

## Product Information Reference Line 069 Belt-Drive CD Player



The Reference Line CD player 069 combines brand-new technologies with the well-established belt-drive-system, invented by Burmester. The result is an extraordinary sounding CD player, which demonstrates the peak of what can be realized on the highest possible level.

Burmester Audiosysteme invented the belt-drive CD player in 1990 and introduced it during the Berlin Consumer Electronics Show in 1991. Just like analogue record players, the belt-drive CD player offers enhanced de-coupling of the record medium from the drive unit. The rotation of the CD is held completely even without sound distorting vibrations or staggering. Therefore, the CD is read out with considerable higher precision and is not afflicted with electronic jitter.

The 069 has three digital inputs, which allow upgrading of further external digital sources via the integrated DA-converter. Before they are converted, all digital signals, including the signals of the internal drive, are upsampled to 96/192 kHz/24bit. In addition to that, the 069 is fully balanced and completely DC-coupled without distorting capacitors in the signal path.

Due to its three digital inputs, one analogue input, all having a selectable volume control, the 069 may be used as pre amplifier as well. The 069 remembers compiled programs out of 99 CDs and recognizes them when the CD is inserted again. The included MMI-slot allows expanding the number of in- or outputs and, just like the modular DA-converter-concept, the integration of further technologies. The entire unit can be controlled via the BurLink interface by using home automation systems like Crestron™ or AMX™.

### WHY A BELT-DRIVE SYSTEM?

Almost all available CD transports on the world market use direct-drive systems, i.e. CD platter, spindle and motor are a firmly fixed unit. Furthermore, most motors are cheesy little things running on cheap bearings and cannot guarantee a smooth rotation. Motor cogging as well as vibrations and mechanical resonance are transmitted directly to the platter and, hence, to the CD. This renders a faultless sampling by the laser pickup impossible. As a result, small parts of the signal are lost. These are the parts that the human ear translates as spatial image, focus and musical accuracy. Therefore, digital playback was criticized as "two-dimensional" and "synthetic." Since, for obvious reasons, direct-drive systems never made it in analog turntables, in 1990 Dieter Burmester developed the belt-drive principle for CD transports and designed the first belt-driven CD-transport, with the 916, in 1991. Since 1995 the beltdrive mechanisms are now produced in house by Burmester Audiosysteme. The advantages of a belt-driven transport are that the digital pickup is completely decoupled from interferences from the motor drive. The CD platter of the 069 sits on a 4 mm-thick spindle which rotates in a precision bearing with no more than three thousandths of a millimeter play. This guarantees an absolutely smooth rotation without cogging, bearing play or vibrations and resonance. Hence, the sampling process is not subject to any mechanical jitter.

### WHY A DOUBLE-CHAMBER HOUSING SYSTEM?

The drive rests firmly in a double-chamber housing system to further de-couple it from mechanical and acoustical interferences such as footfall and sound waves from the speakers. The housing of the drive unit is made of 10 mm-thick aluminum plates and weighs 58.5 lbs. To further increase the 069's interference immunity, the spike feet of the outer housing rest on a carbon fiber suspension as part of its own base.

### IS CHANGING ROTATIONAL SPEED COMPATIBLE WITH BELT DRIVE?

In contrast to analog record players which rotate during playback in constant angular velocity, the CD must rotate in constant line velocity. That means that in order to obtain a steady data stream during the sampling process, the rotational speed of the CD must be continually reduced since the circumference of the 'grooves' that the pickup traces increases from the inside to the outside. Ensuring the correct rotational speed at any point of the sampling process has been the greatest challenge in designing a belt-driven CD transport. It was met by developing a highly sophisticated microprocessor-based control unit. Its calculations takes into account all variables of the drive unit such as motor, belt, precision spindle and stabilizer and guarantees the absolutely smooth rotation of the CD. Besides the low torque motor, a top Swiss product manufactured to our specifications, the precision spindle and bearing are of a level of quality that no other standard CD transport approaches.

## FEATURE OVERVIEW:

- The modular design of the O69 makes it future proof for new digital formats to come (who can predict which format will arrive and if it will stay?)
- Burmester Reference Belt-drive CD transport is based on the CD-2 PRO laser technology
- Mechanical belt-drive drive unit is hand-crafted by Burmester Audiosysteme in Berlin.
- Microprocessor-controlled drive unit consisting of a highest-quality Swissmade low-torque DC motor, CD platter assembled on a 4 mm thick spindle rotating on a precision bearing plus a stabilizer for fly-wheel effect. It guarantees smooth rotation at any point of the sampling process.
- Total interference immunity through heavy triple-chamber design and a special housing base for additional mechanical de-coupling.
- Almost air-tight and sound-proof closure of the top-loading CD chamber by a precision sliding cover plate.
- Proprietary oscillator with minimal phase noise and a high thermal stability is located next to the SRC circuitry.
- Three digital outputs
- Remote control supplied as standard
- EMI (Electro Magnetic Interference)-suppression filters in every stage.
- Standard Version in silver anodized. Other finishes available on request.

## POWER SUPPLY:

- O69 is available with internal or external power supply in Reference Line housing
- External power supply with separated oversized torroidal transformer for digital and analog section.
- Overall filter capacitance of the external power supply is 279,000µF.
- Overall filter capacitance of the internal power supply is 60,000µF.

## ANALOG INPUT:

- 1 balanced analog input which is directly switchable on the front panel

## ANALOG OUTPUTS:

- 1 balanced analog XLR output (Stereo), volume level selectable between variable or fix
- 1 unbalanced analog RCA output (Stereo) with its own driving stage, volume level selectable between variable or fix
- 1 unbalanced analog RCA output (Stereo) with its own driving stage for analog recording, volume level is fix

## DIGITAL OUTPUTS:

- 1 unbalanced digital RCA output with 75W impedance.
- 1 optical digital output (TOSLINK)

All outputs have their own driver stages. They may all be used simultaneously without any loss of quality.

## MMI MODULE SLOT:

MMI slot for future extensions (inputs and outputs of virtually any kind)

## BURMESTERLINK:

The entire unit can be controlled via the BurmesterLink system by using all possible home automation systems like Creston™, AMX™, PC and others.