



BRINKMANN

Real High Fidelity.



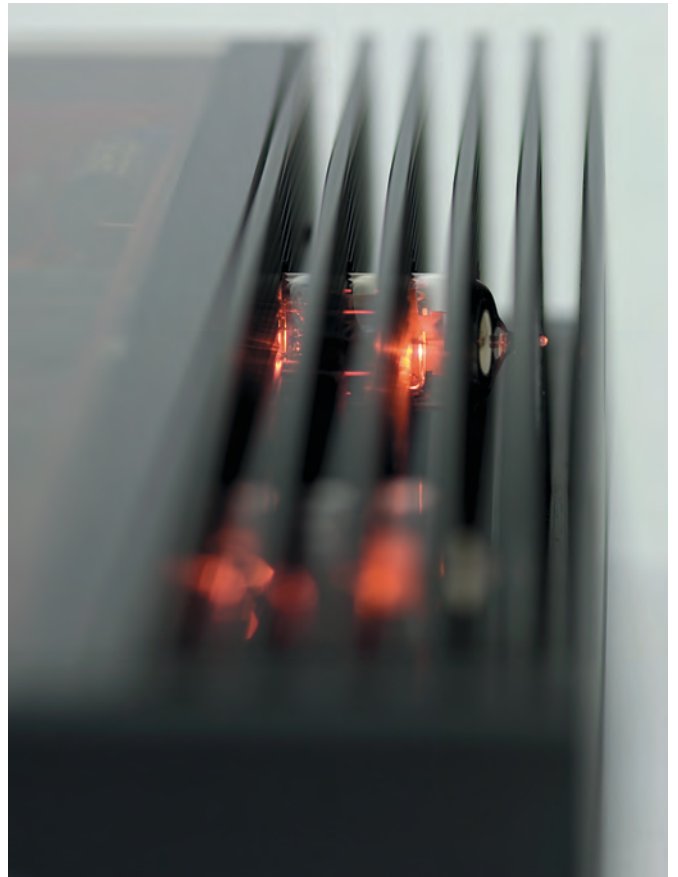
Brinkmann amplifiers and the secret of musically gifted electrons

Mechanical and electronic devices have a lot more in common than is commonly thought. On the one hand, because electronics play a vital role in our mechanical components (the MOS-FET heating of the platter bearing or the sonic differences between our tubed and transistorized power supplies are just two instances of this relationship). On the other hand, because resonances and other mechanical phenomena have a direct influence on the sound of an amplifier. Put differently: in order to build a superior turntable, a designer must have a profound electronics know-how. Vice versa, it sure helps the sound of an amplifier if its designer has some solid insights into mechanics as well.

Perfect reproduction simply does not happen by accident. Instead, it is the result of careful optimizations. Which, for instance, is why Brinkmann defines the optimal capacitance values not only by computer but also by ear. But capacitors of different manufacturers also sound different. Therefore, Brinkmann spends a lot of time not only defining the optimal values by ear, but also the make and type of each capacitor. (The same goes for all other parts, resistors, printed circuit boards or solder. Remember: everything has an influence on the sound, hence everything has to be optimized by ear.)

Listening to the sound of components led Brinkmann to the insight that industrial ceramics are detrimental to good sound. When the metal oxides are sintered, they develop a tendency to resonate that leads to distortions of the mid and high frequencies. Too bad we can not dispose of industrial ceramics entirely, because they are ubiquitous and found in all resistors, switches, potentiometers, tube sockets, and of course capacitors. So we pay great attention to using as little ceramics as possible in our devices—which again is much easier said than done.

You are right: Brinkmann is a specialist for vinyl playback. Not only, however; as it turns out, even before designing his first turntable, Helmut Brinkmann already enjoyed a great reputation for his amplifiers.



Brinkmann offers a full range of pre and power amplifiers as well as an integrated amplifier for all possible uses and demands of music lovers worldwide.

Line stage “Marconi”



A line stage has three duties. First, it switches the various sources. Second, it controls the playback volume. And third, it conditions the signal in such a manner that even long runs of cable between line stage and power amp will not have an influence on the sound.

The most important of course being that the preamp has as little as possible—ideally none—influence on the signal’s musical integrity. As usual for Brinkmann, we didn’t accept any compromises when developing the “Marconi”.

The volume control, for instance, is purely electronic and works in two planes. First, the sensitivity of each of the six inputs (two of them balanced) can be adjusted individually and saved, thus eliminating the obnoxious jumps in volume when switching between sources. Second, the “actual” volume control consists of a motorized potentiometer that can be operated either remotely or with the knob on the front plate. This potentiometer digitally controls ICs which in turn adjust the playback volume passively with discrete resistors in precise steps of 0.5 dB. The utmost immunity against any influences can only be achieved with balanced signal processing. Which means that for a stereo preamp, four complete amplifiers are required since the signal is processed both in phase as well as with a 180 degree phase shift. Since components and external interferences influence the in- and the out-of phase signal to the same degree, they can be eliminated at the input of the power amplifier by means of a circuit that only amplifies the differences between the two signals (i.e. the music), but not what they have in common (i.e. the interferences). This immunity of influences alone in our opinion justifies the doubled parts count and complexity.

We use a vacuum tube phase inverter stage. And it’s not for nostalgic reasons that we rely on tubes—it’s because they operate (practically) without delay and thus guarantee an inverted signal that is perfectly in sync with its non-inverted counterpart. The tubes sit in two large side-mounted heat sinks and can thus dissipate their heat without many obstacles in the way. The remote control allows the selection of the inputs, controls the volume (including mute) and allows the switching of the absolute phase of the signal. The display on the front panel informs about the selected input, its level and the absolute phase.

LINE STAGE “MARCONI”

THD/IM distortion: 0.01%/0.05%
S/N ratio: 90 dBA
Frequency response: DC ... 250 kHz
Gain: 12.5 dB
Output voltage: maximum ± 12 V symmetrical
Output impedance: symmetrical ± 0.1 ohm
Input impedance: 20 kohms
Input sensitivity: 150 mV
Input gain adjustment: 0...-12.5 dB (0.5 dB/step)
Dimensions (WxHxD): 420 x 95 x 310 mm (with granite base); power supply 120 x 80 x 160 mm
Weight: 12 kg; granite base 12 kg; power supply 3.2 kg

PHONO STAGE “EDISON”

THD/IM distortion: 0.01%/0.05%
S/N ratio MM/MC: 82/78 dBA
Frequency response: DC ... 250 kHz
Gain: adjustable, max. 66 dB
Output voltage: maximum ± 12 V symmetrical
Output impedance: 600 ohms symmetrical
Input impedance MC: 47 ohms ... 47 kohms
Input capacitance MM: 50 pF
Dimensions (WxHxD): 420 x 95 x 310 mm (with granite base); power supply 120 x 80 x 160 mm
Weight: 12 kg; granite base 12 kg; power supply 3.2 kg

PHONO STAGE “FEIN”

THD/IM distortion: 0.01%/0.05%
S/N ratio MM/MC: 80/78 dBA
Frequency response: 20 Hz-50 kHz
Gain: adjustable, max. 55 dB
Output voltage: maximum 4 V
Output impedance: 200 ohms
Input impedance MC: 600 ohms
Input capacitance MM: 50 pF
Input sensitivity: switchable 1 mV/47 kohms (MM), 0.5 mV/600 ohms and 0.2 mV/600 ohms (MC)
Dimensions (WxHxD): 120 x 80 x 160 mm (with granite base); power supply 105 x 60 x 100 mm
Weight: 1.5 kg; granite base 2.8 kg; power supply 1.2 kg

The “Marconi” line stage and the “Edison” phono stage are closely related, visually as well as sonically. They both process the signal with vacuum tubes and solid-state components. And of course they are both optimized for sound quality without cutting corners and are built with highest precision in mind.



Phono stage “Edison”

The “Edison” offers three separate phono inputs followed by switchable 1:1 input transformers. The impedance can be optimized for each input in 12 steps between 47 Ohms and 47 kOhms. The gain can be adjusted for each input individually in 16 steps by means of a knob on the front plate; the settings for gain, impedance and routing (transformer in or bypassed) are saved in an EPROM chip when switching to another input. The first gain stage employs bipolar transistors carefully selected for their sonics. The RIAA equalization curve is applied between the two following tube stages; the EQ network is implemented partly as local feedback and partly as plate load of the first tube stage. A third tube stage handles the phase inversion for the balanced outputs. With its adjustable gain, the superior S/N ratio and the extremely low distortions, the “Edison” will extract all possible information from any given cartridge.

Phono stage “Fein”



The black finish hides yet another “Golden Oldie”. Even though the “Fein” has been in production since 1985, it is anything but an oldie. Continued refinements have pushed this phono stage well ahead of its class.

It features a single input, a volume control, and low output impedance; vinyl purists can thus drive an amplifier directly with their “Fein” should they so choose to. Sonically, “Fein” (engl. fine) lives up to its name. Amongst the reasons is because it runs in pure Class-A with all operating points referenced to a single and temperature-compensated voltage source; the power transformer will never run into magnetic saturation thanks to ultrafast diodes and non-inductive resistors; and last, but certainly not least, because the power consumption is so low that we decided to omit a power switch. (We recommend instead to leave the “Fein” powered up continuously because it sounds even better that way.)

Brinkmann Audio is proud to introduce “Nyquist”, “The Digital Source So Good, Only An Analog Leader Could Have Built It!” The “Nyquist” sets new standards for performance, adaptability and long-term value.



D/A Converter “Nyquist”

An entirely new design, “Nyquist’s” hardware has been optimized to accommodate the latest digital formats including MQA™ (Master Quality Authenticated) streaming and playback up to 384kHz, PCM up to 384 kHz/32 bits as well as DSD 64 and 128. RoonReady™ music management software, support of several streaming services and unmatched connectivity featuring USB, SPDIF, optical and Ethernet inputs as well as balanced, single-ended and headphone outputs impart a level of user-friendliness unprecedented in High End Audio. Most importantly, since future technological advancements are inevitable, both the Hardware and Software of “Nyquist’s” Digital Module are easily user-replaceable. This field-upgradable architecture assures unprecedented longevity and enables “Nyquist” to virtually eliminate obsolescence, making it audio’s first-and-only “Investment Quality” digital component.

Power amplifier “Mono”

Today’s speakers are capable of reproducing the full frequency range of music at realistic levels, including the deepest growling lows, the most subtle midrange shadings and the finest shimmering highs. Prerequisite are amplifiers that master the art of letting the music flow freely, yet keep the speakers under tight control at every moment. The “Mono” power amplifier lives up to these requirements in the best Brinkmann tradition and style with a musically compact yet sonically open music reproduction regardless of frequency range and volume level. “Mono” is an amplifier that comes very, very close to the ideal amplifier as “straight wire with gain“. There are many reasons for their musicality. One of them is an extremely stable power supply consisting of a transformer that can deliver up to 1500 watts peak power and four capacitors with a capacitance of no less than 132 millifarad. Another one is the fully balanced driver stage. And let’s not forget the output stage in “Diamond” topology that retains its low impedance at all frequencies and phase angles without feedback. The four Sanken high-performance transistors are attached directly to the speaker terminals—exemplary for the shortest possible signal path which results in an extremely compact build.



Integrated amplifier “Vollverstärker”

“Vollverstärker” translates in English as “integrated amplifier”. To be absolutely correct, we should probably rename our “Vollverstärker” to “stereo power amplifier with high input sensitivity and a passive line stage”. But that is probably the only thing we could still improve on this device. As for the rest, everybody seems to agree that the “Vollverstärker” has looks to die for and sound that is even better. In the typical Brinkmann manner, the “Vollverstärker” is reduced to the max, finished perfectly in the smallest of details and optimized for sound without compromise.

You’ll have to look elsewhere if you’re looking for coupling capacitors, ceramic resistors or an on/off switch. Instead you will find servo direct coupling, protection circuits, thick-film and SMD resistors with no or low ceramic content as well as a clever energy and music saving standby function. (Not to mention a headphone output with a dedicated amplifier, a buffered tape output, or a remote volume control.) Thanks to its spiked feet, the “Vollverstärker” sounds great on every surface—which makes the optional granite plate truly only an option.



D/A CONVERTER “NYQUIST”

Inputs: USB 2.0, SPDIF, AES-EBU, TOSLINK, RJ45 ETHERNET for RoonReady option

Formats: MQA and PCM up to 384 kHz, DSD 64 and 128 via DoP (DSD overPCM)

Digital module upgradable

THD/IM distortion: <0.01%

S/N ratio: >100 dBA

Gain adjustment: -20...+10 dB

Output voltage: maximum ± 12 V symmetrical

Output impedance: 600 ohms symmetrical

Headphone output: 30-600 ohms

Dimensions (WxHxD): 420 x 95 x 310 mm (with granite base); power supply 120 x 80 x 160 mm

Weight: 12 kg; granite base 12 kg; power supply 3.2 kg

POWER AMPLIFIERS “MONO”

Output power: 250/150 W (4/8 ohms)

Minimum loudspeaker impedance: 3 ohms

Damping factor: 80 into 8 ohms load

THD: 0.1% at 50% power

Inputs: XLR (symmetrical) and RCA

Input sensitivity /impedance: 1.55 V/ 1 kohms (RCA), ± 775 mV/2 kohms (XLR)

Power consumption (per channel): 90 W/ 8 ohms (idle), 380 W/8 ohms (full power)

Dimensions (WxHxD): 190 x 220 x 315 mm (with granite base)

Weight (“Mono” per channel): 18 kg; granite base 5 kg

INTEGRATED AMPLIFIER “VOLLVERSTÄRKER”

THD/IM distortion: 0.01%/0.05%

Output power: 2 x 100/70 W (4/8 ohms)

Output resistance: 0.1 ohm

Input impedance: 20 kohms

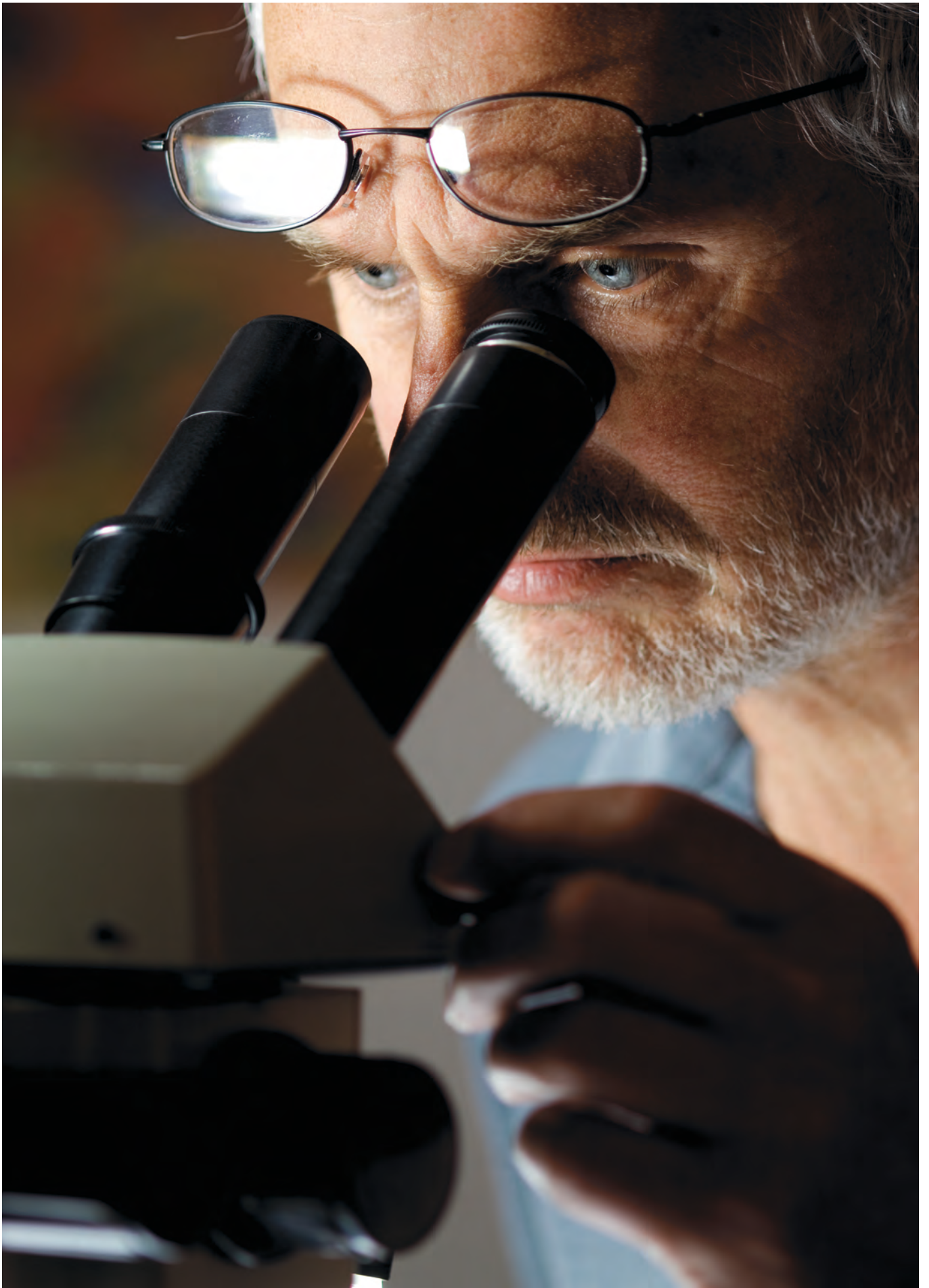
Input sensitivity: 300 mV

Frequency response: DC...250 kHz

S/N ratio: 92 dBA

Dimensions (WxHxD): 440 x 85 x 310 mm

Weight: 14 kg



Magnetic Direct Drive; the promise finally realized



The traditional direct drive technology wasn't without problems, start-up times of less than 1 second necessitated high torque motors, which designers achieved by using motors with 32 and more poles. The penalty they paid were heavy cogging effects accompanied by high wow & flutter numbers. The cure was found in quartz locked motors and phase locked regulators; which corrected for any deviations from their preset with an iron fist.

On paper at least, these "corrected" direct drive turntables boasted hitherto unimaginable low wow & flutter numbers down to 0,001%. But the rigorous iron fist regulation prevented the platter from spinning smoothly; instead, the regulation caused the platter to oscillate continuously between speeding up and slowing down. These start/stop motions translated into an unpleasantly rough and hard sound; odd as wow & flutter numbers in the 0,001% range are deemed inaudible.

The fundamental principal behind a turntable is to spin a record at a specified speed so that the groove's modulation may be traced mechanically.

Integrating the motor into the platter bearing eliminates several sources of interference. For example, the bearing of a separate motor; also, since the coupling medium has been eliminated, no noise or other interferences are being transferred to the platter. Further, as the single-sided pull on the bearing has also been eliminated, the oil film is more uniform therefore increasing speed stability. Cogging is further reduced since a smaller motor drives a substantially larger platter without the need for any sort of gear reduction in place. Also, since the motor's rotational speed is slower, the cogging frequency is further reduced, moving it into the inaudible band of human hearing.

In short, direct drive turntables aren't as bad as their reputation precedes them. If the design emphasis is on overall drive smoothness instead of short run-up times, the benefits actually outweigh their negatives. Having therefore decided to utilize a direct-drive mechanism for our new turntable, we began searching for the appropriate motor. Sadly (or luckily, as it should later prove) and despite much effort we were unable to find a motor that was up to our stringent quality requirements. We therefore decided to design and build the motor in-house - which had the nice side effect that we did not have to cut any corners and instead were in the fortunate position of defining all relevant parameters ourselves.

The motor's stator consists of four specially designed field coils, which are mounted concentrically with high precision around the platter bearing. Based on listening and tuning sessions, we decided to forgo the typical 90-degree mounting angle in favor of a non-standard 22.5-degree roster, which, due to the magnetic fields overlapping, further reduced cogging. The motor's rotor also acts as the sub-platter and carries a magnetic ring with 8 poles on its underside. The drive mechanism, based around Hall sensors and an encoder disk, is designed in such a way that there is just enough power to bring the 10 kg heavy platter up to 33½ rpm in about 12 seconds. Conversely, only a minimal amount of energy is actually necessary to keep the rotational speed at a constant. While the drive mechanism is indeed direct, power is actually transferred without any contact. This soft coupling via a low power magnetic field translates into a silent drive, which reduces cogging further.

One of the main attributes behind the sound quality of our direct drive turntables has to do with our proprietary motor control. It works proportionally, i.e. it transfers just enough energy to the motor for it to remain at constant speed. Conversely, due to our ultra low-friction bearing, only a small amount of energy is actually necessary to keep the motor at constant speed. Previously available regulators typically work disproportional and rather abruptly: they speed up and slow down the motor very rapidly when necessary. During the development phase of the "Oasis" turntable, we spent many long hours auditioning several different regulator designs; it became quite evident that utilizing our concept of proportional regulation always resulted in better sound: typical "harder" motor control concepts produced a sound significantly lower in quality, with less color and drive.



Turntable "Oasis"

The most prominent feature of the "Oasis" turntable is most probably its direct drive mechanism. In our never-ending search to improve sound quality, we did not stop short of evaluating different drive mechanisms or other alternatives such as belts of various consistencies. We quickly discovered, however, that belts, for example, impart a fundamental sonic characteristic on the sound. We therefore decided to forgo them altogether for the "Oasis". As it turns out, the platter is driven directly instead of with a belt. The drive mechanism consists of a ring shaped permanent magnet contained in the platter's bearing and four air-cored inductors on the "Oasis's" chassis plate. These inductors are adjusted and driven with utmost precision to different phase angles. Thus, the ensuing magnetic field rotates the platter. Well aware of the reason for the bad reputation and uneasy sound of the direct drive turntables of the 1970s and 1980s, we resisted tight regulation of the direct drive mechanism. Instead, we take advantage of the many years of experience and insight we gained from manufacturing our own "big" turntables. We use a precision bearing that is capable of smoothing out the drive's miniscule speed variations. This results in a rotational smoothness hitherto unimaginable with "classic" direct drive mechanisms.

TURNTABLE "OASIS" AND "BARDO"

Drive Mechanism: Direct Drive, Platter driven by a magnetic field, proprietary motor
Power supply: External solid-state power supply, optional "RöNt II" vacuum-tube power supply
Bearing: Hydrostatic zero-maintenance bearing
Platter: Resonance-optimized anodized aluminum alloy; crystal-glass platter mat / clamp
Plinth "Oasis": Resonance-optimized anodized aluminum alloy, wood frame
Chassis "Bardo": Resonance-optimized anodized aluminum
Arm board "Oasis": Movable (rotating) without play for simple and precise tonearm adjustment. Accepts all tonearms between 9" and 10.5" effective length
Arm board "Bardo": Movable (rotating) without play for simple and precise tonearm adjustment. Accepts all tonearms between 9" and 12" effective length
Connectors: RCA, XLR or feed-through for tonearms with 5-pin DIN connectors
RPM: 33 1/3 and 45, selectable by a switch
LED indicator for speed (33 1/3 = green, 45 = red)
Deviation from nominal speed: 0.0% (adjustable)
Fine adjustment of speed: ± 10% with trim pot
Wow & Flutter: 0.07% linear, 0.035% weighted DIN 45507
Speed-up time: 12 / 16 seconds (33 1/3 / 45 rpm)
Rumble (noise): -64 dB (test record DIN 45544); -68 dB (measuring adapter)
Weight "Oasis": Total 26 kg (Plinth 15 kg, Platter 10 kg, Power Supply 1 kg)
Weight "Bardo": Total 20 kg (Chassis 9 kg, Platter 10 kg, Power Supply 1 kg)

“The Brinkmann Bardo is a contender for the best turntable under \$10,000 and probably should be auditioned by anyone looking for a turntable costing \$15,000 or even more.” Michael Fremer “Stereophile”



Turntable “Bardo”

Capitalizing upon the success of “Oasis”, Brinkmann developed a second model utilizing our revolutionary magnetic motor which transcends the historical limitations of Direct Drive. Although “Bardo” is Brinkmann’s entry-level turntable, it makes no compromises in either performance or build quality. A “Plinthless” design inspired by our top-of-the-line “Balance”, “Bardo” offers ease of setup found on no other turntable in its class. The tonearm base of the “Bardo” can be rotated and locked, allowing simple and precise adjustment for all tonearms between 9” and 10.5” while a new “Ex-center” base accommodates arms up to 12”. (Custom drilling is available for most tonearms.) In short, “Bardo” excels with virtually any length of tonearm or connection format! Our trademark crystal platter insert and clamping system enables ideal record coupling while 33 $\frac{1}{3}$ and 45 rpm speeds are selectable by a switch at the front of the turntable and can be fine-tuned. For connoisseurs who appreciate the performance and aesthetics of Brinkmann’s “Balance” and “Spyder” tables, “Bardo” offers a smaller, simpler and more cost-effective option.

Tube Power Supply “RöNt II”



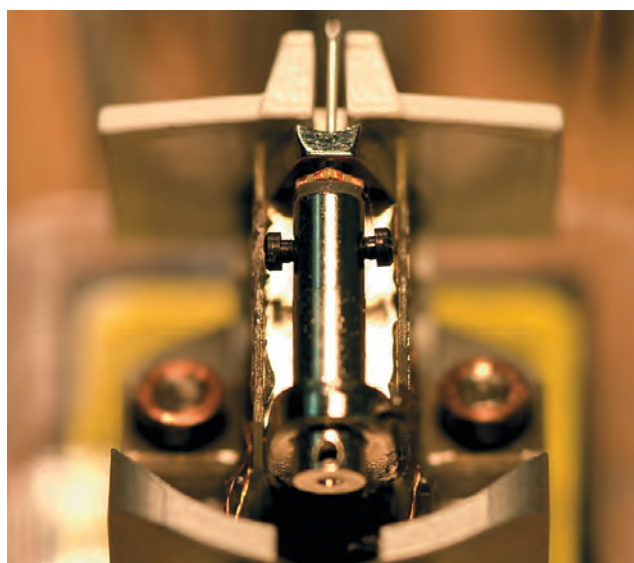
At first blush, it seems a crazy idea to use vacuum tubes for a low-voltage turntable power supply. So why do we do it? We found that the vacuum in the rectifier tubes not only isolates their plates from the cathodes, but also the power line from the drive circuitry. Because of this the “RöNt II” works like a high class power line filter for our turntables. The purification of the mains noticeably improves the sound in terms of clarity, openness and spaciousness. We changed the circuit to a single ended class A topology which gives a smoother and more transparent performance.

The “RöNt II” delivers a stabilized output voltage of 24..25VDC, the output is short circuit proof. The tube supply utilizes two high current low resistance pentodes (PL36) and one full wave rectifier (5AR4). All tubes are made for long life. Secondary AC voltage is rectified by the full wave rectifier and fed to both of the output pentodes via a line choke reducing even more mains noise. The output voltage is stabilized by controlling the output pentode stage. For startup, the motor of our direct drive turntables needs about 500mA, the motor of our belt drive turntables needs about 150mA. Since we wanted to supply the benefits of our famous and unique “RöNt II” for our direct drive models as well, we developed a new and more powerful circuit that meets the demands of all our models.

Mechanical engineering by Brinkmann, or the art of extracting colorful soundscapes from black vinyl.

Vinyl record playback is an exceedingly delicate and massively complex undertaking. The undulations in the record's groove are so miniscule that even loud music passages produce less than a millivolt of signal. Most importantly, in addition to producing only tiny amounts of voltage, tracing these grooves produces all sorts of unwanted vibrations. These vibrations add a layer of noise over the already miniscule and fragile signal. As good as the cartridge is at tracing groove undulations (more or less accurately), it unfortunately also tends to convert all sorts of other external influencers such as motor and bearing noise into electrical voltage as well.

As records are cut at precisely $33\frac{1}{3}$ revolutions per minute, they therefore must also be played back at exactly the same speed; otherwise pitch will be off. This explains the most important requirements for proper playback:



- Accurate and consistent speed.
- Gentle groove tracing.
- High level of immunity from external and internal vibrations.
- Ultimate quietness and low friction of platter and tonearm bearings

All is easier said than done, however, precisely because the groove's undulations are so miniscule in size. Brinkmann offers a complete lineup of analog playback equipment consisting of four turntables, three tonearms and two phono cartridges. Alternatively, you can of course use components from other manufacturers.

Consider, however, that at Brinkmann, each and every component is optimized to work in synergy, hence your mileage with other components may vary. Put differently, at Brinkmann, the whole is greater than the sum of its parts.

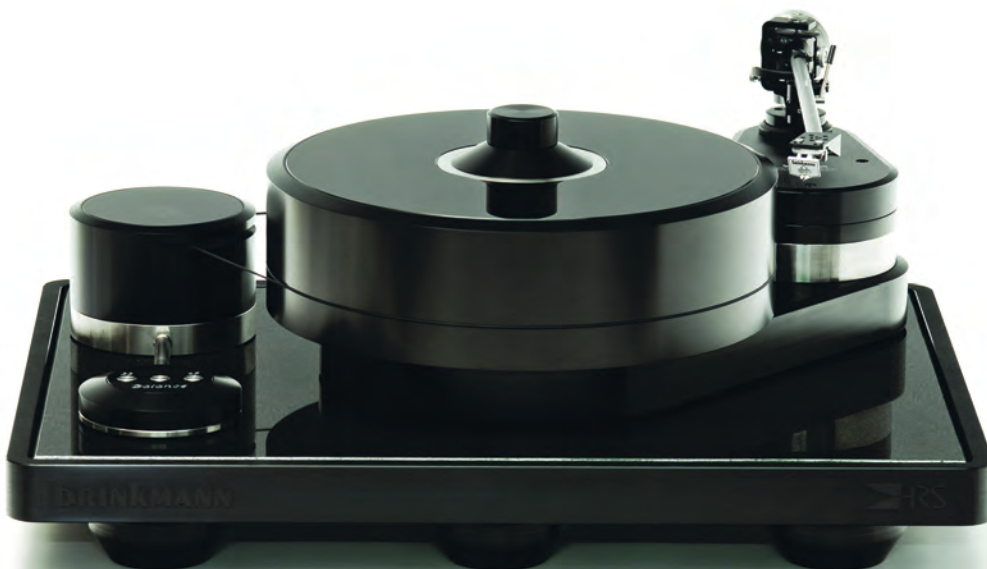
Despite continued advances in digital playback, the vinyl record (in spite of its limitations) remains the foremost important music format in the world.

Belt Drive Motor “Sinus”

For over two decades we relied on the well-regarded German manufacturer Papst to supply capstan motors for our belt drive turntables. Technically and musically we had good results with this motor in combination with our proprietary analogue speed controller. Helmut Brinkmann’s extensive research and development on our direct drive motor for the “Oasis” and “Bardo” turntables gave him valuable insight into the control of magnetic fields and how to apply this knowledge to reduce cogging in a motor. It became apparent that the next logical step was to apply this knowledge in the design of a new motor for the belt drive turntables.



The new “Sinus” (Sine wave) motor is better suited to driving a high mass platter like the ones found in our “Spyder” and “Balance” turntables, while the use of a 4-phase (4 times 90°) drive circuitry enables a very smooth rotation without cogging. The arrangement of the driving coils and the neodymium magnets in combination with the drive circuit achieves 12 “pulses” per revolution. Additionally a large rotating mass of 500 grams, achieved by using a nickel-plated steel motor body, works like a flywheel. This drives the platter of the turntable with a very even force and reduces vibration. The smooth and quiet rotation of the motor allows longer instrument sustains which results in more detail, resolution and musicality. The frictionless flow of the motor movement is readily apparent in the effortless flow of the music. The new motor generates more torque and is therefore able to reduce the start-up time to a few seconds, no problem for the new vacuum tube power supply “RöNT II”, which is also able to handle the direct drive motors as well.





Turntable “Balance”

Our ultimate turntable keeps on running and running...with legendary quietness. Since its introduction in 1985, the “Balance” combines timeless beauty, highest sound quality and perfect build quality. The basic design has remained the same (honestly, there isn’t much to improve), but in the best Brinkmann tradition, the turntable has seen continuous evolution und sonic optimizations. Hence today, the turntable is state of the art in terms of aesthetics and technology—as it has always been—while sounding better than ever. Little wonder then that the “Balance” is used as the absolute reference turntable not only by Brinkmann, but quite a few renowned publications and manufacturers as well.

Utmost mechanical stability is a prerequisite for perfect LP reproduction. In order to achieve it, all parts have to be made with extremely tight tolerances. In order to rotate the “Balance’s” platter, weighing in at 20 kilograms, securely and without radial run out, the bearing has to have extremely tight clearance and absolutely minimal play. But with tolerances that tight, the different coefficients of expansion of the materials used begin to come into play. We therefore heat the bearing electronically in order to render it insensitive to temperature changes. The platter is composed of a resonance-free alloy containing aluminum, copper, magnesium and several other materials. The LP is pressed onto the crystal glass platter top by means of a screw-down clamp. This intimate contact leads any tracking related vibrations quickly and directly into the platter.

We offer the “Balance” turntable in versions for one or two tonearms up to 12 inches length. The arm bases are securely fixed to the base plate by means of adjustable collars. Adjustment of the tonearm is easily—and precisely—done by simply loosening a small set screw and rotating the arm base. The platter is driven via a precision ground round belt. Two speeds (331/3 and 45 rpm) are individually adjustable and selectable by buttons.

TURNTABLE “BALANCE” AND “SPYDER”

Drive Mechanism: Belt drive using “Sinus” 4 -Phase, 12-Pole motor

Power supply: External solid-state power supply, optional “RöNt II” vacuum-tube power supply

Bearing: Hydrostatic zero-maintenance bearing with heating for optimal tolerances

Platter: Resonance-optimized anodized aluminum alloy; crystal-glass platter mat / clamp

Chassis: Resonance-optimized anodized aluminum alloy

Arm board: Movable (rotating) without play for simple and precise tonearm adjustment. Accepts all tonearms between 9” and 12” effective length, as well as several linear tracking tonearms

Connectors: RCA, XLR or feed-through for tonearms with 5-pin DIN connectors

RPM: 33 1/3 and 45, selectable by a switch
LED indicator for speed

Deviation from nominal speed: 0.0% (adjustable)

Fine adjustment of speed: ± 10% with trim pot

Wow & Flutter: 0.07% linear, 0.035% weighted DIN 45507

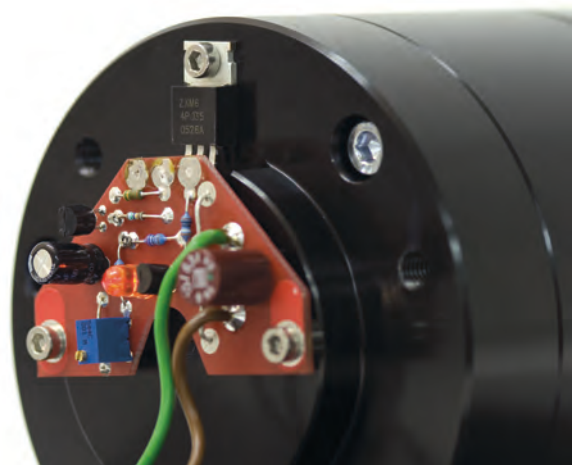
Speed-up time “Balance”: 8 / 12 seconds (33 1/3 / 45 rpm)

Speed-up time “Spyder”: 6 / 8 seconds (33 1/3 / 45 rpm)

Rumble (noise): -66 dB (test record DIN 45544); -70 dB (measuring adapter)

Weight “Balance”: Total 33 kg (1-arm); 35 kg (2-arm) (Chassis 9 kg (1-arm), 11 kg (2-arm), Platter 18 kg, Power Supply 3 kg; Motor 3 kg)

Weight “Spyder”: Total 21 kg (Bearing w/ 1 jig and tonearm 5 kg, Platter 10 kg, Power Supply 3 kg, Motor 3 kg)



Turntable “Spyder”

We started with a blank sheet of paper and created something extraordinary. The “Spyder” is a bold design statement that establishes new standards of versatility while advancing Brinkmann’s commitment to ultimate sonic performance.



This daring design accommodates up to FOUR 9”-12” tonearms and allows maximum flexibility of placement regardless of the number of ‘arms installed. Utilizing our heated bearing and bespoke “Sinus” motor—both Brinkmann exclusives—developed for our flagship “Balance”, the belt-drive “Spyder” has benefitted from years of painstaking materials research to yield unmatched musicality. Also pioneered in the “Balance”, our proprietary, zero-maintenance hydrostatic bearing and our largest solid state power supply (our “RöNt II” tube supply further elevates performance) endow the “Spyder” with unrivalled musicality and vanishingly low noise. The 10 kg alloy/crystal platter ensures speed stability and wide dynamics through the most complex musical passages and prevents dirt and dust from damaging your precious records. The “Spyder” offers the precision, wide dynamics and emotional involvement for which Brinkmann ‘tables are renowned in the most versatile turntable design available today.



Tonearm “10.5”

The “10.5” is considered one of the best tonearms in the world and is used as a reference (and highly recommended) by magazines and reviewers alike throughout the world. The “10.5” is a true all round tonearm. With a dynamic mass of 12 grams, it works well with any modern cartridge; and with 10.5” length, it is still short enough for most turntables designed for 9-inch arms, yet also long enough for 12-inch arm bases. For optimum resonance control and high torsional stability, the “10.5” is made from aluminum and stainless steel; a high tech synthetic material is also used. For the same reasons, the headshell is nondetachable and the surface of the arm tube has also been treated with special anodizing. A double gimbaled suspension, with precision ball bearings free of play, ensures precise and frictionless tracking. The vertical downforce and the dynamic mass can be adjusted over a wide range thanks to the split collar counterweight. Skating is compensated for without any contact by magnetic force. (Too bad you actually will hardly ever notice any of these efforts. Because simply put, the better a tone arm works, the more you’ll hear what has been cut into the vinyl: music!)



Tonearm “12.1”

By definition, when tracking a record with a pivoted tonearm, the cantilever is aligned perfectly perpendicular to the groove in only two instances. The longer the tonearm, the smaller the offset error will be between these two instances, resulting in lower distortion. This explains why LPs tracked with the 12.1-inch long tonearm sound just a tad more poised, relaxed and natural (no rose is without thorns however: there are not that many turntables that can accommodate the “12.1”—among them our “Bardo”, “Spyder” and “Balance”). By the way: The “12.1” is not just a “10.5” with a longer arm tube. Since a longer arm tube offers lower torsional stability and is more prone to resonances, we had to implement quite a few structural changes. We’re proud of the fact that you will probably not notice any them at first sight, and even more proud of the fact that the “12.1” sounds even better than the “10.5”.



Tonearm "10.0"

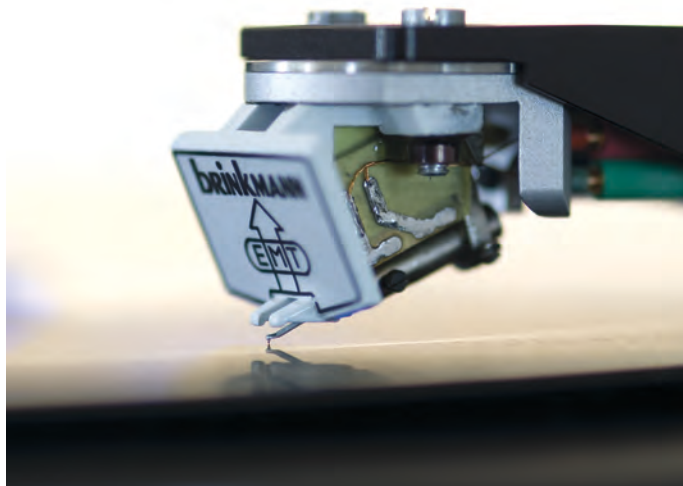
Brinkmann developed the "10.0" tonearm and the "Pi" cartridge to complement our "Oasis" and "Bardo" direct drive turntables. The "10.0" bears a close family resemblance to our "10.5" tonearm. Various component parts—the alloy arm tube with its special hard ceramic coating, Azimuth-adjustable headshell, hydraulic cueing mechanism—that have proven essential to the performance of our cost-no-object tonearms are also found in the "10.0." The mounting socket is also identical, enabling the "10.0" to be mounted on tonearm bases drilled for the "10.5" or "12.1". The principal difference between our arms can be found in the unique, "Hybrid" bearing design developed by Helmut Brinkmann specifically for the "10.0." Designated a "Gimabaled Unipivot," this breakthrough design employs a miniature bearing mounted on a stainless steel tip for the horizontal mounting. A ceramic bearing at the bottom of the bearing assembly prevents the sideways motions of the tonearm. This bearing is friction free and allows a very smooth play. Unlike magnetic or hydraulic damping, this unique solution creates a lifelike and extremely stable soundstage. A pair of these high precision, Swiss-made bearings are used to control vertical movement in a play free adjustment. The sound performance of our new tonearm "10.0" compares favorably to our reference tonearms and is a superb match for most cartridges, including our own "Pi." Whether you've purchased a "Bardo", a Brinkman Belt Drive or one of the many superb turntables marketed by other companies, the "10.0" is one of the finest tonearms available and THE best arm anywhere near its price!

Attributes and technical specifications

	"10.0" / "10.5" / "12.1"
Pivot to Spindle distance:	243 mm / 244 mm / 292 mm +/-2 mm
Effective length:	258,8 / 259,8 mm / 305,6 mm
Overhang:	15,8 / 15,8 mm / 13,6 mm
Dynamic mass:	14 g / 12 g / 14 g
Cartridge mount:	½" connector, long holes
Minimum distance between mounting surface and platter top:	25 mm
Mounting depth:	30 mm / 46,5 mm with DIN socket
Cartridge weight:	min 4 g, max 16 g with standard counterweight
Weight:	410 g / 300 g / 350 g
Counterweight:	150 g / 180 g / 200 g

Cartridge “EMT-ti”

The cartridge is essentially an EMT, which then undergoes heavy modifications. The list of modifications includes a vdH stylus, an aluminum mount with a resonance optimized contact patch (made of several layers of copper, titanium, beryllium, other special materials) and lastly our special sound-optimized tiny screws. The “EMT-ti” has been carefully optimized to sound its best with our tonearms and turntables, although you may of course use it with any combination of your choice. Either way, our “EMT-ti” will reproduce records with uncanny musicality and unheard-of great sound.



Cartridge “Pi”

The cartridge “Pi” has been developed together with our tonearms. With an ingenious mounting of the different parts, the case is highly resonance optimized and with its dynamic mass corresponds perfectly with our tonearms. Due to its neutrality it complements most other tonearms as well. On the “Pi” cartridge we decided to use a Micro Ridge stylus, which has the best resolution in the finest recorded details and which guarantees for the most reliability. Naturally sounding in the midrange with good flexibility it gives a big room imaging in three-dimensionality on the highest level of top cartridges. The stylus is mounted on a boron cantilever and drives a copper voice coil. Most attention was given to the rigidity of the magnetic circuit to prevent eddy currents.

The MC cartridge has a similar output voltage as our “EMT-ti”. By this it drives preamp inputs in their best dynamic range. Due to its relatively high output voltage even on quite insensitive inputs the smallest signals will not be lost in the noise floor. The cartridge works perfectly on loads of 600 Ohms and matches best to our phono preamps.

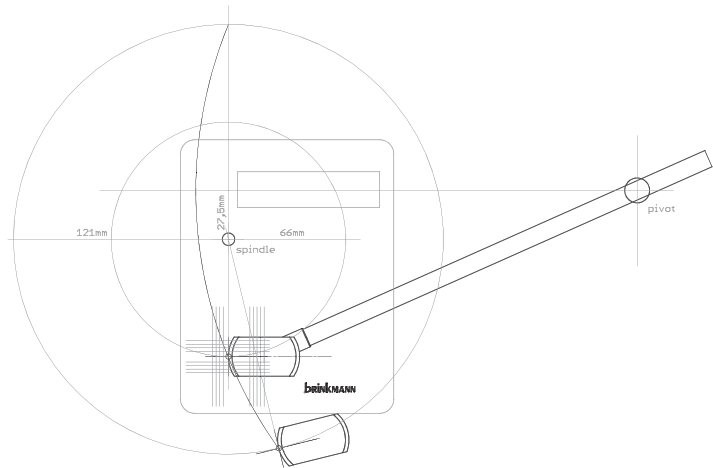


Attributes and technical specifications EMT-ti / Pi

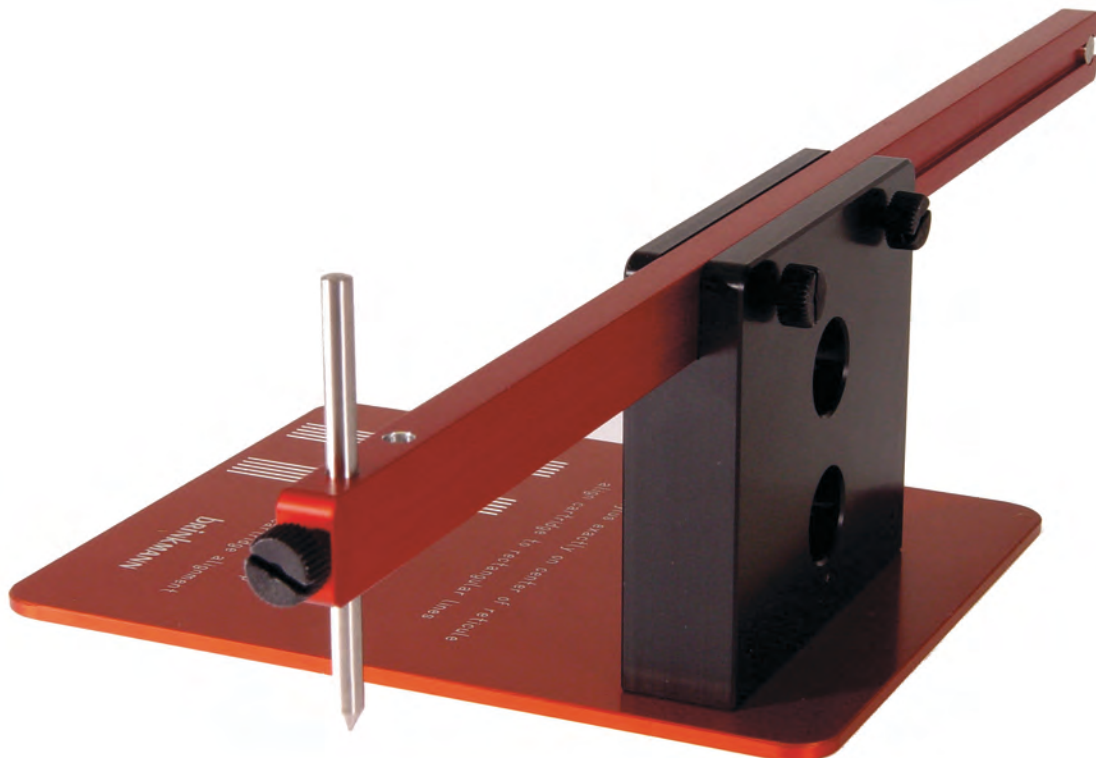
Type:	Moving Coil
Weight:	approx. 11 g / 14 g
Output voltage:	0,21 / 0.15mV (1cm / sec)
Output impedance:	25 ohm / 20 ohm
Frequency response:	20Hz ... 30kHz
Frequency intermodulation:	< 0.5%
Vertical tracking angle:	23°
Crosstalk:	> 25dB (1kHz)
Compliance:	15µm / mN
Stylus:	vdHul, radius 4µm / micro ridge, radius 3µm
Tracking force:	1.8 – 2g
Recommended load:	600 ohms

“Protractor”

Why is our “Protractor” the finest cartridge alignment tool available? Because it embodies the same virtues of simplicity, precision, ease of use and unmatched durability found in all Brinkmann products! Geometrically, our “Protractor” uses the IEC rules for the both null points : 66.04 and 120.9 mm. There has been great debate about the virtues of various null points but evaluations have proved that the IEC rules are correct and yield excellent results.



One special feature of the “Protractor” is that the offset between the guideway of the bar and the hole for the spindle is exactly half the distance between outer and inner null points. By precisely splitting the distance between null points, the outer null point is automatically adjusted when the cartridge is aligned at the inner null point. In other words, the “Protractor” enables a single measurement to optimize both null points, which makes it fast and easy to perfectly align cartridges and tonearms! Furthermore, our design ensures that the geometric relationship between protractor bar and tonearm pivot remains constant, ensuring that alignments are both accurate and consistent. The Brinkmann “Protractor” is machined with highest possible precision. All machining steps of the ground plate and the guideway are performed in a single set up of the CNC machine, which avoids any production variations. The “Reticule” and its grid marks are also precision machined (as opposed to the low quality silk screening found in cheaper products) for enhanced legibility and unmatched instrument lifespan. During manufacturing, the tools of the CNC machine are changed but the protractor is not taken from the machine until all operations are done, which results in a precision of better than a 0.01 mm.



brinkmann
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