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Garrard

FOUR SPEED
SINGLE
RECORD PLAYER

MODEL TA/MK II



INSTALLATION
OPERATION
AND SERVICE
INSTRUCTIONS

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The GARRARD Model TA/Mark II four speed single record playing unit is made under the following patents:—

British	.. 673852	Sweden	.. 144814
	741308	U.S.A.	.. 2757006
	748639	Australia	.. 157656
Switzerland	.. 283111		200074

**THE "GARRARD"
MODEL TA/MARK II
FOUR SPEED
SINGLE RECORD
PLAYING UNIT**



"GARRARD" Record Playing Units are simple and reliable in operation. They are thoroughly tested before leaving our Works and will give a long period of satisfactory service. Instructions for operating the Model TA/Mark II Unit are given in this manual—please follow these instructions carefully.

In common with all mechanical devices, minor adjustments are sometimes necessary. The Service Instructions included have been compiled to cover practically all the information necessary to ensure efficient operation.

If, after carefully perusing this manual you are still in doubt, our Technical Service Department will gladly assist you.

NOTE.

Mention of the Model, Schedule Number and Type of pickup head fitted, is desirable when communicating with the company.

The Schedule Number will be found on the Unit Plate under the Turntable.

Address your enquiries to:—

The Garrard Engineering & Mfg. Co. Ltd.,
Technical Service Department,
Newcastle Street,
Swindon, Wilts.
Telephone No.: Swindon 5381 (5 lines).

If you wish to make enquiries concerning the return of a unit for repair or if you require Spare Parts, address your letter to:—

The Garrard Engineering & Mfg. Co. Ltd.,
Service and Spares Department,
Radnor Street,
Swindon, Wilts.
Telephone No.: Swindon 2606.

The Garrard Model TA/Mark II Four Speed Single Record Playing Unit

DESCRIPTION

The GARRARD Model TA/Mark II Unit is fitted with a diecast aluminium pickup arm to take the

Garrard plug in pickup moulding or shell into which can be fitted a wide range of pickup cartridges.

OPERATING INSTRUCTIONS

The GARRARD Model TA/Mark II Record Playing Unit will play a 7", 10" or 12" record at either 78, 45, $33\frac{1}{3}$ or $16\frac{2}{3}$ r.p.m. To operate, proceed in the following order:—

- 1 See that the correct stylus is in position for the type of record to be played.
- 2 Set the speed change knob to appropriate speed.
- 3 Place the record on the turntable, lift the pickup arm and move it to the right to start the motor, then lower the pickup on to the record.
- 4 At the end of the record the motor will automatically stop. The pickup can then be lifted off the record, returned to the rest and the record removed.

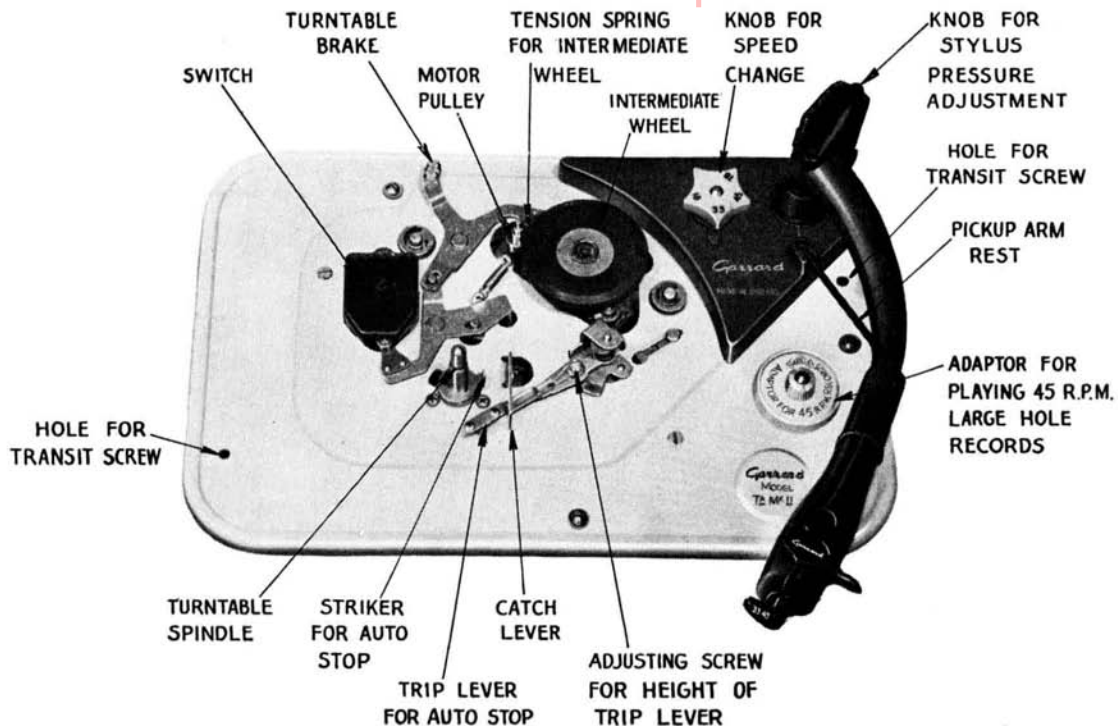
To play 7"—45 r.p.m. records having a $1\frac{1}{4}$ " diameter centre hole, place the adaptor, supplied with unit, on the centre spindle to locate record.

If it is desired to stop the record playing before the end, gently lift the pickup off the record and move it toward the centre to operate the auto-stop, then return it to the pickup rest, press pickup arm firmly on to its rest when not in use or for transit.

RECORDS.

To obtain the best results from your records, always keep them in their envelope when not in use—do not leave them on the turntable. Preserve the surface by keeping them as dust free as possible and it is recommended that records be cleaned with a soft, clean, damp cloth; also keep the turntable surface clean.

Avoid touching the music lines, keep records away from heat and keep in container when not required for playing. Do not play chipped or cracked records as they will damage the stylus point.



View with Turntable Removed

Diagram 1

DIMENSIONS

The cabinet space required for fitting is 14½" long and 12¼" back to front with 3" clearance above and 2½" clearance below the top of the motor board. Where a 12" record can overlap the cabinet sides, the cabinet space can be reduced to 12½" long by 10¼" back to front. Sizes given include ¼" clearance all round to allow the unit to float freely on its spring suspension.

FITTING TO CABINET

Having opened the carton, the template and instructions will be found lying on top of the first liner and underneath it will be found the turntable. A small envelope containing two wood screws and washers, for transit purposes, and the turntable clip, will be found in one corner of the carton at the side of the second liner. Lift the unit out of the carton and attach a suitable flexible lead for the power supply to the two terminals in the front of the terminal block. (Diagram 6). At the same time, inspect the links in the block to ensure that they are set correctly to suit the voltage and frequency of the electrical supply. (Diagram 5). Replace the cover of the terminal block. A length of screened pickup lead should be soldered to the lower soldering tags of the pickup terminal panel as shown on Diagram 2. The other end of this lead should be attached to the pick-

up terminals of the reproducer in accordance with the reproducer manufacturer's instructions. Cut out the motor board in the cabinet to the template, place the unit in position with the leads through the cut out and press down evenly. The patented clip-in spring suspensions will push through the three fixing holes and be retained in position as shown on Diagram 3. Adjustment to level the unit is made by turning each suspension screw, clockwise to lower and counter clockwise to raise the unit.

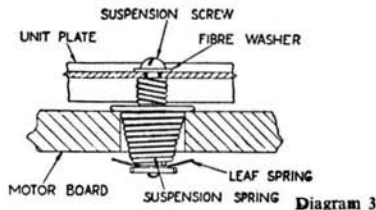


Diagram 3

TRANSIT SCREWS.

Two plated wood screws are supplied for use in clamping the unit rigid to the motor board for transit

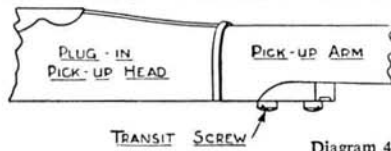


Diagram 4

purposes. The small fibre washers should be fitted under these screws to prevent marking the unit plate. **THESE SCREWS MUST BE REMOVED BEFORE USING THE UNIT.** The position of the screws is shown on the template and Diagram 1.

The plug in pickup head is also retained by a transit screw (Diagram 4) which should be loosened to readily remove the head.

With a Turnover type pickup this screw should remain tight.

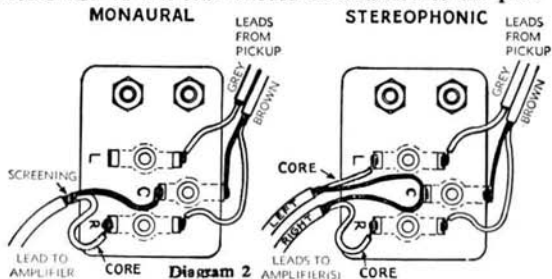
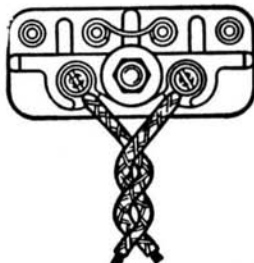


Diagram 2

MAINTENANCE

The bearings in the motor and intermediate wheel are of the oil retaining type and rarely need lubricating. When the need for oil is apparent, remove the turntable and while holding the rubber tyred intermediate wheel out of the way, lubricate the motor and pulley bearings with a light grade of machine oil. Carefully remove every trace of oil from the driving surfaces before replacing the turntable.

Connect both bars thus
for 200/250 volts A.C.



Connect bars thus for
100/130 volts A.C.



Terminal Block and Voltage Change over Link Connections

Diagram 5

To avoid slip resulting in speed variation, the rubber tyre on the intermediate wheel, turntable rim and motor pulley must be kept free from oil.

TO REMOVE TURNTABLE.

The turntable may be removed by taking off the centre retaining clip and applying equal upward

pressure under diametrically opposite sides of the rim with the fingers and lifting with a slight twisting motion.

FITTING TURNTABLE.

- 1 Make sure that the speed change knob is in the neutral position to release the tension on the intermediate wheel.
- 2 Place the turntable on its spindle and gently revolve it clockwise when it will fall into position.

VOLTAGE AND FREQUENCY.

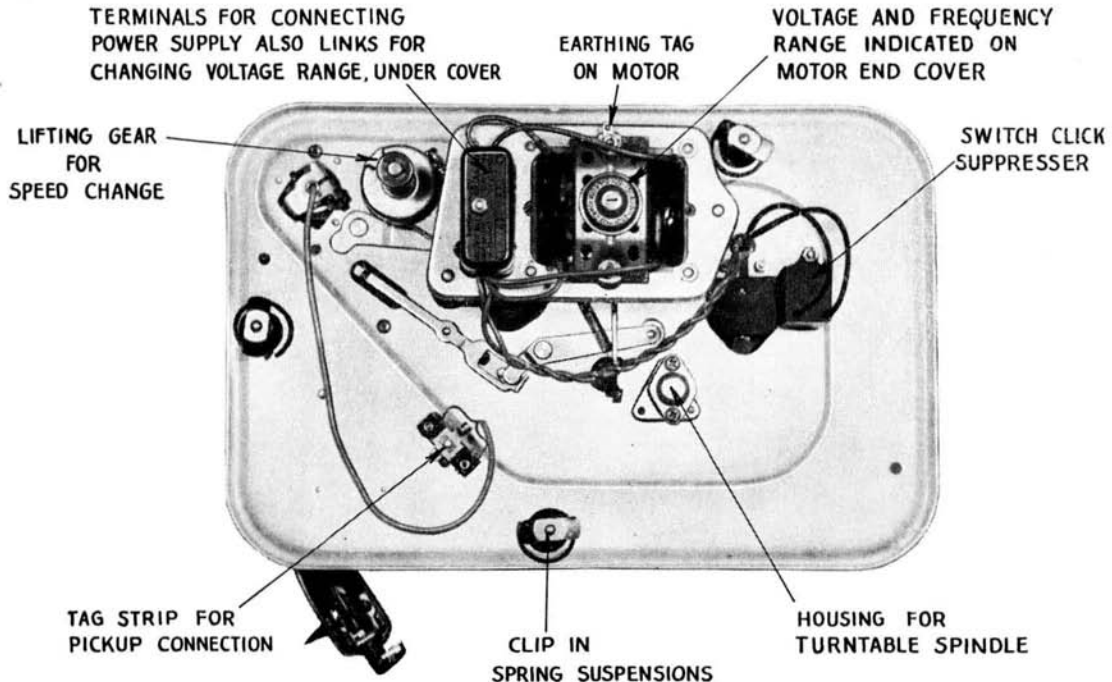
The "GARRARD" Model TA/Mark II Four Speed Record Playing Unit is suitable for use on 100/130 and 200/250 volts, at either 40, 50 or 60 cycles according to the motor pulley supplied and the links on the terminal block should be set to the correct position to correspond with the voltage of the power supply as shown in Diagram 5. A motor driving pulley can be supplied for 40, 50 or 60 cycle power supply as required.

The motor should be earthed by connecting a lead from the earthing tag located under one of the motor end cover screws, to a good earth connection.

If the unit is to be used with a radio set or amplifier having a Universal (AC/DC) chassis, or if the reproducer is a battery set coupled to a Universal H.T. battery eliminator, it is essential to make sure that isolating components (condensers or transformer) are incorporated in the pickup input circuit in the set otherwise the pickup circuit can become "live."

Should the isolating components not be included in the set they should be fitted externally in series with the pickup leads. Consult your radio dealer if in doubt.

Also, the leads from the radio set or amplifier to the pickup should be screened and as short as possible.



Underside View.

Diagram 6

These notes are included to help the owner of the record player make any minor adjustments that may become necessary.

SPEED.

The motor on the Model TA/Mark II is designed to give the desired turntable speed within close tolerances. Should the turntable run excessively fast or slow, then the motor pulley should be examined to see if it is the correct one to suit the frequency of the power supply.

The motor pulley is colour finished as follows to distinguish the three types:—

NICKEL	-	50 cycles.
BRASS	-	60 cycles.
COPPER	-	40 cycles.

SPEED VARIATION.

It is essential that the driving surfaces of the motor pulley, the rubber inter-wheel and the turntable rim, should be kept absolutely free from oil and grease. This is the first point which must be checked if the turntable speed varies and the pulley and inter-wheel should be cleaned with a dry cloth if oil on the driving surfaces is suspected.

MOTORS.

If the motor fails to start when the unit is switched on, first check the power supply and ascertain if current is reaching the motor terminals. If correct, switch off the power supply and examine the terminal block and see that the leads and screws are tight; also examine the switch contacts which are accessible by removing the cover from the switch. (Diagram 1). Clean and adjust if necessary.

Thick oil should not be used to lubricate the motor bearings as it will cause the motor to appear weak or fail to start and it will then be necessary to dismantle the motor and clean away all traces of the thick oil. It is essential to lubricate the motor bearings with a good quality thin oil such as sewing machine oil.

PICKUP.

Two types of stylus are necessary for playing the different types of records. A stylus having a point radius of .0025" is required for the standard 78 r.p.m. (coarse groove) records and one with a point radius of .001" for microgroove (fine groove) records.

The Model TA/Mark II is designed to take a variety of turnover pickup heads or single purpose plug-in pickup heads to suit the individual owner's requirements and care should be taken to ensure that the correct stylus is presented to the record.

Turnover pickup heads are correctly set when the speed of the record to be played appears on top of the turnover knob. If there is an arrow on the knob it indicates the direction in which it should be turned when a change is required.

It is recommended that the stylus pressure be checked periodically with a Garrard Stylus Pressure Gauge. Also its use is essential should another type of pickup be used other than that supplied with the unit, as some adjustment for the difference in pickup weight may be required.

The stylus pressure adjusting screw is located at the rear of the pickup arm, and to adjust the stylus pressure, the knurled knob should be turned to give either an increase or decrease in spring tension.

The maximum recommended stylus pressure for all types of records is 10 grammes. Should trouble be experienced with the reproduction from a pickup, the head should be returned for examination to the manufacturer whose name or trade mark appears on the cartridge.

Pickup cartridges must not be opened or the manufacturers will disclaim all responsibility.

NOTE.

A continuity test cannot be carried out on crystal pickups with an ohmmeter.

Should there be tendency for the pickup to track incorrectly, check the pickup stylus pressure and adjust as explained above if found other than 10 grammes; also make sure that the flexible lead to the pickup is

not twisted or held in such manner so as to prevent the free movement of the pickup arm, and see that the associated levers are free.

AUTO STOP MECHANISM.

The auto stop mechanism for automatically switching off the motor at the end of a record is of the velocity type and is of a special design to be very light and sensitive in operation. It is set to commence operation when the stylus reaches a $2\frac{2}{3}$ " radius. The stop operates by the auto stop lever being raised by a small cam attached to the turntable spindle when the pickup arm runs in on the record run-off-groove. The auto stop lever, on being lifted, trips the catch lever and operates the auto stop. If the auto stop fails to operate it may be caused by the auto stop lever being too low and it should be raised by giving the auto stop lever adjusting screw (Diagram 1) about half a turn in a clockwise direction.

GARRARD STYLUS PRESSURE GAUGE MODEL SPG2



This Gauge, having a range of 0 to 15 grammes, provides a simple, accurate and inexpensive instrument for measuring the stylus pressure of pickups for playing Microgroove (Fine Groove) Records.

The slide off base, containing a spirit level for checking the level of the turntable, should be fitted when used with a record changer, this will give the pressure $\frac{1}{8}$ " above the turntable face, this being the mean reading for a stack of records as used on record changers.

With the base removed the reading is taken as near as possible to the turntable top, the stylus pressure thus being measured at the equivalent height of one record.

To prevent excessive record wear when playing Microgroove (Fine Groove) Records, the turntable should be quite level and stylus pressure not exceed 10 grammes.

Protect your records by making a periodical check of stylus pressure and adjusting counter-balance if necessary. Obtainable with or without slide off base.

EVERY GRAMOPHONE ENTHUSIAST AND RADIO SERVICE MAN SHOULD POSSESS ONE OF THESE GAUGES.

SPARE PARTS FOR MODEL TA/MARK II FOUR SPEED SINGLE RECORD PLAYING UNIT

The Schedule Number printed on the unit plate of the Record Playing Unit is changed whenever a non-interchangeable variation is introduced into the mechanism. It is desirable when ordering spare parts to quote the schedule Number of the Record Playing Unit as well as the reference number of the part required.

Name of Part	Ref. No.	Name of Part	Ref. No.
Turntable	C54409	Switch Contact Spring	A41686
Turntable Cover	C54262	Felt Pad for Turntable Brake	A45064
Pickup Arm	B54520	Spring for Support Bracket	A41594
Intermediate Wheel complete with Tyre ...	B53883	Spring for Switch Lever	A41503
Motor Pulley (50 cycles)	A53953	Spring for Catch Lever	A41590
Motor Pulley (60 cycles)	A53954	Spring for Index Lever	A41506
Motor Pulley (40 cycles)	A53955	Spring Clip for Motor	A43800
Cover for Terminal Block	B51161	Rotor Spindle with rotor	A54413
Nut for cover	A41012	MPM2 Plug in Pickup Head Moulding ...	A52225
Cover for Switch	A51327	Adaptor for Records with large centre hole	A50391
Screw for Cover	A40343	Turntable Clip	A41784
Pickup Arm Counter-balance Spring ...	A41639	Pickup Rest complete with pad	A54417

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GRAMOPHONE EQUIPMENT

FOR

QUALITY

REPRODUCTION



Pickup Connecting Instructions

This Garrard Unit is wired for use with both Monaural and Stereophonic Pickups.

Where the pickup moulding (shell) only is supplied, it will have three leads, making it suitable for fitting either a Monaural or Stereophonic Pickup Cartridge. As only two leads will be required for a Monaural Cartridge, the Grey lead will not be required and it should be tucked out of the way into the rear of the moulding. Use the Brown and the Black lead (Ground) and connect in accordance with the pickup manufacturer's instructions.

The amplifier should be connected to the tags marked 'R' (Brown lead) and 'C' (screen) on the tag strip underneath the unit, the tag 'C' being ground. (Brown phono jack lead on U.S.A. type units).

To use a Stereophonic Pickup Cartridge connect the leads in the moulding (shell) to the cartridge as follows:—

Brown lead Right hand channel.

Grey lead Left hand channel.

Black lead to the common terminal.

Some Stereophonic cartridges may have four terminals and these should be connected according to the manufacturer's instructions.

The amplifier for the Right hand channel should be connected to the tags marked 'R' (Brown lead) and 'C' (screen). This is the Brown phono jack lead on U.S.A. type units.

The amplifier for the Left hand channel should be connected to the tags marked 'L' (Grey lead) and 'C' (screen). This is the Grey phono jack lead on U.S.A. type units.

Suitable Garrard Mouldings for Stereophonic pickups for use with Models:—

RC.88, RC.98 and TA./Mk.II.

Garrard MPM2/S A55703.

RC.121/Mk.II.

Garrard MPM3/S A55704.

4HF. and TPA12.

Garrard MPM4/S A56195.

THE GARRARD ENGINEERING AND MANUFACTURING COMPANY : SWINDON : WILTS : ENGLAND

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**Fitting and Connecting Instructions
for Garrard Plug-in Pickup Cases**

There are several types of Garrard plug-in pickup cases for use with various Garrard units as follows:—

Case Type No.	For use on Garrard Units
M24	RC.98 and RC.88 Record Changers. 4SPA and TA Single Record Players.
M34	RC.121/Mk.II Record Changer.
M44	As M34 but white for use on 4HF Single Record Player. TPA12 Transcription Pickup Arm.
M5	Model 210 Record Changer. RC.88/Mk.II (Brown). Auto Turntable Unit Type A.

The above pickup cases will, with the accessories supplied with them, enable most makes of pickup cartridges to be fitted.

A thin section in front of the case can be broken away to accommodate the knob of turnover type cartridges, instead of this thin section, a removable rubber grommet may be fitted. A hole is provided in top of the case, covered by the Garrard name plate, for the knob of turn round stylus type or cartridge.

As these pickup cases are easily plugged in to the pickup arm, single stylus cartridges can be fitted, using a separate case for each type of cartridge.

The fixing accessories provided with each case comprises two screws 6BA x 5/16", two screws 6BA x 7/32", two stand-offs, two thin washers, two thick washers and one sub plate.

No difficulty should be found in assembling and connecting most makes of cartridge, two lengths of screws are supplied as the longer ones will be required for certain thick cartridges.

The two thick washers should be assembled under the harness of the cartridge should the stylus not project far enough below the edge of case.

The two thin washers may be required for use under the screw heads where the holes in the harness are larger than the screw heads. On some cartridges the thin washers will not be required. Centralise the cartridge before tightening the screws.

For cartridges having the turn round type of stylus, the Garrard name plate should be removed by pushing it out from inside and replacing it with the sub plate. Take care not to lose the two 6BA nuts underneath the plate.

Connecting Instructions:—

All Garrard record reproducing units are now wired to take stereophonic as well as monophonic pickups.

Assemble the cartridge as instructed and connect the colour coded leads in the moulding to the connecting lugs on the cartridge, the connecting pins supplied should be used if the cartridge terminations are sockets. Information on the cartridge connections are usually supplied with it.

The lead colour coding is as follows:—

Brown	—	Right Channel
Grey	—	Left Channel
Black	—	Right Channel Earth (Ground)
Blue	—	Left Channel Earth (Ground)

For cartridges having three connections use the black lead as the common or join the black and blue lead together, and use these as a common.

For monophonic cartridges use the brown and black leads.

Tuck away or cut off any leads not required.

THE GARRARD ENGINEERING AND MANUFACTURING CO. LTD.
Newcastle Street, SWINDON, Wiltshire, England.

In U.S.A.

THE GARRARD SALES CORPORATION
80, Shore Road, Port Washington, New York, U.S.A.