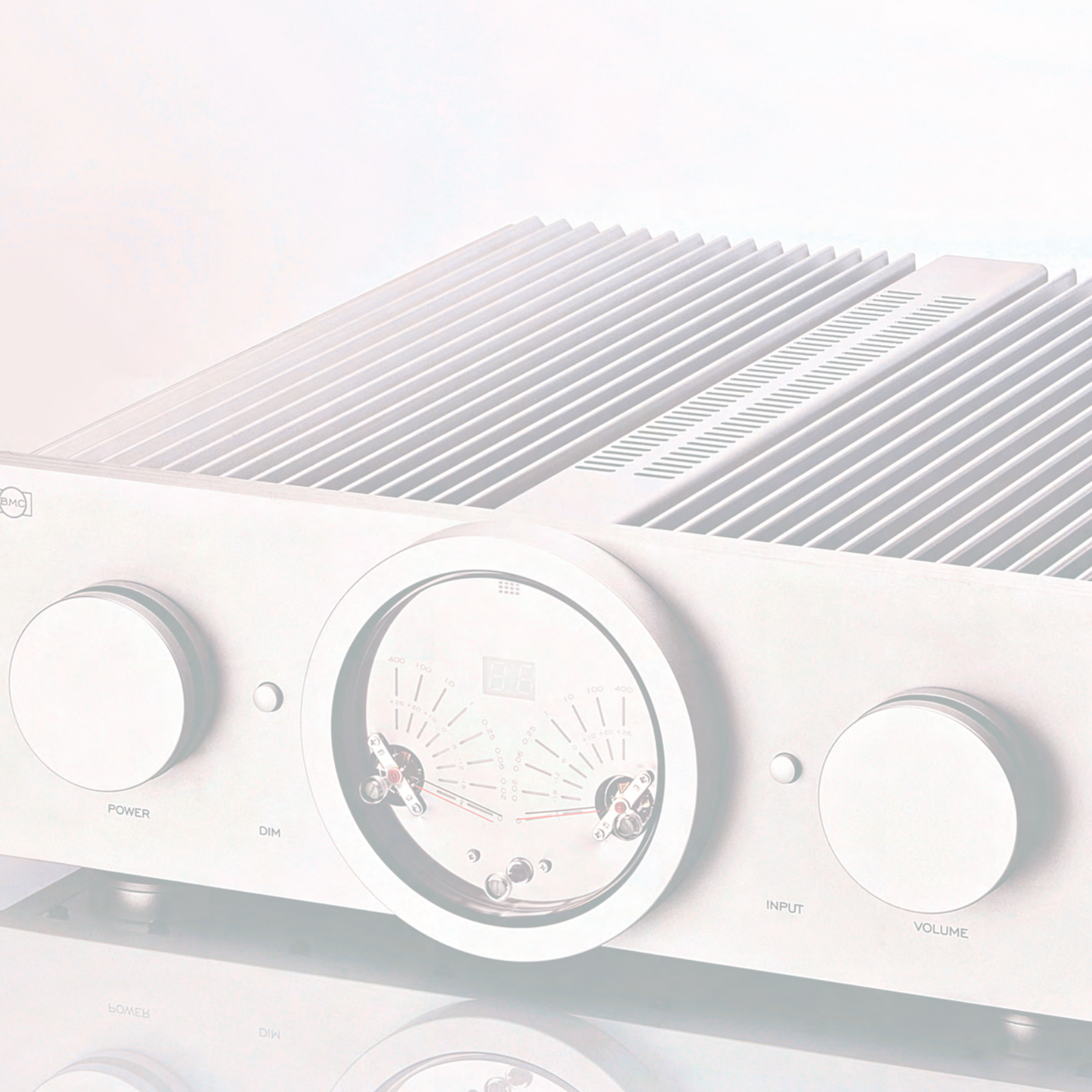


BALANCED MUSIC CONCEPT

B.M.C.

WWW.BMC-AUDIO.COM

CONSISTENT

B.M.C. Audio was founded in 2009 by a team of dedicated designers and managers who brought decades of technical and musical experience to their desire to develop for sophisticated music lovers components that are exceptional in both performance and design. Starting from a base of innovative high-end audio technology, the B.M.C. Audio team conducted extensive research into the impact of electronic circuitry on music reproduction. The result: a rapidly growing reputation within the audiophile community.

B.M.C. believes in thinking outside the box, especially to fulfill its goal of delivering lifelike, you-are-there musical experiences.

B.M.C. is driven by its pursuit of the purest sound and the most direct way to achieve it. Its designers and engineers believe superior audio equipment requires innovation in the same way the best artists and musicians require creativity.

"My immediate impression, and one that persisted as I listened, was that the system presented **more** of the music and **less** of everything else."
—Marc Mickelson, Editor, The Audio Beat,
www.theaudiobeat.com/blog/bmc_denver.htm

Listeners using B.M.C. components will also hear more of the music and less of everything else. Our equipment represents the sum of decades of experience, of extensive research and development, of earned moments of inspiration, and of the discipline to consistently and wisely apply what we learn.

CONSISTENCY HAS A NAME

B.M.C.

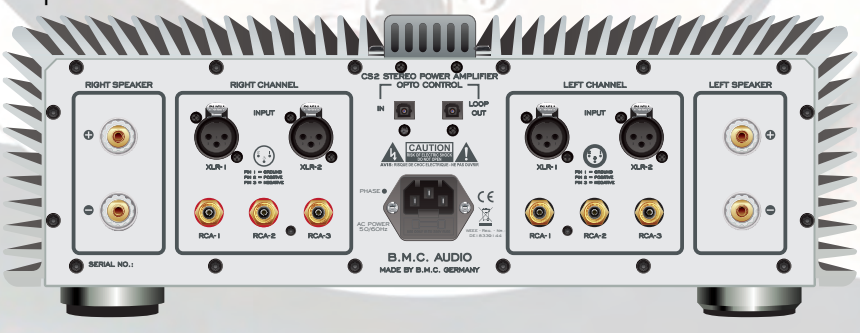
www.bmc-audio.com

B.M.C. AMP CS2

B.M.C.'s AMP CS2 is a Load-Effect Free (LEF) Power Amplifier with an option to upgrade it to a LEF Stereo Power Amplifier. The crucial secret of the CS2's sound is that it avoids distortion, instead of compensating for it through a negative feedback loop.
The AMP CS2 is a power amplifier without a preamplifier for a short, pure signal path. It features a Volume Control using our exclusive Discrete Intelligent Gain Management (DIGM) system, and an input selector. The lossless DIGM volume adjustment eliminates unnecessary signal attenuation at the input, as well as unnecessary high amplification.
Combining the AMP CS2 with a B.M.C. Digital-to-Analog Converter (DAC) transforms it into a power amplifier that offers DIGM gain adjustment set by the DAC's volume control.
In addition, B.M.C.'s balanced Current Injection (CI) input enhances the immediacy of reproduced music by processing the signal current of the source until it reaches the speaker's output voltage.

B.M.C.'s LEF output stage avoids distortion before it occurs by relieving the sound-critical single-ended Class-A transistor of all duties other than providing perfect signal reproduction.
Unlike other amplifiers, a LEF amplifier handles a speaker's current demand separately from the voltage demand. The result is an unparalleled mastery of musical complexity that brings to startling life delicate details, rock-shaking power, high dynamics, sonic vitality, and accurate imaging — all on a three-dimensional soundstage. Load-Effect Free amplification is a new experience that must be heard to be fully appreciated.

The AMP CS2 also boasts solid output power: 2 x 200 watts into 8 ohms, and 2 x 350 watts into 4 ohms.
A fully regulated power supply with a 2kW toroidal transformer and balanced current capacitors provide the muscle behind the music



AMPLIFIED

B.M.C. AMP M I

MONOPOLIST

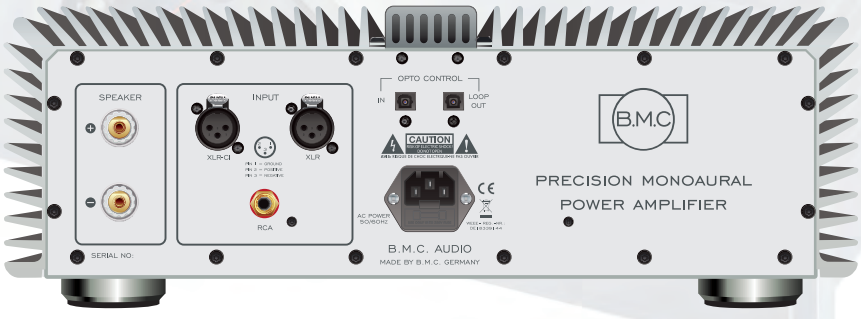
B.M.C.'s AMP M1 is a distortion-free LEF Mono Power Amplifier with adjustable gain DIGM and a balanced XLR-CI input. The AMP M1 can also be used as a classical monaural power amplifier.

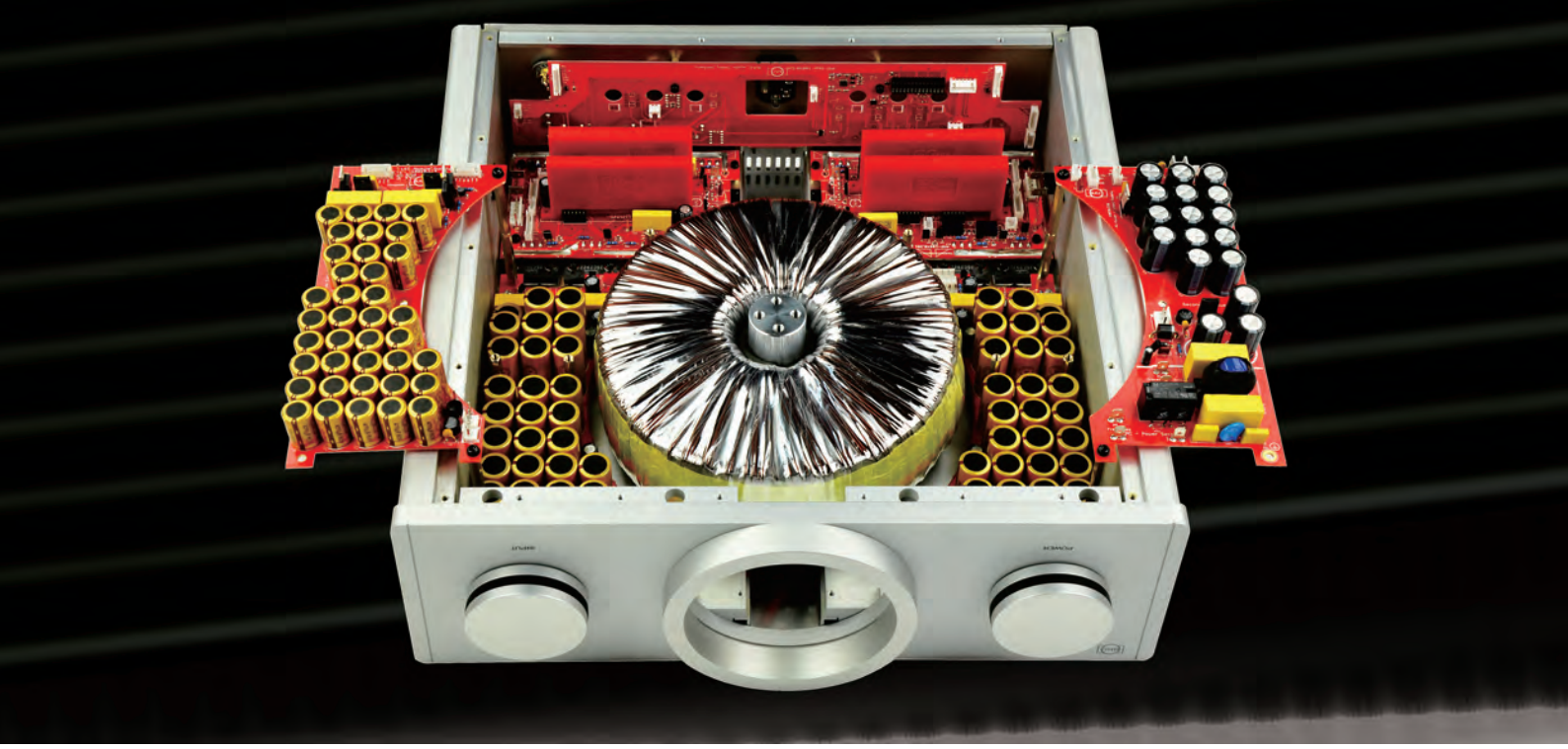
In the short B.M.C. signal chain, the unattenuated signal is used from the fixed output of the source, while our exclusive DIGM system adjusts the volume by setting the gain of the amplifier. The lossless volume-setting happens at the B.M.C. DAC 1, which optically transmits the desired value to the AMP M1.
B.M.C.'s balanced Current Injection (CI) input, a technical and sonic highlight, imparts an even more intense musical experience by processing the original signal current until it generates the speaker output voltage.

The channel separation by two separate mono power amplifiers cannot be surpassed. A fully regulated power supply with a 2kW toroidal transformer and Balanced Current capacitors delivers a silent background and rock-solid stability.
The Load-Effect Free (LEF) output stage avoids any distortion before it occurs by relieving the sound-critical single-ended Class-A transistor of all duties other than providing perfect signal reproduction.

Unlike other amplifiers, a LEF amplifier handles a speaker's current demand separately from the voltage demand. The result is an unparallelled mastery of musical complexity that brings to startling life delicate details, rock-shaking power, high dynamics, sonic vitality, and accurate imaging — all on a three-dimensional soundstage.
Load-Effect Free amplification is a new experience.

The AMP M1 also boasts solid output power: 200 watts into 8 ohms, 380 watts into 4 ohms.





B.M.C.'s many advances are making audiophile sound exciting again, and leading to amplifiers being built in a completely new way. B.M.C. realized that if overall feedback worked as intended, all amplifiers would sound exactly the same. After considerable research, B.M.C. co-founder Carlos Candeias devised a brilliant solution for avoiding distortions at the source, and making a feedback loop obsolete.

This revolutionary circuit was named Load Effect Free, because the single-ended Class-A transistor that defines the LEF sound was relieved of all duties other than providing perfect signal reproduction.

This enabled lossless volume control through our Discrete Intelligent Gain Management, which offered two additional advantages: the input signal would not be needlessly attenuated, and the amplifier would only need to provide the actual required gain.
The last step was to build the balanced Current Injection (CI) input. In typical circuits, the input signal modulates current flow and creates a copy of the original. B.M.C. power amplifiers lead with the input current, using the Current Injection input, until it generates the speaker output voltage. A crucial step in reproducing a truly musical experience.

A giant power supply with a 2kW toroidal transformer, an army of Balanced Current capacitors, and electronic stabilization provide the foundation for a rock-solid energy supply and noiseless background.

The result is an amplifier whose presence recedes behind the music so listeners can hear the true power of their music as well as all the fine details. Quietness combines with a powerful dynamic vitality, richness of detail combines with warmth. The amplifier's only sonic footprint is the purity of the music itself.

40KG INNOVATION

THE SOUND OF NATURE

B.M.C.

www.bmc-audio.com

TOTALLY ANALOG

The World is Flat After All — It's a Vinyl Disk

The vinyl disc, dinosaur of music recording formats, only barely survived the CD. Today, however, the quality of turntables, tone-arms, and cartridges have increased to unprecedented levels, which vinyl recording producers support by pressing higher quality discs in limited quantities. This means new challenges as well as new opportunities for phono amplifiers.

The only consistent way to process the delicate music signal from a moving coil cartridge is with a balanced Current Injection (CI) input as the cartridge's signal is among the most sensitive an audio amplifier circuit will encounter. Using CI, the current of the moving coil flows through the phono amplifier, including the first half of the RIAA equalization spec. The result is a level of dynamics, impact, spaciousness and richness of color that surpasses the performance of step-up transformers as well as the usual voltage inputs.

At the same time, Current Injection electrically damps the moving coil cartridge by letting energy flow into the CI input, instead of eliminating it in a cartridge load resistor.

Transformed energy sounds different than and superior to eliminated energy.

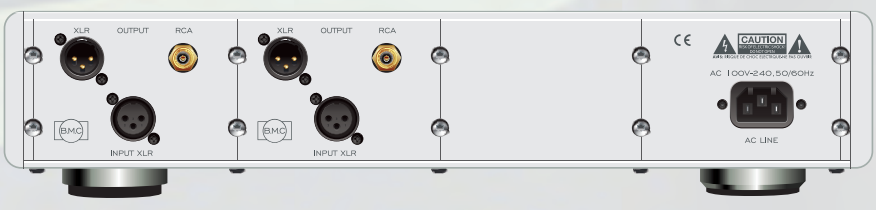
B.M.C.'s use of distortion-free circuits with a Current Injection input and a Load-Effect Free output brings to listeners an advanced musical experience — exceptionally lifelike, open and natural.

Combining the CI input with a low impedance moving coil cartridge give new meaning to the phrase "dynamic system."

05 / 2009
„der Paukenschlag..."
HIFI-STARS

2 / 2010
STEREO-TEST
KLANG-NIVEAU 100%
PREIS/LEISTUNG
ÜBERRAGEND

4 + 5 / 2009
„absoluter Volltreffer..."
lp
Magazin für analoges HiFi & Vinyl-Kultur



B.M.C. BDCD1 CD Belt Drive Player/Transport

The highest grade analog record players share both a belt drive and high inertia. And not without reason, for this is the only way to create a turntable with perfectly smooth rotation and tranquillity.

A patented belt drive with high inertia, in the form of an acrylic-stabilizer, applies this principle to B.M.C.'s BDCD1 CD Belt Drive Player/Transport. In addition to constant rotation, the stabilizer reduces vibrations of the CD. The result is an inner peace and authority unachievable by a lightweight, relatively nervous-sounding direct drive.

The mechanical consistency of the BDCD1's music-optimized, belt-driven flywheel drive is reflected throughout the BDCD1 design. Superlink, our uncompromising digital connection, employs four separate BNC cables to transmit to the B.M.C. DAC. This works out to one cable per clock and one for the digital audio signal, with the master clock very close to the digital/analog conversion. The result: natural-sounding music.

Ausgabe 10 / 2010
STEREO-TEST
KLANG-NIVEAU 83%
PREIS/LEISTUNG
★★★★★
ÜBERRAGEND

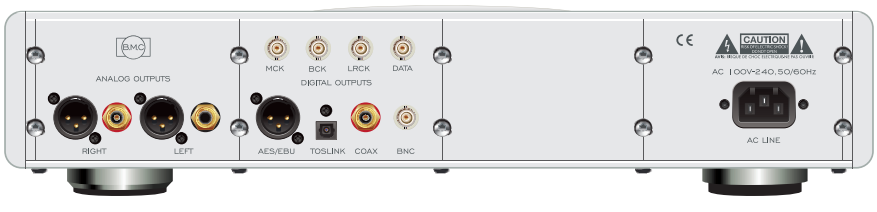
04 / 2009
„ein richtiges Schnäppchen"
HIFI-STARS

An optional, and built-in, Digital/Analog Converter Module stands out due to the extremely short and distortionless Current Injection and Load-Effect Free analog circuitry — and contributes further to the music's impression of effortlessly unfolding.

The result: Music no longer sounds digital, but warm, open and powerful, as if it were from a superior analog sound source.

BDCD1: Simply the quintessence of both worlds.

BELT DRIVEN



B.M.C. DAC I

DIGITAL/ANALOG

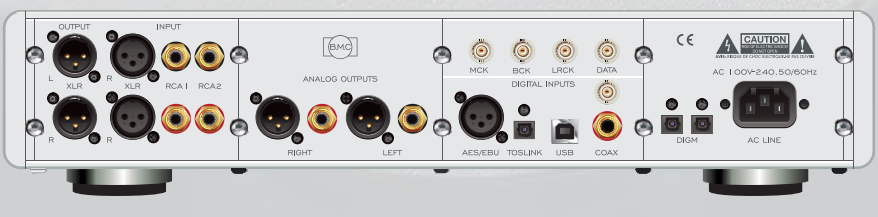
The B.M.C. DAC 1 is not only a digital-to-analog converter, it serves as a preamplifier and the control center of a consistent B.M.C. chain.

Accurate timing separates men from boys in the world of digital audio. This is where Superlink comes in. In addition to standard SPDIF inputs, the DAC 1 offers B.M.C.'s proprietary Superlink connection between itself and the BDCD1. Superlink is an uncompromising digital connection that employs four separate BNC cables, one per clock and one for the digital audio signal, with the master clock very near the digital/analog conversion.

The DAC 1's asynchronous high-resolution USB input generates the music data stream just in front of the D/A conversion. The DAC 1's high-precision master clock is right next to the D/A-converter and creates the ideal foundation for a perfect time-corrected digital signal that produces a more natural sound than other DACs.

On the analog side, the signal-current from the D/A converter is transmitted to the output voltage inside a distortion-free Current Injection input and Load-Effect Free circuit with an extremely short signal path. The result: no "digital" sound.

The DAC 1 becomes the center of a high-end audio system through its preamplifier function. This can be accomplished with a classical preamplifier section for variation of the output signal or, in a B.M.C. component chain, by leading the audio signal straight to the B.M.C. power amplifier. The volume level is set at the DAC 1, and transmitted through an optical connector to the power amplifier, where the gain is adjusted. Result: Perfect lossless volume control.



HIGH-END USB

Computer-based Audio of the Highest Quality Using the New Asynchronous High-Resolution USB Input

Integrating a computer into the audio system is becoming increasingly important, and opens up audio systems to high-resolution digital audio. B.M.C.'s proprietary Superlink between CD players and DACs sets a benchmark in this regard. The USB input yields an even more advanced measure. The music stream for standard USB transfers is generated in the computer, but its quality depends on internal computer clocks not optimized for audio. Fortunately, the USB protocol allows a solution: the so-called asynchronous mode. In asynchronous mode, USB music streaming is not synchronized to the computer's internal clocks, but by an external device, as in the B.M.C. DAC 1.

The possibility of external clocking gives the DAC 1's asynchronous high-resolution USB input the ability to deliver better sound. It enables the DAC 1 to receive digital audio data from the computer then clock the data using a high-precision device. In addition, the data stream is created directly in front of the actual digital/analog conversion. The circuit, more elaborated than a standard USB circuit, provides a consistent jitter-free data stream, sampling frequencies up to 192khz, and resolutions up to 24 bit. This makes it possible to transmit modern recording-studio standards via USB from the computer. Many recording studios and musicians are already providing high-resolution music files online. The DAC 1's asynchronous high-resolution USB input makes it possible to listen to high-resolution music as it's meant to be heard.

The DAC 1's high-resolution USB port reproduces the naturalness and flow of a purely analog playback source, while adding the operating convenience of computer audio and the depth of information available in high-resolution digital recordings.

THE SOUND OF NATURE

www.bmc-audio.com


B.M.C
XLR-CI
B.M.C.

B.M.C. Amplifier M I

BALANCED MUSIC CONCEPT

B.M.C. Concept

B.M.C. Applies Breakthrough Technologies to Its Components to Make Innovation and Perfection Serve Music Reproduction.

All B.M.C. analog circuitry is designed with **a balanced signal path**. The following describes the advantages of balanced circuitry within a component.

Balanced circuitry is not only different from its unbalanced counterpart, but also from circuits with balanced inputs and outputs and an unbalanced internal signal path.
An unbalanced circuit modulates the power supply voltage by the music signal. Certainly not on full scale but with reduced amplitude and most certainly not linear in frequency range, depending on the power supply's quality. Small as these modulations might be they are not without influence on overall quality. Modern high-end DAC ICs with 24-bit resolution are generally designed balanced and to meet their specifications, regardless of whether or not a manufacturer applies an unbalanced circuit afterwards. Delicate low-level resolution is otherwise difficult to achieve.

The power supplies of most modern circuits have a high noise rejection capability. However, the rejection ability is not the same for positive and negative voltages, or for different frequencies. Generally, there is no clear idea how this rejection performs under dynamically changing conditions, such as music signals. From our point of view this means: Better to use cirrcuitry that does not depend on the power supply's noise rejection capability.

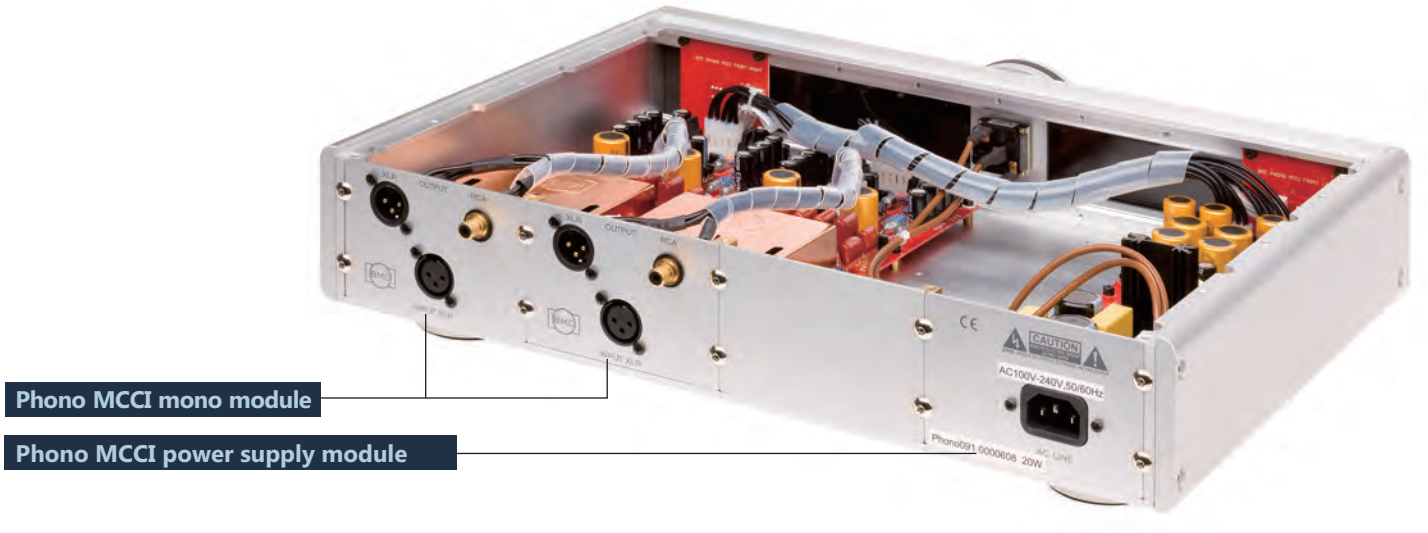
A truly Class-A balanced design is a constant non-moving load for the power supply.
However much energy one signal requires, the balanced mirror signal requires the same amount less. In theory, this means the music signal would not modulate the power supply. Even in real-world applications, power supply modulation is far less in a balanced than an unbalanced circuit. Furthermore, balanced designs possess a natural rejection of common-mode power supply disturbances.

This results in a remarkabe "inner quietness" for music reproduction, leaving more space for sound details, colors and a three-dimensional soundstage.

Balanced designs offer dramatic advantages for phono amplifiers as well. While the output of a phono amplifier delivers a few volts, the input signals are in the range of micro-volts. Any influence of the power supply by noise or modulation would clearly impact the sound quality. But if there is neither modulation nor power supply noise, more room is available for in-depth listening.

B.M.C. in Detail

B.M.C. Phono MCCI
MC Phono Amplifier



The **B.M.C. PHONO MCCI** is a balanced, passively equalized moving coil (MC) preamplifier lacking negative feedback. It features natural distortion-free and Load-Effect Free single-ended Class A output and a Current Injection input, which optimally reads the sound of the moving coil pick-up as the current is exploited at a point of low voltage.

The MC System at CI Current Input Compared with Voltage Input

When amplifying a signal from an MC pick-up, the interaction between the MC pick-up and the input is a critical element, as is optimal utilization of the very fine MC signal. Let us compare the traditional voltage input with the CI current input in terms of signal strength, damping, and amplification:

1. Signal Strength: Moving Magnet (MM) and Moving Coil (MC) Cartridges at Voltage and Current Inputs

MM cartridges have the advantage, at the voltage amplifier input, of an output voltage almost ten times higher than MC pick-ups. It is the other way round at the CI input: MC pick-ups can provide up to ten times higher currents than MM systems. Consequently, an MC system is the stronger not the weaker system at the CI current input.

2. Damping an MC Pick-Up as an Oscillating System

A phono pick-up cartridge is an oscillating electro-mechanical system. At a voltage input, the pick-up signal will be read, but the pick-up emits practically no energy to the amplifier circuit. With a high-impedance input, the oscillation energy of an MC pick-up stays undamped and is especially noticeable in the high-frequency range. Trimming resistors are connected parallel to the input to damp these oscillations. Energy is always destroyed in these resistors, so trimming a system is a compromise: The resistance must be low enough to damp system oscillations to a bearable level yet high enough for the system not to sound completely de-energized.

At the other end of the transmission path, with an amplifier driving the speakers, there is good reason not to use an amplifier with a high-impedance output, or to connect parallel resistors to damp the natural oscillation of the speakers. At B.M.C., we employ an electronic circuit which simultaneously drives the speakers and, through low-impedance, dampens their oscillations.

Current Injection Input for MC Cartridges

Current Injection makes sense, and is normal practice in setting up power amplifiers and loudspeakers because the electric signal and damping the speaker's oscillating, electro-mechanical system go hand in hand. Making the amplifier input low-impedance is unusual but makes perfect sense with the MC input: Signal processing and damping the oscillating electro-mechanical system through an amplifier input allows the MC system's energy to flow as current into the input. Energy is discharged this way but not destroyed. In fact, it is used for signal amplification and to conjure a vitality not previously heard.

3. Use of the Original Input Signal Current

The fine original current that the MC system feeds into the low-impedance CI input flows right through the amplification stage. At its end is a defined signal voltage through the termination. The termination can be a simple resistor, or with PHONO, a part of the RIAA filter network. At the CI current input, you can find the same electrons that are fed into the input. The original signal is used instead of a copy. In this way, the very delicate, finely tuned MC signal experiences the most sensitive method of amplification, and is conserved in all its richness and tonal diversity.

Current Injection

The Current Injection Circuit

The Current Injection input circuit is a remarkable implementation of the principle of the common-base circuit. It is known for having the widest broadband, the least distortion, the best dynamics, and the most musical sound of the three base circuits. But it has a low-impedance input and a high-impedance output. Fortunately, the circuit is a perfect match for MC pick-ups and D/A converters, our best audiophile sources. For decades, some of the best MC amplifiers in the world have used the common-base circuit. However, only unearthed balanced input allows the MC cartridge to be coupled with a common-base circuit without risk or comprises.

The Current Injection circuit, compared with traditional circuits, significantly reduces dynamic loss, and signal distortion and discoloration.

LEF Output Stage

Because the Current Injection circuit has a high-impedance output, a stable buffer is required to drive the load. Seen dynamically, there is no alternative to single-ended amplifiers, which run in Class-A drive. In a Load-Effect Free drive, the single-ended Class-A transistor, which is decisive for the sound, is freed from the work of driving the load. This is why we say it is Load-Effect Free. The quality goes through the natural lack of distortion up and above the classical Class-A mode, and renders negative feedback needless.

Truly Balanced Circuit

In balanced Class-A mode, the supply voltage is not modulated through the music signal. One must keep Phono in mind. The output of a phono-amplifier produces a few volts at high levels, but the input has a sensitivity in the µVolt area. The balanced Class-A mode leads to a distinct increase in the inner tranquillity of the sound pattern, leaving more room for fine details, dynamic leaps, relaxation of the performance, and three-dimensional spatial illustration. In other words, an intense, in-depth music listening experience.

RIAA Equalization and Adjustment Options

Because all B.M.C. analog circuits work without negative feedback, there is no "active" equalization for the RIAA specification. For a precise RIAA correction, the equalization takes place in a passive manner in two stages uncoupled from each other, which calls for a frequency-dependent current/voltage converter. The B.M.C. MCCI PHONO combines the neutrality of passive filtering with the avoidance of unnecessary amplification.

The classic RIAA equalization is wrong because when cutting there is no endless rise in the high tones as they are corrected. Correction takes place In the PHONO MCCI with the help of the Quasi Industrial Standard of disk-cutting lathes by the Georg Neumann company. Music made following this standard simply possesses more breath and openness. One can deactivate the Neumann correction and easily hear its advantages. It is even possible to slightly raise the lowest deep bass as well as the "warmness" level to correct recording errors or slightly bass-poor pick-up/pick-up arm combinations.

The differences in level which may occur despite partly automatic gain adjustments are adaptable by using three different gain settings.

A soft subsonic filter can be activated.

Components of the Highest Value

The combination of Current Injection input and 10 parallel-connected transistors with high Hfe and lowest "noise figures" result in an extremely low-noise MC input.

Balanced Current condensers in combination with non-inductively wound polystyrene condensers deliver unusual musical clarity, precision, definition, and beauty, beginning in the deepest lows and up through the whole spectrum to a very open, melodious, high-range area.

It's Time for New Standards

The emergence of digital technology has challenged analog technology anew, leading it to increase its efforts to develop new, better phono components. This progress should not be held up by traditional standards.

This is why an unbalanced phono input and layout are no longer up to date; they simply do not provide for low distortion levels and the finest releases at the deepest level of hearing. All aspects of the circuit should be designed for high dynamic differentiation and reproduction of the finest releases over the whole frequency range in order to take full advantage of the virtues of vinyl. Foregoing negative feedback is part of this. For RIAA equalization, only a circuit that does not go round its own loops is fast and sensitive enough to keep disturbances far enough from the music that our brains are able to ignore them. Then music can unfold in a way that both relaxes and grabs one emotionally, carrying its listeners into other rooms or even other worlds.

B.M.C.

B.M.C. BDCD 1.1
CD-Transport / Player

B.M.C. Belt Drive CD Transport/Player

A CD transport with a belt drive is a truly uncommon concept. Why use a belt drive when almost all other CD player work with direct drive?

In analog ages: Direct drive turntables sometimes outperformed, in measurement terms, the belt drive models. But among higher-grade turntables, and just in terms of sound, belt drive types clearly outperformed their direct drive counterparts.

The situation is similar in the case of CD players, but with a significant difference. While turntables rotate with a constant velocity, CD players constantly adjust their speed for a constant data stream. Sometimes this is considered an argument against belt-driven CD players, but their speed changes are slow and continuous, a situation belt drives can easily manage. Rapid speed changes only happen during title skips, when no music is playing. Naturally, belt-driven, flywheel-type CD players react somewhat slower during skips, but it's hardly an issue.. Relax, and enjoy the music.

A Belt Drive is More Than Just a Belt

- A belt drive decouples motor vibration from the CD.
- The CD turns on a precision bearing, analogous to a turntable bearing.
- An acrylic CD stabilizer removes vibrations and resonances from the CD and, due to inertia, belt-driven rotation is quiet and smooth.
- A belt drive prompts the the servo circuit to operate softly and quietly of instead of with small and harsh speed adjustments.

Accordingly, it should be understandable that mid- and high-frequency jitter will not happen.

Listening to musical compositions with a belt drive, a precision bearing, and matching servo circuitry reminds listeners of the best turntables they have heard.

B.M.C.'s exceptional **SUPERLINK** connection is ideal for transmitting digital audio signals, and an alternative to established SPDIF-compatible interfaces such as AES/EBU 110 Ohm, coaxial 75 Ohm, and the optical Toslink.

Unlike SPDIF transmissions, SUPERLINK does not merge different digital audio signals into one single stream that must be decoded back into separate signals after the DAC receives it.

SPDIF makes sense from a commercial point of view, but SUPERLINK is a solution without compromise. It requires four times as many connection cables but avoids all coding processes. SUPERLINK transmits left/right-clock, bit-clock, and digital music data from the CD transport to the DAC while the DAC generates master-clock that is sent to the CD transport. Four 75-Ohm BNC cables with matching impedance conduct the transmission. SUPERLINK results in a more intense link to the music, a wider and more realistic soundstage, more detail, and beautiful sonic colors.

Power Supply

B.M.C.'s BDCD1 CD Player/Transport has an advanced switching power supply with active primary voltage filtering and separate transformers for the display, the motor, the logic, and the digital and analog audio circuitry. In addition, it has complex voltage stabilization in front of each functional group.

Optional Upgrade to a CD Player

The belt-drive CD transport can turn into a complete CD player with analog output by adding digital-to-analog converter module.

A clock synchronization circuit in front of the DAC IC optimizes the digital signal performance. All digital signals are re-timed to the local master clock so that the lowest jitter is at the DAC, where it matters most.

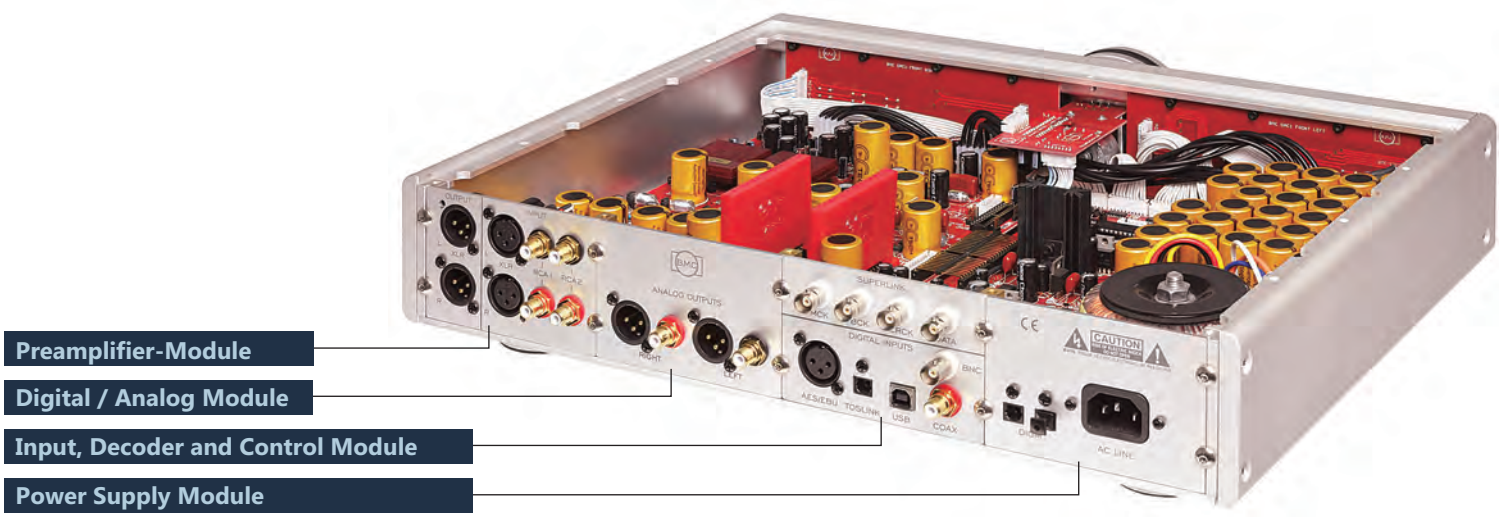
Two 24-bit/192kHz TI/Burr-Brown PCM1792 chips with current output perform the D/A conversion.

Discrete, fully balanced I/V converters, which operate feedback free, filter and convert the output current into an output voltage. The special Current Injection circuitry preserves maximum sound quality, which is stabilized with the unmatched Load-Effect Free driver circuit retaining all sonic details.

These circuits were originallty designed to focus primarily on the sound quality and secondly on specifications, but the present standard is on top for both levels, and the sound is in a class of its own.

Our belt driven CD transport with a precision bearing, a CD stabilizer with a flywheel effect, digital signal interconnection, and an optional DAC delivers a level of musical performance that never reveals its digital origin.

B.M.C. DAC 1
The Audio Center



Digital Signals

B.M.C.'s exceptional SUPERLINK connection, described earlier, is ideal for transmitting digital audio signals, and an alternative to established SPDIF-compatible interfaces such as AES/EBU, coaxial, and Toslink.
A sample-rate converter is available for SPDIF inputs. It may add a certain note to the music signal due to its digital signal processing.
Two digital filters are available with either "Flat" or "Pulse" frequency response optimization and minimized pre/post ringing for the best dynamic response.
Low (32fs) and high (128fs) oversampling rates are available for sound tuning. The low rate has a more dynamic expression, while the high rate is smoother.
A clock synchronization circuit in front of the D/A conversion optimizes the digital signal performance. All digital signals are re-timed to the local master clock so that the lowest jitter is at the DAC, where it matters most.

D/A and I/V-Conversion

Two 24-bit/192kHz TI/Burr-Brown PCM1792 chips with current output perform the D/A conversion.
Discrete, fully balanced I/V converters, which operate feedback free, filter and convert the output current into an output voltage. The special Current Injection circuitry preserves maximum sound quality, which is buffered with the unmatched Load-Effect Free output circuit.

These circuits were originally designed to focus primarily on the sound quality and secondly on specifications, but the present standard is on top for both levels, and the sound is in a class of its own.

Preamplifier Functions and Volume Control

The DAC 1 has preamplifier functions, input selection, two pairs of RCA inputs, one pair of XLR inputs for analog signals, and a Volume Control (the large knob on the front panel). Internal jumper settings offer two operating choices:

1. Classical Preamplifier Mode. With variable output, this is compatible with conventional power amplifiers and active speakers. A digital potentiometer with 62 precise 1dB levels, decoupled by balanced LEF buffers, handles volume changes by adjusting the output level.

2: Loop-Through Mode. Lossless volume control with Discrete Intelligent Gain Management (DIGM) is only possible in a component chain that includes B.M.C. power amplifiers. This is the shortest possible signal path without signal attenuation or further active components. In B.M.C. power amplifiers, the gain setting takes place in 66 precise 1dB steps through switched resistors. The power amplifier works only with the requested amplification, and uses fiber-optic cable to transmit the DIGM control signals.

Both options are the same in respect to the volume setting. However, the loop-through mode with DIGM has a very positive effect on the sound. Its advantages include:

- No additional amplification stages with their tonal influences.
- No superfluous amplification through the gain adjustment.
- Reduced noise and distortion at a lower amplification level.
- DIGM operability at the speaker's output voltage, meaning there is no noise amplification afterwards.
- No need for a potentiometer, not even a digital one, in the signal path.
- No needless attenuation of the input signal.

Power Supply

A 50W O-Core transformer feeds 31 Balanced-Current capacitors with 70,000 µF of storage capacity, which would be respectable for a power amplifier. The capacitors are second-to-none in precision, power-feeling, and sonic colors.
A new voltage stabilizing circuit, as stable as a voltage regulator but without a feedback loop, is In front of each functional circuit group.

True B.M.C.

Although labeling the DAC 1 a digital to analog converter is technically correct, we feel it might more appropriately be considered a true B.M.C. :

Binary to Music Converter

LEF-Amplification

Outstanding Special Features of the B.M.C. Amplifier

The human sense of hearing is surprisingly unimpressed by the perfect test results of customary measuring methods.
This is why traditional transistor amplifiers come under fire again and again, although tube amplifiers are not real alternative as they have clearly audible characteristics.
Several innovations were needed to build an amplifier that does not impose its own sound on the music. These innovations go way beyond the standard circuits and may be not easily understood, even by technologists.

Current Injection (CI), **Discrete Intelligent Gain Management** (DIGM), and **Load-Effect Free** (LEF) circuits are our own, original designs. Used together and consistently executed, they lead listeners into a new world of tonal experience.

Current Injection

Low impedance current input lets the original current of a signal source flow through the amplifier circuit until the desired loudspeaker output voltage is attained.

Discrete Intelligent Gain Management

Precise alignment of the amplifier to the desired volume occurs only on the level of the output voltage. This avoids unnecessary input signal attenuation, as well as excessive amplification.
Less amplification = less distortion and noise, which in turn = more natural musical quality.

Load Effect Free

The LEF output stage takes over the task of adapting the output voltage to the load (the loudspeaker). The signal transistor responsible for the sound is freed from driving the load to avoid distortions at the beginning.
LEF makes it possible to use single-ended mode for high power, a mode that exceeds the classic Class-A by its natural lack of distortion.

Overall Negative Feedback is Obsolete:

The B.M.C. amplifier's natural lack of distortion facilitates the intended renunciation of tonally suspect overall negative feedback.

The Current Injection input and Discrete Intelligent Gain Management would not be possible without the distortion-free LEF output stage and the absent negative feedback loop it induces.

Stabilized 2kW Power Supply

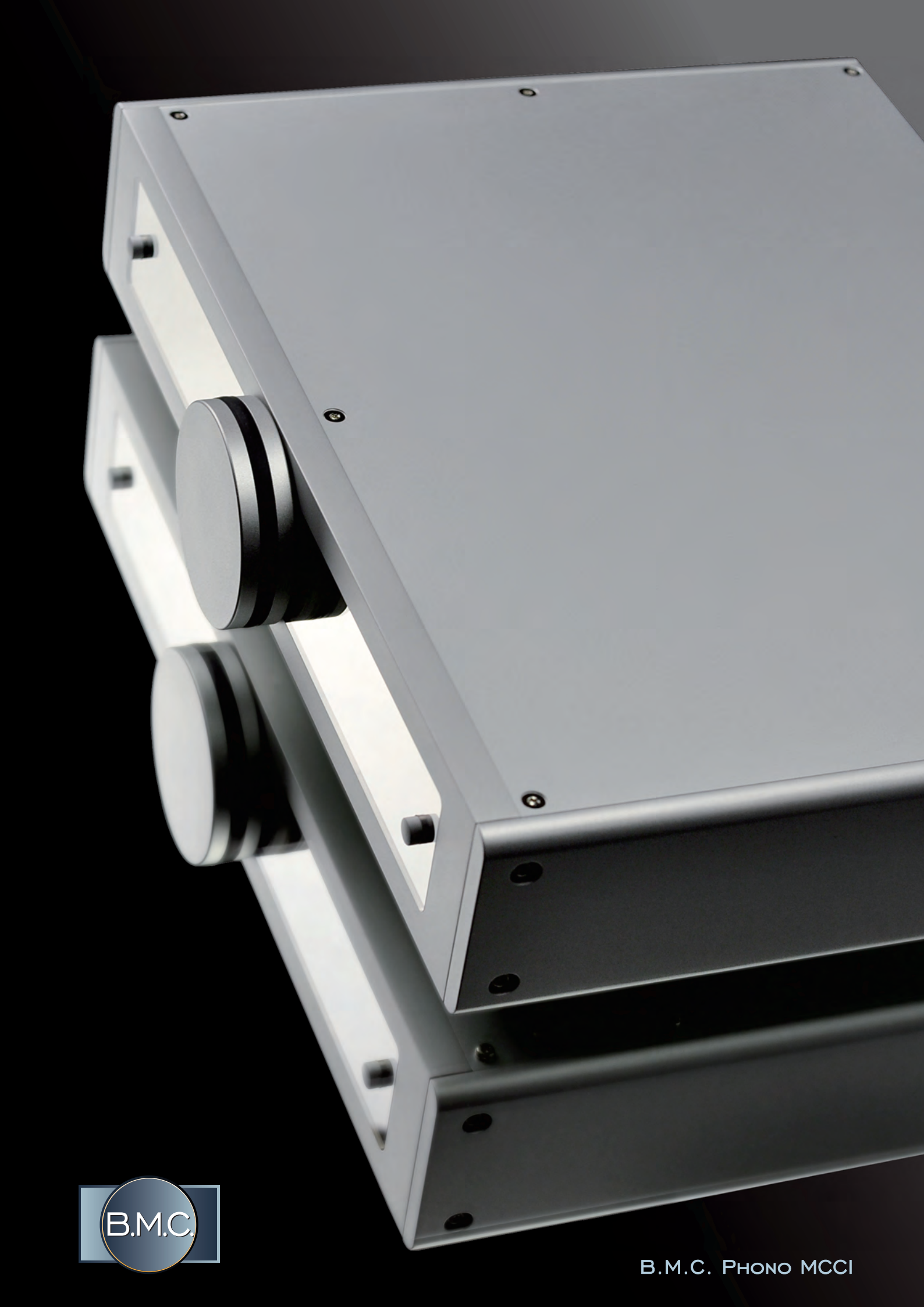
The power supply has nothing to do with the actual amplifier circuit, but determines the extent to which the potential of the amplifier really comes into effect.
A 2kW toroidal core transformer forms the solid basis for a very powerful, dynamic, and stable source of energy.
The storage in a whole battery of specially designed and produced Balanced Current capacitors is the basis for an exceptional musical evolvement and transparency.
An innovative electronic stabilization circuit especially for the power section filters mains voltage ripples and other disturbances out of the supply voltage, ensuring exceptional tranquility and dynamic stability.

All About the Music

The consequences of designing an amplifier for consistent, exceptional musical reproduction also lead to test results right out of the textbooks. But the essential thing is the musical experience. The expression "neutral amplifier" makes one think of an amplifier without a character of its own. But it's this lack of characteristics that makes describing the B.M.C. amplifier so difficult, since it can sometimes be brutally dynamic, sometimes highly expressive and full of detail, sometimes raw and discordant, sometimes bewitching and seductively beautiful, detailed and enveloped by its spatial presentation.
In the end, the result is a musical transparency that has never before been heard.

"**More** of the music and **less** of everything else."
— Mark Mickelson, Editor, The Audio Beat
www.theaudiobeat.com

B.M.C. Arcadia



B.M.C. Phono MCCI

BALANCED MUSIC CONCEPT

B.M.C.

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