



ECLIPSE RADIO PTY. LTD.

(A DIVISION OF ELECTRONIC INDUSTRIES LTD.)

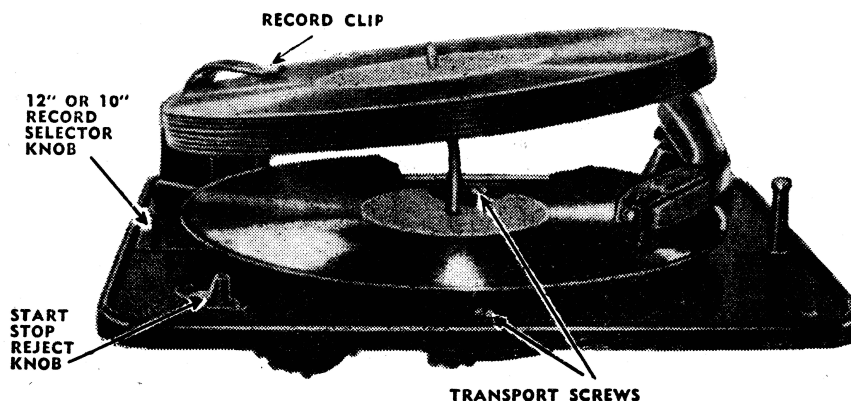
11-21 STURT STREET, SOUTH MELBOURNE
TECHNICAL BULLETIN

BULLETIN MR—2

File : Receiver A.C.

Date : 27/3/50

SUBJECT — RECORD CHANGER SERVICE-ADJUSTMENTS FOR GARRARD TYPE RC70A
RECORD CHANGING UNIT.



TRANSPORT

Two Transport fixing screws, indicated on the diagram, hold the record changer rigid to the cabinet during transport. These two screws are to be unscrewed and withdrawn when operating the changer and when transporting the unit, re-inserted and screwed up tight.

OPERATING INSTRUCTIONS:

Turn grammo-radio switch to grammo position.

Controls: The volume and tone controls function on grammo operation in exactly the same manner as on radio operation.

1. **NEEDLE:** Rotate the pick-up head clockwise and securely fix a needle by means of the clamping screw. The needle may be of the permanent "sapphire" point type, but in any case should be of a type which will play at least 10 records without need of replacement. When a needle has been used once slight flats develop on the needle point, therefore do not alter its position until replacing.
To avoid damage to the changer mechanism, DO NOT touch the pick-up or restrain its movement by hand. When replacing the needle, first make sure the pick-up is resting on its rest pillar, and if not, hold the start-stop knob on the start position until the pick-up automatically rests on its pillar, then quickly release the knob.
2. **LOADING RECORDS ON SPINDLE:** Place the record spindle in position, the sloping section leaning toward the record clip. Set the record selector knob to the 10" or 12" position, according to the size of the records it is desired to play.

Raise the record clip and place any number up to ten 10" or ten 12" records (sizes not mixed) on the record spindle, their lower edge resting on the record platform, then lower the record clip.

3. TO START: Move the front left-hand knob to "START." The motor will commence to run and the changer operate. When the last record has played, the changer will automatically switch off.
4. TO REJECT any record whilst playing, move the left-hand knob to "REJECT" position and release. This will reject the record being played and automatically bring down the next record for playing.
5. TO STOP the machine at any time, move the left-hand knob to the "STOP" position. If this is done while a record is playing, that record will be automatically rejected and the next record commenced when the changer is switched on again.
6. TO UNLOAD RECORDS: Raise the record clip and withdraw the record spindle.
7. TO REPEAT: If desired, one record may be repeated any number of times automatically by placing the record on the turntable, setting the selector knob to the size of the record and switching on with no records on the spindle and the record clip raised. When it is desired to stop playing the record, just lower the record clip and the changer will automatically switch off at the end of the record.

RECORDS: Do not use badly-warped records or records with imperfect and badly-worn centre holes; they may not drop and the pick-up would lower on the turntable felt; also, badly-warped records will give trouble by slipping during playing. Care should be taken in storing records to prevent contact with dirt and dust which sets up abrasive action and causes rapid wear. Always brush records with a lint free cloth or soft brush.

LUBRICATION:

The motor and intermediate wheel bearings being the oil retaining type will rarely need lubricating. When the need for oil is apparent a few drops of fine machine oil is all that is necessary.

The rubber rim on the intermediate wheel MUST be kept free of oil.

SPRING SUSPENSION:

The Record Changer has spring suspensions to prevent acoustic feed back occurring between the loud-speaker and pick-up. Ample clearance should be left between the edges of the unit plate and the cabinet to allow the Record Changer to float freely. Diagram 2 illustrates the assembly of the spring suspension.

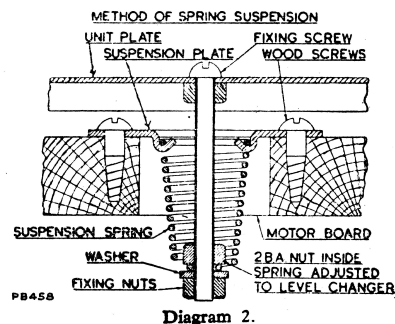


Diagram 2.

MOTOR CONNECTIONS:

The links are set for operating the 200/250 volts range when the changer leaves the factory, and need only be altered if it is required for use on the 100/130 volt range.

CONNECT BOTH BARS THUS
FOR 200/250 VOLTS.

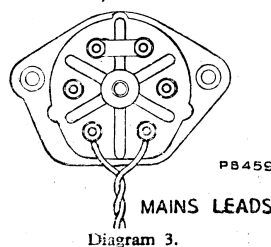


Diagram 3.

CONNECT BARS THUS
FOR 100/130 VOLTS.

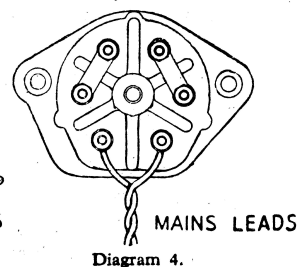


Diagram 4.

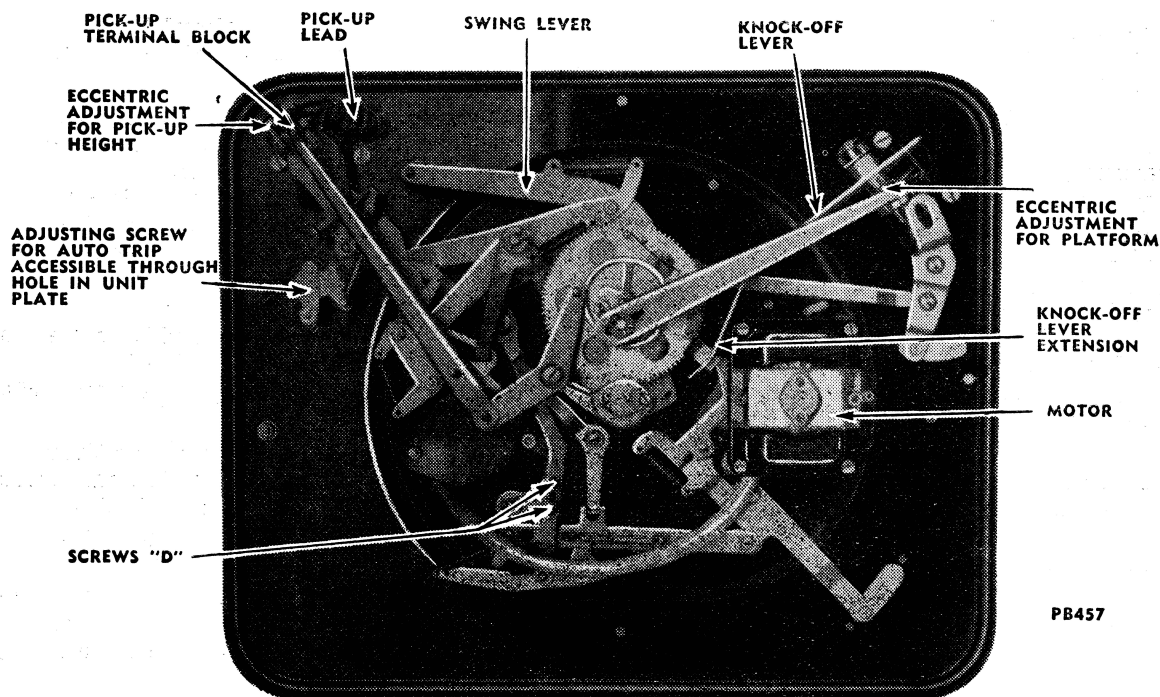


DIAGRAM 5

SERVICE ADJUSTMENTS.**SPEED.**

No adjustment for speed is provided and there is no governor. The motor is of the constant speed induction type which maintains the turntable at 78 r.p.m.

It is essential that the driving surface of the small brass pulley on the motor spindle, the rubber-tyred pulley and the drum of the turntable, be kept absolutely free from all oil or grease. If the speed should become slow or varying, this is the first point that should be checked, and the pulley drum and intermediate wheel should be cleaned with a rag and a few spots of petrol or lighter fuel.

MOTORS.

If the motor fails to start when the control knob is turned to "start," first check the power supply and ascertain if current is reaching the motor terminals.

Next disconnect the mains supply and examine the terminal block and see that the leads and screws are tight, also examine the switch contacts accessible underneath, clean and adjust if necessary.

If a thick oil has been used to lubricate the motor bearings the motor will appear weak or will not start. It will be necessary to dismantle the motor and clean away all traces of the thick oil. It is, therefore, essential to lubricate the motor bearings with a good quality thin oil.

Should the motor get too hot, see that the voltage change over links are set correctly to correspond with the voltage of the power supply. If correct, check the motor windings by inserting an A.C. milli-ammeter in either motor lead. The maximum current consumption should not exceed 100/130 volts, 50 cycles, 0.26 amp., 200/250 volts, 50 cycles, 0.13 amp.

If readings in excess of the above figures are obtained, the motor unit should be returned for examination.

To remove the motor, first make sure the electricity supply is disconnected, then remove the insulated plate on the underside of the terminal block, underneath the plate will be disclosed the nuts on the

screws securing the terminal block to the unit plate—these should be unscrewed and the screws lifted out. The terminal block will then be free from the unit plate and only attached to the motor leads.

Next, while supporting the motor underneath, unscrew the nuts on the three suspension screws, which secure the motor to the unit plate. Before drawing the motor away from the unit, make a careful note of the sequence of steel and rubber washers on each suspension screw in order to reassemble correctly when refitting the motor. This is important as the height of the motor in relation to the intermediate wheel is critical.

PICK-UP DROPPING POSITION.

The Pick-up Arm has been finely adjusted so that the needle comes on to 10 in. records in a 9 $\frac{3}{8}$ " diameter circle and 12" records in a 11 $\frac{1}{8}$ " diameter circle. These positions were arrived at after checking a very wide selection of records of various makes.

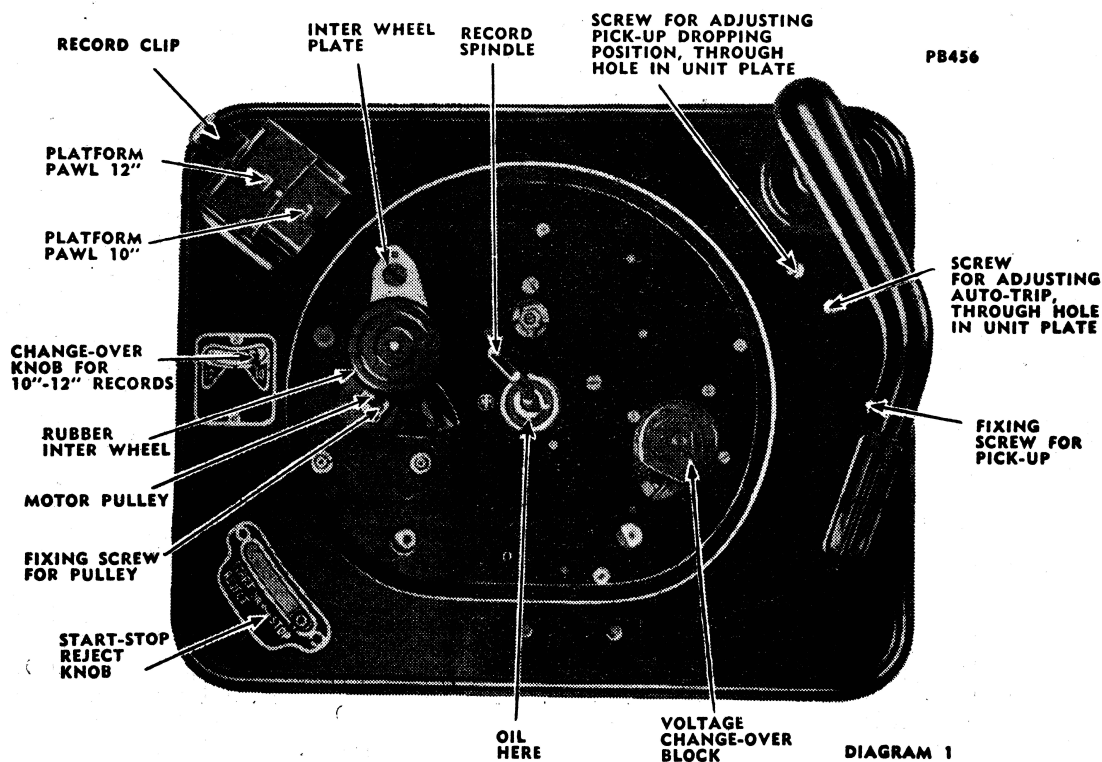
There may be a few records where the record track starts further away from the centre (i.e., nearer the edge), and in these exceptional cases the needle may alight on the record a few grooves from the start of the record. If the pick-up dropping position were set for these exceptional records it would not be suitable for average records.

Should the dropping position of the pick-up require adjustment, the pick-up adjusting screw—accessible through a hole in the unit plate, see Diagram 1, should be turned with the changer in its start position, that is, with the pick-up arm on its rest.

The pick-up adjusting screw should be turned either to the right or left, according to requirements. A quarter of a turn in either direction will give you the maximum adjustment. After adjustment, switch on, check the dropping position and re-adjust if necessary.

PICK-UP HEIGHT.

If desired the pick-up height can be adjusted by loosening the nut securing the "Eccentric adjustment for pick-up height," Diagram 5, and adjust the eccentric pivot with screwdriver in slot at back. Finally retighten locking nut.



CAUTION.

When making any adjustments to the Pick-up Arm, it should NEVER on any account be forced into position. If the turntable is turned by hand it should NOT be turned backwards.

If the pick-up does not run into the record grooves after alighting on the record edge, see that the record changer is level by placing a spirit level on a record on the turntable. Also make sure that the flexible wire leading to the pick-up is not twisted or held in such a manner as to prevent the free movement of the pick-up arm; also see that the associated levers are free.

AUTO TRIP MECHANISM.

The auto trip mechanism is set to operate when the needle reaches a 1 13/16" radius, or if it oscillates in an eccentric groove.

Occasionally records having a smaller or larger radius at the end of the playing grooves, are encountered. If it is desired to adjust the mechanism to take these exceptional records, the screw visible through hole in unit plate (Diagram 1) should be adjusted.

To make the trip operate earlier for larger radius records loosen the screw, and holding the pick-up arm steady, move the screw a shade towards the turntable. To make the trip operate later for small radius records, move the screw away from the turntable.

After each adjustment check with record, and readjust if necessary. Finally retighten the screw.

It is emphasised that this screw should be moved a barely visible amount at each adjustment.

RECORD PLATFORM ADJUSTMENT.

When despatched from our Works the record platform is set to accommodate records of average dimensions. Occasionally, however, records may be found outside the normal limits; if necessary, therefore, the platform may be adjusted to take them.

To set the platform, the nut locking the "Eccentric adjustment" for Platform, Diagram 5, should be loosened, and with the mechanism set for 12" records, the pick-up arm in the playing position, and the largest 12" record available loaded on the platform, turn the "Eccentric Adjustment" until there is a gap of not more than 1/8" between the edge of the record and the front edge of the platform pawl. Finally retighten the locking nut.

If the changer fails to drop either 10" or 12" records, the above adjustment should be carried out.

AUTO STOP.

When the last record on the platform drops on to the turntable, it allows the record clip to fall and this unlocks the auto stop which should switch off the motor at the end of the record. If when the last record has been played and the record clip has fallen the mechanism does not automatically stop, the following procedure should be carried out.

1. Compare the underside of the record changer with diagram 5 and find the "Swing Lever" and the "Knock-off Lever." Note that in the upper edge of the knock-off lever there is a step. With the record clip lowered and the needle removed from the pick-up head, start the changer with a hand on the turntable, slow it down to the slowest possible speed at which the mechanism will operate. Move the control lever to the "Reject" position. The swing lever should now move outwards until it engages the step on the knock-off lever and should remain engaged until the record

changer switches off. If the swing lever does not engage the step but passes over it, proceed as at (a) to correct. If the swing lever engages in the step, set as at (b) following.

- (a) Load two records on the platform spindle in the usual way. Lower the record clip and start the changer. The first record will now drop on to the turntable leaving one remaining on the platform. Again, with the hand operating as a brake to slow down the turntable, move the control lever to the "Reject" position. The tip of the step on the knock-off lever should now clear the surface of the swing lever in its outward movement by $1/64$ ". If this dimension is incorrect, stop the changer when the swing lever is directly over the step in the knock-off lever. The knock-off lever is divided into two parts which are held together by a screw and a rivet. Loosen the screw to adjust the height of the lever until the $1/64$ " clearance is obtained, then retighten the screw. Finally re-check the changer with the record clip lowered to ensure that the swing lever engages the step. Should the auto stop still fail to operate, set as at (b) below.
- (b) Loosen the screws at D (Diagram 5) and bring the two parts of the lever together in order to shorten slightly the effective length and retighten the screws. Check and repeat the adjustment if necessary until changer operates correctly.

TEMPLATE FOR RECORD SPINDLE.

Should the record spindle be accidentally bent out of position through being dropped or other reasons, the record dropping will be affected. If trouble is experienced with erratic record dropping, lay the record spindle on the template and check that it conforms to the shape thereof.

