

## NEW MODEL RELEASE

# ESOTERIC

Driven by a perpetual quest for the highest level of audio and video playback performance

New flagship ESOTERIC audio and video transport Model “**P-03 Universal**”

Super Audio CD (SACD), CD, DVD-Audio / DVD-Video compatible



ESOTERIC is proud to introduce a new Universal disc transport, based on design concepts that originated from the highly acclaimed Super Audio CD/CD Transport Model P-03. The new “P-03 Universal,” applies highly evolved and meticulously selected video components, providing stunning visual detail in addition to the P-03’s leading edge audio playback capability.

The P-03 Universal is a Super Audio CD (SACD), CD, DVD-Audio / Video transport device, engineered and manufactured to ESOTERIC’s award winning design standards and performance characteristics. The P-03 Universal is a perfect companion to Esoteric’s D-03 or D-01, audio D to A converters.



Universal Audio Video Transport Model “P-03 Universal”

- Highly acclaimed VRDS-NEO mechanism (Newly developed vibration free, rigid disc clamping system), AC power drive components, chassis construction, and cosmetics ...the P-03 Universal shares most of its basic design features with the P-03. (see P.3 'VRDS-NEO Mechanism' for more information.)
- In addition to conventional playback, the P-03 Universal also features native PCM to DSD signal conversion for CD audio. Users may select suitable digital conversion options based on personal preference relative to the type of source material used, the category of music selected or simply to match the capability of other components used within the system.
- The "P-03 Universal," integrates proven, high quality video processing technologies enhanced by ESOTERIC. Unlike other players using 10 bit or 12 bit video processing, the P-03 Universal is equipped with the latest 14 bit / 216 MHz video D / A converter chip from Analog Devices as well as the latest video scaling chip from Anchor Bay technologies. This provides for DVD Video up-conversion capability as high as 1080p (progressive scan).

## KEY FEATURES:

- Fully tuned & matched components including newly designed analog & digital video output circuits.
  - The latest 14 bit / 216 MHz video D / A converter chip (ADV 7324), from Analog Devices.
  - The latest digital video up-scaling chip (LSI ABT 1080), from Anchor Bay Technologies.
  - Exclusive AC power components (transformer and circuit board), isolated from the audio section, are dedicated for video processing, providing superior video output display performance.
- Various signal output interfaces are provided including HDMI (High definition multi-media interface). The P-03 Universal is equipped with a HDMI terminal (maximum up-scaling to 1080P), component video outputs, 12V DC trigger/remote control output for compatible external control components, and RS232C for custom installers and home theater control applications.
- High definition video up-conversion to 1080P. Scaling: 480i / 576i, 480P / 576P, 720P, 1080i, 1080P
- The same state of the art commercial technologies shared with the P-03 audio transport including: drive mechanisms, AC power component, digital audio output circuits, internal circuit layouts, chassis construction, chassis isolation, horizontal sled, vertical pickup implementation and design cosmetics.
  - VRDS-NEO mechanism, highly acclaimed for its accurate alignment properties for reading digital data. Used in conjunction with ESOTERIC's horizontal sled and proprietary pick-up assembly, prevents any off axis data read and greatly reduces or eliminates the need for error correction.
  - New for the P-03 Universal: Tray top surface illumination during loading. This allows easier disc placement, disc change out, or disc removal in low light or no light situations.
  - Integrated separate-chassis construction: highly rigid integrated one-piece body style containing separate power supply, electronics and transport compartments. This greatly reduces interference potential and inherent noise associated with more common single chassis designs.
  - Thick aluminum front panel, side panels, top panels and front-corner rounded blocks, covers the integrated chassis supported by a 5 mm-thick steel bottom chassis. This design implementation further reduces overall system noise, created by external influences during the playback process
  - Three pinpoint isolation feet (patent pending), made of quenched steel provide a level and isolated "buffer," zone between the chassis and the surface where it is placed, further reducing vibration
  - User selectable digital audio output features DSD (native mode for SACD), PCM native mode, PCM digital signal up-conversion, and, PCM to DSD conversion function for standard CDs.
  - Word Synchronization  
The P-03 Universal can accept and synchronize (WORD SYNC), to the following clocking frequencies received from external devices such as ESOTERIC's G25U, AZ-1 or G-0s : 44.1 kHz, 88.2 kHz, 176.4 kHz, 48 kHz, 96 kHz, 192 kHz, 100 kHz.
  - Exceptionally high grade selection of parts and internal wiring (6N copper, etc). for top quality audio video playback performance.

## MAIN SPECIFICATIONS

**System:** DVD-Video, DVD-Audio, Super Audio CD (SACD), CD, CD-R / RW, Video-CD, and DVD-R / RW

### Video output

- Composite video output
  - Output level: 1 Vp-p (75 ohm)
  - Jacks: RCA jack
- Component video output (Y, PB, PR)
  - Output level: Y: 1 Vp-p (75 ohm)
  - PB, RB: 0.7 Vp-p (75 ohm)
  - Jacks: BNC jacks
- Digital video output
  - Jacks: HDMI

### Digital Audio output

- i.LINK (AUDIO) output x 1
- XLR output x 2 (Use 2 terminals for ES-LINK or Dual AES output)
- RCA coaxial output x 1

### Word clock

- jack: BNC x 1
- Input level: TTL level / 75 ohm
- The main unit can accept and synchronize to the following frequencies received from external devices  
44.1 kHz, 88.2 kHz, 176.4 kHz, 48 kHz, 96 kHz, 192 kHz, 100 kHz. (rectangular wave)

### 12V DC trigger output

- Jacks: 3.5 mm mini jack

### External control terminal

- Jacks: RS-232C x 1

### General

- Power supply
  - U.S.A. / Canada model AC 120 V, 60 Hz
  - Europe model AC 230 V, 50 Hz
  - Korea model AC 220 V, 60 Hz
- Power consumption 24W
- Weight 32.5 kg (71 1/2 lbs)
- Dimensions (W x H x D) 445 x 159 x 420 mm (17-1/2" x 6-1/4" x 16-4/5")

Design and specification subject to change without notice.



## **VRDS-NEO Mechanism:**

### **Ultra-high-precision turntable system**

When a SACD or DVD disc is played, the higher-speed rotation required for playback causes increased and unwanted vibrations. These vibrations cause the disc surface to shake, making it difficult for the laser pick-up to accurately read the data. The VRDS turntable is designed to physically correct all vibrations and completely stabilize the disc so that adverse effects during high-speed rotation can be minimized. High-speed rotation also necessitates that the spindle shaft be more rigid. The turntable, (the heart of the VRDS mechanism), is supported by several high-precision, highly rigid mechanical components.

### **Coreless motor with no rotational irregularities**

ESOTERIC has developed a long-life three-phase brushless spindle motor for high-speed rotation. Development of the magnetic circuit, consisting of a neodymium magnet structure, was completed through numerous tests and scientific validations, including magnetic field analysis. The optimized magnetic circuit minimizes rotational irregularities in the motor and makes it possible to reduce fluctuations in the motor drive current, thereby lessening any effects on audio circuits and other areas that may be subject to the injection of noise.

### **Duralumin turntable**

During Super Audio CD (SACD), or DVD playback, the maximum rotation speed is approximately 4.5 times greater than the rotation speed during conventional CD playback. To ensure that the turntable can handle this high-speed rotation, ESOTERIC selected duralumin as the turntable material. This material is best known as the outer body material used in hi-speed hi-elevation aircraft. ESOTERIC has developed new technology for processing duralumin into lower mass with higher precision. As a result, P-03 Universal enables smooth turntable response and stable data acquisition properties by preventing disc vibration. The turntable is dyed a black color in order to absorb any diffused reflections of the laser beam from the pick-up.

### **Rigidity and precision are significantly improved by the use of highly specialized ball bearings used in the spindle shaft bearing assembly**

A pair of precise ball bearings, is used in the spindle shaft bearing unit and a pre-load is applied to the bearing inner rings to significantly reduce rattling and shaft shaking during use. This dramatically increases the precision of the bearing unit and greatly improves rotational and positioning accuracy. As a result, the correlation precision between the disc and pickup is improved—a factor which is closely related to transport performance and data acquisition. ESOTERIC has collaborated with a bearing manufacturer and has newly specified and developed an original bearing optimized exclusively for the VRDS-NEO mechanism. A pair of ceramic ball bearings support precisely controlled turntable rotation from low speed to high speed.

### **Massive bridge unit made from SS400 steel supports the turntable and spindle unit**

The precision and rigidity improvements to the turntable and spindle alone will not ensure good results if the bridge supporting them has not also been improved. Therefore, ESOTERIC selected 20 mm (3/4") thick, SS400 steel for the support bridge. Any vibrations originating from the spindle during rotation are subsequently attenuated by the mass of the bridge.

### **Advanced pick up technology --- thread servo section**

ESOTERIC developed an ingenious component structure for driving the pickup lens and a horizontal sled structure to move the pickup unit with an extremely high level of accuracy. This system ensures that the laser optical axis is always positioned at the very center of the pit track for optimal reading. These modifications to earlier VRDS mechanisms (P-0), make it possible to minimize the adverse effects of disc surface shaking and eccentricity at higher rotational speeds.

### **Pickup structure designed to prevent laser optical axis tilt during lens movement**

Optical pickups in ordinary players are designed so that the lens hangs from a wire or a group of wires. This design is not only low in rigidity, but allows the laser optical axis to tilt away from a vertical orientation to the disc as the lens moves. When this occurs major error correction is required (data is lost and must then be interpolated). In contrast, the pickup used in the P-03 Universal (and in other ESOTERIC players), has a shaft-sliding structure that prevents the laser optical axis from tilting, even when the lens is moved. ESOTERIC has also increased the rigidity of the parts supporting the lens on a horizontal platform. Although this is expensive to accomplish, ESOTERIC design implementation greatly improves data acquisition and eliminates the need for off axis error correction.

### **Speed feedback-controlled sled transport with superior response and minimal extraneous pickup lens movement**

In order to provide a very high-performance pickup capable of smooth, continuous movement, a proprietary hall element sensing-type three-phase brushless motor is used in the sled transport. Powerful electronic speed feedback circuits control this sled mechanism.

### **Vibration isolation for spindle motor system and sled moving system**

The spindle system, which may generate fine vibrations during rotation, is isolated from the sled moving system. Since the sled mechanism requires very delicate movement control, this isolation from high-frequency vibrations is another ESOTERIC implementation that ensures superior data read and acquisition.

### **High-precision mechanism and new software controlled servo system for superior playback**

This precision-machined proprietary mechanism combines with new system software to provide optimal servo control for each type of disc.