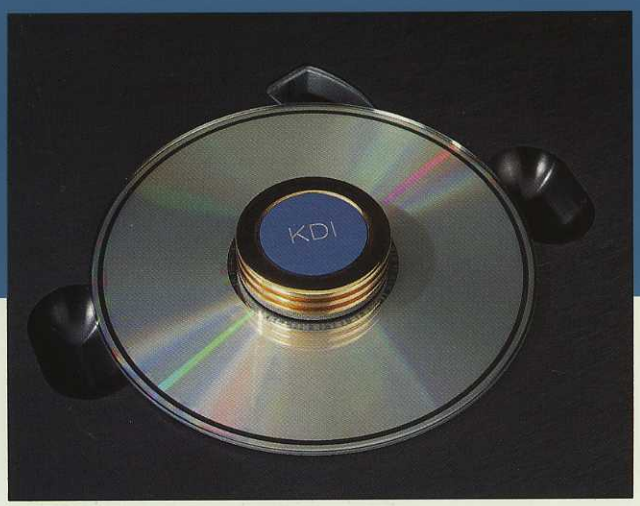
KRELL
DIGITAL INC.

# MD-20 Compact Disc Turntable

# MD-20 COMPACT DISC TURNTABLE

THE MODEST DIMENSIONS OF A COMPACT DISC DISGUISE ITS COMPLEXITY. CD DATA IS ENCODED IN A CONTINUOUS SERIES OF MINUTE PITS 400 TIMES SMALLER IN LENGTH AND 700 TIMES SMALLER IN WIDTH THAN THE POINT OF A HAT PIN. THIS DATA TRACK, IF SET ON A STRAIGHT LINE, CAN EXCEED 3.5 MILES IN LENGTH. IN ORDER TO EXTRACT DATA AT THE REQUIRED RATE, THE 4.7" DISC MUST BE ROTATED AT PRECISELY DETERMINED RATES, VARYING FROM 200 TO 500 REVOLUTIONS PER MINUTE.

ACCURATE DATA RECOVERY FROM THE DISC REQUIRES THE INTEGRATION OF FOUR COMPLEX SYSTEMS: TRANSPORT, CHASSIS, SUPPORT ELECTRONICS, AND POWER SUPPLY. PROPRIETARY AND REFINED TRADITIONAL TECHNOLOGIES ARE COMBINED IN THE MD-20, RESULTING IN A CD TRANSPORT OF EXTRA-ORDINARY SONIC QUALITY AND MECHANICAL RELIABILITY.




*The MD-20 chassis top plate is machined from ½" aluminum plate. Finger wells facilitate placement and removal of the disc. The disc stabilizer, a Krell trademark, is machined to a specific weight for correct performance. It is finished with heavy gold plate and fitted with a hand-brushed, computer-engraved center.*

## TRANSPORT & CHASSIS

The MD-20 utilizes the Philips CDM-1 MKII to read the disc. Built on a heavy unicast frame and fitted with a Hall-effect motor and swing-arm/glass lens laser assembly, this transport provides exceptional stability and read accuracy. The transport is mounted on standoffs machined from high-density engineering plastic. This subassembly is enclosed within a rigid aluminum chassis that exceeds all military specifications. The entire chassis is isolated from external vibration by an ingenious foot assembly which also provides leveling capability.

## JITTER CONSIDERATIONS

Jitter can be defined as minute variations in the timing of digital data. It causes data to arrive early or late at the external processor, creating timing errors and data contamination. The amount of jitter presented to the processor directly affects sonic quality.

Krell attacks jitter in in two ways. First, all active circuitry is built on a four-layer circuit board, identical to the one used in our top-of-the-line MD-10. The four layer board provides critical components with direct access to the supply and ground. Component placement problems inherent in two layer board layouts are eliminated. Second, the power supply is massive

and tightly controlled. The transformer drives seven individual supplies, which are double-regulated in all critical areas. This stable operating environment virtually eliminates jitter and data contamination from the MD-20 output. Image presentation is rendered vivid and transparent. Transient attacks are explosive, yet with the graceful ease of live music. Tonal balance is rich and convincing, without a trace of glare or hardness.

## PROGRAMMING & OUTPUT FORMATS

The MD-20 has a complete array of programming functions. In addition to the ability to program specific tracks on a CD, the MD-20 comes equipped with Philips Favorite Track Selection (FTS). This system allows programs for individual discs to the easily stored in the MD-20's memory. Only one extra step is required to activate a disc's program. The entire disc can be played as well, without use of its program.

Common digital outputs are standard on the MD-20. These include one fibre optic output in the Toshiba format and one coax output. Also standard is the AT&T fibre optic format, which operates with ST connectors. This system has a data rate of 50M bits, as opposed to 6M bits with the Toshiba system. It is the only fibre optic format with rise time adequate to maintain timing information accuracy without induction of jitter.


*An interior view of the MD-20 reveals its robust and clean construction. Leveling feet, which provide superb vibration isolation, are enclosed in housings at the corners of the chassis. Power supplies are in close proximity to the transformer, at left. Control circuitry for transport, display and programming operations is to the right of the transport subassembly.*

## THE FUTURE

In addition to AT&T, Toshiba and coaxial outputs, the MD-20 provides two outputs representative of the latest evolution in digital audio. A 3 pin XLR connector supplies an AES/EBU 5 volt balanced output. Used in professional applications, many believe this format delivers the best sonic quality. An optional second AT&T output, labelled Special, is a feature unique to Krell products called TimeSync. It is used to establish a link between the MD-20 and Krell processor. By locking the clocks of the two components together, transport-processor timing errors are completely eliminated. The corresponding input for the AES/EBU output is available on the Krell Studio and Reference 64 processors. Input for the TimeSync clock output is currently available on the Reference 64 processor.

## THE PRESENT

If every fourth or fifth word in a great novel was illegible, its storyline would remain understandable. Lost, however, would be details crucial to the author's language and style. Effort spent filling in the missing words would diminish the pleasure of reading. The MD-20's mission is identical to that of the printer: every bit of data must be read and transmitted accurately for the music to remain intact. The MD-20 is uniquely suited to this task. Audition the MD-20 with an associated Krell processor and savor, for the first time, all the music.

## SPECIFICATIONS

**Transport**
*Philips CDM1-MKII: industrial-grade transport with long life Hall-effect motor, swing-arm design and unicast frame*

**Laser**
*Single beam, glass lens*

**Outputs**
*Digital only:*
*Coax via RCA connector*
*Toshiba fibre optic format*
*AT&T via ST connector*
*AES/EBU via XLR connector*
*Optional TimeSync via ST connector*

**Dustcover**
*Custom (shown):*
*machined, clear acrylic*
*Standard:*
*molded, smoked acrylic*

**Dimensions**
*19 " wide*
*12.5" deep*
*5" high, cover closed*
*15" high, cover raised*

**Weight**
*20 lbs, unit only*
*27 lbs, packed*

*Krell Digital, Inc. reserves the right to change this product's features and specifications without notice.*


*The MD-20 accommodates every common output system currently in use: coax, Toshiba fibre optic, AT&T fibre optic and AES/EBU balanced. The optional TimeSync output (Special) is part of a proprietary Krell system which synchronizes the clocks of the MD-20 and Krell Reference 64 processor.*

$14000.-

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