

# Service Manual

## SFM 76

**KLH RESEARCH AND DEVELOPMENT**  
A Division of The Singer Company  
30 Cross Street, Cambridge, Massachusetts 02139

## *Garrard* MODEL 5300 RECORD CHANGER



### Adjustments

When a unit is installed or if a pickup cartridge is to be newly fitted or changed, it may be necessary to check or adjust the pickup arm settings. Before making adjustments, disconnect the power supply and protect the pickup stylus. If necessary, operate the controls and rotate the turntable clockwise by hand to actuate the cycling mechanism.

#### **Pickup Lowering Position Adjustment**

This adjustment governs the radius at which the pickup lowers on to a record when on automatic play, also the correct positioning of the pickup over its rest. If adjustment is necessary — such as to prevent the pickup from lowering on to the top of the slope of the groove guard on the edge of some records — then make the adjustment when the stylus is just above the record surface.

Turn screw C in diagram 2 clockwise to move the pickup arm inwards and counterclockwise to move it outwards.

#### **Pickup Lift Adjustment**

This adjustment controls the height to which the pickup lifts on automatic play and normally should be set so that the stylus tip clears an 1/8" thick stack of records on the turntable as the pickup arm return to its rest. If an extra deep cartridge is fitted this setting may need to be adjusted so that the top of the pickup shell clears the underside of a record on the record spindle step, and not so many records will be able to be played in automatic sequence. Turn nut E in diagram 2 clockwise to decrease or counterclockwise to increase pickup height.

#### **Stylus Force Adjustment**

Stylus force should be set within the range recommended by the cartridge manufacturer, which for Model 5-300 should not be less than 2 grams.

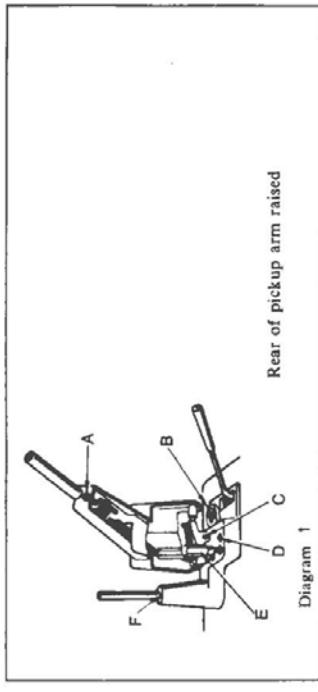
If adjustment is necessary turn screw A in diagram 2 clockwise to decrease or counterclockwise to increase stylus force. The anchorage of the stylus force spring beneath the arm can also be adjusted should extra adjustment ever be required. Check force with a Stylus Force Gauge.

#### **Bias Compensator Adjustment**

Turn the bias compensator adjustment button (B) to the figure which suits the previously applied stylus force.

#### **Pickup Cueing Height**

The height the pickup is raised depends on how much the cue and pause control is lifted, but with the control fully lifted this height must not be greater than when the pickup lifts automatically. If necessary, turn screw (D) clockwise to increase pickup cueing height, counterclockwise to lower.



# Dismantling

To remove 5300 sub-plate. (Numbers in brackets refer to exploded view.)

1. Withdraw overarm (2) — the overarm can be withdrawn completely when swung parallel with rear of unit and its spring clip removed.
2. Remove turntable (83) — note plastic retaining clip (84) beneath centre disc (85).
3. Unplug loom (98) from motor bobbin — pull plug from socket while carefully wedging thin screwdriver blade between faces to unlock pip location.
4. Disconnect pickup lead connections at tag strip (130) — usually push-on or crimped tags. Also remove any tape holding leads.
5. Remove pickup arm pivot nut (15) and washer (16) then withdraw pickup arm (4) — note path of pickup leads (8).

6. Remove plastic height adjusting nut (26) and self-tap screw (19) holding pickup base cover (21), then take off cover (21).

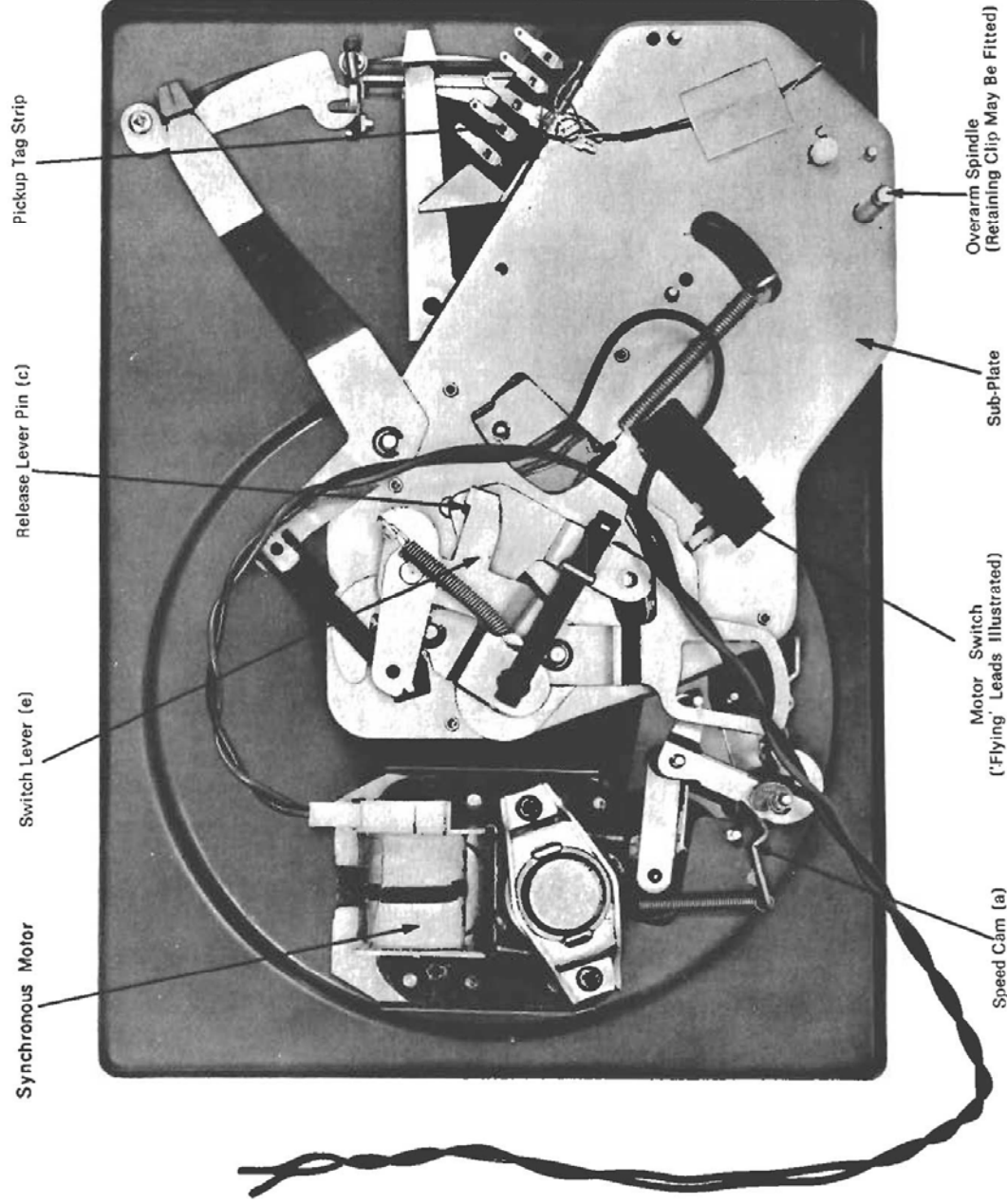
7. Remove self-tap screw.

8. Remove spring clip (102) to disconnect operating control lever (55).

9. Carefully disconnect forked control link (56) from operating control lever (55).

10. Remove the two 4BA nuts (68) holding the sub plate and carefully withdraw the sub plate (43) and mechanism.

When reassembling the sub-plate and mechanism, make sure that the intermediate wheel withdraw pin on support bracket assembly (113) comes inside the cam ring on switch lever unit (52). Also check that the locating pip on record size selector lever (28) will pivot the selector index lever attached to pickup base assembly.



Letter Suffixes Refer To  
Lubrication Chart Index

**FAULT**

**CAUSE**

**CORRECTION**

**TURNTABLE SPEED**

Turntable fails to start or runs slowly when switched on.

1. Oil or dirt on driving surfaces.
2. Faulty intermediate wheel spring (112).

1. Remove turntable and clean inside of rim, periphery of intermediate wheel (78) and motor pulley (65).

2. Check that tension spring (112) is anchored to the unit plate and support bracket assembly (113). When the operating control is turned to "Manual", spring (112) should pull the support bracket assembly into engagement with motor pulley (65). If it does not, and the tapered pin beneath the support bracket assembly (113) is not found to be bent, replace spring (112).

3. Pivots on support bracket assembly (113) not free.

3. Wheel (78) should engage motor pulley (65) firmly when the unit is switched on and retract when switched off. Lubricate the two pivot spindles on the support bracket assembly if they appear to be tight. Replace the support bracket mechanism if damaged.

4. No power supply.

4. Remove plug (99) from motor (65), switch on and check with voltmeter. If no reading, check back to source outlet, looking for loose connections, faulty switch contacts, etc.

5. Faulty motor coil.

5. Remove plug (99) from motor (65) to check continuity of coil with an ohm-meter. Replace motor if necessary.

6. Bearings of motor out of line.

6. If the rotor shaft is tight, tap the motor body with a small block of wood such as a screwdriver handle to realign bearings. Use only fine machine oil such as used for sewing machines on these bearings.

7. Intermediate wheel (78) height set incorrectly.

7. Set as described under "Maintenance" and Diagram 5.

8. Bearings not free.

8. Check motor (65) intermediate wheel (78) and turntable bearings for free running. See lubrication section under "Maintenance".

Record speed varies (Wow and Flutter).

1. Various.

1. See "Turntable Speed" above, Causes and Corrections 1, 7 and 8.

2. Warped records in stack causing slipping.

2. It is not advisable to play badly warped or dished records automatically, although small strips of adhesive tape on their labels may help adjacent records to key together.

3. Damaged rotor shaft of motor (65).

3. Replace motor (65).

4. Flats on driving surface of intermediate wheel (78).

4. If running the unit for a while does not cure the fault, replace the wheel (78). (Do not switch the unit off from the power supply before it has stopped automatically, as the unretracted wheel (78) may form flats.)

# FAULT CHART

THE UNIT SHOULD BE DISCONNECTED FROM ITS POWER SUPPLY AND THE STYLUS PROTECTED BEFORE MAKING SERVICE ADJUSTMENTS. NUMBERS IN BRACKETS REFER TO THE EXPLODED VIEW.

FAULT	CAUSE	CORRECTION
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## RECORD DROPPING

Records fail to drop.

- |  |  |
|--|--|
| 1. Damaged record spindle.                                     | 1. Remove spindle and check that its record pushing pawl moves freely. If not, replace spindle.  |
| 2. Moulding flash or label paper in centre hole of new record. | 2. Remove carefully with a penknife.   |
| 3. Non-standard records.                                       | 3. L.P. records with oversized centre holes, or more than .090" thick at the centre hole may fail to drop. Play them manually.               |
| 4. Spring blade (48) not positioned correctly.                 | 4. Check that the end of spring blade (48) applies pressure to the bottom of the record spindle pawl.  |
| 5. Record spindle not seated properly.                         | 5. Make sure that the spindle is located firmly by the clip (84).<br>Never attempt to fit or remove the record spindle during an auto cycle. |

Two or more records drop together.

- |                            |  |
|----------------------------|--|
| 1. Damaged record spindle. | 1. Check that both the latches at the top of the record spindle move up and down freely. If necessary straighten and clean but do not oil them. Replace spindle if faulty. |
| 2. Tight overarm.          | 2. Check that the overarm steadies a stack of records on the spindle step. Apply a spot of oil at point (F), Diagram 1 if the overarm is tight.                            |
| 3. Non-standard records.   | 3. L.P. records less than .053" thick at centre holes. Play them singly.   |

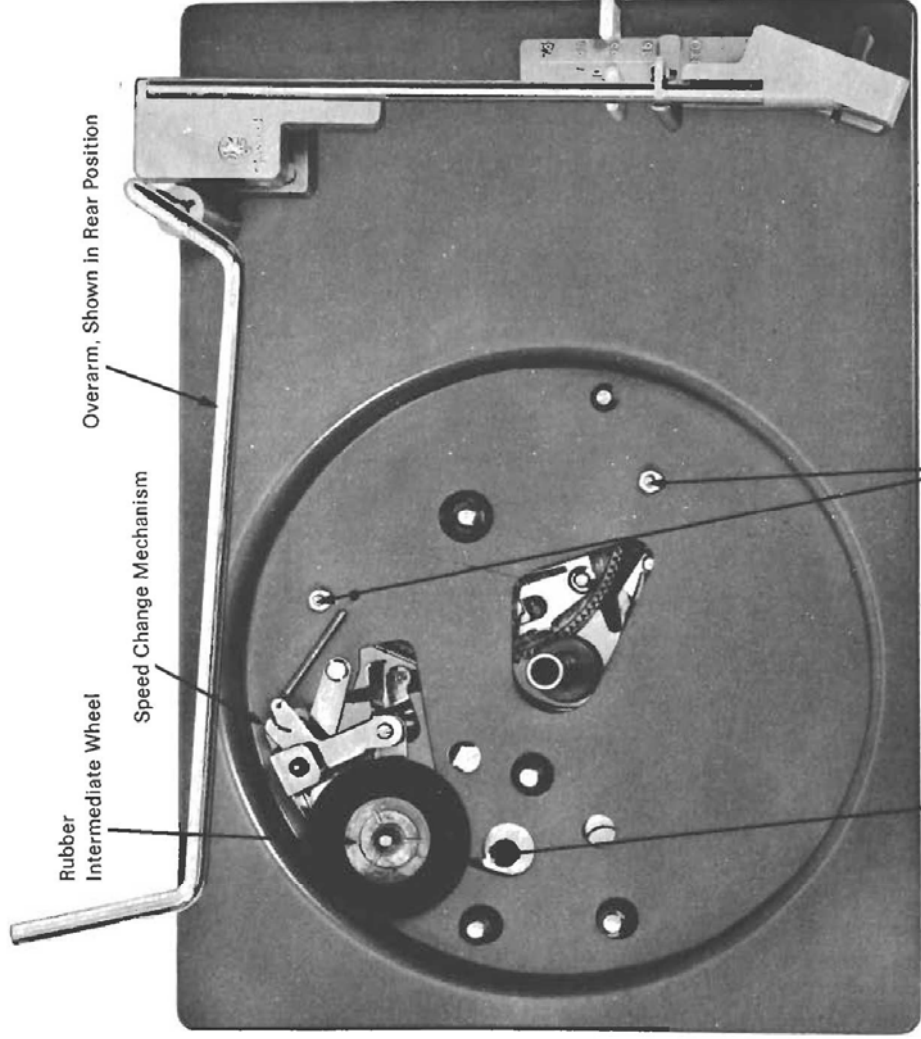
## PICKUP ARM MOVEMENT

Pickup tracks incorrectly.

- |  |   |
|--|---|
| 1. Stylus force too low.                         | 1. Check that the force is not lower than that recommended for the cartridge. Adjust if necessary — see "Stylus Force Adjustment".  |
| 2. Dust accumulated around stylus tip.           | 2. Clean carefully.   |
| 3. Worn or wrong size of stylus tip radius.      | 3. Replace stylus.  |
| 4. Pickup leads tight or trapped at rear of arm. | 4. Make sure leads are slack and check that they are not caught in or touching mechanism below the unit plate.  |
| 5. Groove guard on record (raised rim).          | 5. If the stylus lands too far out it may slide down the slope of the raised rim on certain records and jump the first playing grooves. Reset pickup lowering position so that it lands further in (see "Adjustments"). |
| 6. Linkage not free.                             | 6. Check that the pickup lever on pickup base (105) is not restricted while the pickup arm tracks a record.   |

FAULT	CAUSE	CORRECTION
7. Pickup bearings not free.	7. Neither the pickup bearings for vertical movement nor the horizontal movement bearing should require attention. Check, however, that with the arm unclipped and out of cycle there is free movement when the arm is moved up and down and sideways. If tight, carefully spring off the rear moulding (6) from its pivot bracket and check that there is no dirt on the pivots or the bearing holes. Check, too, that spring (40) exerts a light pressure, lifting the pickup vertical pivot spindle — when the arm is pressed over this spindle there should be some movement against spring (40). If not, check lower bearing (42) is square in sub-plate (43).	
8. Body of pickup cartridge (119) touches record.	8. Make sure any cartridge fixing screws are secure and that cartridge bracket or clip-in plates are assembled correctly.	
Pickup arm fails to leave rest.	<ol style="list-style-type: none"> <li>1. Damaged trip pawl on main cam (93).</li> <li>2. Damaged friction lever on main cam (93).</li> </ol>	<ol style="list-style-type: none"> <li>1. Reshape vertical lug or replace cam assembly (93).</li> <li>2. Check that the lug on friction lever going through main cam (93) is square. See Diagram 4.</li> </ol>
Pickup arm fails to lift and cycle at end of record, or the arm lifts too soon.	<ol style="list-style-type: none"> <li>1. Damaged trip pawl or friction lever on main cam (93).</li> <li>2. Pickup arm lowering position set wrongly.</li> <li>3. Pickup pivot spindle on pickup base (105) set to wrong angle.</li> <li>4. Non standard record.</li> </ol>	<ol style="list-style-type: none"> <li>1. As Corrections 1 and 2 under "Pickup arm fails to leave rest" above.</li> <li>2. Check lowering position — see "Adjustments" section.</li> <li>3. The cast adjusting bracket on the pickup arm is located on flats on the pickup pivot spindle. If the flats are set at the wrong angle, the pickup base assembly (105) should be replaced.</li> <li>4. "Reject" at end of record.</li> </ol>
Pickup arm lands on record too far in or out.	<ol style="list-style-type: none"> <li>1. Lowering position incorrectly set.</li> <li>2. Pickup bearings not free or spring (10) weak.</li> </ol>	<ol style="list-style-type: none"> <li>1. See under "Adjustments".</li> <li>2. Check pickup bearings as Correction 7 under "Pickup tracks incorrectly". Check that when the pickup arm is moved horizontally into the turntable centre by hand, spring (10) acting as an overload spring, will draw the arm back so that screw (20) comes up against the stop face of the cast anchor bracket for spring (10) If spring (10) is weak, replace it.</li> </ol>

Note: Fault Chart continued on Section 2.



Motor Pulley  
Nuts Holding Sub-Plate

Diagram 3

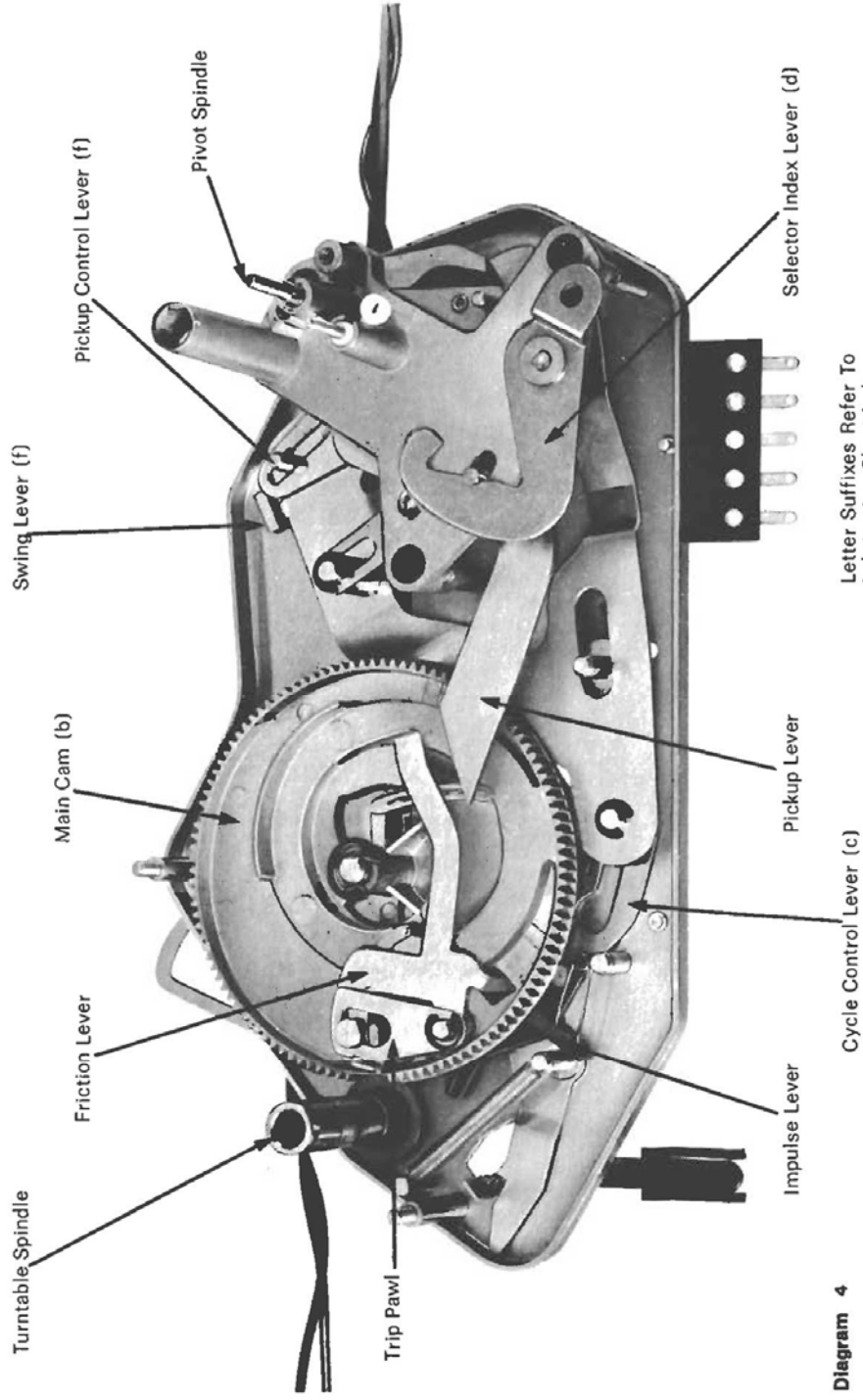


Diagram 4

Letter Suffixes Refer To  
Lubrication Chart Index

## Maintenance

To obtain best results from records, store and clean them 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.

Disconnect the power supply and protect the stylus before carrying out maintenance. Numbers in brackets refer to the exploded view.

### To Remove Turntable

Withdraw the record spindle and carefully take out the centre disc from the turntable mat, then remove the turntable retaining clip, noting the location, and lift off the turntable. (Raise one side of the plastic clip when removing it, rather than opening it out to the retaining groove diameter, so that strain is avoided.)

### The Overarm

The overarm must lower freely when swung to its "in" position, so that it steadies records stacked on the record spindle. If the overarm is stiff, apply a spot of oil to the overarm spindle — see Diagram 2

### Lubrication

The oil retaining bearings of the motor and intermediate wheel (78) and the glass filled nylon bearing of the turntable rarely need lubricating. When the need is apparent, remove the turntable and lubricate these bearings and the turntable ball race (59) with a spot of fine grade machine oil. Carefully remove any excess, particularly from the motor pulley, intermediate wheel (78) and inside turntable rim by wiping these driving surfaces with a clean cloth.

If stiffness of operation becomes noticeable, pivot points such as pivot pins, spindles, rollers and spring anchors, also working faces can be lubricated sparingly with fine oil or thin grease, if appropriate.

More specifically, grease as follows. Letters (a) to (f) refer to diagrams 4 and 2:

- (a) Both sides of speed cam (22) and where it bears on unit plate and support bracket (113)
- (b) Track of main cam (93).
- (c) Edge of cycle control lever (61) where it contacts release lever pin (50), also top face of keyhole slot in cycle control lever.
- (d) Cam profile of selector index lever on top of pickup base assembly (105)
- (e) Cam face and bearing faces of switch lever (52) and control catch on sub plate (43) where switch lever unit engages.
- (f) Pin in swing lever (38) running in cam slot of pickup control lever on pickup base (105) also where swing lever (38) bears on sub-plate (43) and lifting incline of swing lever.

Also apply a smear of petroleum jelly to the sliding faces of the switch plunger (46), if required.

Avoid getting grease between the working surfaces of the switch-off lever (37) and sub-plate (43).

### Speed

Speed variation may be caused by warped records slipping on one another. If so, play singly or put a small piece of adhesive tape on record labels to improve drive. Check that there is no lubricant on the driving surfaces of the motor pulley, intermediate wheel or turntable causing the drive to slip. Check, too, that the rubber intermediate wheel height is set correctly to the appropriate motor pulley step without rubbing the side of the adjacent step. Adjust the height setting if necessary — see Diagram 5.

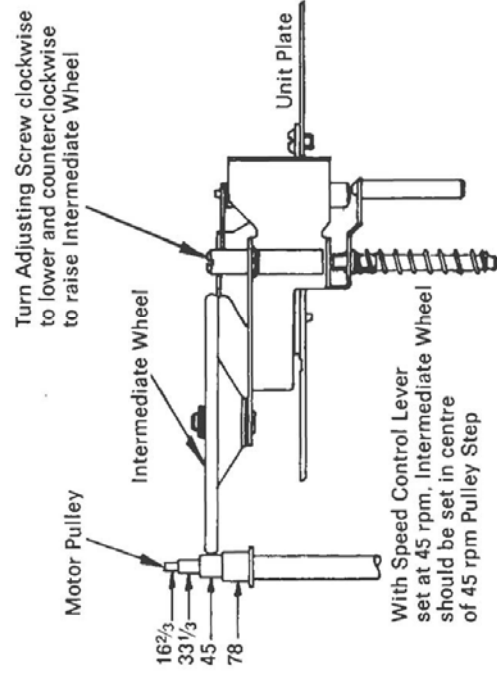


Diagram 5

### Motor

If speed is consistently fast or slow, check that the power supply details marked on the motor correspond to the power supply.

If the motor fails to start, check the power supply to the motor, then with the power supply disconnected check the connections to the switch and motor, making sure they are secure, with the plug-in bobbin lead firmly in its socket.

# Operating Instructions

## TO OPERATE THE CUEING LEVER

1. Swing to the right the clamp that locks the tonearm to its rest.
2. Raise the cueing lever until it hits its stop. The tonearm will lift off its rest.
3. Move the tonearm toward the record until the stylus is over the lead-in grooves or the band you have selected to play. The cueing notch on the plastic stylus assembly and tonearm headshell will permit you to place the stylus exactly over the portion of the record you wish to play.
4. Lower the cueing lever until it hits its stop. The tonearm will "float" down to the record.
5. To lift the tonearm off the record, raise the cueing lever until it hits its stop.
6. Move the tonearm over its rest and lower the cueing lever until it hits its stop.
7. The tonearm will settle on its rest.

## TO PLAY RECORDS AUTOMATICALLY

1. Set the record size selector for the diameter of the records to be played (7", 10" or 12").
2. Set the speed control to the proper record speed (16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 or 78 rpm).
3. Make sure the overarm is at its center position, over the spindle socket. Gently lower it until it hits its stop.
4. Make certain that the turntable is not in any phase of its automatic operation by sliding the operating switch to AUTO and returning it **immediately** to MAN. Wait for the tonearm to return to its rest and for the unit to shut off.

**NOTE:** If the turntable is in any phase of its operation, the automatic spindle may not seat properly in its socket.

5. Lift the overarm by its black fingerlift at the pivot post, and swing it to the right until it hits its stop.
6. Insert the automatic spindle into its socket at the center of the turntable by rotating it until the flat at the base of the spindle faces the turntable control panel (see spindle diagram on page 11 ), and press down **firmly** until it snaps into place.

**NOTE: The automatic spindle must be seated correctly for proper operation of the changing mechanism. If the automatic spindle is not correctly seated, records will not drop and the tonearm mechanism will not operate reliably.**

7. Place a stack of up to 8 records on the spindle, letting them rest on the notch of the spindle. A full record stack should fit on the spindle so that the surface of the top record is flush with or slightly below the top of the spindle. Do **not** stack records above the top of the spindle.
8. Lift the overarm by its black fingerlift at the pivot post, swing it toward the center of the turntable, over the spindle, and gently lower it onto the stack. The overarm will stabilize the record stack.

**NOTE:** If the overarm is not moved to its center position, over the record stack, the record dropping mechanism will not operate reliably, records may drop at random onto the tonearm while it is playing a record, and damage to both the stylus and the record will be caused.

9. Swing to the right the clamp that locks the tonearm to its rest.
10. Slide the operating switch to AUTO, and let the first record drop onto the turn-

table platen. Both the automatic turntable and amplifier will be energized regardless of the position of the POWER switch on the operating controls panel.

11. The turntable will automatically drop and play the succeeding records on the stack and will shut off after the last record has been played.

**NOTE:** Please remember that the POWER switch **must** be left in the up or off position for the entire system to turn off automatically after the last record has been played (see the section "Operating Controls Panel" for the function of the POWER switch).

## TO REJECT A RECORD

To reject the record being played, slide the operating switch to AUTO and release it.

## TO STOP PLAYBACK

1. Lift up the tonearm with the cueing lever.
2. Move the tonearm over its rest.
3. Slide the operating switch to OFF and lower the cueing lever until it hits its stop.

## TO RESUME PLAYBACK OF AN UNFINISHED STACK

1. Slide the operating switch to AUTO.
2. The system will be energized, and the bottom record on the stack will drop onto the turntable platen.
3. Playback will resume.

## TO UNLOAD THE TURNTABLE

1. When the automatic turntable has shut off and the tonearm has returned to its rest, lift the overarm by its black fingerlift at the pivot post and swing it to the right until it hits its stop.
2. Lift the records off the turntable platen and the spindle and return them to their sleeves and jackets.

## TO REPLAY THE SAME STACK

1. Lift the overarm by its black fingerlift at the pivot post, and swing it to the right until it hits its stop.
2. Lift the records off the turntable platen and then completely off the spindle.
3. Replace them on the notch of the spindle.
4. Lift the overarm by its black fingerlift at the pivot post, swing it toward the center of the turntable, over the spindle, and gently lower it onto the stack. The overarm will stabilize the record stack.
5. Slide the operating switch to AUTO. The first record will once again drop onto the turntable platen and playback will resume.

**NOTE:** If the record stack is not completely lifted off the spindle and replaced on the notch, more than one record may drop onto the turntable platen per cycle. In some instances, the record dropping mechanism will not operate reliably, records may drop onto the tonearm while it is playing a record, and damage to both the stylus and the record will be caused.

## TO PLAY SINGLE RECORDS AUTOMATICALLY

1. Set the record size selector for the diameter of the records to be played (7", 10" or 12").
2. Set the speed control to the proper record speed (16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 or 78 rpm).
3. Make sure the overarm is at its center position, over the spindle socket. Gently

lower it until it hits its stop.

4. Make certain that the turntable is not in any phase of its automatic operation by sliding the operating switch to AUTO and returning it **immediately** to MAN. Wait for the tonearm to return to its rest and for the unit to shut off.

5. Lift the overarm by its black fingerlift at the pivot post, and swing it to the right until it hits its stop.

6. Insert the manual spindle into its socket at the center of the turntable platen by rotating it until the flat at the base of the spindle faces the turntable control panel (see spindle diagram on page 11). Be sure it is fully seated.

7. Place the record on the turntable platen.

8. Lift the overarm by its black fingerlift, swing it toward the center of the turntable, over the spindle, and gently lower it until it hits its stop.

9. Swing to the right the clamp that locks the tonearm to its rest.

10. Slide the operating switch to AUTO.

11. At the end of the record the turntable will shut off.

12. To reject the record and to shut off the turntable, raise the tonearm with the cueing lever, slide the operating switch to AUTO and **immediately** return it to MAN.

13. Lower the cueing lever until it hits its stop. The tonearm will return to its rest and the turntable will shut off.

## TO PLAY SINGLE RECORDS MANUALLY

1. Set the record size selector for the diameter of the records to be played (7", 10" or 12").
2. Set the speed control to the proper record speed (16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 or 78 rpm).
3. Make sure the overarm is at its center position, over the spindle socket. Gently lower it until it hits its stop.
4. Make certain that the turntable is not in any phase of its automatic operation by sliding the operating switch to AUTO and returning it **immediately** to MAN. Wait for the tonearm to return to its rest and for the unit to shut off.

5. Lift the overarm by its black fingerlift at the pivot post, and swing it to the right until it hits its stop.

6. Insert the manual spindle into its socket at the center of the turntable platen by rotating it until the flat at the base of the spindle faces the turntable control panel (see spindle diagram on page 11). Be sure it is fully seated.

7. Place the record on the turntable platen.

8. Lift the overarm by its black fingerlift at the pivot post, swing it toward the center of the turntable, over the spindle, and gently lower it until it hits its stop.

**NOTE:** The turntable will not shut off and the record will repeat indefinitely unless the overarm is returned to its center position, over the spindle.

9. Slide the operating switch to MAN.

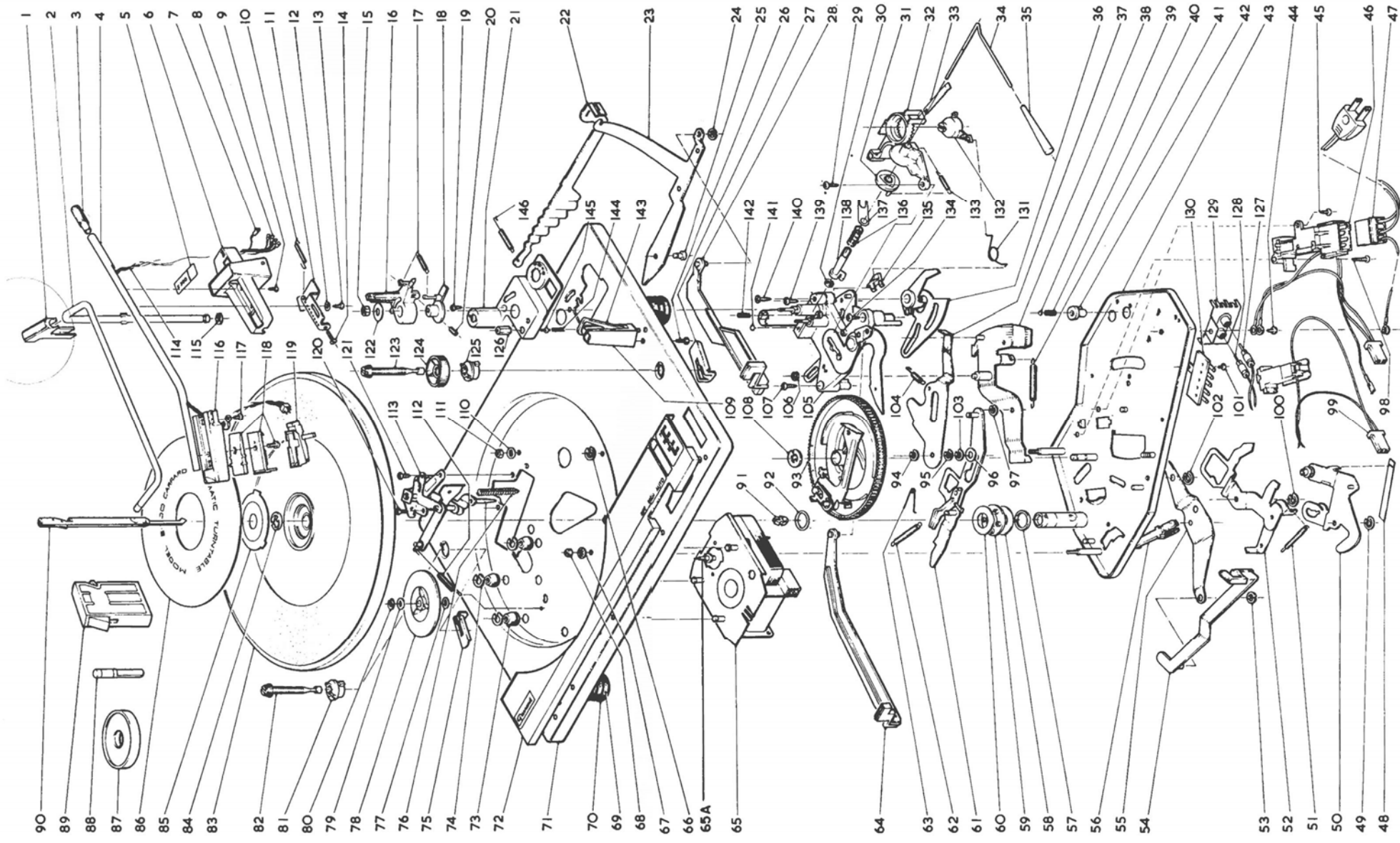
10. Swing to the right the clamp that locks the tonearm to its rest.

11. Lift the tonearm off its rest and place the stylus into the lead-in grooves of the record.

12. At the end of the record, the tonearm will return to its rest and the turntable will shut off.



# GARRARD MODEL 5300 EXPLODED VIEW



## PARTS LIST FOR MODEL 5300

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
1	74826/001	Overarm Trim	50	74013	Release Lever Unit	97	00432/007	Spring Clip
2	74873/001	Overarm Assembly with Trim	51	44420	Spring	98	01577/049	Screw
3	74824/001	Plug for Pickup Arm Tube	52	73997	Switch Lever Unit	99		Plug-in Loom Assembly with switch only (Alternative to Item 46)
4	74813/001	Pickup Arm Tube	53	02664/005	Spring Clip	100	00432/007	Spring Clip
4A	74872/021	Pickup Arm Assembly	54	75772	Operating Control	101		Screw for Terminal Strip
5	75744	Pickup Arm Nameplate	55	74186	Control Lever	102	00432/007	Spring Clip
6	74797/001	Pickup Arm Rear Moulding	56	74011	Forked Control Link	103	00432/007	Spring Clip
7	42946	Pickup Lead Earth Tag	57	58174	Rubber Cushion Ring	104	44421	Spring
8	42946	Pickup Lead Connector Tag (4 of)	58	73975	Thrust Washer	105	75339	Pickup Base Assembly
9	44295	Screw	59	72230	Ball Race	106	00432/007	Spring Clip
10	44494	Stylus Pressure Spring	60	73975	Thrust Washer	107	01144/076	Screw
11	74516	Adjusting Plate	61	73969	Cycle Control Lever Unit	108	00431/024	Spring Clip
12	41218/060	Washer	62	44442	Spring	109	74814/001	Pickup Rest
13	44344	Screw	63	44425	Spring	110	00852/012	Shakeproof Washer
14	01758/222	Stylus Force Adjusting Screw	64	74808/001	Selector Control	111	00451/002	Nut
15	00451/002	Nut	65	60810/013	Motor	112	44411	Idler Wheel Spring
16	74197/001	Pivot Bracket Assembly	65A	60850	50 Cycle Pulley (Brass)	113	73880	Support Bracket Assembly with Item 76
17	44448	Overload Spring		60849	60 Cycle Pulley (Brass)	114	75081/006	Pickup Lead Assembly
18	74198	Adjusting Bracket	66	00432/007	Spring Clip	115	00432/007	Spring Clip for Overarm
19	01577/049	Screw	67	00852/012	Shakeproof Washer	116		Pickup Shell, Pickering 639
20	00525/103	Lowering Position Adjusting Screw	68	00451/002	Nut	117	44297	Screw for Shell
21	74887/001	Pickup Base Cover	69	70447	Damping Pad (3 of)	118		Screw for Cartridge Bracket
22	75448	Speed Cam	70	73542	Mounting Spring with Damping Pad (3 of)	119		Pickering VL5HB/AT2
23	75702	Speed Change Lever	72	75811/001	Control Panel	120	02321/004	Screw
24	02664/005	Spring Clip	73	43129/003	Motor Mount (3 of)	121	02321/004	Screw
25	00290/004	Spring Clip	74	00432/007	Spring Clip for Motor Mount (3 of)	122	41218/017	Washer
26	01577/056	Pickup Rest Screw	75	43855	Tinnerman Clip	123	44360/001	Transit Screw
27	43855	Tinnerman Clip	76	44996	Spring	124	74637	Locking Tool (not supplied with Unit)
28	75773	Speed Change Control	77	41219/005	Fiber Washer	125		Transit Bush
29	01515/006	Screw	78	73891	Idler Wheel	126	75017/001	Pickup Height Adjusting Nut
30	00431/010	Spring Clip	79	41219/010	Plastic Washer	129	73532	Twin Phono Socket Assy. (Alternative to Item 130)
31	74877	Cueing Cam	80	00431/010	Spring Clip	130		Terminal Strip (Alternative to Item 129)
32	74844	Bias Support	81		Transit Bush	131	44468	Bias Torsion Spring
33	44469	Bias Leaf Spring	82	44360/001	Transit Screw	132	74846	Bias Control
34	75272/001	Cueing Lever with Knob	83	74895/002	Turntable & Mat Assembly	133	44471	Cueing Spring
35	73748/001	Cueing Knob	83A	74179/001	Turntable Unit	134	01144/076	Screw
36	74007	Friction Lever Assembly	83B	74759/001	Turntable Mat	135	74848	Bias Spring Anchor
37	73973	Switch Off Lever	84	73935/001	Turntable Clip	136	44470	Cueing Compression Spring
38	73962	Swing Lever Unit	85	73033/005	Turntable Center Disc	137	75033	Isolating Plate
39	43200	Ball Bearing	86	75743/001	Turntable Trim Disc	138	75036	Cueing Arm
40	44431	Spring	88A	59602/021	Manual Spindle and Adaptor Kit	139	01144/076	Screw
41	44423	Spring	88B	72094	Manual Spindle	140	01577/049	Screw
42	73899	Lower Bearing	89	74510	FLRS-45 45 Automatic Spindle	141	72997	Bearing Pad
43	73951	Sub Plate Unit	90	74177	Automatic Record Spindle	142	00525/504	Cueing Adjustment Screw
44	01577/049	Screw	91	74639	Lead Clip	143	74815/001	Pickup Rest Clip
45	01577/066	Screw	92	73139	Rubber Ring	144	44476	Overload Spring
46	60643/025	Combined Sw. & Amp/loom Assy. (alternative to Item 99)	93	73976	Main Cam	145	75018	Lifting Pin
48	74017	Spring Blade	93A	73979	Friction Lever Unit, part of Main Cam Assembly	146	44410	Index Spring
49	00432/007	Spring Clip	94	00432/007	Spring Clip			
			95	00432/007	Spring Clip			
			96	41218/042	Washer			
							74911/001	COMPLETE SUBPLATE MECHANISM

# FAULT CHART (cont'd.)

FAULT	CAUSE	CORRECTION
Pickup keeps on repeating the same record.	<ol style="list-style-type: none"><li>1. Impulse lever tight.</li><li>2. Swing lever (38) not laid flat.</li><li>3. Switch off lever (37) not engaging pickup lever on pickup base assembly (105).</li></ol>	<ol style="list-style-type: none"><li>1. Make sure that the black plastic impulse lever mounted on cycle control lever (61) pivots freely. See Diagram 4.</li><li>2. Check that swing lever (38) is flat against sub-plate (43) over its bearing area and is not twisted.</li><li>3. Make sure that the lug on the end of switch off lever (37) is bent square and makes contact with the side of the pickup lever during auto cycle. Check that the pins on the pickup lever are not bent.</li></ol>
Pickup selects wrong record size.	<ol style="list-style-type: none"><li>1. Bent pin on pickup lever, on pickup base assembly (105)</li></ol>	<ol style="list-style-type: none"><li>1. Make sure that the pins on the pickup lever are square to the lever.</li></ol>
<b>NOISE</b> Rumble heard through speaker(s) while playing a quiet passage.	<ol style="list-style-type: none"><li>1. Rumble on record.</li><li>2. Lack of lubrication of drive mechanism.</li><li>3. Intermediate wheel (78) rubbing against side of motor pulley step.</li><li>4. Driving surface of intermediate wheel (78) dirty, indented or hardened.</li><li>5. Faulty installation.</li><li>6. Worn or dirty turntable spindle bearing (57), (55), (59) and (60).</li></ol>	<ol style="list-style-type: none"><li>1. Check, by playing other records, that a particular record is not at fault.</li><li>2. See lubrication section under "Maintenance".</li><li>3. Adjust the wheel height if necessary. See Diagram 5.</li><li>4. If running the unit for a while and cleaning the periphery of the wheel does not help, replace it.</li><li>5. Check that the unit rests freely on its mountings, if fitted, and that no part of the mechanism is in contact with the mounting board.</li><li>6. Clean rubber cushion ring (57), thrust washers (58) and (60) and ball race (59). Oil the ball race (59). Replace worn bearings or the rubber cushion ring if hard.</li></ol>
Interference heard as crackles, etc., through speaker(s).	<ol style="list-style-type: none"><li>1. Faulty contact in power supply circuit, pickup circuit or earth connection.</li></ol>	<ol style="list-style-type: none"><li>1. Examine all leads and connections for damage and check screws for tightness, also push-on tags. If the switch is faulty, fit a new loom assembly (99).</li></ol>
No sound.	Open circuit in pickup leads.	Check the continuity of the pickup leads from the cartridge to the tag strip. Make sure push-on tags are in position. Disconnect the cartridge before making this check.