

6N2 6P1 Hi-Fi Tube Amplifier Kit User Manual

1. Product Overview

This 6N2 6P1 tube amplifier kit is a Class A single-ended Hi-Fi audio amplifier, designed for DIY enthusiasts. It adopts a classic tube amplification circuit, using 6N2 as the voltage amplification stage and 6P1 as the power output stage, delivering warm, transparent midrange and delicate, natural sound, suitable for desktop audio systems and home listening.

Key Features

- Classic 6N2 + 6P1 tube circuit configuration
- Pure Class A single-ended output, warm and mellow tone
- Built-in Bluetooth, USB, and AUX input options
- High-quality output transformers for low distortion
- Compact all-metal chassis with wood trim for aesthetics and durability

2. Safety Instructions

Warning: High Voltage Hazard

- Tube amplifiers operate with high voltages (up to 200–250V DC inside the chassis). Do not open the chassis or touch internal circuits while powered on.
- Always disconnect the power cord before assembly, maintenance, or tube replacement.
- Do not expose the amplifier to moisture, dust, or direct sunlight.
- Ensure adequate ventilation around the amplifier during operation to avoid overheating.
- Use only matching impedance speakers ($4\Omega/8\Omega$) as specified.

3. Package Contents

Check the package before assembly:

- 1 x Pre-assembled amplifier chassis (with tube sockets, transformers, and input module)
- 2 x 6N2 vacuum tubes (voltage amplification)
- 2 x 6P1 vacuum tubes (power output)
- 1 x Power cord
- 1 x Set of screws and tools (for final assembly)
- 1 x This user manual

4. Tube Installation & Chassis Setup

4.1 Tube Installation

1. Align the pins of the 6N2 tube with the socket holes (left two positions on the top plate) and gently insert it into the socket, ensuring it is fully seated.
 2. Align the pins of the 6P1 tube with the socket holes (right three positions on the top plate) and insert it into the socket.
- Note: Do not force the tubes; align the pins correctly to avoid damage.

4.2 Chassis Placement

- Place the amplifier on a flat, stable surface, leaving at least 10cm of space around it for ventilation.
- Ensure the amplifier is away from strong magnetic fields (e.g., speakers, power transformers) to avoid hum or interference.

5. Connection Guide

5.1 Power Connection

- Connect the included power cord to the AC input socket on the back of the amplifier, then plug it into a grounded AC power outlet (110V/220V, 50/60Hz).

5.2 Speaker Connection

- Locate the speaker binding posts on the back of the amplifier.
- Connect the positive (+) terminal of the speaker to the red binding post, and the negative (-) terminal to the black binding post.
- Ensure the speaker impedance matches the amplifier output (4Ω or 8Ω recommended).

5.3 Audio Input Options

The amplifier supports three input modes, selectable via the front panel or Bluetooth pairing:

1. **Bluetooth Input:**

- Turn on the amplifier, enable Bluetooth on your phone/tablet, and search for the device named [Amplifier Bluetooth Name] to pair.

2. **USB Input:**

- Insert a USB flash drive (with MP3/WAV audio files) into the front USB port; the amplifier will automatically play music.

3. **AUX Input:**

- Connect an audio source (e.g., phone, computer, CD player) to the AUX input jack on the back using a 3.5mm audio cable.

6. Operation Instructions

6.1 Power On/Off

1. Turn the left volume knob counterclockwise to the minimum position before powering on.

2. Plug in the power cord and press the power switch (if available) to turn on the amplifier.
3. The tube filament will light up, and the amplifier will enter a warm-up phase (about 3–5 minutes) for optimal sound performance.
4. After use, turn the volume to minimum, then turn off the power switch and unplug the power cord.

6.2 Volume & Tone Control

- **Left Knob:** Volume control (clockwise to increase, counterclockwise to decrease).
- **Right Knob:** Input mode selection / Tone adjustment (varies by model; refer to the front panel label).

6.3 Input Mode Switching

- Short-press the mode button on the front panel to cycle between Bluetooth, USB, and AUX inputs.
- The LED display on the front panel will indicate the current input mode.



7. Maintenance & Care

- **Tube Replacement:**
 - Unplug the power cord and let the tubes cool down completely (at least 30 minutes) before replacement.
 - Gently pull out the old tube and insert the new tube with aligned pins.
- **Cleaning:**
 - Use a dry, soft cloth to wipe the chassis surface. Do not use liquid cleaners or corrosive chemicals.
- **Storage:**
 - Store the amplifier in a dry, dust-free environment when not in use for long periods.
 - Remove the tubes and store them separately to avoid damage.



8. Troubleshooting

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Problem	Possible Cause	Solution
No sound output	Power not connected; volume at minimum; speaker wires loose	Check power cord; turn up volume; resecure speaker connections
	Grounding issue; input cable interference; tube loose	Ensure proper grounding; replace shielded audio cables; reseal tubes
Hum/noise		

Problem	Possible Cause	Solution
Bluetooth pairing failure	Device out of range; Bluetooth module not activated	Move device closer; re-enable Bluetooth and re-pair
Tube not lighting	Tube not seated; power supply fault	Reseat the tube; check power cord and internal connections (unplug first)

9. Technical Specifications

- **Input Sensitivity:** 200mV–500mV
- **Output Power:** ~3W–5W per channel (Class A)
- **Frequency Response:** 20Hz–20kHz (± 1 dB)
- **Impedance:** 4 Ω / 8 Ω speaker output
- **Input Options:** Bluetooth 5.0, USB (MP3/WAV), 3.5mm AUX
- **Power Supply:** AC 110V/220V (selectable via internal switch)
- **Dimensions:** Approx. 300 × 150 × 120 mm (L×W×H)
- **Weight:** Approx. 3.5 kg