

Garrard

Synchro-Lab 95B auto transcription turntable

(Patents pending)

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Garrard

Synchro-Lab 95B

110/125 volts 60 Hz model

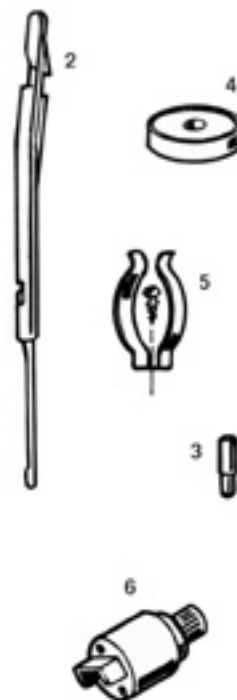
The Garrard SL 95B is a transcription turntable which possesses the added facility of automatic record playing if desired.

This turntable will play 12", 10" or 7" records singly at speeds of 33 $\frac{1}{3}$, 45 or 78 rev/min, or up to six 12" records of identical speed automatically. Six 7" records having large centre holes may be played automatically using large record spindle LRS 25, available as an optional extra. An adaptor is supplied for playing large hole records singly.

Among the unit's many distinguishing features are — a tone arm of advanced design, a new record release mechanism, a built in cue and pause device, and above all, the new Garrard Synchro-Lab motor which, in conjunction with the large, non-magnetic platter, guarantees a high degree of speed accuracy under all normal conditions.



Diagram 1 SL 95B Parts



You should have the following parts:—

- 1 Turntable complete with platter and mat.
- 2 Automatic record spindle, for small hole records.
- 3 Manual spindle.
- 4 45 rev/min large hole adaptor.
- 5 Clip and screw for 45 rev/min large hole adaptor.
- 6 Pickup counterbalance weight.
- 7 Accessory kit, consisting of fixing screws and spacers for assembling a variety of pickup cartridges (see diagram 6).

UNPACKING INSTRUCTIONS

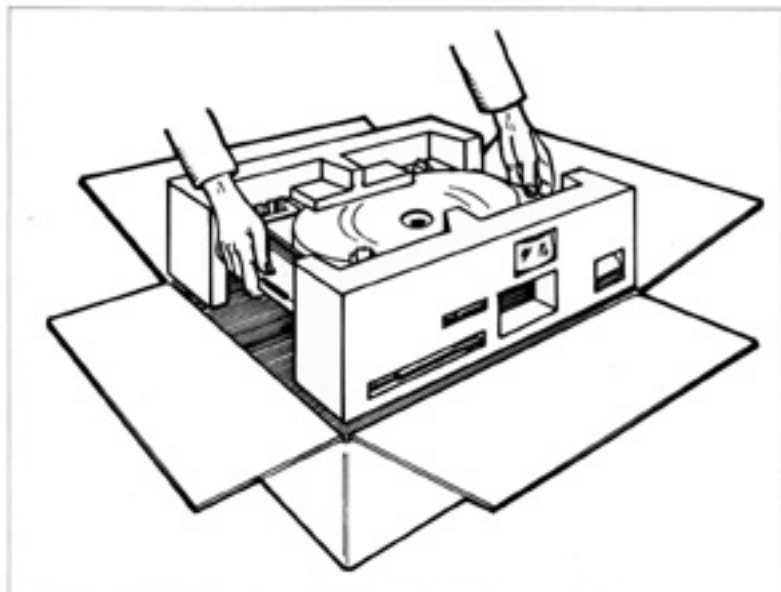


Diagram 2 Removing Unit from Carton

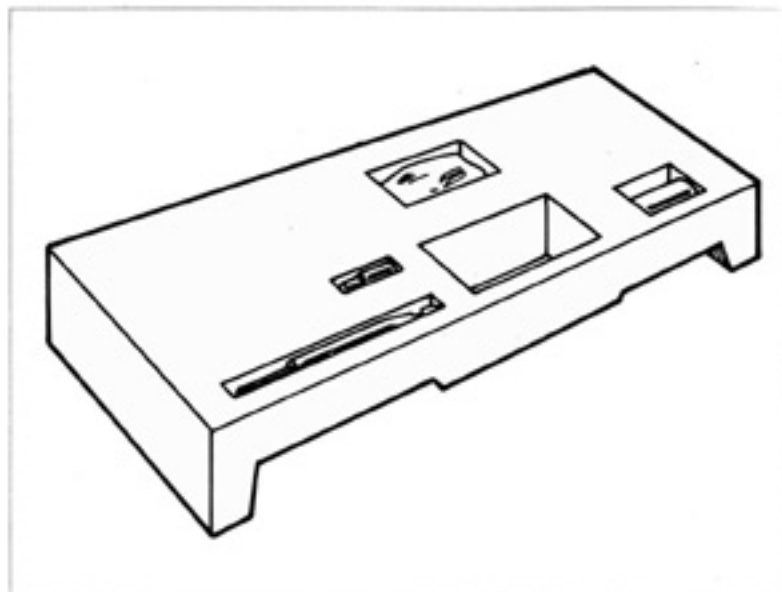


Diagram 3 Location of Accessories in Polyfoam Pad

- 1 Open top of carton.
- 2 Lift out unit by gripping the two short sides of the mounting plate, accessible between the two polyfoam pads (diagram 2).
Warning:
Do not lift the unit by the tone arm or by any component mounted on the mounting plate.
- 3 Remove both polyfoam pads from mounting plate, and place aside (do not discard, see paragraph 6).
- 4 Remove plastic covering from unit.
- 5 Remove the wire tie from the tone arm.
- 6 Remove all accessories from the polyfoam pads (see page 2 and diagram 3).

ASSEMBLY INSTRUCTIONS

REMOVING THE CARTRIDGE MOUNTING SLIDE



Diagram 4 Removing the Slide

Note

The assembly instructions for your Synchro-Lab 95B turntable consist of six sequential procedures.

- 1 Release the tone arm from its rest, hold it over the platter away from the rest and operating controls to avoid risk of damage to the cartridge and withdraw the slide with the other hand. The same procedure should be adopted when removing or replacing the slide.

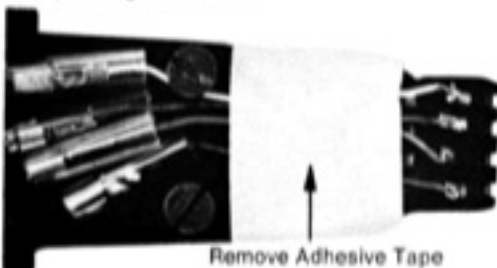


Diagram 5 Cartridge Mounting Slide

- 2 Turn the slide over and remove the tape holding the four pickup wires in position. You are now ready to install your chosen cartridge.

FITTING THE PICKUP CARTRIDGE

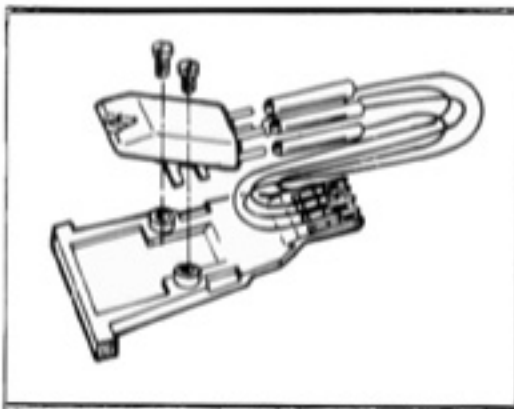


Diagram 6 Pickup Cartridge Assembly

- 3 Fasten the cartridge of your choice to the slide using a pair of the screws provided.

- 4 Connect the four wire leads to the cartridge according to the following colour code and to the cartridge makers instructions (see diagram 5).

Red	Right hand channel signal
Green	Right hand channel ground
White	Left hand channel signal
Blue	Left hand channel ground

Note: DO NOT solder the pickup wires to the connection points on the cartridge. Should a cartridge have only three pins or tags, use the green lead or green and blue joined together, as common. Insulate and tuck away any leads not required.

- 5 Replace the cartridge slide into the front of the tone arm, pushing it gently into place.

REPLACING THE SLIDE



Diagram 7 Replacing the Slide

- 6 The counterbalance weight has been removed from the tone arm for transit, in order to protect the delicate pivot points of the latter. If it has not already been removed from the polyfoam pack (see page 3), it will be found, along with other accessories, in a cavity in the rear of one of the polyfoam packing pads.

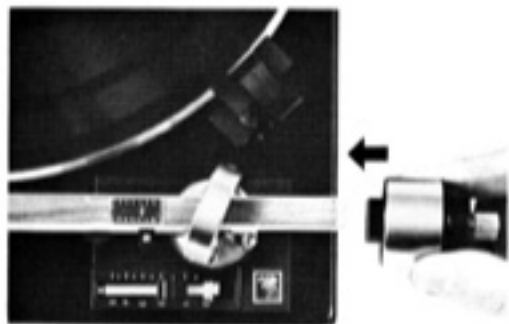


Diagram 8 Fitting Counterbalance Weight

It should now be carefully fitted to the rear of the tone arm, and the screw at the back of the weight turned clockwise (looking at the back of the arm) to wind it onto the arm (see page 7).

GENERAL INSTALLATION NOTES

- 1 Prepare mounting board.
- 2 Thread power supply, ground and audio leads through cut-out in mounting board.
- 3 Screw transit screws right down and set locking clips vertical, then place unit in position on the board, aligning transit screws and mounting springs with their respective holes and recesses. Make sure at this point that the damping pads are in position in the mounting springs.
- 4 When the unit is in place, press it down on its springs, then turn locking clips horizontal.
Note:— For transportation, the transit screws should be turned counterclockwise to clamp the unit against the board, releasing afterwards for playing by turning the screws clockwise.
- 5 Insert the chosen record spindle in platter centre, rotate it until its location is felt, then press firmly to secure it in position.
- 6 Check and, if necessary, reset pickup arm adjustments.

PREPARATION OF MOUNTING BOARD

- 1 Lay the template on the mounting board in the desired position and secure it to the board using strips of adhesive tape. Glue should not be used, for its use will cause distortion of the paper template. Then, using a scribe or other pointed instrument, prick around the heavy line indicating the cut out, and mark the positions of the 4 spring mounting recesses and the 2 transit holes (diagram 9).

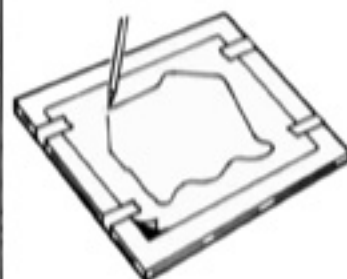


Diagram 9

- 2 Remove the template and saw around the marked cut out (diagram 10).

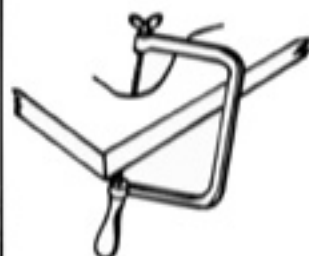


Diagram 10

- 3 Drill 2 holes $\frac{1}{8}$ " diameter for transit screws and, should the board be thicker than $\frac{1}{2}$ " recess the underside of these holes at least $1\frac{1}{4}$ " diameter to reduce the thickness around the hole, to $\frac{1}{2}$ " maximum. Also drill 4 recesses $1\frac{1}{4}$ " diameter x $\frac{1}{4}$ " deep on the top of the board for the spring mountings (diagram 11).



Diagram 11

- 4 The mounting board can now be varnished, painted, or covering material applied (diagram 12).



Diagram 12

CABLING INSTRUCTIONS

Your Garrard Synchro-Lab 95B turntable may be used as follows: stereo cartridge with stereo sound system, mono cartridge with stereo sound system, or stereo cartridge with mono sound system.

Note: RCA type output connectors are used on this turntable.

AC power supply and ground connections

The brown AC power supply cord may be connected to a power outlet on your amplifier chassis (if one is available) or directly into a wall outlet.

If the receptacle on your amplifier is controlled by a front panel power switch, it is possible to switch off the turntable power without using the controls on the unit but this is not advisable. See operating instructions general note 1.

The green (or green and yellow) ground lead should be connected to ground or a ground connection on the amplifier chassis.

Stereo cartridge—stereo amplifier connections

Connect the phono leads as shown on the adjacent illustration. Make certain that the right hand (R) output is connected to the amplifier feeding the right hand speaker and the left hand (L) output to the amplifier feeding the left hand speaker.

Mono cartridge—stereo amplifier connections

Connect the phono leads as shown on the adjacent illustration. Use the (R) pickup output if your cartridge is connected to the red and green pickup shell leads; use the (L) output if your pickup is connected to the white and blue leads. Use the 'Y' adaptor shown only if your amplifier does not have provisions for connecting its left and right inputs together.

Stereo cartridge—mono amplifier connections

Connect the phono leads as shown on the adjacent illustration. With this arrangement, a 'Y' adaptor must be used so that the complete output signal of the stereo cartridge will be reproduced by the sound system.

• Refer to the manufacturer's instructions for selection of 'LO' or 'HI' level inputs

A.C. Power and Ground Connections

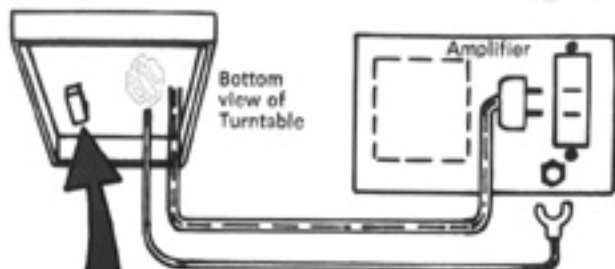


Diagram 13

Stereo Cartridge - Stereo Amp Connections

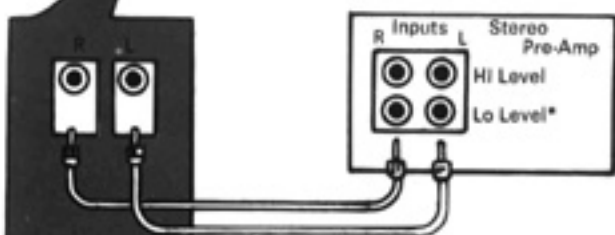


Diagram 14

Mono Cartridge - Stereo Amp Connections

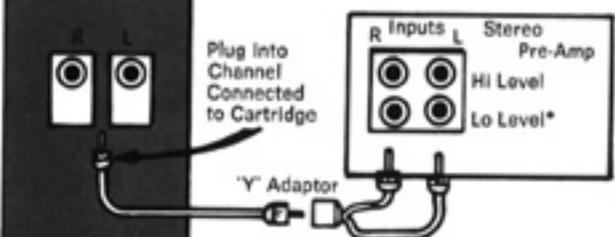


Diagram 15

Stereo Cartridge - Mono Amp Connections

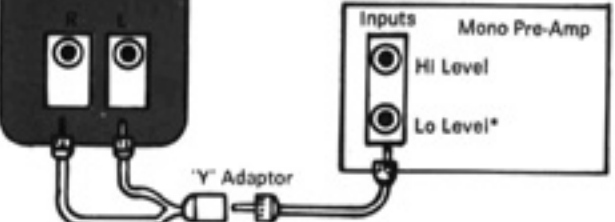


Diagram 16

SETTING INSTRUCTIONS

SETTING THE COUNTERBALANCE WEIGHT



Stylus Force Adjusting Wheel

Diagram 17 Setting the Counterbalance Weight

The weight should be gently pushed onto the projecting rear portion of the tone arm, the screw on the weight turned sufficiently to hold it in place and the stylus force adjusting wheel turned until the slider is set to '0' on the scale. Next, turn the tone arm safety catch to 'FREE' and move the arm away from its rest towards the turntable centre. With the arm thus free to pivot and with the cartridge assembled, turn the screw at the back of the counterbalance weight clockwise until the arm is in balance, with the stylus tip at a height corresponding to that of the top face of a single record on the platter. Return the tone arm to its rest, and secure it by rotating the locking lever to 'LOCK'.

SETTING THE PICKUP STYLUS FORCE



Stylus Force Adjusting Wheel

Diagram 18 Setting the Stylus Force

Determine the stylus force recommended by the cartridge manufacturer, then turn the stylus force adjustment wheel until the recommended figure is indicated. The stylus force scale is calibrated in grams but in addition, when turning the wheel, a slight click will be felt at quarter gram intervals.

SETTING THE TONE ARM ANTI-SKATING DEVICE

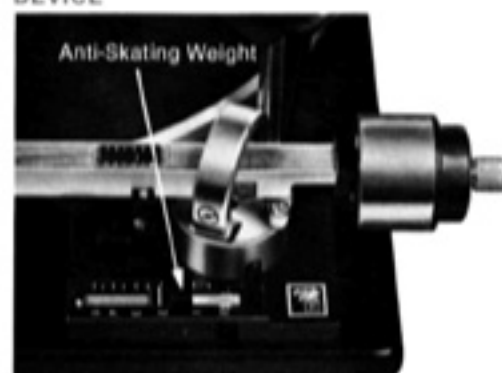


Diagram 19 Setting the Anti-Skating Device

Adjust the anti-skating device by sliding the weight along its arm until the scale marking corresponds with the stylus force setting on the tone arm.

In order to satisfy the different operating requirements of cartridges with round and elliptical styli, two scales for setting the anti-skating weight are provided.

The scale for cartridges with conical styli is marked ●, and the scale for elliptical styli is marked ○. Both scales represent grams of stylus force.

A stylus can be assumed to be conical unless its manufacturer states otherwise.

OPERATING INSTRUCTIONS

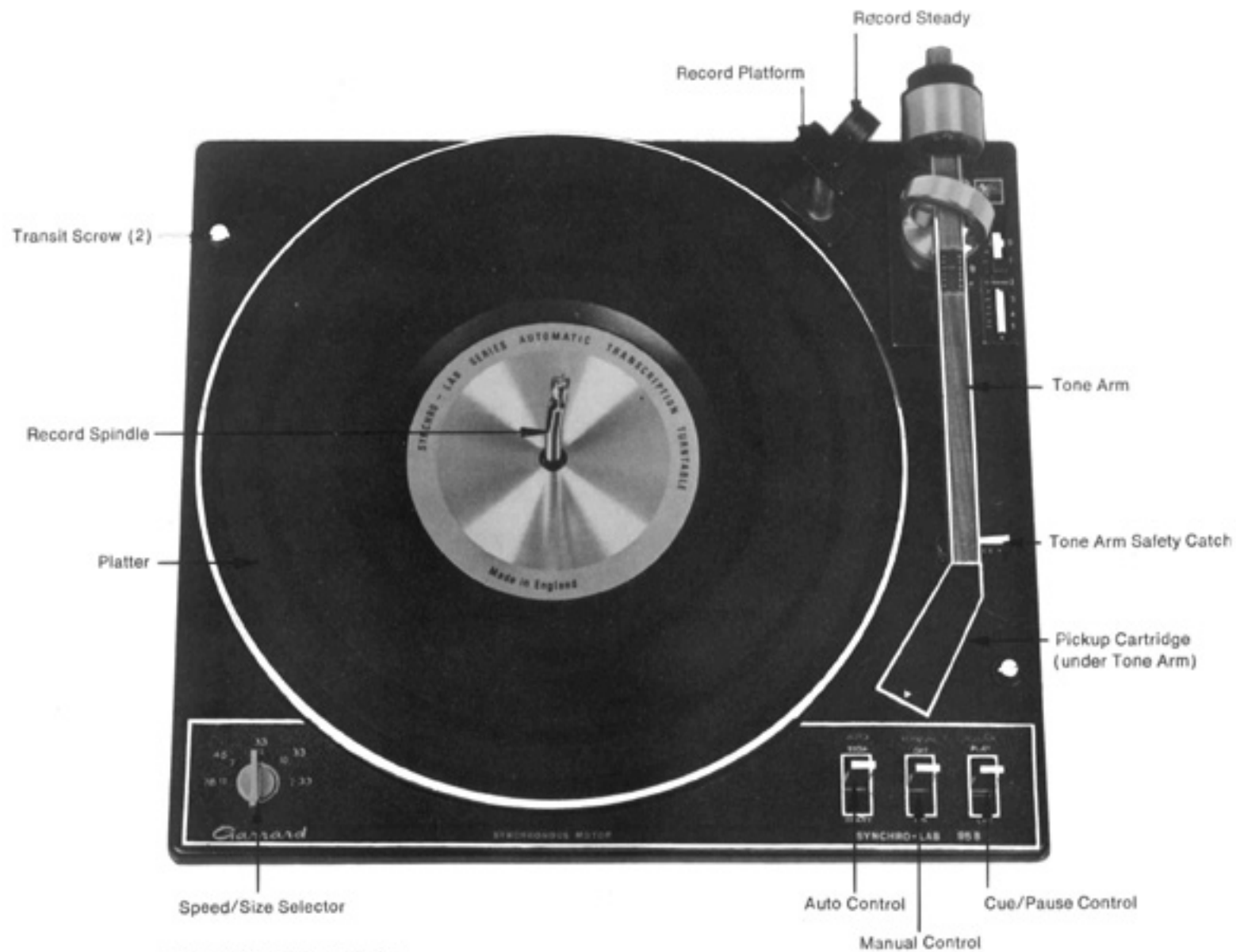


Diagram 20 SL 95B Control Features

PRELIMINARY INSTRUCTIONS

Before playing a record:—

- 1 Set all control tabs vertically.
- 2 Insert automatic, or manual record spindle as desired, into platter socket.
- 3 Turn tone arm safety catch control to 'FREE', remove stylus guard, if fitted, and check that the stylus suits the type of record to be played.
- 4 Set speed/size selector control to chosen speed and record size.
- 5 Never switch on unless at least one record is in position on unit.

GENERAL NOTES

- 1 Always switch off the unit by means of one of the controls when discontinuing play.
- 2 Do not hold, or rotate, the platter counterclockwise.
- 3 When shipping or transporting the turntable, make sure that the tone arm is locked on to the rest and turn the transit screws fully counterclockwise to clamp the unit to the mounting board. Also replace the stylus guard to protect the pickup. Before attempting to use the unit after transport see that it is unclamped, the tone arm is unlocked and the stylus guard is removed.
- 4 Keep the stylus free from accumulated dust, and replace it when worn.
- 5 Do not store records on the turntable, as this may cause them to warp. Store and clean records as recommended by the manufacturers.
- 6 It should be noted that a styling feature of the unit is that the normal position of the control tabs is vertical. When a control is turned to 'STOP' or 'OFF', it will automatically return to mid position, although the unit will be switched off.

OPERATING INSTRUCTIONS

Automatic play (long record spindle)

- 1 Insert the automatic spindle into the centre of the platter, and rotate until the key portion is located; then press the spindle firmly into place.
- 2 (a) **12" records**
Locate records on step of spindle with the edge resting on platform, then lift record steady outwards and up, by means of the tab (diagram 21a). Position the record steady on top of the record stack (diagram 21b); then release it.



Diagram 21a



Diagram 21b

- (b) **7" records**
Place LRS 25 (supplied as optional extra) over auto spindle, and load records on to step of LRS.
- 3 Move 'AUTO' control fully to 'START'. The bottom record will drop on to the platter, and the tone arm will automatically position and lower itself on to the record. After the last record has played the tone arm will return to its rest and the unit will automatically switch off.

4 To unload

Lift records clear of spindle, even if re-playing the same sequence. If using the LRS 25 lift records with fingers whilst pressing down on spindle top with thumbs.

Single record automatic play

- 1 Use short manual spindle in place of long automatic spindle. For a single 7" record with large centre hole, fit large hole record adaptor over manual spindle.
- 2 Place record directly on to the platter and switch on by moving 'AUTO' control fully to 'START'. The tone arm will automatically position itself on the record, and after playing will automatically return to its rest. The unit will then shut off.

Manual/cueing play (Short record spindle, with large hole adaptor if required)

- 1 Place record on platter.
- 2 (a) Normal manual play:— Switch on by moving 'MANUAL' control to 'ON', then place pickup on record.
(b) To cue:— Move 'MANUAL' control to 'ON'. The unit will switch on. Move the 'CUEING' control to 'LIFT'. Position the tone arm over any desired point on the record and gently move the control back to 'PLAY'. The tone arm will then gently lower on to the record.
- 3 After playing the record, the pickup will return to its rest and the unit will switch off.

MAINTENANCE INSTRUCTIONS

Operating instructions continued

Pause

Records being played can be interrupted by moving the 'CUEING' control to 'LIFT'. The pickup will lift but the turntable will continue to revolve. Gently move the control back to 'PLAY' and the pickup will lower and resume playing.

This feature is particularly useful for repeating any portion of a record, for skipping over the unwanted portion of a record or to interrupt play without switching off.

Repeat

Any single record being played, or the last record of a stack, may be repeated by moving the 'AUTO' control to 'START'.

Reject

Any record of a stack being played except the last may be rejected by moving the 'AUTO' control to 'START'. When the last record is being played, this operation will cause it to be repeated (see paragraph above) but the last record may be rejected by moving the 'AUTO' control to 'STOP'.

Stop

- 1 When a record is playing, the action of moving the 'AUTO' control to 'STOP' will cause the tone arm to lift and return to its rest, whereupon the next record will lower onto the turntable and the unit will automatically switch off. Upon re-starting (using the 'AUTO' control) the next record of the stack will be lowered and played.
- 2 By moving the 'MANUAL' control to 'OFF', the unit will be switched off, leaving the pickup on the record. Moving the same control to 'PLAY' will re-start play.

PLATTER REMOVAL

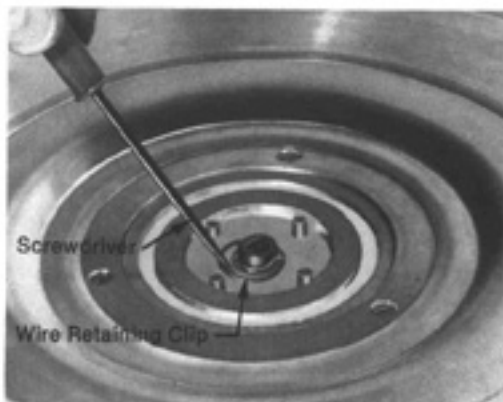


Diagram 22 Platter Removal

Move the 'MANUAL' tab to 'OFF', remove record spindle and platter mat: then prise off the platter retaining clip using a small screwdriver. Lift off the platter by applying equal pressure on opposite sides.

PLATTER REPLACEMENT

First check that the platter bushing, the centre hole and the drive rim of the platter, are clean; then carefully fit the platter on to the spindle while rotating the platter in a clockwise direction. Replace the platter mat in its location groove and re-fit the record spindle.

CARTRIDGE REMOVAL AND REPLACEMENT

(See page 4.)

INTERMEDIATE WHEEL ADJUSTMENT

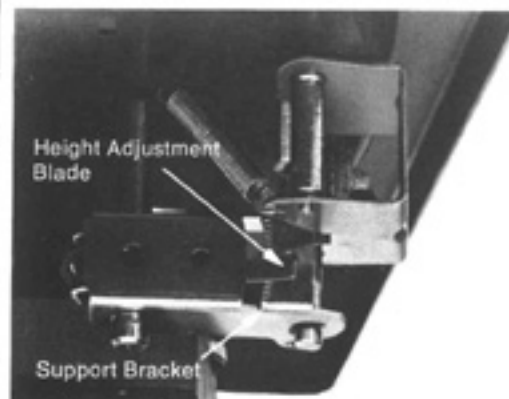


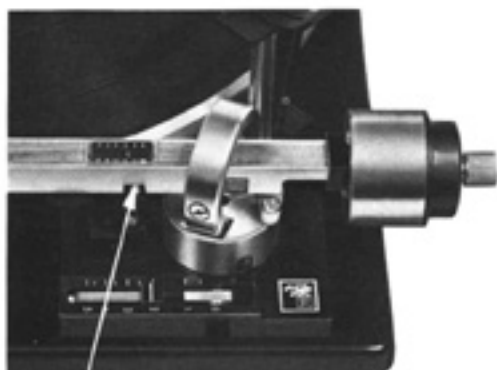
Diagram 23 Intermediate Wheel Adjustment

If the motor pulley is incorrectly positioned, the turntable speed may be erratic or incorrect.

If this is so (see also page 12 service hints) set the 'MANUAL' control to 'OFF' and remove the platter. Then set the speed control to '33' and touch the intermediate wheel against the motor pulley. The rubber wheel should make contact in the centre of the 33 rpm step of the pulley. If it does not, the height of the intermediate wheel may be adjusted by moving the blue spring blade in the support bracket beneath the unit.

Should it be necessary to change the motor pulley at any time, loosen the two screws which hold it to the shaft. It should then be possible to lift the pulley clear of the shaft, but in extreme cases, if it will not move, apply gentle heat to the base of the pulley, using a clean soldering iron, for a few seconds only. This will usually expand the pulley sufficiently to make removal easy. Great care must, however, be taken, not to contact the rubber intermediate wheel. Similar means can be employed for assembling a tight new pulley.

TONE ARM HEIGHT SETTING



Tone Arm Height Adjustment Screw

Diagram 24 Tone Arm Height Setting

This setting may need adjustment after fitting a cartridge. The height of the stylus tip above the top face of one record on the platter should be $\frac{1}{8}$ ". Adjust as follows:— Make sure that the unit is switched off. Move the tone arm towards the centre of the record, at the same time slowly rotating the platter clockwise by hand until the arm has lifted and is about halfway back to the rest. Then turn the screw shown on diagram 24 clockwise to raise it, until the stylus is the correct distance above the record.

TONE ARM HEIGHT RESTRICTOR

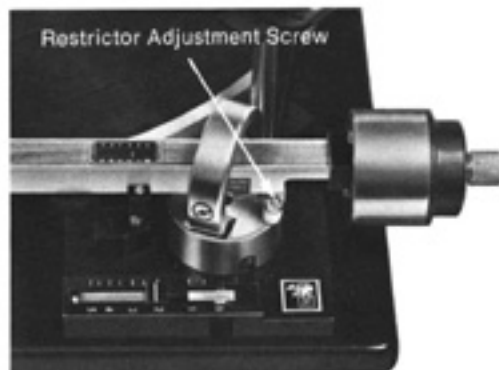
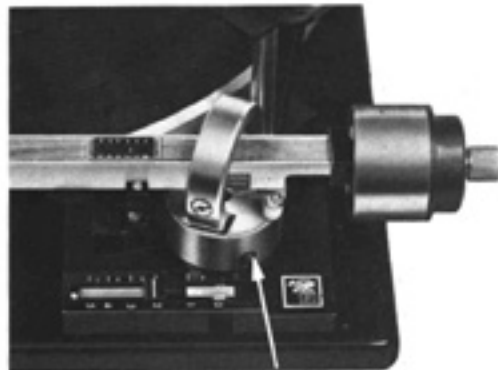


Diagram 25 Tone Arm Height Restrictor Setting

This limits the height to which the tone arm lifts so that it cannot inadvertently touch the underside of a record on the step of the automatic record spindle. It should be set to allow, but not exceed, the tone arm height setting mentioned above.

To adjust, proceed as described in the second paragraph of 'TONE ARM HEIGHT SETTING' and turn the adjusting screw shown on diagram 25 clockwise to reduce and counterclockwise to increase restriction.

TONE ARM LOWERING POSITION



Adjustment Screw

Diagram 26 Tone Arm Lowering Position

This function is factory set, but, after a cartridge has been fitted or replaced, some adjustment may be necessary owing to the wide variation in cartridge dimensions. Adjust in the following manner:— Turn screw in diagram 26 clockwise to move arm lowering position inwards and counterclockwise to move it outwards.

SERVICE HINTS Always disconnect power supply when making service adjustments

Symptom	Probable cause	Remedy
Motor does not run	No power supply to motor	Check for power supply. Check switch and/or plug-in lead connections. If necessary, clean switch blades and connections. Make certain that the plug-in motor leads are secure.
Speed consistently fast or slow	Incorrect pulley	Check that, if 60 Hertz supply, pulley is plain brass. 50 Hertz pulleys are nickel finish.
Speed variation	Warped record when playing a stack	Play singly or stick a small square of adhesive tape on record label to improve drive.
	Intermediate wheel touching step of pulley	Adjust wheel height by means of blue spring blade (diagram 23).
	Grease or oil on driving surfaces	Wipe with a clean rag.
	Drive mechanism requires lubrication	Lubricate in accordance with instructions (page 13).
No audio	Incorrect or defective cabling Defective pickup cartridge	Check cabling to instruction on pages 4 & 6. Replace cartridge.
Hum in audio	Ground lead disconnected	Check cabling.
Noise in speakers during change cycle	Muting switch in-operative	Clean contact wires and check that they make and break properly. If necessary, adjust anchorage of operating spring.
Incorrect tone arm tracking	Worn, damaged, or incorrect stylus; tone arm binding	Replace stylus. Check stylus force. Check that pickup leads at rear of tone arm are not restricting movement.
Incorrect lowering position	Pickup stylus out of position Lowering mechanism out of adjustment	Reset or replace stylus. Adjust lowering position in accordance with instructions (page 11).
Incorrect pickup height	Tone arm height out of adjustment	Adjust height in accordance with instructions (page 11).
Tone arm will not lower on to record at any time	Stylus force too low	Adjust settings of counterbalance weight and pickup stylus force in accordance with instructions (page 7).
Tone arm will not lower in auto mode after manual play	Cueing control is at 'LIFT'	Move control back to 'PLAY'.
Tone arm will not rise from its rest	Tone arm height restrictor out of adjustment	Adjust according to instructions (page 11).

CLEANING

DRIVE MECHANISM CLEANING

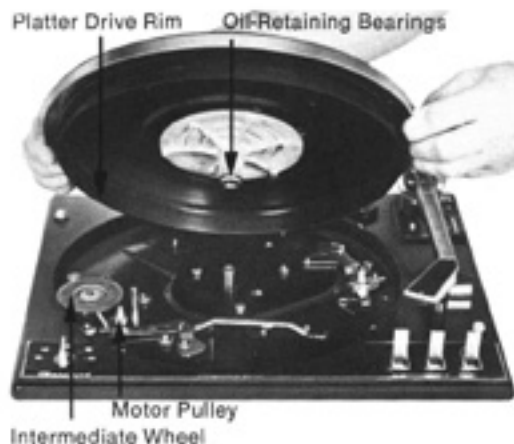


Diagram 27 Cleaning Drive Mechanism

Erratic turntable speed is often an indication that the drive mechanism requires cleaning. When this is suspected, remove the platter and clean the surfaces of the platter driving rim, the intermediate wheel and the motor pulley using a clean lint-free cloth. Make certain that no oil remains on these surfaces.

PLATTER MAT

Clean the mat with a soft brush whenever it appears dusty.

LUBRICATION

MOTOR AND TURNTABLE BEARINGS

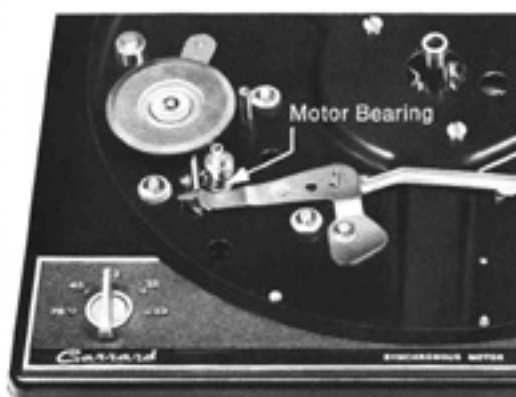


Diagram 28 Motor Bearing Lubrication

MOTOR

The bearings of the motor are of the oil-retaining type and rarely require lubrication. When the need becomes apparent, remove the platter and tilt the front of the unit up so that the motor shaft is visible. Place a few drops of light oil on the motor shaft adjacent to the bearing.

PLATTER

Apply a few drops of light oil to the oil-retaining bearings shown in diagram 27.

INTERMEDIATE WHEEL BEARING

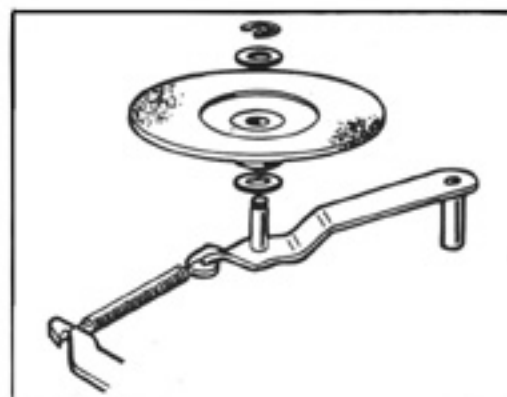


Diagram 29 Intermediate Wheel

Remove platter. Remove 'C' spring and washer. Then remove intermediate wheel and bottom fibre washer. (Since this will often stick to the intermediate wheel bearing, make sure it is not lost.) Clean the inside of the intermediate wheel bearing and the periphery of the shaft, using a clean cloth. Using a toothpick dipped in light oil, coat the inside of the intermediate wheel bearing with oil, making sure that no oil runs over the surface of the rubber wheel. Re-assemble the parts in the reverse order of removal, making certain that the longer portion of the intermediate wheel bearing is facing downwards, then clean the rubber surface of the intermediate wheel with a clean rag.

SERVICE AND SPARES

OPTIONAL EXTRA ACCESSORIES

AVAILABLE FOR MODEL SL 95B INCLUDE:

Adaptor LRS 25 for automatically playing 7" records with large centre holes. Adaptor (part No. 74591) for automatically playing 7" and 10" records with small centre holes. Hardware kit for fixing record spindles to cabinet when not in use. Mounting base and rigid dust cover.

SPARE PARTS LIST

When ordering spares, please quote SL 95B code (from inspection label), part number, if listed, and colour, voltage and frequency when applicable. Also reference number stamped on underside of unit plate.

ALTERNATIVE POWER SUPPLIES

An alternative model is available for use on voltages and frequencies other than 110/125 volts 60 Hz.

Part number	Description
72340	Automatic record spindle
73475	Manual record spindle
72698	Adaptor for single large hole records
73376	Large centre hole record spindle LRS 25, with cabinet fixing kit
73307	Platter mat assembly with centre disc
43857	Platter retaining clip
73361	Pickup cartridge carrier plate, type C2 (slide)
59048	Pickup hardware kit (state cartridge type)
44926	Stylus force spring
71724	Damping fluid for cue/pause mechanism
58220	Rubber intermediate wheel assembly
60534	Motor pulley assembly 60 Hz
60510	110/125 volt AC motor
60365	Plug-in motor lead assembly with switch etc.
43129	Rubber motor grommets (3)
71084	Damping pads for spring mountings (4)
43855	Transit screw clips (2)
44120	Transit screw (2)
72401	Muting switch and phono socket
59028	Grey phono lead
59029	Brown phono lead
58999	Line cord assembly, with ground lead

**Service and Spares Enquiries to:
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Westbury
New York 11590**

**In other territories:
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Service and Spares Department
Newcastle Street, Swindon
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Telephone: Swindon (0793) 5381**

