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PRODUCT DOCUMENT – PASSION PH150

Yves-Bernard's philosophy on phono stages and an explanation behind his design of the Passion PH150.

I have been designing phono stages since the 70's and was working with Goldmund turntables in the past.

I am also a researcher in optics at the most well-known university "the Ecole Polytechnique" in France.

I have published in the past an article about the "fuzzy distortion" which occurs when you are using transistors to increase the signal delivered by a moving coil cartridge. In fact, the cartridge delivers a very small signal, not so far from a few electrons, and this cannot be solved with transistors because of their intrinsic noise.

Then, the only solution is to use transformers. But transformers have 2 defects:

-the transfer of energy from primary to secondary

-the band pass is limited.

In order to solve these 2 defects, YBA takes the following steps

- During the manufacturing of the transformer, primary and secondary are separated in several parts and we are making a sandwich with a lot of layers between the primary and secondary. You obtain success with a lot of layers which are transmitting the energy between them.

- To increase the band pass we are using mu-metal (very expensive) and very thin layers. That permits a band pass of 130.000 khz. Of course, all this is handmade and very costly, but it is the only final solution to drive a moving coil cartridge

The advantage of using a transformer is, because of its complex impedance, you don't need to match with the impedance of the cartridge.

This point is not true for transistors.

The only compromise needed is the necessity to have 2 different inputs for high output and normal MC cartridges.

The MC transformer in our PH150 phono stage is in series with the input of the phono stage and it is there to increase the gain of about 20 dB.

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If we want to use with a high output MC cartridge, needing to be charged with 47 Kohm for instance, it would be necessary to put a 10 Kohm resistor between the output of the MC transformer and the phono input.

For that reason, we have a switch on the PH150 to handle this requirement

We include this in the design in order to avoid any relay or switch on the path of the phono signal. It is a very important and key point for me because of the very tiny signal delivered by the cartridge.

Yves-Bernard André