

*Garrard*

**Model SP. 25 Single Record  
Playing Unit**  
(with SP.25 Mk II supplement)



**ENGINEERS' SERVICE MANUAL  
AND  
SPARE PARTS LIST**

# Introduction

The Garrard SP.25 is a high quality single record playing unit, elegantly styled and incorporating many practical features. The pick-up arm, of the modern, tubular type, has ball-bearing pivots. A cue and pause device is fitted so that the arm can be positioned over the record before play, and gently lowered by the pickup arm control. The pickup arm returns automatically to its rest after play. These refinements, together with the pickup lifting feature, considerably reduce the risk of accidental damage to record or stylus through mishandling. In addition, the large turntable, foam-damped suspension springs, pickup arm bias compensator and plug-in pickup head, reflect the attention to detail and quality built into this unit. It is made as a dual voltage range model, suitable for 100/130 and 200/250 volts a.c. and as a low voltage range model, suitable for 100/130 volts

a.c. The dual voltage range model is fitted with a voltage changeover block. These units are suitable for two power supply frequencies depending on the motor pulley fitted. Both pulleys may be coloured for easy identification: Nickel for 50 and Brass for 60 Hz. supplies. On later units identification may be by means of the size of the pulley base: pulley base diameter smaller than the 78 revs/min step for 50 Hz, larger for 60 Hz.

Should you require any further information or advice not covered by this Manual, our Technical Service Department will be pleased to help. For spare parts and service returns contact our Service and Spares Department. Address: Garrard, Kembrey Street, Swindon, Wilts. Tel: Swindon (0793) 6211; or in other countries your Garrard Agent.

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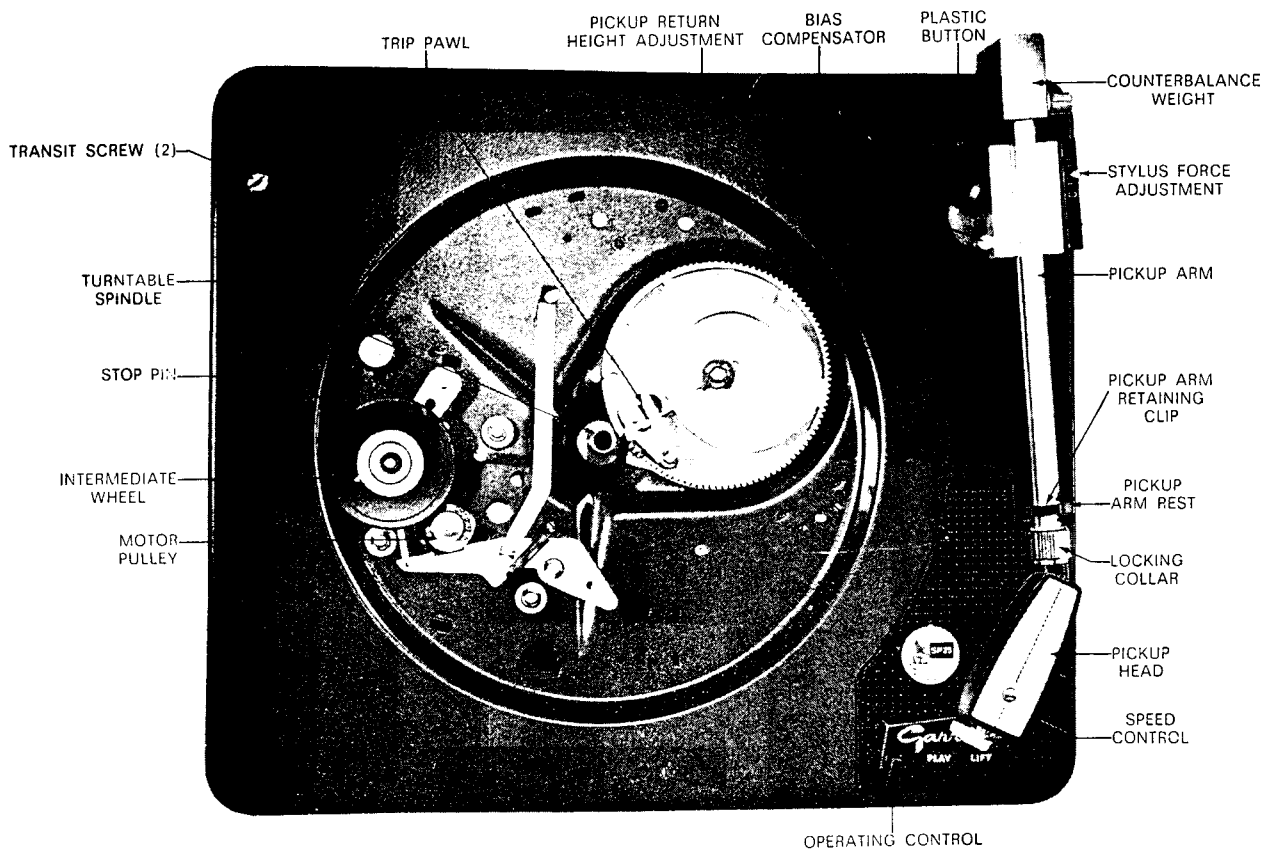


Diagram 1

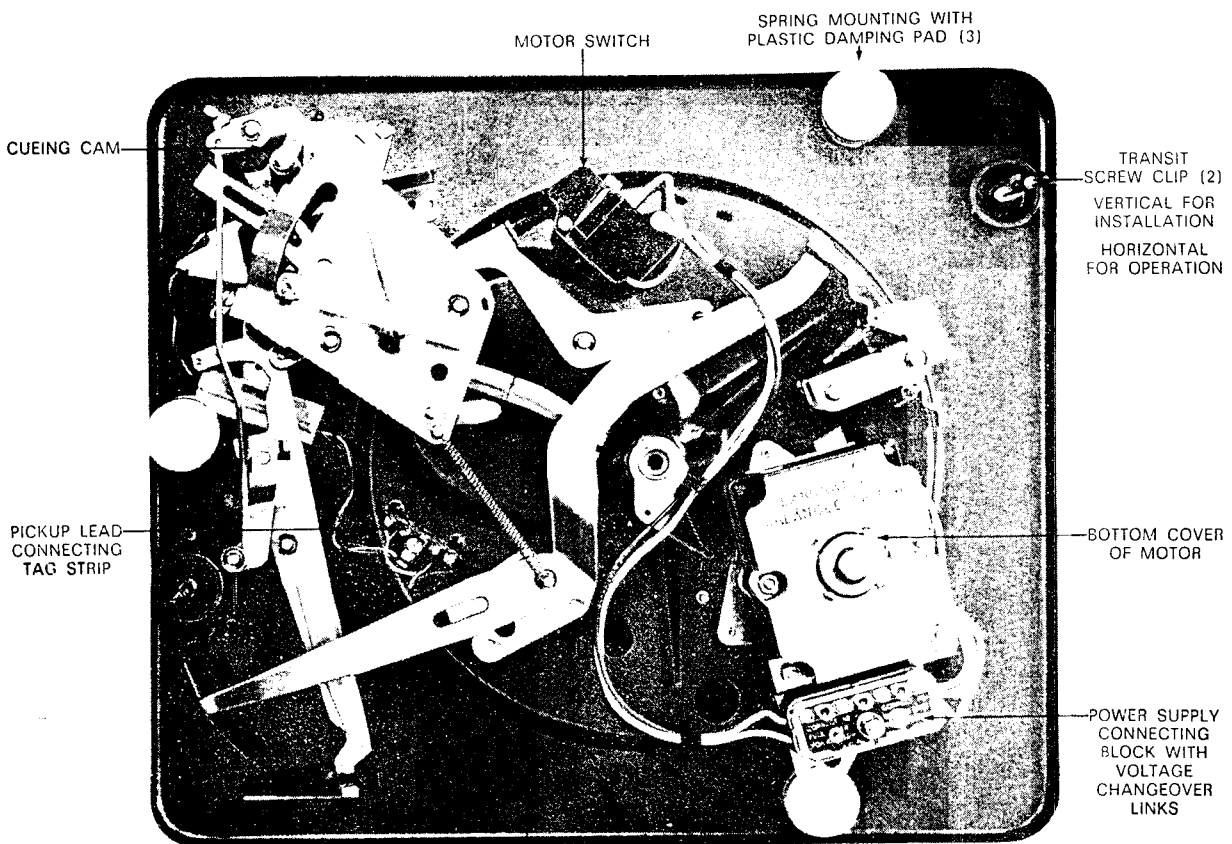


Diagram 2

# Operation

(Note: Model SP.25 Mk II cue and pause control is not integral with the operating control)

The Garrard Model SP.25 will play single records up to 12" diameter. The pickup arm will lift and return to its rest after playing a record, and the unit will switch off automatically. Cue and pause facilities are also provided. 7" - 45 r.p.m. records with large centre holes may be played by fitting a large hole adaptor.

## To Operate

1. Check that turntable speed and stylus are correct for the type of record to be played.
2. Place the record on the turntable and release the clip holding the pickup arm to its rest.
3. (a) Move the operating control to LIFT, align stylus above record and move control to PLAY. The pickup will then lower gently on to record.  
(b) To operate without cueing, move the operating control to PLAY and place pickup on record.

After playing the record, the pickup arm will automatically lift and return to its rest and the motor will switch off. For

safety, the pickup arm should be clipped to its rest when the record player is not in use.

## Cue and Pause

Move the control to LIFT and the pickup arm will rise from the record. Move the control to PLAY and the pickup arm will lower on to the record.

## To Stop

- Either: Move the control to LIFT, swing the pickup arm back to its rest, then move the control to 'OFF'.  
Or: Move the control to LIFT, then swing the pickup arm into the centre of the record, when the trip mechanism will operate; return the pickup arm to its rest and the motor will switch off.

Moving the control from PLAY to OFF switches off the motor, leaving the pickup on the record.

Note: To obtain best results from records, store and clean them as recommended by the record manufacturers. Replace the stylus when worn and clean away any accumulated dust.

# Maintenance

Before carrying out maintenance, the unit should be disconnected from its power supply and the stylus protected.

The motor, turntable spindle and intermediate wheel bearings are of the oil-retaining type and rarely need lubricating. When the need for oil is apparent, remove the turntable and lubricate these bearings with a light oil. Pivots of levers should be lightly oiled if the mechanism becomes stiff to operate. Remove all traces of oil from the motor pulley, intermediate wheel and inside turntable rim by wiping these driving surfaces with a clean cloth.

If the pickup lowers rapidly, the damping fluid controlling this movement should be renewed. On earlier units, proceed as follows (on later units see SP.25 Mk II supplement). To do this, take off the spring clip at the control end of the cueing link so that the cueing cam shown on Diagram 7 can be pivoted to expose the cueing lifting spindle. Remove the spring clip from the end of the lifting spindle and withdraw the cueing piston sleeve, to clean and recharge it with damping fluid. The damping fluid, reference no. 71724, is available from our Spares Department and may be applied

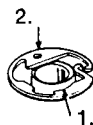
with a matchstick. Take care to replace the small washer between the piston and the shoulder on the cueing spindle, since its absence would also lead to rapid lowering.

To remove the turntable, take out the record spindle and prise out the nameplate from the turntable centre using a screwdriver or penknife and taking care not to buckle the nameplate or damage its location. Remove the turntable clip as shown in Diagram 3 and lift off the turntable with equal pressure under diametrically opposite sides of the flange.

When replacing the turntable, check that the control is in the OFF position and that the gap in the teeth of the cam gear is adjacent to the turntable spindle with the trip pawl (see Diagram 1) pushed away from the turntable spindle. The turntable will now slide on easily. Replace the turntable clip as shown in Diagram 3. If the turntable nameplate has its location in the rubber mat, take care that the rubber location is not damaged when sandwiching the nameplate into position, using a screwdriver or penknife as a lever.

To fit turntable clip

1. Engage clip in turntable spindle slot with hole in clip at rear
2. Press clip down here to spring over chamfer on turntable spindle



To remove, lever this face back to position shown opposite



Diagram 3

# Adjustments

Before making an adjustment, the unit should be disconnected from its power supply, and the stylus protected.

## Motor Pulley Height

The top of the motor pulley should be level with the top of the intermediate wheel stop pin shown on Diagram 1. If necessary, slacken the grub screws holding the pulley, raise or lower it, then retighten both screws equally.

## Intermediate Wheel Height

The intermediate wheel should run in the centre of the appropriate pulley step and must not touch the side of an adjacent step. If necessary, raise or lower the intermediate wheel height setting blade. This blue, spring steel blade is found beneath the unit plate and alters the height of the support bracket on which the rubber intermediate wheel is mounted.

## Pickup Return Height

The height that the pickup arm lifts off the record after it has tripped in the centre of a record can be adjusted by turning the top screw at the left-hand side of the pickup arm pivot bracket (see Diagram 1). The height should normally be set so that the underside of the arm clears the lower step of the pickup rest by  $\frac{1}{32}$ " (0.8 mm) as the arm returns to its rest.

## Pickup Cueing Height

With the control in the LIFT position and the pickup arm swung over a record on the turntable, the height of the stylus point above the record should be  $\frac{1}{32}$ " (10mm). If necessary, this height can be adjusted by removing the button from the upper casting cover (see Diagram 1), to give access to the slotted cueing lifting spindle which, when turned clockwise, will increase the cueing height and counterclockwise will decrease it.

## Pickup Stylus Force

To set the stylus force, unscrew the knurled screw holding the pointer on the stylus force scale and slide the pointer to the zero mark on the scale. Now loosen the screw holding the counterbalance weight on the rear of the pickup arm. With the pickup arm off its rest and free to pivot, slide the weight along it until the arm is horizontal, indicating the point of balance with the pickup head. Tighten the counterbalance weight fixing screw. To set the required stylus force, slide the pointer along the scale graduated in gramme divisions from one to five, then tighten the pointer locking screw at the appropriate mark. Stylus force should be set to the pickup cartridge manufacturer's recommended figure. SP.25 Mk II stylus force adjustment is described in the supplement at the rear of this manual.

## To Remove and Replace the Pickup Head

To remove the pickup head, unscrew its locking collar (see Diagram 1) and gently pull the head from the arm. To replace the head, locate the pin on the pickup head in the slot in the pickup arm and slide the head in. Then bring the locking collar forward and screw it up until tight.

## To engage the Pickup Arm Bias Compensator

The unit may be supplied with the bias compensator disengaged. If this is the case, then the pin bracket should be swung to the position shown in Diagram 4 so that its pin will carry the compensator weight as the pickup arm tracks. This weight should pivot quite freely in order that the compensator can function correctly and counteract the inherent force which drives the pickup arm inwards when a record is being played. This force decreases as the pickup moves across the record and it will be seen that compensation is progressively reduced.

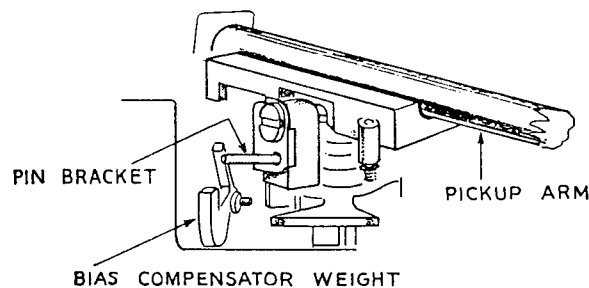


Diagram 4

# Installation

## Dimensions

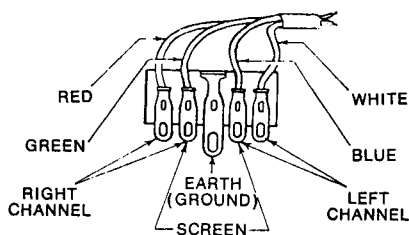
The Garrard SP.25 is  $15\frac{1}{8}$ " (383 mm) wide by  $12\frac{1}{2}$ " (317 mm) front to rear;  $2\frac{7}{8}$ " (73 mm) above and  $2\frac{3}{4}$ " (70 mm) below lower edge of unit plate. The actual dimensions, including the maximum rear and side overhang of the pickup arm, are given.

Recommended minimum clearances, which will allow the unit to float freely on its suspension springs and to be clamped to the motor board for transit purposes, will be obtained by adding  $\frac{1}{2}$ " (13 mm) to each dimension. According to the design of cabinet or case additional clearance may be required for playing 12" (305 mm) records. Recommended motor board thickness is between  $\frac{5}{16}$ " (8 mm) and  $\frac{1}{2}$ " (13 mm). If a thicker board is used, it will be necessary to recess the transit screw holes to  $1\frac{1}{8}$ " (29 mm) diameter from the underside to allow the clips on the ends of the transit screws to be turned.

## Fitting Unit

The motor board should be drilled and cut out to the template supplied. Do not moisten the template, as it may distort, but fix it to the board with self-adhesive tape. Having lifted the unit from the carton, remove all cardboard packing, ties and elastic bands. The record spindle, turntable clip and name plate will be found in packets stapled to the carton liner. The counterbalance weight for the pickup arm is also attached to the carton liner. Fit the weight to the rear of the pickup arm with its clamping screw forward (see Diagram 1). Instructions for setting stylus force will be found above. If the turntable is not fitted, follow the instructions given in the last paragraph of "Maintenance" on page 5.

Connect a lead from the power supply to the two terminal screws in the voltage changeover block after checking that the position of the wire links has been correctly set in accordance with the diagram moulded into the block's cover. If a power supply socket is fitted to the unit, then a lead terminated by the appropriate plug should be connected.



STEREO PICKUP CONNECTIONS  
(For Monophonic Cartridges use Right Hand Channel)  
For Monophonic Reproduction when a Stereophonic Cartridge is fitted, parallel the two channels.

Diagram 5

The motor should be earthed by connecting a lead from a good earthing point to the earthing terminal on the motor. Connect screened audio leads from the amplifier to the tag strip as shown on Diagram 5. Note on later units that the blue lead may be black.

If the unit is connected to an amplifier whose wiring is not isolated from the power supply, isolating components, either capacitors or transformers, should be incorporated in the pickup circuit, otherwise the pickup circuit can become live.

When phono leads are fitted, Brown Phono lead is R.H. channel, Grey phono lead is L.H. channel. For monophonic cartridges use Brown phono lead.

Check that the transit screws, looking from the top of the unit, are screwed right down, see Diagram 1. Then with the transit screw clips vertical, assemble the unit to the motor-board. When the unit is in place, turn the clips horizontally so that the unit cannot be lifted off the board. Before transporting the unit, turn both transit screws counterclockwise until the unit is firmly clamped. Screw them down before using the unit again.

## Fitting Cartridge

A plug-in pickup shell, designated M7, is used on the SP. 25, although an alternative shell, known as M6, having a deeper front to accommodate larger pickup cartridges, is also available. These are supplied with or without a pickup cartridge according to requirements. The pickup cartridge mounting kit, part no. 59248, which is supplied when a cartridge is not fitted, contains a set of cartridge fixing accessories comprising:

Mounting plate

Two 6BA x  $\frac{3}{16}$ " (5 mm) screws

One 6BA x  $\frac{1}{8}$ " (3 mm) screw

These parts allow most types of cartridge to be fitted by screwing the cartridge to the mounting plate and securing the assembly to the pickup shell with the  $\frac{1}{8}$ " (3 mm) screw. Cartridges having a single fixing hole may be fitted directly to the pickup shell using the  $\frac{1}{8}$ " (3 mm) screw.

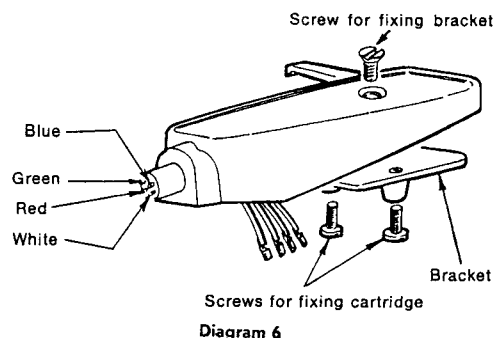


Diagram 6

Connect the colour-coded leads in the pickup shell to the output tags on the cartridge. Do not solder leads direct to the cartridge. If the cartridge terminations are sockets, a special connector must be used. The connections should be made as follows:—

Red to Right Channel

Green to Right Channel (Earthy)

White to Left Channel

Black or Blue to Left Channel (Earthy)

Information on its connections are usually supplied with the cartridge. For cartridges having three connections, use the green lead as the common connection or join the green and blue leads together and use these as the common connection. For monophonic cartridges use the red and green leads. Insulate and tuck away any leads not required.

## Cue and Pause Mechanism

For SP.25 Mk II see supplement at rear of Manual

The purpose of this mechanism is to lower the pickup on to the record and lift it again at any required time before completion of the record simply by moving the operating control. The control is moved to PLAY in order to start the turntable. When moved to its right hand extremity, that is to LIFT, the motion is transferred to the pickup lifting platform by way of a wire link which pivots the cueing cam controlling the vertical movement of a spindle connected to the platform. These parts are shown in Diagram 7. The pickup can then be moved inwards until it is immediately above the point at which play is required to commence.

The control will remain at LIFT with the pickup poised above the record (pause) until moved back to PLAY when the pickup will lower slowly and steadily. This action is brought about by the cueing cam returning to its original position, thereby releasing the cueing spindle which, in turn, retracts the pickup lifting platform. Although the cueing spindle returns under pressure from the friction spring, its movement is damped by the presence of a viscous fluid between a piston on the spindle and the cylinder in the lower casting through which it passes.

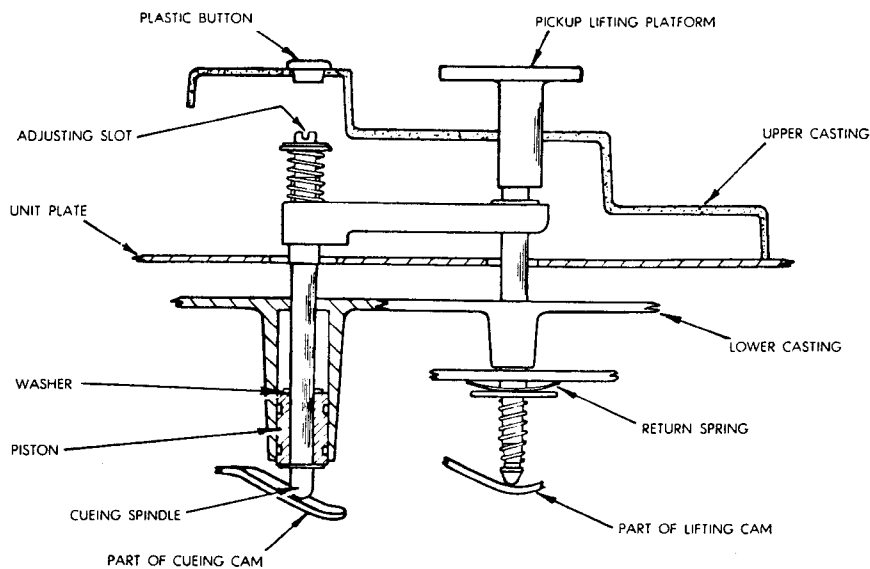


Diagram 7

# FAULT CHART

Before servicing the Record Playing Unit should be disconnected from its power supply and the pickup cartridge protected. Numbers in brackets refer to parts shown on Diagrams 8 and 9.

| FAULT  | CAUSE  | CORRECTION  |
|--|--|---|
| <b>PICKUP ARM MOVEMENT</b>   |  |   |
| Pickup begins to lower, then swings in.  | 1. Pickup leads not free.                              | Relieve any strain in leads and keep them clear of slot in unit plate.  |
|  | 2. Lifting spring (36) or friction spring not working. | Check that lifting spring has not slipped over its retaining shoulder and is not damaged or obstructed. Check that triangular, blue spring steel friction spring is working; with lifting spring held clear, deflecting it away from pickup cam (40), it should spring back. Replace either of these springs if faulty. |
| Pickup will not lift sufficiently to return to its rest.                                       | 1. Pickup return height incorrectly set.               | See "Adjustments" for correct setting.  |
| Pickup lowers rapidly.   | 1. Insufficient damping fluid.                         | See "Maintenance".  |
| Pickup arm will not lower on to record.  | 1. Lifting spindle unit (7) sticking.                  | With pickup arm raised, pull up lifting spindle and watch for it to return under spring pressure. If it does not, examine beneath unit to see that no leads or mechanism impede it. Check that lifting spring (36) has not slipped over its retaining shoulder. Lubricate lifting spring with light, machine oil.       |
|  | 2. Pickup cueing height incorrectly set.               | See "Adjustments" for correct setting.  |
|  | 3. Damaged cueing link (34).                           | Re-shape or replace.  |
| Pickup jumps first few grooves of record.  | 1. Stylus force too low.                               | See "Adjustments".  |
|  | 2. Worn or wrong size stylus.                          | Check that stylus is correct for type of record being played. Examine stylus under a magnifying glass and replace if chipped or worn.   |
|  | 3. Pickup leads not free.                              | Relieve any strain in leads and keep them clear of slot in unit plate.  |
|  | 4. Groove guard on record.                             | Some records are made with a raised rim around the edge of the records to guard the record surface. If the stylus lowers on the slope of this rim, it may jump across the first few playing grooves. Therefore, make certain that the stylus lands just inside the raised rim.  |
|  | 5. Too much friction in friction link (37).            | Lubricate friction link along its slot, with light grease.  |
| Pickup remains in centre of record, or repeats in record groove when nearing centre of record. | 1. Stylus force too low.                               | Check stylus force and adjust as described under "Adjustments".   |
|  | 2. Accumulation of dust on stylus or worn stylus.      | Remove dust. Check stylus with magnifying glass. Replace if worn.   |
|  | 3. Pickup leads not free.                              | Relieve any strain in leads and keep them clear of slot in unit plate.  |
|  | 4. Pickup cartridge case (10) touching record.         | Check that cartridge bracket fixing screw and cartridge fixing screws are tight. If stylus bar is bent, replace it.   |
|  | 5. Too much friction on automatic trip links.          | Guard stylus and move pickup arm slowly inward by hand. Should any stiffness be felt, check associated levers for freeness.   |



| FAULT   | CAUSE   | CORRECTION  |
|---|---|---|
| <b>TURNTABLE SPEED</b>                            |   |   |
| Speed varies erratically.                         | <ol style="list-style-type: none"> <li>1. Oil on driving surface.</li> <li>2. Motor pulley (16) loose or height incorrect.</li> <li>3. Motor shaft tight.</li> </ol>  | <p>Remove turntable and clean all driving surfaces (see "Maintenance").</p> <p>Check that grub screws are tight. See "Turntable runs excessively fast or slow", Cause 4.</p> <p>If the motor shaft is tight in its bearings, it will not turn freely when spun with the fingers. This condition may be caused by using heavy lubricating oil, or by mis-aligned motor bearings. See "Motor runs slowly", Causes 1 and 2, for correction.</p>  |
| Speed varies consistently (Wow and Flutter).      | <ol style="list-style-type: none"> <li>1. Tight turntable spindle.</li> <li>2. Dirt on inside of turntable rim.</li> <li>3. Loose motor pulley (16).</li> <li>4. Flats on intermediate wheel (17).</li> <li>5. Bent shaft or unbalanced rotor.</li> </ol>       | <p>Revolve turntable by hand without engaging trip mechanism. If it does not turn freely remove turntable (see "Maintenance") and wipe its bearing and spindle with clean cloth. Oil spindle and ball race (21) with light, machine oil. Remove surplus oil.</p> <p>Remove turntable (see "Maintenance") and clean inside turntable rim with clean cloth.</p> <p>See "Speed varies erratically", Cause 2.</p> <p>Slight flats can often be removed by running the unit continuously for a few hours. If this does not suffice, replace intermediate wheel. To avoid flats on the intermediate wheel always switch off by means of the operating control.</p> <p>Should the motor shaft with pulley removed (if the removable type) be more than .0005" out of truth or the motor vibrate badly, the rotor and shaft assembly should be replaced. The rotor and shaft are integral and no attempt should be made to separate them.</p> |
| Turntable does not revolve when motor is running. | <ol style="list-style-type: none"> <li>1. Oil on driving surfaces.</li> <li>2. Intermediate wheel tension spring not functioning.</li> <li>3. Intermediate wheel support bracket (18) not free.</li> </ol>  | <p>Remove turntable and clean all driving surfaces (see "Maintenance").</p> <p>Check that the spring attached to the end of lever (15) is still in place. Move the Control to "Manual" and watch to make sure that the spring goes into tension. If not, it means that the spring has stretched and should be replaced.</p> <p>Check that this bracket is free to move in the slot in the unit plate. The intermediate wheel (17) should engage motor pulley firmly on switching the Control to "Play" and retract freely when switching to "Off". If bracket (18) is tight, check speed change mechanism underneath unit plate. Look for damage to mechanism and lubricate the intermediate wheel support spindle and speed change spindle with light, machine oil.</p>  |
| Turntable runs excessively fast or slow.          | <ol style="list-style-type: none"> <li>1. Voltage range of motor set incorrectly.</li> <li>2. Incorrect motor pulley (16).</li> <li>3. Tight intermediate wheel (17) bearing.</li> <li>4. Motor pulley (16), or intermediate wheel height incorrect.</li> </ol> | <p>Disconnect power supply and examine connections. Check that specification on motor corresponds to that of the power supply. If dual voltage range model, check changeover block connections against instructions on its cover. Make sure links in block are tight and making good contact.</p> <p>Remove turntable (see "Maintenance") and check pulley coding, see reference in "Introduction" section, page 1. If incorrect, replace it. When ordering, quote SP.25 and frequency of power supply.</p> <p>Spin intermediate wheel when disengaged from motor pulley to see if it runs freely. If it does not, remove it, clean its spindle and bearing, then lubricate with light, machine oil and reassemble.</p> <p>See "Adjustments".</p>   |

| FAULT                           | CAUSE  | CORRECTION  |                   |         |                   |          |
|---------------------------------|--|---|-------------------|---------|-------------------|----------|
| Speed slightly fast or slow.    | 1. Wrong size pulley (16).   | If turntable fails to run within reasonable speed limits after following preceding instructions, time turntable speeds with a watch while playing a record. Send pulley, quoting Model SP.25 and turntable speeds to our Technical Service Department and your pulley will be replaced by one of correct size.  |                   |         |                   |          |
| Motor runs slowly.              | 1. Motor lubrication.  | The rotor shaft should spin freely by hand. If it does not, dismantle the motor and clean bearings and rotor shaft. Lubricate with thin machine oil and reassemble.   |                   |         |                   |          |
|                                 | 2. Motor bearings out of line.   | If rotor shaft will not spin freely, although properly lubricated, tap body of motor with a piece of wood such as a screwdriver handle, to shock self-aligning bearings into line and free rotor shaft. Should a faulty bearing or ineffective retaining spring be found, replace appropriate cover assembly.   |                   |         |                   |          |
|                                 | 3. Motor coils incorrect polarity.   | The polarity of the coils should be the same. If the motor runs slowly, check polarity and if necessary change over the leads to one coil. If a plug-in bobbin motor, change over the leads in one plug.  |                   |         |                   |          |
|                                 | 4. Motor coil(s) open circuit.   | The two coils are connected in parallel to run on low voltage on the dual voltage model. If one winding becomes open circuit, the motor will run slowly. Check continuity and if necessary proceed as stated under "Motor will not start", Cause 4. On single voltage range models, windings are connected in series, and if an open circuit occurs the motor will not run.   |                   |         |                   |          |
|                                 | 5. Motor pulley wrong size for power supply frequency.   | Check motor pulley coding - see reference in introduction section, page 1.  |                   |         |                   |          |
| Motor runs hot.                 | 1. Normal running conditions.  | Provided motor current does not greatly exceed the following figures at the voltage stated, the temperature of the motor should not rise above its designed running temperature.<br><br><div style="text-align: center;"> <table border="0"> <tr> <td>115 volts, 60 Hz.</td> <td>0.1 amp</td> </tr> <tr> <td>240 volts, 50 Hz.</td> <td>0.06 amp</td> </tr> </table> </div> Although Garrard motors are designed to run under unventilated conditions, as much ventilation as possible is beneficial. | 115 volts, 60 Hz. | 0.1 amp | 240 volts, 50 Hz. | 0.06 amp |
|                                 | 115 volts, 60 Hz.  | 0.1 amp   |                   |         |                   |          |
|                                 | 240 volts, 50 Hz.  | 0.06 amp  |                   |         |                   |          |
|                                 | 2. Short circuit in coil(s).   | Check windings for short circuit with an ohmmeter. If unsatisfactory, proceed as stated under "Motor will not start", correction 4.   |                   |         |                   |          |
| 3. Incorrect voltage.           | Check that voltage specification on motor corresponds to voltage of the power supply. If supply voltage is too high, the coils may burn out. If a voltage changeover block (27) is fitted, check that its links are set correctly. |   |                   |         |                   |          |
| 4. Insulation leakage to earth. | Test insulation between windings and frame with a 500 volt insulation test meter; it should not be less than two megohms. It is recommended that the motor be earthed from its earthing terminal to a good earthing point.         |   |                   |         |                   |          |

| FAULT                 | CAUSE  | CORRECTION   |
|-----------------------|--|--|
| Motor will not start. | <ol style="list-style-type: none"> <li>1. No power supply.</li> <li>2. Loose connections.</li> <li>3. Bad switch contact.</li> <li>4. Open circuit coils.</li> </ol> | <p>Check that current is reaching motor switch by means of a test lamp or meter.</p> <p>See "Interference on reproduction", Cause 2.</p> <p>See "Interference on reproduction", Cause 1.</p> <p>Check coils (26) for continuity. If continuity check is not satisfactory, disconnect the motor leads, noting their connections, particularly for a dual voltage model. Remove turntable (see "Maintenance") and withdraw motor from its suspensions. Fit replacement motor. This is facilitated on later models which have plug-in bobbin connections.</p> |

## NOISE

|                               |   |  |
|-------------------------------|---|--|
| Interference on reproduction. | <ol style="list-style-type: none"> <li>1. Bad switch (44) contact.</li> <li>2. Loose power supply lead connections.</li> <li>3. Loose pickup cartridge connections.</li> </ol>  | <p>Turn power supply off and remove cover from switch. Check that leads are securely soldered, contacts are clean and that they close when control is moved to "Play". To do this, it may be necessary to screw the switch to unit plate temporarily without cover.</p> <p>Examine all connections to make sure of good electrical contact. If a dual voltage model, check that voltage change-over links (27) are tight on their studs. Scrape any tarnish from studs. See the links are set to correct voltage as shown on changeover block cover (27).</p> <p>Check that pickup leads are securely soldered to pickup cartridge tags and tagstrip (31). See diagrams 5 and 6. Also check continuity of leads by removing tags from cartridge and checking circuit from tags to tagstrip. See that tags are a tight fit on pins.</p> <p>Do not solder leads direct to cartridge as heat will damage the element.</p> |
| Mechanical noise.             | <ol style="list-style-type: none"> <li>1. Lack of lubrication.</li> <li>2. Flats on intermediate wheel (17).</li> <li>3. Loose lever.</li> </ol>  | <p>See "Rumble", Cause 2.</p> <p>See "Speed varies consistently (Wow and Flutter)", Cause 4.</p> <p>Eliminate buzzing or chattering noise by touching each lever in turn. A spot of light oil on pivots and points of contact should remedy the trouble when offending lever is found.</p>   |
| Rumble.                       | <ol style="list-style-type: none"> <li>1. Motor pulley (16) height incorrect.</li> <li>2. Lack of lubrication.</li> <li>3. Faulty spring mountings.</li> <li>4. Dirt on intermediate wheel (17).</li> <li>5. Rubber intermediate wheel (17) perished.</li> <li>6. Motor pulley (16) not fitted correctly.</li> <li>7. Incorrect pickup match with amplifier.</li> </ol> | <p>See "Turntable runs excessively fast or slow", Cause 4.</p> <p>Remove turntable (see "Maintenance") and clean turntable spindle and bearing and ball race (21); lubricate then with a light oil. Remove any excess oil.</p> <p>Check that springs (46) support the unit free of cabinet. See that motor is free in its rubber suspensions (28) and that unit is not affected by attachment of a heavy power supply cable.</p> <p>Clean the rubber intermediate wheel with a cloth, or scrape driving surface lightly to remove any foreign matter.</p> <p>Should intermediate wheel have hardened with age, showing cracks on its surface, replace it.</p> <p>Ensure that both fixing grub screws (16) are equally tightened.</p> <p>Make sure that pickup matching circuit is to pickup and amplifier manufacturers' recommendations.</p>  |

| FAULT                                       | CAUSE  | CORRECTION  |
|---|--|---|
| <b>AUTO SWITCH</b>                          |  |   |
| Fails to switch off when record has played. | <ol style="list-style-type: none"> <li>1. Excessive friction on control lever (12).</li> <li>2. Switch-off lever (41) tight.</li> </ol>  | <p>Check that movement of control lever is not restricted and its associated levers are not damaged. Should any lever be damaged, repair or replace it. Grease end of control lever that operates switch lever (42).</p> <p>Check that this lever moves freely between unit plate and lower casting (38). When tail of this lever is moved away from pickup arm, it should return under spring pressure. For switch mechanism to work properly, switch-off lever tail must be square with unit plate. If it has been bent in transit, carefully reshape it.</p> |
| <b>PICKUP TRACKING</b>                      |  |   |
| Stylus fails to track correctly.            | <ol style="list-style-type: none"> <li>1. Dust build-up on stylus.</li> <li>2. Stylus force too low.</li> <li>3. Worn or wrong size stylus.</li> <li>4. Pickup leads pulled tight or trapped in mechanism.</li> <li>5. Pickup arm bias compensator not pivoting freely.</li> </ol> | <p>Remove accumulated dust from stylus.</p> <p>See "Adjustments".</p> <p>Check that stylus is correct for type of record being played. Examine stylus under a magnifying glass and replace if chipped or worn.</p> <p>Make certain that the leads are clear of sides of slot in unit plate and of any other obstruction.</p> <p>Remove compensator and clean its spindle.</p>  |

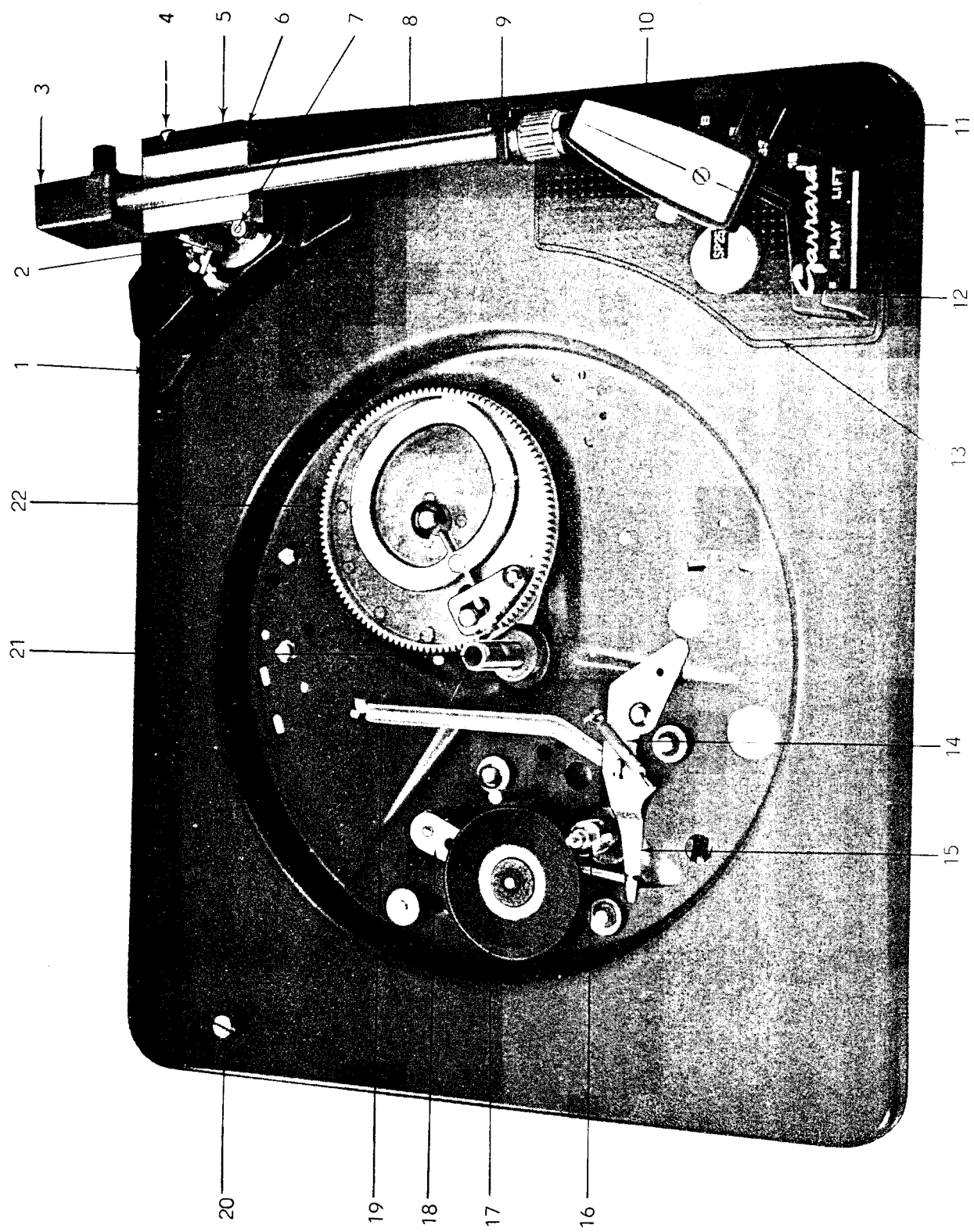


Diagram 8

# SP.25 SPARE PARTS LIST

When Ordering Spare Parts please quote SP. 25, Code Number on Inspection Label, Part Number and Colour if part is enamelled or a moulding.

| Ref. No.                | Part No. | Description  | Ref. No.                | Part No.                     | Description   |
|-------------------------|----------|--|-------------------------|------------------------------|---|
| <b>ABOVE UNIT PLATE</b> |          |  |                         |                              |   |
| 1                       | 71581/02 | Upper Casting Assembly (Note: Later Models as SP.25 Mk II) | 15                      | 71357                        | Tension Lever   |
|                         | 71961    | Bias Compensator Weight                                    |                         | 41723                        | Spring Clip   |
|                         | 70584    | Pivot Pin for Weight                                       | 16                      | 58920                        | Motor Pulley 50 c.p.s. (Nickel)   |
|                         | 40649/02 | Washer for Pin   |                         | 58921                        | Motor Pulley 60 c.p.s. (Brass)  |
|                         | 41868    | Spring Clip for Pin  | 17                      | 44052/01                     | Grub Screw — 6BA  |
|                         | 71591/02 | Cover for Upper Casting                                    |                         | 75625                        | Intermediate Wheel  |
|                         | 71477/05 | Button for Cover   |                         | 40826                        | Fibre Washer under Wheel  |
| 2                       | 70585    | Left-Hand Pivot Screw                                      |                         | 40985                        | Plastic Washer above Wheel  |
|                         | 70845    | Bias Compensator Pin Bracket                               |                         | 43818                        | Spring Clip Retaining Wheel   |
| 3                       | 58595/02 | Counterbalance Weight                                      |                         | 44819                        | Tension Spring for Wheel  |
|                         | 58919    | Screw for Weight   | 18                      | 71545                        | Support Lever   |
| 4                       | 58911    | Pointer  | 19                      | 71824                        | Tension Link  |
|                         | 44135    | Screw holding Pointer                                      | 20                      | 44120                        | Transit Screw   |
|                         | 41099/01 | Locking Nut  | 21                      | 43855                        | Clip for Screw  |
|                         | 71697    | Slider   |                         | 58229                        | Ball Race   |
|                         | 44713    | Stylus Force Spring  | 22                      | 40894                        | Thrust Washer   |
| 5                       | 58902/06 | Pickup Bracket   |                         | 58749                        | Cushion Ring  |
|                         | 58909    | Stylus Force Plate   |                         | 58328                        | Cam Assembly  |
|                         | 40268/01 | Grub Screw   |                         | 58330                        | Cam   |
|                         | 40906    | Locking Screw  |                         | 41788                        | Spring Clip Retaining Cam   |
|                         | 59003    | Pivot Screw  |                         | 58331                        | Pivot Plate   |
|                         | 49504    | Washer   |                         | 58335                        | Trip Pawl   |
| 6                       | 59756    | Right-Hand Pivot Screw                                     |                         | 41723                        | Spring Clips  |
| 7                       | 40240    | Adjusting Screw  | <b>NOT SHOWN</b>        |                              |   |
|                         | 41037    | Nut for Screw  | 71162/01                | Cast Turntable with Mat      |   |
|                         | 44716    | Spring for Screw   | 71042                   | Cast Turntable only          |   |
|                         | 71879    | Cap for Screw  | 71921                   | Mat with Trim Ring           |   |
|                         | 58593    | Pickup Lifting Platform                                    | 70952                   | Trim Ring                    |   |
|                         | 44082    | Screw holding Platform                                     | 71692                   | Steel Disc Turntable         |   |
| 8                       | 71419/01 | Pickup Arm Tube and Body with Wiring                       | 57422                   | Mat for Steel Disc Turntable |   |
|                         | 58896/02 | Body Casting with Ball Races                               | 43834                   | Turntable Retaining Clip     |   |
| 9                       | 71040/01 | Pickup Rest  | 59830                   | Record Spindle               |   |
|                         | 44259    | Screw holding Rest   | 50391/01                | 45 r.p.m. Adaptor            |   |
| 10                      | 58891    | M6 Pickup Shell (for deep cartridges)                      | 71621                   | Turntable Nameplate          |   |
|                         | 70870/01 | M7 Pickup Shell (for shallow cartridges)                   | <b>BELOW UNIT PLATE</b> |                              |   |
|                         | 59048/05 | Cartridge Mounting Accessories for M6 or M7                | 23                      | 70218                        | Speed Cam   |
|                         | 70140    | Red, Green, White or Blue Pickup Shell Lead                | 24                      | 58212                        | Index Bracket   |
|                         | 52002    | Plastic Sleeve for Lead                                    |                         | 71572                        | Index Roller  |
| 11                      | 58271    | Speed Control Lever  |                         | 41848                        | Index Spring  |
|                         | 58273    | Speed Knob   | 25                      | 58209                        | Support Bracket   |
| 12                      | 71590    | Operating Control Lever                                    |                         | 44708                        | Lifting Spring  |
|                         | 58273    | Operating Knob   |                         | 58210                        | Height Setting Blade  |
| 13                      | 71587    | Control Cover  |                         | 41723                        | Spring Clip   |
|                         | 70094    | "Garrard" Motif  | 26                      | 58640                        | Complete Motor (please state voltage range(s) and frequency when ordering Motor or Motor parts). Note that later Models have Plug-in Bobbin Motor, as SP.25 Mk II |
| 14                      | 41503    | Identification Disc  |                         |                              |   |
|                         |          | Tension Spring   |                         |                              |   |

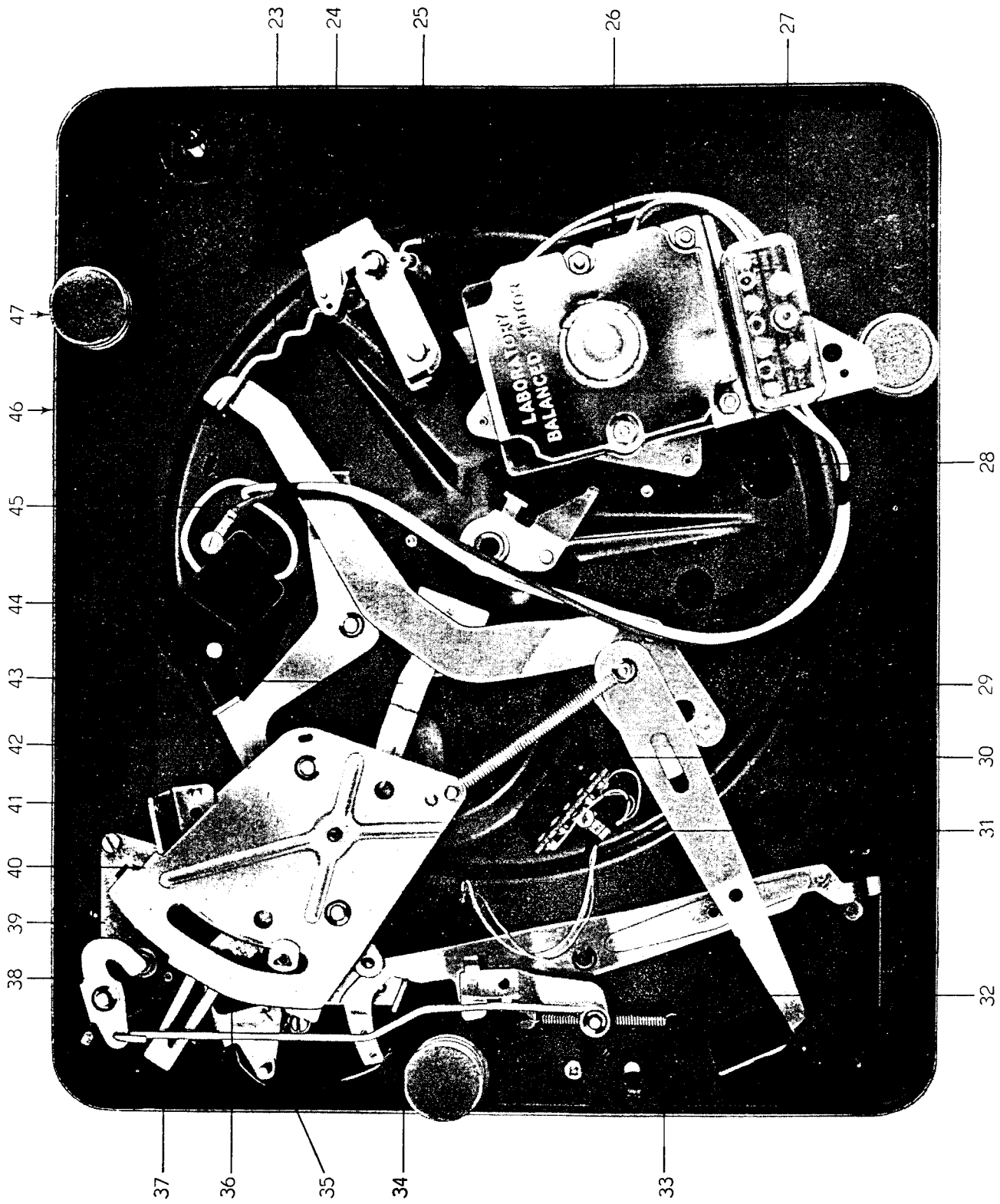


Diagram 9

| Ref. No.    | Part No. | Description                                | Ref. No. | Part No. | Description  |
|-------------|----------|--|----------|----------|--|
| 27          | 58920    | Motor Pulley 50 c.p.s.                     | 39       | 40537    | Washer   |
|             | 58921    | Motor Pulley 60 c.p.s.                     |          | 41723    | Spring Clip  |
|             | 58642    | Mounting Plate with Pillars                |          | 71608    | Cueing Lifting Spindle Assembly (hidden by Cam)  |
|             | 40695    | Washers                                    |          | 71606    | Cueing Lifting Spindle   |
|             | 41723    | Spring Clips                               |          | 71607    | Lifting Arm  |
|             | 41012    | Nut holding Changeover Block Cover         |          | 44851    | Spring   |
|             | 58179    | Block Cover                                |          | 40831    | Washer   |
|             | 44054    | Terminal Screw                             |          | 41772    | Clip retaining Spring  |
|             | 40854    | Washer for Screw                           |          | 71596    | Lower Casting (Note: Later Models with SP.25 Mk II type cueing have Lower Casting as SP.25 Mk II)              |
|             | 54926    | Connector Links                            |          | 44126    | Self-Tapping Screws  |
|             | 54981/01 | Changeover Block Body with Terminal Screws | 40       | 44154    | Self-Tapping Screw   |
|             | 51333    | Insulating Plate                           |          | 73272    | Pickup Cam   |
|             | 40443    | Mounting Pillar                            | 41       | 41723    | Spring Clip  |
|             | 41012    | Nuts for Pillar                            |          | 58290    | Switch-Off Lever   |
|             | 57548    | Mounting Bracket                           | 42       | 44825    | Spring   |
|             | 40085    | Screws holding Bracket                     |          | 58310    | Switch Lever   |
|             | 42501    | Spring Washer                              | 43       | 41723    | Spring Clip  |
|             | 41012    | Nut  |          | 72681    | Auto Stop Link   |
|             | 43000    | Solder Tag                                 |          | 58315    | Collar   |
|             | 40515    | Spring Washer                              | 44       | 44133    | Self-Tapping Screw   |
|             |          |  |          | 70548/03 | Complete Switch with Leads   |
|             |          |  |          | 58277    | Switch Body  |
|             |          |  |          | 58280    | Plunger  |
|             |          |  |          | 58959    | Resistor   |
|             |          |  |          | 58960    | Capacitor  |
|             |          |  |          | 59355    | Switch Blade   |
|             |          |  |          | 58398    | Contact Plate  |
|             |          |  |          | 58731    | Switch Cover   |
|             |          |  |          | 40228    | Screw  |
|             |          |  |          | 42526    | Spring Washer  |
|             |          |  |          | 41008    | Nut  |
|             |          |  | 45       | 53110    | Earthing Lead with Tags (Note: Earth Lead as SP.25 Mk II when Plug-in Bobbin Motor fitted)                     |
|             |          |  | 46       | 71520    | Unit Plate with Pins, Bushes, etc. (Note: Later Models with SP.25 Mk II cueing have Unit Plate as SP.25 Mk II) |
|             |          |  | 47       | 44752    | Mounting Spring  |
|             |          |  |          | 70447    | Damping Pad  |
|             |          |  |          | 71724    | Damping Fluid  |
|             |          |  |          |          | <b>For some requirements items 27A and 31A replace items 27 and 31.</b>  |
| 28          | 43129    | Motor Mount                                | 27A      | 59001    | Power Supply Socket  |
| 29          | 58274    | Speed Lever                                |          | 59310    | Socket Insulation Plate  |
| 30          | 43821    | Spring Clip                                |          | 44154    | Self-Tapping Screw   |
| 31          | 44715    | Spring                                     | 31A      | 58999    | Line Cord with Jack, Plug and Grounding Lead   |
|             | 58356    | Pickup Lead Tag Strip                      |          | 59028    | Grey Phono Lead  |
|             | 44126    | Self-Tapping Screw                         |          | 59029    | Brown Phono Lead   |
|             | 43063    | Tag holding Leads                          |          | 59611    | Twin Phono Sockets   |
|             | 71677    | Cueing Lever                               |          |          |  |
| 32          | 40537    | Washer                                     |          |          |  |
|             | 41723    | Spring Clip                                |          |          |  |
| 33          | 71138    | Return Spring                              |          |          |  |
| 34          | 52417    | Rubber Sleeve                              |          |          |  |
| 35          | 71605    | Cueing Link                                |          |          |  |
|             | 71681    | Pickup Lever                               |          |          |  |
|             | 44711    | Overload Spring                            |          |          |  |
|             | 43200    | Ball                                       |          |          |  |
| 36 (hidden) | 44850    | Pickup Lifting Spindle                     |          |          |  |
|             | 40514    | Coil Spring                                |          |          |  |
|             | 41985    | Washer                                     |          |          |  |
| 37          | 58348    | Friction Spring                            |          |          |  |
|             | 41723    | Friction Link                              |          |          |  |
| 38          | 71610    | Spring Clip                                |          |          |  |
|             | 71601    | Cueing Cam                                 |          |          |  |
|             | 40105    | Pillar                                     |          |          |  |
|             | 42558    | Screw                                      |          |          |  |
|             |          | Shakeproof Washer                          |          |          |  |

Note: On later Models item 27 is replaced by Loom Assembly, as SP.25 Mk II



# Model SP.25 Mk II Single Record Playing Unit

The Garrard Model SP.25 Mk II Single Record Playing Unit is an improved version of the original Model SP.25.

The main differences between the two models are that the Mk II has a dial stylus force adjustment instead of a slide, the pickup arm counterbalance weight is resiliently mounted, and the most significant factor for the service engineer is that the original cueing device has been modified to improve its operation. In addition there are styling changes and the electric motor has plug in connectors.

The two units are similar and except where stated on this sheet the information given in the Engineers Manual for the model SP.25 will also apply to the Model SP.25 Mk II.

## Model SP.25 Mk II Single Record Playing Unit


The stylus force adjustment is made by turning the calibrated dial located on the right hand side of the pickup arm pivot. To set or check the stylus force, free the pickup arm from its rest then set the dial to indicate O. Adjust the position of the pickup arm counterbalance weight by loosening the screw holding it and move the weight until the arm is in balance. Tighten the screw holding the weight then turn the dial so that it indicates the stylus force recommended by the manufacturer of the pickup cartridge fitted.

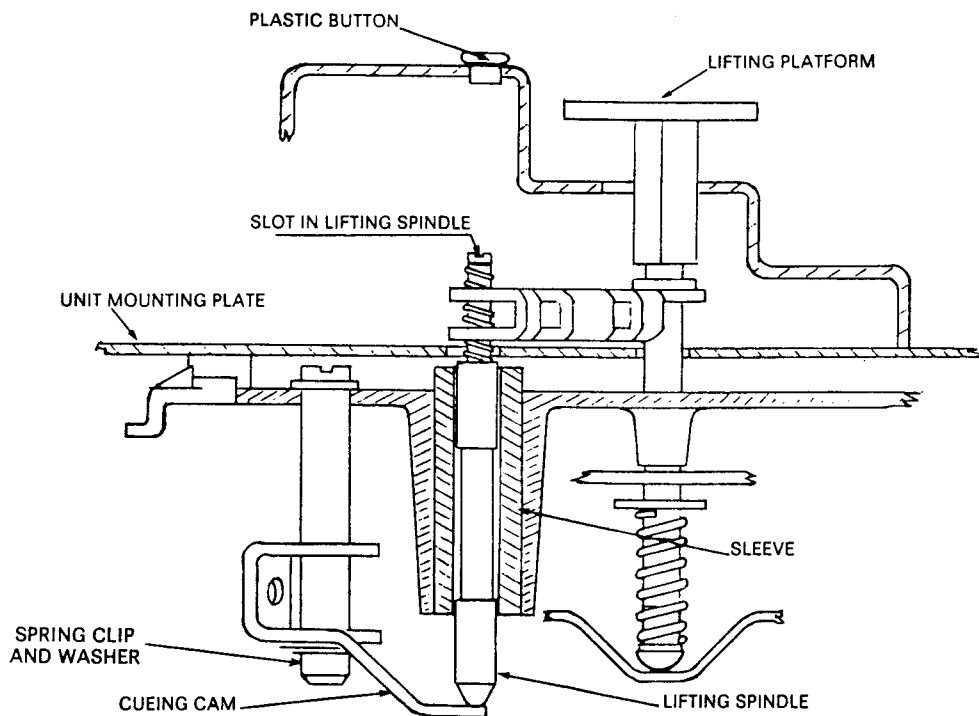
## Cue and Pause Mechanism

The lowering of the pickup arm by means of the cue and pause control is damped by means of a special high viscosity grease between the bearing surfaces of the lifting spindle and the sleeve on which it slides.

Normally the original charge of special grease should last for a long period of use, but if for any reason the damping action of the grease fails as it will if ordinary lubricating oil is used on the piston, the original charge of high viscosity grease should be replaced.

To do this first disconnect the power supply and remove the spring clip and washer from the control end of the link operating the cueing. Disconnect this link from the control end and turn the exposed cam so that the lifting spindle is accessible.

Press down the lifting platform and remove plastic button. Insert a screwdriver in the exposed hole and locate it in the slot of the lifting spindle. Turn the spindle  until it can be removed from the lower end of the sleeve. Leave screwdriver in sleeve to hold bracket in position. Thoroughly clean the spindle then apply a thin coating of special Garrard damping fluid, available from our Spares Department, to the two larger diameters. Refit spindle and reconnect link. Reset height of pickup arm as instructed in Manual.



# Model SP.25 Mk II Spare Parts List

Spare Parts for the Model SP.25 Mk II are identical with those on the Model SP.25 with the differences listed below

| Part No.  | Description                                   | Replaces        |
|-----------|---|-----------------|
| 73265     | Upper Casting and Lifting Platform Assembly   | 71581 and 58593 |
| 73218     | Lifting Platform                              | 58593           |
| 43860     | Spring Clip                                   | New Part        |
| 72178     | Pickup Bracket Assembly                       | 58902           |
| 74505     | Marker Plate                                  | New Part        |
| 72185     | Stylus Force Adjusting Dial                   | New Part        |
| 72186     | Disc  | New Part        |
| 72173     | Pickup Arm Tube and Body with wiring          | 71419           |
| 72501     | Pickup Rest Assembly                          | 71040           |
| 70870/040 | M 7 Pickup Shell                              | 70870/01        |
| 72506     | Speed Control Lever with Knob                 | 58271           |
| 73294     | Operating Control Lever with Knob             | 71590           |
| 72499     | Control Cover                                 | 71587           |
| 73293     | Decor Plate                                   | New Part        |
| 71824     | Tension Link                                  | 58568           |
| 43855     | Transit Clip                                  | 41977           |
| 60350     | Complete Motor                                | 58640           |
| 60369     | Voltage Changeover Block with Terminal Screws | 54981           |
| 40367     | Screw securing c.o. block to bracket          | New Part        |
| 60362     | Mounting Bracket                              | 57548           |
| 44126     | Screws holding Bracket                        | 40085           |
| 70329     | Pickup Lever Unit                             | 71681           |
| 44928     | Overload Spring                               | 44711           |
| 44930     | Lifting Spindle Spring                        | New Part        |
| 58348     | Friction Link Unit                            | 70866           |
| 71584     | Cueing Lifting Spindle Unit                   | 71608           |
| 71583     | Cueing Lifting Spindle                        | 71606           |
| 43818     | Circlip                                       | New Part        |
| 73269     | Lower Casting                                 | 71596           |
| 73272     | Pickup Cam Unit                               | 58317           |
| 72681     | Auto Stop Link Unit                           | 71051           |
| 60365/003 | Loom Assembly and Suppressor                  | New Part        |
| 60236     | Capacitor                                     | 58960           |
| 60363     | Switch Blade Unit                             | 59355           |
| 60391     | Earthing Lead                                 | 53110           |
| 73254     | Unit Plate with pins, bushes, etc.            | 71520           |