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CEC belt drive TL 0 - 3.0 and CEC D/A converter DA 3N

Digital Flagship

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The CEC TL0 3.0 drive delivers an incredibly stable and quiet foundation on which the converter delivers a true Symphony of timbres.

From the mechanics to the smallest detail for the noise immunity of the well-constructed massive TL0 3.0 drive from CEC, all provides for the foundations of an extraordinarily, monumental, natural musical experience to pack more into these products is currently unimaginable.

Review from HIFI STARS - 2014

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CEC new belt drive TL 0 - 3.0 and CEC D/A converter DA 3N

Digital Flagship

We can proudly announce a world exclusive, that HIFI-STARS, the first German speaking Hi-Fi magazine has been given the opportunity and taken to heart, to lead with a Japanese statement in terms of digital music playback. First of all: Alone due to the exclusive price, it will forever stay with me as a unique experience. To describe this Hi-Fi equipment is undoubtedly one of the great moments in my life as a Hi-Fi Editor. Admittedly, not only vinyl enjoys high priority for me. I became intrigued with the request to report on „the flagship“ of the digital world of the sound.

Legend

TL0 from CEC which are considered indisputably as “the experts” with one of the best CD drives on our planet. The topic at hand is the brand new third

generation, current model number 3.0 with the belt-driven construction from CEC. This extraordinarily impressive piece of Hi-Fi technology (the specially built one I picked from the transport container) reminds me of one of my analogue drive dreams, visually graceful, however similar to sacral (forgive me). With the compact dimensions of 300 x 317 x 158 (W x D x H in mm) the drive with is unexpectedly heavy weighing in at 16kgs. The additional weight of just under 4kg for the separate power supply is not included here. The drive table with the „pound“ stabiliser in nickel plated bronze and spring suspended on three pillars is remarkable - I do not want to talk anymore about CD-puck here. Anyway, its appearance has nothing in common with the abundance of available CD player structures in the current market.



The CEC TL0 3.0 is reminiscent of the double-decker sub-chassis design of a high quality analogue drive.

Analogy

In 1991, the starting point for the development of the CD belt drive came with the realisation that the basic functions of analogue and digital drives are the same. Analogue high end drives are all characterised with their effective measures against vibrations and resonances. A large drive plate is often driven by a separately positioned elastic belt motor. In some designs, the engine is designed in such a way so that as little torque acts on the plate as possible. This effectively prevents the transmission of vibrations to the sensitive scanning operation. When the drive plate reaches the right speed, the plate acts as a flywheel and requires only a small supply of energy to compensate the friction on the belt and bearings. In addition, by applying weight the record can be pressed to the plate so that the

cartridge needle for the scan process, finds itself in the very best conditions. Resonances in the housing are also effectively diminished through a mix of wood, aluminium, steel, plastic materials and various elastomers. So far, just a small excursion into the world of vinyl.

Special features

In Tokyo 1954 and in CEC's founding year, they developed the first belt driven drive for turntables and delivered them to numerous well known brands of turntables as an OEM product. (i.e Grundig, Marantz, Teac, Sony, Sanyo, Toshiba, Mitsubishi, Alpine, Kenwood, Sharp etc) With knowledge of the basic functions in drive building, CEC in 1992 then transferred this knowledge to the truly legendary CD drive, the TL1 for the digital reproduction of music. CEC uses a low-torque spindle motor for the CD drive which, together with a massive stabiliser via a precision belt, and a second engine for the laser feed, drives the plate.

The laser engine and the CD drive motor are isolated from the optical tone arm electronically, magnetically and mechanically, and are connected by two precision manufactured belts. The large inertia of the stabilisers produces a flywheel effect at this point and guarantees precise tracking. At the same time it centralises and charges the CD stabiliser and eliminates vibration during sampling. The Sub-chassis design absorbs interference of all kinds. Gone are the days of micro-vibrations and resonances on playback.

Evolution

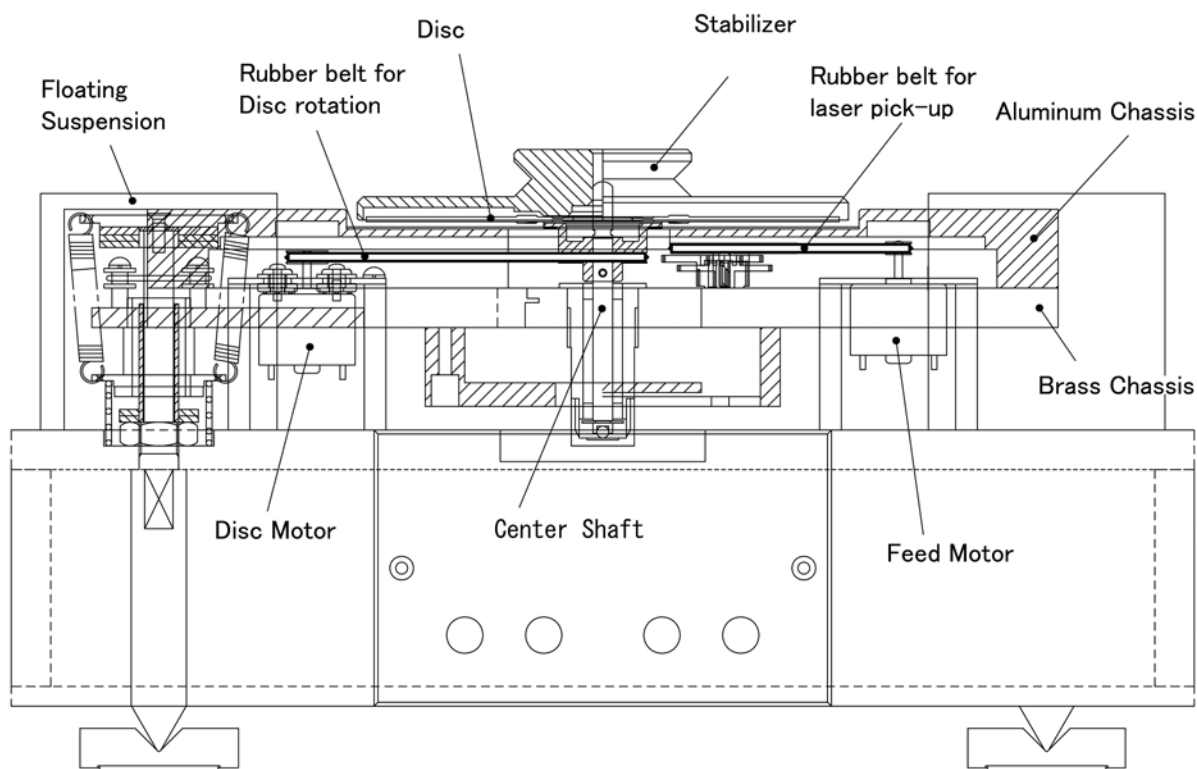
Over the last decades, this development at CEC has continued and is today at the technological forefront at the 60th anniversary of the company. The CD drive version 3.0 now represents the consistent further development of CEC's TL0 and its successor, the TL0 X.

Technology

The CEC TL 0 3.0 drive is designed as a three part

chassis built for vibration suppression and is completely handmade in the land of the rising sun.

This means: all of the components and parts are manufactured exclusively in Japan. All with minimum tolerances, both in mechanical and electronic components. The components are singularly manufactured exclusively for the TL0 3.0. Jitter is often perceived negatively in the playing of CDs as a typical digital sound property. These distortions are produced by various electrical and mechanical interferences. Conventional CD drives can tend to amplify the slightest vibration on the reflective surface of the CD. When these micro-vibrations scatter the light and interfere with the digital data stream, the end result is jitter. CEC counters this interference with a three point insulation of the actuator using rubber damped suspension. The actuator is also enthroned in a 30mm sandwich made of non-magnetic materials such as 20mm aluminium, as well as a 10mm bronze plate with correspondingly different resonance behaviour.





The high-precision bearing is separated from the motor and is preloaded by the separate belts so that it operates free of play. The extremely heavy stabiliser encloses the CD on the edge and forms complete darkness and as a result, hinders against stray light infiltration. Also, all sources of electromagnetic signals are physically decoupled. The power supply is housed separately and can be placed up to 1.5 metres away from the drive. The drive electronics sit in 20mm of closed solid (non-magnetic) aluminium and is therefore isolated from the drive mechanism. The drive and the lasers motor are electronically, magnetically and mechanically separated from the laser tone arm and the CD plate is connected via only the two belts, resulting in trouble free laser operation. This immense effort can be deemed as a statement of performance for the Japanese company CEC and so defines and sets new benchmarks for high standards in sound. Reduced internal signal paths to minimise distortions, the Word-Clock-input to reduce jitter, a visually elegant housing design (e.g. recessed screws, continual edging) and a super link connection to the internal D/A converter DA3N, are all evident. CEC's

own superlink connection transports the CD data streams and synchronisation signals via four special cable connections (master clock, bit clock, L/R clock, data) to the separate converters. The necessary BNC connectors are of course included. When the super link connection the encoding operation is eliminated, which is also beneficial for an undistorted signal flow. CEC also offers the possibility to pick up the audio signals via SPDIF (RCA) or AES-EBU standard (XLR).

Facts

The DA3N was described in the HIFI-STARS issue release No. 17/2012 in conjunction with the CD drive TL3N. The editorial colleague (HO) was at that time very taken by the connection possibilities and the sound potential of the CEC DA 3N converter. But the D/A converter has even more to offer than just its sound potential. It is also a digital pre-amplifier and can therefore become the hub of a digital music system. If only digital sources are used, a power amplifier or active speakers can be controlled directly via the variable XLR or optional RCA output which further reduces the signal paths.

In addition, there is also an output with a fixed signal level for connecting to an existing preamplifier. The sake of completeness there are digital inputs via the 75 ohm coax (SPDIF) RCA / RCA connection by means of the three optical (one on the front) inputs. AES / EBU connection via the XLR jack, two USB ports (one on the front) and the super link connection. This super link connection exists additionally to the BNC-connector at the back in the form of a nine D-Sub connection so that even older drives can exchange digital super link data with the converter. The volume for headphones can be adjusted at the jack plug connection.

Less crucial for the sound quality of a converter are the abundance of connection possibilities but rather, the interior qualities. The heartbeat of the DA3N comes in the form of the Sabre D/A Chip ES9008, an 8-channel audio DAC (the use of which so far was purely limited for professional use), SPDIF and PCM signals in 16 to 24bit with up to 192 kHz sampling rate processes.

Brain activities

I start my listening session with the analogue

section of my system with well-known analogue sounds provided by Ray Wilson, Susan Vega, Marla Glen and Andrea Schröder. I also own these records as CDs and a listening comparison is possible by simply switching between the two sections on the preamplifier. The analogue combination is likeable through the structured and well resolved sound image. The range is wide and the sounds produced are fine and stylised. The sound representation due to the good dynamics is more rounded and so offers pleasant listen over a long period of time.

The human ear is surprisingly sensitive to phonetic changes or is it rather the subconscious which activates the different brain areas? The time is right for an update of my digital horizon and the CEC DA3N converter is quickly connected so that my player can act purely as a CD drive. The before and after sound difference is quite simply dramatic. The sound space is much larger, more spacious, thereby „blackier“ and very dynamic. Through the possibility of directing the music signals via the preamplifier in DA3N directly to an output power amplifier, the sound representation is further enhanced, more direct and contoured.





After further musical trips through my neglected CD collection, the time is now ripe to connect the new CEC TL0 3.0 drive to the DA3N via the Super link. The wonderful CD recording „Nieujaarsconcert 2011“ by the Amsterdam Symphonic Orchestra provides the perfect stage for the musical performance of CEC’s flagship drive. Upon listening, you get the feeling of being kidnapped and taken directly into the concert hall...

The CEC TL0 3.0 drive delivers an incredibly stable and quiet foundation on which the converter delivers a true Symphony of timbres. Of importance for the reproduction of the transient behaviour are natural timbres is the timing of the sound spectrum, as well as its volume in the first seconds of the sound. At least here, the flagship of the CEC drive series separates the wheat from the chaff. As an example of the latter, I will explain the dynamic capabilities of the TL0 3.0. In the classical sense,

belonging to the concept of the dynamics of the entire sound event, in relation to the loudness ratios. From the pianissimo piano (as quiet as possible) to the forte fortissimo (with full power), the full range. Hearing music through the CEC flagship, it quickly becomes apparent how casually it presents the different passages of music.

This nonchalance arises from the monumental building of this drives construction which truly can’t be rattled by anything. So, female voices which to date have not been heard, are extraordinarily rendered in good detail. Equally ensured is the natural flow of the musical piece because the gains in intensity clearly give the sound more life and expressiveness and thus, provides for the concert like feeling of ‚being there‘. At this point, allow me to point out that in my summarised opinion, (unchanged even through listening to a collection of other songs) the CEC TL0 3.0 CD drive, is simply sensational. I expected nothing less in this price range. That it is indeed so relentlessly proven, I couldn’t have imagined that at all. The internal converter (despite the comparatively low production costs) is no less important in its playback performance. The above mentioned super link connection enables a highly precise adaptation for the upcoming digital processing of the signals.

From the mechanics to the smallest detail for the noise immunity of the well-constructed massive TL0 3.0 drive, all provide the decisive advantages for accurate music reproduction. CEC have created the basis for an impressive, natural and absolute musical experience. Notorious „Black listeners“ are also satisfied with the awe inspiring, consistent and absolute top reference imaging performance of the CEC TL0 3.0. For me, parting from both of these units raise significant pain...

Ansgar Hatscher / Alexander Aschenbrunner
HIFI STARS | 2014



Specifications CEC TL 0 3.0

Drive System	Double Belt Drive // Spindle & Pick-up
Playable Discs	Audio CDs & Finalized CD-R/RWs
Power Supply	AC 100-240V / 50-60Hz
Suspension	D.R.T.S. (Double Rubbers and Triple Springs)
CD Stabilizer	Brass, nickel plating (ø125mm, weight:460g)
Digital Input	Word Clock BNC x 1: 44,1kHz
Digital Output	SUPERLINKx1(BNCx4): 2.5Vp-p/75Ω TOS x1: -21 ~ -15dBm EIAJ COAXIAL(SPDIF) x1: 0.5Vp-p/75Ω AES/EBU(Balanced XLR) x1: 2.5Vp-p/110Ω
Dimensions	300(W) x 317(D) x 158(H) mm
Power supply	125(W) x 250(D) x 103(H) mm
Weight	Unit 16 kg // Power supply 4 kg
Color	Silver

Specifications CEC DA 3N

DAC	Highest Performance 8-channel Audio DAC
Power Supply	AC 100V/120V/230V/ 50-60Hz
Analog Outputs	balance fixed XLR x1 variable XLR x1 as PRE-AMP unbalanced fixed RCA x1 variable RCA x1 Headphone 6,3mm x1
Digital Input	Master Clock BNC x 1: 44,1kHz SUPERLINKx1(BNCx4): 2.5Vp-p/75Ω TOS x1: -21 ~ -15dBm EIAJ COAXIAL(SPDIF) x1: 0.5Vp-p/75Ω AES/EBU(Balanced XLR) x1: 2.5Vp-p/110Ω
Dimensions	435(W) x 296(D) x 100(H) mm
Weight	9 kg
Color	Silver or Black

In a nutshell

We'll make it short. From the mechanics to the smallest detail for the noise immunity of the well-constructed massive TL0 3.0 drive from CEC, all provides for the foundations of an extraordinarily, monumental, natural musical experience - to pack more into these products is currently unimaginable.

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High End 2014 - Hot Product



High End 2014 • Hot Product | CEC New CD Belt Drive Transport TL 0 3.0
Tucked away between the expensive boxes driving even more expensive boxes in the Living Voice Vox Olympian/Vox Elysian system was the new CEC TLO 3.0 CD Transport. Making its international debut as the sole (or should that be soul?) source in **the best-sounding system at the show**, this £24,000 CD-only disc spinner might have seemed like an anomaly in this day and age of high-res file replay, but it proved conclusively that there's still life in the old Red Book format. With notably softer styling than its predecessor, the new unit seems set to maintain CEC's position as the supplier of transports of last resort for those who still want to play physical media. It's still built like a battleship, but now it looks more like a stealth cruiser. (Audio Beat | UK audio magazine)



CEC The Drive | since 1954

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