



# RCA Victor

## RP-140

### Automatic Record Changer

## TECHNICAL INFORMATION AND SERVICE DATA

SERVICE DIVISION • RCA VICTOR COMPANY LIMITED • MONTREAL

### Electrical Specifications

Type ..... Automatic  
Record Capacity ..... Eight 10-inch or Seven 12-inch  
Turntable Speed ..... 78 R.P.M. (adjustable)  
Type Pickup ..... Crystal  
Pickup Impedance ..... 100,000 ohms at 1,000 cycles

#### POWER SUPPLY RATING

Rating A ..... 115 volts 60 cycle  
Rating B ..... 115 volts 25 cycle

The RP-140 automatic record changer is used in a number of RCA Victor VR Victrola Models. Reference is made to this bulletin in the Replacement Parts Lists appearing in the Service Notes of the particular models in question.

The following service hints and adjustment details, appearing in this bulletin, should be followed to assure satisfactory operation of the mechanism.

Before servicing the automatic record changer, inspect the assembly to see that all levers, parts, gears, springs, etc., are in good order and are correctly assembled.

A bind or jam in the mechanism can usually be relieved by rotating the turntable in the reverse direction.

The changer can be conveniently rotated through its change cycle by pushing the index lever to "Reject" and revolving the turntable by hand. Six turntable revolutions are required for one change cycle.

If the record changer or cabinet is not perfectly level, normal operation is likely to be affected.

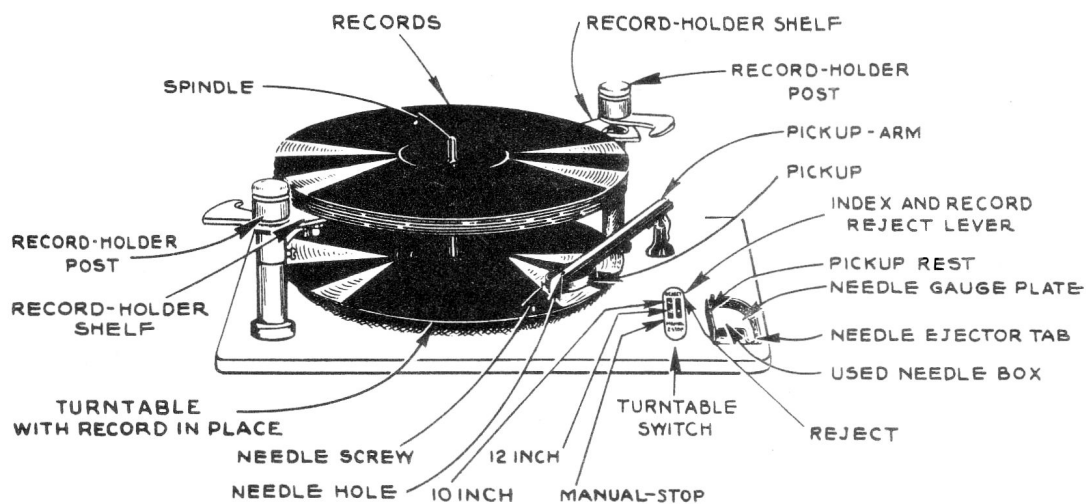
The 10 and 12 inch records must be absolutely flat for smooth operation.

A pickup shorting switch, located under the motor-board, operates when the pickup is moved outward to the pickup rest.

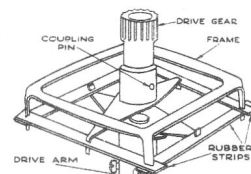
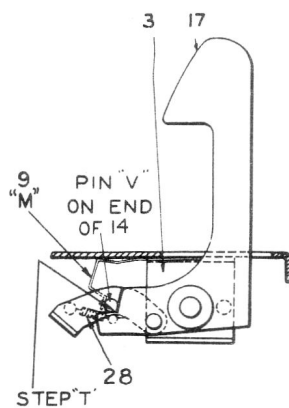
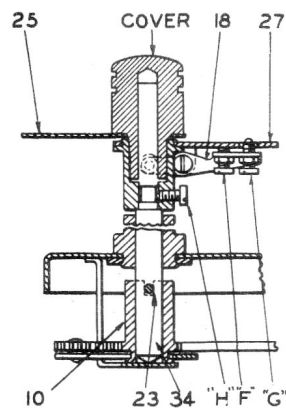
### Miscellaneous Service Hints

Incorrect adjustment of a particular mechanism of the changer is generally exhibited in a specific mode of improper operation. The following relations between effects on operation and the usual mis-adjustments will enable ready adjustment in most cases.

1. For any irregularity of operation, the adjustment of the main lever "15" should be checked first as in "A".
2. Needle does not land properly on both 10 and 12 inch records — Make complete adjustments "O" and "E".
3. Needle does not land properly on 12 inch record but correct on 10 inch—Effect adjustment "E".
4. Failure to trip at end of record—Increase clutch "5" friction by means of screw "B". Also, see that levers "7" and "12" are free to move without touching each other.
5. Pickup strikes lower record of stack and drags across top record on turntable—Adjust lift cable per adjustment "C".
6. Needle does not track after landing — Friction clutch "5" adjustment "B" may be too tight; bind in tone arm vertical bearing; levers "7" and "12" fouled; or pickup output cable twisted.
7. Cycle commences before record is complete—Record is defective, or adjustment "B" of friction clutch "5" is too tight.
8. Wow in record reproduction—Record is defective; flexible coupling between motor and changer mechanism not correctly assembled; or instrument is not being operated at normal room temperature (65° F).
9. Record knives strike edge of records—Records warped; record edges are rough; or knife adjustments "F" and "G" are incorrect.
10. Record not released properly—Adjust record shelf assemblies in respect to shaft by means of adjustment "H".
11. Needle lands in 10 inch position on 12 inch record or misses record when playing both types mixed —Increase tension of pickup locating lever spring "9".



Top View of Automatic Record Changer



SPEED ADJUSTMENT (SCREW) TO DECREASE SPEED TURN CLOCKWISE

TURN ADJUSTMENT SCREW UNTIL FELT PROTRUDES 1/16 IN. ADJUST GOVERNOR FOR 1/16 IN. CLEARANCE BETWEEN FELT AND DISC. SECURE BY MEANS OF SET SCREW

ADJUST SO THAT SHAFT IS FREE TO ROTATE

REMOVE TO TAKE OFF GOVERNOR

SPEED ADJUSTMENT LOCK NUT

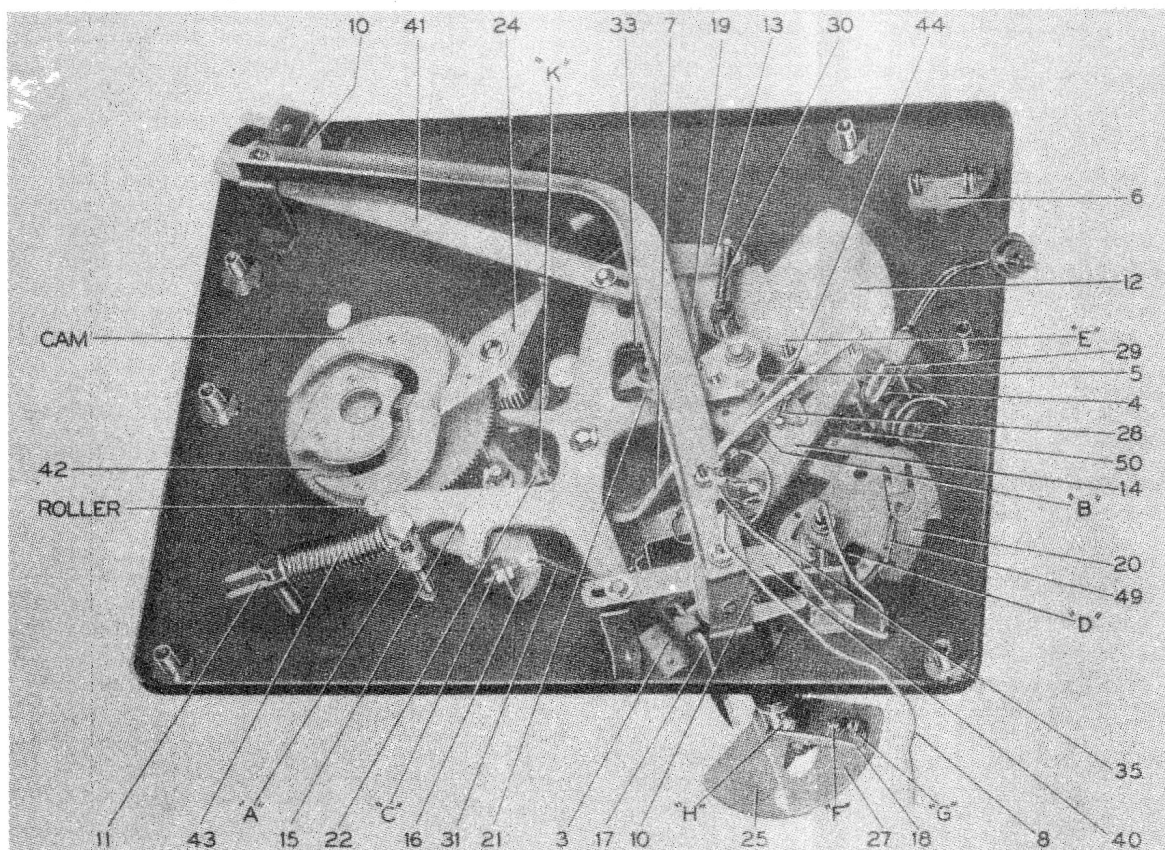
OIL

KEEP FILLED WITH LIGHT OIL TO INSURE SMOOTH OPERATION

DO NOT CHANGE THIS ADJUSTMENT

Details of Record Shelf Posts and Lever Assemblies

Motor Data and Coupling



Bottom View of Automatic Record Changer

NOTE: Numbers refer to parts—letters refer to adjustments.

# Automatic Record Changer

(RP-140)

## GENERAL INFORMATION

Before servicing the automatic record changer, inspect the assembly to see that all levers, parts, gears, springs, etc. are in good order and are correctly assembled.

A bind or jam in the mechanism can usually be relieved by rotating the turntable in the reverse direction.

The changer can be conveniently rotated through its change cycle by pushing the index lever to "Reject" and revolving the turntable by hand. Six turntable revolutions are required for one change cycle.

The turntable, spindle, and pinion gear are assembled by means of a 3/32 inch straight pin. This pin may be removed by gently driving with a standard pin punch.

If the record changer or cabinet is not perfectly level, normal operation is likely to be affected.

All records must be absolutely flat for smooth operation.

A pickup shorting switch, located under the motorboard, operates when the pickup is moved outward to the pickup rest.

## ADJUSTMENTS

**A. Main Lever.**—This lever "15" is basically important in that it interlinks the various individual mechanisms which control needle landing, tripping, record separation, etc. Rotate the turntable until the changer is out-of-cycle; and check rubber bumper bracket (A). The roller should clear the nose of the cam plate by approximately 1/16 inch.

**B. Friction Clutch.**—The motion of the tone arm toward the center of the record is transmitted to the trip pawl "22" by the trip lever "7" through a friction clutch "5." If the motion of the pickup is abruptly accelerated or becomes irregular due to swinging in the eccentric groove, the trip finger "7" moves the trip pawl "22" into engagement with the pawl on the main gear, and the change cycle is started. Proper adjustment of the friction clutch "5" occurs when movement of the tone arm causes positive movement of the trip pawl "22" without tendency of the clutch to slip. The friction should be just enough to prevent slippage, and is adjustable by means of screw "B." If adjustment is too tight, the needle will repeat grooves; if too loose, tripping will not occur at the end of the record.

**C. Pickup Lift Cable Screw.**—During the record change cycle, lever "16" is actuated by the main lever "15" so as to raise the tone arm clear of the record by means of the pickup lift cable. To adjust pickup for proper elevation, stop the changer "in-cycle" at the point where pickup is raised to the maximum height above turntable plate, and has not moved outward; at this point adjust locknuts "C" to obtain 1 inch spacing between needle point and turntable top surface.

**D. & E. Needle Landing on Record.**—The relation of coupling between the tone arm vertical shaft and lever "20" determines the landing position of the needle on a 10 inch record. Position of eccentric stud "E" governs the landing of the needle on a 12 inch record; this, however, is dependent on the proper 10 inch adjustment.

To adjust for needle landing, place 10 inch record on turntable; push index lever to reject position and return to the 10 inch position; see that pickup locating lever "17" is tilted fully toward turntable; rotate mechanism through cycle until needle is just ready to land on the record; then see that pin "V" on lever "14" is in contact with "Step T" on lever "17." The correct point of landing is 4 5/8 inches from the nearest side of the turntable spindle; loosen the two screws "D" and adjust horizontal position of tone arm to proper dimension, being careful not to disturb levers "14" and "17." Leave approximately 1/32 inch end play between hub of lever "20" and pickup base bearing, and tighten the blunt nose screw "D"; run mechanism through several cycles as a check, then tighten cone pointed screw "D."

After adjusting for needle landing on a 10 inch record, place 12 inch record on turntable; push index lever to reject

and return to 12 inch position; rotate mechanism through cycle until needle is just ready to land on the record; the correct point of landing is 5 5/8 inches from nearest side of spindle. If the landing is incorrect, turn stud "E" until the eccentric end adjusts lever "14" to give correct needle landing. The eccentric end of the stud must always be toward the rear of the motorboard, otherwise incorrect landing may occur with 10 inch records.

**F. & G. Record Separating Knife.**—The upper plate (knife) "25" on each of the record posts serves to separate the lower record from the stack and to support the remaining records during the change cycle. It is essential that the spacing between the knife and the rotating record shelf "27" be accurately maintained. The spacing for the 10 inch record is nominally .055 inch, and for the 12 inch record is .075 inch.

To adjust, rotate the knife to the point of minimum vertical separation from the record shelf and turn screw and locknut "F" to give .052—.058 inch separation. Screw "G" must not be depressed during this adjustment. After setting screw "F," adjust screw "G" so that when its tip is depressed flush with top of record shelf, the vertical spacing between the knife, in its lowest rotational position, and the shelf, is .072—.078 inch.

**H. Record Support Shelf.**—The record shelf revolves during the change cycle to allow the lower record to drop onto the turntable. Both posts are rotated simultaneously by a gear and rack coupled to the main lever "15," and it is necessary that adjustment be such that the record is released from both shelves at the same instant. To adjust, place a 12 inch record on the turntable, rotate mechanism into cycle to the point where both separating knives have turned clockwise as far as the mechanism will turn them; lift record upward until it is in contact with both separating knives. Then loosen screws "H" and shift record shelves "27" so that the curved inner edges of the shelves are uniformly spaced approximately 1/16 inch from the record edge. Some backlash will be present in the rotation of these shelves. They should be adjusted so that the backlash permits them to move away from the record but not closer than the approximate 1/16 inch specified above. Tighten the blunt nose screw "H," run mechanism through cycle several times to check action, then tighten cone pointed screw "H."

*If record shelves or knives are bent, or not perfectly horizontal, improper operation and jamming of mechanism will occur.*

**J. Tone Arm Rest Support (not shown).**—When the changer is out-of-cycle, the front lower edge of the pickup head should be 5/16 inch above surface of motorboard. This may be adjusted by bending the tone arm support bracket, which is associated with the tone arm mounting base, in the required direction.

**K. Trip Pawl Stop Pin.**—The position of the trip pawl stop pin "K" in relation to the main lever "15" governs the point at which the roller enters the cam. By bending the pin support either toward or away from trip pawl bearing stud, the roller can be made to enter the cam later or earlier, respectively. This adjustment should be made so that the roller definitely clears the cam outer guide as well as the nose of the cam plate.

**Lubrication.**—Petrolatum or petroleum jelly should be applied to cam and gears of record posts.

Light machine oil should be used in the tone arm vertical bearing, record post bearings, and all other bearings of various levers on underside of motor board.

The felt washer between the turntable and spindle bearing should be soaked in light engine oil whenever the turntable is removed, or as required for proper operation.

Do not allow oil or grease to come in contact with, rubber mounting of tone arm base, rubber bumper, or flexible coupling of drive motor.

# REPLACEMENT PARTS FOR MODEL RP-140

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
<b>PICKUP ARM ASSEMBLIES</b>			
34011	Arm-Pickup arm shell.....	32879	Gear-Rack gear for front left hand record post (41).....
32556	Cable-Shielded pickup cable (8)...	32880	Gear-Rack gear for rear right hand record post (40).....
33905	Crystal-Pickup cartridge and needle screw.....	31121	Gear-Record post gear (10).....
34013	Pin-Used to fasten pivot arm in pickup arm shell (Pkg.5).....	33982	Guide-Main lever spring guide (11)
33529	Screw-Needle screw.....	34000	Lever-Index lever assembly (12)...
34012	Shaft-Pickup pivot shaft and pivot arm.....	31137	Lever-Index lever pawl (13).....
		34999	Lever-Locating lever and pawl assembly (14).....
<b>MOTOR ASSEMBLIES</b>		33985	Lever-Main lever assembly (15)....
		31140	Lever-Pickup lift cable lever and spring assembly (16).....
31617	Bracket-Governor and bearing bracket.....	34002	Lever-Record discriminating lever assembly (17).....
31624	Governor-Complete for 110 volt,25 cycle motor.....	31130	Lever-Record separator elevating lever and adjustment screws(18).
31623	Governor-Complete for 110 volt,60 cycle motor.....	34007	Lever-Mercury switch actuating lever (29).....
31448	Motor-Motor complete 25 cycle,110 volt (M1).....	31132	Lever-Trip detaining lever (19)...
31163	Motor-Motor complete 60 cycle,110 volt (M1).....	34014	Lever-Trip lever and cam assembly (20).....
30870	Plug-2 prong male A.C. plug.....	31131	Lever-Trip regulating lever (21)...
31616	Screw-Rotor thrust bearing screw and nut.....	34086	Link-Index lever link.....
31620	Screw-Speed regulator screw and nut.....	31133	Pawl-Trip pawl assembly (22).....
31636	Spindle-Motor spindle and gear for 110 volt,25 cy.motor.....	31124	Pin-Record post drive pin (23) (Pkg.3).....
31634	Spindle-Motor spindle and gear for 110 volt,60 cy.motor.....	31535	Pin-Turntable spindle pin(Pkg.4)..
<b>MOTORBOARD ASSEMBLIES</b>		4573	Plug-2 contact female A.C.plug....
		31147	Rubber-1 set of rubber strips for flexible coupling.....
33998	Base-Pickup arm mounting base.....	31118	Screw-No.10-32 cone pointed set screw (Pkg.3).....
33999	Cup-Used needle cup,lid and pickup arm rest (6).....	32869	Screw-No.10-32 set screw (Pkg.10).
33997	Escutcheon-Index escutcheon.....	34001	Screw-Record separator elevator lever adjusting screw.....
31150	Mounting-Pickup arm base rubber mounting complete.....	33983	Screw-Record separator shelf elevating lever screw.....
31155	Spring-Used needle cup lid spring (Pkg.5).....	14195	Screw-Set screw for flexible coupling (Pkg.2).....
34875	Switch-Pickup shorting switch(44).	31117	Screw-Trip lever and cam adjusting screw (Pkg.4).....
<b>OPERATING MECHANISM</b>		33990	Separator-Record separator knife (25).....
		33988	Shaft-Record post gear shaft(34)..
33580	Arm-Drive arm and bushing for flexible coupling (motor end).....	33989	Shelf-Record Record post assembly(27)
34009	Arm-Drive arm and gear for flexible coupling (T.T.end) (24).....	31141	Spindle-Turntable spindle.....
33984	Bracket-Pickup locating lever mounting bracket (3).....	3676	Spring-Cam pawl tension spring (Pkg.5).....
33987	Cam-Cam and drive gear assembly (42).....	31136	Spring-Index lever pawl spring (30) (Pkg.2).....
6808	Clutch-Trip lever friction clutch assembly (5).....	32436	Spring-Locating lever and pawl spring (35) (Pkg.2).....
31116	Finger-Trip lever friction finger assembly (7).....	32882	Spring-Main lever tension spring (43)(Pkg.2).....
33581	Frame-Flexible coupling metal frame.....	32868	Spring-Mercury switch cam spring (49) (Pkg.2).....
		3666	Spring-Pickup lift cable lever spring (31) (Pkg.3).....
		14190	Spring locating lever pawl spring (28) (Pkg.2).....
		33994	Spring-Pickup locating lever spring (9) (Pkg.2).....
		14191	Spring-Trip detaining lever spring (33) (Pkg.3).....
		34006	Support-Mercury switch support bracket and terminal board.....
		32866	Switch-Mercury switch (4).....
		34003	Turntable-Record turntable.....
		31143	Washer-Turntable shim washers one steel,one bronze,one felt.....