



# Lenco L90

- 1 Gegengewicht
- 2 Skalaring für Auflagegewicht
- 3 Antiskating-Einstellung
- 4 Armheber
- 5 Knopf für Tourenzah-Feinregulierung
- 6 Knopf für Tourenzah-Umschaltung
- 7 Armlifthebel
- 8 Tonarmrohr
- 9 Ausschalttaste
- 10 Einschalttaste
- 11 Ansteckkopf
- 12 Befestigungsschraube zu Halteplatte
- 13 Festhaltungmutter zu Ansteckkopf
- 14 Pick-up-Stütze
- 15 Plattentellergummi
- 16 Stroboskopring (Plattenteller mit beleuchtetem Stroboskopring)
- 17 Montageplatte mit Plastikrand
- 18 Tellerachse
- 19 Blindschraube für LENOCLEAN «L»
- 20 Abdeckplatte
- 21 Pick-up-Support

- 1 kontragewicht
- 2 instelring voor naalddrukinstelling
- 3 instelschijf voor anti-skating instelling
- 4 toonarmlift
- 5 snelheids-fijnregeling
- 6 snelheidsomschakelaar (33<sup>1</sup>/<sub>3</sub>—45 omw/min)
- 7 bedieningshendel voor toonarmlift
- 8 toonarm
- 9 uitschakelknop
- 10 inschakelknop
- 11 toonkop
- 12 bevestigingsschroef voor montageplaatje
- 13 wartel voor toonkop
- 14 toonarmsteun
- 15 rubbermat
- 16 stroboskoop (plateau met verlicht stroboskoopvenster)
- 17 montageplaat
- 18 plateau-as
- 19 schroefdraad voor bevestiging LENOCLEAN „L” platenreiniger
- 20 aluminium afdekplaat
- 21 toonarm-draaipunt

- 1 Contrepoids
- 2 Bague graduée pour l'ajustement de la force d'application
- 3 Disque gradué pour le réglage de l'antiskating
- 4 Relève-bras
- 5 Bouton de réglage fin des vitesses de rotation
- 6 Bouton de changement de vitesse
- 7 Manette commandant le relève-bras
- 8 Corps du bras de lecture
- 9 Touche d'arrêt
- 10 Touche de mise en marche
- 11 Coquille porte-cellule
- 12 Vis pour la fixation de la plaquette de montage
- 13 Bague moletée pour la fixation de la cellule
- 14 Support du bras
- 15 Tapis de plateau en caoutchouc
- 16 Anneau stroboscopique lumineux à la périphérie du plateau
- 17 Platine de montage bordée de plastique
- 18 Axe du plateau
- 19 Vis obturant l'ouverture destinée au montage du LENOCLEAN «L»
- 20 Feuille de protection
- 21 Support articulé du bras

- 1 Motvikt
- 2 Ring med skala för nåltryck
- 3 Antiskating-inställning
- 4 Tonarmslyftare
- 5 Vred för fininställning av varvtalet
- 6 Omkopplare för varvtal
- 7 Spak för tonarmslyft och nedlägg
- 8 Tonarmsrör
- 9 Frånkoppling
- 10 Inkoppling
- 11 Pickuphus
- 12 Fästskruv
- 13 Fästmutter för pickuphus
- 14 Pickup-stöd
- 15 Skivtallriks-gummi
- 16 Stroboskopskala (skivtallrik med belyst stroboskopring)
- 17 Montageplatta med plastkant
- 18 Axel för skivtallrik
- 19 Blindskruv i stödhålet för LENOCLEAN «L»
- 20 Täckplatta
- 21 Stöd för tonarm

- 1 Counterweight
- 2 Stylus pressure scale ring
- 3 Anti-skating adjustment wheel
- 4 Pick-up lowering arm
- 5 Fine speed adjustment knob
- 6 Speed change knob
- 7 Pick-up lowering control lever
- 8 Pick-up arm tube
- 9 'Off' button
- 10 'On' button
- 11 Plug-in headshell
- 12 Cartridge mounting plate adjusting screw
- 13 Plug-in head securing nut
- 14 Pick-up rest
- 15 Rubber turntable mat
- 16 Stroboscope ring (Turntable with illuminated stroboscope ring)
- 17 Base plate with plastic edge
- 18 Turntable spindle
- 19 Hole for mounting LENOCLEAN 'L'
- 20 Cover plate
- 21 Pick-up pedestal

- 1 Contrapeso
- 2 Anillo con escala para regular la fuerza de apoyo
- 3 Regulación del anti-skating
- 4 Soporte elevador del brazo
- 5 Botón regulador de velocidades
- 6 Botón cambio velocidades
- 7 Palanca elevadora del brazo
- 8 Tubo brazo
- 9 Pulsador para poner en accionamiento
- 10 Pulsador de parada
- 11 Cabezal porta-cápsula
- 12 Tornillo regulación cápsula
- 13 Tuerca para sujeción del cabezal
- 14 Apoyo-brazo
- 15 Goma plato
- 16 Anillo estroboscópico
- 17 Pletina con bordes de plástico
- 18 Eje plato
- 13 Tuerca para sujeción del Cabezal LENOCLEAN «L»
- 20 Hoja protectora de la pletina
- 21 Soporte pick-up



## Technical Description

The 16-pole synchronous motor, which is completely shielded, is spring-mounted on the steel baseplate.

The drive from the motor to the turntable is via a flat belt.

The pick-up arm with its counterweight has 4 miniature precision ball races.

The balance weight is especially sprung and designed to counteract rumble resonance and any mechanical shaking.

The tonearm wiring is for stereo and also quadrophonic CD 4. Stylus pressure is accurately adjustable from 0 to 5 g.

The lightweight interchangeable plug-in headshell can accommodate any pick-up cartridge with the international 1/2" size. The stylus position also being adjustable.

The turntable has an illuminated stroboscope round its edge.

The pick-up lowering device is hydraulically damped.

Two speeds 33 1/3 and 45 r.p.m.

An electronic fine speed adjustment of -3 to +7 %.

An electronically controlled switch, which quietly and smoothly raises the arm and stops the turntable at the end of the record play.

Switching on the unit is done through the red coloured push-button.

## Unpacking the L 90

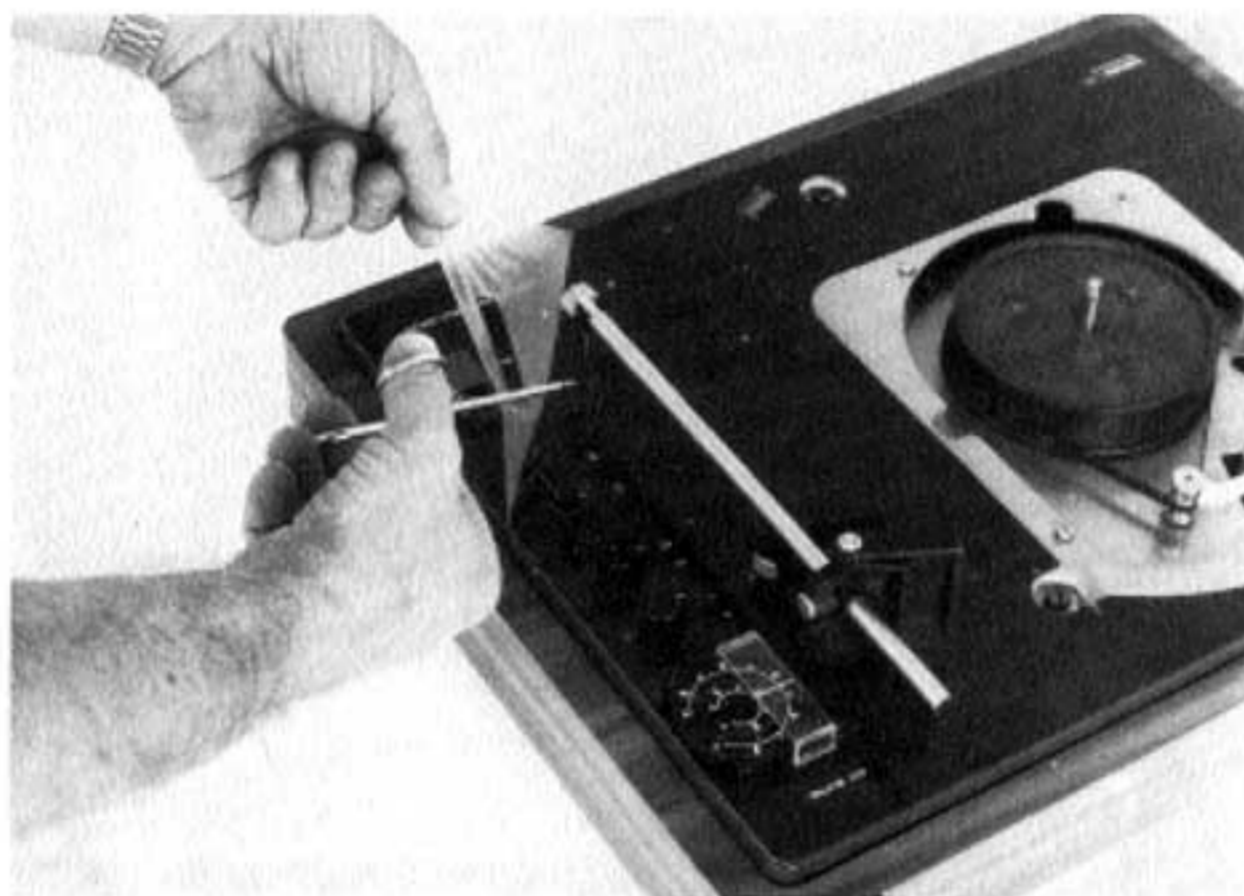
The L 90 was thoroughly checked before leaving the factory and was sent to you in perfect condition. Under no condition whatsoever should the precision tonearm be used for holding or pulling when unpacking the unit from its carton. Do not plug in the unit until told to do so.

## Removal of Protection Film on L 90 Front Plate

To avoid damage to the surface of the Lenco L 90 Transcription Unit, a protection film is being applied to the base plate. This film should be removed carefully before mounting the turntable. Begin by lifting the film carefully at the right-hand front corner. At the protruding spots, such as knobs, tonearm support, etc., the film must be cut by scissors for it to be removed. Be careful not to scratch any metal parts of the unit.

## Preparation for Use

The L 90 Turntable is supplied either built into a plinth or as a chassis model. In order to avoid damage to the turntable spindle during transit, the turntable is removed and packed separately.



The lightweight headshell and the balance weight are also separately packed in the packing material.

On the plinth version, screw up the two red-headed screws before placing the turntable on the spindle. Place the turntable on the spindle and then the turntable mat over it.

The L 90 is supplied for connection to 220 V 50 Hz mains, or 110 V 60 Hz mains, or switchable 110 to 220 V 50 Hz.

## Interchangeable Plug-in Shell

The L 90 is normally supplied with a cartridge correctly mounted in the headshell.

## Mounting the Cartridge into the Plug-in Headshell

If, for some reason, you have bought your L 90 without cartridge, then these simple mounting instructions should be followed:

The four pick-up cables in the headshell should be carefully attached to the pins on the back of the cartridge in the following manner:

R	=	Red	right-hand channel
GR	=	Green	earth, right-hand channel
L	=	White	left-hand channel
GL	=	Blue	earth, left-hand channel

Mount the pick-up cartridge on to the mounting plate of the plug-in shell with the screws supplied.

Place the plug-in shell on the pick-up arm and tighten with the knurled nut.

Place the cardboard pick-up template on the turntable with the cut-out against the pick-up pedestal and the hole 'A' over the turntable centre spindle.

Lift the pick-up arm from the rest, slightly loosen the screw on the top of the headshell; and place the arm over the template, the armlift lever should now be brought forward into the down position ∇.

Slide the cartridge until the stylus point is exactly on the black line marked on the template.

The armlift lever should be pushed back into the raised position ∇ and the screw carefully tightened. Check once again that the stylus is still exactly on the black line. Should it have moved, repeat this procedure.

## Adjusting the Stylus Pressure

Turn the anti-skating adjustment wheel into the null position. Bring the armlift lever into the down position ↓. Take the balance weight, with the scale markings facing towards the front of the unit, and turn it on to the tonearm until the arm is equally balanced (arm floats parallel to the turntable). Return the arm on to its rest and while holding the main counterweight, rear section, turn the stylus pressure scale ring until '0' is aligned with the white line on the tonearm pedestal. Check the tonearm balance once more.

The complete counterweight should now be turned to the required stylus pressure by an anti-clockwise movement as viewed from the front of the unit. If a playing weight of 3 grams is required, the complete counterweight should be turned one complete revolution to '0', which is equivalent to a playing weight of 3 grams. The counterweight can then be turned further on to the difference between 3 grams and the required playing weight; if necessary a.g., for a playing weight of 5 grams, the counterweight must be turned for one complete revolution past '0' and then on to the '2' mark, thus giving the required 5 grams. In the interest of the music listener, so that he can obtain maximum music performance, the stylus pressure should not be set lighter than necessary. Too low a stylus pressure can lead to increased record wear; therefore a stylus

pressure towards the upper limits recommended by the cartridge manufacturer should be carefully followed. For this reason a general table of such weights can be found at the back of this manual.

### Adjusting the Lowering Device

Place a record on the turntable and put the armlift lever in the raised position ▽.

Lift the tonearm and place it over the first run-in groove of the record.

The stylus tip should have a height of 4 to 5 mm over the run-in groove.

When adjustment is needed, this can be done by turning the knurled nut to be found on the armlift segment. By doing so, a raising or lowering of the 'height over the record', can be achieved.

### Anti-skating

When a stylus is playing a record, a certain force arises due to frictional effects. Due to the geometrical design of modern tonearms, this force tends to pull the stylus against the inner wall of the record groove. This force, when uncompensated, causes distortion and uneven wear of the stylus. This can be compensated for when an anti-skating system is fitted to counteract this force. This anti-skating force is at its greatest when on the outside of the record at its biggest diameter, and then slows up slightly as it moves towards the middle part of the record, but then quickens again as it moves on to the last playing section where the record has its smallest diameter.

For the L 90 unit a new specially designed anti-skating system has been developed so that this skating force can be precisely compensated for.

### Setting the Anti-skating

The new Anti-skating device has three different compensation scales, these are:

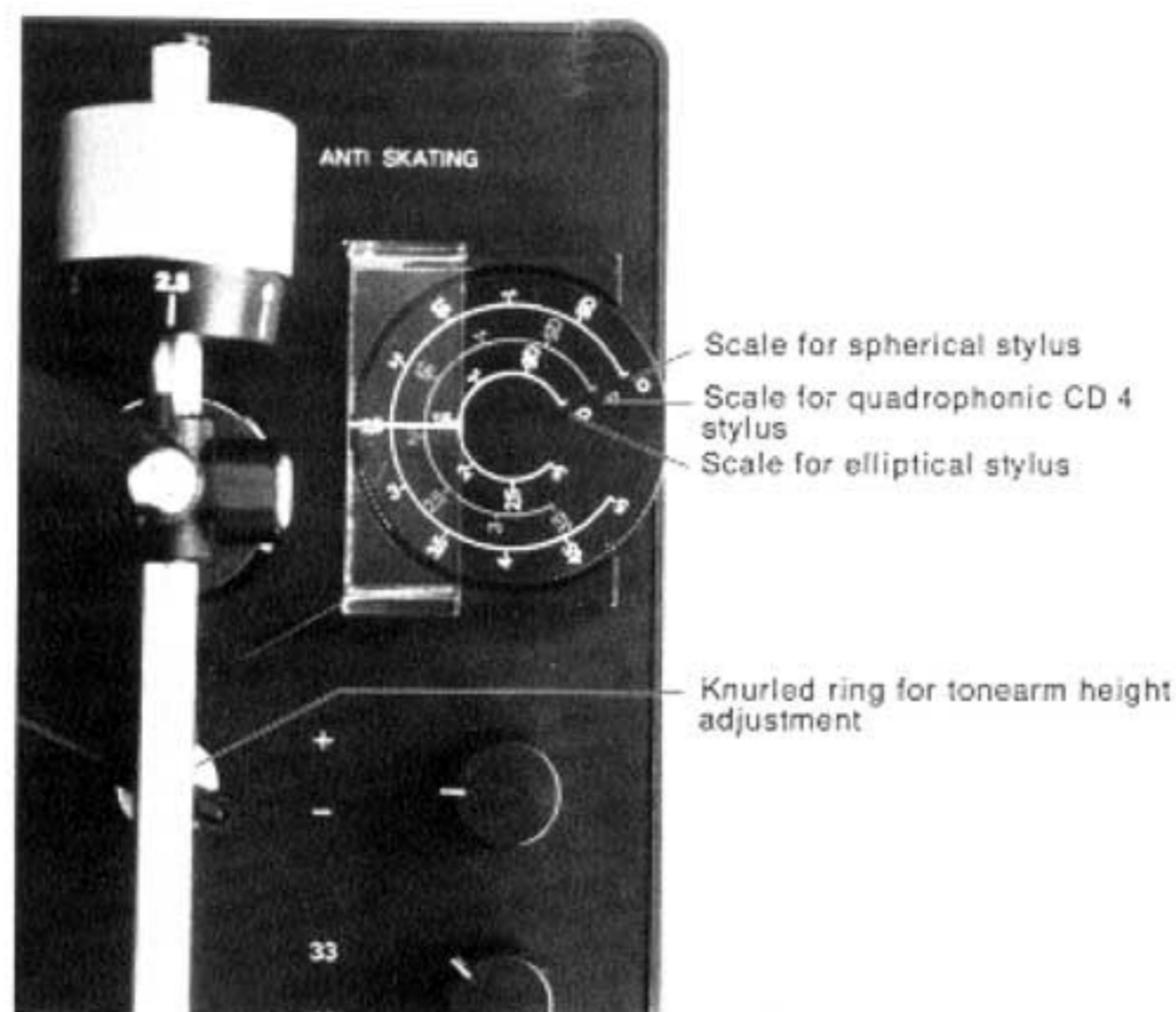
1. 'O' scale operates for spherical styli and is adjustable from 0 to 5 grams.
2. '△' scale operates for quadrophonic CD 4 styli and is adjustable from 0 to 3.5 grams.
3. '∅' scale operates for elliptical styli and is adjustable from 0 to 3 grams.

Before setting the anti-skating device, check again that all the other instructions have been carefully followed.

To set the correct anti-skating force, turn the wheel to the same number as the stylus pressure on the appropriate scale.

Examples:

1. Using a Shure M 75 MB II spherical stylus, with an optimum pressure weight of 2.5 grams, set the number at 2.5 on the 'O' scale.
2. Using a Shure M 91 ED, elliptical stylus, with an optimum pressure weight of 1.2 grams, set the number at 1.2 on the '∅' scale.



3. Using a JVC 4 MD-20X Shibata Quadrophonic stylus, with an optimum pressure weight of 1.7 grams, set the number at 1.7 on the '△' scale.

### Electrical Connections

The screened pick-up lead is fitted with a standard plug which is suitable for connection to the input of the amplifier or radio. This input is usually marked 'Grammo', 'Pick-up' or 'TA'. Modern amplifiers, tuners and tape records of European origin are fitted with standard sockets which the plug on the L 90 will match.

A special CD 4 connection cable and plug is available upon request at extra cost.

The unit may now be plugged in.

Once the mains lead is connected to the mains socket, the record player is ready for use.

### Operating Instructions

Place a record on the turntable.

Place the tonearm on the lowering arm segment so that it lies over the run-in groove of the record that is to be played.

Press the button marked 'on' and the unit will switch on and the turntable start rotating.

Turn the speed change knob to the desired speed, either 33 $\frac{1}{3}$  or 45 r.p.m. Move the lowering arm device lever forward, and the pick-up arm will automatically be slowly lowered on to the record.

At the end of the record the incorporated electronic shut-off switch will automatically stop the turntable and lift the tonearm off the record.

After this, return the tonearm by hand to the tonearm rest. Should you wish to interrupt your record play, simply push the 'off' button once. This will switch the unit off and also raise the tonearm from the record.

When wishing to replay a certain section of a record again, simply bring the tonearm lever into the raised ▽ position and bring the tonearm over the desired section. By bringing the armlift lever into the down position ▽, the tonearm will gently lower on to the record. If you wish to replay a section that is already inside the automatic switch-off region, e.g., towards the end of a 17 cm diameter record, then the 'on' button, should be pressed until one hears a second slight 'click'. The turntable will revolve, and the tonearm may be lowered on to the desired section. The record player will automatically switch off at the end of the play.

**Important!** The speed should only be changed while the turntable is revolving.

### Adjusting the Speed

With the L 90 is an incorporated illuminated stroboscope built into the turntable edging. Once the unit has been switched on, the lamp under the stroboscope is lit up.

The upper ring of the stroboscope is for control of 45 r.p.m., whilst the lower ring is for 33 $\frac{1}{3}$  r.p.m.

To determine the effect of the stroboscope at 33 $\frac{1}{3}$  r.p.m., look down on the stroboscope ring at the edge of the turntable from vertically above the turntable.

With the tonearm already placed upon and playing a record, the speed is set with the speed knob. With the knob in the extreme left position the turntable revolves approximately 3% slower. With the knob turned to the extreme right the turntable will run approximately 7% faster.

The speed is correctly set when the illuminated window on the rim of the turntable corresponding to the correct speed remains stationary. When a LENCOCLEAN 'L' is being used, the speed must be checked and if necessary regulated.

Any desired speed within the quoted limits is available between the extreme positions of the knob. This is very important if for example a musical instrument is to be played at the same time as a record.

### Maintenance of your L 90 Record Player

The bearings built into the unit are self-lubricating and require no further attention. The stylus should be kept clean of fluff and dust, and a small soft brush is recommended for this purpose.

**Attention!** It is important that when brushing the stylus it is done only in one direction, from the rear edge of the headshell cartridge to the front, otherwise damage may occur to the stylus system. Use of the LENCOCLEAN Record Cleaning System

however will keep the stylus clean so that further cleaning is not usually necessary. At intervals of approximately one year the stylus should be inspected under a microscope by an expert. Worn or damaged styli points cause not only distorted reproduction but also serious damage to your records.

### Levelling the Turntable

The L 90 is mounted on four viscously damped spring suspension devices. If you have bought the chassis version it will be necessary to level the unit after it has been installed into its cabinet. To do this, turn the damping bushes, to be found on the underside of each suspension device, with the aid of a coin until the unit is level and floating freely on its springs. On the plinth mounted version this adjustment is factory pre-set and should therefore require no further attention. However, four holes can be found in the plinth bottom for such adjustment, if necessary.

**Important!** Before tipping the unit to adjust the level, it is imperative that the turntable is removed. However, to check whether the unit is level the turntable has to be replaced.

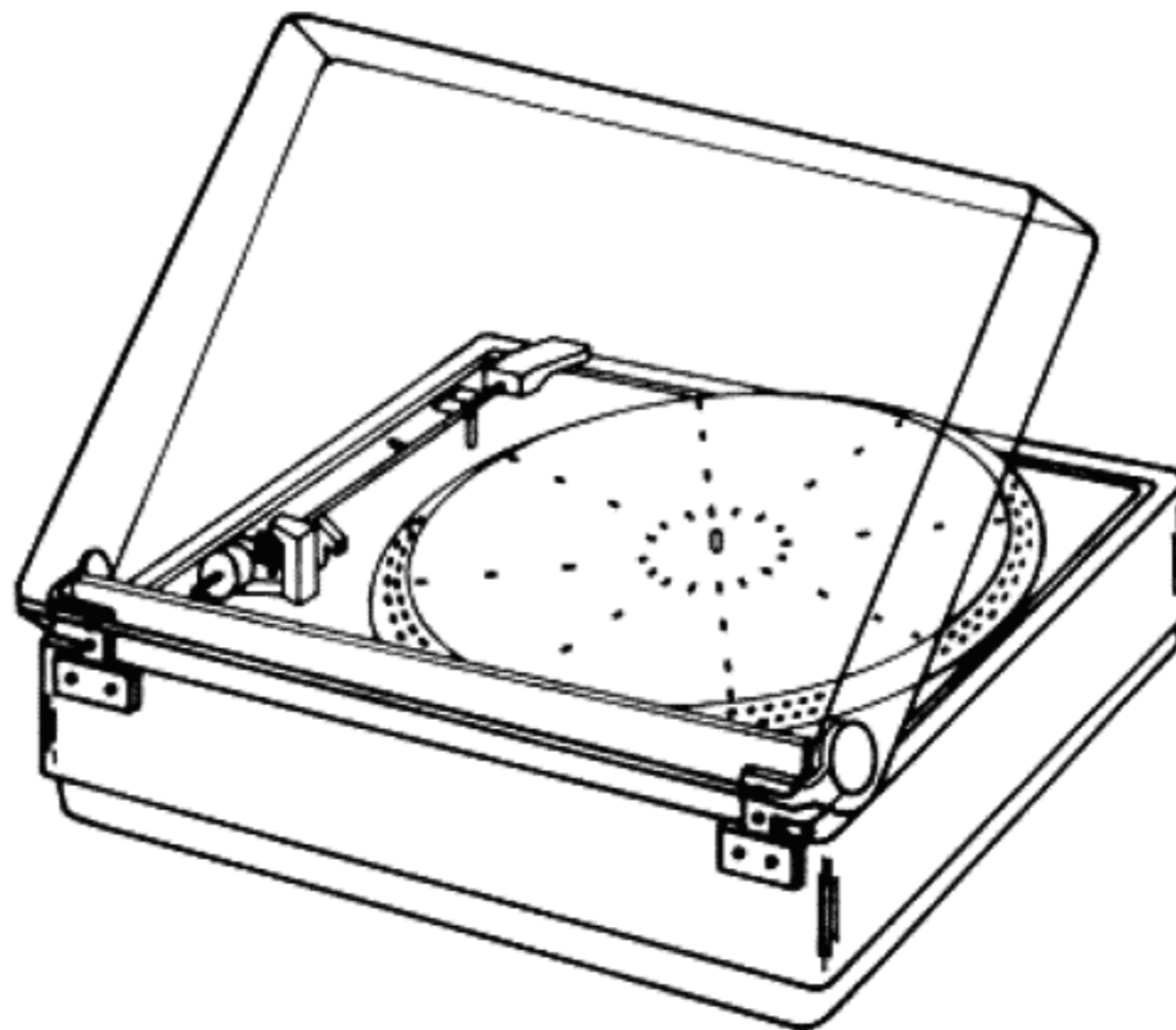
### Mounting the Record Cleaning Device LENCOCLEAN 'L'

LENCOCLEAN 'L' has been specially constructed for use with the L 90 and provides a means of maintaining your records in perfect condition and guarantees optimum reproduction. Remove the screw in the left-hand back corner and in its place screw the spindle 'C' supplied with the LENCOCLEAN 'L'. The exact mounting instructions are provided with each LENCOCLEAN 'L'.

### LENCOCLEAN 'L' with Super-Tonic

- For reproduction without extraneous noise;
- for minimum wear on records and pick-up stylus;
- for simple care of records.

LENCOCLEAN 'L' with Super-Tonic for the sake of your records.



### Dust Cover

The L 90 Hi-Fi Transcription Turntable Unit mounted on plinth, is supplied together with a dust cover. This can be fitted to the holders at the back of the cabinet. Thanks to a special construction the dust cover can stay open in every position down to 20°, after which it automatically closes.

When placing the dust cover on to the plinth, care should be taken to ensure that both hinges on the dust cover are folded back simultaneously, otherwise there is danger that the movable plastic pack of the dust cover might break.

### Important!

Please make sure to keep the complete original packing of your L 90 Record Player.

Should for some reason or other your Lenco L 90 have to be sent by post or rail, the original packing must be used and the following procedure should be followed:

1. Remove the plastic dust cover and replace it in the original carton, packing it in the plastic bag with the foam corners.
2. Remove the turntable, plug-in shell and counterweight and lay them in their special places in the original packing.
3. With a screwdriver or coin, unscrew the two red-headed screws until they will turn no further. Note: The screws must be turned anti-clockwise.
4. Place the turntable in its special inlay in the carton first.
5. Manoeuvre the foam packing over the unit so that the position of the pick-up arm of the L 90 corresponds with the pick-up arm position marked in the foam inlay. The two cables should be fed through the slits in the back of the foam inlay.

By following this procedure, serious transport damage can be avoided which is not covered by the guarantee and which would have to be charged for.