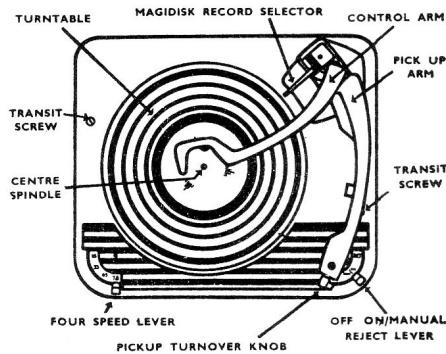




RCA VICTOR



MODEL UA-12

STEREOPHONIC
HI-FIDELITY RECORD CHANGER

MODEL MONARCH UA-12

SERVICE DATA

— 1958 No. 15 —

ISSUED BY

SERVICE DIVISION
RCA VICTOR COMPANY, LTD.
MONTREAL, CANADA

GENERAL DESCRIPTION

The Monarch UA-12 record changers are four-speed mechanisms designed to play, in automatic sequence, a stock of 7", 10" or 12" records, or 10" and 12" records intermixed. The mechanism will shut off automatically after the last record.

SPECIFICATIONS

Turntable Speed	16 $\frac{2}{3}$, 33 $\frac{1}{3}$, 45 or 78 r.p.m.
Record capacity	Up to 14-seven inch
or	12-ten inch
or	10-twelve inch
or	10-ten and twelve inch intermixed

OPERATING INSTRUCTIONS

OPERATION

Loading — Lift the record Control Arm by holding it at the far end (i.e. end furthest away from the Centre Spindle) and then swing it clear of the records. Then, taking each record singly place it on the Centre Spindle resting the first record on the spindle ledge. Hold the record in position with the left hand and load the others with the right hand in the same way. When all records are in position, replace the Record Control Arm over the Centre Spindle. If the records are all of one diameter it may be more convenient to group the ten together, see that the centre holes are all in line and place the group on the Centre Spindle.

Starting Up — Make sure that the pickup stylus is correct, that is either 78 or 33-45 and similarly the Speed Knob. The pick-up is correctly set for 78 r.p.m. records when knob at the front of the pickup is so positioned that the number 78(Std) is upright. To position the pickup for long playing records the numbers 33-45 (LP) must be upright. Move the On/Off Reject Lever fully over to the right and release. The lever will return to the "On" position and the Changer will commence its cycle.

Rejecting — To reject a record, move the On/Off/Manual/Reject Knob to the RIGHT.

When the last record is finished the machine will switch itself off automatically.

Manual Operation — To play records singly on the "Monarch" record changer the following procedure should be adopted. Place required record on the turntable manually and replace Control Arm in its operation position. Turn On/Off/Manual/Reject switch to the 'Manual' position only. The turntable will now revolve at the selected speed. Lift the pickup off its rest and place in position on record. The record will now play and when completed the pick-up will return to rest and the unit will switch off automatically in the normal manner.

TO REMOVE THE RECORDS — Lift the Record Control Arm and turn it out of the way. Grasp the records together and lift them gently from the Centre Spindle, easing them past the ledge on the spindle.

OPERATING INSTRUCTIONS

WHAT TO DO AND WHAT NOT TO DO

1. Never force the Pick-up Arm. This machine is robust but due to the featherweight action of the pickup and the delicate balance required, any force will upset the adjustment.
2. When playing new records a certain amount of fluff will gather on the stylus point. This should be removed gently from time to time.
3. Always remember to use the correct stylus on the Pick-up. If the wrong one is in use it may not be apparent from the music. However, the stylus itself may get

somewhat damaged by continuous playing on the wrong point.

4. After loading always see that the Magidisk Record Selector Arm (152) is out and not stuck in a vertical position. In other words it must be BELOW the records.
5. Some very old 78 r.p.m. records have no "run in" grooves on the outside edge. Such records can be played but it will be necessary to move the Pickup inwards to the first grooves manually AFTER it has descended of its own accord. It will descend and stay stationary in most cases.

ADJUSTMENTS

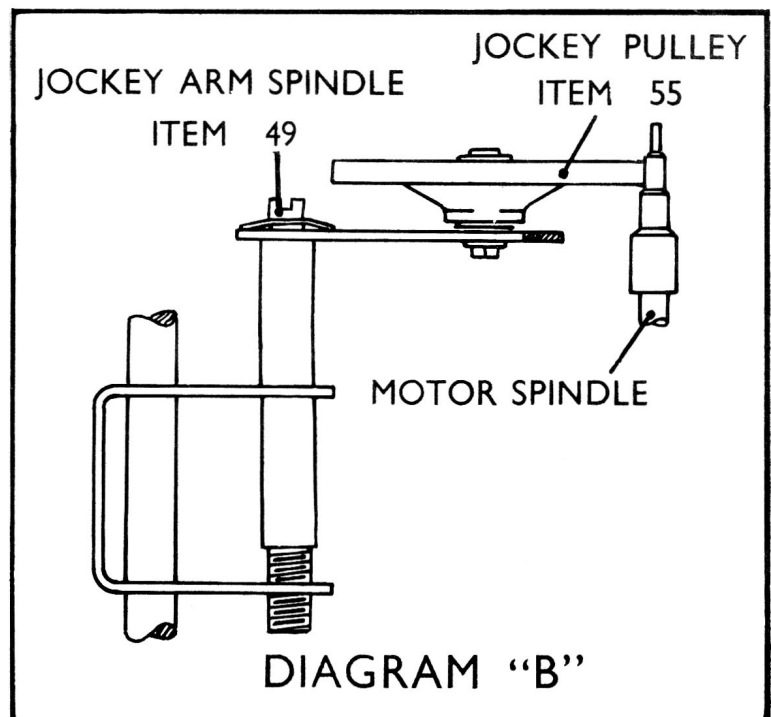
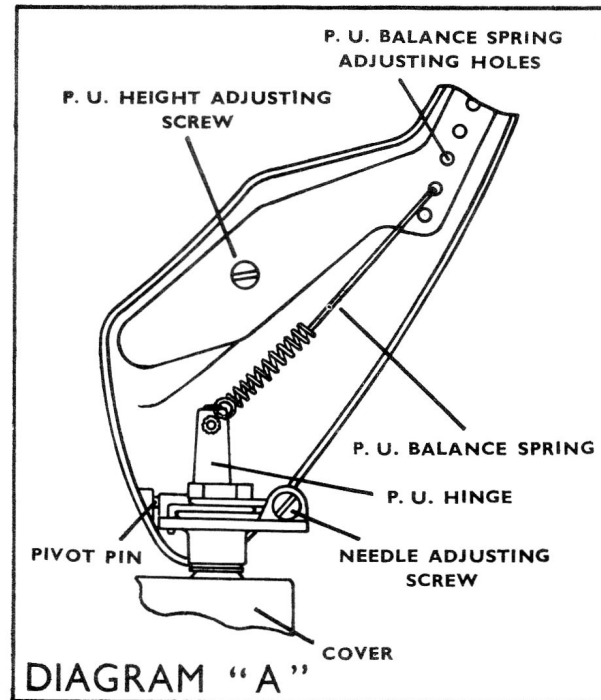
Needle Set-Down. — The Set-down position of the needle on the record is adjusted by means of the Needle Adjusting Screw (Item 227) (see Diagram 'A'). This Screw should be adjusted until the correct set-down of the needle on a 10" record is obtained. The correct position is $\frac{1}{8}$ " from the edge of the record. It is advisable to make this adjustment with a stack of 10" records on the Turntable. When correctly positioned for a 10" record, the 12" and 7" needle Set-down will also be correct.

Pick-up Arm Height.—The Pick-up Arm Height is adjusted by the Pick-up Height Adjusting Screw (Item 230) (see Diagram 'A'). To raise the height of the Pick-up Arm, turn this screw clockwise, and to lower it, anti-clockwise. The Pick-up Height should be adjusted so that when a stack of 10 average thickness records is on the Turntable, the point of the needle clears the top record by $\frac{1}{8}$ ". A check should then be made to ensure that the Pick-up Arm clears the underside of records ledged on the Centre Spindle, and also clears the top of the Pick-up rest.

Needle Pressure.—Adjusting of needle pressure may be made by re-positioning the Pick-up Balance Spring in the various adjustment holes provided (see Diagram 'A') until the correct pressure is obtained.

Adjusting of Speed Change.—

- (1) Remove Turntable (see 'Dismantling').
- (2) Set the Speed Change Lever to 33 r.p.m.
- (3) Using Screw Driver slot provided in Item 49 (see Diagram 'B') adjust the height of the Jockey Pulley until it is just below the first shoulder of the motor spindle as shown in Diagram 'B'. The Jockey Arm Spindle (Item 49) must be turned clockwise to lower the Jockey Pulley and anti-clockwise to raise it.
- (4) Replace Turntable.



DISMANTLING

(1) **Centre Spindle.** In order to remove the Centre Spindle, it is necessary to release the Centre Spindle Retaining Spring (see Diagram 'C') located on the underside of the Unit. The looped end of the spring should be compressed in the direction of the Arrow. It should then be possible to remove the Centre Spindle. To Replace the Centre Spindle, the Control Arm should be swung towards the centre of the Turntable, it will then be possible to lift the arm. The Arm should be raised to its fullest extent and swung towards the edge of the Unit Plate. A Location is provided which will retain the Control Arm in this position. The Centre Spindle may now be inserted in the hole provided at the Turntable centre, making sure that the projection on the side of the spindle locates in the slot at the top of the hole. The spindle will clip permanently into position and the Changer is now ready for operation. *Note.*—Before attempting to raise the Control Arm and fit the Centre Spindle, the Turntable should be rotated five times in a clockwise direction, when the unit is in a horizontal position: this will make sure that the mechanism is in a neutral position.

(2) **Turntable Assembly.** Remove the plastic Turntable Centre Dish (Item 9) by exerting a downward pressure on the ribbed finger pads and turning in a clockwise direction, while the Turntable is held stationary. When the dish has been turned to the Stops (approximately $\frac{1}{4}$ ") it should be lifted off the Turntable and Centre Dish, revealing the Turntable circlip (Item 21). This, in turn, should be removed, and the Turntable lifted vertically upwards over the Centre Spindle. To re-assemble, the above procedure should be reversed. When re-assembling, the mechanism should be in the switched-off condition and set to the 45 speed. It is advisable to push the Jockey Pulley (Item 55) in towards the centre of the Turntable, this allows the Turntable to drop into position without damaging the Jockey Pulley. A light pressure on the Turntable Centre Disk when re-assembling will assist the location in the keyhole slots.

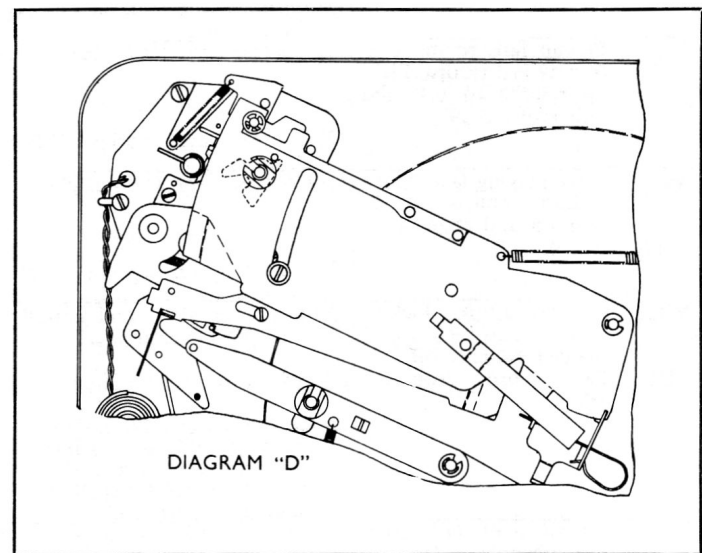
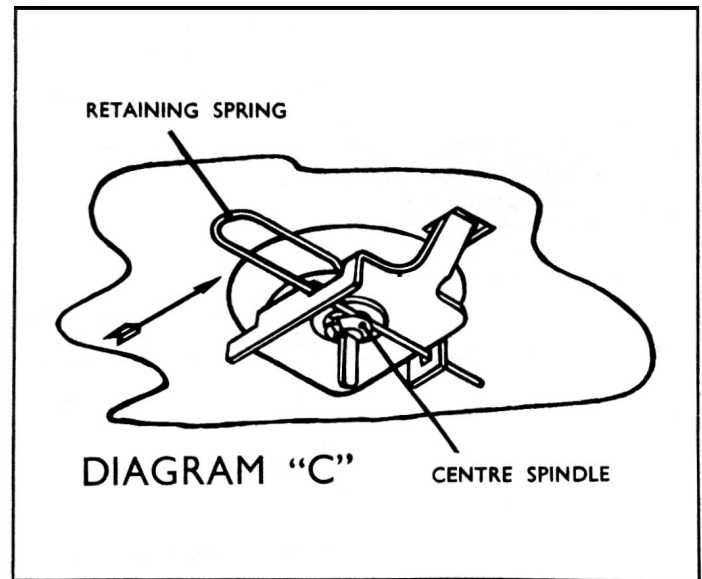
(3) **Control Arm Assembly.** Before attempting this, make sure that the Unit has completed its cycle and the Pick-up has returned to rest. Remove the circlip (Item 158) from the bottom of the Control Spindle (Item 156). The Control Arm Assembly can then be removed from the top of the Unit.

(4) **Pick-up Assembly.** The Unit should be disconnected from the power supply before attempting to remove the Pick-up Assembly. The Pick-up Leads should be detached from the terminals on the underside of the unit, and Pick-up Spindle Nut (Item 159) should be unscrewed, the Pick-up may then be lifted clear. The Pick-up lead should be withdrawn from the hole in the die casting.

(5) **Operating Plate.** The Operating Plate (Item 91) should only be removed or replaced with the Unit in the Switched-off condition; when screw, washer and circlip (Items 103, 102 and 94) have been removed, the Operating Plate may be detached from the Unit. When replacing this, the toggle (Item 86) should be replaced as shown in Diagram 'D'.

(6) **Support Casting Assembly and Selector Housing.** This may be detached by removing the three screws (Items 186, 187 and 198).

(7) **Selector Assembly.** Screw (Item 141) should be removed, together with the cover (Item 142). Selector Assembly may now be withdrawn from the Housing.

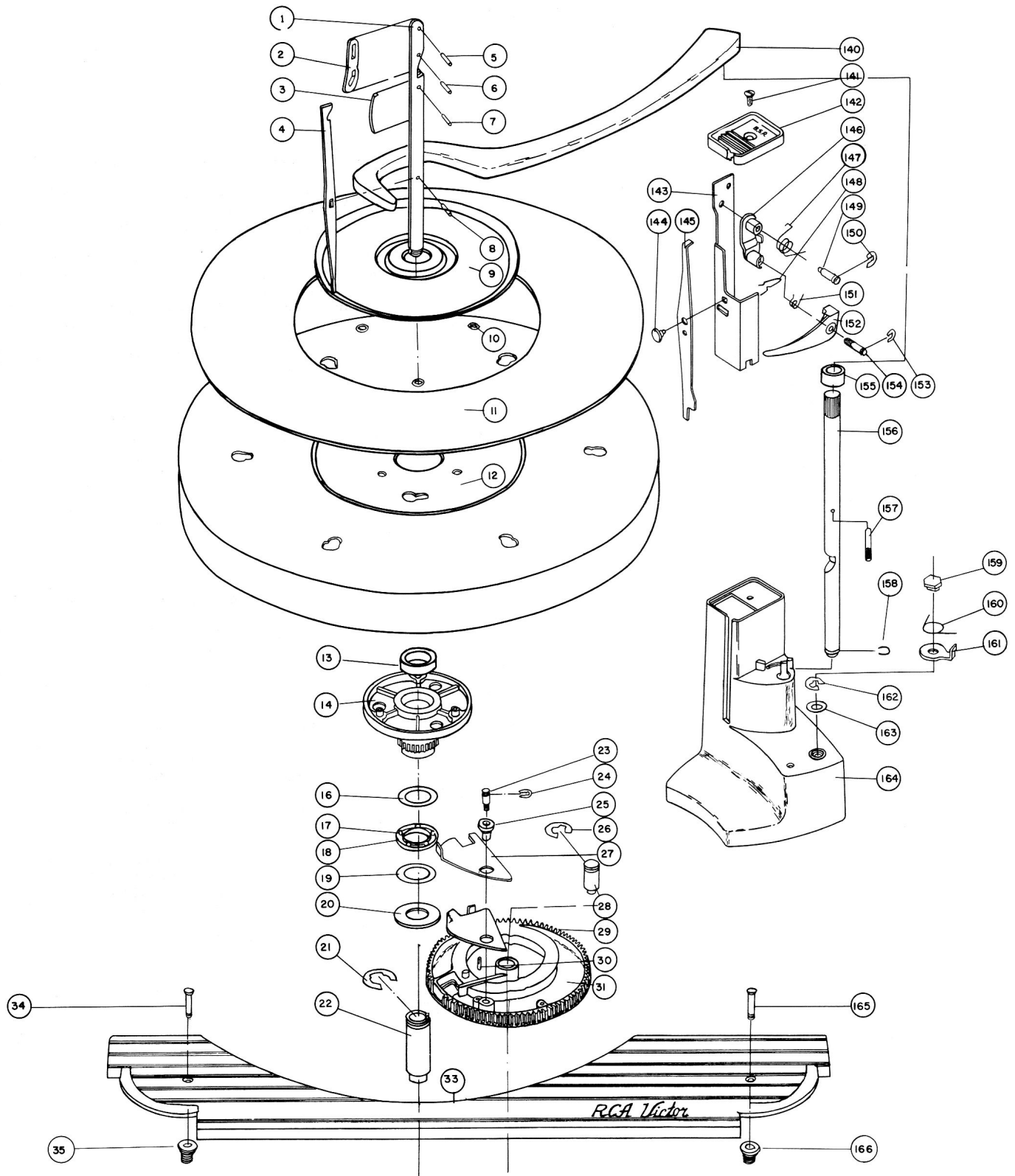


SERVICE HINTS

SYMPTOMS.	CAUSE	REMEDY.
I. Turntable does not rotate when on/off/reject lever (Item 174) is turned to 'ON'.	(1) No current to motor. (2) Defective motor. (3) Jockey Pulley (item 55) not engaging turntable rim. (4) Jockey Pulley not driving.	(a) Check that current is reaching external mains lead. (b) Check that switch box is functioning correctly. (c) Check all wiring and contacts to and from switch box assembly. Remove the Turntable and allow the motor to operate without load. If motor spindle is not rotating and main supply is reaching the motor, the motor is faulty. Repair or replace. (a) Check that jockey arm is free to pivot. (b) Make sure that spring (53) has one tensioning turn around pillar (44). Carefully clean the inside rim of the turntable and the rubber tyre of the jockey pulley (item 55) to ensure that they are free from oil and grit.
II. Turntable revolves when on/off/reject lever (Item 174) is operated but P.U. remains stationary on its rest.	(1) Incorrect manipulation of control. (2) P.U. arm clipped to rest (item 169). (3) Actuating Lever (104) trapped under friction link.	Ensure that on/off/reject lever is turned fully to the right. This does not apply when operating the changer manually. Lift P.U. arm clear and replace lightly on top of rest. Revolve gear 31 by hand to free lever.
III. Turntable Speed too slow.	(1) Tightness in motor bearings. (2) Binding in T.T. bearings. (3) Jockey Pulley Slip. (4) Mains voltage too low. (5) Operating Temperature too low.	Tap lightly the side of motor laminations to free self-aligning bearings. Check Turntable Bearing for freedom. If it does not turn easily when Jockey Pulley (item 55) is disengaged, remove turntable and clean off foreign matter and lubricate with light mineral oil. (a) Check that Jockey Arm pivot (49) is free in raising bracket (52). Check that end of Jockey Arm (60) is not jammed on unit plate. (b) Make sure that spring (53) has one tensioning turn around pillar (44). Less than 100 V. when the unit is wired for 100-125 Volts. If the unit has been standing in a cold place or operated in surroundings at a temperature of less than 45°F. the turntable speed may be slow initially.
IV. Turntable stops in middle of changing cycle.	(1) Jockey Pulley slip. (2) Insufficient tension on Jockey Pulley Spring.	Clean the inside rim of the Turntable and the rubber tyre of the Jockey Pulley (55) to ensure that they are free from oil and grit. Make sure that spring (53) has one tensioning turn around pillar (44).
V. Pickup fails to move in to play last record. Pickup returns to rest and unit switches off.	(1) Control lever (189) sticking. (2) Control lever spring (188) strained.	Free Control lever by moving backwards and forwards several times. Replace.
VI. After playing last record Pickup returns to 7" position and changer switches off.	(1) Control lever (189) sticking. (2) Control lever spring (188) strained or detached.	Free Control lever by moving backwards and forwards several times. Replace.
VII. Record drops, Pickup moves on to record and changer switches off. VIII. Two records drop together.	Control lever (189) and cut-off lever (191) overlapping. (1) Hole in record too large. (2) Record Keeper (2) not fully down (possibly due to incorrect loading of records). (3) Record Control Arm (140) not holding records level.	Ensure that levers are flat and contact edge to edge only. Replace record. Carefully clean and remove burrs. Do not oil, it should fall under its own weight. Gently twist Control Arm until it will hold record stack parallel to the top face of turntable.
IX. Record does not drop when changer cycles.	Strained record feed lever (4).	Replace record feed lever (4) or complete spindle 1A.
X. Pickup does not locate correctly on records.	(1) Pickup arm not adjusted correctly. (2) Stylus not located correctly on coupler (see Dia. 'F').	See Adjustments. Reposition as detailed.
XI. Pickup does not move in when set down on record.	No run in groove on record.	Check that the record is of the standard type which has a run-in groove from the outside edge of the record to the recorded section. Some old type records and home recordings do not have this run-in groove.
XII. Pickup does not track correctly across record.	(1) Stylus may be clogged with an accumulation of dust or be worn. (2) Pickup leads too tight. (3) Changer not level. (4) Binding on friction in the Pickup spindle (204). (5) Insufficient stylus pressure. (6) Actuating slide (104) sticking. (7) Worn record or records with damaged groove.	(a) Clean the foreign material from around the stylus. (b) Check stylus to see if tip is broken and replace if necessary. (To replace see instructions). Give Pick-up leads enough slack to allow tone arm to move freely across record. Ensure that changer is level before use. Ensure that all moving parts and bearing surfaces in this assembly are free and lightly oiled. Check as under Adjustments. This lever must be absolutely free to slide on its bearing surfaces. Check for distortion rust, fray, etc. Replace record.

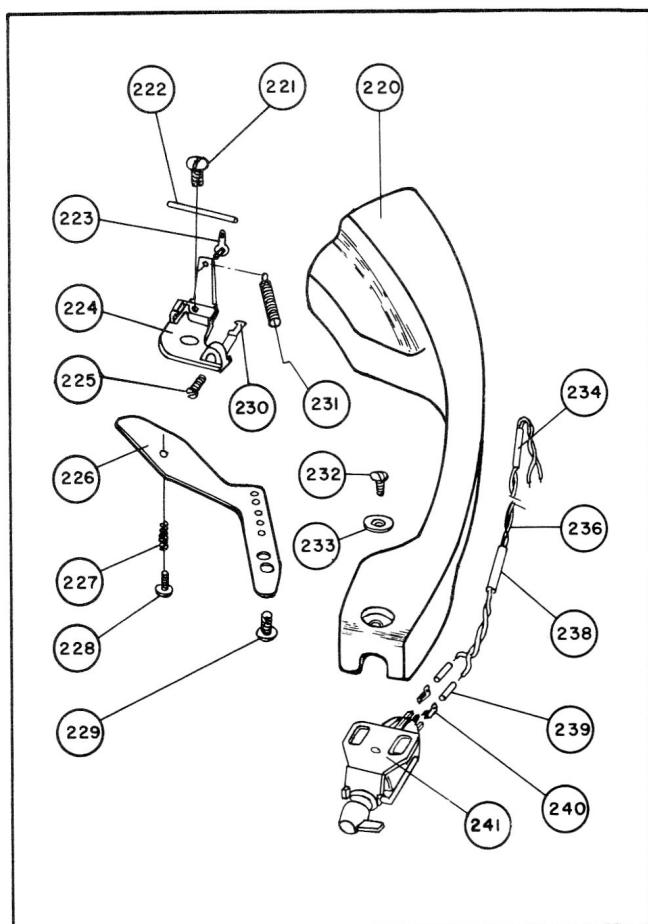
SERVICE HINTS

SYMPTOMS.	CAUSE.	REMEDY.
XIII. Pickup remains on record run out groove or on last groove.	(1) No finishing run out groove on record. (2) Stylus jumps out of groove in record. (3) Faulty Actuating Pawl (27) and Friction Link (29).	Check record for eccentric run-out groove in centre of record. (b) Check that stylus pressure is correct. (c) Check that record is not defective. The run-out groove is often too shallow. (d) The stylus might be damaged or affected by excessive accumulation of dust. Replace or clean. (e) Ensure that all moving parts and bearing surfaces of P.U. spindle assembly are free and lightly oiled. When Friction link (29) has been moved towards centre of gear wheel (31) and then slowly pushed outwards, it should also carry the actuating pawl (27) outwards from the start of its movement. If the pawl does not move freely with the link it will not engage the Turntable Boss (44) to start the cycle. If the assembly sticks, remove assembly, clean, and lightly oil pawl bush (25)
XIV. Changer does not shut off after last record has been played. Pickup continues to play last record from 7" position.	(1) Control Arm (140) not dropping. (2) Control lever (129) and cut off lever (191) overlapping.	Make sure that control arm is in the operating position and drops freely. If necessary, oil spindle (156). Ensure that levers are flat and contact edge to edge only.
XV. Changer continues to cycle with pickup dropping on to record every cycle.	Operating plate spring (96) weak or detached.	Replace.
XVI. Changer fails to switch off after Pickup has played last record and returned to rest.	(1) Mains lead fouls switch slide. (2) Faulty switch. (3) Tight cut off lever. (4) Cut off lever spring (193) strained or detached.	Move leads clear of slide. Disconnect power. Remove cover and check operation of contacts. Free Lever by moving backwards and forwards several times. Replace.
XVII. Pickup does not locate on pickup rest.	Toggle (86) loading too light.	Replace circlip (87).
XVIII. Noise during playing of record.	(1) Motor rumble. (2) Defective turntable bearings. (3) Defective Jockey Pulley. (4) Defective records. (5) Squeaks.	If a low pitched rumbling sound comes from the loudspeaker while the record is being played, check the motor rubber mounting to make sure the motor is freely suspended on them. The motor leads should have slack to allow the motor to float. Check for foreign matter in the bearings or on thrust washer (16, 19), check for defective balls or binding between balls and ball cage. Grease ball race (18) and lubricate Turntable Spindle (22) with light mineral oil. A rapid thumping sound while the motor is running may indicate uneven wear of the jockey pulley (55). If the surface of the rubber tire is found to be rough, the J.P. should be replaced. Worn or defective records cause rumble, scratch and distortion of recorded sound. If the record is warped it may slip on the other records causing 'wow.' An enlarged hole in the record can also cause 'wow.' Squeaking sounds as the changer operates indicates a lack of oil. Lubricate.
XIX. Pickup arm strikes underside of record on spindle ledge when it rises, or stylus catches on top of last record when moving in.	(1) P.U. Arm Height not adjusted correctly. (2) Control arm not holding records level.	See Adjustments. Gently twist control arm until it will hold record stack parallel to top face of Turntable.
XX. Distortion of recorded sound.	(1) Defective record. (2) Defective Amplifier. (3) Faulty Cartridge (242). (4) Dust on Stylus.	(See 4 under "Noise during playing of record.") Check Amplifier and speaker. Replace. (See instructions). Remove dust.
XXI. No sound during playing.	(1) Defective Cartridge (242). (2) Defective Wiring. (3) Defective Amplifier. (4) Loose Cartridge socket tags (241).	Replace. Check P.U. Leads for short or open circuit condition. Check Amplifier and speaker. Remove, tighten slightly and replace.



EXPLODED VIEW SHOWING MECHANISM PARTS ABOVE MOTOR BOARD

TONE ARM REPLACEMENT PARTS



ITEM	STOCK NO.	DESCRIPTION
220	*S-22853	P. U. Arm
221		Screw type 25 6-20x1/4" B. HD
222	*S-22854	Pivot pin
223		Tag eyelet
224	*S-22855	P. U. Hinge
224A	*S-22856	P. U. Hinge ass'y.
225		Screw 6BA x 3/8" CH. HD
226	*S-22857	P. U. HT. Adjusting plate
227	*S-22858	Spring
228		Screw type 1.6BA x 3/8" B. HD
229		Screw type 25.4-24x1/4" B. HD
230	*S-22859	Friction spring
231	*S-22860	Spring (P. U. Balance)
232		Screw 6BAx3/16" INS. HD
233	*S-22861	Screw escutcheon
234		Sleeve 1" x 2MM P. V. C.
235		
236		P. U. Lead
238		Sleeve 1" x 2MM P. V. C.
239		Rubber sleeve (3 off)
240		Tag (3 off)
241	*S-22862	Cartridge Stereo
	*S-22905	Needle Sapphire type L. P. (TC8S)
	*S-22906	Needle Sapphire type standard (TC8S)
	*S-23003	Turnover Ass'y

* Indicates New Stock Items.

CARTRIDGE REPLACEMENT

TC8S Cartridge. When replacing cartridges, it is not necessary to remove the turnover assembly from the tone arm. Simply remove the pick-up lead tags from the cartridge lugs, grip the cartridge case firmly and pull backwards out of its snap fork housing (see Diagram 'E'). It is impossible to put the cartridge into the cradle incorrectly, because of the non-reversible housing. When positioning the new cartridge into the turnover assembly ensure that it is securely home, otherwise the styli positioning will not be correctly related to the tone arm and incorrect tracking may result.

Needle (Stylus). To remove worn out stylus, slacken screw at rear of stylus. (Do not try to remove this screw—it only requires one turn to slacken). Ease stylus out in direction of arrow (see Diagram 'F'). Replace with new stylus and when tightening the

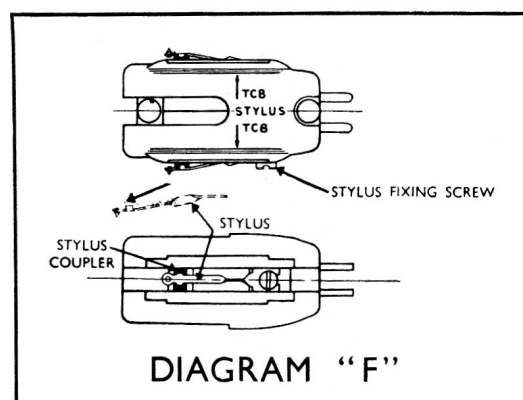


DIAGRAM "F"

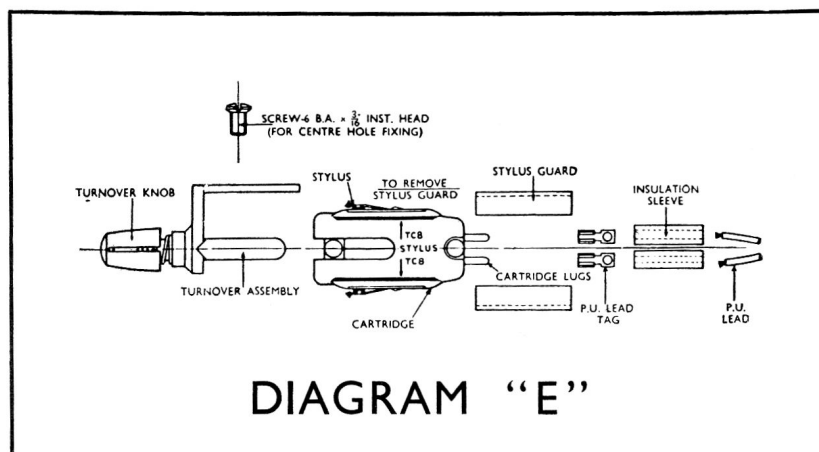


DIAGRAM "E"

fixing screw, ensure that the stylus is correctly seated and that the head is positioned centrally on the stylus coupler (see Diagram 'F'). Make sure that the microgroove stylus (coloured red) is replaced only with the microgroove stylus, type TC8R. Similarly, the 78 r.p.m. stylus (coloured green) should be replaced with the 78 r.p.m. stylus TC8G. The stylus is clearly marked on the side of the cartridge case and an arrow indicates the correct position of each one.

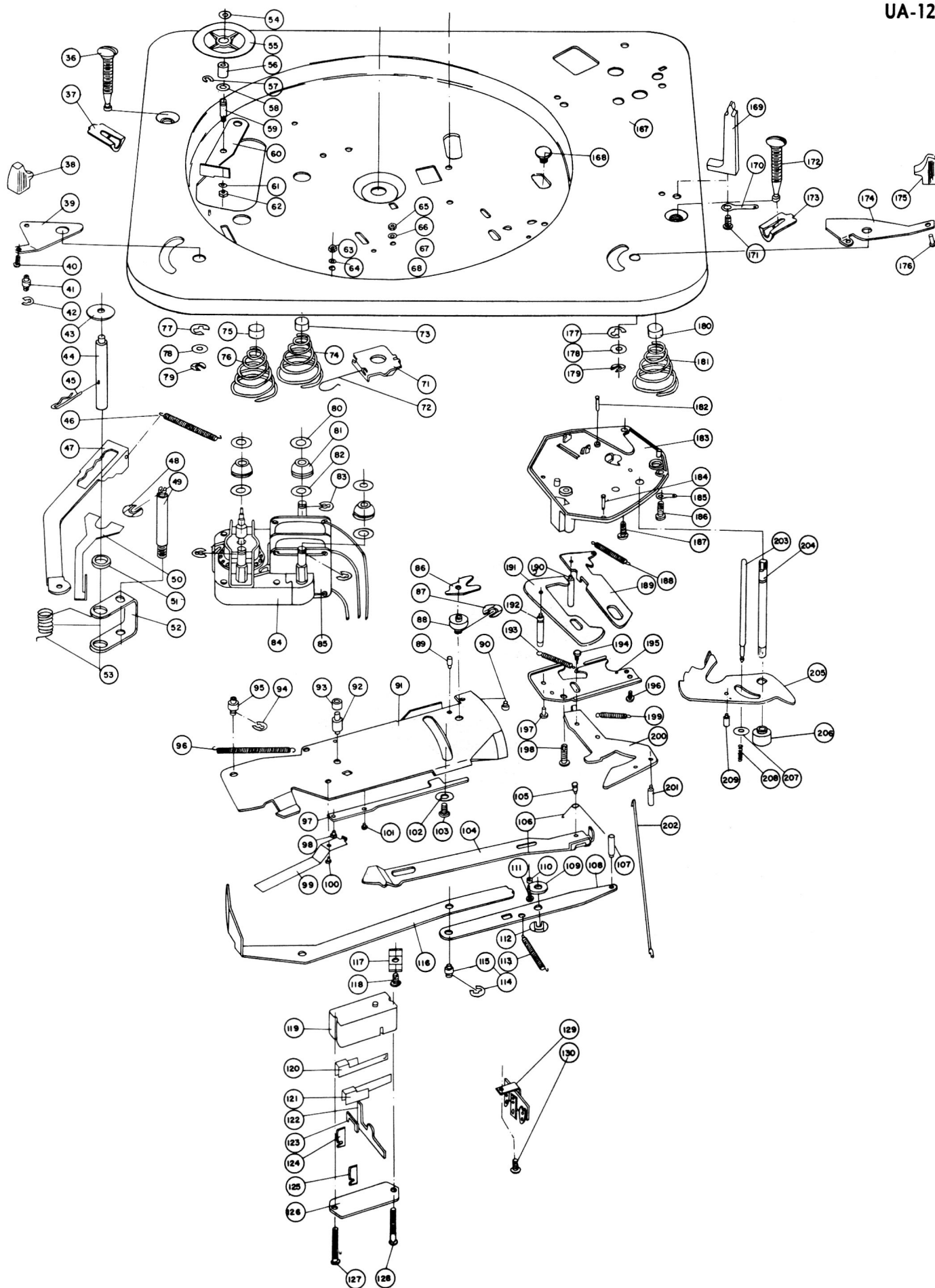
REPLACEMENT PARTS LIST

Insist on Genuine Factory Tested Parts, which are readily identified and may be purchased from Authorized Dealers.

SYMBOL	STOCK NO.	DESCRIPTION	SYMBOL	STOCK NO.	DESCRIPTION
1	*S-22748	Centre Spindle	81	*S-22810	Rubber Mounting 3 Off
1A	*S-22761	Centre Spindle Ass'y., includes 1, 2, 3, 4, 5, 6, 7, 8	84A	*S-22812	TP8/6 Motor Ass'y.
9	*S-22762	TT Centre Dish	86A	*S-22813	Toggle Ass'y, includes 86, 88
11	*S-22763	TT Mat	91FA	*S-22814	O.P. Final Ass'y., includes 86A, 87, 91A
12	*S-22764	Turntable	104A	*S-22815	Actuating Slide Ass'y, includes 104, 105, 106
13	*S-22765	TT Bearing Bush	108A	*S-22816	Transfer Lever Ass'y, includes 107, 108
14	*S-22766	TT Boss & Gear	109	*S-22817	Washer (Transfer Lever)
18A	*S-22767	Ball Race & Thrust Washers, includes 16, 17, 18, 19	110	*S-22818	Actuating Slide Spacer
20	*S-22768	Damping Washer	112	*S-22819	Circlip
21	*S-22769	Circlip	113	*S-22820	Spring (Transfer Lever)
22	*S-22770	TT Bearing	115	*S-22821	Switch Lever Pivot
23	*S-22771	Pawl Pivot	116	*S-22822	Switch Lever
24	*S-22772	Circlip	119A	*S-22823	Switch Box Ass'y., includes 119, 120, 121, 122, 123
25	*S-22773	Pawl Bush	124	*S-22824	Solder Tag
26	*S-22774	Circlip	126	*S-22825	Switch Cover
27	*S-22775	Actuating Pawl	140	*S-22826	Control Arm
27A	*S-22776	Actuating Pawl Ass'y. includes 25, 27, 29	142	*S-22827	Selector Cover
29	*S-22777	Friction Link	143	*S-22828	Selector Column
31	*S-22778	Cam Gear Casting	143A	*S-22829	Selector Riveting Ass'y, includes 143, 144, 145, 149
31A	*S-22779	Cam Gear Riveting Ass'y. includes 23, 30, 31	143FA	*S-22830	Selector Unit Ass'y, includes 143A, 146A, 147, 148, 150, 151, 152, 153
31FA	*S-22780	Cam Gear Final Ass'y. includes 24, 27A, 31A	146A	*S-22831	Trim Arm Ass'y, includes 146, 154
33	*S-22781	Escutcheon	155	*S-22832	Control Arm Sleeve
34	*S-22782	Escutcheon Pin	156	*S-22833	Control Spindle
35	*S-22783	Knob Spindle	156A	*S-22834	Control Spindle Ass'y, includes 156, 157
36	*S-22784	Transit Screw	159	*S-22835	PU Spindle Nut
37	*S-22785	Retaining Clip	160	*S-22836	Spring (PU Overload)
38	*S-22786	Knob	161	*S-22837	PU Overload Plate
39A	*S-22787	Speed Change Lever Ass'y. includes 38, 39, 40, 41	164	*S-22838	Selector Housing
43	*S-22788	Washer	167W	*S-22839	Mainplate Welding Ass'y, includes 73, 75, 167, 180
44	*S-22789	Raising Pillar	169	*S-22840	PU Rest
45	*S-22790	Transit Clip	174	*S-22841	Reject Lever
46	*S-22791	Spring (SP Change Slide)	174A	*S-22842	Reject Lever Ass'y, includes 174, 175, 176
47	*S-22792	Speed Change Slide	175	*S-22786	Knob
48	*S-22793	Circlip	183A	*S-22844	Support Casting Ass'y, including 182, 183, 184, 188, 189A, 191A, 193, 195A, 196, 197, 199
49	*S-22794	Jockey Arm Pivot	189A	*S-22845	Control Lever Ass'y, includes 189, 190
50	*S-22795	Raising Shoe	191A	*S-22846	Cut-Off Lever Ass'y, includes 191, 192
51	*S-22796	Raising Shoe Spacer	195A	*S-22847	Retaining Plate Ass'y, includes 194, 195, 200A
52	*S-22797	Raising Bracket	200A	*S-22848	Switch Plate Ass'y, includes 200, 201
53	*S-22798	Spring (Raising Pillar)	202	*S-22849	Reject Link
55	*S-22799	Jockey Pulley	203A	*S-22850	PU Raising Spindle Ass'y, includes 203, 207, 208
55A	*S-22800	Jockey Pulley Ass'y. includes 55, 56	205	*S-22851	Quadrant
60A	*S-22801	Jockey Arm Ass'y. includes 54, 55A, 57, 58, 59, 60, 61, 62	205A	*S-22852	Quadrant Ass'y, includes 204, 205, 206, 209
71	*S-22802	Support Plate		*S-22890	Spindle - 45 RPM Adapter Spindle
72	*S-22803	Retaining Clip			
73	*S-22804	Spring Mounting Cup			
74	*S-22805	Spring (Unit Mounting)			
77	*S-22806	Circlip			
78	*S-22807	Washer			
79	*S-22808	Circlip			
80	*S-22809	Washer (Motor Mtg) 3 Off			

* Indicates New Stock Items. Only items listed under stock numbers are available as Replacement Parts.

All parts subject to change or withdrawal without notice.



EXPLODED VIEW SHOWING MECHANISM PARTS BELOW MOTOR BOARD