RCA Victor

RP152E

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. (Fixed)
Type Pickup ..... Crystal
Pickup Impedance.....100,000 ohms at 1000 cycles
POWER SUPPLY RATING
Rating A ..... 115 volts, 60 cycle, 14 watts
Rating B ..... 115 volts, 25 cycle, 14 watts

The RP152E automatic record changer is used in a number of Phonograph Models. Reference is made to this bulletin in the Replacement Parts List appearing in the Service Notes of the particular model in question.

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.

When a record has been played the pickup moves out, another record is dropped down, and the needle is fed automatically into the starting groove of this record. If the needle fails to enter the starting groove, raise the right-hand side of the cabinet by inserting thin spacers under tne feet on that side. If the needle slides over a few grooves, raise the left-hand side of the cabinet in a similar manner.

The 10- and 12-inch 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.

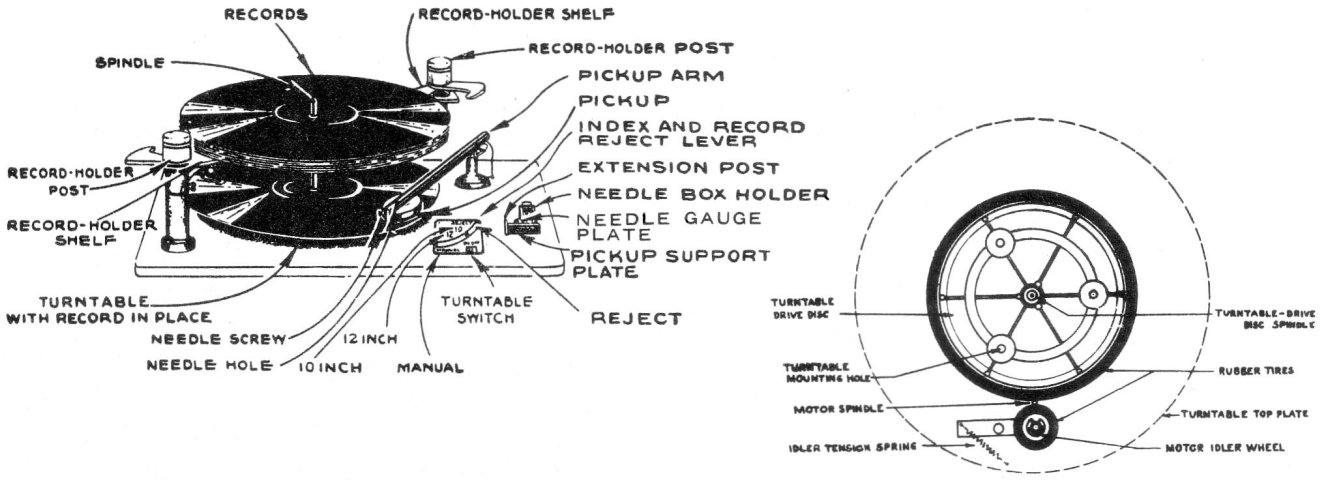
It is important that the drive motor spindle, and rubber tires on main driving disc and idler pulley be kept clean and free from oil, grease, dirt, or any foreign matter at all times. Any quick-drying naphtha is satisfactory for cleaning these parts. The drive motor bearing is lubricated from an oil well filled and sealed at the factory. It should not require lubrication in the field.

The rubber-tired drive disc is not removable from the spindle. The turntable is fastened to the driving disc by three bolts. If necessary to remove these parts the spindle drive gear set screw should first be removed. The driving disc, turntable and spindle assembly can now be lifted upward from the motorboard. If this is done, great care should be taken not to bend the spindle.

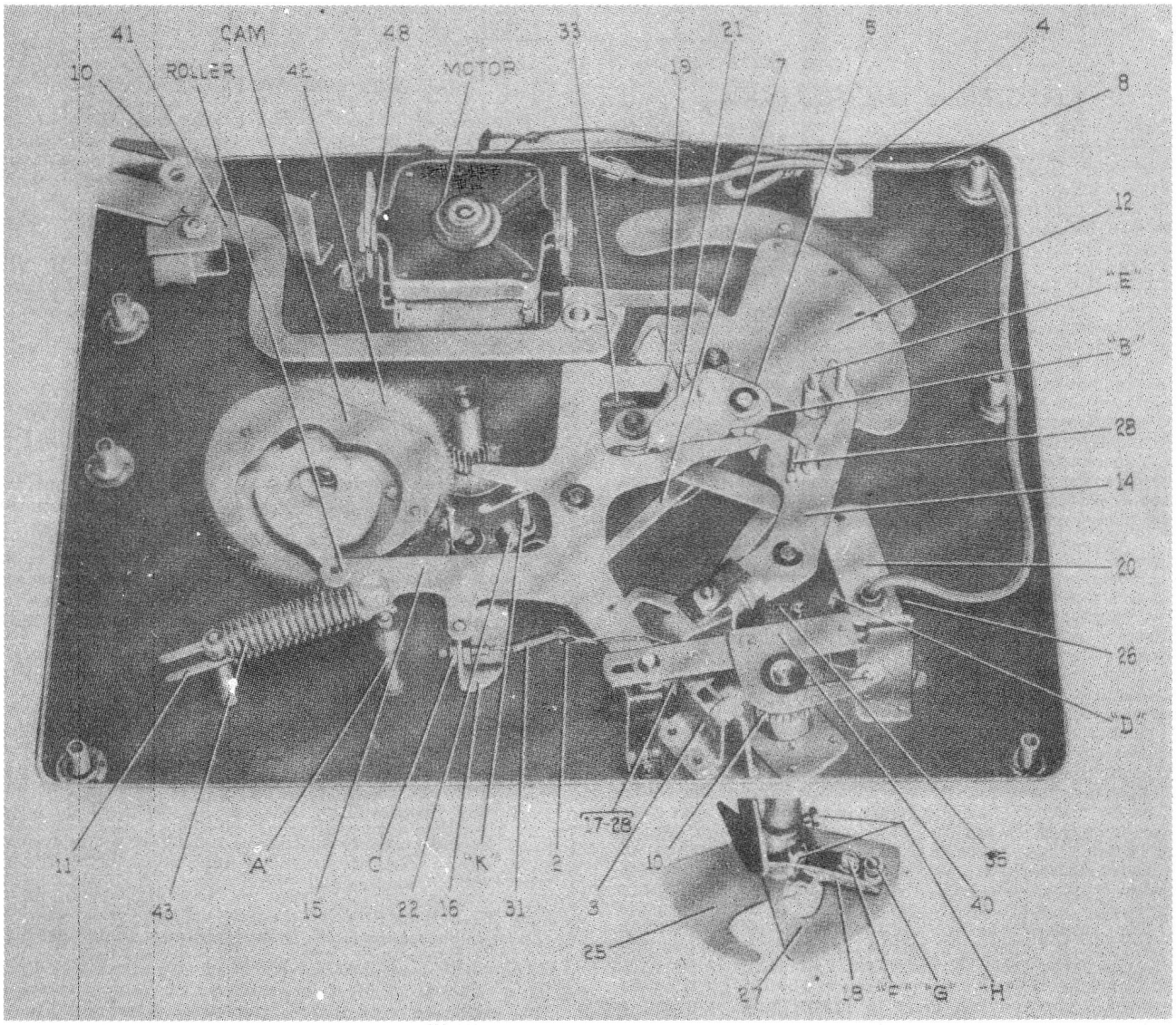
MISCELLANEOUS SERVICE HINTS

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 misadjustments 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 "D" 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 or 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; or instrument is not being operated at normal room temperature; oil, grease, dirt, or other foreign matter on motor spindle, main driving disc or idler pulley rubber tire. Clean with any quick drying naphtha.
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. When playing both types of records mixed and needle either lands in 10-inch position on 12-inch record or misses record entirely—Increase tension of mixed record discriminating lever spring "M".



Motor Drive Details on RP-152 E.



Bottom View of RP-152 -E Automatic Record Changer

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

ADJUSTMENTS

A. Main Lever.—This lever 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.

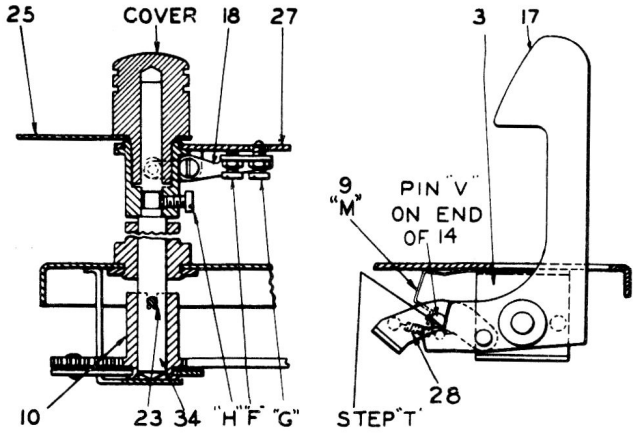
D. & E. Needle Landing on Record.—The relation of coupling between the tone arm vertical shaft and lever "20" determines the landing position of the needle on a 10-inch record. Position of eccentric stud "E" governs the landing of the needle on a 12-inch record; this, however, is dependent on the proper 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 4⅝ 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 5⅝ 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 .058 inch, and for the 12-inch record is .078 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 .055—.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 .075—.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 tipped screw "H," run mechanism through cycle several times to check action, then tighten cone tipped 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, main gear, spindle pinion gear, 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 and pulleys on underside of motorboard.

Do not allow oil or grease to come in contact with rubber bumper or rubber parts of the mechanism.

MOTOR SERVICE DATA

On the RP-152E drive motors a 0.014-inch feeler gage is recommended for centering the rotor in the field bore.

The field coils can be disassembled and reassembled if care is used in reassembling the field lamination block in a manner so that the dove tail joint will not be sprung.

When disassembling the rotor or rotor shaft bearing only, the field stacking should be held in a clamp to prevent the field springing when the bolts which hold the assembly together are loosened.

REPLACEMENT OF RUBBER TIRE

1. Remove old tire by stretching and pulling over drive disc edge.
2. Thoroughly clean drive disc to remove burrs or foreign particles.
3. Place new tire over the drive disc. Avoid any twisting or excessive stretching of the tire.
4. Roll disc and tire on a flat clean surface while simultaneously applying a slight downward pressure on the disc shaft. This will allow the tire to seat itself properly in the "V" shaped groove on the drive disc and take up for any uneven stretching of the rubber tire.
5. Clean the rubber tire with carbon tetrochloride or any quick drying naphtha.

The mechanism should be loaded with one record on the turntable to provide sufficient momentum during the record changing cycle.

If it is desired to play 10" and 12" records in mixed sequence, only flat unwarped records of uniform thickness should be used.

Replacement Parts for Model R P 152E

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

STOCK NO.	DESCRIPTION
	PICKUP AND ARM ASSEMBLIES
36322	Arm-Pickup arm only less crystal, cable, pivot arm and shaft.....
36320	Arm-Pickup pivot arm and shaft less lift cable and rubber bushings....
32635	Cable-Pickup lift cable.....
35694	Cable-Pickup shielded cable.....
37158	Crystal-Pickup crystal cartridge and needle screw.....
	MOTOR ASSEMBLIES
36954	Armature-Motor armature and shaft for 25 cy. motor.....
36255	Armature-Motor armature and shaft for 60 cy. motor.....
36952	Cap-Bakelite cap for motor.....
36955	Capacitor-1.1 mfd for 60 cy. motor.
36951	Capacitor-1.25 mfd for 25 cy.motor (2 req'd).....
36726	Motor-105-125 volts 25 cy.complete.
36254	Motor-105-125 volts 60 cy.complete.
	OPERATING MECHANISM
10129	Ball-Steel ball for spindle shaft (Pkg.5).....
36277	Bumper-Main lever rubber bumper....
33987	Cam-Cam and drive gear complete(42)
36266	Clutch-Trip lever clutch less adjusting stud (5).....
36282	Disc-Turntable drive disc,rubber tire,and spindle shaft assembled-less turntable plate.....
36265	Finger-Trip lever friction finger(7)
31121	Gear-Record separator shaft gear(10)
36280	Gear-Turntable shaft drive gear....
33982	Guide-Main lever spring guide(11)..
31151	Guide-Pickup lift cable guide(spring) (2).....
36273	Lever-Locating lever and pawl.....
33985	Lever Main Lever (15).....
31140	Lever Pickup lift cable lever and spring (16).....
31132	Lever-Trip detaining lever (19)....
31133	Pawl-Trip pawl (22).....
36268	Pin-Pin to fasten gear to separator shaft (23).....(Pkg.2).....
36267	Rack-Long arm and gear (41).....
32880	Rack-Short arm and gear (40).....
36281	Ring-Retaining ring for set screw in turntable drive gear (Pkg.5)...
36477	Screw-No.6-32 ball point screw for record separator elevating lever..
36276	Screw-No.6-32 x 3/8 cup point set screw for turntable drive gear (Pkg.5).....
31118	Screw No. 10-32 x 5/16 cone pointed set screw for record separator shelf ('H') (Pkg.2).....
32869	Screw No. 10-32 x 5/16 machine screw for record separator shelf(Pkg.10)
4563	Screw pickup lift cable adjusting screw(Pkg.3).....
33983	Screw Record separator elevating lever point screw.....
33990	Separator-Record separator knife(25)
33988	Shaft-Record separator shaft (34)..
33989	Shelf-Record separator rotating shelf less set screws.....
33994	Spring-Flat spring for record discriminator lever (Pkg.2).....
32882	Spring-Main lever spring(43)(Pkg.2)
36580	Spring-Idler tension spring(Pkg.2).
36278	Spring-Pickup arm feed spring.....
3666	Spring-Pickup lift cable spring(31) (Pkg.3).....
14190	Spring-Record discriminating lever pawl spring (28) (Pkg.2).....
3676	Spring-Tension spring for cam pawl (Pkg.3).....
32436	Spring-Tension spring for locating lever and pawl (35) (Pkg.2).....
36921	Spring-Tension spring for trip detaining lever (Pkg.4).....
36279	Spring-Tension spring for trip pawl (Pkg.5).....
36271	Stud-No.4-40 Hex stud for trip lever clutch adj. (Pkg.2).....
34875	Switch-Pickup shorting switch.....
37873	Tire-Rubber tire for turntable drive disc.....
36283	Turntable-Finished top plate only..
8078	Washer-Spring washer for record discriminator lever (Pkg.2).....
2917	Washer-Spring washer for mounting levers (Pkg.4).....
36274	Wheel-Motor idler wheel and bearing less arm.....
	MOTORBOARD ASSEMBLIES
36262	Cup-Used needle(insert in pickup rest).....
36258	Escutcheon-Index escutcheon.....
36260	Gauge-Pickup needle gauge.....
34368	Grommet-Rubber grommet for motor mounting (Pkg.2).....
36263	Plate-Turntable shaft support and spring plate.....
30870	Plug-2 contact male plug for motor leads.....
36379	Rest-Pickup arm rest.....
32875	Switch-A.C. switch.....