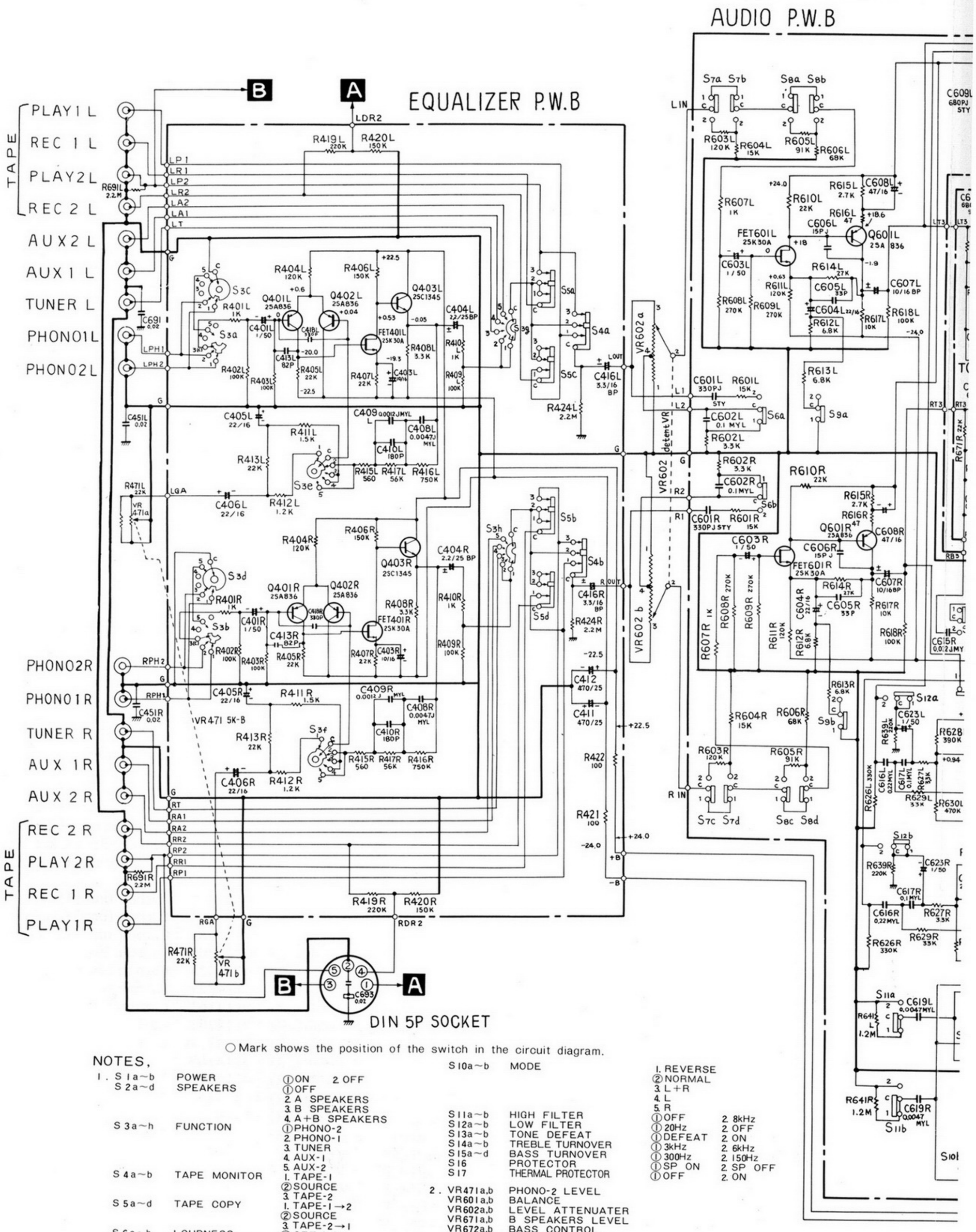
Power consumption . . . . . 350VA or 280W (120V), 400W (AC220V, 240V)

Extermal dimensions . . . . 435(W) × 144(H) × 388(D) mm
(dimensions from knobs to rear components)

Weight. 12kg

Specifications and designs may be changed without notice for improvement.

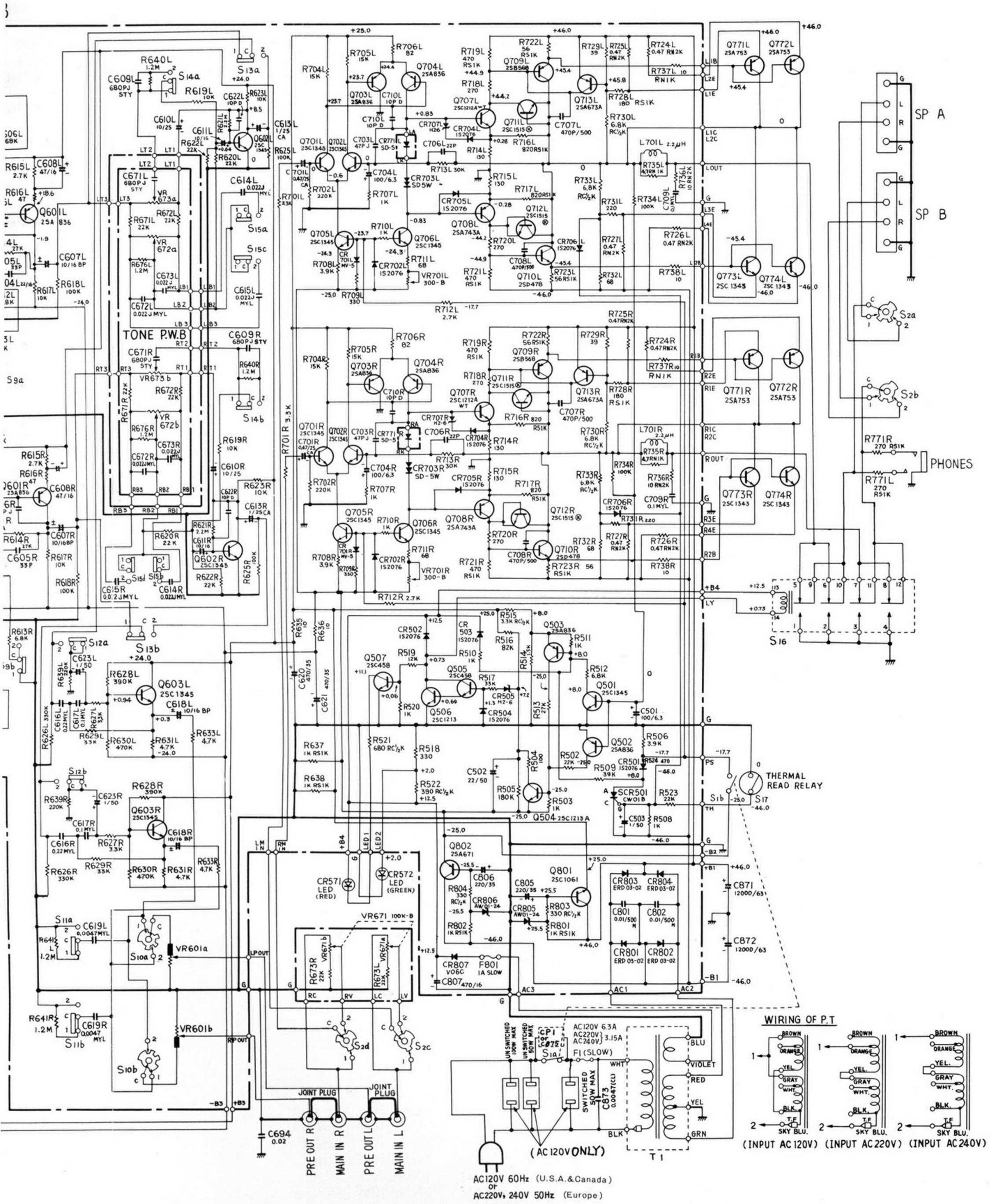
5. CIRCUIT DIAGRAM, SCHALTPLAN, PLAN DE CIRCUIT



○ Mark shows the position of the switch in the circuit diagram.

NOTES,

1. S1a~b POWER ①ON 2. OFF
   S2a~d SPEAKERS ①OFF 2. A SPEAKERS 3. B SPEAKERS 4. A+B SPEAKERS
   S3a~h FUNCTION ①PHONO-2 2. PHONO-1 3. TUNER 4. AUX-1 5. AUX-2
   S4a~b TAPE MONITOR 1. TAPE-1 ②SOURCE 3. TAPE-2
   S5a~d TAPE COPY 1. TAPE-1→2 ②SOURCE 3. TAPE-2→1
   S6a~b LOUDNESS ①OFF 2. ON
   S7a~d GAIN SELECTOR ①OFF 2. −20dB
   S8a~d GAIN SELECTOR ①OFF 2. −10dB
   S9a~b GAIN SELECTOR ①OFF 2. −5dB
   S10a~b MODE 1. REVERSE ②NORMAL 3. L+R 4. L 5. R
   S11a~b HIGH FILTER ①OFF 2. 8kHz
   S12a~b LOW FILTER ①20Hz 2. OFF
   S13a~b TONE DEFEAT ①DEFEAT 2. ON
   S14a~b TREBLE TURNOVER ①3kHz 2. 6kHz
   S15a~d BASS TURNOVER ①300Hz 2. 150Hz
   S16 PROTECTOR ①SP ON 2. SP OFF
   S17 THERMAL PROTECTOR ①OFF 2. ON
2. VR471a,b PHONO-2 LEVEL
   VR601a,b BALANCE
   VR602a,b LEVEL ATTENUATER
   VR671a,b B SPEAKERS LEVEL
   VR672a,b BASS CONTROL
   VR673a,b TREBLE CONTROL
   VR701L,R IDLE CURRENT ADJUST
3. UNITS RESISTANCE : Ω
   CAPACITANCE : F



The circuit diagram is subject to change for improvement without notice.