ECLIPSE RADIO PTY. LTD.
(A DIVISION OF ELECTRONIC INDUSTRIES LTD.)
11-21 STURT STREET, SOUTH MELBOURNE
TECHNICAL BULLETIN

GENERAL SERVICE INSTRUCTIONS FOR AUTOMATIC RECORD CHANGERS COLLARO MODELS RC511 AND 3RC511

1. MOTOR

No maintenance of the motor is necessary as it is fitted with self-oiling bearings.

In the event of the supply frequency being changed, the motor pulley must be changed accordingly.

To do this, undo the 3 nuts holding the motor to the unit plate and remove motor.

Take careful note of any washers used in mounting the motor and be sure to refit them in the same position when re-assembling.

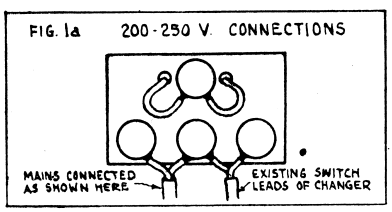
IMPORTANT:— Before removing the pulley from the motor spindle, mark its position on the spindle so that the replacement pulley may be set at the same level. This is of particular importance in the case of 3-speed Models.

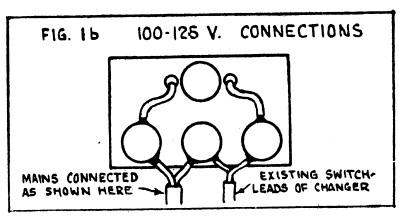
	Part No.
RC511 motor pulley for 40 cycle supply mains.	217/524.
3RC511 motor pulley for 40 cycle supply mains.	213/524.

2. VOLTAGE ADJUSTMENT

Each changer is normally connected for 200/250 volt A.C. supply as shown in Fig. 1A.

For 100/130 volt A.C. supply the two leads should be reconnected as shown in Fig. 1B.





3. PICK-UP DROPPING POSITION

IMPORTANT:— The pickup arm is located to the mechanism underneath the unit plate by means of a pair of spring-loaded rollers which engage in slots in the pickup positioning arm (7). This is to prevent damage or strain to the mechanism should the pickup arm be inadvertently moved sideways by hand, e.g., whilst changing the pickup head or stylus, such movement merely disengaging the rollers from the slots. If left so displaced, the pickup dropping position will be correspondingly affected. It is, therefore, important to ensure that the rollers are located in the slots before determining whether adjustment of the dropping position is necessary. To do this, bring machine to switched-off position, move pickup inwards till head touches record spindle and then move outwards to position over pickup rest. It will be felt distinctly when the rollers spring into position in their slots.

The position at which the pick-up stylus alights on the record may be adjusted, if necessary, by means of the two screws A and B (Fig. 2). To bring pickup dropping position further in, loosen screw A and tighten screw B the same amount. To bring pickup dropping position further out, loosen screw B and tighten screw A the same amount.

NOTE:— This adjustment is very sensitive; turn the screws only about 1/8th of a turn at a time until the desired position is obtained, and finally make sure that both screws are really tight.

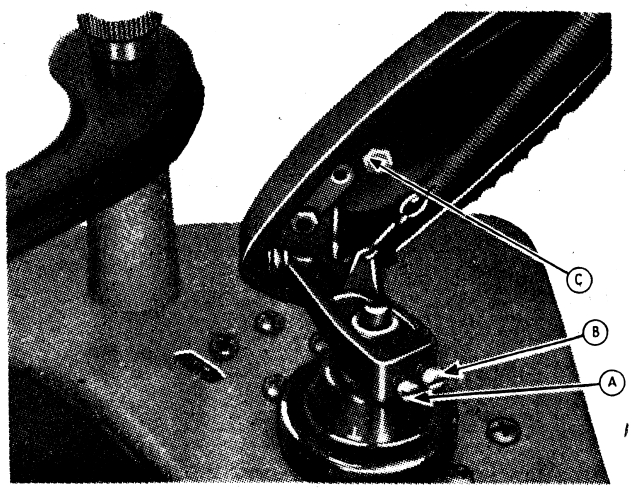


FIG.2.

This adjustment affects equally all positions (whether for 7", 10" or 12" records). No independent adjustment is provided, the positions being relatively correct to each other in accordance with the standards laid down by the principal record manufacturers. Some very old records may not conform to these standards.

4. PICK-UP HEIGHT ADJUSTMENT

Small adjustments may be made by means of the hexagon-headed screw C (Fig. 2). Turning the screw anti-clockwise will increase the lift of the pickup and vice versa. Correct adjustment is when the arm just clears the pickup rest. Not more than 1/16th" clearance is advised as otherwise the arm will be unduly strained when secured by the clip to the rest.
If the pickup arm is replaced at any time complete adjustment may be necessary. Proceed as follows:—

1. **Bring machine to playing position and switch off mains supply.**
2. **Adjust screw C so that underside of pick-up head (not the needle) comes just level with the turntable cloth.**
3. **Bring machine to switched off position and, if necessary loosen locknut and adjust screw 8 so that pick-up arm just clears the pick-up rest. Retighten locknut securely.**

5. RECORD DROPPING

If more than one record drops at a time, examine the centre holes of your records. If these are badly worn, their use should be avoided. If the record holes are not worn, see that the record retaining slide in the top portion of the record spindle is perfectly free. If there is any suspicion of the spring or slide binding, this must be freed by removing the screw at the top of the spindle and carefully cleaning in petrol the slide and spring which should then be replaced.

If records fail to drop, care should be taken to see that the record selector pawl in the bottom half of the record spindle rises into the hole in the record, and moves forward enough to push the record off the shelf. This is best done with one record on the spindle and starting up the changer in the normal way. If the selector pawl is not moving sufficiently, the remedy is as follows: Lift record dropping lever (1) out of slot of record dropping pad (2) taking care not to stretch the spring (3) unduly. Insert screwdriver in slot (2) and turn one-half to one turn in anti-clockwise direction. This will increase travel of record selector pawl. This must not be overdone as jamming of the mechanism will result. Likewise movement of the pad (2) in a clockwise direction will reduce the movement of the selector pawl. The record dropping lever (1) should then be inserted in the slot of the record dropping pad (2).

NOTE:— SPINDLES ARE NOT INTERCHANGEABLE. If a new spindle has to be fitted the turntable spigot must be pre-set by means of the large hexagon nut (27) so that the step of the record spindle faces approximately halfway between the pickup base and the pickup rest.

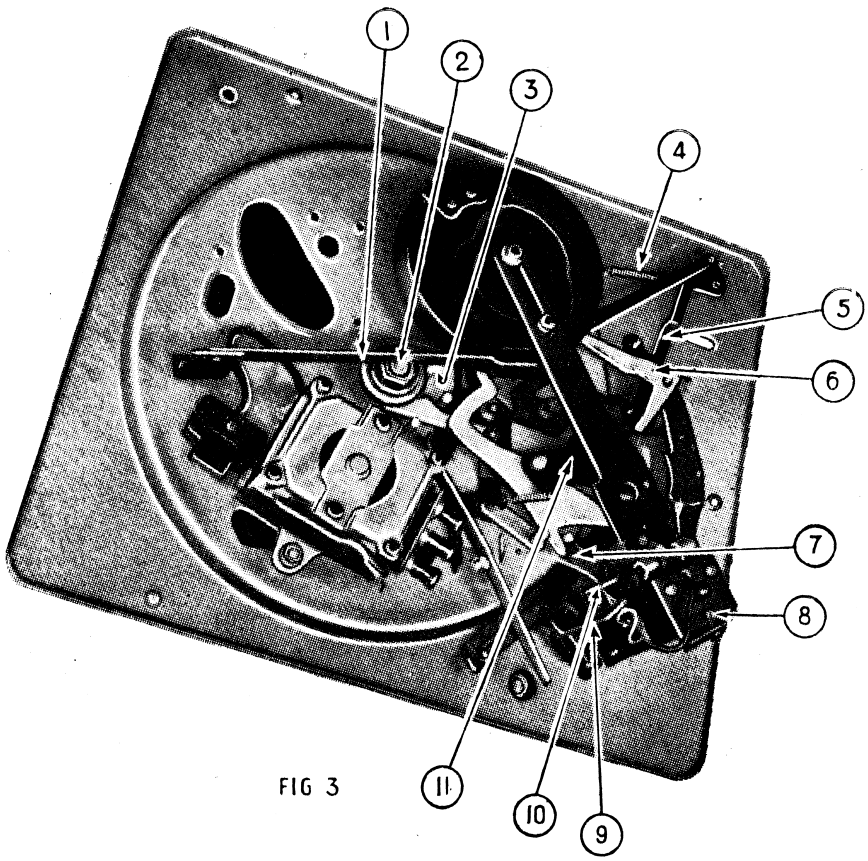


FIG 3

6. SWITCHING OFF

A. AUTOMATIC

In the event of the machine failing to switch-off after the last record has been played, it may be due to one of the following reasons:—

1. The balancing arm spindle (19) is not falling to its full extent and making contact with the lever (20). This will be due to the balancing arm spindle (19) sticking in its housing, and this should be freed.
2. The lever (20) is not working freely up and down. The balancing arm spindle (19) should when fully dropped lift the lower forked end of the lever (20) into contact with the underside of the unit plate, thus preventing the niche in the trigger (15) engaging with the pin (14). This allows the slide (30) to return under the action of its spring (35), thus switching the machine off.
3. The auto-Stop trip pawl (29) is not working freely under the action of its spring (28), which may have been accidentally stretched or displaced.

If the machine stops when the pickup alights on the record, or at the end of each record, it will be due to the trigger (15) not working freely, or to its spring (13) having become weakened or displaced.
If the machine stops at the end of the last but one record, this will almost certainly be due to the record balancing arm (33) having become bent upwards, thus allowing the balancing arm spindle (19) to fall into full engagement with the lever (20), while there is still one record on the spindle.

B. STOP CONTROL

Operation of the "Stop" control should produce a similar effect by fully depressing the end of the lever (20) by means of the ramp in the stop slide (18) while at the same time tripping the driving mechanism into action.

7. BIASING

In order to obtain satisfactory tracking whilst using light-weight pickup heads, more especially with long-playing records, it has been found necessary to eliminate all inward drag. In consequence it will be found that the pickup will not of its own accord run inwards into the playing grooves of older types of records not provided with a run-in groove on their outer edges. If it is desired to play such records, the machine may be slightly tilted by adjusting the mounting screws to give the necessary amount of bias, but under no circumstances should long-playing records be played under these conditions, as they would be seriously damaged.

8. SWITCHING ON

It is important when switching on to turn the control knob to its full extent. This has the effect of holding off the drive to the change mechanism and enables the turntable to attain its proper speed before the load of the change mechanism is imposed.

Under exceptional circumstances, switching off the mains supply during the change cycle or otherwise interfering with the mechanism may result in inability to set the change cycle into operation, or to maintain the machine in the switched-on condition. Under these circumstances it will generally be found that the turntable will rotate while the control knob is held to the "Start" position, but that it comes to rest as soon as the control knob is released. The mechanism may in all cases be restored to normal functioning by rotating the turntable by hand until the pickup assumes either its playing position over the turntable or its switched-off position over its rest. It should then be possible to switch on in the normal way.

IMPORTANT:— 1. Do not use force in turning the turntable in this way. If it is unduly hard to turn, it should be removed by unscrewing the record spindle to see if any of the levers underneath it have become displaced. (Fig. 5 shows correct disposition of levers.)

2. When removing or replacing turntable be sure that the tab projecting from the bottom of the turntable boss is towards the front of the machine as otherwise it may interfere with the levers running across the centre hole in the unit plate and cause damage or displacement. Also, when replacing be sure that the end of the striker arm (25) is moved away from the turntable bearing spigot.

3. When replacing spindle, be sure to re-adjust in accordance with instructions given in Section (5).

9. AUTOMATIC TRIP

This is of the "Velocity Trip" variety, and is designed to be extremely light and sensitive in operation so as to function satisfactorily with the lightest type of pickup. The only adjustment is provided by means of the self-locking nut (21) which should be set so that the striker arm (25) rests in a horizontal position with its free end just clearing the bottom of the diecast housing (26) carrying the turntable bearing spigot.

If this adjustment is correctly made and mechanism fails to come into operation at the end of each record, make sure that the striker arm (23) is pivoting quite freely, as it is only fed inwards by the friction provided by its own weight resting on the curved end of the lever (24). See also remarks under Section 10.

10. REJECT OR STOP

If operation of the "Reject" or "Stop" control fails to bring the change cycle into operation, the swinging bracket (17) carrying the drive pulley is probably restricted in its movement. Most likely causes of this would be (a) displacement of the muting contacts (32); (b) damage or displacement of spring (31). These circumstances would also cause complete or intermittent failure of the change mechanism to come into operation automatically at the end of each record.

11. CONTINUOUS OPERATION

If the change mechanism operates continuously without allowing each record to play to the end, the cause will most likely be associated with failure of the control knob to return to its central position under the influence of its spring (4). This causes the pin (36) to strike against the edge of the trip cam (34) at the end of the change cycle, thus tripping the mechanism back into action again.

To test whether this is the cause, deliberately turn the control knob very slightly towards the "Stop" position immediately after switching on. If this cures the trouble, then ascertain what is preventing free return of the control knob to its central position. Most likely cause is that the stop link (5) is binding against the underside of the unit plate, and it should be gently prised away with a screwdriver until perfectly free. The tension of the spring (4) may also be slightly increased if necessary by cutting off about 6 coils.

Another possible source of this fault, which then generally becomes intermittent, and only apparent after the mechanism comes into operation at the end of a record, and not if a record is rejected, is due to the auto trip resetting lever (22) not being rotated fully during the change cycle by the action of the spring (23). This can be due to weakening or displacement of the spring, or, in the case of early production of Model 3RC.511, to the end of the pin in the short leg of the lever (22) rubbing against the underside of the unit plate. In later production of this Model the unit plate has a clearance hole to avoid the possibility of the end of the pin touching the unit plate.

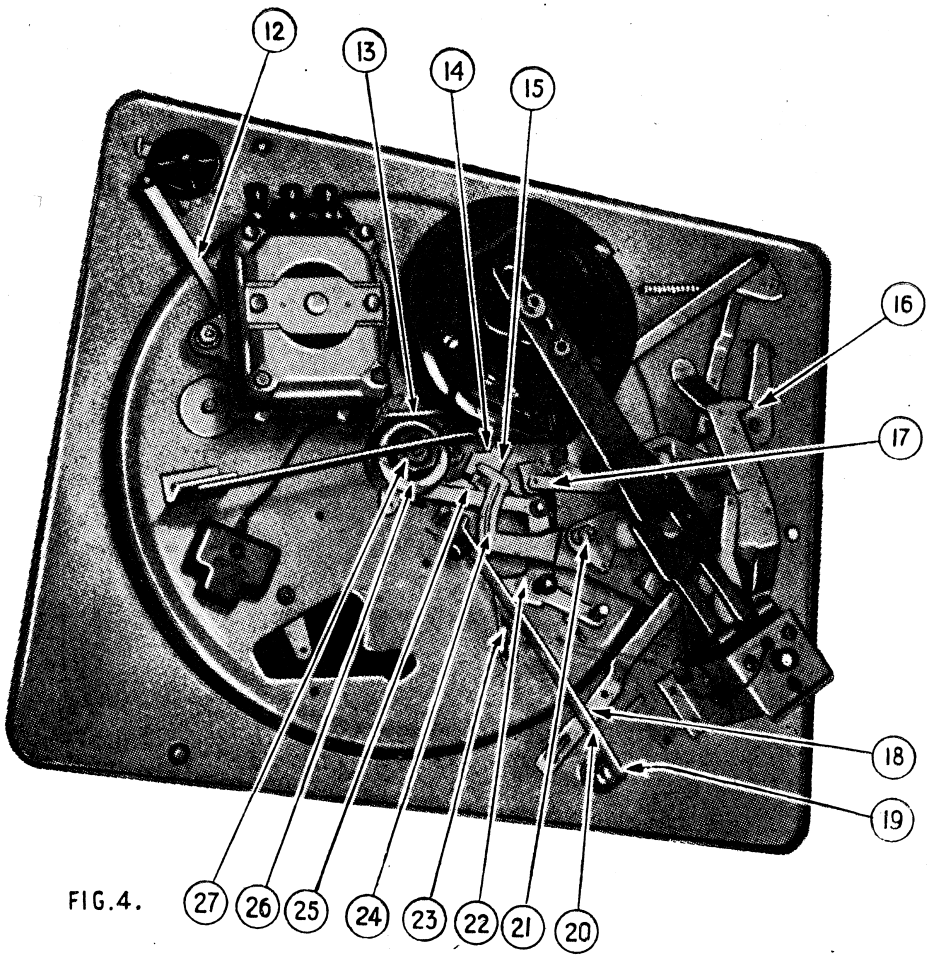


FIG.4. Underside of Model 3RC.511.

12. THREE SPEED DRIVE

The 3-speed intermediate spindles and pulleys are mounted on a floating quadrant (39) which has to be adjusted to have easy movement between the motor drive pulley (38) and the idler pulley (40). The adjustment is by means of the self-locking nut (37) which should be set with a minimum upward movement.

Should there be a loss of speed on any drive, it is usually due to either oil on the friction drive surfaces or dirty component. Remove the pulley by unscrewing the securing screw on top, and clean thoroughly, taking care not to damage the rubber drive as this has been ground with accurate concentricity. Lubricate the bush with light oil and replace with the fibre washer at each end of the pulley, the fibre washer with the large hole at the bottom.

Should the quadrant (39) be removed, see that the felt pads are lying flat and secured firmly in position.

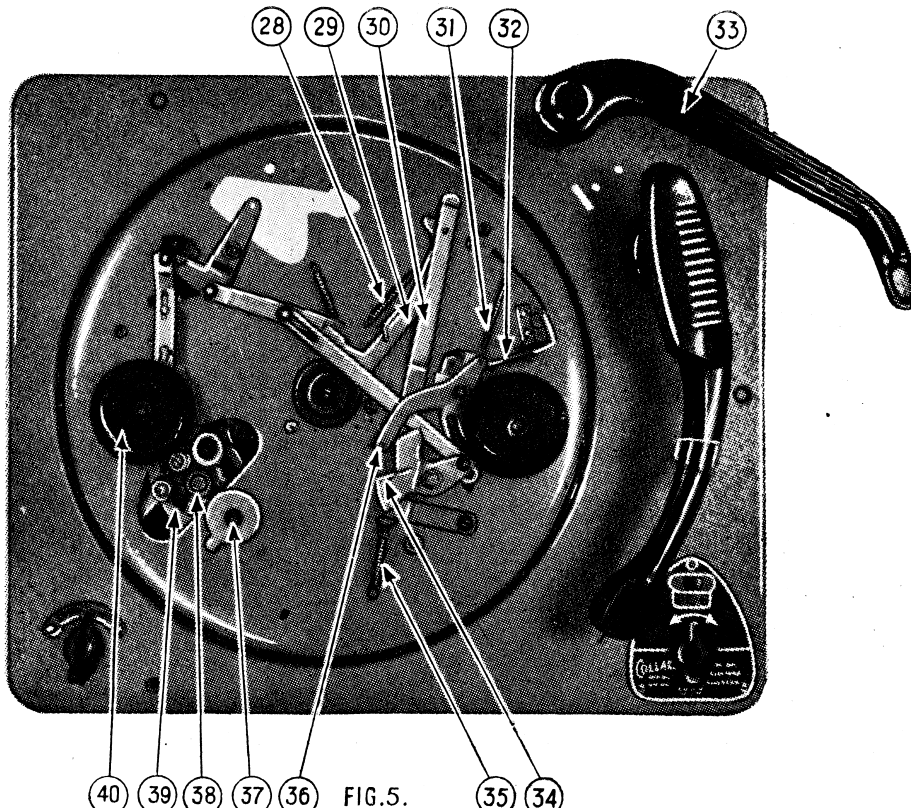


FIG.5.

View with turntable removed–Model 3RC. 311.