

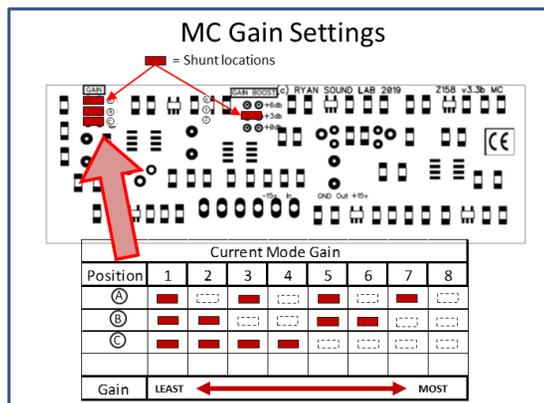
RSL Phono-Stage Owner's Manual

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The Z158 MC boards have two gain adjustments: (1) labelled “Gain” (with shunt positions A, B, C) and (2) “Gain Boost” (with positions +6db, +3db, 0db). These allow for a very large range of gain settings to suit most MC cartridge impedances, which are typically between 3 ohms to 40 ohms. It is recommended that initially you leave the “Gain Boost” shunt on “+3db” (middle position) while you make adjustments to the “Gain” shunts on the left. Note, there is only 1 shunt on the “Gain Boost” pins but the “Gain” pins can have 1, 2 or all 3 shunts installed.

Now, consulting the chart below, you can increase or decrease the gain by configuring the shunts are shown, moving to the right or left in the chart as desired to effect the change. For example, if your shunts are positioned as shown in column 3, reposition them to look like column 4 or higher for more gain.



If, after adjusting the Gain to “most” or “least” from the chart below you still need more adjustment then move the Gain Boost shunt to the 1st or 3rd position to add or reduce gain by another 3 db.

6. Specifications

MM:

- Frequency response: 20 Hz – 20kHz +/- 0.3db (guaranteed)
- Channel matching: 1kHz gain within +/- 0.1db
- Input impedance: 47k ohms / 100pf. (adjustable)
- Voltage mode gain: 40db (nominal) (adjustable)

MC:

- Frequency response: 20 Hz – 20kHz +/- 0.3db (guaranteed)
- Channel matching: 1kHz gain within +/- 0.1db
- Cartridge internal impedance range: 3 to 40 ohms
- Total gain: 60db +/- 8db (adjustable, cartridge dependent)

1. Congratulations!

Congratulations on your purchase of the RSL Phono-Stage. This unit will bring your turntable music to life with its dynamics, clarity and tonality. It has been tested and listened to before shipping and should sound excellent right from the start, but we recommend allowing up to 2 weeks for “burn-in” to get the best sound.

2. Warranty

Your new RSL Phono-Stage was engineered and hand-crafted with care, then tested, and carefully packed for delivery to you. It is warranted for 2 years from the date of purchase against defects in materials and workmanship. During the warranty period, Ryan Sound Lab will repair or replace any defective part(s) in the Preamp and Power Supply at no cost to you. Please save the original packaging in the unlikely event that the whole unit would need to be returned. If there appears to be a problem, please first contact Ryan Sound Lab at info@ryansoundlab.com.

In addition, the RSL Phono-Stage are guaranteed to meet or exceed your expectations for 60 days from the date of purchase. During that period, if for any reason you are not completely satisfied with your purchase, simply return the unit(s) for a full refund. You pay only return shipping.

Also, please be aware that RSL cannot be held liable for consequential damages to other equipment. RSL's liability is limited to the cost of the RSL equipment.

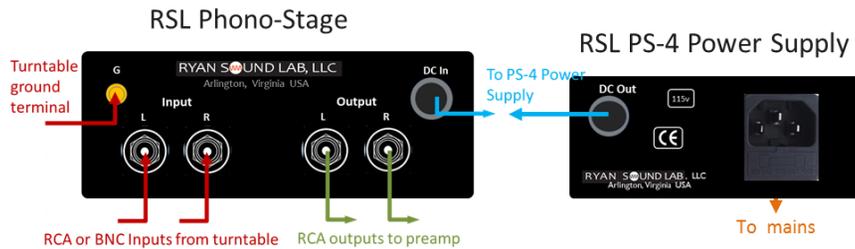
3. Safety notes regarding the power supply

 Your unit was shipped with a separate linear power supply set for the proper voltage for your country. Please verify you have the correct voltage by referring to the sticker on the rear panel before plugging it in. Plugging in a 115v power supply to 230v mains may result in permanent damage to your unit.

⚠ There are no lethal voltages inside the Phono-Stage case. However, to avoid accidental circuit damage, please turn off the power and unplug the cable from the power supply before opening the case.

4. Connecting the RSL Phono-Stage

Use the following rear panel illustration to hook up your Phono-Stage. Your unit may have either RCA or BNC input connectors. Use adapters if they don't match your turntable leads. Attach the turntable ground wire to the thumbscrew on the rear of the unit. Attach the Phono-Stage to the PS-4 Power Supply with the special DIN cable provided.



Important! There are no mains frequencies inside the Phono-Stage case to minimize hum pickup. However, the MC boards are sensitive to hum pickup from external sources, such as conventional power supplies and turntable motors, so please locate the Phono-Stage away from such hum sources, including the PS-4 power supply.

5. Inside the RSL Phono-Stage

The RSL Phono-Stage has the flexibility to accommodate either MM (moving magnet) or MC (moving coil) plug-in boards to match your cartridge. There is a sticker on the rear panel to indicate which boards were installed when it was shipped.

If you need to change board types, mute your preamp, disconnect the PS-4 power supply, remove the top cover, pull the two existing boards straight up and out, then fully insert the



new ones making sure the connector pins all line up. An Allen wrench is provided for removing the two front top screws while a standard Phillips screwdriver is needed for the rear panel top two screws to allow removal of the case top section to gain access to the plug-in boards.

Optional Grounding Connections

To minimize turntable hum pickup, you can select none, one or both of the following grounding options:

- Attach the turntable ground wire to the rear thumbscrew on the Phono-Stage.
- Leave in place or remove the shunt (yellow jumper) in the center rear of the motherboard which connects signal ground to the earth ground of the enclosure. The enclosure is grounded through a separate wire in the cable to the center pin on the mains connection (earth) at the power supply.

For Moving Magnet Cartridges: The RSL Z159 MM boards have industry standard input resistance of 47k ohms. The capacitance is adjustable over a range of 0 to 367pf with 100pf as nominal. The chart below shows the possible settings. Remember, there is already a cable capacitance from the turntable of about 120pf which should be added to the value you choose below to find the total cartridge capacitive load. If in doubt, just leave it at 100pf – the setting as shipped.

MM Settings
= Shunt locations

Input Capacitance								
Position	1	2	3	4	5	6	7	8
Ⓐ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Ⓑ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Ⓒ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
pf	367	320	267	220	147	100	47	0
	MOST			←————→			LEAST	

The gain shunt is normally set for 40db (middle position) but can be boosted or cut by +/- 3db by moving the shunt up or down. Only one shunt is used on the gain pins.

For Moving Coil Cartridges: The RSL Z158 MC boards use a special “current capture” input mode (sometimes referred to as “DrT mode” after its inventor in the 1970’s) which maximizes the sound quality. It has different input settings than conventional MC amplifiers and does not use “input compensation” for resistance and capacitance. Instead, it uses gain settings to allow matching to the cartridge’s internal impedance.