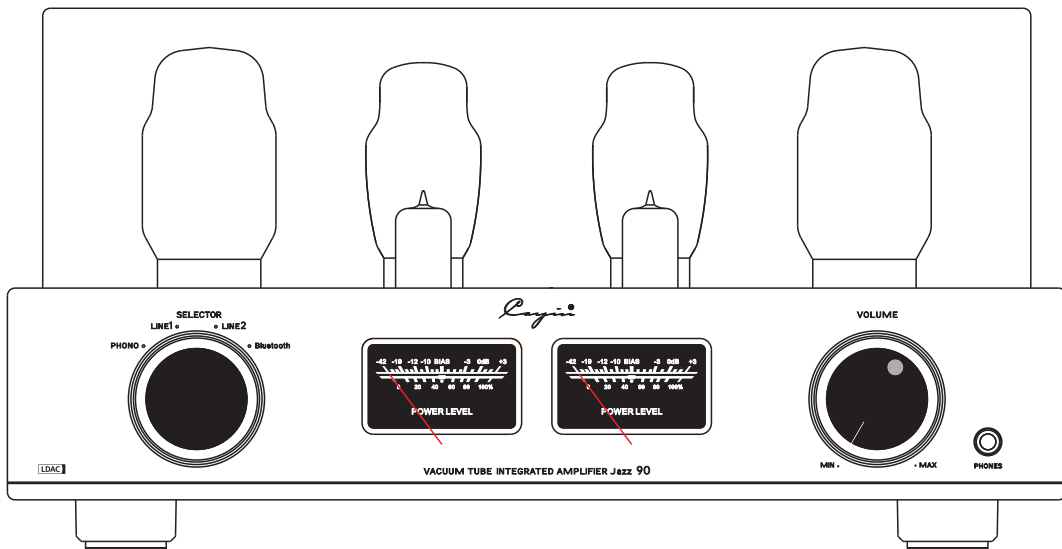


Cayin®



Jazz 90 | VACUUM TUBE INTEGRATED AMPLIFIER

User's Manual



Thanks for choosing **Cayin Jazz 90** Vacuum Tube Integrated Amplifier and please read the user's manual carefully before installation and operation.

In order to prevent damage during transportation, the amplifier is packed with protective foams surrounding the tubes. Before installation and operation, please remove these foams to avoid any risks.

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NOTE:

Cayin Jazz 90 Vacuum Tube Amplifier is designed and manufactured with our original parts and reaching the best results. We are not responsible for problems and damages caused by non-original parts replacement in the amplifier.

Package Contents

Please inspect the product package before opening it to ensure it is free from impact damage, breakage, or moisture. Upon opening the packaging box, the packing list is as follows:

- | | |
|----------------------|--|
| 1. Cayin Jazz 90 | 1 piece; |
| 2. Power cord | 1 piece; |
| 3. User's Manual | 1 piece; |
| 4. Bluetooth antenna | 1 piece; |
| 5. Remote Control | 1 piece; |
| 6. Main Fuse | 2 pieces (~ 220V-240V : T1.6AL250V; ~ 100V-120V: T3.15AL250V) |

Recommendation:

It is recommended to save the packaging and packing materials for future shipment use.

NOTE:

Please ensure that the local voltage level matches the input voltage specified on the rear panel of the amplifier. Using a voltage that is too low or too high can cause issues. If you find that the voltage is incorrect, please contact us or your local dealer for assistance.

All other parts not mentioned above are not included.

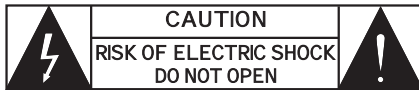


Product Features

- ◆ Input Stage: Utilizes two 12AX7/ECC83 vacuum tube.
- ◆ Driver Stage: Utilizes two 6SN7 vacuum tubes for amplification.
- ◆ Power Stage: Utilizes four KT88 tubes are used for AB1 push-pull amplification.
- ◆ External Adjustments: Includes external KT88 vacuum tube bias adjustment, monitoring meter (BIAS) functions.
- ◆ External Tube Selection Switch between EL34 and KT88 on the rear panel for easy tube replacement.
- ◆ Soft start function (about 60 seconds).
- ◆ Dual operation mode Triode & Ultralinear. Triode mode is tendering, rich in harmonic, smooth, lush and holography. Ideal for vocal and string music. Ultra-linear mode can improve power and extension. Clean, energetic, and authoritative. Ideal for music requires a lot of punch, dynamic and control.
- ◆ Upgraded Toroidal Power Transformer: An upgraded toroidal power transformer, designed and manufactured in-house for the Jazz 90, provides reliable performance.
- ◆ Dual Function Meters: Dual meters offer a retro, eye-catching design and serve as professional power meters that move rhythmically with the music. They also allow for bias adjustment and monitoring.
- ◆ BMI Function: In order to protect and monitor the operation state of the Power Tubes we have designed the Jazz 90 with Bias Monitoring Indicator. Once bias of Power Tube is abnormal the BMI will react and the amplifier will enter into protection.
- ◆ Headphone Output: Features a headphone output for enjoying the amplifier with your headphones.
- ◆ Remote Control: Comes equipped with a remote control for convenient operation.
- ◆ Handmade Construction: Built with the finest point-to-point wiring for optimal sound quality.
- ◆ Jazz 90 can memorize last operation of the unit once turned off.
- ◆ Removable Tube Cage: Includes a removable metallic tube protection cage.

Safety precautions

1. Unplug the power cord if you are not going to use the product for an extended period of time.
2. The machine will become hot after working for a long time. Please keep the unit's ventilation open and install the amplifier at a well-ventilated place to avoid troubles and fire hazard.
3. Do not operate the amplifier without a connected load or if the output is shorted.
4. Do not attempt to service this product on your own. Opening the cover may expose you to dangerous voltage and other hazards.
5. We are not responsible for any issues arising from unauthorized disassembly of the product. For service, please contact qualified technician.
6. Do not place any objects filled with liquids such as vases on the top or around the amplifier.
7. Clean with dry and clean cloth only.
8. Handle the machine with care during transportation to avoid damaging it.



- ◆ To avoid the risk of electric shock, do not remove the cover.
- ◆ No user serviceable parts inside. Refer servicing to qualified technician.
- ◆ To avoid the risk of fire or electronic shock, do not expose the unit to rain or moisture.

- ⚡** The thunder arrow is used to alert the user to dangerous uninsulated components that carry high voltages inside the product. These voltages are extremely high and can cause electric shock.
- !** The warning symbols are used to draw the user's attention to the important operating instructions and maintenance instructions mentioned in the user manual.

Specifications

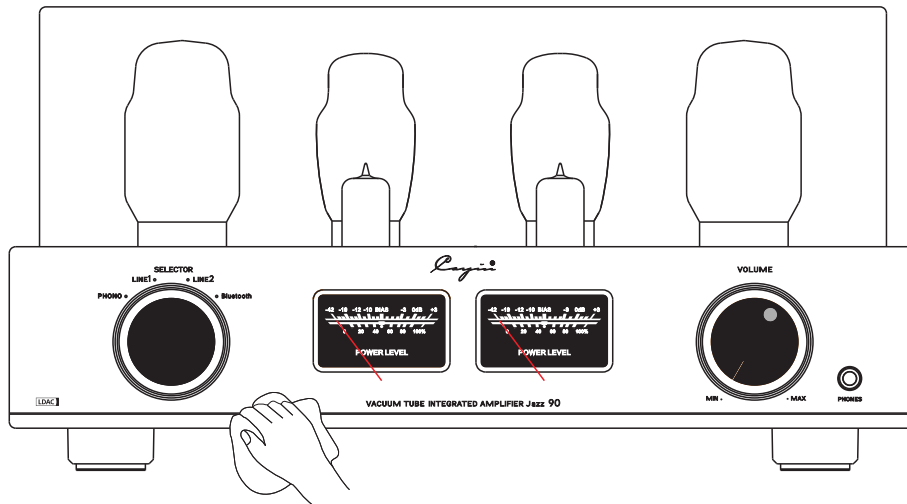
ITEM		SPECIFICATIONS	
AMP	【Power Output】	TR: 28W+ 28W (RMS Triode mode) UL: 50W+ 50W (RMS Ultralinear mode)	
	【Frequency Response】	9Hz~45KHz (±3dB,UL)	
	【THD】	0.2% (1W/1kHz, 5% Under Rated Power)	
	LINE	【S/N Ratio】	100dB (A-Weighted)
		【Input Sensitivity】	300mV
		【Input Impedance】	100kΩ
	PHONO (MM)	【S/N Ratio】	68dB
		【Input Sensitivity】	3mV
		【Input Impedance】	47kΩ
		【RIAA Errors】	Lower than ±0.25dB
	【Total Gain】	40dB	
	【Tube】	12AX7/ECC83×2、6SN7×2、KT88 ×4	
	【Headphone Output】	85mW (32Ω, 6.35mm)	
	【Input Terminals】	PHONO,LINE1,LINE2,Bluetooth	
	【Output Terminals】	SUB OUT (Full Frequency)	
	【Full Remote Control】	INPUT,MUTE,VOLUME	
【WxDxH】	420mm×379mm×215mm		
【Speaker Output】	4Ω, 8Ω		
【Net Weight】	27.5kg		
【Power Consumption】	310W (Max)		
Bluetooth	【Bluetooth Version】	V5.1	
	【Bluetooth Chip】	QCC5125	
	【High Fidelity DAC Chipset】	ES9018K2M	
	【Audio Format】	LDAC, aptX HD, aptX LL, aptX, AAC, MP3, SBC	
	【Effective Range】	≤10M	
	【Device Name】	Cayin HD BT	
【Working Condition】	Temp : 0℃~40℃ Humidity : 20%~80%		
【Storage Condition】	Temp : -20℃~70℃ Humidity : 20%~90%		



Maintenance

NOTE:

- ◆ Use the soft dry cloth to clean up the chassis.
- ◆ Do not use any chemicals for cleaning.



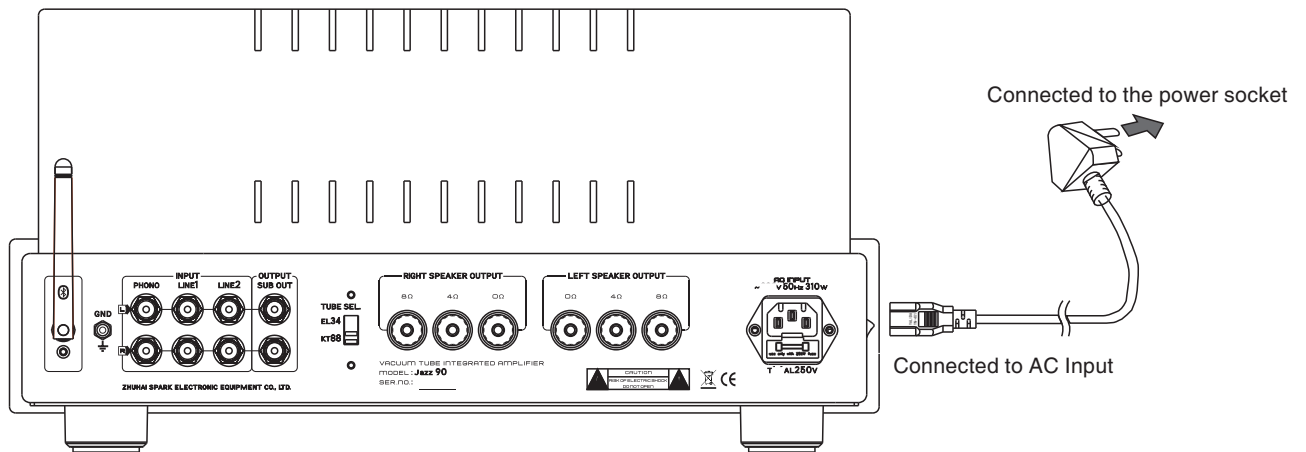
Warranty Service

1. This product is warranted for a period of twelve months beginning from the date of purchase.
2. The defective product must be returned to your dealer or us for repairing.
3. The warranty doesn't extend to any product that has been opened without permission of our company.

NOTE:

The information in this manual is subject to change without further notice.

Precautions



Connection of power cord:

Connect the speaker cables and signal cable first and then insert the power cord into the power socket.

NOTE:

- ◆ Connect the power only after finishing rest of the connections.
- ◆ It is normal that power transformer becomes hot for extended period of operation.
- ◆ Unplug the power cord if you're not going to use the product for an extended period of time.
- ◆ Please ensure that the local voltage matches the operating voltage indicated on the device. We are not responsible for any damage caused by connecting to an incorrect voltage.



Front Panel

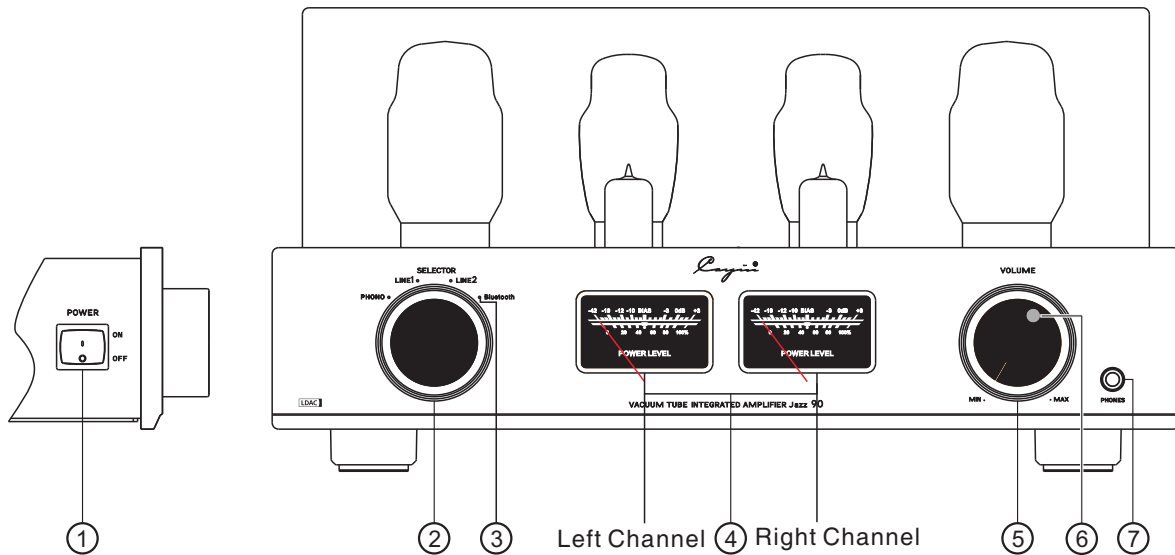


Diagram 1

1. Power Switch

Used to switch on/off the amplifier.

2. Input Selector

Used to choose 4 types of audio sources.

There is an indicator next to both the PHONO, LINE1, LINE2 and the Bluetooth label.

When the light is on, it indicates that the corresponding input has been selected.

3. Bluetooth indicator:

Indicator Flickering : The Bluetooth module is activated awaiting for connection.

Indicator Remain Steady : The Bluetooth has been connected successfully.

4. POWER LEVEL Meter (also functions as BIAS Meter):

POWER LEVEL Meter: Displays the output levels of the amplifier.

BIAS Meter: (Left One) Used to display and adjust the bias status of the corresponding power tube.

5. Volume Knob

Used to control volume

6. IR Remote Sensor

Used to receive the signal of remote control.

7. Headphone Socket

Plug in, and you can enjoy the same excellent output through the headphone socket as you would from the speaker output.

Rear Panel

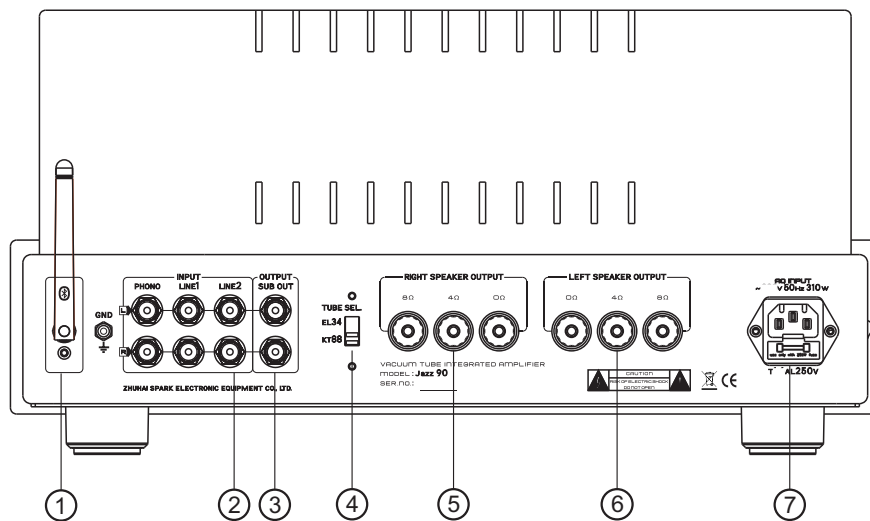


Diagram 2

1. Bluetooth Antenna

Please connect the Bluetooth antenna to the amplifier in order to use the Bluetooth function

2. Signal Input Terminals

Used for audio source input.

3. Sub Output

A pair of Subwoofer Outputs is located on the rear panel. If you wish to integrate subwoofer into the system, you can use the terminals located here.

4. Tube Selector Switch

Tube selector switch is accessible on the rear of Jazz 90. Please make sure the switch is at the right position when you are exchanging power tubes. Please refer to page 11 for details on vacuum tube substitution.

5. Right Channel Output

Used to connect with the right channel of speaker.

6. Left Channel Output

Used to connect with the left channel of speaker.

7. Power Socket with Main Fuse

Main fuse is located just below the power socket. Replace the fuse with the same type as indicated.



Top Panel

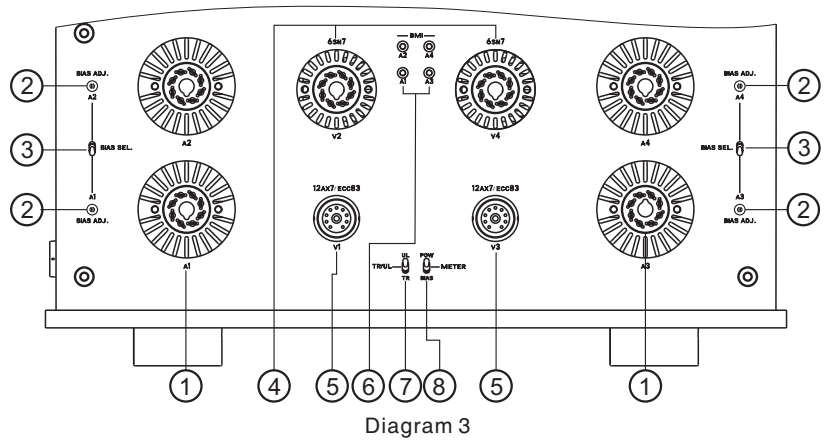


Diagram 3

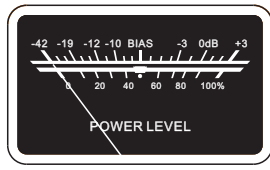


Diagram 4
Bias meter when not working

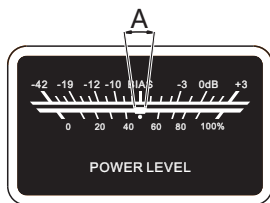


Diagram 5
Bias meter during bias adjustment
Note: During bias adjustment, the pointer should remain within the A zone; however, it may fluctuate due to voltage variations.

1. A1, A2, A3, A4: KT88
2. Bias Adjustment Knob for Power Tubes (A1, A2, A3, A4)
3. Bias Selector (A1, A2, A3, A4)

Used to select corresponding tube for bias adjustment.

4. V2, V4: 6SN7
5. V1, V3: 12AX7/ECC83

6. Bias Monitoring Indicator (BMI):

Monitor the operation state of the KT88 Power Tube. If abnormal the BMI will light up and the amplifier will enter into protection. Once the amplifier entered into protection please take the steps of troubleshooting as we suggested on Page 15.

7. Triode/ Ultralinear Indicator

Used to select Triode/Ultralinear working state.
TR: Triode Operation State;
UL: Ultralinear Operation State.

8. METER Switch

This switch allows you to select between the Power Meter and the Bias Meter functions. When set to POW, both front-panel meters display the output levels of the amplifier's left and right channels. When set to BIAS, only the left meter is active and functions as a bias meter. You can use it to monitor and adjust the bias of the power tubes.

Bias adjustment for the power tube:

Turn the Bias Selector Switch to its opposite direction without releasing it, adjust the corresponding Bias Adjustment Swith with flat screwdriver, and inspect the Bias Meter on the top panel to make sure the pointer keeps in the center. Bias adjustment for A1, A2, A3 and A4 are the same. After all have been djusted, do it one more time to make sure all the bias level of A1, A2, A3 and A4 are the same.

Once all adjustments are complete, please turn the Meter Selection Switch back to the POW position.

Example: Bias Adjustment for A1 Tube:

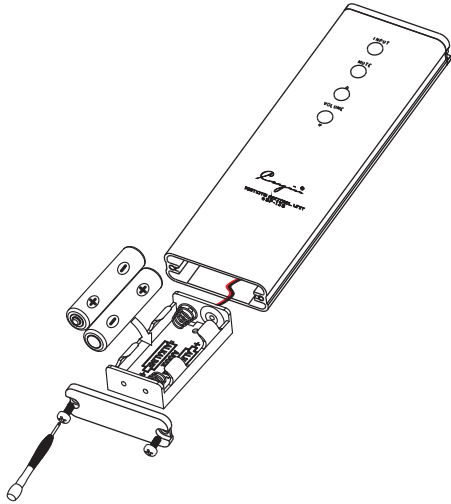
1. Turn Meter Selection Switch to BIAS.
2. Turn BIAS SEL. Switch to A1 Side.
3. Use flat screwdriver to adjust the BIAS ADJ. of A1 and make sure the needle of the Left Meter keeps in the Center .
4. Turn the Meter Selection Switch back to the POW position when finished.

Method for Bias Adjustment for A2, A3, A4 Tubes is the same.

NOTE

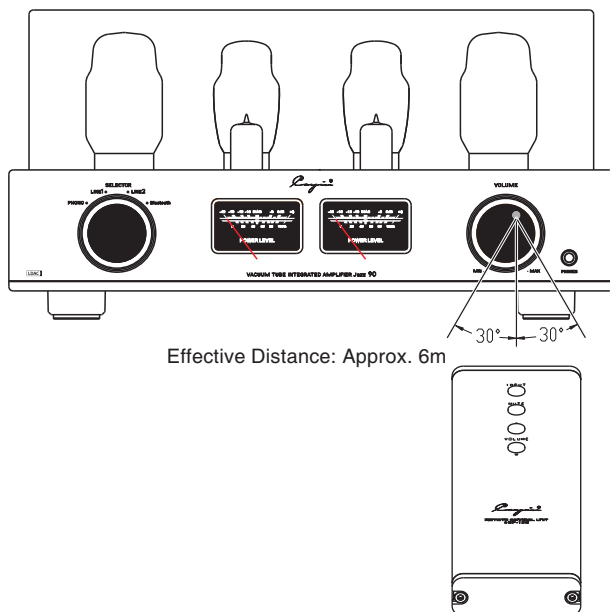
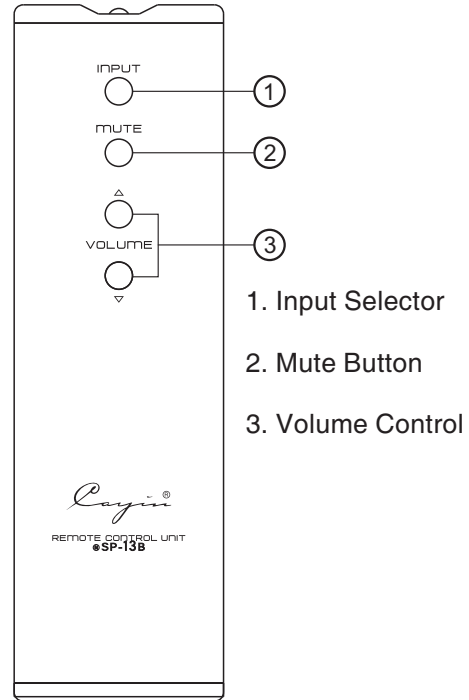
- ◆ Be careful of the high temperature of the tubes during operation.
- ◆ Replace the tubes carefully and correctly.
- ◆ Power tubes must be matched for well function.

Remote Control



Installation

1. Place the remote control with top facing up.
2. Use the attached hexagon screwdriver to remove the bottom cover.
3. Pull out the (AAA) battery case carefully (be aware not to break the connected wires).
4. Put in the batteries with correct polarity.
5. Push the battery case back in and secure the bottom cover with the screws.



NOTE:

- ◆ Avoid rough handling or exposing the remote control to moisture.
- ◆ Replace the batteries timely.
- ◆ Don't mix new and old batteries together. Use the batteries with the same specification.
- ◆ Remove the batteries if you do not plan to use the remote control for an extended period.
- ◆ It is recommended to use high-quality batteries.



Installation

Carefully read and follow the manual for installation:

- ◆ Do not place the machine near heat sources such as radiators, heat registers or other products that produce heat.
- ◆ In order to avoid being overheated please keep the unit's ventilation open.
- ◆ Do not expose this appliance to rain or moisture.
- ◆ Keep the amplifier in a certain distance so that it can be easily connected.
- ◆ Amplifier should install steadily and make sure all four feet are on the same level.
- ◆ Keep the amplifier over 15cm's distance to the surrounding walls.

NOTE:

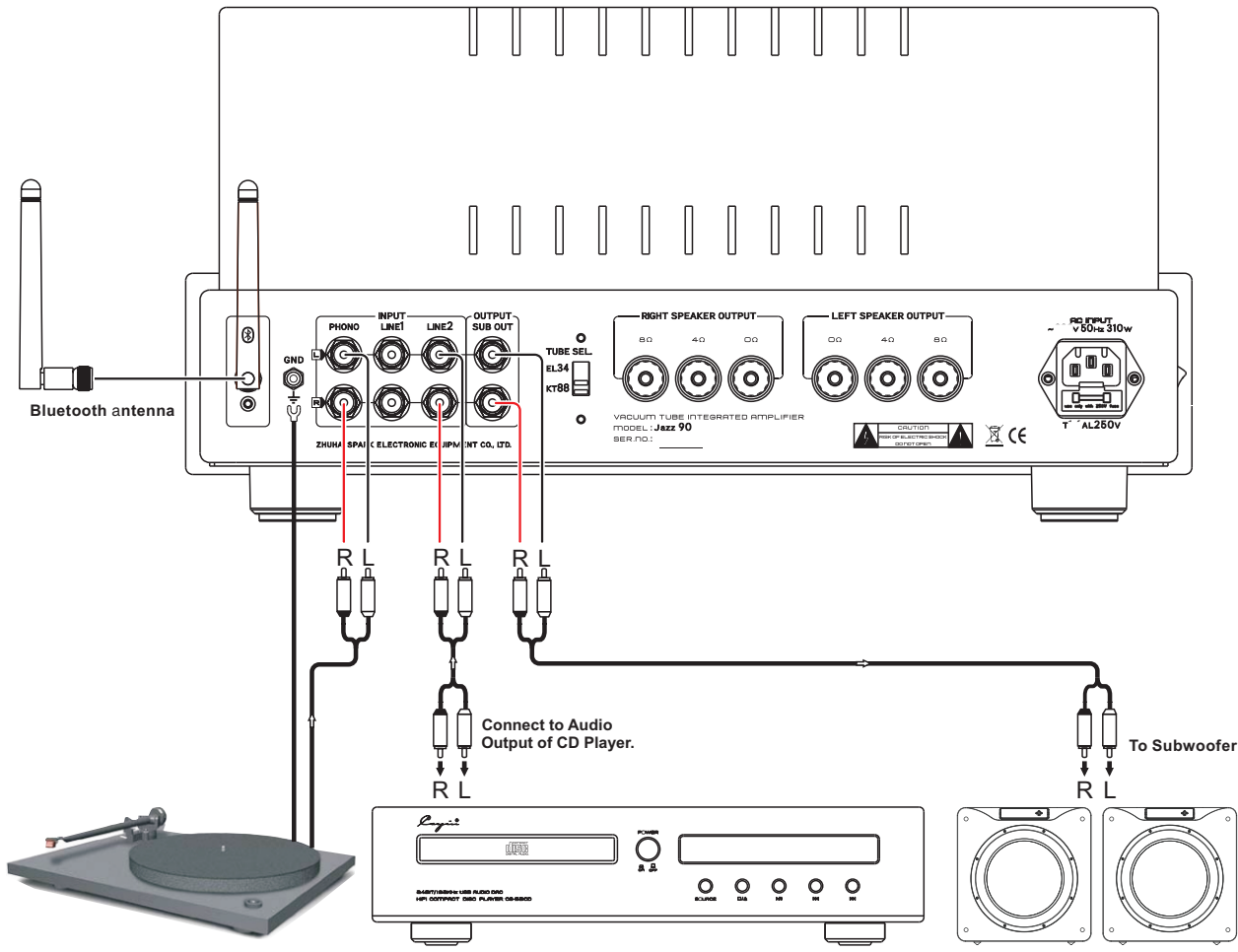
Please make sure local voltage level is matched with the input level of the amplifier, which indicates on the rear panel. Too low or too high voltage may cause problems or shorten the amplifier's life.

Tube Replacement

Tubes for the Machine	Tubes Replacement
12AX7/ECC83	12AX7、ECC83、E83CC、ECC803S
6SN7	6SN7GT、6H8C、6N8P、CV181
KT88	KT88、6550、KT66、KT90、KT120、KT150
EL34	EL34、6CA7、KT77

Audio Connection

Connection Method of Cayin Jazz 90 with Other Audio Equipment:
Refer to the pictures below for guidance.



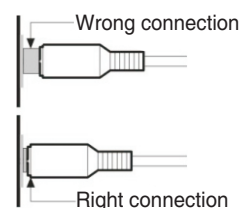
Bluetooth Instruction:

1. Please turn the knob to Bluetooth before using Bluetooth function.
2. Check the status of the Bluetooth indicator:
The indicator will flicker when the Bluetooth is in pairing mode. Please turn on Bluetooth and search for the device name "Cayin HD BT" on your audio source device (such as a music player, phone, or tablet that supports Bluetooth). Once connected successfully, the indicator will remain lit, allowing you to play audio from the device via Bluetooth.

If the connected device is not the one you intended, please turn off the Jazz 90 and restart it. When the indicator begins to flicker again, follow the steps above to connect to the desired device.

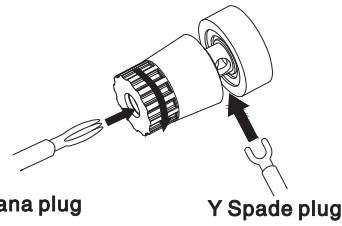
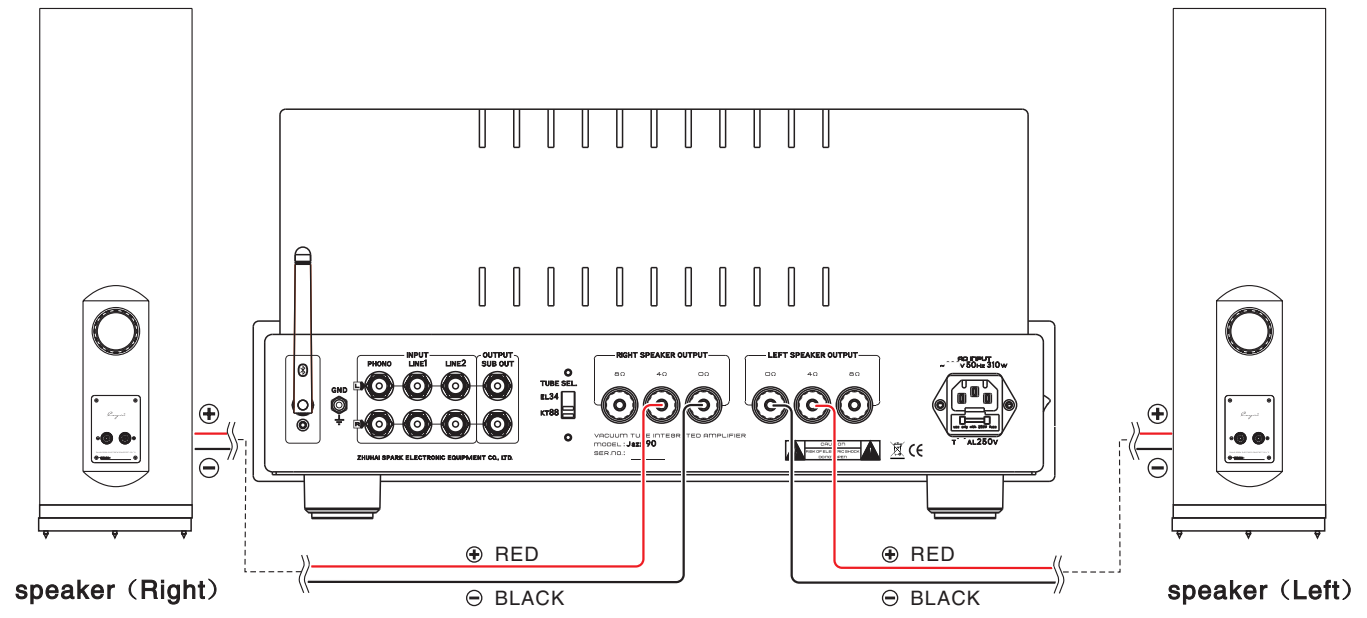
NOTE:

- Please also refer to the manuals of other connected equipments during the installation.
- It is recommended to connect the power cord and turn on the device only after all other cables have been properly connected.
- R refers to right channel while L represents left channel.
- Please take the correct guidance for connection as wrong connection may cause excessive noise, distortion or damage.
- Do not tangle signal cable together with power cable and speaker cables. As this may introduce noise and degrade audio quality.





Speaker Connection



Check the impedance of your speakers:

Connect the positive terminal of your speaker to either the 4 ohm or 8 ohm terminal, and the negative terminal to the 0 ohm terminal, separately. If your speakers are 6 ohms, you can choose either the 4 ohm or 8 ohm terminal (recommended), neither will harm the amplifier. Properly connecting the left and right speakers as instructed can ensure accurate soundstage and imaging.

Connection of speaker cables:

1. Unscrew the terminal knob
2. Insert the speaker cable
3. Screw the terminal knob

NOTE:

- Connect the speaker cables to the amplifier only after securely connecting them to the speakers.
- Ensure both speakers are connected to maintain optimal sound fidelity.
- Pay attention to the signal direction indicated on the cables.
- Be careful not to mix up the positive and negative ends of the speaker cables, as this could result in a short circuit.

Turning On

Before turning on the amplifier, please make sure all connections are correct and power supply is stable.

- Turn on the power, and the power meter light will illuminate, indicating the unit is functioning properly. If the power meter light remains off, it suggests an internal fault. Please turn off the power immediately and contact the dealer or us for assistance.
- Select the correct audio source and adjust the volume to a suitable level. You are now ready to enjoy your music!

NOTE:

1. When the audio system is under working state, do not unplug the signal cable or speaker cables, as it could cause damage to the amplifier and other equipments.
2. Please allow a 2-minute interval between turning the device off and on again. Failing to do so may cause damage to the tubes.

Small Tips

Read the Manual——Please read the user's manual carefully before installation and operation .

Keep the Manual——Please keep the manual for future reference.

Warning Signs——Don't tear off or rub off the serial number .

Operation——Follow the instructions in the Manual.

Parts—— If you are going to use parts not supplied by our company, like power cord, fuses, etc., please make sure that parts you used are compatible with the safety requirements. Otherwise it may cause fire or electric shock.

Placement——Place the amplifier on a stable, level surface. Ensure it is positioned safely to prevent any harm to children, adults, or the amplifier itself.

Power——Please make sure the local voltage is the same as indicated on the rear panel.

Overload——If the power socket is overloaded with other equipment, it may cause fire or electric shock.

Warranty Service——Do not open the product or attempt to replace any components yourself.

Opening the cover may expose you to dangerous voltages or other hazards. The warranty will not cover any product that has been opened without authorization from our company.

Troubleshooting——If any issues occur, please refer to the following troubleshooting part to identify the cause. If the problem persists, contact us for further assistance.



Troubleshooting

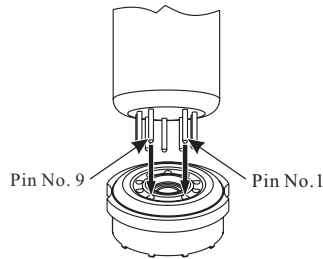
To ensure optimal performance of the machine, it is essential to adhere to proper maintenance procedures and operate it correctly. Incorrect operation may lead to abnormal functioning of the machine. Should any issues arise with the unit, please perform the following checks.

Problem		Cause	Remedy
NO OUTPUT	Backlight of the Meter is Off	Power cord is not well-connected.	Check power cable connection or power outlet connection
		Main fuse is out.	Replace with the same type and value fuse.
		Problem with inner parts or circuit.	Please contact with local dealer or us.
	Backlight of the Meter is On	Volume is at ZERO.	Turn up the Volume.
NO signal input.		Check the function of the sound source.	
		Check the input selection and switch to the proper input.	
BMI indicator is ON.	Abnormal current of KT88 Power Tube and BMI reacts.	Switch off the amplifier and switch on again after 5 minutes.	
	Defective KT88 Power Tube and BMI reacts.	Replace the defective Tube and Switch on the Amplifier again.	
	Connect the Audio Cable during Powering on and abnormal current makes the BMI react.	Switch off the amplifier and reconnect the audio cable.	
Sound Distortion	High input signal level.	Turn down the volume to suitable position.	
Noise output	Ground of input signal cable is open or bad contact of the input signal cable.	Replace the input signal cable with a new one.	
	Components or circuits are in trouble.	Please contact with local agents or our company.	
Sound field Positioning is not so good.	Signal input cables or speaker cables are wrongly connected.	Reconnect it as suggested in the manual.	
Malfunction of Remote Control.	Be disturbed. Low Battery. Obstacles between the amplifier and remote.	Keep away from the source of disturbance. Turn off and restore. Replace with new batteries. Remove the obstacles.	
Malfunction of Bluetooth	Power Indicator is OFF.	Bluetooth haven't start	Ensure the amplifier's audio source is set to Bluetooth.
	Power Indicator is ON.	Bluetooth be connected to other device	Restart Jazz 90

NOTE: *Cayin*[®] is the registered trademark of Zhuhai Spark Electronic Equipment Co., Ltd.

How to Install Vacuum Tubes

How to Install 9-Pin Vacuum Tubes

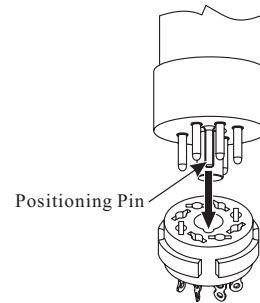


Applicable vacuum tube:
 12AU7 (ECC82)、12AX7 (ECC83)、5BK7、12BH7、
 12AT7 (ECC81)、6922 (ECC88), etc. 9-Pin vacuum tubes.

Instructions to Change and Install the vacuum tubes:
 To install a nine-pin vacuum tube, align the pins of the vacuum tube with the holes of the tube socket and insert the tube vertically up and down (as shown in the figure above).

▲ Please note that when installing the nine-pin vacuum tube, pay attention to the alignment of the vacuum tube pins with the holes of the tube socket. Otherwise wrong insertion will cause damage to the vacuum tube and prevent the amplifier from working properly, which may lead to failure of the amplifier.

How to Install 8-Pin Vacuum Tubes

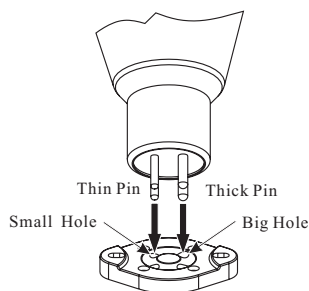


Applicable vacuum tube:
 KT150、KT170、KT88、6550、EL34、6V6、6SN7、6SL7、5AR4,
 etc. 8-pin vacuum tubes.

Instructions to Change and Install the vacuum tubes:
 To install an eight-pin vacuum tube, align the positioning pin of the tube with the grooves in the positioning holes of the tube socket, and install the tube by pulling up and down vertically (as shown in the figure above).

▲ Please note that when installing the eight-pin vacuum tube, pay attention to the alignment of the vacuum tube positioning pin with the positioning hole of the tube socket. Otherwise wrong insertion will cause damage to the vacuum tube and prevent the amplifier from working properly, which may lead to failure of the amplifier.

How to Install 4-Pin Vacuum Tubes

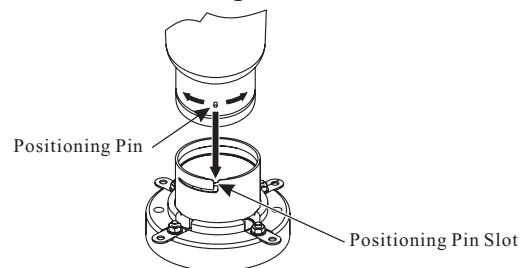


Applicable vacuum tube:
 300B、2A3 etc. 4-pin vacuum tubes .

Instructions to Change and Install the vacuum tubes:
 To install a four-pin vacuum tube, please pay attention to the thickness of different pins of the vacuum tube and the size of the tube socket hole. Thick pin should be aligned with the big hole, and the thin pin should be aligned with the small hole. Install the tube vertically up and down (as shown in the figure above).

▲ Please note that when installing the four-pin vacuum tube, pay attention to the thickness of different pins of the vacuum tube and the size of the tube socket holes. Otherwise wrong insertion will cause damage to the vacuum tube and prevent the amplifier from working properly, which may lead to failure of the amplifier.

How to Install Big 4-Pin Vacuum Tubes



Applicable vacuum tube:
 845、805、211 etc. 4-pin vacuum tubes.

Instructions to Change and Install the vacuum tubes:
 To install the big four-pin vacuum tube, align the vacuum tube positioning pin with positioning pin slot of the tube socket and then rotate 45° clockwise to tighten. (As shown in the picture above). To take out the big four-pin vacuum tube, turn the tube 45° counterclockwise and take it out upward after loosening.

▲ Please note that when installing the big four-pin vacuum tube, pay attention to the alignment of the vacuum tube positioning pin with positioning pin slot of the tube socket and then rotate 45° clockwise to tighten. It is strictly forbidden to install the vacuum tube when the positioning pin is off or missing. Otherwise wrong insertion will cause damage to the vacuum tube and prevent the amplifier from working properly, which may lead to failure of the amplifier.

Cayin

EN Use these headphones only for the intended applications.
Austrian Audio cannot accept any liability for damages resulting from improper handling or misuse.



Listening to personal stereo equipment at full volume for long periods can damage the user's hearing.

Complies with IEC 62368-1:2018 for mobile audio equipment.



Declaration of Conformity at <https://austrian.audio>



When the product reaches the end of its life, separate the housing, electronics and cables and dispose of all components in accordance with local waste disposal regulations!

DE Verwenden Sie diesen Kopfhörer nur für die vorgesehenen Anwendungen.
Für Schäden infolge unsachgemäßer Handhabung oder missbräuchlicher Verwendung kann Austrian Audio keine Haftung übernehmen.



Das lang andauernde Tragen von Kopfhörern bei voller Lautstärke kann das Gehör schädigen.

Entspricht dem Standard IEC 62368-1:2018 für mobile Audio-Geräte.



Konformitätserklärung auf <https://austrian.audio>



Am Ende der Lebensdauer des Produkts, trennen Sie Gehäuse, Elektronik und Kabel und entsorgen Sie alle Komponenten gemäß den örtlichen Abfallentsorgungsbestimmungen.



HERSTELLER

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