

# Caspian Stereo Power Amplifier

Set Up Guide and Product Manual



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## INTRODUCTION

Thank you for your purchase of the Roksan Caspian Stereo Power Amplifier.

This amplifier is designed and manufactured to the highest specification and rigorously tested to offer you many years of trouble-free pleasure.

Your Caspian Stereo Power Amplifier is at the heart of your hi-fi system. Its correct installation, set-up and operation will have a profound influence on the sonic performance of the entire hi-fi installation.

Please read the contents of this manual thoroughly. It will help you to understand your hi-fi equipment better and enhance your listening pleasure. Please keep this manual for future reference.

## UNPACKING

Included in the packing of your Caspian Stereo Power Amplifier you will find:

- One mains lead fitted with the correct mains power plug for your country
- One information pack.

After removing these items please retain all packing materials. Correct packing is necessary for future possible transportation of your amplifier.

## MAINTENANCE

After disconnecting the amplifier from the mains supply, the casing and front panel may be cleaned with a lightly dampened lint-free cloth. Avoid using abrasives substances or solvents.

## EU DIRECTIVES



Roksan declares that the apparatus "Caspian Stereo Power Amplifier" complies with the essential requirements and other relevant provisions of Directive 1999/5/EC".



**NOTE:** This product must be earthed. Please ensure that other equipment connected to it is earthed according to the manufacturer's instructions.

## AC MAINS SUPPLY

Your Caspian Stereo Power Amplifier is set to operate from a fixed supply voltage which is marked on a label next to the mains input socket. Before connecting the mains lead please check that your mains supply corresponds to this list below:

230 V Products \_\_\_\_\_ Voltage Range: 220 - 240V

115 V Products \_\_\_\_\_ Voltage Range: 100 - 120V

100 V Products \_\_\_\_\_ Voltage Range: 90 - 110V

The mains lead supplied with this product has an IEC C13 mains plug which is inserted into the Mains Input Socket on the unit's rear panel. The other end is a moulded plug appropriate to that for your country. In the UK this is the standard UK13A plug.



**NOTE:** Other international markets will require a different value plug and protection fuses. Please contact us for more details.

This plug should ordinarily not be removed from the lead. If you do remove it, please dispose of it safely so that it cannot be plugged into a mains socket whilst in a potentially dangerous condition. If your lead has been damaged please obtain a complete replacement lead from your dealer.

Should you move to another area where either the mains voltage or the mains plugs are different from those as supplied with your amplifier, please contact the appointed Roksan distributor for assistance.



**Please observe correct mains polarity at all times.**

The mains fuses are located on the rear panel below the IEC Mains Socket. These must only be replaced by the fuse type and rating as described on the fuse rating label on the rear panel of the unit.

If the equipment is likely to be unused for some time, unplug it from the mains supply.

## CONNECTING MAINS POWER



**NOTE:** The amplifier uses high current circuitry. Do not unplug the cable while the amplifier is on.

The moulded IEC plug of the supplied mains lead should be plugged into the socket on the rear of the unit first and then plugged into the mains supply. The Mains Power Switch is on the left front underside of the amplifier. This switch can be left on; if however the amplifier is likely to be unattended for a long period, switch it off and unplug the mains lead from the wall.

## LOCATION

Your amplifier should be located in a well ventilated area and kept away from sources of heat, dust, humidity and direct sunlight.

The amplifier may be positioned either as a free standing unit or alongside another audio/video product. Never place the amplifier on other electronic equipment, carpet or any surface likely to hinder normal ventilation. Never allow liquids or other objects to fall into the unit.



**NOTE:** The feet on the Caspian products are made from natural rubber for improved sound quality. Unfortunately, they can sometimes react with oiled, natural wood surfaces. It is recommended to place a non porous material between the feet and the wooden surface to prevent the reaction and preserve the finish of the wood.



**NOTE:** This unit contains no user serviceable parts. Do not remove any panels or attempt to service it yourself. **Unauthorised servicing will void the warranty.**

## FRONT PANEL VIEW



1. AC Mains Power Switch
2. Left Channel LED:  
Red - On  
Green - Ready  
Orange/Green - Overload
3. Right Channel LED:  
Red - On  
Green - Ready  
Orange/Green - Overload

## REAR PANEL VIEW



1. XLR Balanced Inputs
2. Input Selector Switch
3. RCA Single Ended Inputs
4. RCA Single Ended Output (Bypass)
5. XLR Balanced Output (Bypass)
6. Chassis Ground Terminal
7. Serial Number
8. Loudspeaker Output Terminals
9. Voltage & Fuse Rating Label
10. AC Mains Fuse Holder
11. AC Mains Input Socket

## SIGNAL CONNECTIONS

All the inputs and outputs use gold plated RCA Phono and XLR connectors and should be connected accordingly:

Left Channel - Black; Right Channel - Red

### Input Connections:

Two pairs of inputs are available on your amplifier. One pair is a line input (RCA) the other is a balanced input (XLR). They are designed for connection to units which are equipped with a volume control using appropriate type and length cables.



**CAUTION:** Any attempt to connect the amplifier directly to a source such as CD, Tuner, DVD player, etc may result in a volume level that will damage the amplifier and any loudspeakers connected to it.

### Output Connections:

Two pairs of outputs are available on your amplifier. One pair is a line output (RCA), the other is a balanced output (XLR). The outputs can be used to connect additional amplifiers in a chain that will maintain a stable and powerful signal to jointly control loudspeakers with more than a single amplifier.



**NOTE:** The amplifier is designed to be used as a two channel amplifier and can not be bridged to form a Monoblock.

## LOUDSPEAKER CABLE CONNECTIONS

Loudspeakers and their cables can be connected to the amplifier in a number of ways. The following sections guide you through the different options available to you depending on your electronics, cable and personal choice/ preference.

The right and left loudspeakers are connected to the amplifier via the binding posts. The amplifier offers the standard 4mm speaker cable binding posts or bare wire connection.



Litz-wound loudspeaker cables or those with a complex plaited construction can present a highly capacitive load to an amplifier and may cause damage to the amplifier and/ or degrade the sound of your system. Choose a cable of simple construction, manufactured from high-quality materials. Your ROKSAN retailer will be able to advise.



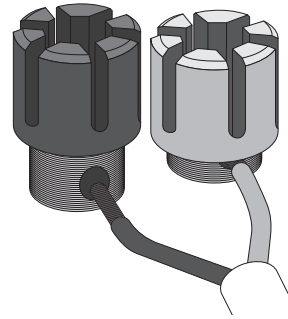
**NOTE:** DO NOT use speaker cable with conductor size less than 16 AWG (1.6mm Diameter). The binding posts accept conductor sizes up to 12 AWG.



**NOTE:** We strongly recommend that you use professionally terminated speaker cables using 4mm plugs. Any attempt to connect cables which are not terminated may result in damage to the amplifier if not done correctly.

Making a connection using bare wire must be done correctly so that there are no stray strands of wire to touch the opposite terminal. Carefully strip the insulation on each wire exposing about 12mm (1/2") of the conductors. If the conductor is stranded, twist the strands together on each conductor.

Unscrew the binding post and feed it through the cross-hole and tighten the binding post securely making sure that there are no loose strands or bare ends protruding through the post.



## Speaker Connection Polarity

Carefully observe polarity ensuring that the red (+) speaker terminal is connected to the red (+) amplifier terminal and the black (-) speaker terminal to the black (-) amplifier terminal.

When both left and right channels are connected to their respective loudspeakers the amplifier is ready for use.

## CONNECTING TO LOUDSPEAKERS

There are 3 ways to connect your loudspeakers to the amplifier(s). They are single wire, bi-wire and bi-amp.

### What is Single Wiring?

Single wiring is the quickest and simplest way to connect the loudspeakers. In some cases, it can yield better results than bi-wiring. This uses a single pair of loudspeaker cables to connect the amplifier to the loudspeakers sending the full range signal to the speakers along the cable.

### What is bi-wiring and bi-amping?

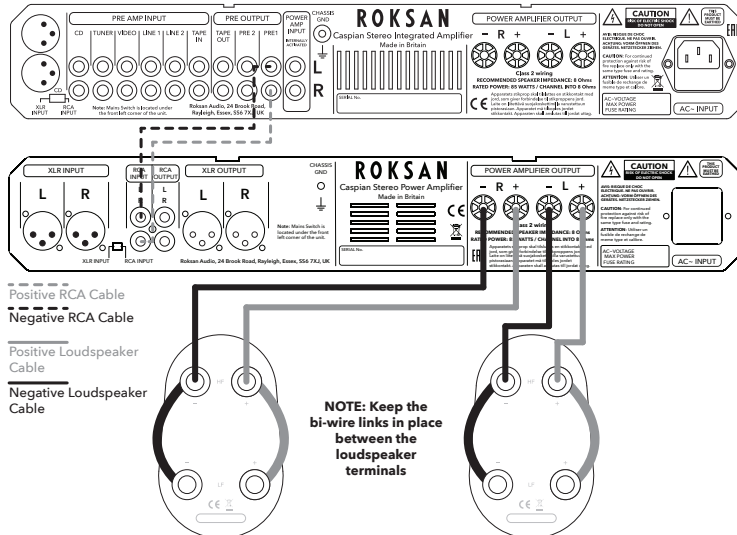
A loudspeaker's crossover varies the impedance seen by the speaker and by the amplifier as well as directing the frequencies to the corresponding drivers. When a full range audio signal is applied to the terminals of a full range speaker system, the bass driver(s) will only receive low frequency signals, the mid driver receives the mid band frequency signals and the tweeter only gets sent high frequency signals. This means that if separate speaker cables are connected to the low and high frequency terminals, not only have the drive units had the frequency's directed and divided for them, but if using a bi-wire setup the two separate speaker cables will now also carry different signals due to the impedance.

The effects of bi-wiring can be subtle depending on the cable construction and design. It could be better to go for one better engineered cable than two for bi-wiring. We recommend experimenting with both configurations to find out which one works best in your system.

Bi-amping adds an additional amplifier to the system so that the one amplifier drives the low frequencies and the other amplifier drives the high frequencies. Bi-amping can therefore present a 'cleaner' signal at both the low frequency and high frequency speaker terminals, and because the high and low frequencies have already been separated, each has a minimal effect on the other - in essence the bass has less effect on the delicate treble. In order to best take advantage of bi-amping the amplifiers should be as independent from each other as possible. For instance, if using two stereo amplifiers you should use one stereo amplifier for the bass and the other for the treble, minimising the impact of the bass on the treble.

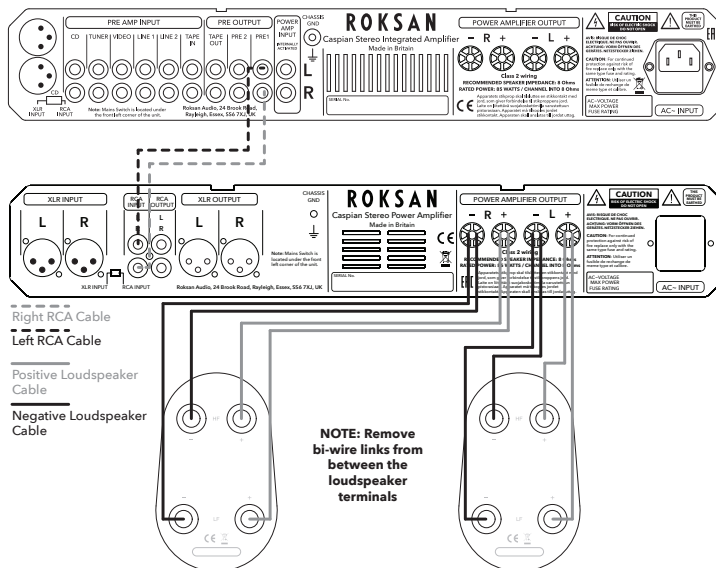
## Single Wiring The Loudspeakers

When single wiring, connect the loudspeaker cables as illustrated below.



## Bi-Wiring The Loudspeakers

Bi-wiring is achieved by using a single amplifier, but splitting the high and low frequency loudspeaker cables at the amplifier. It uses the same principles as bi-amping, but the two sets of cables that feed the high and low frequency terminals on the loudspeaker connect to the single set of terminals on the amplifier. Connect the cables as illustrated below.

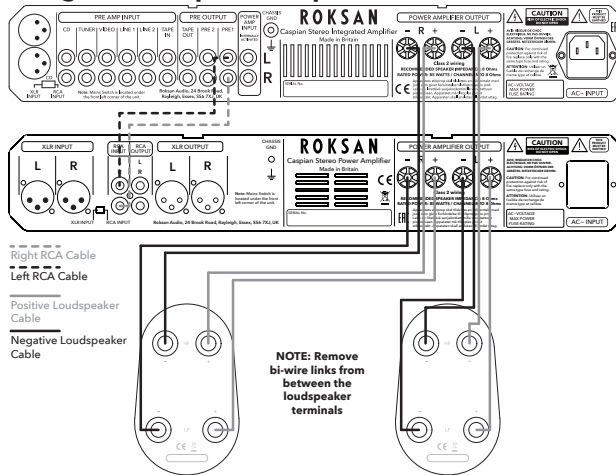




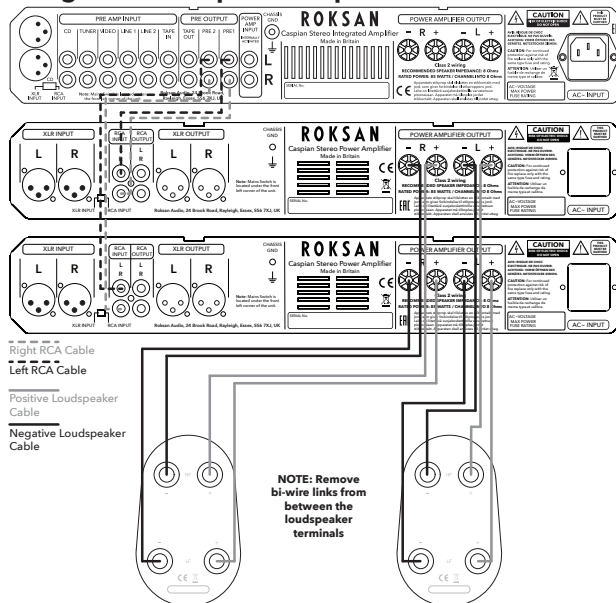
## Bi-Amping The Loudspeakers

Bi-amping is similar to bi-wiring, but uses the Caspian Power Amplifier to drive the low frequency terminals. One set of cables goes from the Caspian Integrated Amplifier to the high frequency terminals on the loudspeaker and the power amplifier drives the low frequency terminals. Connect the cables as illustrated below.

### Bi-amping with integrated and power amplifiers



### Bi-amping with integrated and 2 power amplifiers



## SWITCHING ON

The power switch is on the left front underside of the amplifier. This switch is the only method of controlling the power to the amplifier.

When switched to 'on' the amplifier runs a self-diagnosis. This is a quick process where the Mode LED indicator will momentarily be green. When completed, the LED will turn red and the amplifier is now ready for use.

## PLAYING MUSIC FOR THE FIRST TIME

When first turning the amplifier on, it is important to follow these simple steps in order to protect it and your loudspeakers.

1. Reduce the volume of the pre/ integrated amplifier to minimum
2. Start playing from your chosen source (CD, DAC, Turntable, etc) and increase the volume slowly
3. The LED indicators on the power amplifier will automatically switch to red and will be activated within a few seconds.

## RUNNING IN THE NEW AMPLIFIER

Any new electrical equipment requires a "running-in" period, warming up the components to the optimum working temperatures, acquiring the electromagnetic properties and stability that offers the listeners optimal musical performance. We suggest that after the initial playing period the amplifiers should be left playing at low volumes for up to 40 hours. Clear improvements to clarity and speed will be apparent after the first 10-15 hours of playing with the amplifier reaching its optimal performance after 40 hours.



**NOTE:** When switched off for long durations the procedure described above may need to be performed again.

## KNOW YOUR CASPIAN

When you first power up from the Mains Switch the amplifier goes into the idle mode and the Mode Indicator LED glows green.

If the amplifier heat-sink temperature rises above 55°C the internal fan will activate to keep heat-sink temperature constant. If the output level is reduced the fan will continue for approximately 45 seconds and will switch off once the temperature has lowered.

If for any reason the amplifier overheats through overload or lack of ventilation, it will revert to shut-down mode for protection. The Mode Indicator LED will blink orange/green.

Reset the amplifier by switching the mains switch off and on.

If the output is accidentally shorted the amplifier will revert to shut-down. You can manually re-activate amplifier after the short/fault has been eradicated.

In the unlikely event of an internal fault such as a power supply failure, the Mode Indicator LED will glow green and the amplifier will shut down. If the fault persists, the amplifier will stay in shut-down/ in protection mode and you should consult your Roksan dealer.

## TROUBLESHOOTING

If you suspect that your amplifier is not operating properly, you should check all the connections carefully. Pay particular attention to speaker phasing and channel connections. RCA plugs should be fully inserted - a frequent cause of problems is that RCA plug surrounds do not make proper contact. Below are some commonly encountered problems with suggestions for possible cure. The list is not exhaustive: If you have any unresolved problems, please consult your appointed Roksan dealer or distributor.

SYMPTOM	LIKELY CAUSE	SUGGESTED REMEDY
<ul style="list-style-type: none"> <li>No power.</li> </ul>	<ul style="list-style-type: none"> <li>AC Mains lead not inserted properly</li> <li>Unit not switched on.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure AC mains lead is fully inserted</li> <li>Switch unit on at front left underside.</li> </ul>
<ul style="list-style-type: none"> <li>No output on one or both channels.</li> </ul>	<ul style="list-style-type: none"> <li>Missing or bad input signal connection</li> <li>Incorrect speaker connection</li> <li>Wrong input selected on integrated or pre-amplifier</li> <li>Tape Monitor selected on integrated or pre-amplifier</li> <li>Over heating</li> <li>Amplifier or pre-amplifier are in the mute position.</li> </ul>	<ul style="list-style-type: none"> <li>Check to make sure that the integrated amplifier or the pre-amplifier are connected</li> <li>Check all input connections</li> <li>Check speaker output connections on rear panel</li> <li>Select correct input, ascertain source is working</li> <li>Deselect Tape Monitor on your integrated or pre-amplifier</li> <li>Allow amplifier to cool, increase ventilation or use at lower volume</li> <li>Deselect Mute (check volume setting first)</li> <li>Switch to RCA or XLR as appropriate.</li> </ul>
<ul style="list-style-type: none"> <li>Very low sound output.</li> <li>Poor loudspeaker imaging, lack of Bass output.</li> </ul>	<ul style="list-style-type: none"> <li>Loudspeakers connected out of phase.</li> </ul>	<ul style="list-style-type: none"> <li>Check polarity of speaker connections (especially important if bi-wiring, bi-amping).</li> </ul>
<ul style="list-style-type: none"> <li>Hum from loudspeakers.</li> </ul>	<ul style="list-style-type: none"> <li>Incorrect grounding.</li> </ul>	<ul style="list-style-type: none"> <li>Check Mains polarity and grounding on all connected equipment.</li> </ul>

## WARRANTY

There are no user-serviceable parts inside your Caspian Stereo Power Amplifier. If a fault should develop, refer any servicing to your appointed Roksan dealer, distributor or Roksan approved service agent.

Both the craftsmanship and the performance of this product is covered by the manufacturer's warranty against manufacturing defects provided that the product was supplied by an authorised Roksan retailer under the consumer sale agreement. For the period of cover please refer to the product page on our website: [roksan.com](http://roksan.com) for the product you have purchased.

When purchasing Roksan products, please keep your receipt of purchase safe, as this validates your warranty.



### **This warranty excludes:**

1. Damage caused due to accident, misuse, neglect and incorrect installation, adjustment or repair.
2. Liability for damage or loss during transit from the retailer or purchaser to Roksan or its authorised distributor for the purposes of repair or inspection.
3. Carriage costs to Roksan that will be borne by the consignor.

All claims under this warranty must be made through an authorised Roksan retailer.

If equipment returned for repair to Roksan is found on inspection to not comply with the product specification, Roksan reserves the right to make a charge for examination and return carriage.



**NOTE: Unauthorised servicing will void this warranty.**

## **SPECIFICATIONS**

### **INPUTS**

Input 1 (Balanced): 1 x pair XLR sockets

Input 2 (Single ended): 1 x pair RCA sockets

Input Impedance: 38 k $\Omega$

Input Sensitivity: 240 mV RMS

Signal Input L+R Channels: Balanced and single ended

Signal Output Chain Output L+R channels: Balanced and single ended

### **OUTPUTS**

Output 1: 1 x pair RCA sockets

Output 2: 1 x pair XLR 3 pin plugs

Output Voltage: 700 mV

Output Power: 85 Watts in to 8  $\Omega$  both channels driven  
125 Watts in to 4  $\Omega$  both channels driven

Output Current: 60 A peak to peak

Damping Factor: 160 measured at 8  $\Omega$

Frequency Response: -3 dB, <3 Hz. > 100 kHz

Gain: 31.6 dB straight or untrimmed 0.316 untrimmed to fully trimmed

Harmonic Distortion: <0.005% 1kHz into - 8 Ohm

Signal to Noise Ratio: Line 100 dBA (ref 900 mV)

### **POWER SUPPLY**

Power Supply: 350 VA Ultra low noise toroidal transformer

Power Source: 100 - 120 V, 50/60 Hz  
220 - 240 V, 50/60 Hz

Power Consumption: Full power 2 channels 8 Ohm <330 W, 4 Ohm <550 W

Dimensions (W x D x H): 432 x 330 x 70 mm  
432 x 330 x 80 mm (Including feet)

Weight: 13 Kg

All specifications are liable to change without notice. E&OE





# ROKSAN

**MADE IN  
BRITAIN**



**Designed and built  
in Great Britain.**

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