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AN OVERVIEW OF THE "CRYOVALVE" TREATMENT AND GRADING PROCEDURES

The series of operations through which an electron tube must pass before it can be called a PEARL CRYOVALVE is lengthy and in some ways, arduous.

As received, a typical electron tube exhibits several problems that deleteriously impact its sonic performance. Most serious are the many internal stresses in the construction materials that accumulate during most of the stages of manufacture and; a very hard, heavy oxide-coating on through-glass pins to which direct connection is made. Seven- & nine-pin miniature tubes are typical of those whose pins are heavily oxidized while power tubes such as KT88 and EL34 are fitted with bases whose pins are tinned. Where required, through-glass pins are cleaned back to base metal and polished, with the result that contact quality is *much improved*. The degree of sonic improvement is *substantial*.

The initial 100hr. burn-in allows the tubes' characteristics to stabilize while providing an opportunity to cull any "infant mortals."

During cryogenic tempering, the tube is slowly cooled to the $-196^{\circ}\text{C}/-320^{\circ}\text{F}$ temperature of liquid nitrogen, "soaked" for many hours then *slowly* returned to ambient. By means of this unique and vital process, the stresses interior to the materials of the tube are substantially and permanently relaxed. During a subsequent, high temperature anneal, the tube is heated to $175^{\circ}\text{C}/350^{\circ}\text{F}$ then *slowly* cooled to ambient. Although not as extensive, the results are similar to those achieved by the cryogenic treatment.

The "Q" of the (self) resonant (electro)mechanical systems responsible for the output of (self) microphonic spurs is thereby drastically reduced. By this important reduction, both the peak amplitude and the "ring down" time of these systems is reduced with the result that the "apparent gain" of the device is increased—even in feedback controlled circuits—while the "dynamic noise floor" is lowered.

Grading for noise and microphonic performance involves both listening and instrument evaluation. Various instrumentation provides data on the noise, microphonic level and spectral content while the overall "sound" of the spurs is critically evaluated. In particular, the evaluation of microphonic output is very much an experienced-judgement call.

Dual triodes are rated for overall noise performance by the noise-output level of the noisier "tube" or section. Thereby, it's possible for a tube given an overall "STANDARD" rating to contain an *ultra low-noise* section. ULN tubes however, always consist of two ULN sections, hence the cost.

The last few steps in our process are the standard yet essential procedures for the evaluation of many important electrical characteristics such as μ or amplification factor, plate current and transconductance. Additional data is generated indicative of the μ and DC balance of the tube's sections.

Quite simply, PEARL CRYOVALVES are the electron tube of choice for virtually all high performance audio applications: your satisfaction is *guaranteed!*



5687WA
Build Date - 56/58
Test Date - 04/01
Serial No. 3471

Noise Grade					Gain Match		
-8dB	-6dB	-3dB	0dB	+5dB	-1dB	-0dB	+1dB
Gold Grade	UltraLow Noise	Low Noise	Std. Grade				
Section 1: Pins 6, 7 & 9							
Section 2: Pins 1, 2 & 3							

Noise Grade & Microphonic Test Conditions: $B+ = 250\text{V}$; $R_L = 12\text{k}\Omega$; $R_K = 133\Omega$; $C_{\text{bypass}} = 470\ \mu\text{F}$; $E_b = 130\text{V}$

Microphonic Test		Plate Current (I_b): mA	Transconductance (g_m): milli Siemens	Sec. 1 - Sec. 2 Balance: Typical Operation	
Output Level	Ring Down			Idle (DC)	Dynamic
		12.2	4.5	$\pm 1\%$	$\pm 1\text{dB}$
		13.1	4.2	$\pm 2\%$	$\pm 2\text{dB}$
				$\pm 5\%$	$\pm 5\text{dB}$
				$\pm 10\%$	$\pm 1\text{dB}$

AVO 163 Meter Test Setup: $B+ = 250\text{V}$; $E_{g1} = -12.5\text{V}$; $V_f = 6.3\text{V}$. *Bogies: "Gain" = 23.9dB (equiv to: $\mu = 17.5$); $I_b = 12.5\text{mA}$; $g_m = 4.1\text{mS}$.

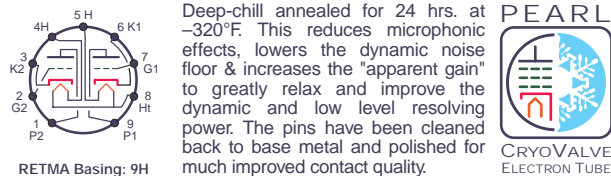
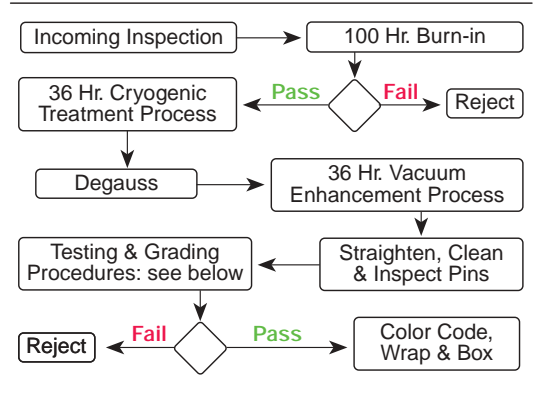
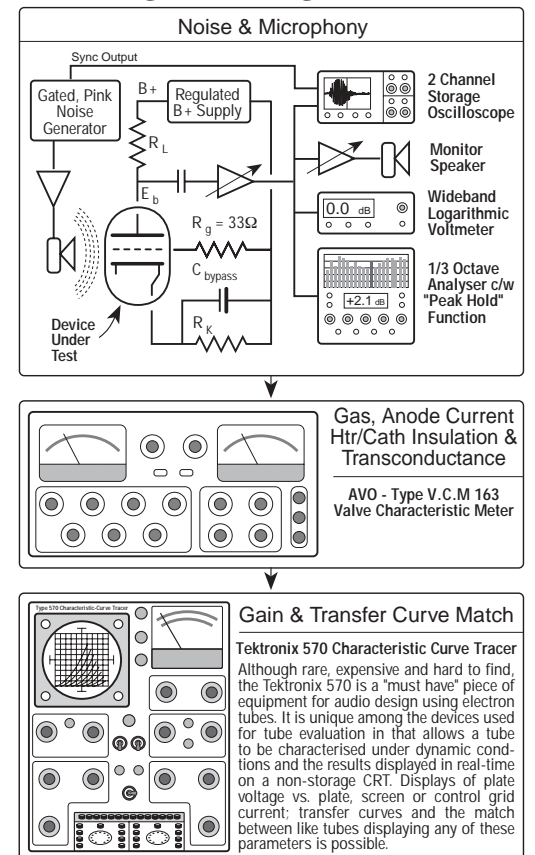


Fig. 1. Shown above is an artwork typical of those applied to the sides of the boxes in which all 7/9-pin CryoValve tubes are packed. All test data is written in by hand as the tube is passed through the various stages of our procedure. Every tube is subjected to assessment by instrumentation and actual listening tests.

Production Flow Chart



Testing & Grading Procedures



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Fig. 2. The complete production flow for PEARL CRYOVALVE electron tubes is schematically rendered above. Unique in the audio industry, our methodology effectively addresses many issues relevant to the performance of electron tubes in high-quality audio and musical instrument applications. CryoValves will remarkably improve the sound of any tube-type audio equipment.

Users Comment on the Sonic Performance of PEARL CRYOVALVE Treated Tubes

We maintain a strong relationship with:

<http://www.tubeworld.com/cryovalve.html>

for whom we freeze and grade a simply awe inspiring variety of the the best of the best NOS. Where the owner, Brendan Bieber, finds these tubes I simply cannot imagine, but find them he does.

So without further ado, here are some comments from his web site headlined by a rave from the man himself:

I can hardly put into words how wonderful this new batch of NOS PEARL CRYOVALVE tubes sounds, they are so outstanding, one is literally hypnotized by the music:

- *Great improvements in perceived dynamics due to reduced perceived-noise floor—blacker background.*
- *Very! focused and sweet midrange. Incredible top to bottom tightness to the music.*
- *Mid-bass articulation is excellent—tight!*
- *Sub-sonic, deep-bass tracking is phenomenal, especially with hip hop bands*
- *Emotional recordings will bring you to tears!*
- *You can hear individual instrumentation in each channel in the mix much better. The foundation of each recording can be followed perfectly. You just hear more music! Cymbals have incredible shimmer!*
- *Sweeping musical passages rise and fall like a tidal wave*
- *Closely miked recordings are alive in your room. You find yourself inside the recording.*
- *Background vocals buried in a lot of mixes are readily apparent and become a bigger part of the recording.*
- *You can hear every waver in a singer's voice*

These are best sounding and graded NOS tubes you can buy!

Customer Comment on PEARL CryoValve Tubes:

To say [I'm] impressed would not be enough! To say jaw droppingly astounded still would not approach my exact sentiments! To reach nirvana is close, but still doesn't describe it! But if you have ever wanted to treat yourself to pure musical purity and bliss, then you have go to be willing to buy some of these CRYOVALVE tubes.

They are worth every penny they cost.

My system is comprised of Audio Prism's Mantissa Pre-amp and Debut MKII amplifier. First I bought some 6DJ8/Mullard CRYOVALVES [and installed them] in my gain stage and I was very impressed with the overall changes in my system. More musical presence, clarity, bass enunciation and range that went on and on.

Later, I purchased some Gold Grade 12AU7 Mullards for my output pre-amp section, sat down to listen, and. . . I was struck by lightning. I never knew music could sound this beautiful. I could swear that whatever I put on, put the musicians right there, in my living room. What enchantment, what beauty, *what out and out ecstasy.*

Please, if you can, try these tubes in your system, I'm sure you won't be sorry. I'd say more, but I want to get back to the music, I can't seem to turn it off anymore!

"CV4004 Mullard"

CRYOVALVE Customer Comments:

I am extremely satisfied with my purchase of the Mullard CRYOVALVE CV4004 as well as the Telefunken CRYOVALVE ECC801S which is been used in my upgraded Conrad Johnson PV4 preamp. The CV4004 has upgraded my system to a new dimension; overwhelming dynamics, wide, deep and well populated soundstage with great separation and air surrounding instruments, tight and extended lower bass as well as more definition on the uppers. Warm, rich, smooth mids with incredible shimmer on percussion. Inner detail is amazing, you hear more complete notes and everything just has more

presence, but most of all it is extremely musical, making your listening session an enjoyable experience. This tube does everything right.

“Dutch 6DJ8 Mullard”

CRYOVALVE Customer Comment:

I just wanted to write you a brief note to let you know how amazing these Mullard, Holland 6DJ8, PEARL CRYOVALVE, Gold Grade tubes are in my AI Modulus 3A preamp! Fabulous midrange and treble clarity, while at the same time, as warm a sound as you could ever want; ie: female vocals. . . Whew! Bass has improved as well.

Of course, I also replaced the Mullard 6201s in my VTL MB450 monoblocks, with the PEARL CRYOVALVE Telefunken ECC801Ss—so natural sounding—like music!

Thanks very much. The tubes are not inexpensive, but I think they are worth every penny.

“German 1960s ECC88/6DJ8 Siemens”

CRYOVALVE Customer Comment:

Balanced sound, smooth and detailed, this tube does everything right, probably the best all-around 6DJ8, highly recommended.

“ECC88/6DJ8 Siemens”

CRYOVALVE Customer Comment:

I recently ordered a 6087/5Y3WG7B, indirectly heated, slow-warmup ruggedized 5Y3GT rectifier tube from you for my Decware Zen SET amp along with a pair of ECC88/6DJ8 Siemens Germany NOS original boxes, same date codes, 1960s, for my Ah! Tjoeb 99 tubed CD player.

I wanted to let you know that both purchases are working out great. I started with the rectifier tube and noticed that the amp played louder with more bass and better rhythm.

After trying that alone for a while, last night I installed the old ECC88 Siemens tubes in my CD player. Wow! they are awesome. There is more and clearer sound in the upper registers, cymbals and triangles sound more realistic and percussion instruments sound tighter and more detailed. In addition, they keep everything that was already there in the music that I liked with the stock tubes.

Thanks for some great recommendations.

“Philips Miniwatt E88CC/6922”

CRYOVALVE Customer Comment:

Thank you for your sending of E88CC/6922 Philips Miniwatt-CRYOVALVE. These tubes arrived safely and sound great. Actually they bring my system in much higher stage, like heaven. Quiet, smooth, dynamic and 3-dimensional sound. Music has become real. Always tubes you offer are nice.

Hoping everything goes fine for you.’

“ECC32/CV181 Mullard”

CRYOVALVE Customer Comment:

I have a Meridian 508.24 CDP hooked up to a Cary 300SEI LX20 integrated amp. These newer versions use the pumped-up 20 watt 300B tubes by KR (which they name 300BXLs). I’ve been playing around with 6SN7 tubes for quite a while: from the cheap Sovteks and Shuguangs to the RCA 5692 Red Base to the 1940s Sylvania VT231/6SN7W and RCA VT231s. The best combination that I settled on was a pair of Sylvania VT231/6SN7Ws as drivers with a Platinum Select 1950s RCA Black Base 6SN7GTB as the input tube. It was crystal clear, vast, open and very pristine. Bass was sufficient for my listening as I listen mostly to classical (especially chamber) and acoustic jazz. With my wife being a (former professional) cellist, we listen to a lot of cello sonatas.

But today, everything changed with the ECC32 CRYOVALVES. The bass was more present but not loose. Right off the bat, the Mullards somehow sounded too good to be true—scary to think how they’ll sound after breaking in. Strings, especially cello, suddenly sounded like real finely crafted wooden instruments. I said to my wife [that] I was hearing instruments; she phrased what I was really trying to say, “You can hear the sound (vibrations and output) coming from inside the cello.” ie., “You can hear the wood!”

We were now hearing (more of) the wood of the cello instead of a perception of soundwaves emanating from the steel strings of a cello. I thought this was a significant revelation, not just because it’s the first time we felt this way after hearing the cello from our audio system, but because it really does gets us *closer* to the music.

From the Mullard ECC32 CRYOVALVES, I was hearing, during a cello or oboe concerto, the ‘background’ massed violins very clearly (not thin sounding as weight of the clarity is never compromised) while the main instrument is weighty but still utterly clear. The other 6SN7 combinations I’ve tried did give me clear sound but there was a compromise as the main instrument was also thinned-out to mesh with the background clarity.

On the other hand, some more “sweet and rounded” sounding tubes (such as the Red Base) sounded too “closed-in” and “muffled.” The extension and dynamics were not there and I had to turn up the volume higher to get the same perception of loudness—it was what they term a bit too “dark.”

But my wife preferred the Red Base as the input tube as it gave less thin sounding harshness. In addition, the bass of the Mullards are extremely impressive. The echoing of the bass twang is more present

and you can actually hear it fading.

For a tube that is not “in your face” I don’t know how the ECC32s do it—they have it all: very civilized but not gentle and bland; deep bass and clear open highs; just the right amount of hall effect (not too airy or echo-y) very open and spacious but not thin and light sounding; absolutely stunning for cello reproduction. Yes, some 6SN7s did give me more of a [sense of] “being right there” and an extremely well focused image, but they could not match the overall total package of the Mullards.

It just makes me wonder how these creations are made—how does a tube maker know how to let a piece of glass and metal produce such a fine sound? Simply amazing. Yeah, driving a BMW may give you an ultimate driving experience. But why drive when you can have a chauffeuer drive you in your Rolls Royce; sit back and enjoy the ride!

Sorry if things kind of got too long-winded . . .

It’s so good that the thought of not being able to hear this sound makes me somewhat worrisome. I’m compelled to get another matched pair as back-up; I’ll take it to the grave if it’s never used.

Many thanks and I look forward to another pair of these wondrous and amazing tubes.

“Mullard 12AU7 & 7044”

CryoValve Customer Comment:

[I] just installed the 12AU7 Mullard CRYO and 7044 CRYOS in my Wheatfield HA-1 headphone amp. Terrific, sophisticated sound. The improvement is even more apparent when used as a preamp into a pair of Tannoy dual concentric monitors. Separation of instruments and the sweetness you described are certainly there but I was surprised by the stronger bottom that emerged. What an improvement.

“Mullard CV4004”

CryoValve Customer Comment:

When the new CV4004 came, I nearly went through the ceiling. Talk about detail and dynamics. Extreme intensity is the best way I can describe it. You’ve never heard such dynamics in a system.

It made music; clean, beautiful music, I couldn’t turn it off, only up. And I consider my system very good to begin with: Green Mountain’s Continuum II speakers (wow, these are good!). The cabling was by Audio Magic which is just fantastic analog sound to the hilt. And McIntosh amps. The tubes went into my E.A.R. phono stage, which carries 3 tubes—and thank goodness only 3, I couldn’t afford any more.

But I’ll never go to a tube dealer other than Tubeworld. He worked with me and picked out the tubes for my system. I had no idea what tubes were until he helped me. Thanks again and yes, these tubes will toast any solid state stuff, I firmly believe.

“Tung Sol 5687WA”

Customer Comment:

I am extremely pleased with the [Tung Sol] 5687 CRYOVALVE tubes I received recently. I concur with the testimonials from other buyers on your site, but I would further add that once you have listened to a CRYOVALVE tube, you quickly lose interest in all other types regardless of make or pedigree.

The CRYOVALVE treated tube does things no other tube can do. Even tubes that normally would be considered mediocre under normal circumstances, once treated exceed the performance of the more exotic varieties.

The last similar performance experience I had was when an Audionote Japan amplifier was trialed in my system. Unfortunately I could not afford the Ongaku, but I can afford the CRYOVALVES.

“GE 5751”

CryoValve Customer Comment:

[The] noise floor dropped almost off the face of the earth. Macro dynamics seem to have an additional 3—5 db of headroom. But the inner microdynamics are, well, frightening. Hand claps on gospel music, stick work by drummers all seem to explode out of the speakers at me. It almost seems that I have a new amplifier!

I had been considering upgrading to the CJ Premier 12 monoblocks, which are better still, but just changing the front end tubes seems to have revitalized my entire system. Without question, the best \$150.00 improvement I’ve ever made!

Another “GE 5751”

CryoValve Customer Wrote:

First of all thanks for the fast service. Secondly, the tubes have arrived in excellent state on Tuesday already. I have placed them in their respective positions. After warming up, I noticed immediately differences compared to the 12AX7. These tubes are very warm in sound very dynamic, focused, splendid overall range from top to bottom. What was most remarkable was a very, very deep and well defined bass.

“Telefunken 6922”

CryoValve Customer Comment:

Many thanks for the 1960s Telefunken Diamond Bottom 6922s. I have done a lot of tube rolling for the last couple of months and have changed and tweaked a lot in my system. I have some of the best custom cabling. I have some of the best 2A3 tubes and some excellent 1940 6SN7s in my monoblocks, but the driver tubes in my phono preamp kept tormenting me. I have tried many: some of your Sylvania Cryo 7308. I have tried the Siemens Cryo. I have tried the Matsushita

(a good tube!!). I have also tried some Brimar. None come close to these Telefunken. All the tubes I mentioned had something special about them.

In some ways the Matsushita was better than the cryo tubes. The Matsushita was more transparent. In my system the Sylvania was the lesser tube, too veiled. From all these tubes, the Brimar had pretty good transparency. All is relative: these tubes are no slouch, but still I missed something... But the Telefunken does probably everything better. The sound is purer. A deeper a wider soundstage and a superb sense of dimensionality.

Most of all the Tele's prove the other tubes deficiencies. That is, a clean soundstage and a superb bass, but really superb. The improvement in bass was so noticeable that, what I thought was resonance, and to a certain point distortion, in the past, thus a sound too muddled, too distorted at higher volume levels, was almost absent now.

I still have to do something about bass traps, but with these Tele's, this "urgent" need became less urgent. It took me a long time to take this chance because these Tele's are far from cheap and I was hoping the last couple of days that these tubes would really prove themselves. They did!!!!!!!"

"GE 5751 Black Plate Triple Micas"

CryoValve Customer Comment:

Over the past few days I have been busy listening to a new amp. Actually, it is really just my old amp, but with the new CryoVac 5751 GE Black Plate Triple Micas.

There is much to report and all of it good!

Please keep in mind that these were put into the pre-amp section of a stock Jolida Integrated PP amp, an amp that many folks deep into high-end audio would turn their nose up on. Yet with the Cryo-Valves in place it sounds like a completely different amp.

So profoundly different is the amp that a good friend, who is deeply into SET 2A3 amps and 100db horn speakers, felt the improvement was like replacing a high watt PP amp with a SET amp, but with the power of the PP amp retained.

Sound stage: Yes, we have sound stage, wide and deep, with each instrument and sound now represented as a separate point in space. The speakers have disappeared, replaced with a wall of sound stretching across the front of the listening room.

Detail: Suddenly the tired cliché of "hearing things I have never heard before" has real meaning. Small details now are discernable as having their own individual identity.

More good news: Prior to the CryoValves I had invested in a large number of NOS Power Tubes. Amperex EL34's, Mullard EL34's, Tung Sol 6550's, GE 6550A's, plus various Svetlana and Chinese cur-

rent production. Some sounded good, some not as good. Now each sounds very good with its own individual tone and "flavor" clearly discernable.

The BAD NEWS: There can be no going back. All of my 12AX7/5751 tubes, long plates, smooth plates, box plates, gray plates, you name it, they are now all relegated to the bottom of the tube drawer, where they will likely stay for a very long time.

"Tung Sol 5687"

CryoValve Customer Comment:

Simply unbelievable! The Cryo 5687 Ultra-Low Noise and WE 417A (+Sylvania 6GK5) made the largest single upgrade difference I have ever heard, and all for about \$250!

Detail and micro-detail was the first thing I noticed. Incredible! What I've been missing these last few years. The imaging and soundstaging are better now than ever before. There is also more ambient air around voices and instruments, and everything else sounds much more natural. I didn't expect this much improvement!

"German Siemens 6922"

CryoValve Customer Comment:

"After two days I received the Siemens Cryo-Valve 6922. They are a "direct hit". Splendid overall. They give the Raven ribbons and the Cabasse drivers in my speakers all they need to give the most beautiful music. Let us not talk about all that technical stuff: sound stage, etc. etc. These tubes produce music at its best."

"German Siemens E88CC"

CryoValve Customer Comment:

"I have installed your E88CC Siemens CryoValve Low Noise into my Digital Filterless Non Oversampling DAC and was wondered with excellent transparent and delicate sound I never heard before."

"Sylvania 7308"

CryoValve Customer Comment:

I just received a pair of Sylvania Pearl Cryo-Valve 7308's from you. They're 10 times better than I thought they would be.

"1960s Telefunken E88CC"

CryoValve Customer Comment

E88CC=6922 Telefunken Diamond Bottom 1960s - a reference 6922; This is the best sounding, best graded 6922 you can buy in the world.

"Telefunken6922"

CryoValve Customer Comment:

Brendan, you did it again. Your personal recommendations have always been right on the money.

And speaking of the money I certainly got what I paid for. I paid a premium price and got a premium tube. I have listened to Telefunken and Siemens CCa tubes and some Telefunken 6922 Falcon Grade tubes and these Telefunken Cryo-Valve 6922s you sold me this week are by far the best sounding tubes I have ever heard. The dynamics are superb. They are so musical. I can't imagine using anything else now that I have heard these. I'm selling all my 6922's and CCa's that I currently have to buy that other pair of these you have. WOW!

John A.

A review of the PEARL 5687 CryoValve:

John Fairchild, owner of "Satellite to the Stars"

Being a dealer of Audio Note products I was looking for a more transparent sound that I felt was lacking with the Jan Philips 5687's. The stock tubes in both the M5 and M6 come with standard 5687's and 6X5GT's which I felt were not capable of producing the full potential of these fine preamps.

The Tungsol 5687's Cryo-Valve are available in various degrees of quality (ie; noise floor, matching of the triode sides etc.) and as you progress from the standard all the way to the "gold grade" the liquidity and transparency improve. Having gone through all the grades I have found the "Ultra-Low Noise" and "Gold-Grade" to be the best, at least with the Audio Note preamplifiers.

A excellent substitute for the 6X5s are the Bendix 5852s, and I highly recommend them over the Philips 6X5s. Not only are they more durable, but I find them more stable as a rectifier tube in the Audio Note products. Grab these from Brendan while you can as they are getting harder and harder to find, and the prices will certainly increase.

These tubes are available from Tube World, Inc. (www.tubeworld.com) and Brendan the owner really knows his stuff. Not only will he spend time discussing your situation and what you should expect from the various brands, but he is extremely knowledgeable in the products that he carries.

For all the skeptics out there, the higher quality tubes make a huge difference in the quality sound coming from one's gear and adding Cryo-Valve tubes only increases the listening experience.

John L. Fairchild, Satellite to the Stars

<http://www.sattothestars.com/>

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From a PEARL customer who had his Chinese 6550s treated:

I received the tubes this past Thursday. They sound fantastic. I was unprepared for the increased transparency, tighter bass and increased airiness.

They're just flat out more musical than before.

I find that my KT90s now sound harsh in comparison!

From PEARL customer who had his Chinese 845s treated:

The use of PEARL's CRYOVALVE tubes has been beneficial to my listening experience. I have used tube amps and had many different products for years now. I have owned a variety of gear from 845 single ended amps to 220 watt push pull 6550 amps and a lot of different pre amps, all of them using tubes.

I am not a scientist but I can honestly say that the PEARL CRYOVALVE tubes sound better in my system than pre-cryo or untreated pieces. One of my most recent experiences is an experiment I conducted with my 845 amp:

My present stereo SE amp uses 4-845s. In one channel I fitted cryo-treated GE 845s while in the other channel I used regular Chinese 845s. I then listened to the amp.

The side with the Chinese tubes sounded congested, lacking impact and was veiled compared to the side using the cryo-treated US-made GE 845s. Then I sent the Chinese tubes off to be cryo-treated, the cost was not a factor in my decision as the treatment was rationally priced.

When the tubes came back I was not expecting a great change as the sound before was so different between the two sides. When I plugged in the Chinese tubes (with the GEs still in the same channel as before) the sound was stunning from both sides now. The cryo-treated Chinese tubes were keeping up with their US counterparts! It was a major difference I then had all my Chinese 845s treated and am using them exclusively.

I've also used PEARL's cryo-treated 12AX7s and compared them with Telefunken 12AX7 smooth plates as well as Mullards. Each time, the CRYOVALVES have held their own compared to these great brands. I now use a combination of both in all of my gear.

In closing, the above are simple tests, they use real-world audio in real-world circumstances. I am not a scientist and cannot debate the scientific merits of the CRYOVALVE treatment processes with any authority but I can certainly say that the CRYOVALVE tubes improve my system, cryo-d tubes simply sound better than their untreated counterparts.

This observation has been consistent in all the circumstances that I have used this product.

From PEARL customer who had both his tubes and cables treated:

I am a freelance composer, I am also an audiophile. When I audition audio equipment, I use recording studio masters of my own music. If you think

about it, there could not be situation where a weakness in the signal chain could be heard more quickly.

Let me put it to you this way: if it doesn't sound like a person playing an instrument, why would I listen to it?

I have been searching for a "chamber music sound" for years. By that I mean, audio that sounds like the ensemble is in my room, playing... on instruments. Well, I finally found it. The PEARL cryo-treatment is the best thing I ever did to my signal chain.

Percussion does what it is supposed to do: attack, instantly . . . then decay. Strings aren't just fluid, they are resonant. The chameleon register of the clarinet sounds warm and breathy. Voice? Well, it is what it is: a person, singing.

Anything else is just . . . gear.

PEARL:

If you want to get out of "the box" . . . then stop listening to it.

Shane Fage - Calgary.

**From PEARL customer who
bought some TungSol 12B4s:**

Just a few words to say how completely my mind was blown by your cryo-treated 12B4A vacuum tubes! First, here's my system:

- Theta Miles CD player; custom-built preamp using 2 - 12B4A and 1 - 6CA4 vacuum tubes (designed and built by master engineer A. Bohnen in Vancouver);
- Pass Aleph 5 amplifier;
- Martin Logan SL 3 electrostatic hybrid speakers

Until this morning, the 12B4A vacuum tubes in the preamp were Tung Sol NOS, and very, very good—the pick of about 20 different NOS 12B4A's I have sampled over the last six months or so. I was very happy with them, until I got a pair of your cryo-treated 12B4A Tung Sols in the mail yesterday and dropped them into the preamplifier this morning.

I listened to a compact disk I've been listening to daily for about three weeks—16th Century Latin Church Music by William Byrd, sung by The Cardinall's Musick and recorded in an English Renaissance chapel on the ASV Gaudeamus label. This is an exceptionally fine recording for soundstage, room ambience and, being all voices, truly "absolute sound" material.

With my "old" Tung Sol vacuum tubes in place,

this disk sounded nothing short of heavenly in my system, which is why I've been listening to it every morning for weeks now.

With [the] "new" cryo-treated Tung Sol's, it sounds even better! I would go so far as to say that the cryo-treated tubes push everything into the next plane of perception and musical/spiritual experience!

For one thing, the front to back soundstage got MUCH deeper. The air and space around each individual voice in The Cardinall's Musick just blossomed into something ethereal and refined beyond exaggeration. If the old J. Gordon Holt term "bloom from within" ever meant anything, this is it!... and to a degree I have never heard before in *any* system let alone my own.

But the one thing up of all I noticed was an absolutely amazing sense of purity—the singers and the words seemed to hang in the atmosphere of a kind of celestial antechamber such as the Renaissance painter Rafael would depict!

To conclude, I have never heard an improvement in any audio system like the one resulting in my own system from the simple swapping in of two [cryo-treated] 12B4A vacuum tubes [for identical counterparts] from exactly the same manufacturer!

I am afraid I will have to stop or I will make a fool of myself with the degree of praise I want to lavish on these valves! Suffice it to say in conclusion that I am now a 110 percent convert to cryo-treated vacuum tubes! My only fear is that I will make an annoyance out of myself by preaching this "gospel" night and day to anyone who will listen!

GW
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