

# *ayon*

## CD-10 II

Top Loading  
Vacuum Tube Class-A CD-Player

Röhren Class-A CD-Spieler mit oben  
liegendem CD-Laufwerk



## Owner's Operating Manual Bedienungsanleitung

## INTRODUCTION

Thank you for your purchase of the Ayon Audio CD-10 Class-A vacuum tube CD-Player. With this CD-Player, you have entered into the world of exclusive design which will give you great satisfaction and privilege of enjoying the advanced technology of Ayon Audio products. It is designed to serve as a high standard of truthful real musical performance. The care in engineering and manufacturing of this product anticipates a long time of enjoyment. We also encourage you to enlist the aid of the dealer from whom you purchased this Ayon CD-Player. Your dealer is an excellent source of information on compatibility, installation, and troubleshooting, and should be capable of helping ensure that your overall music system provides you with maximum performance and satisfaction.

The CD-10 will playback normal "red book" music CDs, CD-R/RW discs and hybrid SACDs, but it will not playback DVD-A or DVD-video or SACD-only discs. Why? Because we firmly believe that the compromises built into multi-format playback devices sacrifice sonic performance in the CD format. Most music lovers have extensive compact disc collections that continue to grow, so it only makes sense to play back those collections as faithfully as possible. Whether you have 100 or 10,000 discs, don't you want them to sound their best? Compromise was not built into the CD-10's design.

## SAFETY INFORMATION

Please read this owner's manual to obtain the full benefit of the CD-10 CD-Player in your system. This manual provides you with necessary safety information and operation procedures for this unit. Keep the manual always handy that you can read it at any time. To prevent shock or fire hazard do not open the unit or expose to rain or moisture. Refer all service to Ayon audio or an Ayon audio authorized service facility. There are no user serviceable parts inside the CD-10. Refer all internal service, updates, or modifications to qualified service personnel.



High voltage is present inside an operating CD-10.

Do not remove bottom plate or insert any objects through openings in the case.

## OPERATING VOLTAGE

The operating voltage is factory set for the destination country and is not user adjustable. Unauthorized attempts to modify the operating voltage may damage the unit and will void the manufacturer warranty.

## FUSE

The AC power line fuse is located in a snap-out receptacle on the underside of the power inlet (rear panel). The correct value of "slow-blow" fuse is 1-2A (3-4A for 120V version). Do not replace the fuse with a higher than indicated. Disconnect the power cord before changing fuse. A blown fuse in your unit can be an indication of a serious problem. If a replacement fuse fails as well, no further attempts should be undertaken. Please contact the factory for professional service.

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# 1. UNPACKING

Inspect your CD-Player for any shipping damage and call your dealer immediately if any is found.



Do not plug your CD-Player into an AC outlet if you find shipping damage.

Use care in unpacking your CD-Player, open the box and remove the top layer of foam.

You will see these items:

- 1 x CD-Player
- 1 x AC power cord
- 1 x Remote control (Batteries for RC, for safety air shipping regulations, the batteries are not included)
- 1 x Acrylic CD-Lid with magnetic integral CD-clamp
- 1 x Owner's manual

**Note:** We advise saving all packing materials so that the unit can be easily and safely shipped if the need arises.

## Which are additional features of the CD-10 „Signature “ version?


- ▶ DSP module/PCM → DSD converter for all PCM signals; all PCM signals from 16-44.1 to 24-192 from the streamer, DAC or USB-PC (Type „B“) are converted into DSD signals (128x or 256x – switchable). SACD signals (DSD→DSD) are switchable up to DSD256x.
- ▶ 8 High-quality coupling capacitors.

**Note:** the CD-10 can be upgraded any time to the “Signature” version!

Please contact your distributor/dealer or Ayon Audio in Austria concerning this matter.

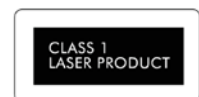


## 2. PRECAUTIONS, INSTALLATION & USER INFORMATION

1. Always make sure your hands are clean and free of any dirt or oils before carrying.
2. Carry the CD-Player with both hands by gripping the sides of the unit.
3. Never hold the face plate against your clothing as coarse materials such as stitching, belts, and the rivets from denim pants can mar the surfaces.
4. Never put any objects directly on top of the unit.
5. Use a soft cloth with non-abrasive cleaning product to clean your CD-Player.
6. Take care of the precision toggle switch selectors at the rear panel when moving or transporting the CD-10.
7. The unit should be put on an adequate ventilated place; it is normal for a vacuum tube CD-Player to runs very warm if used for prolonged periods.
8. Avoid prolonged exposure of the appliance to direct sunlight!
9. Under normal circumstances the laser needs no cleaning. Do not use cleaning CDs.
10. The CD-10 must be protected from humidity – if the unit is moved from a cold place to a warm room, leave the unit for 3 hours or so to allow sufficient time for the moisture to evaporate.
11. The power cord must be earthed . Never touch power plug with wet hands.
12. Never touch power plug with wet hands.
13. Disconnect from power before removing bottom plate is mandatory.
14. The electronics in modern hi-fi equipment is complex and may, therefore, be adversely affected or damaged by lightning. For protection of the audio system during electrical storms, remove the mains plugs.
15. Important: To switch on or off always use the power switch of the equipment, the power switch (on/off) is located at the front left corner of the bottom plate.
16. For best performance, place the CD-10 on a solid, horizontal and non-resonant shelf where there is no risk of being knocked or subjected to vibration such as from loudspeakers.
17. The CD-10 should not be left running when not in use. If you will not be listening to the CD-Player for more than 3 hours, it is advised that the player be turned off. Unlike solid state players, tube output stage players should be shut down when not being used. This will greatly prolong tube life.
18. Reseating Tubes: Normally, reseating tubes upon delivery is not required. However, if any tubes have noticeably drifted out of position due to high transportation stress, it will be advisable to reseat the tubes.
19. Unauthorised opening of the equipment will invalidate any warranty claim.
20. **Warning:** Never attempt any measurement or adjustment yourself as voltages inside the CD-Player can be lethal. Do not work inside a tube CD-Player when you are not qualified to do so.



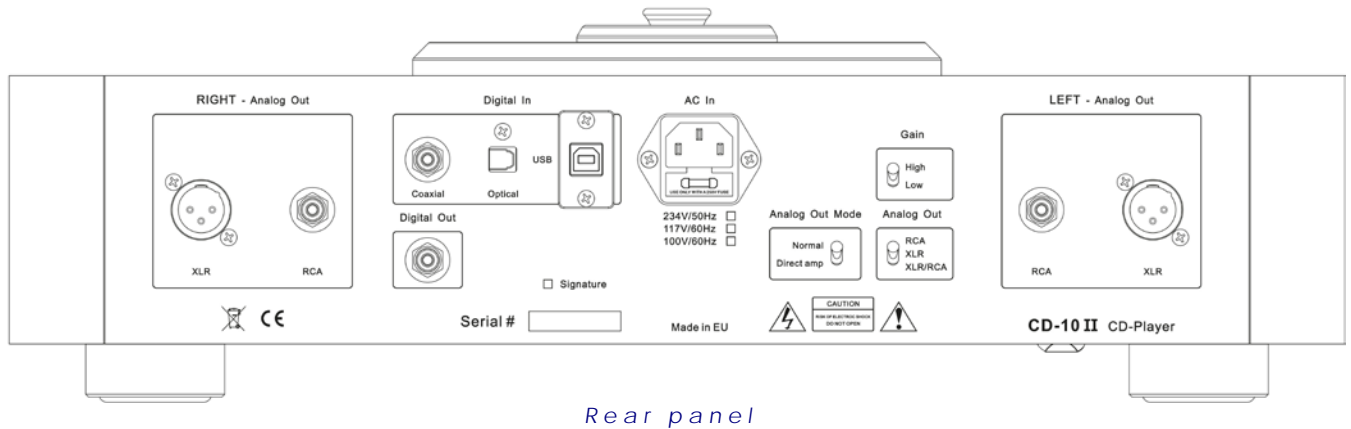
This CD-Player uses invisible laser light. When the CD-Player operates, laser light is radiated internally. The laser pick-up is located behind the spindle. Do not look directly into the laser beam.



### 3. CONNECTION



When making any connections to this component or any other device, make sure the power amplifier and the preamplifier are OFF and disconnected from the AC current. **Switch off the CD-10 whenever you need to connect or disconnect any cables!**



► All input and output connectors are clearly marked on the rear panel ◀

- Analog OUT / main – RCA or XLR (right & left channel)
- Gain – toggle switch / High (+6dB) or Low (0dB)
- Analog Out mode – toggle switch / Normal or Direct amp
- Analog Out – toggle switch / switchable between RCA & XLR or XLR/RCA mode
- Digital In – Coaxial, Optical (TosLink) & USB (DAC section)
- Digital Out – Coaxial (DAC section)
- AC In – power inlet with fuse

#### ANALOG OUTPUT

Connect the CD-10 analog output to the appropriate preamplifier or integrated amplifier input or directly to a power amplifier. To connect your CD-10 to a power amplifier, ensure that your power amplifier is turned off then connect your analog interconnects from the CD-Player analog outputs to the amplifier's inputs.



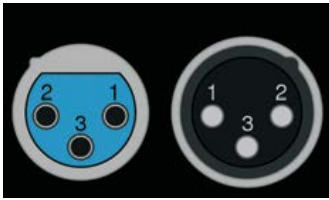
If you use the CD-10 directly to amp(s), caution must be exercised that the volume is down to the "min" setting. **Note:** On the player's display -60 is mute and 0 is maximum volume. Or you select via **analog out mode** toggle switch to "direct amp" operation.

- Select via **analog out mode** toggle switch between "normal" and "direct amp".  
"Normal" – If you connect the CD-10 to an integrated or preamplifier.  
"Direct amp" – If you connect the CD-10 directly to a power amplifier.  
Please use this mode when to drive directly your power amp. In this case the volume level is automatically down to -40 (every time – power on) and the function "fixed"– bypassed / max. Volume (VOL SEL at the RC Handset) is turned off for security reason to protect your power amp and speaker.

The CD-10 is equipped with two analog output configurations: Single-ended via **RCA** connectors and balanced via **XLR** connectors.

- Select via **analog out** toggle switch between "RCA" or "XLR" or "RCA/XLR" mode.  
When you have a RCA connection you must put the analog-output-toggle switch on position **RCA**.  
When you have a XLR-connection you must put the analog-output-toggle switch (analog out) on position **XLR**. When you want to use both outputs at the same time switch on position **XLR/RCA**.

**Note:** When it is possible, do not connect both output configurations (RCA/XLR) at the same time, use RCA or XLR only. It can degree a bit the sound quality!



The XLR pin configuration is:

Pin 1 Ground

Pin 2 Non-inverting ( plus + )

Pin 3 Inverting ( minus - )

- Select via **gain** toggle switch between “low” and “high” gain.
- Select via **analog out mode** toggle switch between “normal” and “direct amp”.

“**Normal**” – if you connect the CD-10 to an integrated or preamplifier.

“**Direct amp**” – if you connect the CD-10 directly to a power amplifier.

Please use this mode in any case when to drive directly your power amp. The volume level is automatically down to -40 on every power ON progress and the function “fixed” (VOL SEL at the RC Handset) is turned off for security reason to protect your power amp and loudspeaker.

**Note:** “Fixed” mode: (VOL SEL button at the RC Handset); the audio signal is bypassed (the electrically-controlled analog volume control system is not engaged) and runs directly to the analog vacuum tube output stage.

### DIGITAL OUTPUT

The CD-10 is equipped with one **S/PDIF** (75  $\Omega$ ) coaxial digital output in order to send this output to a digital recording device or external D/A processor.

### DIGITAL INPUT

The CD-10 is equipped with one **S/PDIF** (75  $\Omega$ ) coaxial digital input, one **Toslink** and one **USB** (up to 24/384kHz-asynchronous and DSD 64x & 128) to receive digital signals from separate digital components.

### USB DAC input notes

A good quality USB A to B cable is required to connect the USB DAC input to the computer.

Plug the B (square) end into the socket in the rear of the unit, and the A (rectangle) end into a free USB socket on the computer.

**Operation:** you don't even need a driver for Apple computers! For Windows 7, 8 and 10 computers, we offer a certified driver from the professional audio sector, which works very well with all models of this operating system. You have to install the driver before using the USB device for the first time!

Download the USB driver firmware from our website.

<http://www.ayonaudio.com/support/product-drivers.html>

**Note:** Please follow up a required set up on MAC computers and set the default sampling rate in Audio MIDI setup to 44,1kHz. Example: iTunes by itself does not match the sampling rate to the file being played; software like Amarra or Pure Music does that.

**POWER INLET (AC IN):** Plug the CD-10 into a standard wall AC receptacle.



Never connect the digital input or output on a non-digital input of an amplifier, such as AUX, CD, TAPE, PHONO, etc. Damage may occur!

## Note concerning the particularity of the tube output-stage or the "direct" connection of the CD-10 to power amplifiers or active loudspeakers

In all our CD-players, DACs and Network-players the Ayon tube output stage is designed extremely puristical and "short" with only very few components, i.e. no feedback, no corrective or compensating elements and no filter in the circuitry. Furthermore, we use "big volume" coupling capacitors in the output with almost no inner "capacitor resistance" and hence provide for maximum current transmissibility.

- All these puristic sound-measures occasionally or always result in a short audible „tube-ping/pop“ when pressing the „play/start“ button or switching inputs or sampling frequencies. (extensive 6N6P grid, being biased herewith).
- With the „direct“ connection the level of the basic tube noise and its buzz at volume minimum is significantly more audible than in conventional circuitries or if you would use a separate pre-amplifier (additional buffer stages etc.) respectively. However, the basic noise level does not grow further with increasing volume, it remains "almost" unchanged even at max. volume of the CD-Player. I.e. in principle the basic noise level is almost independent from the position of the volume control, hence completely different from conventional circuitry or separate pre-amplifiers, where the tube noise level increases relatively strong and steady with the volume. Usually this is not noticed, because the volume control remains in the lower third or at minimum position when no music is played.

Naturally, these two peculiarities depend upon the sensitivity of your amplifier (input sensitivity) or your loudspeaker (efficiency); the higher the more audible. If feasible, reduce the input sensitivity of the power amplifier. The tubes are not defective, but these are their peculiarities in this particular and puristic circuitry.

**DMP switch:** on the bottom plate there are 2 small sunk-in sliding switches for the right and the left channel marked with "DMP" and its position "ON" and "OFF".

*Note:* Only for factory settings and "DMP" is set to "ON".

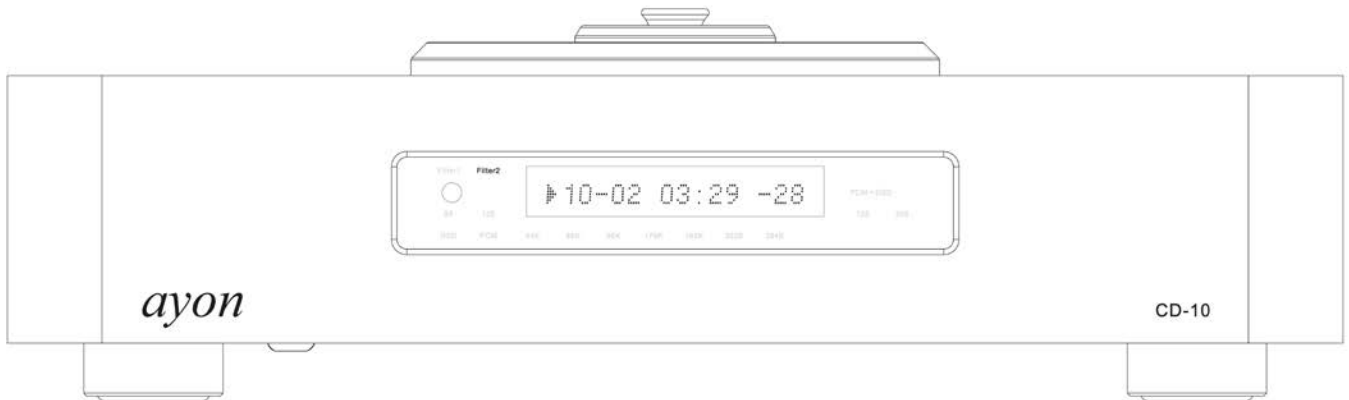


## 4. OPERATION

Turn on the power switch (left-front on the bottom plate mounted), insert a CD, label side up and affix the CD with the Magnetic integral CD-clamp system combined with dark acrylic CD-cover. The “ayon” logo will light up, followed by the “Warm Up” message on the front display panel. Then the total track number and playback time will be indicated on the front display panel.



Pay attention that the CD-LID is well centred, i.e. there should be a small gap between the CD-LID and the CD-housing (CD-metal ring). In case the CD-LID is inserted eccentrically a slight clipping noise may occur. This is harmless for the magnetic clamp and does not cause any damages.



*Red Indicators – left display side*

**PCM** (Puls Code Modulation)

**DSD** (Direct Stream Digital)

**Filter 1** (slow rolloff speed) and makes the sound a bit smoother.

**Filter 2** (fast rolloff speed) and makes the sound a bit more analytical.

**64 128** (shows the incoming DSD frequency rate when USB input is selected)

*Red Indicators – below the display: shows the incoming PCM frequency rate.*

**44 48 88 96 176 192 352 384**

*Red Indicators – right display side:*

**PCM → DSD** indicator (optional / CD-10 Signature version)

**128 256** indicator (optional / CD-10 Signature version)

## HOW TO PLAY A CD

Remove the Magnetic integral CD-clamp system combined with dark acrylic CD-cover.

Carefully, place the CD on the CD Spindle and replace the Magnetic integral CD-clamp system combined with dark acrylic CD-LID on the top of the CD.

The total track number and playback time for the entire disc is shown on the front display panel.

Press **PLAY ►** button\* to activate playback from the beginning of the CD.

Press **PAUSE II** to temporarily suspend playing the current track. To resume playing at the point pause was engaged, press **PLAY** again. (Combined\*)

To **STOP ■** the CD, press the STOP button.

Press **TRACK BACKWARD I◀◀** once to select and begin playing the track that precedes the current track.

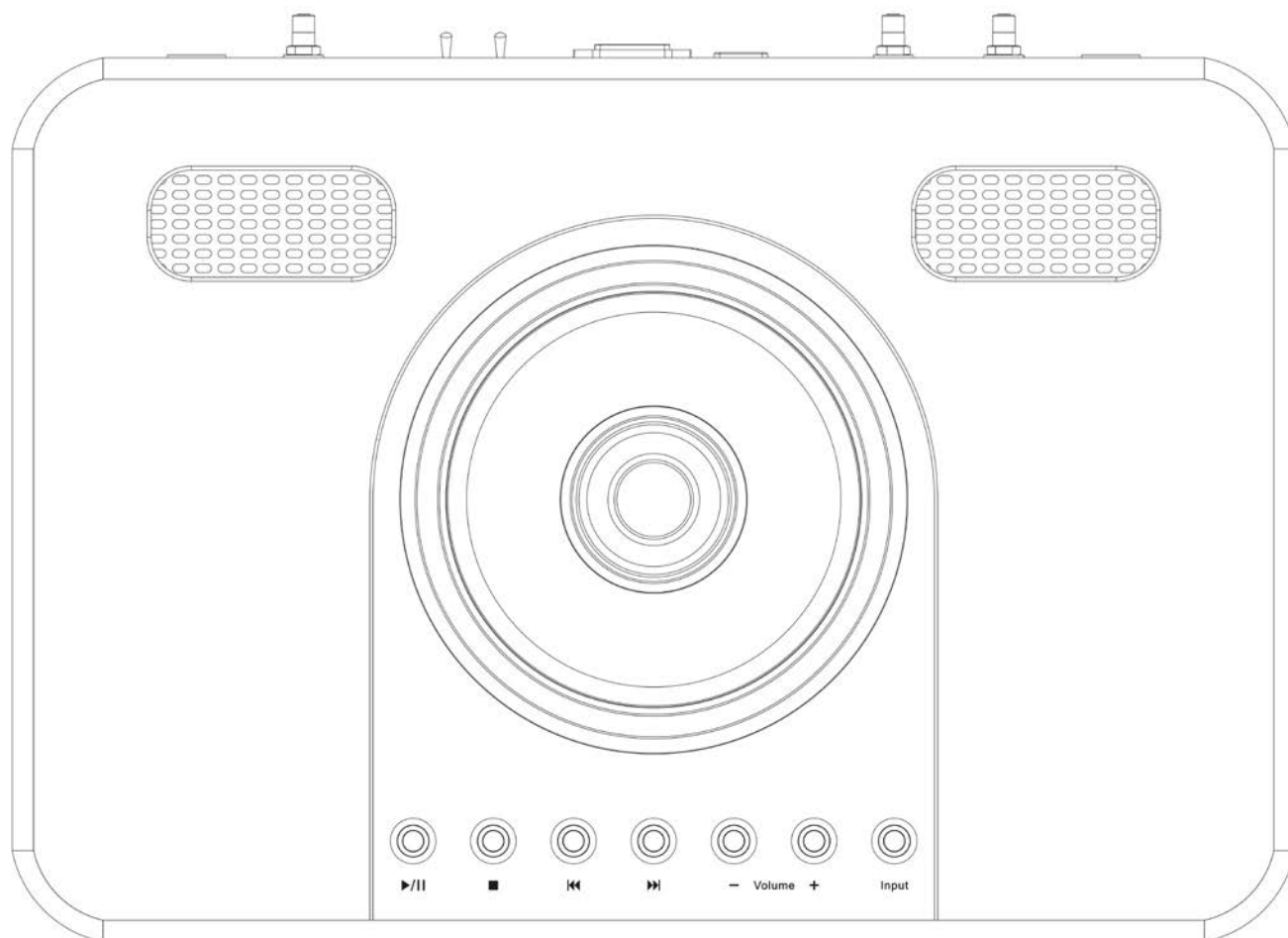
Press **TRACK FORWARD ►►I** once to select and begin playing the track that follows the current track.

**VOLUME** buttons: Whenever the volume control buttons are pressed, the volume for both channels will be increased (+) or decreased (-) by an increment of 1 on the display screen. The range of the volume control is from **0** (Volume maximum) to **-60** (Volume minimum).

**INPUT** button: This button is for digital and analog input selection.



Never play without Magnetic integral CD-clamp system combined with dark acrylic CD-cover affixed to the CD.



Top view

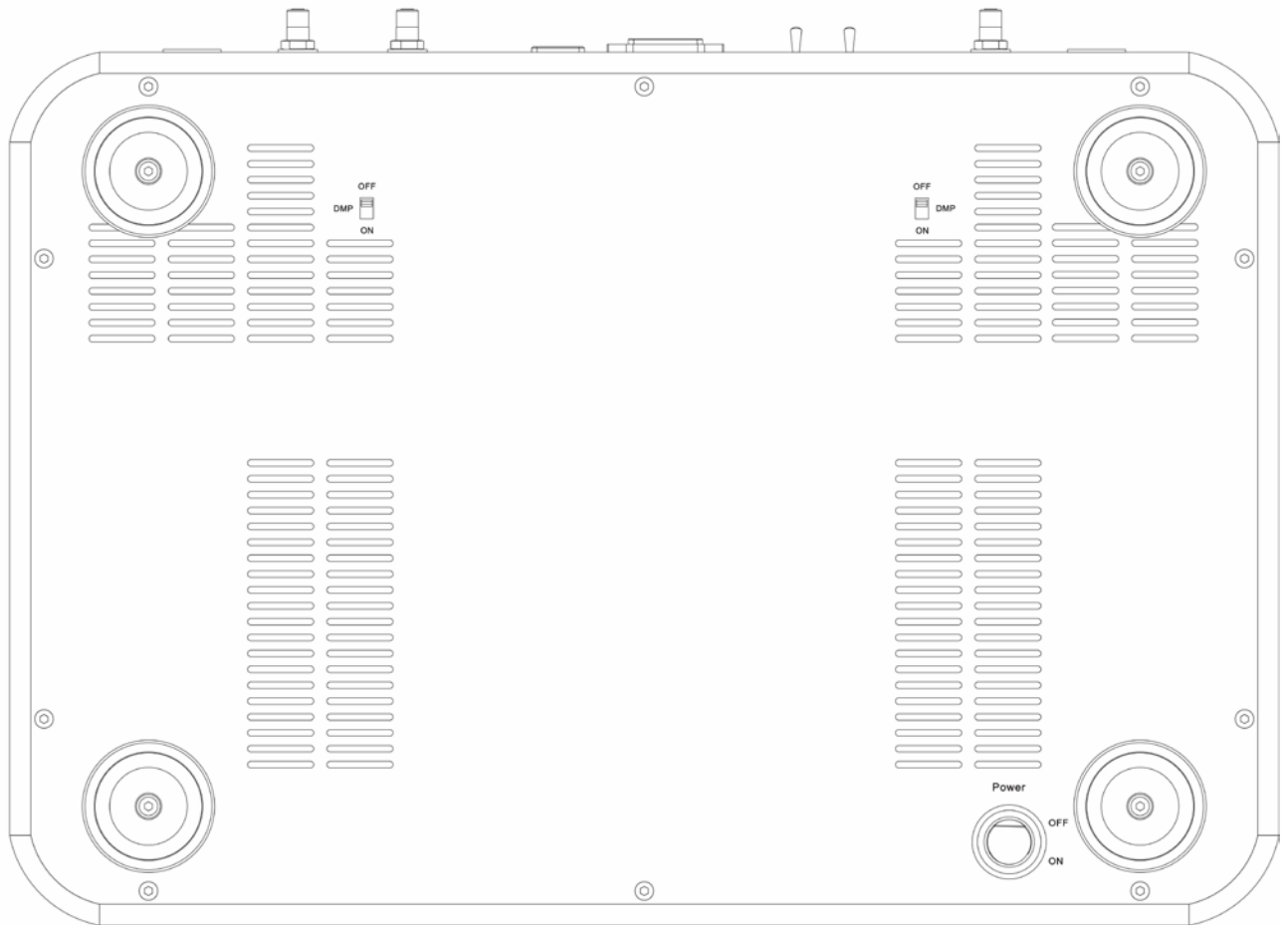
## Turn OFF procedure

- Always turn down the volume to minimum first.

When powering down your system always turn the amplifier off first.



If the CD-10 was turned OFF even for a short period of time, you should wait at least 30 seconds before turning it back ON. Do not turn it ON then OFF and then ON again in quick succession. This precaution will minimize the stress (high voltages) on internal components. Follow this procedure each time you turn your CD-10 OFF/ON.

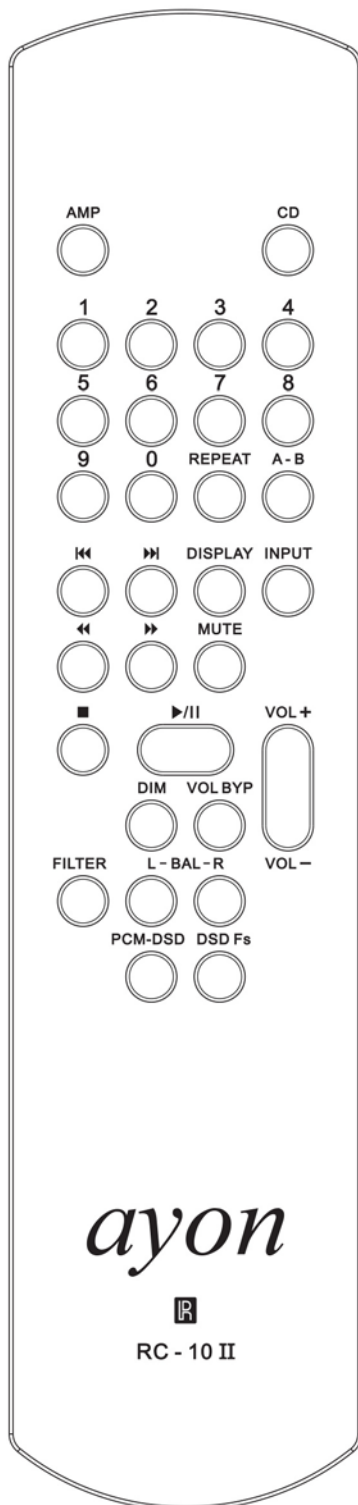


Bottom plate – power switch (left-front on the bottom plate mounted)



**N**ever remove the bottom plate of the CD-10 before unplugging the unit from the wall!

## 5. REMOTE CONTROL



Remote Control

### Remote control

Equivalent buttons on the remote control have the same functions as those on the front panel of the unit. Other functions are only available by remote control. As the handset uses an invisible infra-red-light beam, the front edge must be pointed directly towards the receiver window at the front of the player, without visual obstruction between them. Avoid allowing direct sunlight or florescent lighting to fall directly on the IR receiver (in the unit) as this could cause range and reliability issues. Also be aware of internal security systems which can also transmit strong infra-red interference.

### Battery

The Batteries of the remote unit can be easily changed by removing the back cover. Insert two "AAA" batteries. Make sure the batteries are installed with their positive + and negative - poles positioned correctly. Do not mix old and new batteries.

*Please dispose of used batteries in accordance to local regulations.*

### Note: electrostatic charge of the remote control

It may happen occasionally that your remote control suddenly and without any advanced notice does not function despite sufficient battery power. Remove the batteries, insert them with wrong polarity, wait some seconds, remove the batteries and insert them again with the right polarity. By this means the microchip is re-initialized and the electrostatic charge can be removed this way. Thereafter the remote control should work again properly.

1. The Remote Control can be used also for other Ayon equipment.  
"AMP" for Integrated or Preamps (only Volume and Mute function)  
→ **Press the CD button to return to the CD mode!**

## CD-10

2. **DIM** button: Set the display brightness.
3. **NUMERIC** buttons: (0-9, total ten buttons);  
Press 1-9 buttons to select a specific sound track you want to play.  
For the track number greater than 9, press the corresponding numeric buttons for the track number desired.
4. **REPEAT** button  
During normal playback: Press this button once (**T**), the system will play the current track repeatedly. Press this button again (**A**); the system will play all tracks repeatedly.
5. **PREVIOUS TRACK I◀◀** button  
This button will cause the unit to move to the previous track and begin playing.
6. **NEXT TRACK ▶▶I** button  
This button will cause the unit to advance to the next track and begin playing.
7. **SEARCH BACK ◀◀** button  
When pressing this button during normal playback, the system will play the track reversely at twice speed. Once the track is finished, the system will play the previous track normally.
8. **SEARCH FORWARD ▶▶** button  
During normal playback, press and hold this button, the system will play at twice speed. Once the track is finished, the system will play the next track normally.
9. **STOP ■** button: During normal playback, press this button to stop the playback.
10. **PLAY ▶ – PAUSE II** button (combined)  
When the system is in stop mode, press this button to playback the first track. When the system is in pause mode, press this button again to return to normal playback.
11. **INPUT** button: This button is for digital input selection.  
Digital inputs allow independent use of the processor section for external sources to enjoy music reproduction with the same superb quality.
12. **DISPLAY** button:  
This button switches between the various time modes on the display. Before play, the total time on the CD is shown. Once a CD starts to play the elapsed time of that track will be shown. Pressing the button once will cause the display to indicate the remaining time in that track (remain). Pressing this button again will cause the display to indicate the total time elapsed for the entire CD. Pressing the button another time will cause the display to show the total time remaining for the entire CD. Finally, pressing the button again will cycle back to the original default setting. The remaining time of the song can be checked and when you press the button again the remaining time of the whole CD can be checked. **Note:** It can also choose between "time display" and "volume display" when you press the button again.

13. **MUTE** button  
Press this button, mute all outputs, press again to unmute. If the output is muted, the display will indicate this by showing, "MUTING".
14. **VOLUME** button  
Whenever the volume control buttons are pressed, the volume for both channels will be increased ( + ) or decreased ( - ) by an increment of 1 on the display screen. The range of the volume control is from **0** ( Volume max. ) to **-60** ( Volume min. ). **Note:** On the player's display -60 is mute and 0 is maximum volume.
15. **VOL BYP** button: (**Volume Bypass** – "variable" or "fixed"); It changes the output volume function between "variable" or "fixed" mode. In the "fixed" mode the audio signal is bypassed directly to the analog output stage and can't be regulated anymore.
16. **PCM → DSD** button: (*Optional / CD-10 Signature*)  
All PCM-signals from 44.1 to 192K (DAC and USB "B" type inputs) are converted automatically to DSD.
17. **DSD Fs** button: (*Optional / CD-10 Signature*)  
You may choose between 128x and 256x. Under the condition that the DSD converter previously was activated with the PCM → DSD button.
18. **BAL L & R** buttons: Left and right channel can reduced by 6 steps (0dB to -6 dB)  
In the 0dB position the audio signal is bypassed directly to the analog output stage.
19. **FILTER** button: Filter 1(slow roll-off speed) and makes the sound a bit smoother. Filter 2 (fast roll-off speed) and makes the sound a bit more analytical.
20. **A-B** button  
For repeated playback of a specified passage (A-B): During normal playback: Press this button once at the starting point (A) of the passage you want to repeat. If do not press the button again to mark the stopping point (B) before the next track starts, the starting point A will be cleared during the track change. Press this key again at the end of the passage (B) you want to repeat, the designated passage A-B will be played repeatedly.

## 6. BREAK-IN PERIOD

Your new Ayon Audio CD-10 tube CD-Player has an initial break-in period. The unit will not perform to its full sonic potential when first installed in your system. This is partially due to a residual polarization of the dielectric materials used in the PCB, like resistors, capacitors, chokes, transformers and internal wiring. As music is played through the unit, the electrical signal will gradually anneal these materials. Only after the break-in period will the full performance of your Ayon Audio CD-10 is fully realized. The break-in process will occur naturally as music is played through the system.

During the break-in period, the sonic properties of your electronics may undergo several gradual shifts as the various components break-in at different rates. It is therefore suggested that the fine tuning of the system be delayed until after the break-in period is completed. However, during the final phases of the break-in period, the sonic image will open up, the sound stage will bloom to perfection, the bass control and impact will increase and the overall sound will have a more involving soundstage presentation.

- o Break- in: 30 to 50 hours



Do not use any CD Break-in Disc or Break-in device. Use natural music only. We have found that certain "break in" CD's can actually have a detrimental effect on the performance of the system.

## 7. SIGNAL VACUUM TUBES

It is a fact that each brand of tube sounds different in a particular high-resolution circuit. This is because no two manufacturers make a tube type in quite the same way, and the central tendencies of the performance parameters will differ slightly with each maker. To emphasize the point, examine the plate structure of any two signal tubes of the same type from different manufacturers. You will probably find that they may not even be the same shape and size.

Ayon Audio strongly discourages changing tubes (tube rolling) for the purpose of "improving sonic performance". Tubes of the same part number from different manufacturer's and lots generally vary considerably in many operating parameters. The Ayon Audio Class-A CD-10 CD-Player has been sonically and precisely optimized for the tubes installed at the factory in Austria, by Ayon Audio.

The 6N6P tubes are highly selected and matched tubes by our experts at Ayon Audio. The original signal tubes will provide for many years of excellent audio performance.

### Tube Life Expectancy

Average power tube life will depend on several parameters: product type, how the product is installed, loudspeaker efficiency, room size and acoustic damping, listening habits or average sound pressure levels, A.C. line stability and purity, and other circumstances. When tubes are new, they are at slightly greater risk of going bad during their break in period. This is called infant mortality. After the break in time period the tubes will stabilize and last for the several thousand hours of operation unless traumatized by being jarred or dropped. The vacuum signal tubes used in the CD-10 are high quality tubes rated for approximately 5000 hours of use. For maximum audio quality however, we recommend replacing the tubes after 4000 – 5000 hrs of operation. As with all tubes, their quality degrades with age. This is due to cathode emission, a natural process found in all tubes. **Note:** Some tubes of the same brand and type glow at different brightness levels, some variation in brightness is normal – having to do with the amount and positioning of the internal silvering on the glass. You need not be concerned if one tube glows brighter than another.

## 8. DIGITAL FORMATS FOR HI-END APPLICATIONS – A GENERAL OVERVIEW

When music is stored digitally, the data are stored in a standardized format to enable the computer to recognize what he shall do with them.

Format	data reduction	resolution	max. frequency	channels
CD	no	16 bit / 44.1kHz	ca. 20 kHz	2 (stereo)
SACD	no	1 bit / 2.8 MHz	ca. 40 kHz	2 (stereo)
FLAC / WAV / AIFF	yes / lossless	24bit / 96 kHz or 24 bit / 192 kHz	ca. 90 kHz ca. 180 kHz	2 (stereo)
DSD	no	1 bit / 2.8 MHz or 1 bit / 5.6 MHz	ca. 40 kHz ca. 80 kHz	2 (stereo)
for comparison: analogue signals:				
LP	no	-	ca. 50 kHz	2 (stereo)

**CD:** the files on a music-CD (Red-Book-Standard) are specially encoded but not compressed. CDs are best established on the market since decades, monthly many new titles are published.

**SACD:** this format was developed to expand the quality of the CD for higher standards.

**FLAC:** the application of this format is becoming increasingly popular, because it offers a completely lossless data reduction. I.e. the data file is shrunk for the transmission via internet and unpacked for playback. FLAC is a format free of fees. Programs to create music in the FLAC-format as well as for playback are free. More and more providers use this modern format for the transmission of high-quality audio files via the internet. Also, an increasing number of small bands and big orchestras use this format for productions of very high quality at an affordable price. There are similar formats (WAV, AIFF) offering a comparable value. All current music-player (i.e. software-programs) e.g. iTunes, MediaPlayer, Foobar2000, MediaMonkey, JRiver, Decibel, Roon can play the music-files regardless of their format.

**DSD:** (Direct-Stream Digital). A 1-bit-format known to most interested people only from the SACD.

DSD is a very elegant technology for describing an analog signal in a digital way. DSD is used for storing the high-resolution sound on Super Audio CD. As the internet is getting faster, more music providers dare to offer this format. The files are very big but the quality is on a very high level comparable to the PCM-high-bit-format. More and more download-sites and D/A-converters support DSD.

DSD can also exist outside of SA-CD: it can be downloaded and played back on our players or D/A - converters right from your computer. There are three flavors of DSD, DSF and DSDIFF, also known as DFF.

Unlike SA-CD, DSD music is free from copy protection and DRM.

### **Converting DSD in PCM music files:**

Software as Foobar2000 can be expanded by a plug-in enabling the conversion of DSD to PDC in order to playback DSD-files with conventional PCM-converters - in 24 bit, 88.2 or 24 bit, 176.4 kHz corresponding 1:1 to the DSD-signal. Resulting PCM playback sounds like the original SACD (DSD) equivalent.

### **Bits and kHz**

When music shall be stored in a digital file, firstly it must be digitalized. For this, firstly the constant (analogue) signal is scrambled into small slices. Then each slice is stored as a byte. The precision of the altitude of the slice can be recognized by the number of bits. For a CD 16 bits are used, for high-resolution formats 24 bit. The thickness of the slice is defined by the sampling rate. The finer the slices are, the more precise the storage of the music. The CD uses 44,100 slices per second. High-resolution files are sampled with 96,000 Hz and 192,000 Hz. For playback the slices are reassembled - digital becomes analogue again.

### **What is DoP ?**

DSD at the studio is packed in a .wav container and is then called DoP. This .wav file is then distributed to you, the user. The header of the file identifies it as a DSD file. DoP is completely native and unprocessed DSD 'packed' into a PCM bit stream with 8 bits of 'ID Header' that must be stripped out before playback. A native DSD stream would have no header. That is essentially the only difference between the two. Once inside the Ayon DAC, the ID Header is stripped away and a 'pure' DSD stream is again present.



## Music listening - a complex process

Man listens music by receiving noise with his ears that is analyzed further by ear and brain. Music listening is an astonishingly complex process influenced by both acoustics and psyche. We hear a tone in a very different way depending on the duration of the sound of the tone. We can listen consciously to long during tones up to 20,000 Hz max and only at young age. But music does not (only) exist of long continuing tones, this would be boring very soon. In fact, the excitement of music results from the change of tones and the (almost never synchronous) accord of multiple tones. Amongst others man recognizes form the overtones and the way a tone begins and ends, which instrument he is listening to. Human voices are analyzed by man much more in depth and surprisingly fine details decide whether a listener senses a voice as gay or sad, beautiful, boring, or annoying. Technically speaking, man can hear signal structures up to 5  $\mu$ sec corresponding to a frequency of 100,000 Hz!

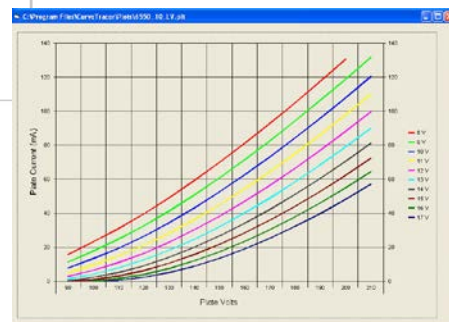
Directive listening of man also is extremely complex. The level of a sound only very roughly determines the direction. Additionally, the ear compares the difference in sound of the left and right ear by superimposing. This way man can notice differences in time of less than 10  $\mu$ sec and hear differences in angle of 3-5 degrees! When a hi-fi-equipment shall be able to reproduce these 10  $\mu$ sec the upper threshold frequency must be 50,000 Hz. Furthermore the ear learns interpreting sound-"distortions" by means of the form of the ear conch.

## WHY VACUUM TUBES

The output level of studio microphones under typical recording conditions contain peaks far in excess of what VU meters display. Everyone knows that, but the peaks, as measured with an oscilloscope, are really quite high, easily exceeding 1 volt! The tube or transistor used in a condenser microphone, or in a microphone preamplifier, often will be driven into severe overload by these peaks. The peaks are short, so the sound isn't grossly distorted-sounding; but the distorted peaks do affect what we hear. All preamps (and condenser microphone electronics) are overloaded by these peaks, but tubes handle it differently than solid-state devices. When transistors overload (in a discrete circuit or in an OP amp), the dominant distortion product is the third harmonic. The third harmonic "produces a sound many musicians refer to as blanketed". Instead of making the tone fuller, a strong third actually makes the tone thin and hard. On the other hand, with tubes (particularly triodes) the dominant distortion product is the second harmonic: "Musically, the second is an octave above the fundamental and is almost inaudible, yet it adds body to the sound, making it fuller". Tubes sound better because their distortion products are more musical. Tubes provide a more appropriate load to transducers. These are the fundamental reasons why tubes simply sound better.

## AYON TUBE TESTING PROCESS

Every power and signal tube is visually examined and tested by our own special custom made tube testing machine with burn in feature and add on the industry's most advanced computerized electron tube testing system – Amplitrex AT1000 tube tester, for all 5 specs: Plate current, trans-conductance, heater-to-cathode leakage, internal gas and microphonics. Actually, tube manufacturer only tests mostly one spec – the plate current in their factory QC process; we test all 5. For tubes with multiple sections such as "dual triode" types, we test all sections of the tube and match the sections as close as possible.



## 9. AYON CABLE – PEARL SERIES

Almost daily we are confronted by our worldwide customers with the question which cable would be most appropriate or best sounding for their Ayon installation. Unfortunately, there is no “best” cable and will never be! Every cable has different effects on the sound produced by the speakers and devices and their electrical interrelations. The composition of the cable design, its materials, construction and circuitry are decisive for the tonal properties of cables. I.e. the overall design and the interaction such as type and quality of the materials, the inner construction consisting of the combination, arrangement and shielding of the signalling lines as well as last but not east the wiring of the components amongst each other and the plug connectors determine the effectiveness and quality of the cable.

A decisive point is that the cable itself is adapted to the Ayon equipment, as much as possible, to all electrical parameters (input resistance, capacity, electrical ground-feedback etc.) to provide a closed, neutral, spatial, seamless sound stage.

Well, after all the requests we have decided to restart a small hand-made high-end series of cables after 10 years of cable-absence, integrating itself perfectly into the “significant” Ayon sound pattern. After endless and tedious listening tests and year-long experiments again and again we have made comparisons; now we believe to have created an “optimum” connector according to our tonal imagination especially for Ayon equipment and loudspeakers, the Ayon “Pearl” series.

The “Pearl”-series is a new development and was composed to an overall concept for Ayon equipment by different developers in meticulous work and fine tuning of all components. The “Pearl” cables are uncompromising using both exquisite conductive materials consisting of gold, silver, and rhodium and extremely oxygen-free copper, Polytetrafluoroethylene (PTFE), and special shielding materials as well as in their composition.

Our year-long experience designing benchmark setting tube devices and loudspeakers have been introduced into the realization of our tonal imagination of the “Pearl” series.



## 10. SPECIFICATIONS

<b>CD-Player</b>	<b>Ayon CD-10 II</b>
Conversion rate	32 bit, PCM up to 768K & DSD 256
DAC configuration	Fully symmetrical / AKM-Japan
CD-Transport	Stream Unlimited – Austria
DSP Module (Option)	PCM→DSD & DSD→DSD
Tube complement	2 x 6N6P (SE-Triode)
Dynamic range	> 120dB
Volume control mode	Variable or fixed* (bypass* - the audio signal goes directly to the analog output stage)
Output level @1 kHz / 0,775V -0dB /RCA/LOW	2.2V fixed or 0 – 2.2V rms variable
Output level @1 kHz / 0,775V -0dB /RCA/HIGH	4.4V fixed or 0 – 4.4V rms variable
Output level @1 kHz / 0,775V -0dB /XLR/LOW	2.2V fixed or 0 – 2.2V rms variable
Output level @1 kHz / 0,775V -0dB /XLR/HIGH	4.4V fixed or 0 – 4.4V rms variable
Output impedance Single-Ended-RCA	≥ 700 Ω
Output impedance Balanced-XLR	≥ 700 Ω
Digital output	75 Ω S/PDIF (RCA)
Digital input	75 Ω S/PDIF, TosLink, USB-24/384kHz & DSD 64x/128x
S/N ratio	> 118 dB
Frequency response	20Hz – 20kHz +/- 0.3dB
Total harmonic distortion @ 1kHz	< 0.002%
Remote control	Yes
Output complement	RCA & XLR
Power consumption	35W
Dimension (WxDxH) cm	48x33x12 cm
Weight	13 kg

Ayon reserves the right to make improvements which may result in specification or feature changes without notice.



This product contains a CD mechanism, which complies with the PHILIPS/SONY red book CDDA standard. It is guaranteed to play all disks with the "compact disc digital audio" badge (see left) without any problems. Please note that due to "piracy" concerns, some record companies/pressing plants are creating disks that do not adhere to this standard. Such disks may – or - may not play in some –or- all CD player products of any manufacturer. We advise caution in using these disks, as the information contained therein has been deliberately manipulated and can cause audio degradation and/or

playability problems. We also advise caution with using cheap and/or computer CD-R/RW disks for audio. To ensure optimum reliability and performance we recommend all home-generated CDs intended for playback on this unit are recorded as CCDA AUDIO CD's (i.e not MP3, WAV, etc.) on good quality household brand Audio grade CD-R's. Remember - the most vulnerable part of a CD playing system is the disc itself. The most likely cause of a disc not playing is that the disc itself is faulty, scratched or simply dirty. Never open the case of the unit yourself, as this will invalidate the guarantee. If none about above affects a cure, please contact your Ayon dealer.



### CE DECLARATION OF CONFORMITY

We declare under our sole responsibility that this product is in conformity with the following standards or standardized documents: BS EN 60065 in accordance with the regulations 73/23/EEC, 89/336/EEC (from 1 January 1997) CE 94



### DISPOSAL

The crossed out wheeled bin label that appears on the back panel of the product indicates that the product must not be disposed of as normal household waste. To prevent possible harm to the environment please separate the product from other waste to ensure that it can be recycled in an environmentally safe manner. Please contact local government office or retailer for available collection facilities.

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# 11. WARRANTY & SERVICE

## LIMITED WARRANTY

Ayon Audio electronic components are warranted by the manufacturer to be free of defects in materials production for a period starting 2 years (except for wear parts like all types of signal\*, rectifier\* and power tubes\*; AA52B or AA62B power tubes\*\*\*, CD-mechanism\*\*, laser pick up\*\* and CD-acrylic-lid\*\*), from the date of dispatch (factory). Under this warranty defects are repaired free of charge. The purchaser is responsible for transportation from their location to the original sales agent, national distributor, or international distributor, whoever is closest. This warranty applies to the original purchaser only and it is non-transferable to subsequent purchasers within the original 2-year period. Request for repair under this warranty must be accompanied by an unaltered copy of the original purchase receipt. (3 month\*), (6month\*\*) & (1 year\*\*\*).

## IN THE EVENT OF A PROBLEM

In case of defects, please contact at first your dealer. He will ensure continuous operation at the highest level of performance. The defective parts must then be returned to the factory for inspection to determine the status of the warranty claim. This on-site replacement of the parts eliminates the time and expense of shipping the entire unit to the factory for repair. Except as specified below, this warranty covers all defects in material and workmanship in this product. Any implied warranties, including warranties of merchantabilities and fitness for a particular purpose, or damages based upon inconvenience, loss of use of the product, or commercial loss, or any other damages are not covered by this warranty.

If at the sole discretion of Ayon Audio it is necessary to ship the product to the manufacturer, please make sure that:

- The product is carefully packed and shipped in its original shipping box.
- The product is shipped free of charge to us, e.g. you must pay all shipping charges (ex. freight, insurance etc.).

## CONDITIONS

This warranty is subject to the following conditions and limitations. The warranty is void and inapplicable if the product has been used or handled other than in accordance with the instructions in the owner's manual, abused or misused, electric shorts from lightings or overloaded wall power outlet, the serial identification plate and serial number has been removed from the unit, damaged by accident or neglect or in being transported or the defect is due to the product being repaired or tampered with by anyone other than Ayon Audio, or an authorized party.

Further, the following are not covered by this warranty:

- Regular inspections, tuning, repairs or replacement of parts which are attributable to normal wear and tear.
- Damage occurring during shipment of the product. All transport claims must be presented to the carrier.
- Damages or scratches on the surface of the product (ex. metal and chrome parts, color coating etc.).  
These claims must be presented immediately after the date of original purchase with your dealer.
- Damage resulting from incorrect placement, faulty connections, improper operation. Damage resulting from failure to follow instructions supplied with the product.
- Damage resulting from accident, misuse, abuse, neglect, electrical surges, lightning or other acts of God.
- Damage resulting from repair or attempted repair by anyone other than Ayon Audio or an authorized Ayon dealer.
- Consequential, secondary or subsequent damages to other third-party appliances.
- The device was sold by an unauthorized dealer or sales organization.
- The device is operated without ground connection (unearthed).
- The device is sent back inappropriately packaged.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

Ayon reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the price or specifications of any product without notice or obligation to any person.

## OWNERS MANUAL

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