Admiral

SERVICE DATA NO. ST569-1 FOR RC604, RC624, RC644, RC654, RC664, RC674 AND RC684 FOUR SPEED RECORD CHANGERS

This service manual contains temporary information for Admiral four speed record changers, models RC604, RC624, RC644, RC654, RC664, RC674 and RC684. For complete information on these changers, see Service Manual No. S569.

INSTALLATION

Installation instructions for these models are the same as those on page 2 of S454, Service Manual for the RC600 record changer, with the following exceptions.

A tone arm clip has been incorporated to permit the tone arm to be securely fastened during transport of the phonograph. The tone arm clip should be disengaged from the retaining stud on the tone arm rest before the record changer is operated.

Remove the needle guard by pulling it forward and off the cartridge. Remove the leveling arm retainer which holds it in position during shipment.

OPERATING INSTRUCTIONS

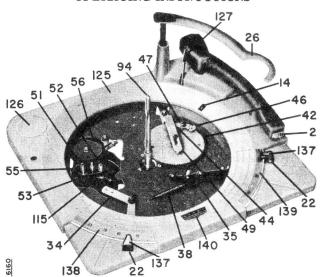


Figure 1. RC654 Record Changer with Turntable Removed.

Operating instructions for these record changers are the same as those for the RC600 on pages 2 and 3 of Service Manual S454 with the following excep-

tions. The SPEED SELECTOR knob has a neutral position. This knob should be left in the neutral position when the changer is not in use.

45 RPM adapters are not required when the 45 RPM spindle is used. The design of the leveling arm will allow the record changer to automatically shut off after the last record is played while using the 45 RPM spindle.

This series of changers will automatically play--

twelve 10-inch 33 or 78 RPM records, or ten 12-inch 33 or 78 RPM records, or fourteen 7-inch 45 RPM records, or ten 7-inch 33 RPM records.

In addition, RC654 record changers will automatically play twelve 10-inch and 12-inch records of the same speed intermixed.

RECORD CHANGER DIFFERENCES

The Admiral line of four speed record changers is basically the same as the three speed record changers, the major difference being in the new motor assembly. Adjustments for three and four speed changers are identical and are described in detail in this manual.

All of the new four speed changers have these features:

- (1) Storage well to accommodate the 45 RPM spindle.
- (2) Redesigned leveling arm to permit the changer to shut off automatically after the last record has played when using the 45 RPM spindle.
- (3) Neutral position for SPEED SELECTOR that disengages the idler wheel from the turntable rim when the record changer is not in use.

ADJUSTMENTS

When making the following adjustments, keep in mind that the Push-off, Trip, and Set-Down mechanisms function independently.

VELOCITY TRIP MECHANISM

This record changer uses a velocity type trip, which depends upon a rapid movement of the tone arm toward the centerpost in any area between 2-7/8" to 7/8" from the center of the record. This trip requires no adjustment. However, in order for the changer to trip properly, there must be sufficient friction between the trip motion arm (44) and the gear engagement pawl (46). Friction may be increased by placing a very slight amount of a silicone lubricant such as Cosmolube #1 on the fiber washer (45). If necessary, replace the trip friction washer (47).

SET-DOWN ADJUSTMENT

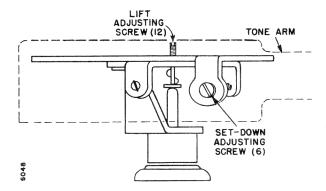


Figure 2. Set-Down and Lift Adjustments.

The set-down adjustment may be made while the changer is in its compartment or cabinet. Adjustment of the set-down point is made by adjusting the set-down adjusting screw (6). See figure 6. The tone arm will automatically set-down properly on 10-inch or 12-inch records if the set-down adjustment is made properly on a 7-inch record. The set-down adjusting screw is accessible through the hole in the left side of the tone arm. Turning this screw out (counterclockwise) moves the set-down point of the tone arm closer to the centerpost, and turning this screw in (clockwise) moves it away from the centerpost.

When operating the record changer out of its cabinet, the television line cord with the interlock socket (Admiral part number 89A22-1) may be used as an adapter for power at the phonograph motor plug.

Be sure the record changer is level. Make the set-down adjustment as follows:

- Grasp the leveling arm at the point marked "LIFT HERE" and swing the arm from the centerpost to its stop above the tone arm rest.
- Place a standard 7-inch, 45 RPM record on the turntable.

- Rotate turntable by hand. Slide the reject pointer (22) to "REJ" position and let it return to "ON".
- 4. Continue to rotate turntable until the tone arm swings over and begins to "Set-down". Stop turntable just as needle touches the record.
- "Touch-up" set-down adjusting screw (6) and repeat the preceding steps until needle sets down in the center of the starting groove of the 7-inch 45 RPM record.
- Check the set-down point with each size of record.
 "Touch-up" set-down adjustment until the set-down
 has been optimized for all sizes, 7, 10 and 12-inch
 records.

If all sizes of records are not readily available, Set-downadjustments may be accurately checked with a ruler. Follow steps 1, 2, 3 and 4. Measure from the near side of centerpost to the point of "Set-down". The distance should be between 3-1/4" to 3-5/32" for 7-inch records, between 4-10/16" and 4-11/16" for 10-inch records and between 5-19/32" and 5-22/32" for 12-inch records.

ADJUSTING THE TONE ARM LIFT

Be sure the record changer is level. The tone arm lift adjustment may be made while the changer is in its compartment or cabinet. The tone arm lift adjusting screw (12) is accessible through a hole on the top of the tone arm at the tone arm base. See figure 2. If the tone arm lift is too great, that is, the tone arm touches the record at the bottom of the stack of 12 standard 10", 78 RPM records on the turntable, turn the lift adjusting screw clockwise.

Adjust according to the following procedure.

- (1) Lift the leveling arm (26) and swing it outward toward the tone arm.
- (2) Rotate the turntable by hand. Slide the reject pointer (137) to "REJ" and let it return to "ON".
- (3) Continue rotating turntable slowly until the tone arm swings over the turntable. Stop the turntable before the tone arm begins to set-down in position for 7-inch records.
- (4) The needle must be 1-3/8" above the surface of the turntable to pass over 12 standard 78 RPM 10-inch records.
- (5) Adjust the tone arm lift adjusting screw (12) clockwise for greater lift and counterclockwise for lesser lift.
- (6) Place some records on the spindle shelf (94) and put the leveling arm in position. Start the record changer. During the reject cycle, if tone arm touches the records suspended on the spindle shelf, the lift is too great. Adjust accordingly. See pages 6 and 7 of Service Manual S454 for other adjustment instructions.

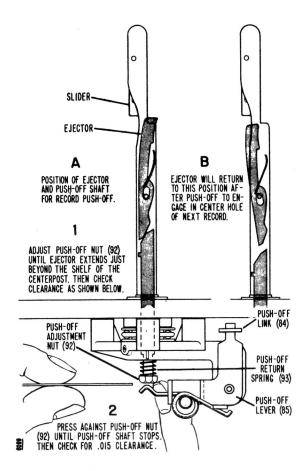


Figure 3. Adjusting For Correct Push-Off.

If the 45 RPM spindle does not operate properly, check to see that it is firmly pushed down on the centerpost, until it is firmly seated. If it still does not operate properly, then the Push-off adjustment should be made. A compromise adjustment may be necessary to get acceptable push-off for both the spindle and the small center hole records.

OPERATION OF 45 RPM CENTERPOST

Change Cycle

In the out of cycle position, the 45 RPM records rest upon the protruding ends of the record shelves (7a, 7b), see figure 4.

When the record changer goes into cycle, the ejector (122) and push-off shaft on the small centerpost assembly (94), are moved by the push-off lever (85). See figures 12 and 3. The outward movement of the ejector (122) in centerpost assembly (94) pushes against the push-out slider assembly (9) causing the record slicer drive studs to move the record slicers (5) outward. As the record slicers move outward and hold all but one record, a record shelf drive stud drives the record shelves, (7a, 7b) inward which allows the record to drop to the turntable.

After the record drops to the turntable, the record shelves move outward, then the slicers move in allowing all the records to again rest on the record shelves until the next change cycle starts.

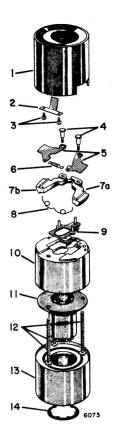


Figure 4. Exploded View of 45 RPM Centerpost.

DISASSEMBLING THE 45 RPM SPINDLE (See figure 4.)

To disassemble the spindle for parts replacement, etc., proceed as follows:

- Place spindle upside down on a clean, flat surface and remove retaining ring (14) by prying under it.
- 2. Remove rotating base assembly (13) from the rest of the spindle.
- Remove the three screws (12) that hold the spindle shaft assembly (11) to spindle base assembly (10).
- 4. Lift spindle shaft assembly (11) from spindle base assembly (10).
- Lift spindle base assembly (10) from spindle cap assembly (1).

All moving parts which may require replacement are a part of the spindle base assembly (10) and are now accessible.

The slicer return spring (6) may be removed with a pair of long nose pliers. To replace the shelf return spring (8), the two pivot studs (4) must be loosened enough to allow clearance between the record shelf (7a, 7b) and the spindle base assembly (10).

To replace the record slicers (5), record shelf (7a, 7b) or push-out slider assembly (9), remove the two pivot studs (4).

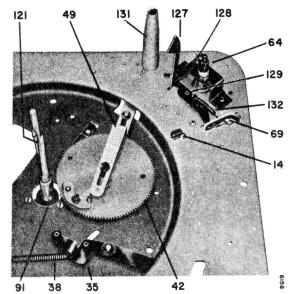


Figure 5. RC654 Record Changer, Phono Pan Cover Removed.

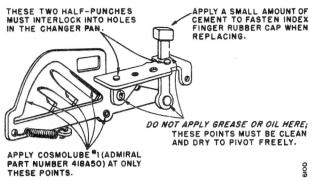


Figure 7. Set-Down Index Assembly.

Differences in Change Cycle

The information below describes the operation of the 10-inch and 12-inch automatic record size selector (intermix) in RC654 record changers only.

The 7-inch and 10-inch set-down position of the tone arm is accomplished in the same manner described on page 4 of S454. However, the index finger's rubber cap (14) is not stepped on the RC654 record changer, and thus it will not "feel" the difference between a 10-inch or 12-inch record. The presence of a 12-inch record is felt by the 12-inch set-down trigger (127).

At the beginning of each change cycle, the 12-inch set-down slide (129) is reset into position to be triggered by the 12-inch set-down trigger (127), by means of the pin on the safety arm and stud assembly (73). This pin actuates a roller (129A) located on the underside of the pan that is attached to the 12-inch set-down slide

Intermix of 10-inch and 12-inch records is thus accomplished, since the index finger's rubber cap (14) will always "feel" the equivalent of a 10-inch record, and the 12-inch set-down trigger (127) will correct this action for every 12-inch record that slides down the centerpost.

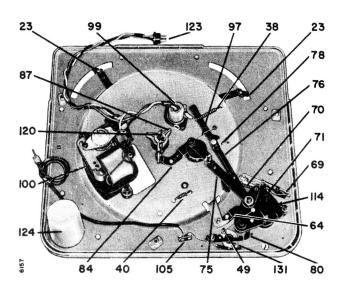


Figure 6. RC654 Record Changer, Bottom View, Changer Out of Cycle.

SERVICE AND REPAIR

When servicing or repairing the RC654 record changers, first follow instructions below and then refer to pages 8 and 9 of S454. For record changers covered in this manual, other than the RC654 record changer, see pages 8 and 9 of S454.

Removing Record Changer Pan Cover on RC654 Record Changers

To remove Record Changer Pan Cover, loosen set screw in Tone Arm Mount and Hub Assembly. This will allow the tone arm to be lifted away from the record changer pan cover. Swing the leveling arm over the centerpost and lower it as far as it will go toward the turntable with the centerpost extending up through the opening. Turn changer over. Lift shut off delay stop (80) upward slightly and turn out of way of protruding leveling arm shaft (26). Remove retaining ring and leveling arm return spring from leveling arm shaft. Remove control knobs by removing control knob lever screws and remove the eight screws that hold the record changer pan cover to the record changer pan. Turn changer over and remove leveling arm by lifting up off of the centerpost. The record changer pan cover can now be lifted from the changer pan far enough to make repairs.

Removing Turntable on Record Changers with Neutral Position on Speed Selector

Set the speed selector knob to the neutral ("N" or dot) position before following the instructions on page 8, S454. This disengages the idler wheel from the turntable rim and facilitates removing or replacing the turntable.

NEEDLE AND CARTRIDGE REPLACEMENT

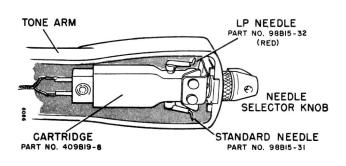
Various needles and cartridges are used in the record changers covered in this manual. To simplify selection of replacements, the table below may be used.

RECORD CHANGER IDENTIFICATION CHART

RECORD CHANGER	RECORD INTERMIX	CHANGER PAN COLOR	TURNTABLE COLOR	CARTRIDGE	NEEDLES
RC604	No	Dull Gold Hammer Tone	Maroon	409A17	.002" osmium 98B15-29
RC624	No	Dull Gold Hammer Tone	Maroon	409B21	osmium .001" .003" 98B15-44
RC644	No	Dull Gold Hammer Tone	Maroon	409B20	saphire .001" .003" 98B15-43
RC654	Yes	Beige	Coral	*409B19-8	saphire .001" 98B15-32* .003" 98B15-31*
		7		409B20	.001" 98B15-43
RC664	No	Light Green	Dark Green	409B20	saphire .001" 98B15-43 .003"
RC674	No	Dull Gold Hammer Tone	Dark Green	409B21	osmium .001'' .003'' 98B15-44
RC684	No	Dull Gold Hammer Tone	Maroon	409A17	osmium .002" 98B15-29

^{*}Used in early production RC654 record changers stamped Run 2M5 and lower

When replacing a needle, note that the needle may be mounted to the cartridge by one of two methods. One type of cartridge has a knurled nut, which must be loosened to remove the needle. The other type of cartridge has a force-fit sleeve and the needle is removed by pulling it forward. Also note that a rotating type cartridge is used on the early production of RC654 Record Changers. See figure 8.



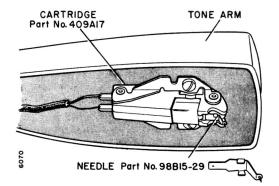


Figure 8. Cartridge and Needles Used On Early Production (below Run 2M5) RC654 Record Changer.

Figure 9. Cartridge and Needle Used On RC604 and RC684 Record Changers.

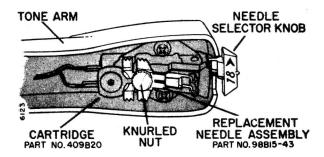


Figure 10. Cartridge and Needle Assembly
Used in RC644, RC654 and RC664
Record Changers.

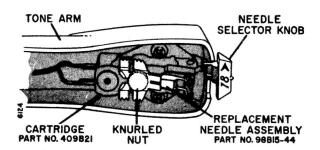


Figure 11. Cartridge and Needle Assembly Used in RC624 and RC674 Record Changers.

The cartridges shown in figures 10 and 11 use replaceable needle assemblies. Both jewel tipped needles are part of a replaceable assembly. To replace the assembly, loosen the knurled nut and remove the needle assembly. Insert replacement assembly in the exact same position and tighten knurled nut.

SERVICE HINTS

Reducing Hum

Hum may be reduced or eliminated on some phonograph models if the ground strap (if one is used) which grounds the motor to the changer pan is removed.

Cementing Inlay (Rej-On-Off, 33-78-45 or 33-78-45-16) To Record Changer Pan Cover on RC654 Record Changers

If the speed indicator inlay or Rej-On-Off inlay becomes loose, they can be cemented to the Phono Pan Cover with Ambroid or Pliobond cement. Caution: Be careful not to get any of the bonding material on the Phono Pan Cover, since it will dissolve the plastic.

Record Changer Drops More Than One Record At A Time on Turntable

If the centerpost slider (see figure 3) does not move freely on the record changer, then more than one record at a time may drop to the turntable. To correct this condition, the centerpost slider should be cleaned with carbon tetrachloride and lubricated with a light machine oil. If this does not correct the difficulty, the spring within the record ejector and spring assembly (122), may have lost its tension, and it should be bent to increase tension or be replaced.

Changing the leveling arm angle slightly will, in some instances, improve record push-off action.

Reducing Possibility of Groove Skipping on 45 RPM Records

Groove skipping (failure of needle to follow grooves on 45 RPM record) may be caused by the tone arm shielded lead (5) being improperly dressed, or too short, producing a drag on the tone arm. This may be corrected by improving the shielded lead dress, or, if necessary, replacing the tone arm shielded lead (5) with new longer lead (part number G400A660).

Reducing Rumble

Rumble is due to vibrations developed by the motor, finding a conducting path to the ceramic pick-up. This path is generally through the thrust bearing to the turntable. To reduce rumble developed in this manner, the thrust bearing should be thoroughly cleaned with carbon tetrachloride and packed with a heavy grease which can be ordered under Admiral part number 418A68 or Houghton Absorbed Oil #100. Rumble may also be caused by insufficient motor grommet cushioning, idler wheel not rolling freely, or idler wheel being at an angle. These points should be checked if cleaning and greasing thrust bearing does not reduce rumble.

PARTS LIST

Most major parts are identified by reference number in the various illustrations in this manual. To identify any parts not shown (up to reference number 109) use this parts list with the exploded view given in Service Manual No. S454, figure 11.

	view given in Service Manual	No. S454, figure 11.			
Ref. No.	Description	Part No.	Ref. No.	Description Part No.	
1	Tone Arm		26	Leveling Arm Assembly	
_	Maroon; RC604	403C 60		Gold Spray; RC604, RC624,	
	RC624, RC644, RC684			RC644, RC684	2-2
	Green; RC664, RC674			Brass; RC654 G400B 662	2
	Coral; RC654		l	Green; RC664, RC674 G400B 662	
2	Cartridge with Needles and Pin		27	Leveling Arm Return Spring 405A 150	
	Jacks		28	Retaining Ring (2 required) 401A 355	- 3
	RC604, RC684		29	Tone Arm Rest	
	RC624, RC674	409B 21		RC604, RC624, RC644, RC684 403A 65	_
	RC644, RC654, RC664	409B 20		RC664, RC674 403A 65-2	5
	*Cartridge with Needles and Pin	1.00m 10 0	30	Speed Nut (3/16")	-59
2	Jacks, RC654	409B 19=0	31	Phono Escutcheon Green; RC664, RC674 403D 64-	_
3	Needle(s), Replacement RC604, RC684	988 15-29		Gold; RC604, RC624,	
	RC624, RC674	98B 15-44		RC644, RC684 403D 64-	3
	RC644, RC654, RC664	98B 15-43	32	Screw for Mounting Escutcheon,	•
	*LP, RC654	698B 15-32		#2x5/16" (not used on RC654). 1A 28-53	-57
	*STD, RC654	498B 15-31	33	Turntable	
4	Cartridge Mounting Screws			RC604, RC624, RC674, RC684 401B 395	
	RC604, RC684	1A 73-1-20		RC644	
	RC624, RC644, RC654, RC664,	(0		RC654	
-	RC674, RC684		2),	RC664	
5 6	Tone Arm Shielded Lead	413A 13-1	34 35	Switch and Reject Arm Assembly G400A 60	
O	Set-Down Adjusting Screw, #4-40x3/4 BMS	45_750_C2_k7	36 36	Spring Washer	,
7	Set-Down Adjusting Lock Spring.		50		
ė	Tone Arm Mtg. and Pivot Plate			RC604, RC624, RC664, RC674, RC6844A5 -19-)
	Assembly	G400A 611	37	Flat Washer (6 required) 401A 388	
9	Speed Nut, 1/8" (2 required)	2B 10-5-59	38	Reject Arm Return Spring; Shut-	
10	Tone Arm Counterweight			Off Link Return Spring 405A 140	
	1 required		39	Gear Indexing Arm and Stud	
	3 required	401A 403-2	40	Assembly)
	Tone Arm Counterweight, RC604 only	hoha ho	40	Gear Indexing Spring 405A 147 Flat Washer (5 required) 4B 2-178	-0
11	Counterweight Mounting Screw	10-21 10	42	Drive Gear and Stud Assembly G400A 58	
	(2 required)	·	43	Trip Pivot Hub 402A 292	
	$\#4x^{\frac{1}{4}}$ RH Phillips	1A 69-1-55	44	Trip Motion Arm 401A 351	-1
	#4x5/8 RH, RC604 only		45	Fiber Washer	
12	Lift Adjusting Screw		46	Gear Engagement Pawl 401A 352	
13 14	Lift Adjusting Spring		47 48	Trip Friction Washer 401A 366 Retaining Ring 401A 355	6
14	Index Rubber Finger Cap RC654 only		49	Trip Slider	
15	Retaining Ring (12 required)		50	Oil Retaining Felt Washer	
16	Pivot Shaft			(2 required) 98A 15-9	
17	Tone Arm Mount and Hub (includes	_	51	16 RPM Drive Wheel 98B 15-51	
- 0	Allen Set Screw)	G400A 610	52	33-1/3 RPM Drive Wheel 98B 15-52	2
18	Allen Set Screw, #8-32x3/16	1004 006	53	16 RPM Drive Belt 406A 31	
19	(2 required) Tone Arm Plastic Base Assembly	402A 296	54 55	Idler Wheel Tie Lug	
17	(includes bearings)		56	Idler Wheel	1
	Maroon; RC604, RC624, RC644,			Moulded; RC644, RC654, RC664 98B 15-46	3
	RC684	403C 61		Standard; RC604, RC624, RC674,	
	Green; RC664, RC674			RC684	
20	Snap-In Buttons	13A 2-8-57	57	Washer	
21	"Hold-Down" Screw	90 1500 30 0).	58 59	Retaining Ring	
	RHMS $\#8-32x1\frac{1}{2}$ "FHMS $\#10-32x1 \ 3/4$ "	100 1750 80 57	60	Set-Down Pivot Retaining Spring. 405A 161	***
00	Plastic Control Pointer (2	102-1170-12-71	61	Retaining Ring	-5
22	required)		62	Spacer Washer 415A 34	
	Meroon; RC604, RC624, RC644,		63	Set-Down Arm Assembly G400A 616	,
	RC684	403A 63	64	Tone Arm Control Lever and	
	Green; RC664, RC674	403A 63 - 2	۲-	Shaft Assembly	,
	Coral (includes inlay, ref.	-1 (-1	65 66	Lift Rod	
00	no. 137); RC654		67	Washer (0.196x5/16x1/64)	
23	Control Knob Lever (2 required).		j ,	(2 required)	ŀ7
24	RC654 only	HOTH HIO	68	Set-Down Arm Return Spring 405A 146	•
4	PHST (2 required)	402A 342	69	Set-Down Index Assembly	
25	Screw, $\#6-32x3/16$ " BH (includes			RC604, RC624, RC644, RC664,	,
	lock washer) (3 required)	760-187-c2-57	l	RC674, RC684	
*Used	in early production RC654 record	changers up to run 2	15.	11000 H	1

Ref. No.	Description	Part N	0.	1	Ref. No.	Description Part	No.
70	Set-Down Index Return Spring				121	Record Ejector and Spring	
71	Control Plate Assembly				100	Assembly	77
72 73	Retaining Ring Safety Arm and Stud Assembly	. •			122	Washer, Motor Mtg. $(0.256x\frac{1}{2}x$ 1/32") (3 required) 4B 1	-127-47
74	Safety Spring	405A 1	45		123	Alden Plug	
75 76	Drive Link					RC604, RC624, RC684	8 -1
77	Shut-Off Arm Spring	405A 1	51		124	45 RPM Spindle Holder 403A	0 - 5 71
7 8	Cam Return Spring	405A 1	52		125	Record Changer Pan Cover, Beige	1-
79 80	Retaining Ring					(RC654 only) (includes inlays,	0 667
81	Shut-Off Delay Stop Engagement				126	ref. nos. 138, 139 and 140) G4000 45 RPM Spindle Holder Cap 403A	73
00	Spring				127	Tone Arm Alignment Bracket and	-
82 83	Drive Eccentric Assembly Screw, #8-32x1 BH (includes	G400A	005		128	Trigger Assembly (RC654 only) G4004 Trigger Cocking Spring (RC654	A 651
	lock washer)	285-25	0-C2-47	•	120	only)	160
84 85	Push-Off Link				129	12" Set-Down Slide Assembly	
86	Washer (0.196x3/8x1/32)				130	(RC654 only)	
87	Turntable Hub Support and Shaft				131	Record Clamp Bearing (RC654	102
88	(less Allen set screw) Screw, Self-tapping, #6x3/8	404B 4	Т.		120	only)	46
00	(3 required)	LA 70-	10-47		132	12" Set-Down Slide Spring (RC654 only) 405A	159
89	Drive Gear Bearing				133	Drive Screw, $\#6x_{4}^{\perp}$ " HH (for mtg.	
90 91	Retaining Ring Turntable Thrust Bearing					record changer pan cover, 7 required) (RC654 only) 402A	255
92	Push-Off Adjustment Nut	402A 2	77		134	Tone Arm Clip, RC654, RC664,	3//
93 94	Push-Off Shaft Return Spring	405A l	42		305	RC674, RC684	428
94	Centerpost Assembly (includes 92 and 93)	G400B	601		135	Tone Arm Clip Stud, RC654, RC664, RC674, RC684	358
95	Screw, Self-Tapping, #6x5/8			1	136	Tone Arm Clip Mtg. Screw, RC654,	
96	(3 required)	402A 2	63		127	RC664, RC674, RC684 1A 69	
97	Shut-Off Link Hold-Down	414A 5	0		137 138	Control Knob Inlay (RC654 only). 401A Speed Inlay, "33-78-45-N-16"	41 (
98	Screw, Self-Tapping, #6x3/16" RH	402A 3	46			(RC654 only)	416-3
99 10 0	Switch and Mtg. Plate Assembly 4 Speed Motor Complete		000		139 140	Inlay, "Rej-On-Off" (RC654 only) 401B Admiral Crest Inlay (RC654 only) 401A	
	RC604, RC624, RC674, RC684.	407Y2	23-2	•	141	Resistor, 330,000 ohms, $\frac{1}{2}$ watt	71)
101	RC644, RC654, RC664(Motor Grommet				11.0	(RC654 only)	3 - 334
102	Retaining Ring (3 required)	401A 3	55 - 4		142	Capacitor, 0.1 mf, 200 volts, tubular (RC654 only) 64B	5-30
103	Speed Selector Link Grommet	406A 2	.4				
104	Float Spring, 3/4" high (3 required)	19A 10	ı <u>÷</u> 5			PARTS FOR CONVERTING	
105	Terminal Board				4	407Y23-1 AND 407Y23-2 MOTORS FOR 50 CYCLE OPERATION	
	RC604, RC624 RC634, RC644, RC654, RC664,	10B 1-	18		FO 0		ı).
	RC674, RC684	10D 1-	29		50 Cy	cle Conversion Kit 98B 1	15-54
106	Audio Cable (20") includes Plug.	413A 1	1-5				
107	Changer Pan Assembly RC604, RC624, RC644, RC674,				PI	ARTS LIST FOR 45 RPM SPINDLE (G400B645))
	RC684			1	Ref.		
	RC664			1	No.	Description Part	No.
108	45 RPM Record Adapters	48A 8-	2		1	Spindle Cap 403A	68
109	Plastic Tubing, 1½"	96B 18	-9-10-0		2	Index and Retaining Spring 401A	
†110 †111	Cartridge Knob, Coral Set Screw (for cartridge knob)				3	Screw, $\#4x_{4}^{1}$ " Elco Pan Head (2 required)	2)12
†112	Knurled Nut (fits between				4	Pivot Stud (2 required) 402A	349
†113	cartridge knob and tone arm). Locating Plate for 409B 19-8	409B 1	9-4		5	Record Slicer (2 required) 401A	
1443	cartridge	409B 1	9-3	'	6	Slicer Return Spring 405A Record Shelf	150
114	Cocking Roller for 12" Set-Down				7a	Left403A	
115	Slide Assembly (RC654 only) 33 1/3 RPM Drive Belt				76 8	Right	
+116	Tone Arm Counterweight Slug				9	Push-Out Slider Assembly G400A	
117	(3 required)	401A 4	03-2	•	10	Spindle Base Assembly	
($(0.125x_{\perp}^{1}x1/32")$	4B1 - 19	- 47		11 12	Spindle Shaft Assembly G400A Screw, #4-40xl 3/4" RH4S (3	4 040
118	Counterbalance Spring	405A 1	63			required)	
†1 19	Tone Arm Clip				13 14	Rotating Base Assembly G400A Retaining Ring 400A	
	Record Changers Only, Runs 2K5,						→▲→
						-	