

REMOVAL OF MECHANISM FROM CASE (Fig. 1).

NOTE:

Lift mechanism by **CUT-OUTS** IN EITHER SIDE OF BASE. **DO NOT ATTEMPT TO LIFT BY RECORD SUPPORTING PLATES.**

Care should be exercised in lifting mechanism out of cabinet or finish of cabinet may be damaged.

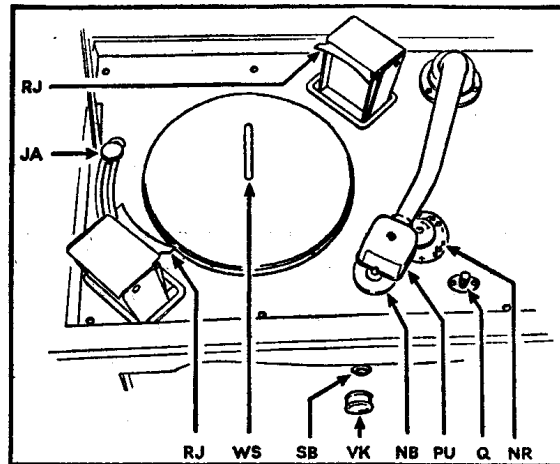


Fig. 1.

REPLACING PICKUP BASE AND RING (Fig. 2).

The $\frac{3}{4}$ ring should be fixed as shown, using two small cheese-head screws. When replacing moulded tonearm base cover, place small section at **back of pickup** arm and slide large section on to it. Tonearm should be swung as far as possible towards centre of turntable before this is done.

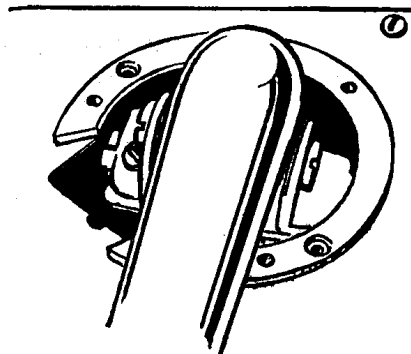


Fig. 2.

LUBRICATION.

The mechanism has been so designed that it **requires lubricating only after extended periods of use.** MECHANISM SHOULD BE RUN THROUGH SEVERAL CYCLES OF OPERATION AT INTERVALS DURING THE PROCESS OF OILING SO THAT OIL PENETRATES TO ESSENTIAL FRICTIONAL POINTS. Attention should be paid to lubrication of turntable spindles. Oil should also be applied to countersunk top face of clutch wheel and to small hole in sleeve surrounding hollow motor spindle, which communicates with the top motor bearing.

Wipe mechanism carefully with dry cloth to remove traces of dirty oil, then apply HIS MASTER'S VOICE oil to frictional points. EXCESSIVE OIL TENDS TO COLLECT DUST AND GRIT. INCORRECT OIL MAY "GUM-UP" MECHANISM.

MOTORS.

Motors should receive careful handling during periods of overhaul. See MARCONIPHONE MOTOR MANUAL for type 24 motor (A.C.) and type 25 motor (D.C.).

The motor is situated in the bottom of the cabinet and connected to the auto-mechanism by a shaft with flexible joints.

SPEED REGULATOR.

This is situated on the motor board in the bottom of the cabinet.

REMOVAL OF MOTOR.

- (1) Unscrew grub screws securing lower flexible joint to motor spindle.
- (2) Slide joint off motor spindle and remove motor board retaining screws.
- (3) Lift out motor board, back edge first.

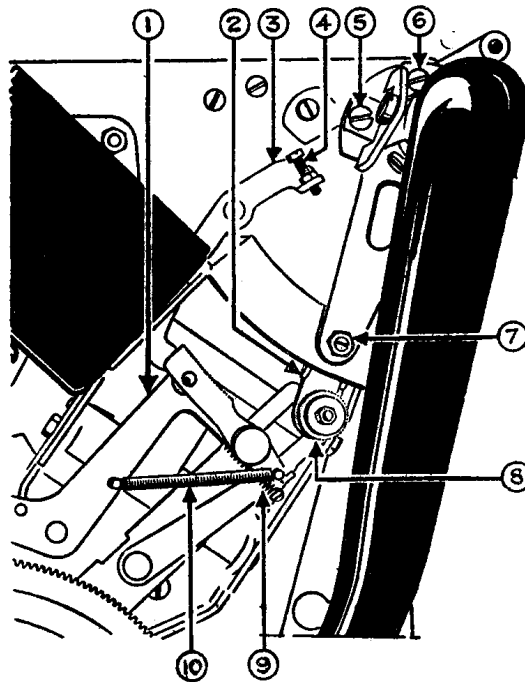


Fig. 3.

ADJUSTMENT OF MOTOR.

Alternating current, type 24.

Set the copper links as fig. 6.

Note. For voltages of 130 to 160 a specially tested 3-mfd. condenser must be connected in series with the motor when adjusted as for 200 to 260 volts. The Part No. of this condenser is 3278A.

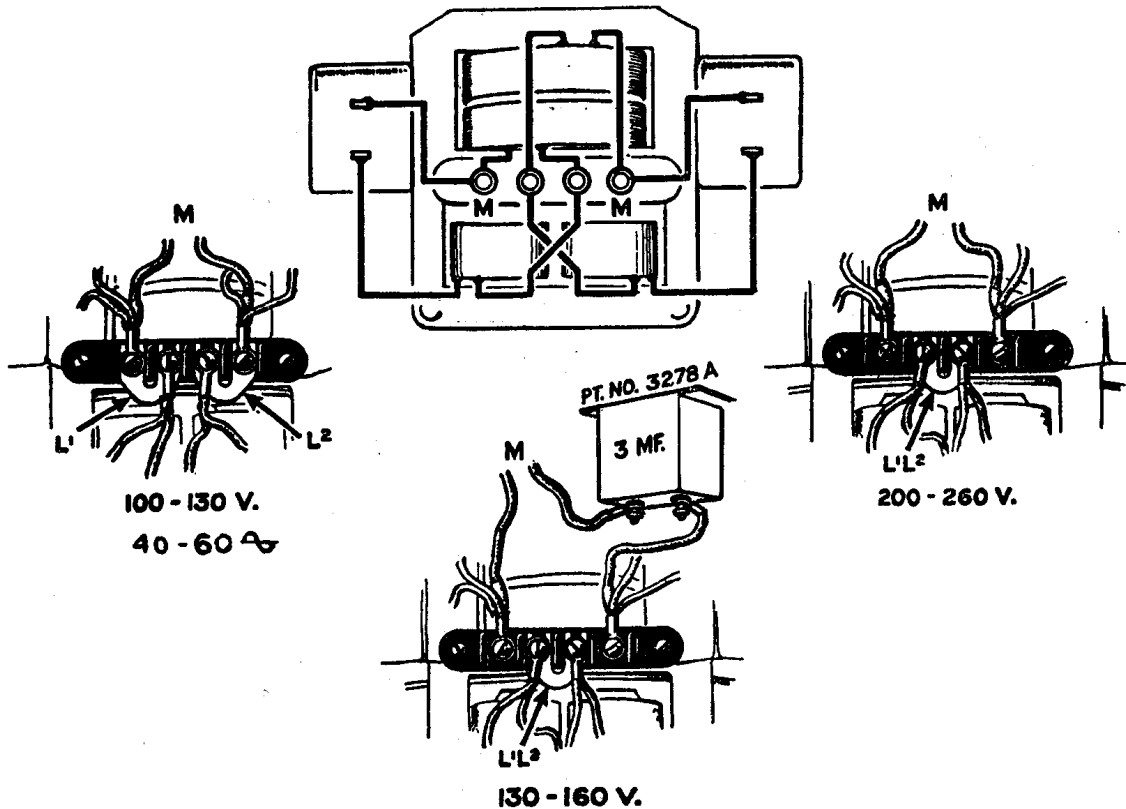


Fig. 6.

Direct current, type 25.

When operating on 8-Record auto-mechanism, the voltage of this motor, measured **at the motor with the motor running, MUST be 50 VOLTS.** Adjust sliding resistance to secure this voltage.

Two calibration scales may be found on motor resistance, one for when motor is operating simple turntable, the other for auto.

MOTOR CIRCUIT.

The motor is controlled by 2 switches :

1. The main switch on the chassis.
2. The switch operated by the revolutions of the indicator switch of the mechanism in order to stop the motor when the last record has been played.

The mains received from the chassis pass to the motor via the switch on the mechanism by the brown and red wires of a triple flex, connected to a 3-socket plug which engages in 3 pins on the motor board.

Note. The black wire is an earthing wire for the motor frame and is connected to the large pin and plug socket.

REPLACEMENT OF MOTOR. (Fig. 4.)

To remove motor, drive out the turntable locating pin 34, and slack off the grub screw which fixes the toothed clutch wheel 33.

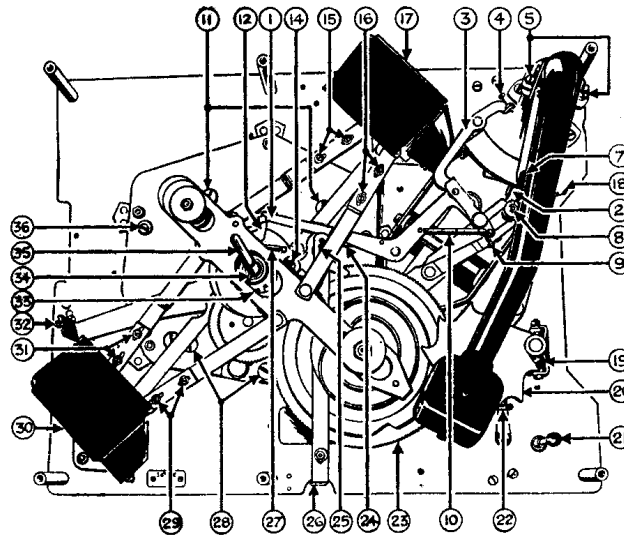


Fig. 4.

When replacing motor do **not** use the spot hole in motor spindle to locate the clutch wheel. This spot hole is used only to facilitate manufacture. Secure the clutch wheel by means of the grub screw in such a position that there is about $\frac{1}{32}$ inch up-and-down play in the motor spindle, tested while the spindle is being rotated this way and that.

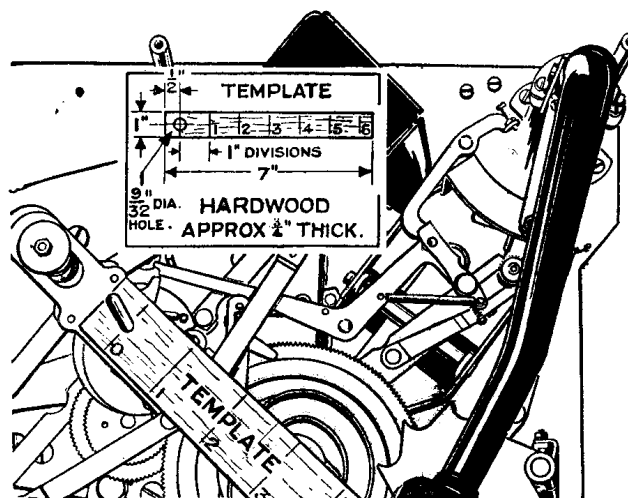


Fig. 5.

Detach main feeder wires to motor and remove four screws 11 and 28 (Fig. 4). Remove motor.

ELECTRICAL DETAILS OF PICKUP CIRCUIT.

Pickup. Type 14, DC Resistance 6,000 ohms. Signal strength from pickup, on a pair of 4,000 ohms 'phones, from average record (volume control full on) should be medium crystal strength.

Cut-Out Switch. Two spring contacts are mounted on underside of motor board S1 (Fig. 6) operated by stud on underside of gear wheel, to cut out sounds from pickup while records are being changed and pickup is landing on record.

Signals pass from pickup head down pickup arm via pair of metal screened wires to contacts of mechanism operated cut-out switch.

Signal then passes down brown screened flexible lead to blue plugs for insertion into sockets in chassis.

Note. The black plug earths the screening of leads.

SPARE PART LIST OF SPRINGS FOR AUTOMATIC MECHANISM.

	Part No.
9 Spring for return lever	9044
10 Spring for trip ratchet	9077
18 Spring for feed-in lever on "A" mechanism series	9044
18 Spring for feed-in lever on "A1" mechanism series	9099
19 Spring for Index Roller	10221
22 Spring for switch latch	9100
24 Spring for check lever	9100
25 Spring for push bar	9040
Spring for setting lever (JA)	7992

Note. "A" or "A1" will be found stamped on the top or bottom plates of the mechanism, not the cover plate.

IMPORTANT.

NOTE A. Before making any adjustments, examine mechanism closely to ascertain whether any of the springs 9, 10, 18, 19, 22, 24, 25 or 27 have broken or become detached.

THE MECHANISM MUST BE FIRMLY SECURED IN CABINET BEFORE MAKING ADJUSTMENTS.

NOTE B. PROCEED WITH CAUTION. ONE ADJUSTMENT MAY AFFECT ANOTHER.

NOTE C. WATCH AND LISTEN FOR MECHANICAL FRICTION.

SERVICE TABLE.

Symptom.	Suggested Action.
Pickup rises to high and touches bottom record of those loaded on Plates or Pickup does not drop low enough.	Before assuming that height of pickup head is wrong, make certain that the turntable is correctly located upon the turntable pin 35 (Fig. 4), and IS NOT RIDING UPON PIN. Having located the turntable, rotate until the pickup head drops and indicator disc 20 (Fig. 4) has moved round. In this position needle should just clear felt on turntable. Move tonearm towards turntable spindle and, whilst revolving gears in a clockwise direction, disengage clutch lever 12 by giving tonearm a slight backward movement. When pickup is at its maximum height it should just clear the under side of a 10 in. record when record is resting on the record releasing plates, i.e., the lower plates. The needle point should clear the top of 8 1/2 in. records when the arm is moved towards centre spindle. If height of pickup head is incorrect, adjust by screw 7 (Fig. 3) and fix screw by locking the nut. Examine spring 18 (Fig. 4) and action of catch lever, if necessary strengthening spring 18.

SERVICE TABLE—continued.

Symptom.	Suggested Action.
<p>Mechanism will not drop records. Mechanism drops more than one record at a time.</p>	<p>Should distance between top separator plates be too small, the mechanism will not release the records. On the other hand, if separator plates are too far apart, more than one record may be released.</p> <p>The following operations should be carried out with the spindle 35 in position. Slack off the screws 16 and 29 (Fig. 4) and open separator plates to fullest extent. With current switched off, press starting lever 26 (Fig. 4) and rotate gears in a clockwise direction until lower record plates are open to their fullest extent.</p> <p>Now slack off screws 15 and 31 and adjust lower plates until the largest available 12 in. record just clears the edges. The lower record plates should release both sides of record simultaneously.</p> <p>Tighten up screws 15 and 31 to secure this adjustment.</p> <p>Again rotate gears until top separator plates are as far back as possible, and place the largest available 10 in. record on the plates. The separator plate knife-edges should now be set so that they just clear the record.</p> <p>Secure this adjustment by tightening screws 16 and 29.</p> <p>The screws fixing the eccentric discs 36 should not be interfered with. These eccentrics only adjust the selector lever in relation to the slot in the metal cover plate.</p>
<p>Needle does not drop on records in correct starting position.</p>	<p>Should the pickup head lower at the wrong point on either 10 in. or 12 in. records, set the mechanism for 10 in. records and slack off the screws 5 (Fig. 4). By turning screw 6 (Fig. 3) the correct position of arm for 10 in. records can now be obtained. The needle point should descend in the centre of the plain margin on edge of record. Rotate gears in a clockwise direction and test after making this adjustment.</p> <p>Now move lever 32 (Fig. 4) to open plates for 12 in. records and test "drop" of needle on a 12 in. record.</p> <p>If needle does not drop in centre of plain edge of 12 in. record rotate gears until pickup starts to fall—DO NOT BRING PICKUP TO ITS LOWEST POSITION AND DO NOT READJUST SCREW 6. Make a template (shown in Fig. 5) and place in position shown—the template should be a tight fit on spindle 35.</p> <p>Carefully mark the distance between the centre of spindle and the needle point. Now set the jaws to accommodate 10 in. records and gently push pickup head as far to the right as it will go.</p> <p>The distance between the centre of spindle and needle point should again be marked on template. The distance between the two marks on the template should be exactly 1 in. Should this distance be incorrect, the screw fixing the knurled nut 14 (Fig. 4) should be SLACKED OFF. There is an eccentric on the underside of the knurled nut and the rotary movement necessary is only slight.</p> <p>Carefully adjust position of knurled nut until this 1 in. difference is secured between the two marks on template. Check this dimension again after tightening screw fixing the knurled nut.</p> <p>The correct dropping position of needle on 10 in. records previously obtained should now be checked over as the adjustment may have altered slightly. THE NEEDLE POINT SHOULD DESCEND ABOUT $\frac{1}{32}$ OF AN INCH FROM EXTREME EDGE OF RECORD.</p> <p>Reset position of arm by screw 6 (Fig. 3) as detailed previously, and tighten the two screws 5 (Fig. 3).</p>
<p>Mechanism will not change non-eccentric groove records, or changes them too soon.</p>	<p>The mechanism is adjusted at the factory to suit records with a finishing groove $3\frac{1}{8}$ in. diameter, this dimension having been found to cater for the majority of records, including records having no eccentric groove.</p> <p>If instrument fails to change the record or does so before the selection has finished, a slight modification of the given dimension should be tried, as the different makers of records tend to vary the point at which their recording groove finishes.</p> <p>It will be seen that the arm 2 (Fig. 3) pushes the cessation trip 3 (Fig. 4) when the pickup is moved over to the centre of the record. This movement of 2 is transmitted to lever 1, which in turn releases the clutch lever 12 (Fig. 4).</p> <p>With the mechanism at rest (i.e., with pickup arm free to travel towards the turntable spindle), place the template (Fig. 5) over the spindle and move tonearm until distance between needle point and centre of turntable spindle is exactly $1\frac{11}{16}$ inches.</p> <p>Now turn screw 4 (Fig. 3) into contact with arm 2 until trip lever 1 releases clutch lever 12 (Fig. 4).</p> <p>Re-tighten locking nut on screw 4 to secure the adjustment.</p>
<p>Needle drops correctly but slides past first groove of record.</p>	<p>Examine level of instrument tested on turntable.</p> <p>Examine needle for worn point. See that lead spring (9) is not too strong.</p>

SERVICE TABLE—*continued.*

Symptom.	Suggested Action.
Motor slows up at beginning of records.	Check voltage adjustment. Check speed regulator. Check mains voltage. Ascertain that records are not warped.
Cut-out does not work. (Drop of needle heard in loudspeaker).	Examine contacts S.1. (Fig. 6). These should remain closed while record is being changed and be just separated at end of cycle and remain open while a record is being played. See if stud on underside of gear wheel is correct and firm.
Motor stops during record changing cycle.	Check voltage adjustment. Examine for mechanical friction. Check mains voltage. Examine records.
Instrument continues to change records without playing them.	Examine spring 24, it may be too weak. See that pivots of levers 1 and 3 are free and whether lever 26 is "sticking."
Records stick in plates.	Try other records to see if due to one or two records only. (Unsuitable Records:— Rough edged records. Warped records. Records with worn centre holes.)
Mechanical clicking sound while record is being played.	Examine, and, if necessary, strengthen spring 24 (Fig. 4) adjusting also, if necessary, spring 27.
No sound from pickup (no reproduction).	Examine Radio set, connections, loudspeaker, etc. Reverse position of blue plugs. Test with headphones (vol. cont. at max.) :— 1. Across blue plugs. 2. Across volume control lugs. 3. Across shielded leads from pickup. (disconnected from volume control). If no signal here unscrew small screw on underside of pickup arm near head and examine leads and soldered contacts, having withdrawn head from arm. To test pickup head alone, detach wires and clip on 'phones to lugs and rest needle on revolving record. A clear signal should be heard. If no signal, examine for jammed reed or disconnected winding (DC Resistance 6,000 ohms). Test each blue plug lead for an earth. If necessary, test right through, as above, for earths. See that "cut-out" switch blades move out of contact and are not touching regulator lever or any other metal part of mechanism.

SPECIAL NOTE.

Please address all service communications respecting the Marconiphone automatic mechanism to :—

THE SERVICE DEPARTMENT,
THE MARCONIPHONE COMPANY, LTD.,
DAGENHAM, ESSEX.

Telephone : Seven Kings 2801.

Always quote the type and serial number of the instrument.

