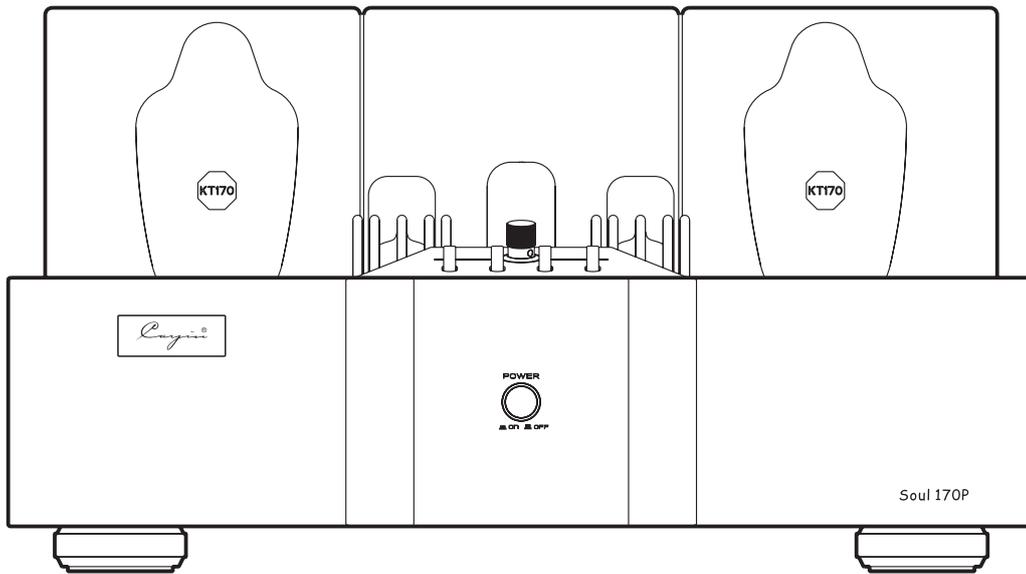


Cayin®



Soul 170P

VACUUM TUBE POWER AMPLIFIER

User's Manual

REV : 1.0 20250321



Thanks for choosing **CAYIN Soul 170P** Vacuum Tube Power 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. Soul 170P Vacuum Tube Power Amplifier × 1
2. Product User Manual × 1
3. Power Cord × 1
4. Spare Fuses:
 - ~ 220V-240V : T3.15AL250V × 2
 - ~ 100V-120V : T6.3AL250V × 2

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.

	<p>CAUTION</p> <p>RISK OF ELECTRIC SHOCK</p> <p>DO NOT OPEN</p>		<ul style="list-style-type: none"> ◆ 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 170P 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.



Product Features

- ◆ Pure tube, handcrafted, fully point-to-point wired.
- ◆ Utilizes two high-quality audio-grade EI output transformers.
- ◆ Custom-designed toroidal power transformer for optimal performance.
- ◆ Rectifier Stage: Uses with a single RCA 17AX4GT rectifier tube.
- ◆ Voltage Amplification Stage: Uses two JJ 12AU7/ECC82 tubes.
- ◆ Driver Stage: Uses two JJ 6SN7 tubes.
- ◆ Power Stage: Uses four TUNG-SOL KT170 tubes in Class A push-pull configuration.
- ◆ Capacitors: Uses premium AUDIOCAPX coupling capacitors manufactured in the USA.
- ◆ Dynamic Bias Circuit: Precisely controls the operating state of the power tubes, extending tube lifespan.
- ◆ Triode & Ultra-Linear Mode Selection:
 - Triode Mode: Delivers a refined, smooth, and natural sound, ideal for vocals and string instruments;
 - Ultralinear Mode: Provides an open, expansive sound with strong dynamics, suitable for large-scale music and dynamic recordings.
- ◆ Dual Timbres:
 - DYNAMIC: High sound density, wide dynamic range, powerful driving capability;
 - SOFT: Relaxed, delicate, and smooth sound signature.
- ◆ Selectable STEREO and MONO (Dual-mono) mode for versatile operation.
- ◆ Features XLR balanced input and RCA unbalanced input.
- ◆ Negative Feedback (NFB) Selection:
 - NFB.LOW Mode: Delivers a more relaxed sound;
 - NFB.HIGH Mode: Enhances precision and detail.
- ◆ Four-Stage Gain Control: Allows precise gain adjustments.
- ◆ Microcontroller (MCU) Protection Circuit: Includes multiple protection circuits and a soft-start function to ensure optimal amplifier operation.
- ◆ BMI Power Tube Protection Function.
- ◆ Thick-layer silver-plated internal wiring.
- ◆ Premium American walnut side panels.
- ◆ Convenient removable tube cage.

Specifications

Power Output	STEREO	TR:32W+32W (RMS Triode mode)	MONO	TR:64W (RMS Triode mode)
		UL:60W+60W (RMS Ultralinear mode)		UL:120W (RMS Ultralinear mode)
Frequency Response	8Hz ~ 70kHz (-3dB , RCA/XLR)			
THD	0.2% (1W/1KHz ; 2% Under Rated Power)			
S/N Ratio	105dB (RCA, A Weighted)			
	102dB (XLR, A Weighted)			
Input Sensitivity	820mV (NFB.LOW)			
	960mV (NFB.HIGH)			
Input Impedance	18kΩ			
Output Impedance	4Ω , 8Ω			
Input Terminals	RCA , XLR			
Tube	JJ 12AU7/ ECC82×2、 JJ 6SN7×2、 TUNG-SOL KT170×4、 RCA 17AX4GT×1			
WDH	430mm×420mm×238mm			
Net Weight	37.5kg			
Power Consumption	420W (MAX)			
Working Condition	Temperature : 0℃~40℃ Moisture : 20%~80%			
Storage Condition	Temperature : -20℃~70℃ Moisture : 20%~90%			

Front Panel

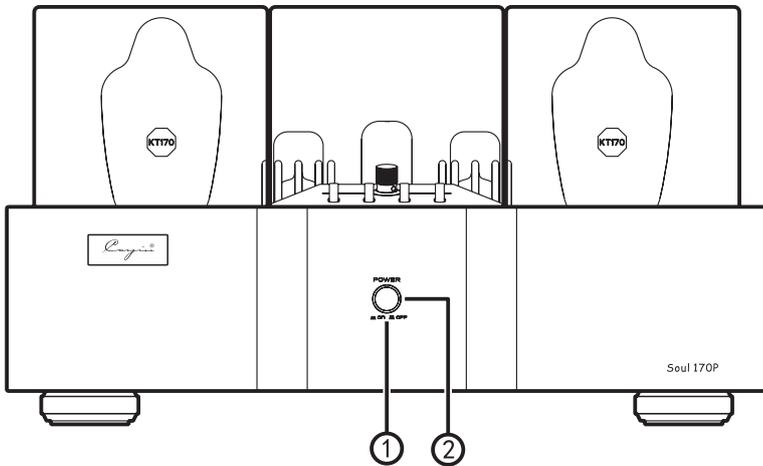


Diagram 1 : Soul 170P FRONT

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

Indicates the operating status of the amplifier:

- During startup delay, the status indicator light flashes.
- When operating normally, the indicator light remains steady.

Top Panel

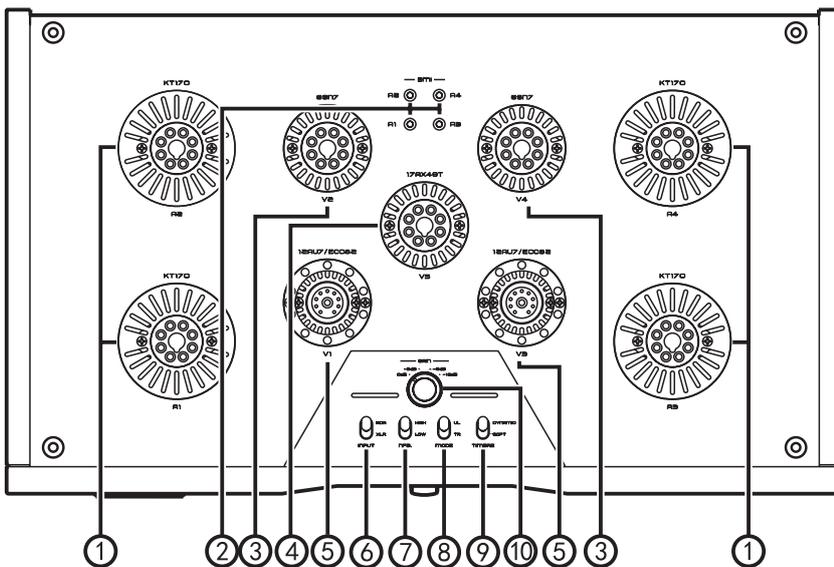


Diagram 2 : Soul 170P TOP

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.

①. A1, A2, A3, A4: KT170 Tube

②. **Bias Monitoring Indicator (BMI):** A1, A2, A3, A4 Monitor the operation state of the KT170 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 10.

③. V2, V4: 6SN7 Tube

④. V5: 17AX4GT Tube

⑤. V1, V3: 12AU7/ECC82 Tube

⑥. Input Selector:

Select balanced or single-ended input.

⑦. NFB. Selector:

Used to select circuit negative feedback level: LOW (low feedback) or HIGH (high feedback).

⑧. Mode Selector:

Use to select TRIODE or ULTRALINEAR; Operation State.

⑨. Timbre Selector:

Dynamic: Dynamic Working Mode;
Soft: Soft Working Mode.

⑩. Gain Selector:

Used to select four gain levels: 0dB, -3dB, -6dB, -12dB.



Rear Panel

AMP Mode Switch Instructions:

1. Pull the lever to B direction as shown in the diagram.
2. Push the lever up to select MONO mode.
3. Push the lever down to select STEREO mode.
4. Always turn off the amplifier's power before switching the AMP mode.

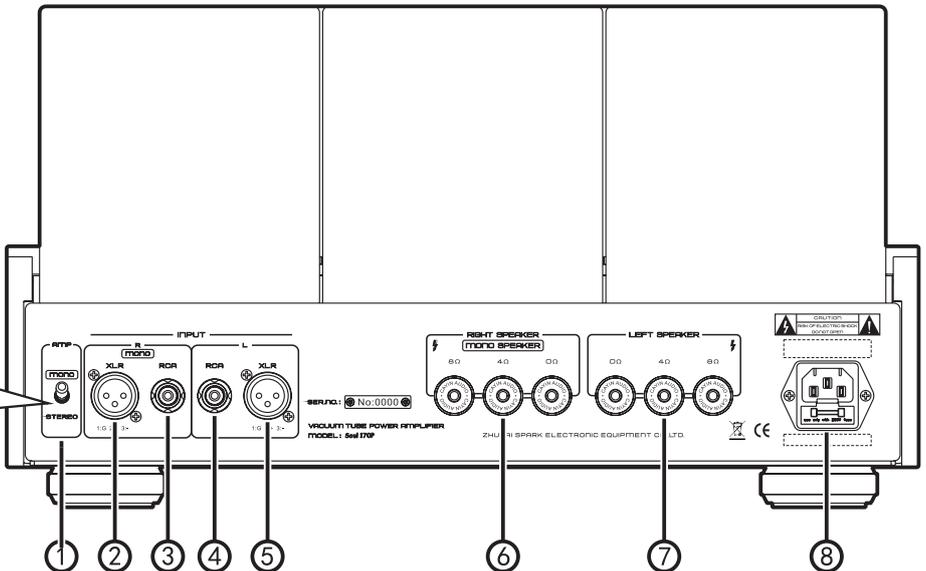
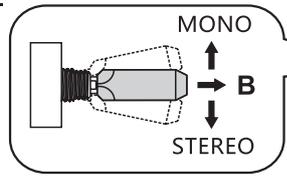


Diagram 5 : Soul 170P BACK

①.AMP Mode Switch (AMP):

Used to select MONO mode or STEREO mode. For details, refer to the diagram [AMP Mode Switch Instructions].

②.Right Channel Balanced Input (XLR):

Used to connect the balanced output of a preamplifier or similar device. **▲** In mono mode, connect to this terminal.

③.Right Channel Unbalanced Input (RCA):

Used to connect the unbalanced output of a preamplifier or similar device. **▲** In mono mode, connect to this terminal.

④.Left Channel Unbalanced Input (RCA):

Used to connect the unbalanced output of a preamplifier or similar device.

⑤.Left Channel Balanced Input (XLR):

Used to connect the balanced output of a preamplifier or similar device.

⑥.Right Channel Output:

Used to connect the right channel speaker. **▲** In mono mode, connect to this terminal.

⑦.Left Speaker Output:

Used to connect the left channel speaker.

⑧.Power Input Socket & Fuse Holder (FUSE):

The fuse holder contains the fuse. When replacing the fuse, use fuse with same specification.

Tube Replacement

Tubes for the Machine	Tube Replacement
JJ 12AU7/ECC82	12AU7, E82CC, ECC802S
JJ 6SN7	6SN7, 6SN7GT, 6H8C, ECC32, CV181
TUNG-SOL KT170	KT170
RCA 17AX4GT	17AX4GT

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.

System Connection

Connection method of **CAYIN Soul 170P** 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 :

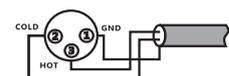
- ◆ Connect the speaker cables with the amplifier after it is well connected with the speakers.
- ◆ Connect both of the speakers to make sure of the acoustic fidelity.
- ◆ Please notice the signal direction indication of the cables.
- ◆ Do not mix up the positive and negative ends of

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.

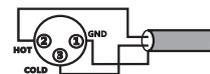
① European System :

- ① PIN1 : ground;
- ② PIN2 : -cold;
- ③ PIN3 : +hot



② USA System :

- ① PIN1 : ground;
- ② PIN2 : +hot;
- ③ PIN3 : -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.

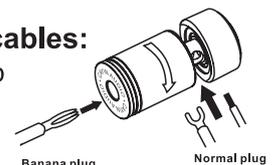
speaker cables or it will cause short circuit.

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 speaker cables:

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



IV. Connection of power cord:

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



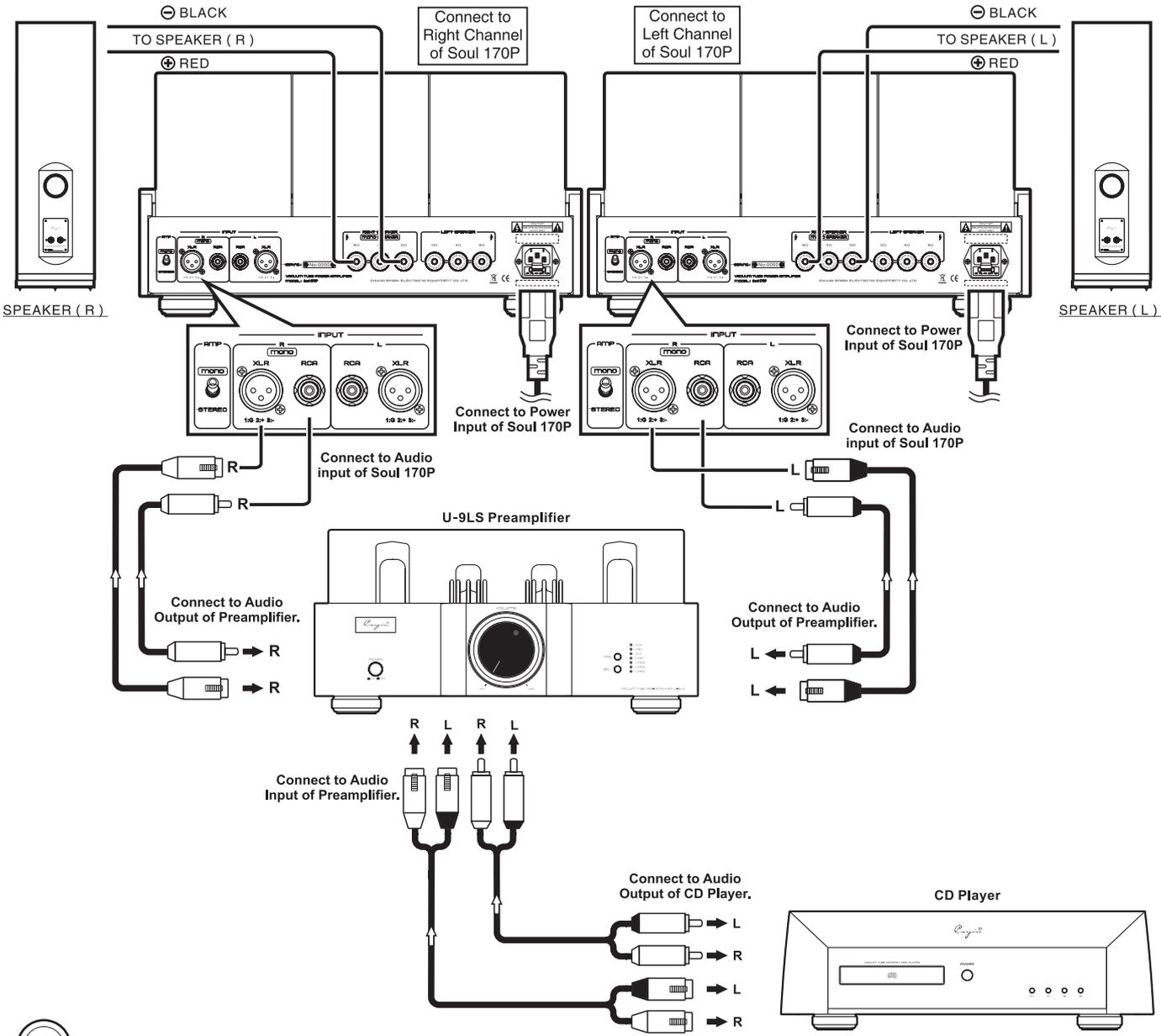
Equipment Connection Diagram I

MONO: Dual Mono Mode Amplifier Connection

1. Use two Soul 170P power amplifiers to form a dual-mono stereo system in Mono mode. When connect as dual-mono stereo system, switch the AMP MODE to MONO. For connection details, refer to the diagram [P5].
2. Connect the signal output from a CD player or similar device to the input terminal of the preamp.
3. The output from the preamp should be separately connected to the R-channel input terminal of each Soul 170P power amplifier.
4. In MONO mode, the two power amplifiers will operate as a stereo system, with the R-channel speaker tap of each Soul 170P connected to the speaker input correspondingly.

▲ Note:

- In MONO mode, connect to the right channel input terminal of each Soul 170P; do not use the left input nor speaker output tap.
- Before operating the AMP Mode, please ensure the unit's power is turned off.



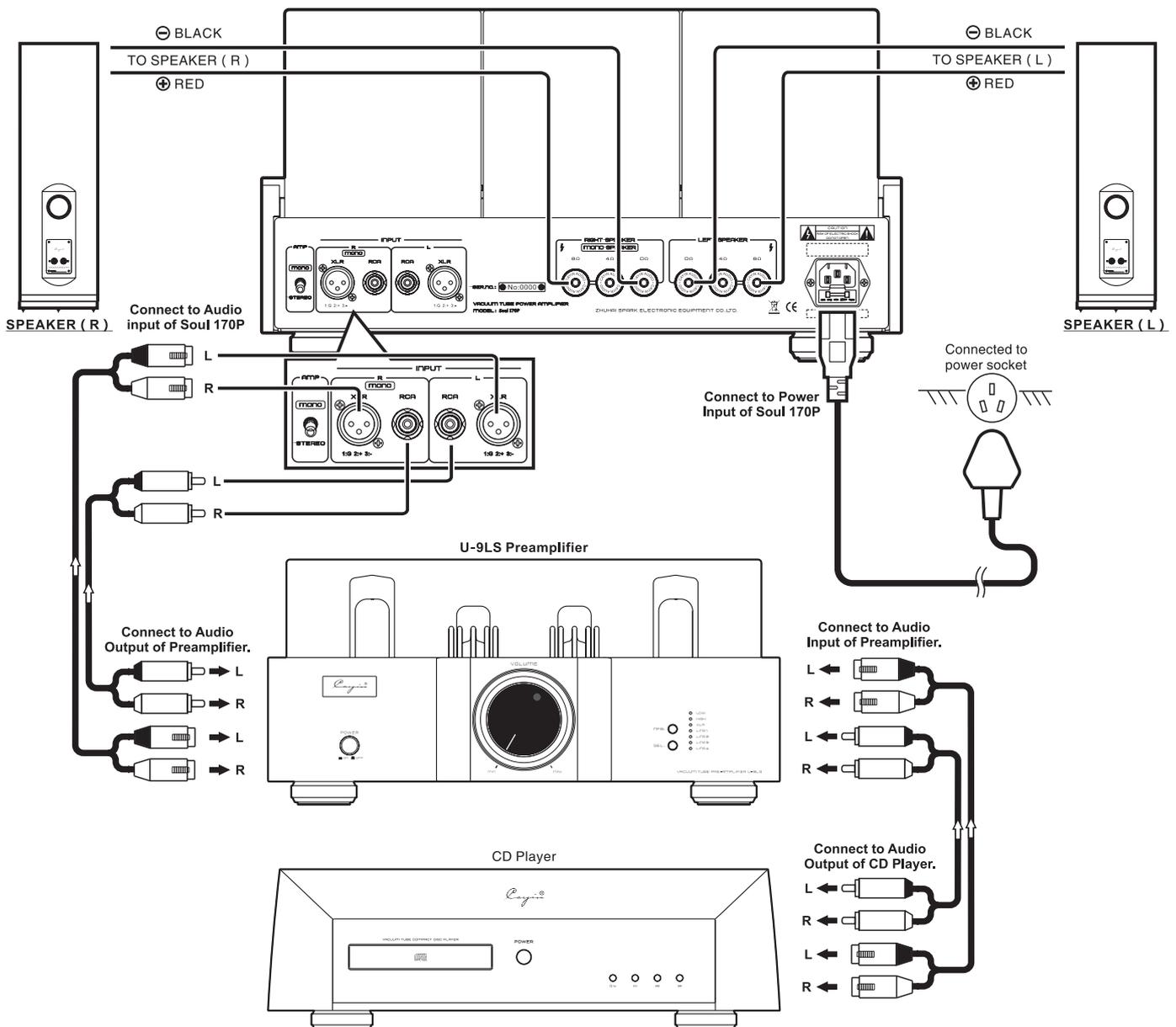
Equipment Connection Diagram II

STEREO: Stereo Mode Amplifier Connection

1. Use Soul 170P power amplifiers as a stereo power amplifier. When use as stereo power amplifier, switch the AMP MODE to STEREO. For connection details, refer to the diagram [P5].
2. Connect the signal output from a CD player or similar device to the input terminal of the preamp.
3. The output from the preamp should be connected to the left and right input terminals of Soul 170P power amplifier.

▲ Note:

- In STEREO mode, connect to both channel of the input terminals; when connecting the speaker, also connect bothchannel of speaker output taps.
- Before operating the AMP Mode, please ensure the unit's power is turned off.





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. Turn on: CD player → pre-amplifier → power amplifier
 2. Turn off: power amplifier → pre-amplifier → CD player
 3. 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.
 4. It should at least takes 5 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.

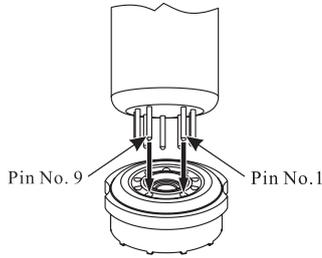
Problem		Cause	Remedy
NO OUTPUT	Power Indicator is OFF.	Power cord is not well-connected.	Check power cable connection or power outlet connection
		Main fuse is out.	Replace with the same type and value fuse.
	Power Indicator is ON.	NO signal input.	Check the function of the sound source.
			Check the input selection and switch to the proper input.
	BMI indicator is ON.	Abnormal current of KT170 Power Tube and BMI reacts.	Switch off the amplifier and switch on again after 5 minutes.
			Defective KT170 Power Tube and BMI reacts.
Connect the Audio Cable during Powering on and abnormal current makes the BMI react.			Switch off the amplifier and reconnect the audio cable.
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.	

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How to Install Vacuum Tubes

How to Install 9-Pin Vacuum Tubes

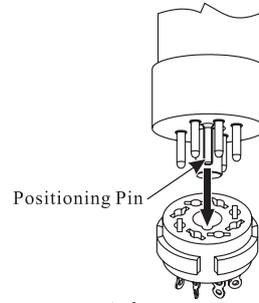


Applicable vacuum tube:
12AU7 (ECC82)、12AX7 (ECC83)、5BK7、12BH7、
12AT7 (ECC81)、6922 (ECC88), etc. 9-Pin vacuum tubes.

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

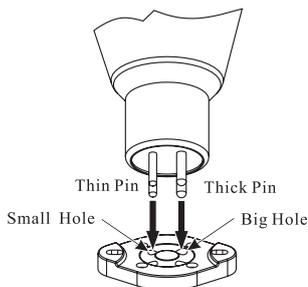


Applicable vacuum tube:
KT150、KT170、KT88、6550、EL34、6V6、6SN7、6SL7、5AR4, etc. 8-pin vacuum tubes.

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

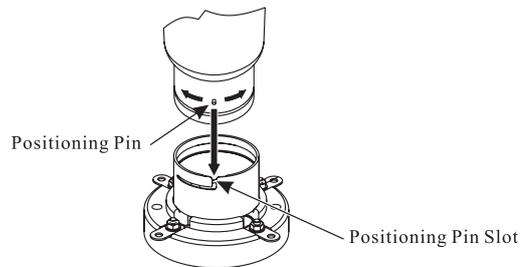


Applicable vacuum tube:
300B、2A3 etc. 4-pin vacuum tubes .

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.

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