

Pass Labs XP-17 Phono Stage

September 22, 2017 | Karl Sigman



While spending more time using vinyl in my audio system, I came to realize the importance of a phono stage; in particular matching one appropriate with one's turntable and cartridge. This is a huge grey area, and one in which passions are high. If you ask for advice you must be prepared to enter a mine field. Some will insist that all-tube phono stages are the only way to go, while others will insist on solid state. Not having any strong pre-conceived ideas of my own, I considered whatever advice I could get and then researched/explored further. I tried both types, plus the solid state one I own, the PS Audio NuWave Phono Converter, which has the unusual ability to convert to digital on the fly and send the output to my DAC--in addition to offering a purely analog path. As I gained a better understanding of what I did and did not like about sound quality revealed by different phono stages, I concluded that the reason my digital setup had the overall upper hand in sound quality was due to its superior components; the weak link in my vinyl setup was the phono stage. So, here we are; the *raison d'être* for this review.

Being of a practical nature, I did not like the moving coil (mc) versus moving magnet (mm) dichotomy incorporated in the vast majority of phono stages. Why? Because the cart I liked so much as my reference was neither; it was a moving iron (mi) and had other unusual properties that were not accommodated by some of the most expensive and well regarded phono stages. My reference is a Grado Labs Statement v2, which requires high gain on the one hand (≥ 56 db) and high impedance loading on the other hand (from 10K Ohms--47K Ohms). These requirements ruled out many a fine phono stage. Several superb manufacturers of all-tube models honestly told me that they would have to modify their product to work with my system and that it could be a risky adventure; they even admitted that I should instead consider a solid state one where such flexibility is easier to accomplish--and could yield outstanding sound quality. In fact I had already acquired a Schiit Audio Mani at only \$129 which worked, so their advice was wise. Solid state it would be. But of course I also wanted to consider a phono stage with the ability to handle the

finest of both mm and mc, too.

In Spring 2017, just as I was in the midst of the above mentioned thought process, Pass Labs conveniently had just announced the release of the XP-17 Line Level Phono, a new version of their widely acclaimed XP-15 that was released about 7 years ago. In addition to its new specifications, I was also impressed with their philosophy about upgrading products:

At Pass Labs, we don't change our products unless we feel that the changes are significant improvements over previous versions. Because of this we see typical product life spans of seven to eight years.

Chatting with the designer of the XP-17, Wayne Colburn, who has been working at Pass Labs with Nelson Pass since 1994, was a real pleasure and I am very grateful to him and to Bryan Stanton (J. B. Stanton Communications) for arranging for me to be sent an XP-17 for this review, and for being so helpful in answering questions about the unit during my review.

What is new in the XP-17?

Like the XP-15, the XP-17 is a high-end, single-chassis, solid-state, dual-mono phono preamplifier with 1 pair of RCA inputs to support 1 turntable/arm, and 1 pair of stereo outputs (balanced and single-ended are both included). All controls and inputs/outputs are on the back including the power switch; there are no control knobs of any kind on the front, and no remote control. Compared to the XP-15, the XP-17 has the same dimensions (17" (W) x 12.5" (D) x 3.5" (H)) which is relatively large for a single-input phono stage. And it looks identical in the front; very classy and elegant silver-colored with an artistic horizontal line cut across about 2/3rds of the way down and with only a tiny blue LED in the middle for on/off. It is one pound heavier than the XP-15 (19.5 lbs versus 18.5 lbs) due primarily to the new toroidal transformer used in the internal power supply. At a price of USD\$4300, the XP-17 is \$500 more than the XP-15.



The back of the XP-17 is different, however, from the XP-15 and this is where things start to get interesting. First, there is no longer an mc/mm switch or separate inputs for mc/mm. Instead, each channel has just one input; then gain, impedance loading and capacitance are chosen according to need, by flipping dip switches. Each stereo channel has identical sets of such switches (and they should be set the same because the XP-17 is a dual mono design). One set of 8 switches is labeled 'Loading' while the other set of 8 is labeled 'Cap/Gain'. Here is how it works for impedance loading: There is 47K Ohms always in play (all 8 loading switches down). Then, flipping the 8 switches up/down in various combinations, Ohm's Law in parallel takes over, including that 47K, offering 256 loading values down to as low as 10 Ohms—quite something. So, the 8 switch loading section offers from 10 Ohms to 47K Ohms. But it gets even better:

A most impressive new addition is that of a 10K Ohms dip switch for impedance loading, which allows one to use either 47K Ohms or 10K Ohms for a moving iron cartridge. Bravo. (To be precise, because of Ohms Law, the 10K switch yields a 8.246K Ohms load—good enough!). Note: This 10K switch is actually the 4th switch in the Cap/Gain area; it is thus a 9th switch for impedance loading. Keeping all the other 8 loading switches down and that 9th one up is how to engage the 10K.

As for gain, if you are using single-ended (XP-17 to preamp), you have choices of 70dB, 60dB, 50dB; if balanced you have choices of 76dB, 66dB, 56dB. Those are switches 5,6,7 in the Cap/Gain section. As for capacitance, there is 100pf that is always in play, and then that can be modified by the first three switches in the Cap/Gain area, of 100pf, 220pf, 330pf. They are add ons, so in the end you can choose between 100pf (all 3 switches down) and 750pf (all 3 switches up). So, the XP-17 can handle just about any cartridge I know of—including moving iron. Internally, here are the further significant changes as mentioned by Pass Labs:

The XP-17 uses a new-shielded low noise toroidal and input filter module. The power supply has an extra stage of RC filtering, allowing for lower radiated and mechanical noise. It has an all new input circuit that is symmetrical and lower in noise and distortion, with greater drive capability. Noise being the most prominent part of THD+N in the first section of a phono stage, by lowering noise we get better resolution and dynamics. It was designed with a split EQ network, like the XP-25 and XI Phono, that is more accurate and can handle greater signal levels. The secondary stage runs a higher bias output stage with auto bias.

When I asked Colburn which of the changes made in the XP-17 he thought resulted in the most increase in sound quality compared to the XP-15 he said, 'The input stage. It is symmetrical with feedback, and more linear, but because we use higher quality components, it yields lower noise.' He also pointed to the power supply upgrade as helping the sound stage, and mentioned that the gap in sound quality between using an internal power supply versus an external one is getting closer and closer. Keep in mind that high-end phono stages with separate external power supplies can be very expensive, easily \$10K or more; in fact Pass Labs makes some: The XP-25, at \$10, 600 is a two-chassis model and has 2-inputs, and the Xs-Phono at \$45K is a two-chassis model with 3 inputs. Adding extra inputs as well as an external power supply adds heavily to the cost of a high-end phono stage.

As I will expand upon below, the XP-17 made my vinyl system sing with an exceptional sound quality that I have never heard from my vinyl system. Taken in this regard, the minimalist XP-17 is a bargain at USD\$4300 exhibiting a sound quality well above its price point. Just flip some switches on the back to accommodate your cart, turn the unit on and leave it on and enjoy your LPs. Right up my alley.

Specifications

Power consumption: 40 Watts

Gain: 76, 66, 56 dB balanced 70, 60, 50 unbalanced

Output impedance: 110 Ohms RCA; 220 Ohms balanced

Input impedance: 10 - 47K Ohms more than 200 values

Capacitive loading: 100 pf -750 pf RIAA curve accuracy: +/- .1 dB 20 - 20 KHz Passive / Active EQ

Distortion and noise: .004% Quad-matched low noise symmetrical JFET input.

Double shielded low noise toroidal transformer

Dimensions: 17" W x 12.5" D x 3.5" H Weight: 19.5 lbs

Sound Details

In this review, I used my reference VPI Prime Turntable with two different cartridges. The first was the Grado Statement v2 moving iron mentioned earlier. I used it with 56dB gain, and yes, the 10K Ohms loading (that sounded best to me on my system). I kept the capacitance switches all down so that only the minimal base 100pf was in play. The second was an Ortofon Cadenza Bronze MC. (Special thanks to Mat Weisfeld, President of VPI Industries, for generously lending me a second 3D tonearm with a Cadenza already properly mounted for a Prime; I just snapped one arm out and the other arm in. Isn't that cool?) For the Ortofon, 56dB gain was about right as well, and I experimented using both 50 Ohms and 100 Ohms resistive loading, and with 100–200pf capacitance. The XP-17 connected then to my reference PS Audio BHK Signature Preamplifier using balanced cabling, which in turn connected to my Merrill Audio Veritas mono block amps using balanced cabling. For speakers I used my Alta Audio Celesta FRM-2. Suffice to say, the XP-17 handled both carts with aplomb allowing their unique characteristics to shine; I was deeply impressed.

Overall assessment of the XP-17: Revealing, with a large detailed soundstage, particularly in depth and height, and nuanced textures of individual instruments and voices. Exceptional resolution and dynamics. Stringed instruments sounded divine with richness and fullness, not just details only for the sake of details--the natural timbre of those strings played the prominent role; they were brought to life. Exquisite. And the bass was superb. Incredible lack of distortion—in a black background.

I list below 8 LPs that I mainly listened to for this review. In addition to allowing me to listen to these LPs (and of course others) with such a great sound quality, the XP-17 also taught me something new and important: some of my LPs needed replacement; areas of some records had damaged grooves due to use and long age (some of these LPs were 30-45 years old). A perfect example is (1) below; a great Decca LP recording with such dynamic range and power, impressive soundstage and lovely natural sound of de Larrocha's piano, all displayed so naturally by the XP-17. But occasional distortion would come in. I had never noticed this before the XP-17 was used in my system, and damage to the vinyl was not visible by close inspection. So, at first I assumed I needed to clean the record. Nope. Then I assumed that my cartridge was not mounted properly with its tonearm, that I was experiencing inner-groove distortion. After having an audiophile friend help me re-do the mounting with care, the distortion was still there. Well, by then playing the record on my friend's own system, the distortion was still there! It was the record. Several other records also were revealed defective in this way. So, I took advantage of this by buying online used—in fine shape—copies of the same LPs. No more distortion. Thanks XP-17.

(2) showed off how well the XP-17 handles dynamics, bass, and soundstage—and with a dead quiet background. That LP was my favorite of the list below while reviewing; I just loved the music with its deep Spanish folk elements jumping out at me from all directions. It offered an irreproachable excuse to drink a fine glass or two of Rioja reserva red wine while sitting on my couch at night listening. The timpani, strings low and high, trumpet, Spanish dancing sounds, flute, singing; magnificent throughout. One of my daughters just started ballet lessons, and she was enchanted by this LP.

(3) has a story behind it. I had been invited to attend a casual get-together at DeVore Fidelity one evening in Brooklyn at the factory. Host John DeVore's fine and homey listening room (with, of course, his very fine speakers) was only playing vinyl and allowing attendees to bring their own LPs

and play. (I had not brought anything.) At one point as I strolled into the room, a couple walked in and put on Kraftwerk's *Autobahn* (1974). It mesmerized me with its sound stage, eclectic-electronic sounds and fine recording quality. I sat in the sweet spot of the couch with a shot of whisky and intensely listened and enjoyed. It had been decades since I had heard that classic, and I must admit, that in the 1970s I was not interested in that kind of music. So when I returned home, I soon acquired a version of the LP. Through the XP-17 at home, I continue to be mesmerized by it, as is anyone who happens to hear it when they visit. When the car sound starts in the beginning, we still all look out the window.

The 8 Lps for listening:

- (1) *Concertos from Spain*, with Alicia de Laryocha on piano. The Royal Philharmonic Orchestra, Raphael Frubeck de Burgos (1977). Decca Records.
- (2) Manuel de Falla: *The Three Cornered Hat* (complete), with Victoria des los Angeles (voice), The Philharmonia Orchestra, Raphael Frubeck de Burgos (1964). Angel Records.
- (3) Kraftwerk *Autobahn* (1974). (Digital Master 2009, Klingklang).
- (4) *Underground*, by Thelonious Monk, Columbia (1968).
- (5) *Pithecanthropus Erectus*, by Charlie Mingus Jazz Workshop (1956). Atlantic.
- (6) *Marilyn Horne Sings Carmen*, Royal Philharmonic Orchestra and Chorus, Conducted by Henry Lewis. (1970). London Records
- (7) *Little Creatures*, Talking Heads. (1985). Sire Records.
- (8) *Gilberto & Jobim*, Capital Records Re-issue (1964)

Summary

The Pass Labs XP-17 Phono Stage is a serious but no-nonsense, high-end phono stage with stellar sound quality, elegant looks, ease of use, and one that can accommodate essentially any cartridge (including moving iron) and extract its unique sound characteristics. With such a high performance/price ratio, what more can one ask for after acquiring it, perhaps a fast ride on the Autobahn?



Further information: [Pass Labs](#)

Associated Reference Equipment

Turntable: VPI Industries Prime

Speakers: Alta Audio Celesta FRM-2

Amplifiers: 2 Merrill Audio Veritas Monoblocks Special Edition (SE)

Preamplifier: PS Audio BHK Signature

Phono stages: PS Audio NuWave Phono Converter, Schiit Audio Mani, Ear 834P

DAC: PS Audio DirectStream

Music Player: Mac-Mini modified by Mojo Audio with separate power supply, (Mojo Audio Illuminati)

Interconnects : Anticables Level 6.2 ABSOLUTE Signature RCA, Anticables Level 4.1 Reference PLUS Xhadow (with cryo option) XLR and Antipodes Reference XLR.

Speaker cables, jumpers, power cords: Waveform Fidelity.

Power generator: PS Audio P3 Power Plant.

Turntable cabinet with solid walnut top: Audio Vault USA