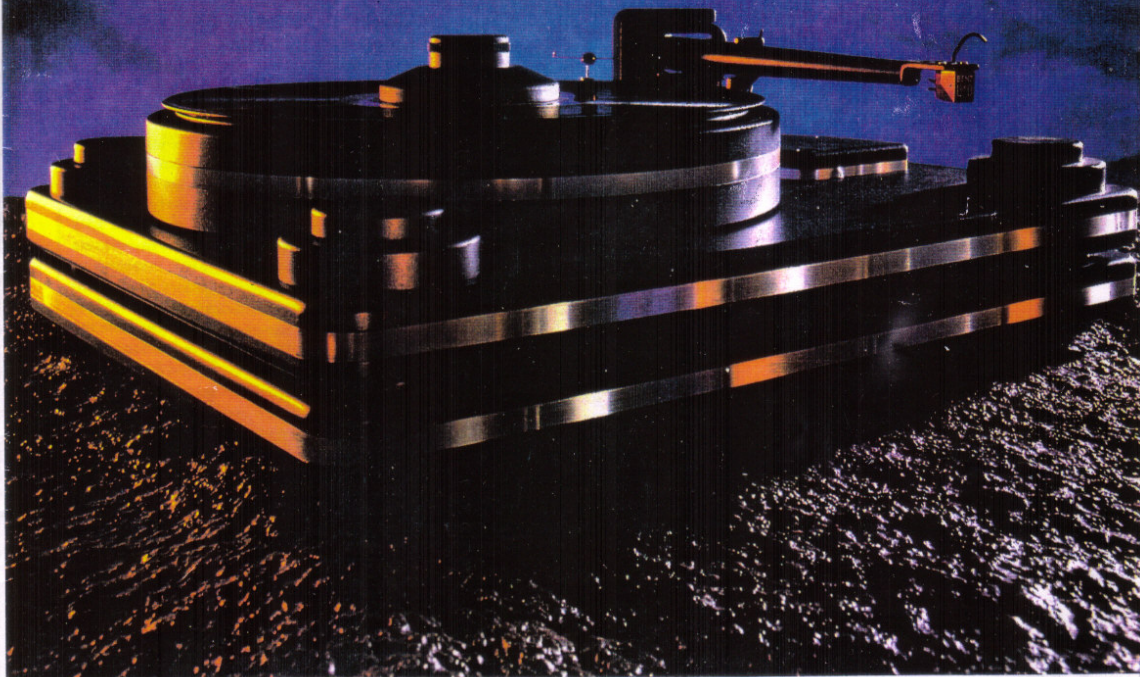


KUZMA REFERENCE

£3000

Jonathan Kettle listens to the final word on turntable design from Kuzma, intrigued to discover whether the Reference name tag is indeed a reflection of its performance



Back in the dark ages about 20 years ago, well before CD was invented, the best turntables you could buy were 'transcription' record decks designed for use in broadcast studios. Transcription turntables had to be robust, reliable, consistent, noise-free and speed-stable; they had to start and stop quickly and cope with a lot of abuse. In short, they had to be work horses.

By the late seventies, serious turntable designers were looking beyond these broadcast studio criteria to improve standards of vinyl replay. Reference quality turntable design requires a much more uncompromising, single-minded approach.

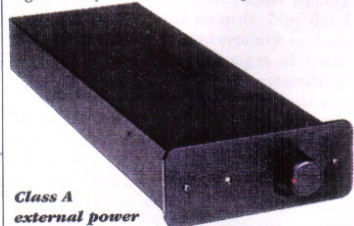
Examples from the past two decades include Linn's LP12, updated for ever more tuneful

performance; Pink Triangle's turntables, designed to make records sound closer to the original master tapes; Roksan's turntables, made to measure records ever more accurately; Townshend's Rock Reference, and a variety of American heavyweights, each designed to minimise the effect of unwanted vibrations on signals. The diversity of exotic 'reference standard' turntable design is testament to the enduring appeal of vinyl. But it also reflects the absence of consensus among designers over the ultimate reference against which their turntables should be judged.

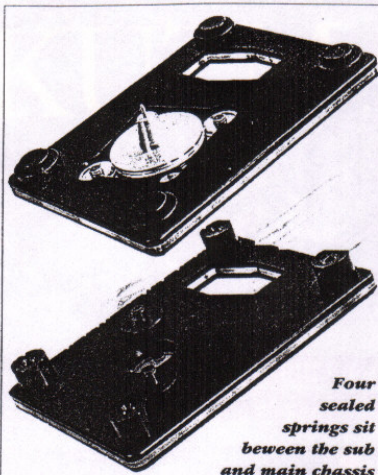
Franc Kuzma, the turntable specialist based in Slovenia, takes a refreshingly pragmatic approach to turntable design. By applying established mechanical engineering principles and common sense in equal measure he's produced the Kuzma Reference turntable, his 'final statement' on vinyl reproduction. It

represents a complex balancing act, juggling with the conflicting goals of high strength/rigidity and resistance to spurious mechanical vibrations and acoustic breakthrough.

Although the Kuzma Reference shares one or two common design elements with the classic Stabi turntable of the 1980s, it is significantly different in concept. Most strikingly,



Class A external power supply drives the turntable's two motors



Four sealed springs sit between the sub and main chassis

ingly radical is the sandwich construction of the three main elements, the platter, subchassis and main chassis.

Each sandwich contains a layer of acrylic (the filling) in between two outer layers of aluminium (the bread). Laminate construction ensures that these three components are immensely strong yet resistant to a single, peaky vibrational mode; acrylic and aluminium are likely to give a broad band, unpeaky resonance behaviour. They are extensively bonded and bolted to ensure intimate contact between the layers, for optimum strength and resonant behaviour.

An ingenious suspension system based on four hermetically sealed, self-centring, user-adjustable springs damped in silicon viscous fluid isolates the subchassis from the main chassis. The armboard is a double layer of bonded aluminium and acrylic, tightly bolted to the subchassis using threaded inserts.

Drive to the 10kg platter is achieved by externally powered twin motor/pulley/belt arrangement. A 20W split phase Class A external power supply drives two motors placed at opposite poles, at about 2 o'clock and 8 o'clock respectively, beneath the circumference of the platter. One neoprene belt connects these two motors to two pulleys placed at 10 o'clock and 5 o'clock. A second neoprene belt transfers drive from these two pulleys to the rim of a substantial hub.

The twin purpose of this complex configuration is elimination of motor noise transfer via the belt to the hub, and fast start-up time. Were it not for the presence of a tapped record clamp I'd be tempted to think the Reference is a transcription player after all.

Beneath an upturned flowerpot-like machined extension of the hub is the heart of the turntable, the main bearing. This is inverted on the top of a 16mm oil-lubricated stainless steel shaft supported by Teflon reinforced bushes for low friction. A tapered hole in the centre of the platter mates with the flowerpot sides. You have to be very strong to lift the platter on and off safely. On the other hand, who would want to

transport this deck once it's been installed?

Playing records on the Kuzma Reference is quite an experience – but you do have to go through something of a ritual. A three-position rotary control on the power supply switches between off, 33.33 and 45 rpm. That's the easy bit. The fiddly part is the spinning-top record clamp. I fail to see the need for such extensive tapping of the spindle and clamp. There must be 20 revolutions before the clamp starts to grip.

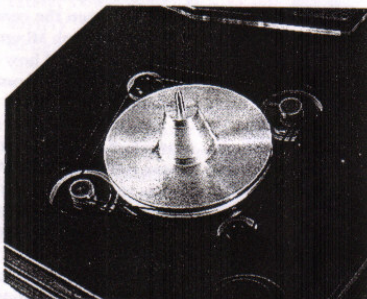
This clamp soon showed its friendlier side when I tried playing a couple of warped albums. In place of the usual, impossible-to-track warp, the clamped records were rippled but just about playable (although my heart missed a few beats as I watched the cartridge riding the rougher humps).

Friendly isn't the first word that springs to mind to describe the Kuzma Reference. But by the same token it wouldn't be the first word you'd use to describe a good friend you've grown to trust and rely upon. The longer I lived with this turntable the more I realised how reliable it is; how faithfully it

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played my LPs. If I wasn't completely won over in the short-term, I certainly ended up missing the Kuzma Reference having used it for the best part of a month.

Its sound is extraordinarily difficult to pin down. It certainly doesn't lack fire or the ability to capture a dramatic, thrusting orchestral crescendo. Nor did it ram furious, even fiercely recorded music down my throat. Piano music sounded eloquently inte-



The deck's two belts transfer drive from the twin motors and pulleys to the hub

DATA

Price:	£3000
Size:	490x390x190mm
Drive:	Twin belt/twin motor
Speeds:	33.33, 45rpm
Arm:	Not included
Other:	External power supply; tapped record clamp

DESIGN

- ▶ State-of-the-art belt drive record deck
- ▶ Hermetically sealed four-point silicon damped springs
- ▶ Inverted precision-made stainless steel shaft
- ▶ Acrylic/aluminium sandwich platter, subchassis and chassis

PERFORMANCE

- ▶ Transparent, stable and convincingly integrated sound
- ▶ Musically communicative and involving
- ▶ Wheaton/Benz-Micro Ruby is exceptionally detailed, but with a slightly finicky sound
- ▶ Kuzma Stogi Reference/Benz-Micro L040 gives smoother, richer textured and more satisfyingly solid, weighty presentation

grated, choral music breathed, and solo vocal music had an infinite variety of qualities, though it was never vague or congested.

I even managed to make sense of some of the most lugubrious of my recordings listening to them on the Kuzma Reference. Invariably it allowed the message through without making it sound embroidered, obvious, piercingly bright or predictable. And although it enabled clear differences between arms and cartridges to be easily identified, the Kuzma Reference maintained a resolutely stable, cogent, clearly structured and essentially transparent sound with both the tone-arm/cartridge combinations I tried.

The bottom line is this: the Reference lives up to its name in no uncertain terms. It brings recordings to life without presenting a superficially glamorous picture, yet it is deeply informative in terms both of pure musical performance and recording quality. It handled all musical genres adeptly and revealed all styles of recording explicitly but sympathetically. It draws you into the music, capturing the performance idiosyncracies.

Using the Kuzma Reference I never felt the sharp edge of the surgeon's knife ripping open the contents of records. Nor did I detect any rhythmic uncertainty or bass boom. There weren't any signs of speed instability, bearing problems or susceptibility to environment noise. Playing records was illuminating and satisfying because the turntable always retained a sense of order and precision. Listening to album after album reinforced this impression. It's why Kuzma's 'final statement' on turntable design more than justifies its Reference name tag.

■ **Right of Reply:** see page 53

KUZMA STOGI REFERENCE £1000
BENZ-MICRO LO40 £700

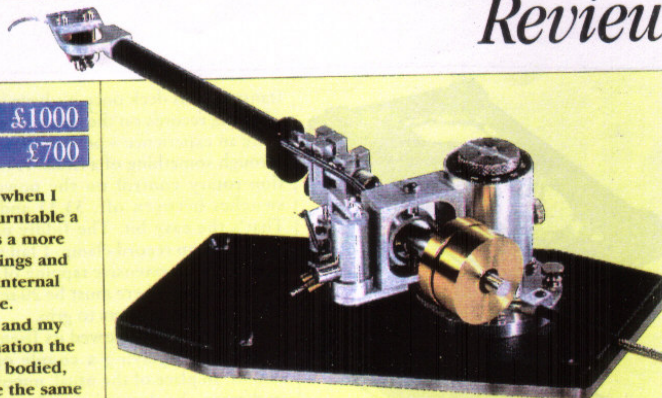
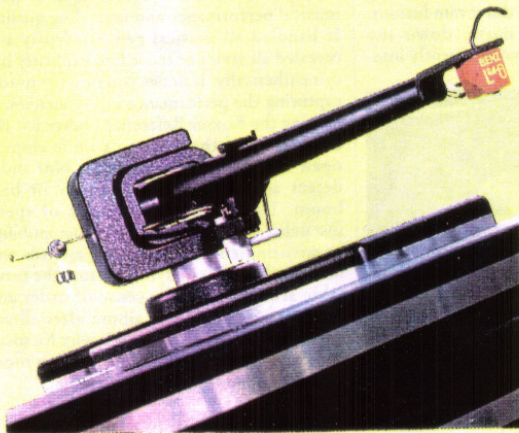
I remember liking the Kuzma Stogi tonearm when I reviewed it in combination with the Stabi turntable a few years ago. The £1000 Stogi Reference is a more refined version with ultra high quality bearings and adjustable VTA (vertical tracking angle), Cardas internal wiring and Straight Wire Micro-Link lead out wire.

In partnership with the £700 Benz-Micro LO40 and my Unison Research/Snell amplifier/speaker combination the Stogi Reference sounded marvellously solid, full bodied, and majestically dynamic. It didn't capture quite the same wealth of fine detail as the top Benz-Micro cartridge and Wheaton tonearm combination, but what a wonderfully integrated picture it painted nevertheless.

Everything from the wailing *Peter Grimes* of Jon Vickers to the sweeping intensity of Rimsky Korsakov's *Scheherazade*, the aching, intimate intensity of Billie Holiday and her rich-textured backing – especially Barney Kessel on guitar and Ben Webster's sax on *Darn that Dream*, from the album *Body and Soul* – was projected with a life of its own. The shape, scale, atmosphere but, most of all, the message – the sheer communicativeness of the music – sang through the system.

The Kuzma arm and LO40 cartridge worked together to create a stability and poise, a sense of purpose and an overall ease of presentation with very clear counterpoint and instrument tonality. It captured the distinctive qualities of different recording acoustics, different mixes, and the contrasting sounds of instruments with uncanny ease. It never sounded ruffled, only rarely less than completely responsive, and proved more than sympathetic to some less than immaculately recorded material. It didn't mask flaws, but it didn't render recordings unlistenable – the mark of a well-balanced, well-matched arm and cartridge.

Some hi-fi systems you can play while doodling away at other activities – skimming newspapers, for example. This system simply demanded your full attention. Anything less would have been sacrilege. Its only slight flaw was in not resolving quite so much subtlety and precision of fine detail as the more expensive Wheaton/Benz-Micro Ruby arm and cartridge. But I found myself smiling a lot more as I played records. It's this special ability to bring music to life with a credibility transcending the vinyl medium that made the Kuzma Reference/Stogi Reference/Benz-Micro LO40 worth the £4700 asking price. Come on, it's only a grand more expensive than the top Linn record player!



WHEATON TRI-PLANAR III ULTIMATE £2250
BENZ-MICRO RUBY £1400

The Wheaton arm fitted to the review Kuzma Reference is terminated in a junction box with phono sockets. For an extra £250 you can enjoy the luxury of a 1.25m length of Cardas tonearm lead terminated with rhodium connection plugs.



A structural marvel, the Tri-Planar III arm is adjustable for everything from VTA to cartridge azimuth, yet it provides a very stable cartridge platform. A silicon fluid damping trough may prove useful with some cartridges, and an enormous range of counterweights helps make the arm compatible with virtually any type of cartridge.

The Tri-Planar III allowed the Benz-Micro Ruby to sail through the toughest of recordings without a whimper. The major strength of the combination was its breathtaking transparency – both in terms of the way albums were recorded and the musical detail it laid bare. Indeed, this detail sounded so finely chiselled that the sheer wealth of information, especially sharply percussive transients, often proved a mite distracting. All the more so since the Wheaton and Ruby did not seem ideally suited to my lively Snell Type J II speakers.

The net tonal balance of the system was slightly skewed at the expense of bass weight. I could follow every squeak and click of the sliding left hand over acoustic bass strings during Art Pepper's startlingly vibrant *Intensity*. Everything except the weight and solidity of bass lines projected well.

The sheer energy and panache of the playing, the intricacies of the percussion and sax lines on Joni Mitchell's *Mingus*, even the coarsely recorded and compressed short takes featuring Mingus' voice, interludes between the main tracks, revealed how deep the Wheaton/Ruby combination was digging. Far from needing the lyric sheet to tell me what was going on, I made out extra words not listed.

There was a loss of weight to bass guitar on the Joni Mitchell album, but the music's pace, rhythm and clarity was well captured. With grander orchestral recordings the bass shy balance was more intrusive. I noticed it again listening to the Italiano Quartet playing Beethoven, and Pollini's Schumann Symphonic Studies sounded intricate, but slightly finicky.

The Wheaton and Benz-Micro Ruby yielded up the most remarkably forthright detail imaginable. In my system it lacked only that final octave of bass power to add oomph, weight and scale to an otherwise immaculate presentation.