

Black Wheel user manual

MARCH 2023



Congratulations
on your Black Wheel!

Each Black Wheel is hand built
in Schagen, Noord-Holland.

All parts are of our own design,
and nearly all of these parts
are hand made in our lab in Schagen,
Noord-Holland.

The Miniot team



Black Wheel
Instruction video

Black Wheel Handmade in Holland

Black Wheel is a turntable upside down.
All precision technology is below the
record, shielded from dust or mishaps.
Unlike other turntables, Black Wheel
rotates counterclockwise, and plays the
opposite side (the side facing down)
of your record. Because of its unique
construction, Black Wheel can be used
horizontally and vertically.
Black Wheel is operated by the
exceptional slide track system.

We've gone to great lengths to
build Black Wheel to the best of our
ability, using the finest materials and
components, to give you many years of
enjoyment.

Black Wheel is precisely calibrated during
assembly. No adjustments are needed.

Please read this manual carefully to
ensure you understand all the features
and functions of Black Wheel . Enjoy!

Precautions

- Turntables, tonearms and cartridges are delicate, so please take extreme care when moving, setting-up and using them.
- Do not use Black Wheel near sources of heat, or liquids. Don't expose Black Wheel to moisture. Ensure ventilation around Wheel, at least 10 cm in all directions.
- Do not open Black Wheel's enclosure or force objects into its openings. Never drop small parts into Black Wheel's openings.
- Place Black Wheel on a fixed level surface where it will not fall or trip. Don't place Black Wheel on surfaces like carpet or fabric.
- Black Wheel should only be used in mild climates between 5 °C (41 °F) and 35 °C (95 °F). Avoid direct sunlight to keep your records and Black Wheel healthy.
- Keep packaging material and small pieces out of reach of small children.
- Unplug the power supply if Black Wheel is not used for extended periods of time.
- Only clean Black Wheel with a microfibre cloth (lightly damp if necessary). If the wooden parts of Black Wheel lose their luster over time, a drop of furniture oil makes it look like new.
- If Black Wheel performs erratically or emits smoke or odour, disconnect from the power supply and contact us at service@miniot.com.
- Black Wheel and it's cartridge (excluding stylus) are warranted against all manufacturing defects. This warranty does not cover wear, tear and shipping costs.
- Any modifications or failure to follow recommended guidelines may void the warranty.
- If Black Wheel needs to be returned for repair or inspection, the original packaging must be used to preserve your warranty.

Unpacking

Black Wheel is shipped in a square brown protective box. This box encloses a smaller white box. This box contains:

- Black Wheel's trademark transparent record
- Black magnetic puck/single adapter
- Wooden stylus cleaning brush
- 2 meter power cable
- 5V DC usb power supply
- User's manual
- Black Wheel
- Two legged stand and screwdriver

Black Wheel is securely enclosed by foam. A red clip at the bottom locks the arm in position during transport. After removal of the red clip, Black Wheel is ready to use.

NOTE: PLEASE GIVE YOUR BLACK WHEEL A FEW HOURS TO ACCOMMODATE TO YOUR ENVIRONMENT BEFORE YOU START USING IT.

After unpacking, store the box for future use and safe transport if needed.



Black Wheel placement

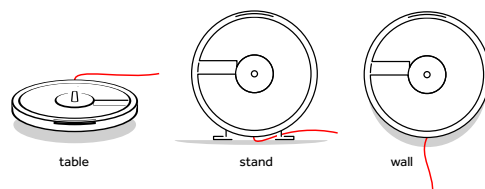
By nature, turntables are designed to make sound from even the smallest vibrations. This means that they are also very good at picking up vibrations you don't want to hear.

To minimize this, Black Wheel is built with a carefully tuned combination of mass, stiffness, magnets and isolation. All of this helps, but it's still important that Black Wheel is placed or mounted on a rigid, sturdy surface, away from loudspeakers or amplifiers.

Do not leave Black Wheel exposed to heat and direct sunlight, this may affect the cosmetic finish over time, and could cause warping of records on Wheel.

Because of its construction and built-in sensor, Black Wheel can be used in three orientations: on a table, on the wall, and on a stand.

1. If you use Black Wheel horizontally, or flat, place it on a sturdy, vibration free table.
2. Black Wheel can be mounted on a stand or hung on a wall. Concrete or brick walls are better than box walls.

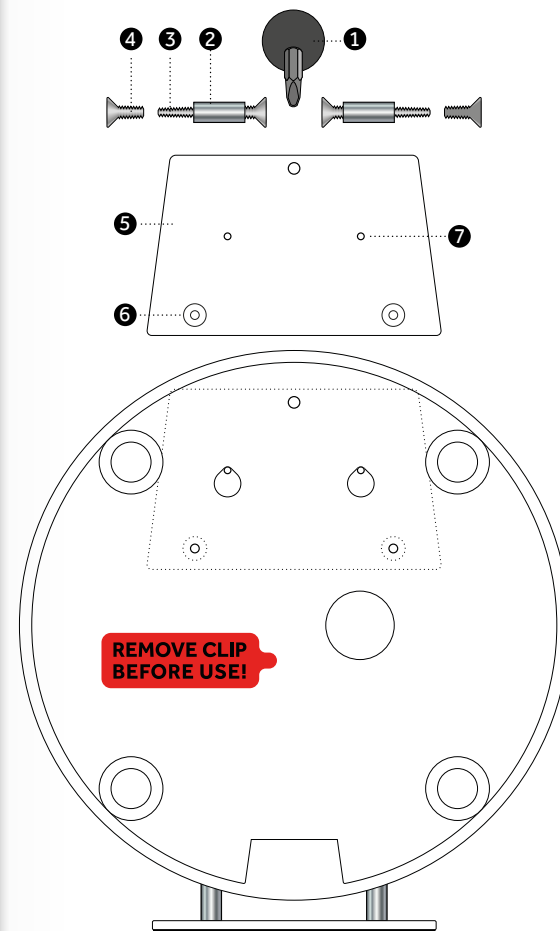


Mounting the stand

First, remove the short screws from Black Wheel's rear (4) with the supplied screwdriver (1). Attach the plate (5) to Black Wheel: Slide the tubes (2) into the openings at the bottom of Black Wheel's plinth. Hold the plate with the rubber towards you and align the countersunk holes (6) over the tubes. Use the long screws (3) to mount the plate to the base.

Wall mount

Black Wheel can be hung directly on a wall with a single screw. The two keyholes in the bottom plate are spaced at 80 mm. The plate (5) can be used as a wall adapter by placing screws (4) into holes (7).



Vinyl rules

Vinyl records can be vulnerable by today's standards. A few basic rules keep your records in perfect shape.

1. Always handle the record by its edges, touching only the label. Never touch grooves of the records.
2. Buckle the record jacket when removing or replacing the record by pressing the jacket against you. This will help prevent scratches.
3. Before playing the record, wipe it slightly with a designated record cleaning brush. This helps to remove the static dust which collects on the record.
4. Always place a record back into its sleeve after you're done playing. Don't drop your record into its sleeve, always slide it in gently.
5. Vinyl records need to be stored in an upright position to keep them in good condition. Stacked or slanted records can warp over time.

Black Wheel connections



USB Type C 5 V connector

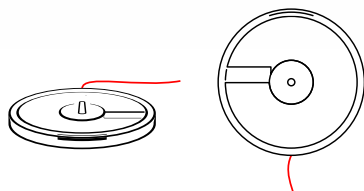
3,5 mm Mini-Jack

To connect Black Wheel to an amplifier, use an RCA/Mini-Jack cable



Ports

Black Wheel has a simplified port setup mounted in the base. If used horizontally, the connectors point away from you, if used upright, the connectors point downward.



Power

Black Wheel comes with its own 5V DC power supply. It adapts to the AC voltage in your country (EU, UK, US and AU) and connects between your wall plug and the Power port on Black Wheel's rear panel.

Ground

Because Black Wheel has a high end phono stage built right into the tonearm, it delivers a RIAA corrected linear preamplified signal to its 3,5 mm port. A separate ground wire is not needed.

3,5 mm Mini-Jack port

Black Wheel has a single 3,5 mm Mini-Jack audio port and can be connected directly to an amplifier with 'aux' or 'line' input, to wired headphones, and to wired active loudspeakers.

Most amplifiers use RCA or cinch inputs. To connect Black Wheel, use a 3,5 mm Mini-Jack to RCA cable.

Wireless

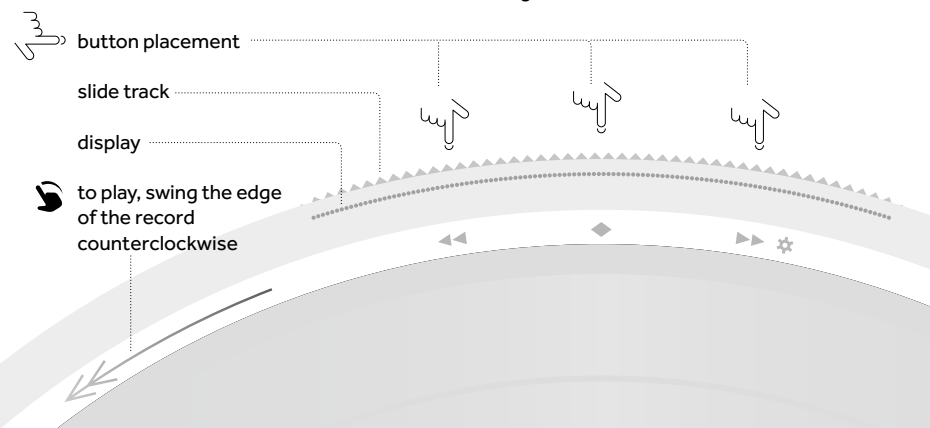
To use Black Wheel with wireless equipment, a wireless transmitter can be connected to the 3,5 mm port.

IF BLACK WHEEL IS CONNECTED TO AN AMPLIFIER, ALWAYS USE ITS AUX OR LINE INPUTS. CONNECTING BLACK WHEEL TO AN AMPLIFIER'S PHONO INPUT MAY RESULT IN DISTORTED SOUND OR DAMAGE TO YOUR EQUIPMENT.



- start button**
 short press play • / pause ••
 long press stops record, arm to home position
 press & hold repeat mode •••
 double press purist mode •◦•
- forward button**
 short press next track
 long press jogs forward
- backward button**
 short press previous track
 long press jogs backwards
- settings button** (without record)
 short press toggle auto rpm •••
 33 rpm ••• ••• •••
 45 rpm ••• ••• ••• •••
 press & hold (5 sec) stylus cleaning mode
- slide track**
 in pause mode ◀ jog
 in stylus mode ⚙ stylus pressure setting
 each block ••• of leds is 0,5 gram

IMPORTANT:
 BLACK WHEEL'S
 TONEARM SITS BELOW
 THE RECORD.
 IT PLAYS THE SIDE
 FACING DOWN.
 BLACK WHEEL
 ALWAYS TURNS
 COUNTERCLOCKWISE.



Using Black Wheel



Starting Black Wheel

Black Wheel doesn't have a power switch. After connecting the power supply, the display briefly lights up. If the display is off, Black Wheel is ready to use. If Black Wheel is idle for 30 seconds, it automatically switches off. Any action turns it on again.

Speed - By default, Black Wheel automatically selects 33,3 rpm for 12 and 10 inch records, and 45 rpm for 7 inch records. You can manually select 33,3 or 45 rpm by toggling the settings button. If one block of leds is displayed, automatic speed is selected. Three blocks is 33,3 rpm and four blocks is 45 rpm.

Placing a record on Black Wheel

Just put a record on Black Wheel and press play or swing the record to play.

IF BLACK WHEEL IS USED UPRIGHT ON THE STAND, OR ON THE WALL, USE THE MAGNETIC PUCK TO PREVENT THE RECORD FROM FALLING OFF.

Operation

Black Wheel is operated with the slide track and three buttons underneath it. All actions are confirmed by the led display.



Here's an overview of the functions.

◆ **Start** - Just put on a record and press the start button to start playing. Pressing the button again pauses the record.

◆ **Stop** - When a record is playing, a long press lifts and moves the arm to its home position. The record stops spinning.

🌀 **Swing to play** - Black Wheel also starts playing if you swing the record counterclockwise.

◆ **Pause and resume** - Pressing the start button when a record is playing pauses Black Wheel. The stylus is taken off the record but stays in position. The record keeps spinning and the the display shows a pause sign (two leds). Another short press resumes playing.

⏮ ⏭ **Next or previous track** - When a record is playing, pressing the forward or backward button once moves the arm to the next or previous track. Pressing the buttons more times let you skip a track.

⏮⏭ **Jogging with the slide track** When a record is playing, press the start button to pause the record. Moving the slide track let you easily navigate the entire

side of the record. The display shows precisely where you are. By pressing the start button again, you can land the stylus and start playing where you want it.

NOTE: TRACK SELECTION MIGHT NOT BE ACCURATE ON COLOURED OR TRANSPARENT RECORDS, OR RECORDS WITH VERY NARROW TRACKS. YOU CAN ALWAYS USE THE SLIDE TRACK FOR ACCURATE POSITIONING.

Repeat mode - Press and hold the start button ◆ sets Black Wheel in repeat mode. It endlessly plays one side of the record until you stop it. In repeat mode, the stylus position is displayed as three leds.

🔊 **Output volume** - The slide track can be used as volume control by sliding to the right (louder) or to the left (quieter).

Service mode - Over time, the stylus picks up dust from the record grooves. This affects audio quality. To clean the stylus, remove the record, press ⚙ for 5 seconds until the tonearm comes out. Carefully clean the stylus with the included brush. After cleaning, any button action parks the arm in it's home position.

Stylus pressure - Black Wheel's automatic tracking system controls groove contact with much more precision than conventional balanced systems do.

Almost all records will play flawlessly with the factory stylus pressure of 2,1 gram. Moving the slide track in service mode ⚙ (arm out) allows you to set stylus pressure between 0,5 and 4 gram. Each displayed led block represents 0,5 gram. If Wheel has been idle for 30 seconds, stylus pressure is reset to default.

Purist Mode - In rare occasions, if a record is severely out of balance or alignment, or if the lead-in groove is too

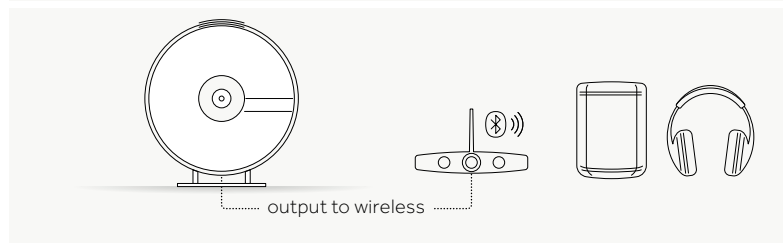
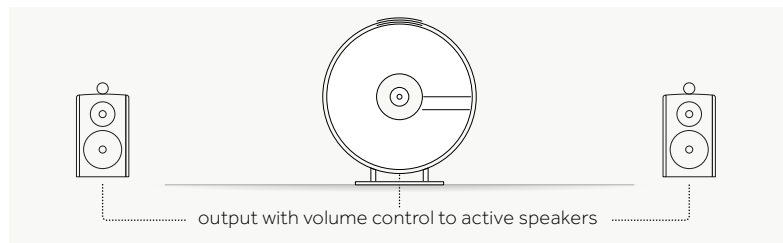
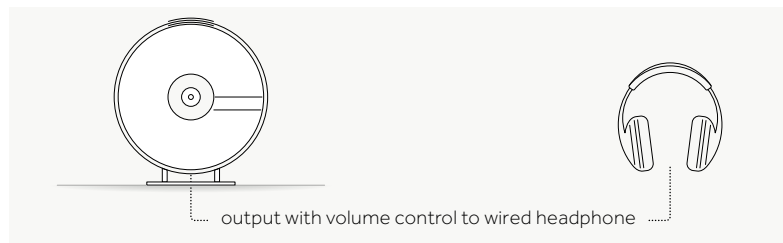
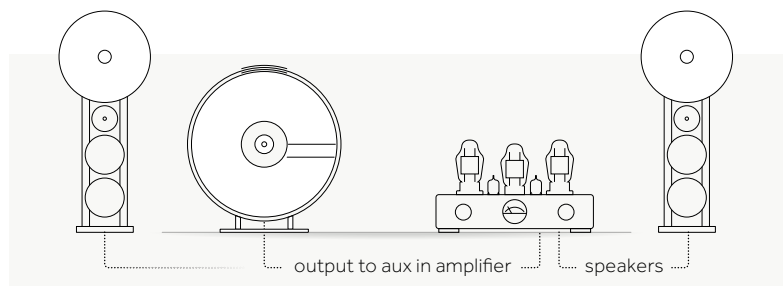
short, processing isn't finished when the music starts playing. In Purist Mode, Black Wheel first plays a few seconds of your record silently. When all relevant data is processed, the stylus is moved to the lead-in groove again and audio starts. Depending on the severity of misalignment and imbalance, this takes up to 10-15 seconds. Purist mode is activated per record by double clicking the start ◆ button. The stylus position is displayed as two blinking leds.

PLEASE NOTE: PURIST MODE IS ONLY MEANT FOR RECORDS WITH AUDIBLE DEFICIENCIES. NORMALLY, YOU CAN LEAVE PURIST MODE OFF.

Constant Groove Speed

Constant Groove Speed is what sets Black Wheel apart. All variables of the drive systems are analyzed: alignment, weight, balance, position, etc. These values are used to calculate a constant 33,3 or 45 rpm only where the stylus tip touches the groove. Motor speeds are recalculated every millisecond. Once the record starts spinning, a compensation profile is being made, and a self learning algorithm continuously optimizes speed on the fly.





Black Wheel specifications*

Black Wheel dimensions

Wheel base Ø x H	330 x 42,7 mm
Center stick Ø x H	7,2 x 24,5 mm
Total Weight	3300 gram

Audio Technica AT-VM95 Nude Shibata

Type	Moving magnet, dual magnet cartridge
Frequency Response	20 - 25,000 Hz
Channel Separation	23 dB (1 kHz)
Vertical tracking angle	23°
Tracking force	1.8 to 2.2gram horizontal/vertical setup
Stylus	2.7 x 0.26 mil Shibata
Stylus Construction	Nude Square Shank
Cartridge is factory fitted to the tonearm	Not user replaceable
Replacement Stylus	AT-VMN95SH User replaceable

Phono preamplifier

Built into tonearm	
RIAA accuracy	+/-0.18dB @20Hz - 20kHz

Audio output

3,5 mm stereo jack
for Headphones, or Hi-Fi amplifier's line input,
not suitable for Phono inputs

Minimum Load Impedance
12.8 Ω

Output Power
138 mW per channel,
drives every modern headphone

Harmonic Distortion
0.0045% @1kHz (Typical)

Miniot Linear tonearm

Electromagnetic stylus pressure
Closed loop position control
Tangential tracking
Servo controlled stylus tracking

Drive system

Self learning closed-loop speed control,
speed 33,3 and 45 rpm

Power

Power supply 100-240V AC - 5V 2A
Plug type is based on country or user preference

* All product specifications and data are subject to changes without notice.



Black Wheel by Miniot

Handmade in Holland

Miniot bv - Laan 22 - 1741 EB Schagen - the Netherlands

www.miniot.com - wheel@miniot.com