

ART DUDLEY

It's a Clean Machine

I'm old enough to remember Fizzies: tablets that were promised to transform mere water into an effervescent soft drink. They showed up on my radar when I was five, at a time when impatience stood between me and the full Fizzies experience: I couldn't wait for the Bromo-Seltzer-like tablet to dissolve completely, so I was rewarded with little flavor and lots of undissolved sugar shards. At my present age, I would be likelier to drop a Fizzie into a glass of water, walk away, and forget I had ever done so.

Fizzies came to mind the first time I used the Audiodesksysteme Gläss Vinyl Cleaner (\$4450), a sample of which was loaned to me late last year by its US distributor, Ultra Systems. For those who haven't already read the reviews by Fred Kaplan and Michael Fremer, in these pages¹ and on Analogplanet.com,² the Vinyl Cleaner is a fully automated, wet-bath-and-blow-dry record-washing machine that uses cavitation and distilled water, the latter enhanced with a surfactant, to remove contaminants from LP grooves. Cavitation is, literally, the creation of cavities—which, in a liquid medium, means the creation of bubbles. Microscopic bubbles, at that. *Zillions* of them.

Pause for a moment and bear in mind that the width of a stereophonic LP groove is $25.4\mu\text{m}$ —about one-third the diameter of an average human hair—while its depth is usually no greater than two-thirds its width. (The width of a typical *mono* groove made with a mono cutter head ranges between 55 and $80\mu\text{m}$.) Keep in mind, also, that the modulations within the groove are far smaller than the groove itself, and can range in size down to a fraction of a micron: the approximate size of the average bacteria ($0.2\text{--}0.3\mu\text{m}$, to be precise). The size of the *largest* groove modulations is more on a par with that of a red blood cell or a single dust-mite feces, both of which measure about $5\mu\text{m}$.

Get the picture? There does not exist, in this world or the next, a brush whose bristles can get in there and mix it up with that crap. Period.

Cavitation is a different kettle of microscopic fish. By using an ultrasonic wave to stimulate cavitation in a cleaning bath, bubbles can be created that range in size down to $2\mu\text{m}$, depending on the frequency of the wave. And the agitation created by the movement of these bubbles is such that contaminants, once removed, are carried away from the substrate, and thus prevented from reattaching.

I know what you're thinking: *Sign me up.*

Which is why Reiner Gläss invented the Vinyl Cleaner. And it's why I asked to borrow one, so that I could see whether, some 55



Audiodesksysteme Gläss Vinyl Cleaner

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years after Fizzies, record lovers such as I could experience better living through effervescence, as opposed to mere chemistry.

Full fathom five

I guess I wasn't paying close enough attention. Yes, I'd heard of the Audiodesksysteme Vinyl Cleaner. And, yes, I'd understood that it comprises a fluid tank, an ultrasonic cavitation system, four rotating cleaning drums, a motorized record-drive system, two drying fans, and a microchip-based system to automate and coordinate all of the above. Naturally, as an American, I assumed that the product was enormous and heavy: How else could the thing be done?

Imagine my surprise when a 19-lb carton measuring just 11" by 14" by 16" showed up on my doorstep. *Damn*, I thought. *The cleaning fluid and accessories made it here, but the cleaner itself must've gotten lost.* I opened the carton, and there was the Vinyl Cleaner itself plus two much smaller boxes, containing an AC adapter and two bottles of cleaning solution.³ Each bottle was the size of one of those little jars of marmalade one finds on the breakfast tables of nice hotels. I was fascinated.

The Vinyl Cleaner, which is made in Königsbrunn, in Baden-Württemberg, Germany, appeared very well crafted and was surprisingly easy to set up. The only real challenge was getting the thing level on my tabletop, the need for which may be obvious. A bubble level is built into the Vinyl Cleaner's top surface, yet its bottom lacks adjustable feet. I used business cards as shims.

With the Vinyl Cleaner both level and reasonably stable, I set about filling its cleaning chamber with the prescribed 4.5 liters of distilled water,⁴ after which I dumped in the contents of one bottle of cleaning solution. The bilingual instructions, which are quite good, suggest that air pockets—the unwanted kind, not the bubbles for which we hope—can get into the system whenever one fills a completely empty Vinyl Cleaner; air must be removed by running one full cycle without a record in place, which I did.

1 See www.stereophile.com/content/audio-desk-systeme-vinyl-cleaner.

2 See www.analogplanet.com/content/worlds-best-record-cleaning-machine and www.analogplanet.com/content/service-bulletin-audio-deske-owners.

3 Vinyl Cleaner Cleaning Fluid Concentrate costs \$19.95 (add 1.2 gallons of distilled water to make cleaning solution to clean 100 used LPs or 200 new LPs). A Fluid 6-Pak costs \$99.95. Replacement filters cost \$19.95 (can be rinsed out; not necessary to replace in normal use). A set of 4 Microfiber Cleaning Barrels costs \$99.95.—Ed.

Notwithstanding the well-considered raves the Vinyl Cleaner has received, I proceeded with caution; my choice for its maiden voyage was a thoroughly unlistenable, beat-to-hell US mono copy of the Rolling Stones' *Between the Buttons*. As you've no doubt seen from pics of the Vinyl Cleaner, records are loaded vertically—edge-down rather than face-down—into an arrow-shaped slot on the machine's top surface. Not without reason is this opening only 11 $\frac{3}{8}$ " long: The dimension is meant to limit just how far into the cleaning chamber a standard LP can fit. And when a 12" record is loaded into the Vinyl Cleaner, its downward travel is stopped at the precise point where its outermost edge is gripped between two rubber-rimmed, counter-rotating turnstiles, which gently turn the disc. It is apparently mostly for this reason that the Vinyl Cleaner can accommodate *only* 12" discs; with any smaller size, it would seem possible for the drive mechanism to grip the disc at a point inward from its edge, thus damaging the groove.

I pressed the Vinyl Cleaner's Start button. It took about five seconds for the LP to begin to spin—prior to which I followed the manual's advice and gave the disc's edge a bit of a nudge. After that, the cleaning chamber filled with the fluid, which had, during setup, flowed straight down into the storage tank below. Viewed from above, the cleaning chamber is a canyon in which the record is flanked by two pairs of cleaning drums, each covered in microfiber toweling and measuring 4.5" tall by 1" in diameter. When the drums are at rest, there's a gap of about $\frac{1}{2}$ " between the two pairs. When the cleaning cycle begins, the drums move inward to briefly contact the record, then move back out to their resting positions; then, when the chamber is full, they move back in and begin to rotate, their sides in contact with the record's surfaces. The record-drive turnstiles also move inward and outward, but only slightly. At rest, they're held tightly together, but when the cycle begins, the turnstiles part just enough to let the outermost edge of the record drop between their rubber grommets. At the end of the drying cycle, the turnstiles again come together, expelling the edge and slightly lifting the record.

The entire wash cycle took about 75 seconds. After that, the disc stopped turning, the water drained from the cleaning chamber into the storage tank, and the two drying fans—one for each side of the record—started up. The drying cycle comprised 120 seconds with the record turning at a very slow speed, then 10 seconds

at a fast speed, then another 150 seconds at slow, seeming to turn even more slowly, until the machine stopped and a gentle beep told me that this record was done.

The record in question was a noisy one to begin with, and the noise proved to be the consequence of physical damage: After the washing and drying, it sounded neither better nor worse. Perversely or not, I persisted with hard cases: awful-looking, awful-sounding records from lawn sales, garage sales, and the nearest Salvation Army store. With the next two records, the Vinyl Cleaner again made the sound neither better nor worse, but the one after that—a *ca* 1964 blue-label Prestige copy of Sonny Rollins's *Tenor Madness*—produced my *holy shit* moment. The Vinyl Cleaner not only transformed its noisy lead-in grooves into utterly dead-silent ones, it removed 95% of the ticks and pops, and allowed the instruments to sound more colorful and more vivid. As I said: *Holy shit*.

The next LP provided a similar transformation, but here I must pause and reflect: Only now do I realize how lucky I've been to live in a very small town that's miles from the nearest grocery store, pharmacy, or pizzeria—yet that had, for a brief time, its own LP store. And Xavwax wasn't just *any* LP store. It stocked great new records and a frequently replenished supply of used vinyl, the latter accounting for my own copies of *Miles Ahead*, *Sketches of Spain*, *Gerry Mulligan Meets Ben Webster*, *The Jazz Soul of Oscar Peterson*, and Benny Carter's *New Jazz Sounds*. The store's excellent proprietor has moved to Vermont, and I wish him well.

My nice mono copy of *Back to Back: Duke Ellington and Johnny Hodges Play the Blues* (Verve 6055), like other albums purchased from Xavwax, apparently once belonged to a library; there are even Dymo adhesive labels in its run-out grooves. (You can bet I'm always on hand to lift up the tonearm at the end of the last song.) When I bought it, the sleeve looked rough, and the record looked and sounded rough. Now, after one trip through the Audiodesksysteme Gläss Vinyl Cleaner, Duke Ellington, Johnny Hodges, and their band—especially drummer Jo Jones—sounded like their old selves. My record went from G- to VG+ in just under six minutes—or, if you prefer, my \$8 mono Verve LP with its DSM center labels is now worth more like \$40. (Those Dymo labels are holding it back.)

Were I a more profit-oriented individual rather than just an undisciplined collector, I might think: "I just made \$32. If I do that 138 more times, the Vinyl Cleaner will have paid for itself."

Then there's the transformation the Vinyl Cleaner wrought in my copy of Elgar's *Symphony 1*, with John Barbirolli and the Philharmonia Orchestra (EMI ASD 540). When I was in Munich last year, I'd reserved my very last hour at the show for record shopping, and selected as my target the display by Blue Danube Records (based in, you guessed it, Vienna). I began browsing the classical selections, setting aside a handful of titles. One was the Elgar, in a later pressing and graded only VG. Whether it was because of my press badge or my interest in Elgar I don't know, but the proprietor approached me with the kind offer to have a look through his private stock. He produced from under one of his tables a fiberglass flight case containing 70 or 80 LPs. Therein was the same Elgar—in an original white-and-gold-label pressing, the record graded M-. The price was more or less my entire vinyl budget of \$50, yet I decided on the spot to bring home one very special record instead of three or four average ones.

Back home, I cleaned the Elgar LP on a borrowed Keith Monks Record Cleaning Machine—which I would return to its owner just a few months later—and settled in to listen. The M- grade was reasonable and fair: I heard a few small ticks on both sides, and in the fourth movement there was a bit of groove distortion, lasting about one second. No big deal, but I was disappointed to find that the recording itself was less spectacular—less open, less colorful—than I'd expected. Just one of those things, I figured.

A few weeks ago I remembered that LP, and decided to run it through the Vinyl Cleaner. I was gobsmacked. Now there were no ticks—zero, zilch, none—on either side. The one-second distortion in the fourth movement endured, but seemed less objectionable. And, above all, the thing that unfolded in front of me was among the smoothest, most colorful, most delicately clear and brilliantly insightful recordings of orchestral music I've heard. That record was a *bargain*.

But even that doesn't compare to last Saturday, when I discovered in my collection a record I'd forgotten I even had: the Società Corelli's recording of Vivaldi's *The Four Seasons* (RCA Living Stereo LSC-2424). The jacket was frayed on all edges, and the inner sleeve torn in two places—but

4 A tip for those lucky enough to own one of these things: The Audiodesksysteme Gläss Vinyl Cleaner requires 4.5 liters of distilled water. Here in the US, distilled water is generally sold in gallons—but a gallon is only 3.785 liters. What the Vinyl Cleaner owner needs to do is to add one full gallon, then another three cups: That will bring the level up to 4.495 liters, which is pretty dang close.

the disc itself was a shaded-dog pressing with 1S/1S stamper markings, so it seemed worth a try. A brief listen before its trip through the Vinyl Cleaner did not leave me encouraged—yet its sound *après le bain* was and is nothing short of amazing. The Società Corelli's performance is intense and deliberate, not fluffy and superficial—and the recording, made in Italy, is dry, up-front, and intensely colorful and tactile. This record is worth seeking out.

Again: *Wow*.

Splish Splash

There's a nice passage in *Tune In*, the first volume of *All These Years*, Mark Lewisohn's incomparably exhaustive (and mildly exhausting) three-volume Beatles biography: Pointing to the boys' very humble backgrounds, the author reminds us that, in 1962, 50,000 homes in war-racked, economically depressed Liverpool still lacked bathrooms, and that bathing for those households was limited to one night a week—and to one tub of hot water for all members of the family, one after the other. *Ewww*.

That crossed my mind during my first few days with the Audiodesksysteme. Yet my concerns pretty much went down the drain once I understood the Vinyl Cleaner's *hydraulics*, key to which is its efficient electric pump. Once the user presses that little red Start button, and after the Vinyl Cleaner's microprocessor has completed a quick system check—noting, in particular, whether the bottom-level fluid tank is sufficiently full—the pump forces the liquid straight up into the cleaning chamber through a gap at the bottom of said chamber. The volume of fluid is sufficient to assume a level of about 4" above the cleaning-chamber floor, yet in one side of the chamber is a long horizontal opening whose bottom edge is only about 3.75" above that floor. Because the pump continues to work throughout the cleaning cycle, the fluid has no choice but to spill over the bottom edge of that gap, beneath which it flows into a tightly enclosed sponge of white foam measuring 1" by 4" by 6". The sponge filters out contaminants, and the fluid continues down through three holes at the bottom of the filter chamber, where the fluid reenters the tank.

Working in tandem with the pump are those four counter-rotating barrels. Their microfiber pile is, of course, far too big to get into the grooves themselves, but serves two other purposes: to clean the outer surfaces of the record—removing, for example, fingerprint oil that didn't make its way into the groove—and to stimulate

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the fluid into constantly flowing away from both sides of the record, so that contaminants detached from the vinyl are unlikely to become reattached.

That brings to mind two other points. First, the bubbles one sees during the Vinyl Cleaner's cleaning cycle are not cavitation bubbles—those are too small to see with the naked eye—but instead result from the combined hydrodynamic actions of the pump and the counter-rotating barrels. Second, Rainer Gläss designed the Vinyl Cleaner to apply cavitation as briefly and gently as is practically possible. I'm told that it doesn't take long for the ultrasonic generator to loosen caked-on mold-release compound and the like—after which, the machine's major chore is to direct such contaminants as far from the record as possible.

And after *that*, the Vinyl Cleaner's major chore is to dry the record in a similarly noninvasive way, with no penalties in terms of static buildup. Hence the twin drying fans, which blow through openings in the cleaning chamber about 4.5" above its floor—high enough to be safe, but low enough to remind the user never to overfill the Vinyl Cleaner. "Thing bad," as author Mary Roach would say.

Speaking of drains, Audiodesksysteme recommends that the fluid be changed approximately every 100 records; the distributor suggests that same number for dirtier records, adding that, if one tends to wash only new records, it's okay to stretch it to 150. Since I began this little experiment with the filthiest of the filthy, and because I wanted to gauge the Vinyl Cleaner's effectiveness with relatively clean, new records—and to describe in this space the fluid-changing experience—I decided to bail after about 40 or so, and to start all over again with fresh distilled water and a fresh dose of cleaning fluid.

It was almost laughably easy. I unplugged the Vinyl Cleaner from the AC, carried it to the edge of the kitchen sink, removed its knurled metal drain plug—it's fitted with a rubber grommet—and watched



Top: The cleaning chamber, viewed from its left, with the microfiber barrels removed from the four upright spindles (foreground). Also visible are the two turnstiles that drive the record and, beyond those, the hollow recess for the ultrasonic transducer. The filter has been removed from the filter chamber (left), the input slot for which is just visible within the cleaning chamber.

Middle: To drain the storage tank of the Vinyl Cleaner, simply remove the knurled metal plug . . .

Bottom: . . . then stand back and let nature take over.

as the machine quickly and thoroughly voided itself. I had allotted for the job far more time than it took, so I killed the extra minutes by rinsing in distilled water the filter and the rotating cleaning drums—the latter which are mildly difficult but not impossible to remove and reinstall. The manual recommends rinsing the filter for every 100 records, though it strikes me as easy enough to do every few days; rinsing the drums isn't mentioned anywhere, though the manual does recommend replacing the drums every 500 records. (A set of drums costs \$99.95.)

Is it a wash?

My reservations comprise a very short list indeed, topped by the Vinyl Cleaner's lack of adjustable feet. It's easy to see why they were left off—the internal storage tank occupies so much downstairs room that the manufacturer would have to add to the bottom of the machine a plate thick enough to accommodate the threaded axles of such feet—yet the omission is unseemly on so expensive a device.

And I'm a bit suspicious of the soft, rubber-like lips through which the record passes when being loaded into and out of the Vinyl Cleaner. For one thing, after the cleaning cycle is complete, wayward drops of fluid sometimes cling to the lips' undersides, only to be flicked onto the record and record label by the wind from the fans: a rare but nonetheless annoying occurrence. For another, it seems to me that the lips *could* become contaminated with dirt or grit, and their undersides, which exert a mild squeegee effect on each side of an LP, are hard to get at with a cleaning swab. Spare lips are available (I felt dirty writing that) from the distributor, so I assume they're user-replaceable; if so, perhaps the Vinyl Cleaner owner should observe some regimen for their renewal.

Apart from that, my only regret is the price: I regret that I can't afford a Vinyl Cleaner, but I do not consider Audiodesksysteme's price of \$4450 regrettable in and of itself. This product

is so well thought out, so thoroughly debugged, that I can only imagine that its gestation required more than a few months' work—and probably more like several years. And the Vinyl Cleaner's build quality, like its effectiveness, is beyond reproach. You'd be within your rights to believe that Reiner Gläss applied to the problem of dirty records an unreasonable level of technology (in which case you should, with all haste, set about not buying one); he did it anyway, and you would *not* be within your rights to call the Audiodesksysteme's price unreasonable.

Where does that leave everything else? For a little more than half the price of the Audiodesksysteme Gläss Vinyl Cleaner, you can buy a Keith Monks Audio Labs discOvery One: a wet-wash, vacuum-dry machine that safely cleans dirty records,⁵ but not quite as effectively as the Vinyl Cleaner. On the other hand, *all* KMAL machines will clean 7" and 10" as well as 12" discs—an advantage of no small importance to me and other collectors. (I should also say that I've never actually had a problem with static buildup when using KMAL's tonearm-style vacuum wands—though I can't say the same about those vacuum-dry cleaners that evacuate fluid by means of a velvet-lined radial slot.)

By all accounts, the Audiodesksysteme Gläss Vinyl Cleaner has already enjoyed considerable success: with record dealers, music archives, and some of the world's

most serious record collectors, not to mention audiophiles of comfortable means who simply want the best. As for myself, I've laid in a good supply of fresh, new Original Master Sleeves from Mobile Fidelity Sound Lab, and I'm trying to clean as many records as I can before the Vinyl Cleaner has to go back to its owners. If there exists a more effective, easy, reliable, and utterly transformative way of cleaning LPs, I have yet to hear it. ■

Art Dudley (art.dudley@sorc.com) makes sure his records are super clean in snowy upstate New York.

5 See this column in the April 2014 issue: www.stereophile.com/content/listening-136.

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MANUFACTURER'S COMMENTS / Audiodesksysteme Vinyl Cleaner

Editor:

We are grateful to Art Dudley for his thorough report on the Audiodesksysteme Vinyl Cleaner, and happy to have provided him with some "wow" moments this winter.

He mentions that development of the Vinyl Cleaner may have taken quite some time. In fact, it was four long years. The first prototype, about six months in, was a somewhat primitive "brute force" ultrasonic machine, actually quite similar to a couple of ultrasonic-only machines currently available on the market from other companies. But brute force and the LP don't mix well, as Art's descriptions of the teeny-tiny size of the groove modulations point out, and so began three more years of R&D to reduce the

ultrasonic power that needed to be applied for safe yet effective LP cleaning.

The addition of four rotating, microfiber-covered barrels as the primary means for the surface cleaning of fingerprints, etc., allowed for a significant reduction in ultrasonic wattage, and also serves an important fluid-management function by wicking the ultrasonic agitated rubbish away from the LP surface into the cleaning solution, where it can be filtered. Another reduction in the need for ultrasonic power was achieved through introduction of a cleaning solution surfactant, to make the distilled water a better solvent when used in conjunction with the ultrasonic process.

Add a fluid filter to clean the recirculating cleaning solution, and air

filters to collect airborne dust, which would otherwise be blown back onto the wet surface of the LP during the drying cycle, and you basically have the current machine: a fully automated record-cleaning robot, just as the Jetsons surely promised!

Art mentioned that he wished for adapters to allow for the cleaning of 7" and 10" discs in the Vinyl Cleaner. Not as easy as it sounds, because of the wide variance in the actual diameters of these discs, but good news: In conjunction with Vinh Vu, a Vinyl Cleaner user and the acrylics master at Gingko Audio, we are several prototypes into development of such adapters.

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