

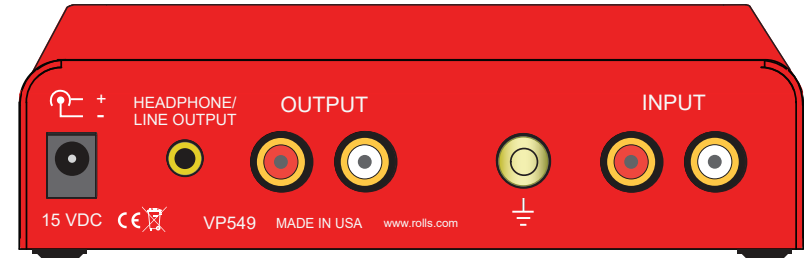
The RIAA equalization curve was intended to operate as the global industry standard for records since 1954. However, it is almost impossible to say when the change actually took place.

RIAA equalization is a form of pre-emphasis on recording and de-emphasis on playback. A recording is made with the low frequencies reduced and the high frequencies boosted, and on playback the opposite occurs. The net result is a flat frequency response, but with attenuation of high frequency noise such as hiss and clicks that arise from the recording medium. Reducing the low frequencies also limits the excursions the cutter needs to make when cutting a groove. Groove width is thus reduced, allowing more grooves to fit into a given surface area, permitting longer recording times. This also reduces physical stresses on the stylus which might otherwise cause distortion or groove damage during playback.

A potential drawback of the system is that rumble from the playback turntable's drive mechanism is amplified by the low frequency boost that occurs on playback. Players must therefore be designed to limit rumble, more so than if RIAA equalization did not occur. Using a rumble filter to filter out the subsonic frequencies many help mitigate the noise from the turntable.

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## VP549 Phono Preamp



### SPECIFICATIONS

I/ O Connectors:	RCA, 1/8" TRS Stereo
Input Sensitivity:	30 dB gain @ 1kHz, 47k ohms
Input Impedance:	47k ohms
Output Impedance:	32 ohms Headphone, 470 ohms RCA
Frequency Response:	14Hz to 23kHz
Max Output Level:	>10dB @ 1kHz at .1% dist.
Equalization:	RIAA +/- 1 dB, 20Hz to 20kHz
Rumble Filter:	20Hz
THD:	.02% @ 1KHz
S/N Ratio:	>94 dB unweighted
PWR:	15 VDC
Size:	5.5"w x 3.5"d x 1.25"h
Weight:	.8 lbs
Indicator:	1 Power LED

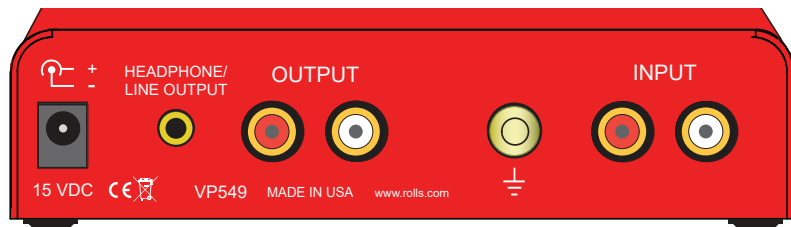
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The Bellari VP549 is a phonograph preamplifier with RIAA EQ. - RIAA equalization is a specification for the recording and playback of phonograph records, established by the Recording Industry Association of America (RIAA).

Thank you for purchasing the VP549. We spent a considerable amount of time designing and developing the VP549. Hundreds of hours listening and improving the design. We hope you enjoy using the VP549, and that it makes listening to your vinyl collection rewarding. We sincerely appreciate the opportunity to build a product for you and participate in your love of quality music and sound. We love what we do and we're happy to help. All Bellari products are hand built in Salt Lake City, Utah by people who care about high quality music. No surface mount parts are ever used at Bellari.

The Bellari VP549 has excellent true sound resolution. It's tone center is right in the middle of the music, its very agile and dynamic. It performs very well on the extremes, it never loses its solid performance in the meat of the music. It is well rounded when needed, but has a very surprising shimmer when called on. The VP549 is well balanced and bold, yet has a very surprising attack that will take your rig to the next level.



**Connecting the VP549:** You have an input for the VP549 that connects to your phonograph, and the output of the VP549 plugs into your pre-amp or amplifier. The ground post is where things can get complicated. Ground hums have always plagued the turntable. We recommend using the ground post to connect to your turntable's ground connection. In our experience we have never seen a situation where not using the ground would sound better than using it.

Ground loops are a very common occurrence with audio. The more equipment you use, the higher likelihood you will have a ground loop. The term "loop" refers to your ground generating unwanted noise from traveling back and forth in a loop. The turntable is usually the most likely component to have a ground issue. Another thing you can try if you have a ground loop is connecting the turntable ground to the RCA jack's ground if the ground post is not remedying the issue. One thing to keep in mind is that ground loops can be anywhere in a system so try and isolate the components that are the issue before you spend a lot of time looking at just one component.

**Rumble filter:** AKA "subsonic filter" cuts very low frequencies (below 20 Hz). The purpose of a filter like this is to get rid of annoying frequencies that disrupt the turntable's sound quality. A good rumble/subsonic filter should be inaudible, meaning you can not hear when it is on or off in the program material you are listening to. What it will do is help with excessive very low frequency interruptions from the turntable to the preamp.

**Cartridge load capacitance:** The VP549 has three settings: 120 pF, 220 pF and 330 pF. Set the switch in the position you feel sounds best to you. The difference might be very slight, but it is there. Most cartridges come with a capacitance load recommendation in the spec sheet for the cartridge. For example the Ortofon 2M series asks for a loading of 150pF to 300pF. Most Audio Technica cartridges state 100pF to 200pF for loading. The VP549 has been tested with multiple turntables and multiple cartridges. We have found it best to use your ears to set the loading. You can set the loading switch to any setting 120, 220 or 330 with any MM cartridge and no damage will be done to the VP549 or your cartridge. If you can not hear a difference we would suggest that you do as the cartridge manufacturer suggests, and set the loading switch to their recommendation for the cartridge you are using.



**Trim - Gain:** Control to attenuate the signal level up or down. It is not a volume control, meaning that signal will still be present even when the level is turned to the lowest point (in this case -10dB as labeled). If at half way up you are at 0 dB output level then all the way up you will have +4dB more gain, and all the way down you will be at -10dB down from a reference of the middle 0 dB. Most users will be best served to set the control at the middle or 0 setting to get the best outcome. This is not always the case. In some situations you might need more gain, like when using a quiet record or a very low level cartridge. In the opposite situation you might need less gain from a hot or loud record, or if you have a high output cartridge. The newer cartridges made tend to have a higher output level than in the past. For instance, the popular Ortofon 2M series of carts have a 6mV output. This is much hotter than carts of old, as they were around 4mV to 5mV. When using a 6mV cart you might need to turn the trim gain control to just below the half or 0 setting. Many factors go into setting the proper level, but we recommend start at the middle, 0 setting.