

# Bedienungsanleitung

## *Operating Instructions*

# Miracord 90

Wir beglückwünschen Sie zum Kauf eines ELAC Plattenspielers, der unter strengen Qualitäts- und Umweltauflagen hergestellt wurde. Um alle Leistungsmerkmale optimal auszunutzen, lesen Sie bitte die Bedienungsanleitung gründlich durch. Wir raten Ihnen, diese Anleitung für späteres Nachschlagen gut aufzubewahren.

**Bitte beachten Sie die separaten Sicherheitshinweise, die der Verpackung Ihres neuen Plattenspielers beige packt sind.** Bitte lesen, beachten und befolgen Sie alle diese Sicherheitshinweise und bewahren Sie diese ebenfalls auf. Beachten Sie alle Warnungen, die auf dem Gerät und in der Bedienungsanleitung aufgeführt sind.

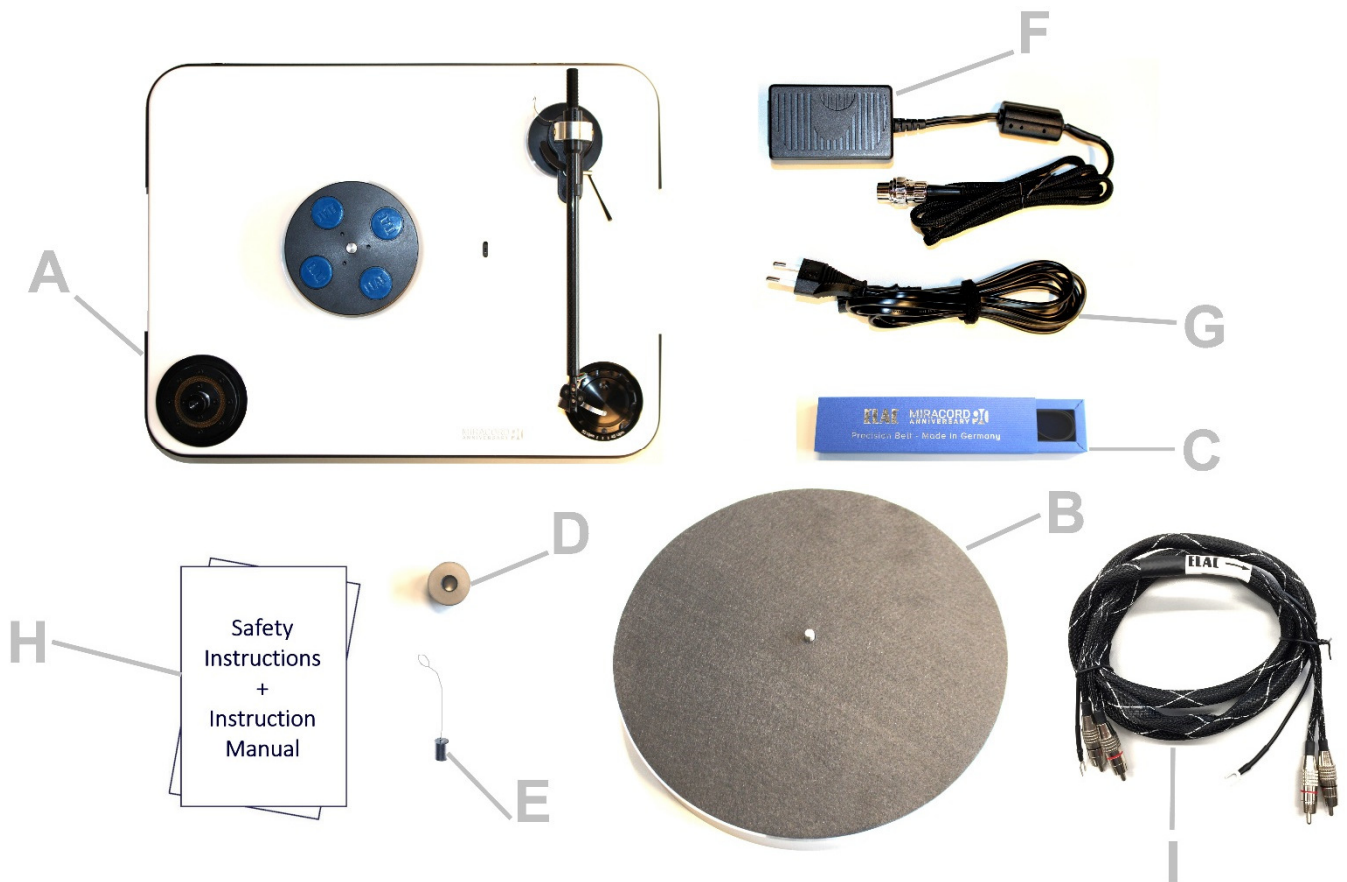
*Congratulations on the purchase of your ELAC turntable that has been designed in accordance with strict quality and environmental requirements. Please read the instruction manual carefully.*

**We recommend keeping it in a safe place for future reference. Please note the enclosed safety instructions.** *Please follow the instructions and keep the safety instructions. Heed all warnings on the appliance and in the manual.*



**ELAC** The life of sound.

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<b>Position</b>	<b>Pcs.</b>	<b>Description</b>
A	1	Turntable chassis
B	1	Platter with felt mat
C	1	Belt in carton box
D	1	Tone arm counter weight
E	1	Anti-skating weight
F	1	Power supply adaptor
G	1	Mains cable
H	2	Instruction manual / Safety instructions
I	1	Audio cable (RCA)

**What is so special with ELAC Miracord 90?**

- The massive aluminum platter with a mass of almost 6.5 kg (!!!) rests on a sub platter which is equipped with a hardened steel axis rotating on an 8 mm ruby ball.

The two axial bearings are made of sintered bronze.

- The Miracord 90's frame is made of 5.5 kg solid MDF which is characterized by a high inner damping. This eliminates high frequency vibrations efficiently. What is more, thanks to the newly developed silicone rubber feet the chassis is decoupled from the surface
- Thanks to the rubber dampers and fabric centering devices which are well-known from speaker design the motor is decoupled from the chassis (and also from the tone arm) twice.
- The tone arm is made in Germany and was especially developed for this turntable. The arm is made of an ultra-light carbon pipe, the rest of the parts is made of aluminum and brass.
- The so called coreless DC motor is controlled by a microcontroller in which a PID regulator is taking care of the correct speed. The detection of the current speed is done optically on the bottom side of the platter. The variable pitch control allows a variation of the speed up to +/- 5 %.
- The connection is done via gold plated RCA jacks and a ground screw. The connection to the external power supply is done via a lockable Lumberg connector.
- The turntable is shipped in working order, i.e. a high grade Micro Line Cut pickup system especially made for ELAC by Audio Technica is also integrated.



**Before the turntable can be used some preliminary activities have to be put into effect.**

### **1.1 How to install the platter (B):**

The platter has to be positioned in perfect alignment to the sub platter. Settle down the platter carefully without tilting it. The platter should lie flush on all 4 rubber bumpers of the sub platter. Turn the platter clockwise carefully to see that there's no radial runout.

### **1.2 How to install the belt (C):**

Take the belt out of the beauty carton and put it circumferential around the platter. Now pull the belt in direction of the motor and pull it over the motor pulley. Check if the belt runs centered on the pulley by carefully turning the platter clockwise. That should be the case after 2 turns at the latest.

### **1.3 How to install the tone arm weight (D) on the tonearm:**

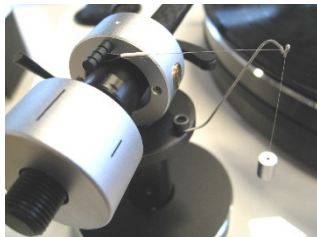


Place the tone arm weight onto the thread of the tone arm and turn it clockwise until the tone arm is floating. Check this by carefully releasing the tone arm from time to time while turning.

If the tone arm isn't spreading up anymore the floating point has been reached. If the tone arm is spreading down the weight has been turned too wide and should be turned back counterclockwise a bit.

### **1.4 How to adjust the tracking force:**

From the floating point turn the weight clockwise onto the thread exactly 3 ½ turns. This results in a tracking force of appr. 1.4 g. The tone arm is now adjusted properly.



### **1.5 Installing the anti-skating weight (E):**

The anti-skating weight should be installed as shown on the picture above.

### **1.6 Putting-on the felt mat:**

The last step is to put the felt mat onto the platter if not done already. The turntable is ready for use now and can be connected.



**2.1 Connecting the audio outputs:**

The two RCA jacks are directly connected to the pick-up system. So you need a (pre-) amplifier with phono input or an additional phono preamp.

Next to the output jacks there is the earth connector which is connected to all metal parts of the turntable. This screw can be used for potential equalization with the connected (phono-) preamp. Sometimes it's also useful for getting rid of humming problems. Preferably you should use the audio cable (I) which is part of the accessory kit. The optimum signal flow direction is marked by an arrow on the cable.



**2.2 Connecting the power supply:**

On the rear side of the turntable you can find the Lumberg power supply jack. Please connect the power supply adaptor (F) which comes with the turntable here. The power supply adaptor should be connected to the mains with the power cord (G) which also comes with the turntable.



**2.3 Turning on the motor / choosing the speed:**

The control wheel includes two different functions. On the one hand, the motor will be started and thus the desired speed will be chosen by turning the outer rotary switch either to 33 rpm or to 45 rpm. On the other hand, the pitch can be fine-adjusted within a range of +/- 5 % by using the inner pitch wheel (potentiometer).

Please make sure, the pitch wheel is adjusted to middle position first (center detent).



You can now turn on the motor by selecting either „45 Upm“ or „33 Upm“. While the motor is slowly increasing speed the indicator LED in the control wheel is glowing green (= nominal speed not reached).



As soon as the desired speed is reached the LED glows white permanently. Remark: Because of its high weight the platter reacts very slowly on speed changes which are provided by the speed regulator. So, the LED might change color between “green-white” (current speed value below desired speed), “white” (current speed = desired speed) and “red-white” (current speed above desired speed) before the LED permanently glows white.



**2.4 Pitch wheel:**

The pitch wheel allows the user to fine-adjust the speed in a range of +/- 5 %. The middle position provides center detent.

Remark: The control LED acts as your „independent expert“ and monitors the deviation to the nominal speed permanently. If e.g. “45” is selected a deviation below the nominal speed will be displayed as „green-white“, a deviation above nominal speed will be displayed as „red-white“. This is also relevant for the case that you intentionally increase or decrease the speed with the pitch wheel.



<b>Symptom</b>	<b>Possible root cause</b>	<b>Remedy</b>
<i>Motor doesn't work</i>	<i>No connection to the mains or mains fuse burnt through</i>	<i>Check mains plug, receptacle and fuse.</i>
	<i>Power supply not connected properly</i>	<i>Check the Lumberg plug for correct fit and fix it.</i>
	<i>Rotary switch in position „0“</i>	<i>Switch the rotary switch to either „33 Upm“ or „45 Upm“.</i>
<i>Audio signals are reproduced distorted or not loud enough, even if volume is turned to max. on (pre-) amp</i>	<i>(pre-) amp doesn't have enough gain</i>	<i>Make sure the preamplifier which is connected to the turntable provides a suitable input and a RIAA equalization. If applicable a phono preamp has to be connected in advance.</i>
	<i>(pre-) amp is misadapted</i>	<i>Use the option „Moving Magnet“ for the phono preamp and the input impedance of 47 kOhm.</i>
<i>The right channel appears on left channel and vice versa</i>	<i>The channels are swapped</i>	<i>Swap the two RCA plugs (left and right channel) which are plugged into the turntable's RCA jacks.</i>
<i>Loud humming noise</i>	<i>Contact problems with the signal connections (e.g. RCA plugs, RCA extensions or adapters)</i>	<i>Check all connections; for acoustical check relating major problems reduce the amp's volume level to minimum. Possibly the RCA plugs ground rings should be re-adjusted.</i>
<i>Gentle humming noise</i>	<i>Metal housing acts as antenna and catches humming</i>	<i>In certain cases it makes sense to connect the metal parts of the turntable to signal ground of the (phono-) preamp. On the rear side of the turntable there's an earthing screw for this purpose. Please use a wire with enough cross section for this ground connection.</i>
<i>The music doesn't sound naturally</i>	<i>Wrong speed selected</i>	<i>Check which speed has to be chosen for playing the current record. There are also records on the market which have the same diameter as a LP (30 cm) but have to be played with 45 rpm (e.g. maxi singles). On the other hand there are also records in single format (17 cm) which have to be played with 33 rpm (so called "EPs").</i>

**Warranty**

The terms of warranty are regulated individually by the law in the different countries and by the terms of the international ELAC representatives respectively. If you have not bought your appliance in Germany, please check the terms with your retailer. Warranty can be given by any special retailer who has been authorized by ELAC or the respective international representative to distribute ELAC products (EU contract retailers). In the case of warranty, the complete appliance together with the receipt has to be handed over to the retailer.

Your turntable is maintenance-free. Changes in acoustical behaviour decrease over the years so that the human ear will probably change even more than the turntable actually does. Only the needle should be checked from time to time and should eventually be replaced.



**Clean your turntable only with a soft, dry and smooth cloth,** or with a dust brush. Do not use scouring powder, alcohol, benzene, French polish, or other agents. Do not expose your turntable to a relatively high humidity. Temperature variations, humidity and excessive sunlight may damage the turntable and result in optical changes.

In the case of malfunction of your turntable apply to an expert. Your special dealer will be pleased to help you. If a turntable should be destroyed through improper use by a second person the repair requires special know-how in order to provide accurate performance of your device.

Many of today's modern furniture are coated with multiple varnishes and plastics which may be treated with chemical agents. Some of these agents might contain substances which cauterize or soften the rubber feet. Therefore, we would like to advise you to place an anti-slip mat underneath the turntable.

### **Production Control**

Every production step is controlled individually. Each part of the turntable (e.g. electronics unit or motor) is tested several times, from the purchase until the final assembly. In the final control every turntable is tested acoustically, i.e. skilled ears check the acoustic quality of each frequency range.

To be able to observe the tolerance limits, variations e.g. the values of the electric components must be severely restricted, since inaccuracies of single components may add up in the total system. To achieve maximum production quality, compliance with ELAC quality criteria and guidelines can be regarded as the most important duty.

### **Turntable Disposal**

Please keep the cardboard box and packaging. Since the box and packaging represent the ideal container for the appliance, you should keep them for future transports.

### **Material-Specific Disposal**

If you want to discard the packaging, please do not put it in the household waste, since here it will be mixed up with other residual materials. Please, do not give the material to collecting points for paper or other materials, but take it to the dealer's. The packaging represents an important recoverable material. It consists of fabric, PE (bag and packing parts) as well as cardboard, which should be returned to the material resources cycle for recycling. We have an agreement with your special dealer to take back and dispose of the material in a way that guarantees material-specific disposal. Thus, please, take the packaging back to your dealer for disposal.



### **Recycling**

Support the environmentally-friendly disposal of electronic industry waste.

Old electronic and electrical appliances must not be disposed of in the same manner as regular household waste!

Environmentally-friendly recycling must take place according to each country's regulations.



<i>Dimensions H x W x D</i>	<i>170 x 470 x 360 mm</i>
<i>Weight</i>	<i>17.1 kg</i>
<i>Pick-up system</i>	<i>Moving Magnet system by Audio Technica</i>
<i>Frequency range</i>	<i>20 Hz ... 25 kHz</i>
<i>Tracking force</i>	<i>1.4 +/- 0.4 g; 14 +/- 4 mN</i>
<i>DC resistance</i>	<i>800 Ohms +/- 20 %</i>
<i>Coil impedance</i>	<i>3.2 kOhms +/- 20 % @ 1 kHz</i>
<i>Recommended load resistance</i>	<i>47 kOhms</i>
<i>Output voltage</i>	<i>2.2 – 4.9 mV</i>
<i>Crosstalk damping</i>	<i>&gt; 25 dB</i>
<i>Nominal speed</i>	<i>33 / 45 rpm</i>
<i>Pitch</i>	<i>+/- 5 %</i>
<i>Outputs</i>	<i>2 Neutrik RCA jacks, gold plated; 1 grounding screw, gold plated</i>
<i>Power supply</i>	<i>18 V / 18 W with Lumberg plug</i>
<i>Colors</i>	<i>Black Highgloss, White Highgloss, Walnut Oiled</i>

Technische Änderungen und Designänderungen vorbehalten / *Technical data are subject to change.*

**ELAC** The life of sound.

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