

*Garrard*

model 35SB



instruction booklet



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The information in this booklet most likely to be needed is arranged in the first sections. The later sections may be referred to as required. Those owners who have purchased Model 35SB in a ready mounted module form or already installed in a cabinet to which only lead connections are required, may ignore most of the installation sections in this booklet. *However, it is advisable to check that the stylus force and bias compensation are set to suit your pickup cartridge before using the unit, also that the unit is correct for the power supply, particularly if it is a dual-voltage unit.*

## introduction

Over the years, to many people the name Garrard has become synonymous with high fidelity record playing equipment. Yet Garrard have always recognised that although attention to quality has gained this select reputation, in the audio world as in any other, the laws of diminishing returns on performance apply, as expenditure increases.

This value for money problem is overcome by Garrard in offering a choice of quality products, from turntables made to basic agreed standards to more sophisticated products with extra performance and extra features. Within this range, Garrard have found that customer demand confirms the laws of cost-engineering and with Model 35SB is introduced a single record playing unit made to the specifications and with features which have made its predecessors such an outstanding success in their category.

The refinements which justify this new model are listed opposite together with some of the features which have proven so popular with this class of unit.

### Model variants

Model 35SB may be supplied as a deck or as a module or incorporated with other equipment, such as in a music centre. The type of leads or connectors fitted may be tailored to suit these requirements or particular territories. Because of these requirements and other variables, for example, cartridge type or special trims, Model 35SB may differ in some details other than as portrayed. The basic specification of the unit is not affected by any such changes.

### Safety regulation note for USA models

**WARNING:** To prevent fire or shock hazard, do not expose this appliance to rain or moisture.



# features



Diagram 1

## Features and Specifications

- Single record playing unit, with automatic facility by pre-selection of speed ( $33\frac{1}{3}$  rev/min or 45 rev/min) and record size (7in, 10in or 12in).
- Automatic repeat control and manually operated replay control.
- Switches off with pickup arm in rest position after manual or automatic play, unless overridden by 'Repeat' control.
- Belt-drive turntable, effectively non-magnetic.
- Precision engineered tubular pickup arm with decoupled counterbalance weight.
- Removable slide-in cartridge carrier accepts a wide range of cartridges.
- Damped cue and pause facility with fine control.
- Garrard Synchro-Lab motor.
- Available with Garrard base and cover.

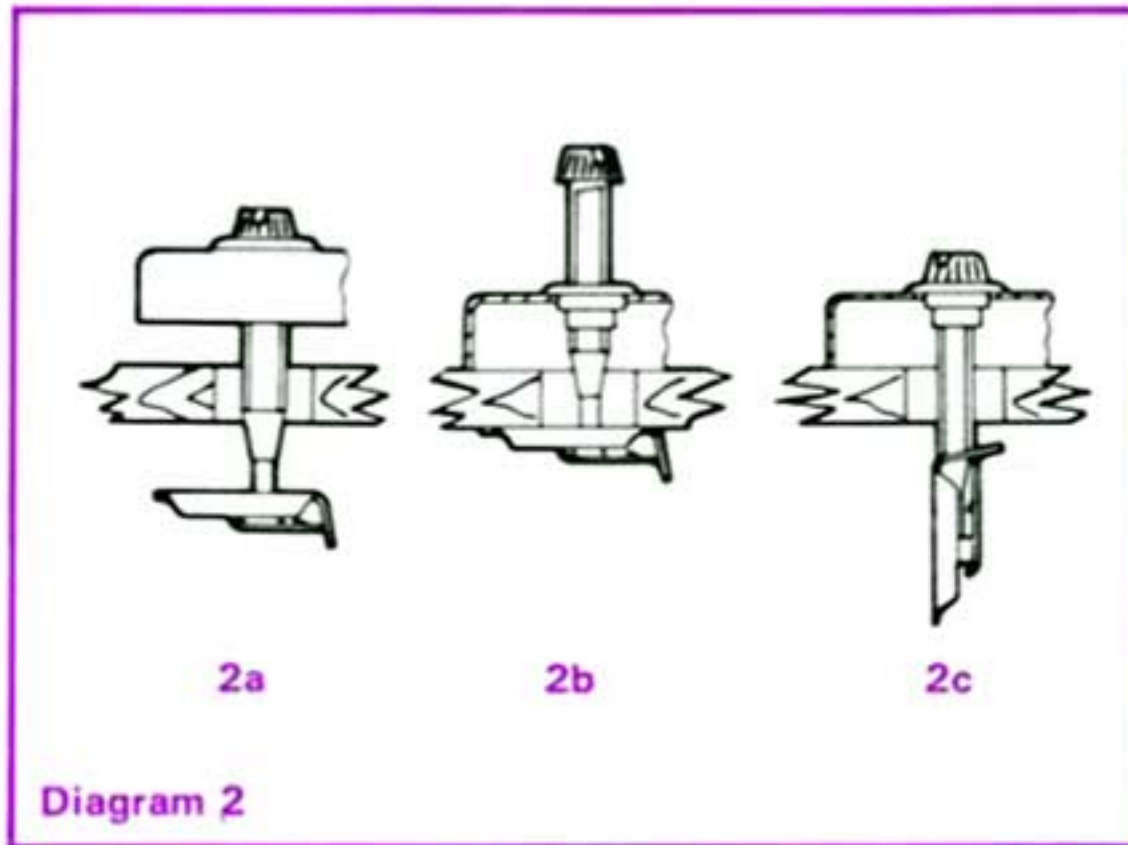
## Technical Specification

Wow and flutter 0.20 peak % max. (DIN).

Rumble -55dB (DIN B).

Minimum stylus force  $1\frac{1}{2}$ g.

## installation



*These instructions do not apply if your unit has already been prepared for play and a pickup cartridge fitted. Simply check the installation adjustments and follow the operating instruction procedure.*

### Unpacking

Carefully remove polyfoam and cardboard packing, also ties and rubber bands. Do not lift the unit by its pickup arm. Take care not to discard any accessories or fittings with the packing (or the damping pads in the mounting springs).

**WARNING:** Keep plastic bags away from children.

### Cabinet space

Model 35SB deck is 14 $\frac{3}{4}$ in (374.5mm) wide by 12 $\frac{1}{2}$ in (317.5mm) front to rear by 2 $\frac{7}{8}$ in (73mm) above and 2 $\frac{1}{4}$ in (57mm) below the lower edge of the unit plate. This latter figure is 2 $\frac{3}{8}$ in (60.5mm) for a double insulated unit.

### Fitting

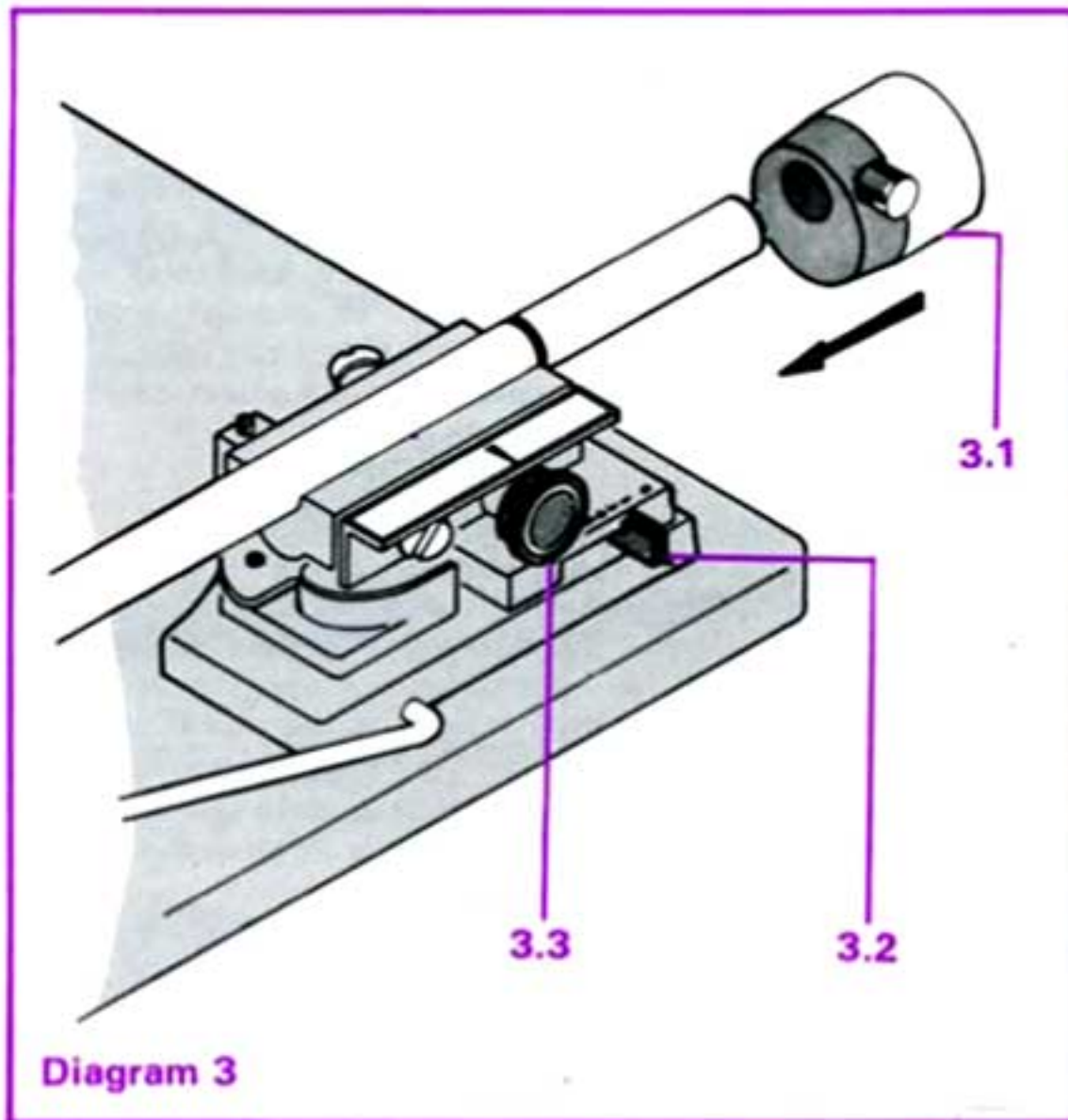
If supplied as a module carry out installation adjustments. See page 11 in this booklet for information on the base and cover and on fitting a deck to the base, should this be required. If supplied as a deck refer to the fitting sequence described in the template provided. Refer back to this booklet during this sequence, when required.

### Transit

Before using the unit make sure that the transit screws are turned fully clockwise so that the unit floats on its mounting board as in sectional diagram 2a. For safer portability at any time, turn these screws fully counterclockwise to securely clamp the unit as in sectional diagram 2b. Sectional diagram 2c shows how the transit clips must be turned when fitting or removing the unit.



## installation adjustments



*It is always advisable to check these adjustments on a new unit even when a pickup cartridge is already fitted. Note that a minimum stylus force of  $1\frac{1}{2}$ g is recommended for this unit.*

Before carrying out these adjustments, with power supply unconnected, make sure that the pickup arm is clipped to its rest and that the operating control is in its 'Off' position. Now check that the mechanism is not engaged by rotating the turntable gently clockwise at least six turns.

### Stylus force

- 1 With its clamp screw loosened, slide the counterbalance weight (3.1) on to the end of the pickup arm as indicated in diagram 3 and set the stylus force dial (3.3) to zero.
- 2 Lift the pickup arm from its rest and slide the weight to the position which balances the pickup arm with the stylus tip (stylus guard removed) about  $\frac{1}{8}$ in (3mm) above the turntable mat. Move the bias compensator control (3.2) to 0 on its scale if the arm tends to drift outwards during this balancing operation.
- 3 Tighten the counterbalance weight clamp screw and clip the arm to its rest.
- 4 Set the stylus force dial to the figure recommended for your cartridge. Numbers on the dial represent 0 to 5g. If a cartridge is already fitted by Garrard, a suggested stylus force will be found following the cartridge description on the inspection label attached to the carton or transit screw.

### Pickup arm bias compensator

After setting the stylus force, move the bias compensator control (3.2) along its scale to the figure which corresponds to the previously set figure for stylus force.

The bias compensator compensates for the small side forces acting on the pickup arm.



# wiring connections

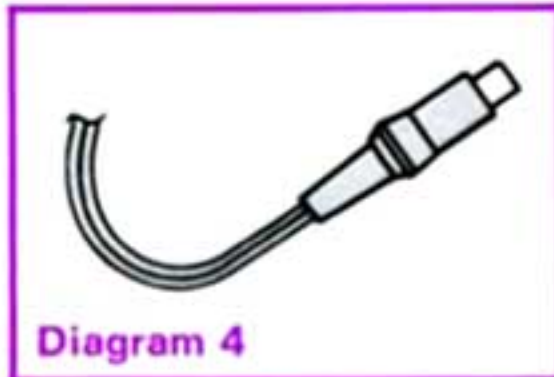


Diagram 4

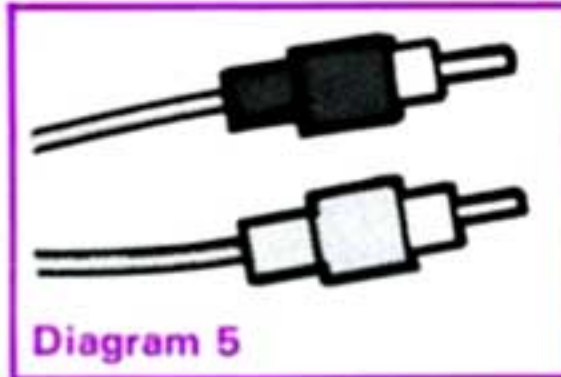


Diagram 5

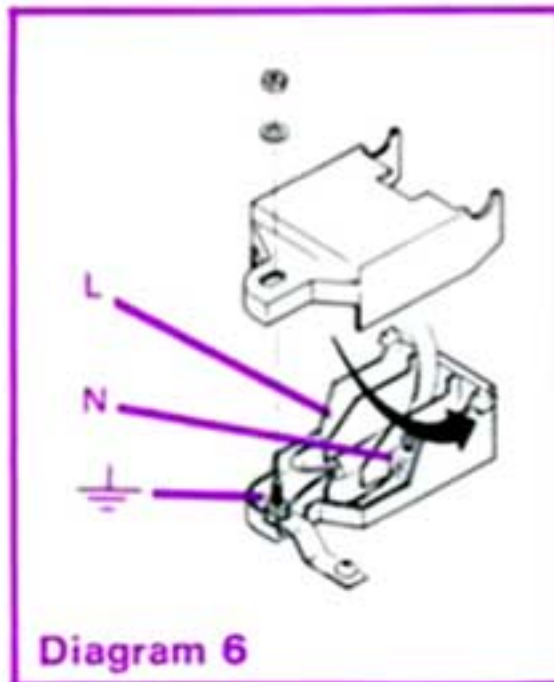


Diagram 6

*AUDIO NOTE: All pickup leads on Garrard units are wired to the colour code given in the 'Fitting pickup cartridge' section.*

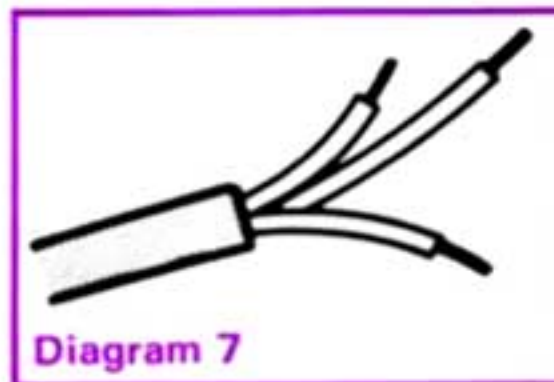


Diagram 7

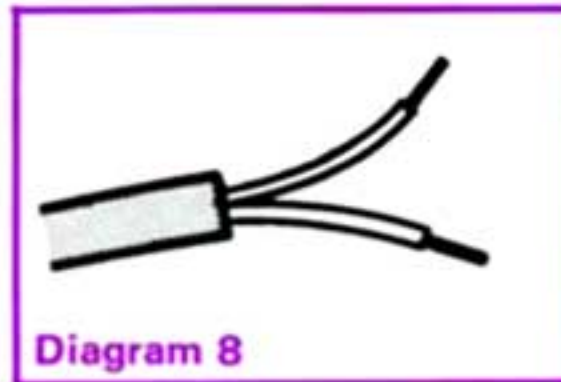


Diagram 8

## Audio connections

When Model 35SB is supplied less audio leads, refer to the template provided for information on connections to the deck.

Pre-fitted leads usually have a 180° 5 pin DIN plug (diagram 4) or twin R.C.A. type phono plugs (diagram 5) - grey plug for left channel, black or brown for right channel. Use Garrard audio leads coded grey and black with CD-4 type quadraphonic equipment. Connect the audio leads to the pickup socket(s) on the amplifier - normally marked 'Phono' or 'P.U'. If you require an alternative type of plug to match the amplifier input socket, adaptors are available from your dealer. Refer to the amplifier manufacturer's instructions for the selection of amplifier input level to suit your cartridge.

## AC power supply connections

Model 35SB may be supplied for 220/240 volts AC, 50Hz or alternatively 110/125 volts AC, 60Hz power supply. A dual voltage model for these ranges is also available. Check that the label information and any dual voltage setting on your unit suits the power supply. When Model 35SB is supplied less power supply leads refer to the template provided for information on connections to the deck. When leads are already fitted, make plug connections to the power supply according to your requirements, referring to the following headed paragraphs. Diagram 6 shows how the live (L), neutral (N) and, when fitted, earth  $\perp$  leads are normally fitted to the terminal block on the deck, should this information ever be required.

### United Kingdom models 220/240 volts AC 50Hz three core lead

The three core power supply lead (diagram 7) already fitted should be connected via a plug to an earthed AC power supply socket.

**IMPORTANT:** The wires in this mains lead are coloured in accordance with the following code: Green and Yellow - Earth; Blue - Neutral; Brown - Live.

Connect a suitable plug to the mains lead. As the colour code of your plug may not correspond to this mains lead, proceed as follows:

Connect the green and yellow wire to plug terminal marked 'E' or  $\perp$  or coloured green or green and yellow.

Connect the blue wire to plug terminal marked 'N' or coloured black.

Connect the brown wire to plug terminal marked 'L' or coloured red.

The apparatus must be protected by a 3A fuse (in a 13A plug or distributor board).

**Warning: This apparatus must be earthed.**





Diagram 9

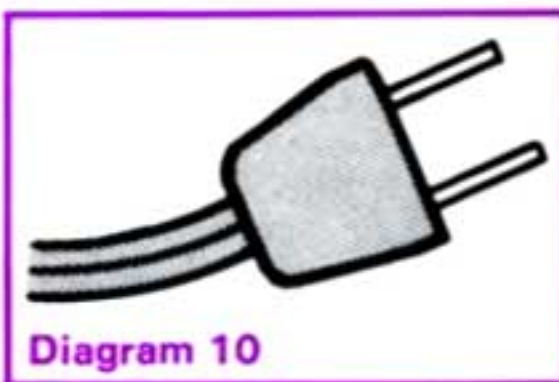


Diagram 10

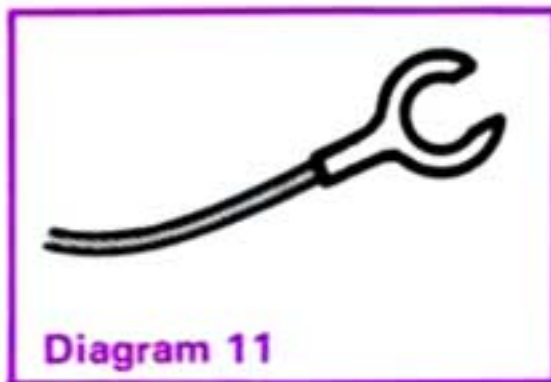



Diagram 11



Diagram 12

#### Double insulated units

Garrard double insulated units are indicated so in writing or by the sign  on a label attached to the apparatus or power supply lead. Make lead connections as instructed in the appropriate section here but note that there is no need to attach a safety earth lead. It is recommended however that any other electrical equipment connected is of a high standard of insulation or safety earthing.

Note that normally double insulated units will be signal-grounded through the deck phono socket to prevent hum. For this to be effective, the amplifier must be grounded. If it is not, attach a grounding lead to the amplifier.

#### European models 220/240 volts AC 50Hz two core lead

The wires of the power supply lead (diagram 8) are colour coded:  
Blue - Neutral; Black - Live.

Connect these wires to a suitable plug and in turn connect the plug either to the take-off socket on your amplifier or an AC power supply socket. When a plug is already fitted, it is usually of the two-round-pin European type (diagram 9).

#### USA and Canada 110/125 volts AC 60Hz

A line cord with a standard two-flat-pin plug is normally supplied (diagram 10). Connect this to the power outlet on your amplifier or wall socket. Connect the line cord green ground lead (diagram 11) to a reliable grounding point on the amplifier chassis or directly to ground.

#### Voltage changeover on dual range units

Certain units may be set for 220/240 volts AC and 110/120 volts AC according to the position of the voltage changeover switch (when fitted) beneath the turntable. Remove the turntable mat and turn the turntable clockwise to align one of the turntable clearance holes over the switch in the front of the unit as shown in diagram 12. Use a small coin or finger nail to slide the switch to read '230' if 220/240 volts AC or '115' if 110/120 volts AC power supply. Also check that the motor pulley is correct for the power supply frequency.

A 60Hz pulley is distinguished from a 50Hz pulley by having a narrow groove around the circumference of the pulley base. To change the pulley, remove the turntable (see page 12, also for refitting) and carefully withdraw the pulley (18.4) from the motor spindle. As the pulley is a close fit to ensure true running it may require heat expansion. An alternative pulley and an extractor kit with instructions are available if required.

Press the new pulley on to the motor spindle, making sure that its position allows the belt to run in the middle of the lifting guide forks (18.3).



# operating instructions

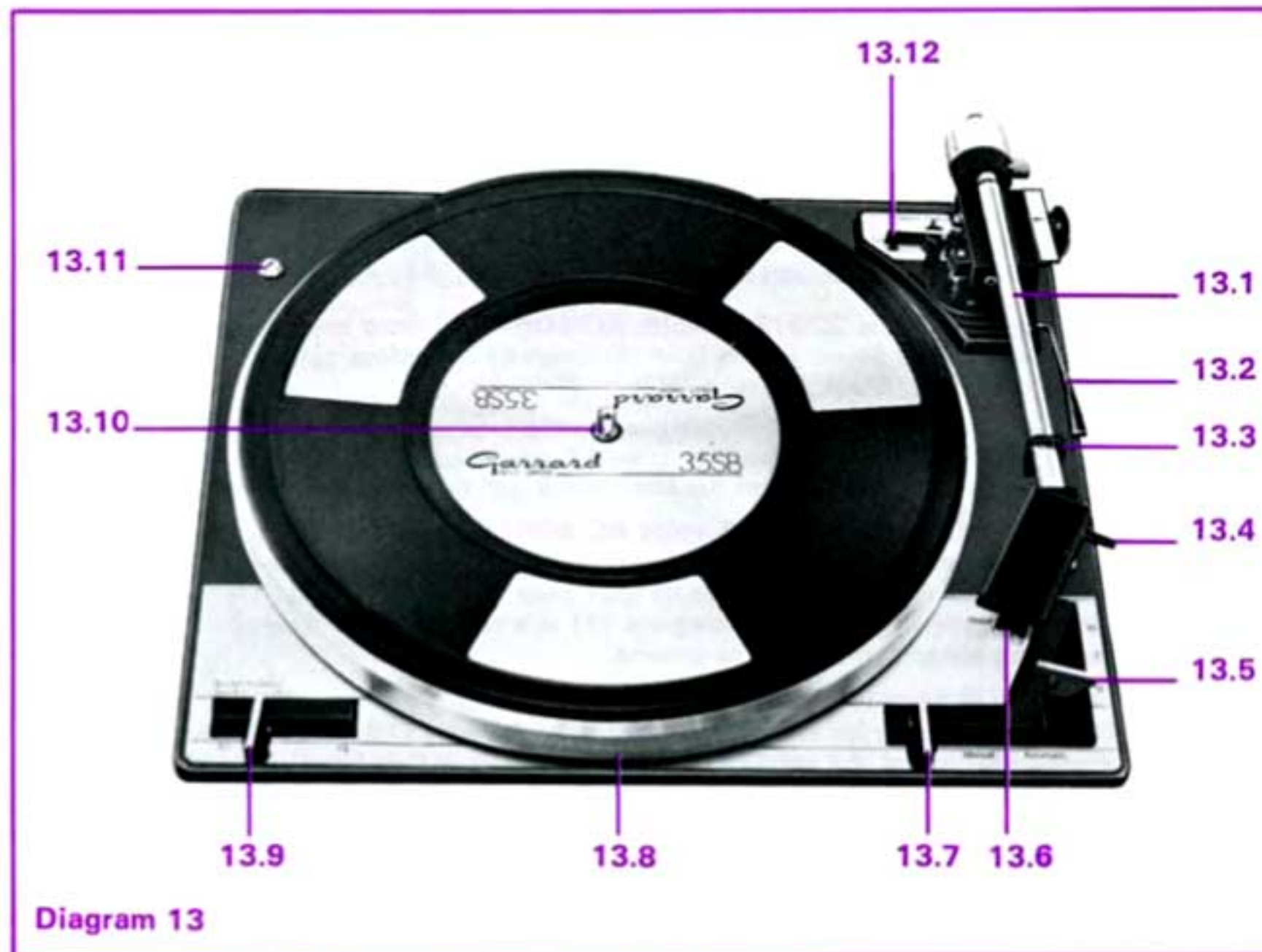


Diagram 13

*Note that these operating instructions apply to the Model 35SB in whatever type of installation it may be used.*

To obtain best results, store and clean records as recommended by the record manufacturers. Do not leave records on the unit when not in use. Keep the stylus free from accumulated dust and replace it when worn.

### Before use

- 1 If in module form, either remove the cover from the unit or make sure the cover hinge locates correctly, then raise the cover to a hinged open position.
- 2 If the unit is equipped with a push-on rotating record spindle, check that this is in place.
- 3 Free the pickup arm by releasing its catch and remove the pickup stylus guard, if fitted.
- 4 Check that the record speed, size and 'Repeat play' controls are set as required.
- 5 Check that the transit screws are turned fully clockwise.

### KEY

13.1	Pickup arm	13.5	Record size selector control	13.9	Record speed selector control
13.2	Cue and pause control	13.6	Pickup cartridge and stylus (beneath pickup head)	13.10	Record spindle
13.3	Pickup rest safety catch	13.7	Operating control	13.11	Transit screw (2)
13.4	Pickup finger lift	13.8	Turntable	13.12	Repeat control



# operating instructions

## Automatic play

- 1 Place the record of your choice on the turntable.
- 2 Move the operating control to 'Auto', pause and release the control which will return to 'Manual'.
- 3 The record will play automatically, the pickup will return to its rest and the unit will switch off.

## Manual play

- 1 Place the record of your choice on the turntable.
- 2 Move the operating control to 'Manual'.
- 3 Place the pickup on the record by hand, using the finger lift. After playing the record the pickup will return to its rest and the unit will switch off.

## Cue and pause

On manual play the cue and pause control may be used to place the pickup at the start of the record also to raise or lower the pickup at any selected point or temporarily interrupt play. To raise the pickup, lift the cue and pause control, then move the pickup by hand to the position required. To lower the pickup, steadily lower the control.

A technique of lifting the control just sufficiently for the stylus to clear any warp on a record allows a shorter descent time and greater precision in aligning the stylus over the selected record groove.

## Restart

Move the operating control to 'Auto', pause and release the control. The pickup will then replay the record in play.

## Repeat

Turn the repeat control from 'Single play' to 'Repeat play'. Any record played will repeat indefinitely. Move the control back to 'Single play' when the switch off cycle is required.

## Reject (Stop)

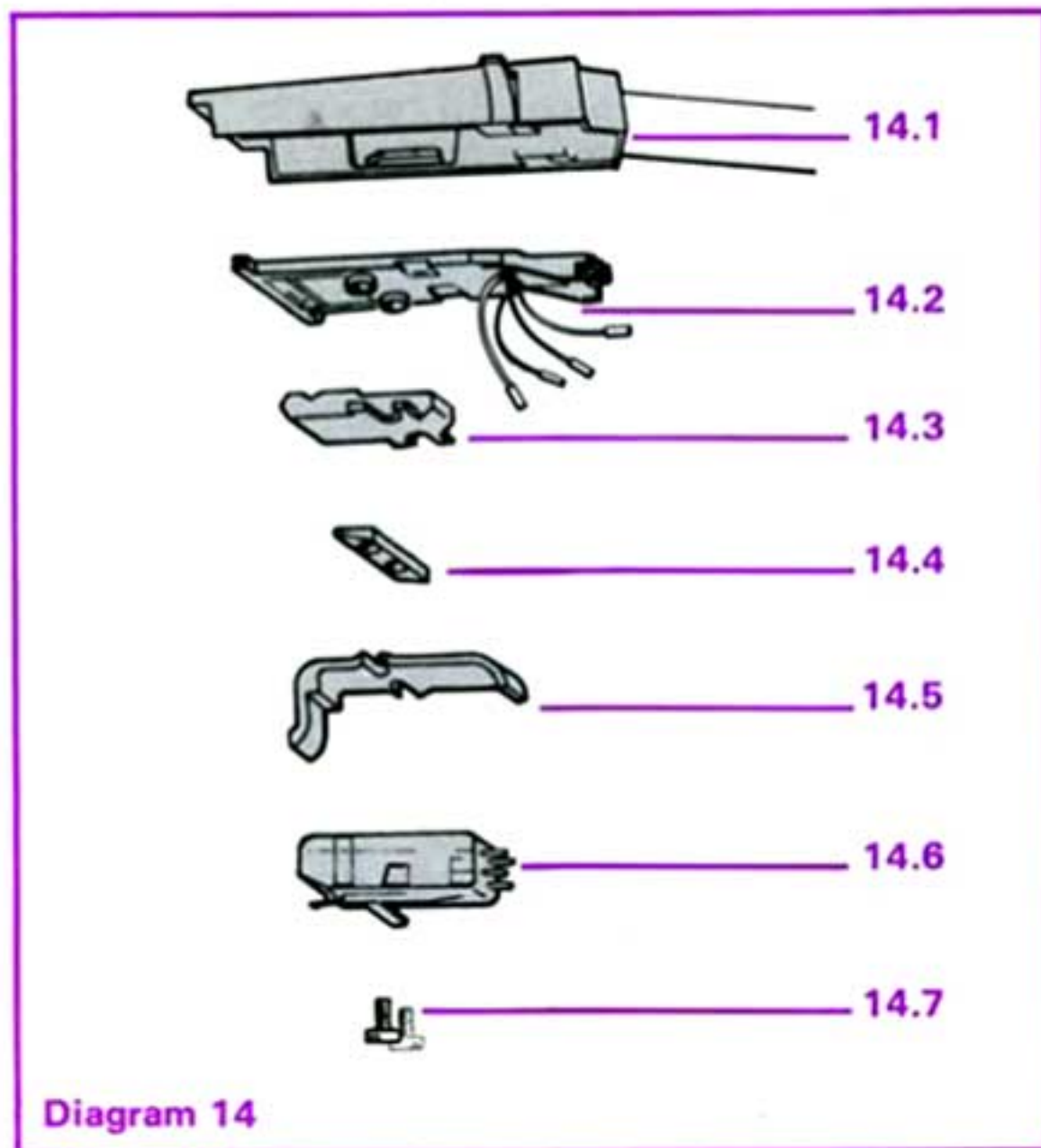
Use the cueing facility to return the pickup to its rest then move the operating control to 'Off'.

## Large hole records

Fit the adaptor - available as an optional extra - over the record spindle in order to play records with large centre holes.



## fitting pickup cartridge



KEY	
14.1	Pickup head
14.2	Cartridge carrier
14.3	Auxiliary weight
14.4	Auxiliary tilt wedge
14.5	Auxiliary fixing clip
14.6	Pickup cartridge
14.7	Fixing screws

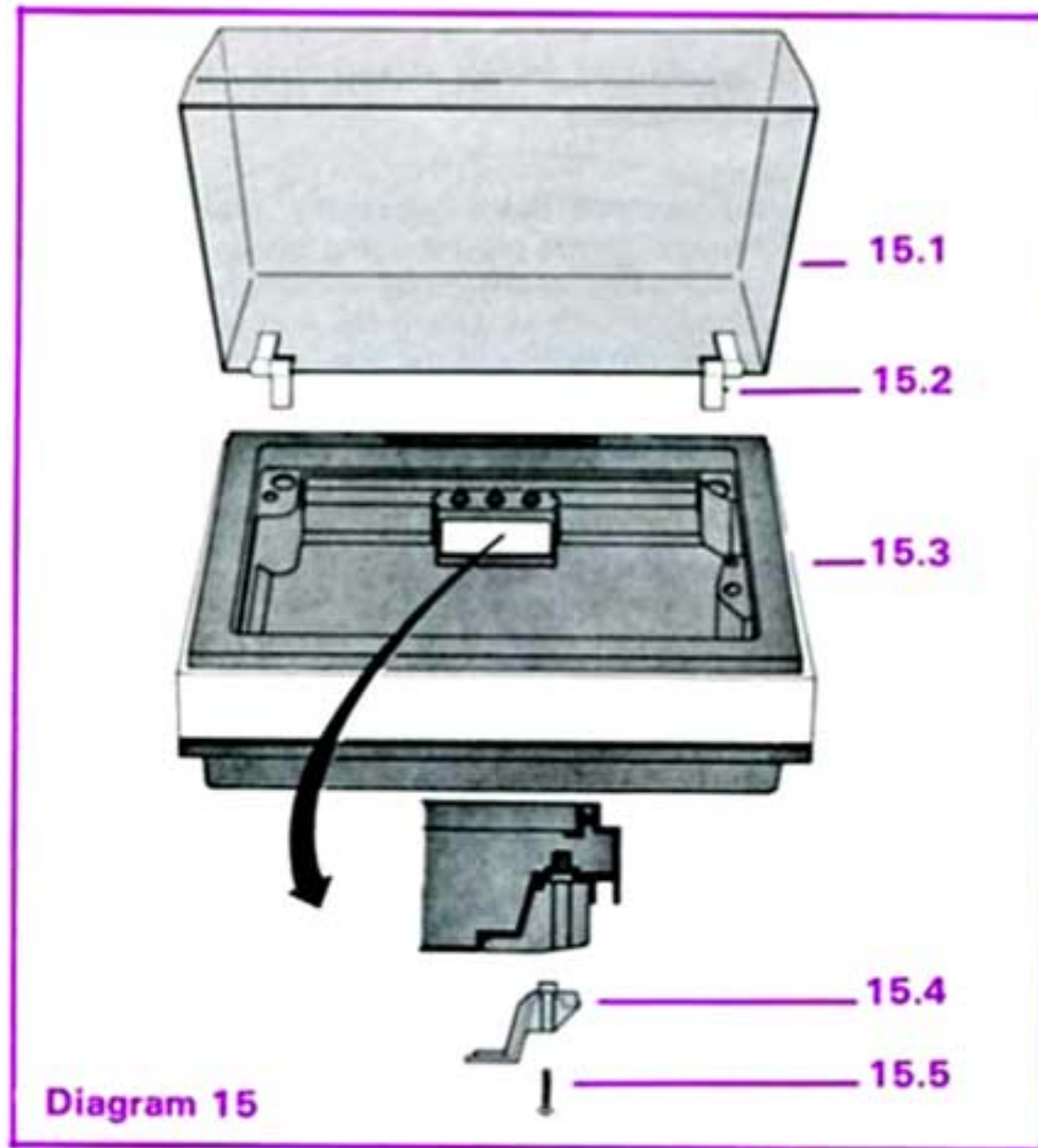
*If your stereo pickup cartridge is already fitted this section may be ignored.*

However, diagram 14 shows how the pickup hardware kit is assembled should this information be required. (Many people like to have a second cartridge and carrier assembly available for use.)

- 1 Withdraw the slide-in cartridge carrier (14.2) and secure the cartridge (14.6) to the carrier using screws of the most suitable length from the kit provided. Some cartridges are fitted with a mounting clip (14.5) as shown in diagram.
- 2 If, due to its design, the rear of the cartridge does not clear a record when placed in playing position, fit the tilt wedge (14.4) between the cartridge and carrier with its deep edge to the front. The tilt wedge helps correct the tracking angle for such cartridges.
- 3 If the cartridge is too light to come within the counterbalance range of the arm, include the pickup head weight (14.3) next to the carrier in the assembly.
- 4 Attach the pickup leads to the cartridge output terminals in accordance to its manufacturer's instructions and the following colour code:  
Red to Right channel  
Green to Right channel ground  
White to Left channel  
Black or Blue to Left channel ground  
If the cartridge has three output pins or tags, use the green lead or the green and black leads connected together, as common. Insulate and tuck away any unused lead.  
NOTE: Do not solder leads directly to the cartridge, as heat may cause damage, use the tags supplied.
- 5 Replace the slide-in cartridge carrier securely in the front of the pickup arm (14.1). Make sure that cartridge fixing screws (14.7) do not protrude through the carrier.
- 6 Check or carry out the installation adjustments described on page 5. (Remember to do this if an alternative cartridge and slide assembly is sometimes used, of different weight.)



# Garrard module base and cover



KEY	
15.1	LC15 cover
15.2	Friction hinge (2)
15.3	B15 base (for units with
	three mounting springs)
15.4	Lead clamp
15.5	Clamp screw (3)

*For other types of base and cover refer to supplier's information*

Type BLC15 base and cover assembly may be supplied with Model 35SB. The base (15.3) is made of low resonance material which safely encloses the mechanism. A clamp (15.4) provides strain relief for connecting leads and a shallow well on one side of the base gives storage space for accessories. The transparent tinted cover (15.1) has adjustable friction-loaded hinges (15.2) (patents applied for). At low angles and when open vertically the cover has free movement. A fractional turn on each hinge screw when the cover is vertical, allows friction adjustment if ever required. The cover lifts from or lowers into its slot locations in the base, at any time.

## **Assembling deck to base - ignore if already fitted**

- 1 When purchased separately, carefully place the deck near the base and uncoil, or if necessary, fit connecting leads, passing them through the large hole at the rear of the base.
- 2 Turn deck transit screws fully clockwise and clips vertical (diagram 2c) then place deck on base by aligning transit screw holes and mounting recesses with unit.
- 3 When the deck is in place, press it down on its springs then, from beneath the base, turn transit locking clips horizontal (diagram 2a).
- 4 Turn the transit screws fully counterclockwise to clamp the deck (diagram 2b) and carefully lift off the turntable mat (store flat).
- 5 Unpack the transparent lead clamp and three fixing screws (15.5), then support the base assembly on its front edge whilst assembling the clamp.
- 6 Slide the clamp into its base location (diagram 15). Guide the phono lead(s) through the slot in the clamp nearest the pickup arm and the power supply lead through another slot which holds it securely. Pass any earth lead through the remaining slot.
- 7 Check leads are drawn through the base leaving enough slack for the unit to move freely then secure the leads firmly with the three fixing screws.
- 8 With the unit level, refit the turntable mat and turn transit screws fully clockwise.
- 9 Carry out other installation requirements and fit the cover when required.



# maintenance

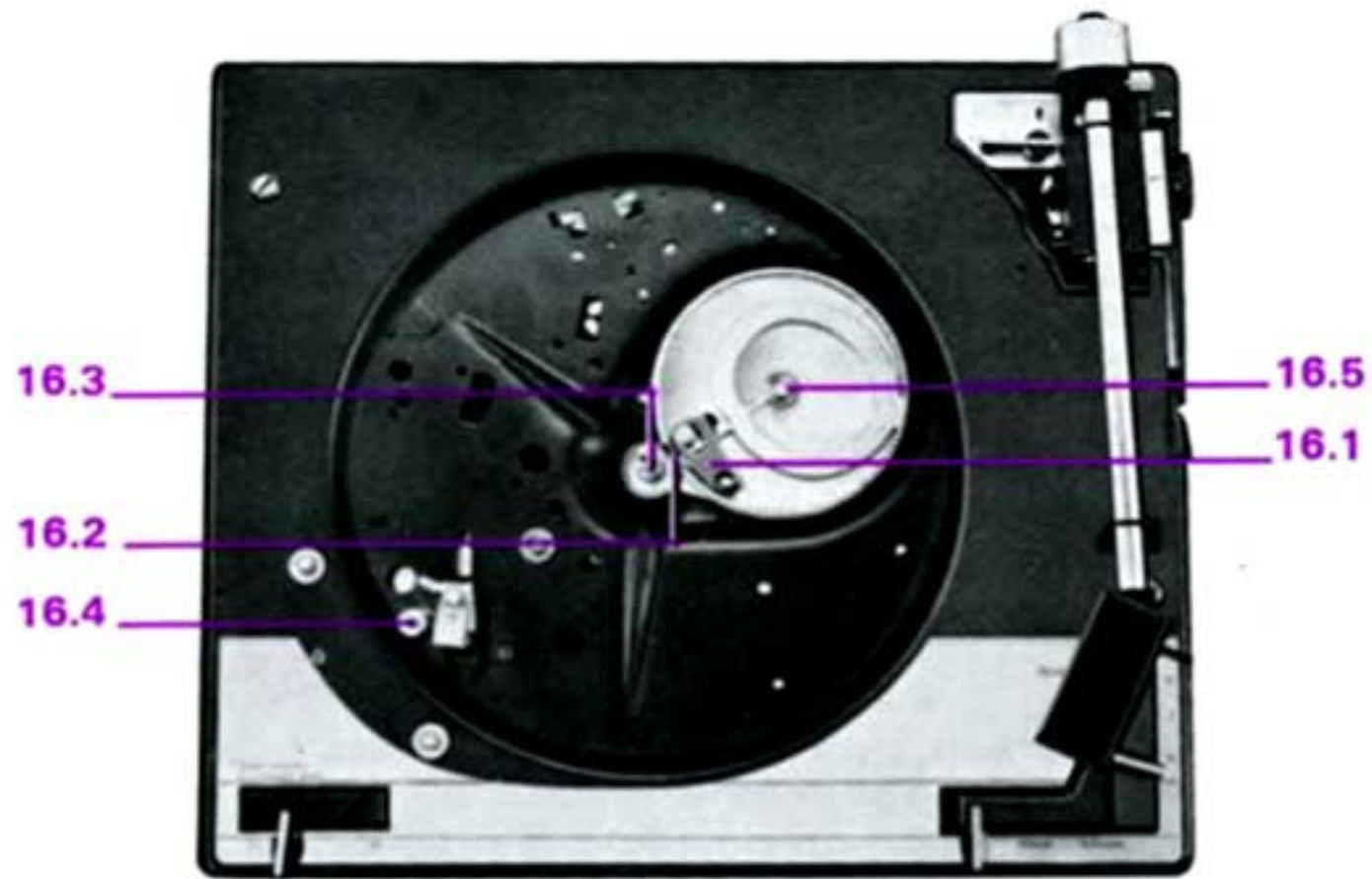


Diagram 16

## KEY

- |      |   |      |  |
|------|---|------|--|
| 16.1 | Trip pawl (push away from turntable spindle)      | 16.3 | Turntable spindle (oil turntable bearings and spindle ball race beneath thrust washer) |
| 16.2 | Main cam (gap in teeth next to turntable spindle) | 16.4 | Motor pulley (oil top motor bearing beneath pulley)                                    |
|      |   | 16.5 | Main cam bearing (oil)   |

## Caution

Switch off power supply and protect pickup stylus before carrying out any maintenance.

## Lubrication

Lubrication is rarely required, but if necessary, apply a spot of fine grade machine oil to the oil-retaining top motor bearing (16.4), the turntable bearing and spindle ball race beneath top thrust washer (16.3). Lubricate lever pivots and other bearing surfaces if stiffness in the mechanism becomes noticeable, but do not oil the viscous-fluid damped cueing system. Remove any excess oil with a clean cloth - pulley, belt and turntable drum must not be contaminated or turntable speed may be affected.

## Fitting turntable and drive belt

- 1 Carefully lift off the turntable mat (store flat).
- 2 Using a small screwdriver, lever off the turntable retaining clip, first removing the record spindle if it is of the rotating, push-on type.
- 3 Remove the turntable, turn it upside down and fit the drive belt (untwisted) around the turntable drive drum, belt narrow identification strips (18.2) on the outside.
- 4 Check speed control is set to '33' also that the mechanism has gap in teeth of cam (16.2) adjacent to turntable spindle with trip pawl (16.1) pushed away, for reassembly clearance.
- 5 Hook left forefinger through one of the turntable clearance holes and between belt and drum, as shown in diagram 17.
- 6 Refit turntable, aligning clearance hole in use over motor pulley (18.4). Carefully stretch belt over lifting guide (18.3) releasing it on to the top pulley step, as in diagram 18.
- 7 Refit turntable retaining clip (and record spindle, if push-on, rotating type) and carefully reseat turntable mat.



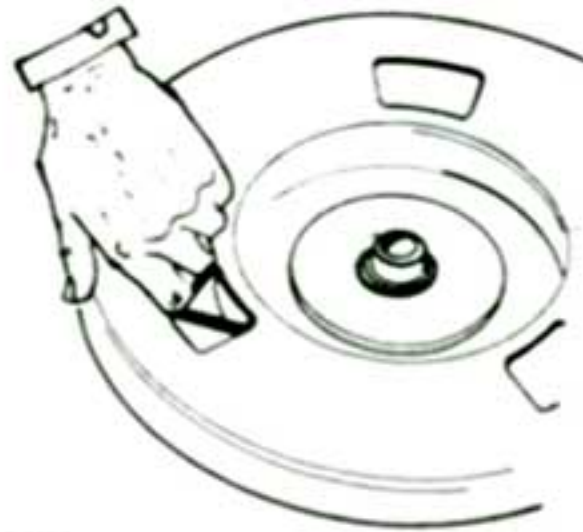


Diagram 17

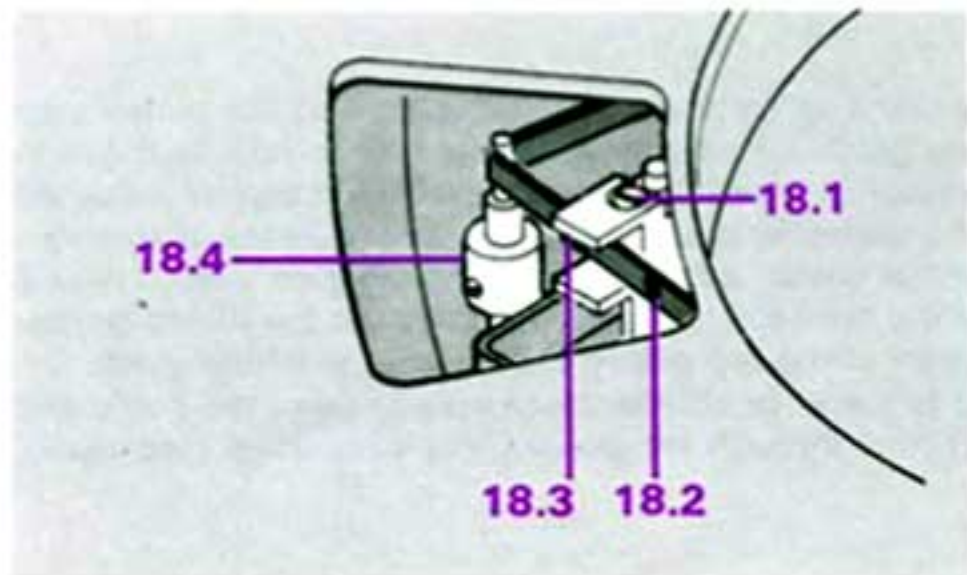


Diagram 18

### Service hints

The references below may be of use as a check list.

*Pickup mistracking:* A, B, C, D, E, F

*Distorted sound:* A, B, C, D, G, K

*Speed varies:* H, J

- A Check stylus is clean
- B Check stylus is correct type for record being played
- C Check that back of cartridge or leads do not touch record - fit tilt wedge if necessary
- D Check balance of pickup arm, stylus force and bias compensator setting
- E Check pickup leads not caught up, restricting arm movement at rear
- F Check cue and pause control in down position
- G Have amplifier and loudspeakers checked
- H Check no oil on motor pulley, drive belt or turntable drive drum
- J Check belt lifting guide not rubbing top or bottom of drive belt
- K If low hum affects sound, check earthing arrangements for your hi-fi system

### KEY

- 18.1 Lifting guide adjustment screw
- 18.2 Drive belt with identification stripe
- 18.3 Lifting guide
- 18.4 Motor pulley



## adjustments



### KEY

- 19.1 Pickup lowering position adjustment screw
- 19.2 Pickup lifting height adjustment screw
- 19.3 Pickup cueing height adjustment (factory set)

*These are factory set and normally need not be touched. If necessary, however, switch off the power supply, carry out the adjustment, then move the operating control to 'Auto' and revolve the turntable slowly clockwise by hand to check the adjustment.*

### Pickup lowering position

This setting governs the position at which the pickup is lowered automatically on to the record. Turn the screw (19.1) in diagram 19 clockwise to move the lowering position inwards or counterclockwise to move it outwards. The lowering position should be set just inside the slope of records with a sloping edge, to avoid skating.

### Pickup lifting height

This governs the height to which the pickup arm rises automatically. The pickup height should be set normally so that the arm just clears the top of the pickup rest as it returns automatically. Turn the screw (19.2) in diagram 19 clockwise to increase or counterclockwise to decrease this height. Make sure the tension nut beneath the screw does not turn with the adjusting screw.

### Pickup cueing height

The screw referred to above can be used to give special adjustments to the height to which the pickup lifts when cued. A separate adjustment screw (19.3) in the lifting platform is factory set and should need no adjustment.

### Drive belt lifting guide

The drive belt automatically takes up its position in the centre of the pulley step to which it is set. If the lifting guide rubs the edge of the belt or fails to move the belt to the other pulley step when a speed change is required, it can be adjusted by means of the screw (18.1) shown in diagram 18. First remove the turntable mat, then with the speed control set to '33', run the turntable gently clockwise for a few turns and align one of the turntable clearance holes over the lifting guide. The belt should be in the centre of the top pulley step. Turn the lifting guide adjustment screw clockwise to lower or counterclockwise to raise the guide and set the guide so that the belt runs through the guide forks with equal clearance top and bottom.



## sales service

For technical information or spare parts, contact your Garrard dealer or Agent, or our Sales Service Department.

In correspondence always quote the Model 35SB code number (which is 78400 plus its following three figure number from the inspection label under the deck - code number 78740 on underside base if a module). When ordering spare parts include part description, part number if known and colour or voltage and frequency when applicable.

### Selected spares list and extras

<i>Part number</i>	<i>Description</i>
78790	Record spindle (when rotating type)
72698	Large hole record adaptor
73361	Slide-in cartridge carrier, type C2
59048	Pickup hardware kit
01166/008	Turntable retaining clip
78385	Turntable mat assembly
76992	Turntable drive belt
43129/003	Rubber grommet for motor (3)
70447	Damping pad for spring mounting (3)
77177	Transit screw (2)
43855	Transit clip (2)
78588	Audio lead - 5 pin DIN plug
78582	Audio lead - twin R.C.A. type phono plug
78181	Module cover type LC15
78182	Module base type B15
	Motor, pulley and wiring loom (with switch, etc.) - quote the voltage and frequency from the motor and the Garrard identification numbers from the loom.

Garrard record playing equipment is made to Approved Standards and recognised specifications.



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