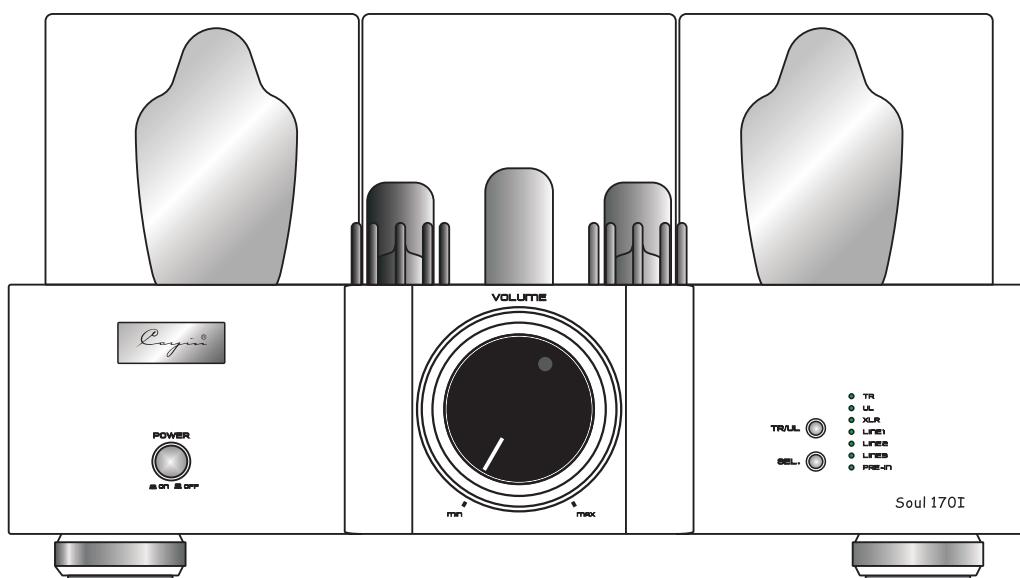


Cayin®



Soul 170I

VACUUM TUBE INTEGRATED AMPLIFIER

User's Manual

REV : 1.0



Thanks for choosing **CAYIN Soul 170I** 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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Package Contents

Please carefully check the package first and then open it.

Package contents include:

1. CAYIN Soul 170I x1
2. Users' Manual x1
3. Power cord x1
4. Remote Control x1
5. Spare Fuses:
 - ①.External Main Fuse x2 (~ 220V-240V : T3.15AL250V ; ~ 100V-120V : T6.3AL250V)
 - ②.Fuse for KT170 tube x4 (T3.15AL250V)

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. Forbidden to operate when the output is open or shorted.
4. Do not attempt to service this product yourself. Opening the cover may expose you to dangerous voltage or other hazards.
5. We are not responsible for any problems caused by checking and opening without permission of our company. For service, Please contact a qualified service technician.
6. Do not place any objects filled with liquids such as vases or some others on the top or around.
7. Clean only with dry cloth.
8. Please move the amplifier carefully not to drop the unit or be subject to other strong shocks.



Product Features

Soul 170I is designed on basis of Tungsol KT170 Power Tube. It outputs 130 watts Power in Ultralinear Mode or 75 watts power in Triode Mode per channel. Designed in Class AB Push-Pull Soul 170I takes two pieces of powerful KT170 tube per channel.

All tube Integrated with 22DE4 Tube Rectifier for Power supply, ECC83S voltage amplification stage, 6SN7 driver stage, and KT170 output tubes.

Following the design concept of Cayin Soul 170I offers two operation modes: Triode and Ultralinear. As you can see from above for these two different modes the output power are different. However it is not more than that. Change the output mode you will get a different sound signature instantly. Triode Mode is Tendering, Rich in Harmony, Smooth and Soft. Ideal for Vocal and Instrumental Music. Ultralinear Mode has power and extension. Clean with energy. Ideal for music has punch and dynamic and at such mode it offers excellent control ability.

Three pairs of line inputs, one pair of Balance Input and one pair of Pre-In are located on the rear panel of the amplifier. In our Soul 170I not only the Single Ended RCA inputs provided but also the XLR Balance Input.

Different from other inputs Pre-In offers you a possibility to connect to some other Preamplifier so that you can the Soul 170I as a power amplifier.

One pair of Sub Output is located on the rear so that if you want to get more Bass you can use the interconnector to connect with your Subwoofer system.

Speaker terminals for 4 and 8 ohm speakers are located on the rear panel of the Amplifier.

User bias controls for KT170 Power Tubes have been used for bias adjustment and one meter has been added to the top plate to allow you to monitor bias with ease.

Soul 170I, same as other products from Cayin employs Point to Point wiring. The entire circuitry including signal path is painstakingly hand wired with heavy-gauge cable by craftsman.

Soft-start circuit and High Voltage Delay to protect the amplifier for extended life of sensitive components.

High Voltage Fuses are used in the amplifier for protection which are located on the top plate close to the Power tubes. In case there were failure of tubes the Fuse will react first that you can know easily where the issue is.

Premium Parts: Alps volume control, Porcelain Tube Sockets, Audio grade capacitors and carbon film resistors, Toroid transformer for power supply, Wide bandwidth EI output transformer, etc.

Output transformers are the most important part of any tube amp. They determine how low the bass will reach and how high the top end goes. Cayin output transformers are custom-designed, wound in-house, and massive. Enable complicated multi-layer winding and multiple impedance output to match with different needs. Carefully matched output will sound Balanced, natural and realistic across the complete audio spectrum.

Custom designed Toroid Power transformer with strong power production and extreme low hum level provides a reliable performance and extraordinary control.

Standard with remote control, Soul 170I can memorize last operation of the unit once switched off.

Specifications

| | |
|--------------------|---|
| Power Output | TR:75W+75W (RMS Triode mode) UL:130W+130W (RMS Ultralinear mode) |
| Frequency Response | 5Hz~50kHz (-3dB,RCA) 5Hz~35kHz (-3dB,XLR) |
| THD | 0.2% (1W/1kHz; 5% Under Rated Power) |
| S/N Ratio | 97dB(A Weighted) |
| Input Sensitivity | 330mV (Integrated) 1000mV (Pre-IN) |
| Input Impedance | 100k Ω |
| Output Impedance | 4 Ω , 8 Ω |
| Input Terminals | XLR; LINE1; LINE2; LINE3; PRE-IN |
| Output Terminals | SUB OUT |
| Tube | JJ ECC83S \times 2、TUNG-SOL 6SN7GBT \times 2、TUNG-SOL KT170 \times 4、RCA 22DE4 \times 1 |
| WDH | 430mm \times 448mm \times 238mm |
| Net Weight | 38.7kg |
| Power Consumption | 290W(MIN) 680W(MAX) |
| Working Condition | Temperature : 0 $^{\circ}$ C \sim 40 $^{\circ}$ C Moisture : 20% \sim 80% |
| Storage Condition | Temperature : -20 $^{\circ}$ C \sim 70 $^{\circ}$ C Moisture : 20% \sim 90% |



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



The lightning flash with arrowhead symbol is intended to alert user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of a risk shock to persons.



The exclamation point is intended to alert user to the presence of important operation and maintenance (servicing) instructions accompanying the appliance.

Recommendation: Cayin Soul 170I 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. Please keep all packaging materials for future use as you may need to repackage the amplifier in the future.

Please fill in the product warranty card immediately and mail it to authorized dealer to safeguard your after- sales service.

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 problem. Please contact our company or our local agent if you've found improper voltage.



Front Panel

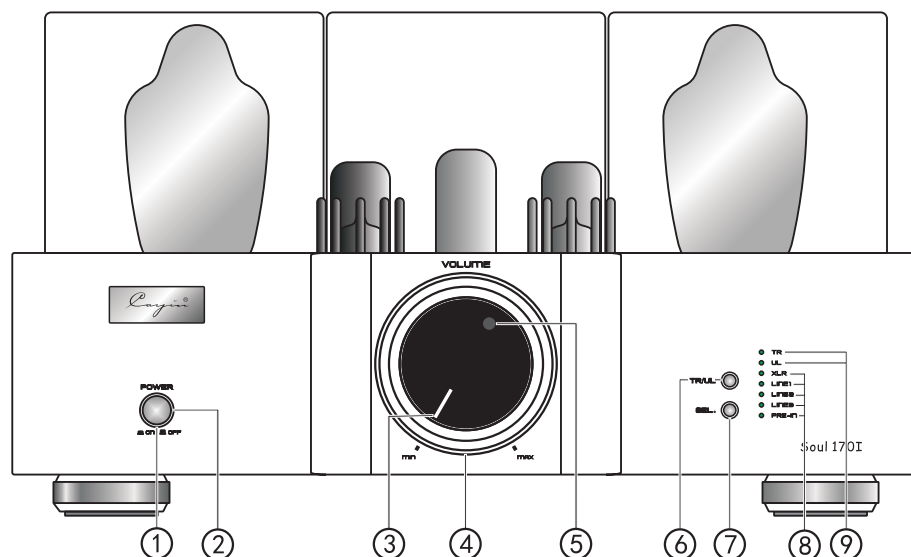


Diagram 1 : Soul 170I FRONT

①. Power Switch

Used to switch on/off the amplifier.

Note: Unplug the power cord if you're not going to use the product for an extended period of time.

②. Power indicator

Turn on the amplifier the power indicator will be on.

③. Power Indicator/Mute Indicator

Used to indicate the working state.

The indicator will be on when it is working normally.

The indicator will keep flickering when it is at mute state.

The indicator will flicker for 60 seconds when it delays to work.

④. Volume Knob

Used to control volume.

⑤. IR Remote Sensor

Used to receive the code of remote control.

⑥. Triode/ Ultralinear Selector Button

Used to choose Triode or Ultralinear working state.

⑦. Input Selector Knob

Used to select five kinds of audio sources.

The input selection indicator will be on according to the input audio sources.

This function can be operated on the remote control.

⑧. Input Selector Indicator

You can hear sound from XLR when XLR indicator is on.

You can hear sound from LINE1 when LINE1 indicator is on.

You can hear sound from LINE2 when LINE2 indicator is on.

You can hear sound from LINE3 when LINE3 indicator is on.

You can hear sound from PRE-IN when PRE-IN indicator is on.

Soul 170I has one pair of Pre-In Input which offers you a possibility to connect to some other Preamplifier so that you can the Soul 170I as a power amplifier.

⑨. Triode/ Ultralinear

It is at triode working state if the TR indicator is on.

It is at ultralinear working state if the UL indicator is on.

Top Panel

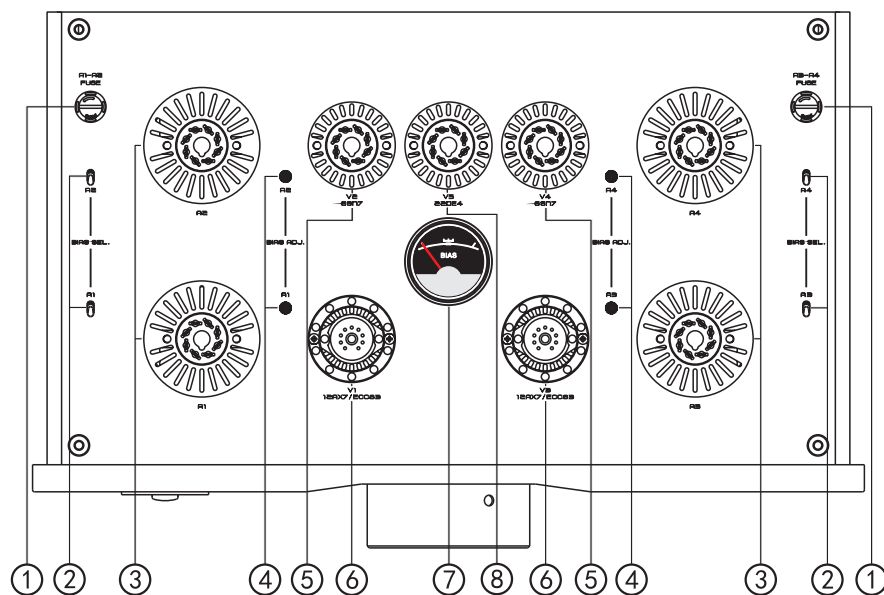


Diagram 2 : Soul 170I TOP



Diagram 3
Bias meter when not working

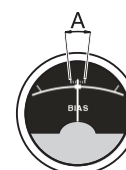


Diagram 4
Bias meter during working
Note: When working normally, the pointer should stay within the A zone, still, it would move for the voltage fluctuation.

①. External Fuse for high voltage (T315mAL250V)

A1-A2 Fuse for high voltage

A3-A4 Fuse for high voltage

②. Bias Selector Switch(A1、A2、A3、A4)

Used to select corresponding tube for bias adjustment.

③. A1、A2、A3、A4 : KT170 Tube

④. Bias Adjustment Switch(A1、A2、A3、A4)

Used to adjust bias of corresponding power tube(A1、A2、A3、A4)

⑤. V2、V4 : 6SN7 Tube

⑥. V1、V3 : 12AX7/ECC83 Tube

⑦. Bias Meter

Used to monitor the working current of the power tube.

⑧. V5 : 22DE4 Tube

Bias adjustment for the power tube:

Turn the Bias Selector Switch to its opposite direction without releasing it, adjust the corresponding Bias Adjustment Switch 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 A4 are the same. After all have been adjusted, do it one more time to make sure all the bias levels of A1,A2,A3,A4 are the same.

Sample of bias adjustment for power tube A1:

1. Turn the Bias Selector Switch A1 to its opposite direction without releasing it.
2. Adjust the corresponding Bias Adjustment Switch A1 with flat screwdriver until the pointer of the bias meter keeps in the center.
3. Adjustment for A2,A3,A4 are the same.

NOTE: 1. Be careful of the high temperature of the tubes during operation.

2. Replace the tubes carefully and correctly.

3. Power tubes must be matched for well function.



Rear Panel

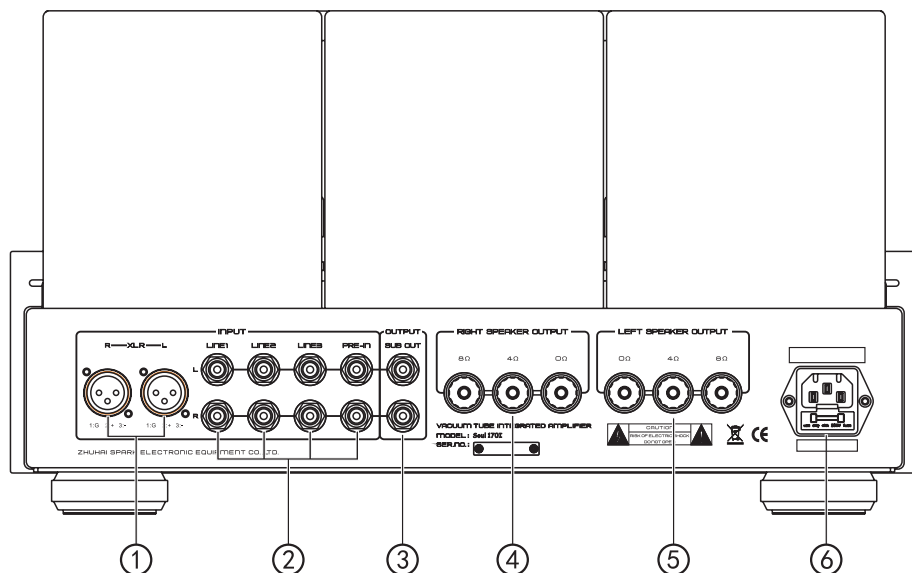


Diagram 5 : Soul 170I Back

①. Balanced input (XLR)

Connect a balanced audio input to the amplifier. Please make sure the left and right channel is connected correctly

②. Single-ended input (RCA)

Connect a single-ended audio input to the amplifier. Please make sure the left and right channel is connected correctly

③. SUB OUTPUT (SUB OUT)

One pair of Sub Output is located on the rear so

that if you want to get more Bass you can use the interconnector to connect with your Subwoofer system.

④. Right Channel Output

Used to connect with the right channel of speaker.

⑤. Left Channel Output

Used to connect with the left channel of speaker.

⑥. Power Socket with Main Fuse

Main fuse is located just below the power socket. Replace the fuse with the same type and value.

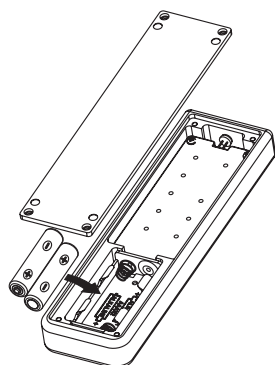
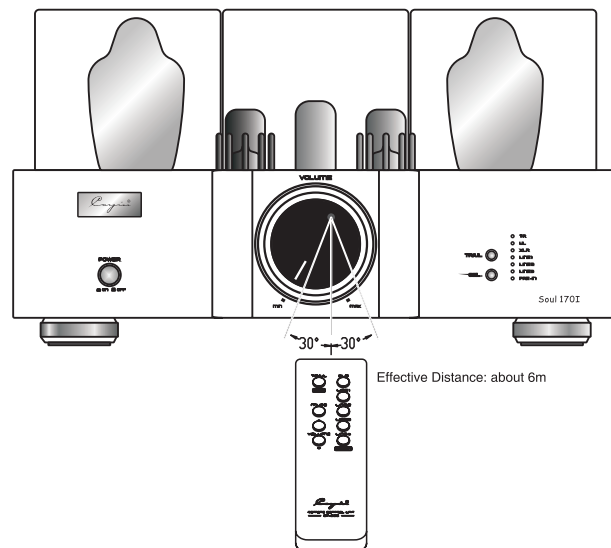
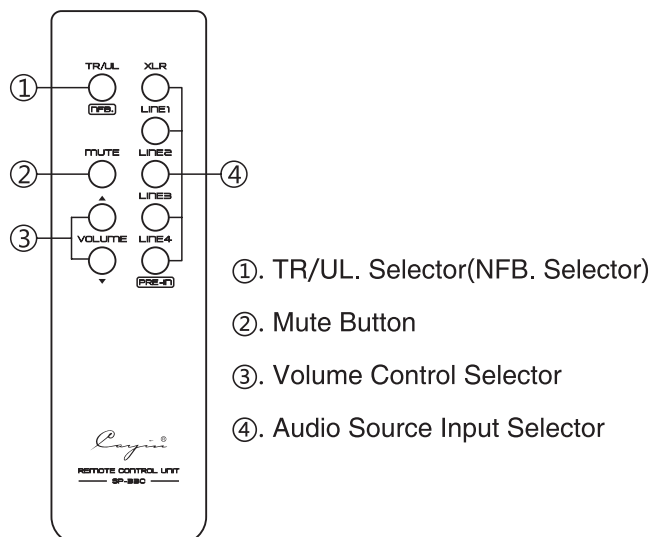
Installation

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 20cm'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.

Remote Control



Installation :

1. Remove the screws from the back cover of the remote.
2. Insert two 1,5V AAA batteries using the + and - indicators to insert them in the correct position.
3. Screw the battery cover back into place.

NOTE:

- ◆ Don't drop the remote control. Keep the remote control dry.
- ◆ Replace the batteries timely.
- ◆ Don't mix new and old batteries together and use the batteries with the same specification.
- ◆ Take out the batteries if you don't use the remote control for an extended period of time.
- ◆ Batteries with high quality are recommended.

Tube Replacement

| Tubes for the Machine | Tube Replacement |
|-----------------------|--|
| JJ 12AX7/ECC83S | 12AX7, E83CC, ECC803S |
| TUNG-SOL 6SN7GTB | 6SN7, 6SN7GT, 6H8C, ECC32, 6N8P, CV181 |
| TUNG-SOL KT170 | KT170, KT150 |
| RCA 22DE4 | 22DE4 |

System connection

Connection method of **CAYIN Soul 170I** with other audio equipments Take pictures below for your reference.

I . Speaker Connection:

1. Check the impedance of your speakers. When using a pair of speakers, you can use speakers with an impedance of between 4 and 8 ohms. **BE SURE TO USE THE MATCHING TERMINALS.**
2. Please notice the polarity of the cable and do not mix up the positive and the negative ends.

NOTE :

- ◆ Connect the speaker cables with the amplifier after it is well connected with the speakers.
- ◆ Connect both of the speakers to make sure of the acoustic fidelity.
- ◆ Please notice the signal direction indication of the cables.
- ◆ Do not mix up the positive and negative ends of

speaker cables or it will cause short circuit.

II. Audio Connection:

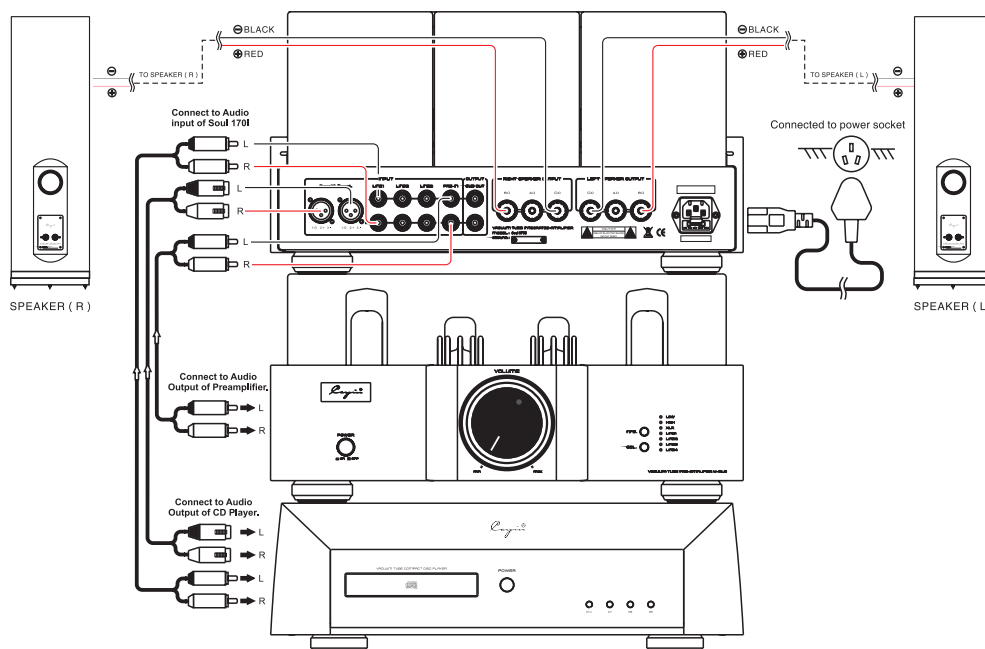
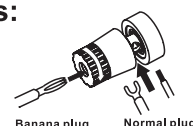
1. Please refer to the manuals of other connected equipments during the installation.
2. R refers to right channel while L represents left channel.
3. Do not fasten signal cable together with power cable and speaker cables. It will worsen the acoustic fidelity.

III. Connection of power cord:

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

IV. Connection of speaker cables:

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



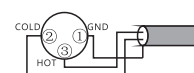
BALANCE Socket :

1. The BALANCE socket is with XLR input. The functions are following:
 - ◆ Music signal is transferred as balance signal without the outside disturbance.
 - ◆ Professional XLR connectors are used to raise reliability of connection.
2. In the following two systems, professional XLR connectors are used for inside connection.

① European System : ①PIN1 : ground;

②PIN2 : -cold;

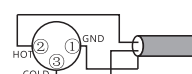
③PIN3 : +hot



②. USA System : ①PIN1 : ground;

②PIN2 : +hot;

③PIN3 : -cold



3. This amplifier uses the ②USA System.

If the XLR balance connector is used by European system, the restored signal of pre-amplifier or main amplifier will be inverse. Therefore, please setup the correct phase in advance.

Turning On

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

- ◆ Turn on the amplifier, the power indicator will be on and the working indicator will keep flickering.
- ◆ The working indicator will be on after 60 seconds. It means that the amplifier is working normally. If the working indicator is off, please turn off the power and contact with our local agent or our company.
- ◆ Select the right audio source channel, adjust the volume to a certain position and then you can enjoy the music you prefer.

NOTE : 1. When the audio system is under working state, don't unplug the signal cable or speaker cables, or it will cause damage to the amplifier and other equipments.
2. It should at least takes 2 minutes before you turn on the power again, or it will cause damage to the vacuum 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 — Do the operations as you are instructed 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. Or it will cause fire or electric shock.

Placement — Put the amplifier on a level place. Make sure that it doesn't bring damage to the children, adults and the amplifier itself.

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

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

Warranty Service — Do not open the product and change the components inside yourself. Opening the cover may expose you to dangerous voltage or other hazards. The warranty doesn't extend to any product that has been opened by you without permission of our company.

Troubleshooting — If you encounter any abnormal behavior during setup or playback, please refer to the advice in next pages of this manual to recover your amplifier back to normal operation. If you fail to rectify the problems after that, please contact your authorized dealer for technical support.

Warranty Service

1. The Product is warranted for a period of twelve (12) months from the date of original purchase (the "Warranty Period"). Replacement Products are warranted for the remainder of the original twelve (12) month warranty period. Six-month warranty on stock vacuum tubes.
2. The defective product must be returned to your dealer or our company for repairing when your dealer or our company accepts your requirement.
3. The warranty doesn't extend to any product that has been opened by you without permission of our company.

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



Troubleshooting

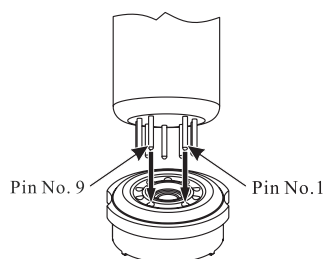
Please follow the instruction in the manual in order to keep the amplifier work in its best state. If wrongly operated and you thought that would be troubles please check according to following tips to look for the exact reasons.

| Problem | | Cause | Remedy |
|---|-------------------------|--|---|
| NO OUTPUT | Power Indicator 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. |
| | Power Indicator is ON. | NO signal input. | Check the function of the sound source. |
| | | | Check the input selection and switch to the proper input. |
| | | Volume is at ZERO. | Turn up the Volume. |
| 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. |
| | | Interference between the Power Cable and Signal Cable. | Please separate the Power Cable and Signal Cable making sure there is no interference between each other. |
| | | 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. | Keep away from the source of disturbance. Turn off and restore. |
| | | Low Battery. | Replace with new batteries. |
| | | Obstacles between the amplifier and remote. | Remove the obstacles. |
| No Indication on Bias Meter | | External High Voltage Fuse Burned. | Please exchange with same type and same value of fuse. |
| | | Troubles of inner parts or components. | Please contact with local agents or our company. |

NOTE: *Rayin*® 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:

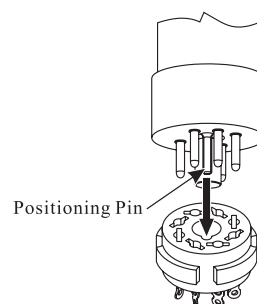
12AU7 (ECC82)、12AX7 (ECC83)、5BK7、12BH7、12AT7 (ECC81)、6922 (ECC88), etc. 9-Pin vacuum tubes.

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:

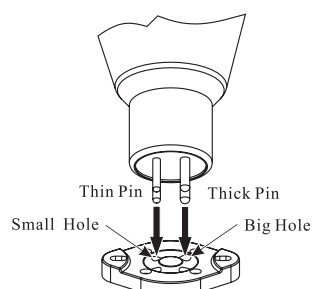
KT150、KT170、KT88、6550、EL34、6V6、6SN7、6SL7、5AR4, etc. 8-pin vacuum tubes.

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:

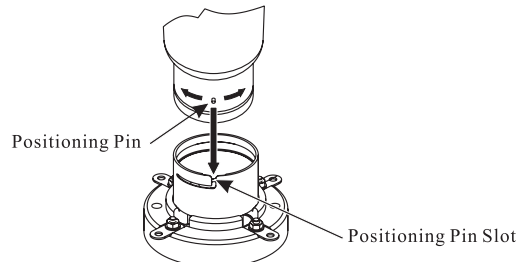
300B、2A3 etc. 4-pin vacuum tubes.

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.