Garrard

LABORATORY
SERIES

TYPE A 70

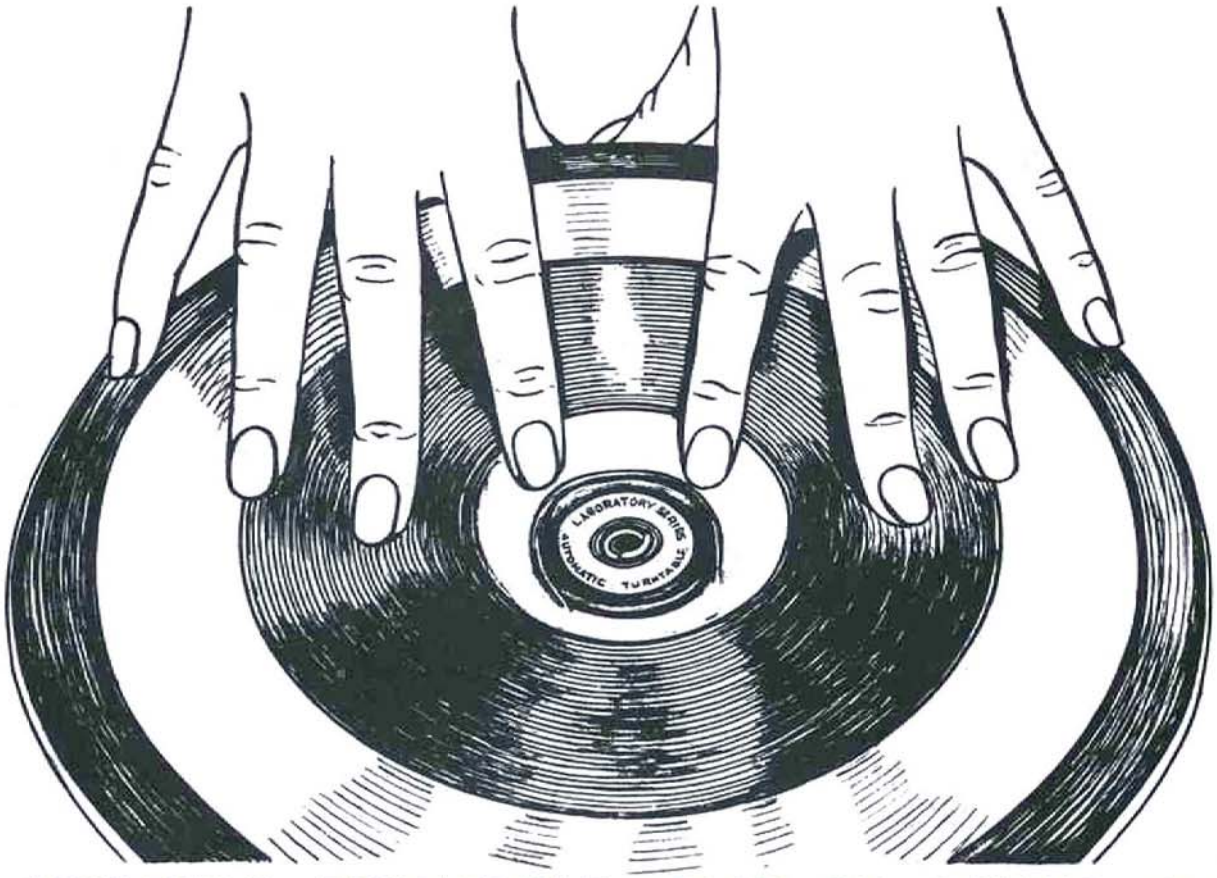
Instruction Manual

THIS INSTRUCTION MANUAL and template apply to the Garrard Laboratory Series Auto Turntables Types A.70 and 70 Mk. II.

However, if spare parts are ordered, please be particularly careful to quote both the type number and the code number on the coloured label attached to your unit.

72655 Printed in England

ASSEMBLY INSTRUCTIONS FOR TURNTABLE MAT



ASSEMBLE TURNTABLE MAT BY LAYING MAT FLAT ON TABLE TAKING CARE NOT TO BUCKLE TRIM RING. FIX MAT BY STRETCHING THE CENTRE HOLE OVER THE TURNTABLE RETAINING RING AS SHOWN IN DIAGRAM.
ENSURE MAT IS CENTRALISED CORRECTLY BY SPINNING TABLE.

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Garrard

LABORATORY SERIES
AUTO TURNTABLE TYPE A70

Introduction

The Garrard Auto Turntable Type A70 has been designed to play records singly with Transcription Turntable quality, at the same time having the advantage of being able to play a number of records automatically when desired.

Its styling is ultra modern and special attention has been given to detail, ensuring the best possible performance.

As the owner of this Garrard Auto Turntable Type A70, you have a unit whose performance is supreme in its class and rigorous laboratory checks have been applied to your unit to ensure that this high standard is maintained.

This leaflet has been prepared to help you enjoy and maintain the high performance of which this unit is capable.

Should you require any further information or advice not covered by this leaflet, please do not hesitate to ask your nearest Garrard agent or write to our Technical Service Department, 50-54 Radnor Street, Swindon, Wilts. (Swindon 22606). Factory Address: Newcastle Street, Swindon, Wilts. (Swindon 5381).

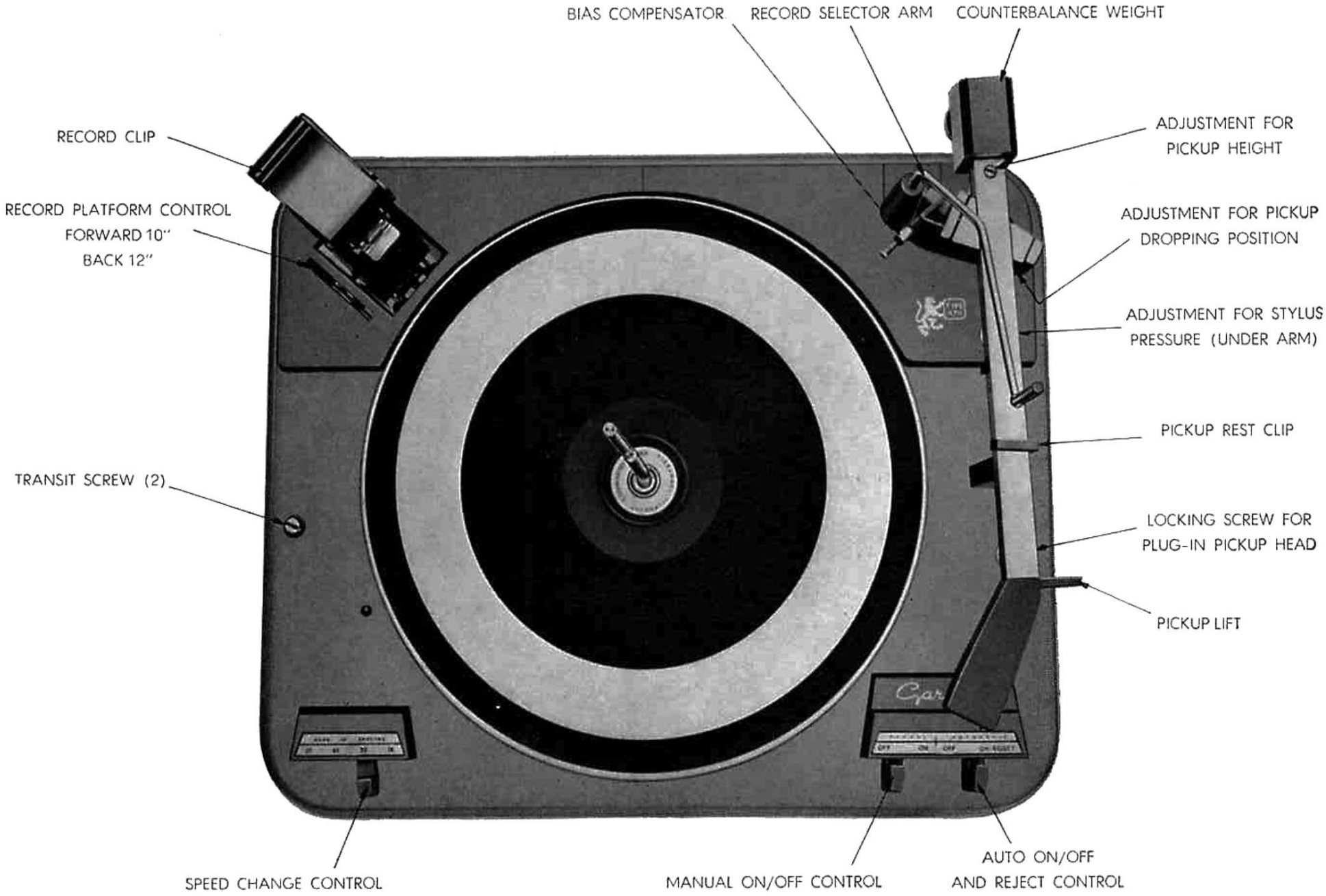
BIAS COMPENSATOR
RECORD SELECTOR ARM
COUNTERBALANCE WEIGHT
RECORD CLIP
ADJUSTMENT FOR PICKUP HEIGHT
RECORD PLATFORM CONTROL FORWARD 10" BACK 12"
ADJUSTMENT FOR PICKUP DROPPING POSITION
ADJUSTMENT FOR STYLUS PRESSURE (UNDER ARM)
PICKUP REST CLIP
TRANSIT SCREW (2)
LOCKING SCREW FOR PLUG-IN PICKUP HEAD
PICKUP LIFT
SPEED CHANGE CONTROL
MANUAL ON/OFF CONTROL
AUTO ON/OFF AND REJECT CONTROL

Diagram 1

Operation

The Type A70 will play records manually, or any number up to six of the same speed and size, automatically. It will play 7″, 10″ and 12″ diameter records at 16⅔, 33⅓, 45 and 78 r.p.m.

The unit is normally supplied with a short record spindle and large hole adaptor for playing records manually, also a sloping stepped spindle for playing records automatically. A large record spindle, LRS 3 for playing automatically 7″—45 r.p.m. large hole records is available as an optional extra.

To Operate for Manual Play

1. Set correct stylus for type of record to be played.
2. Check that speed change control is set to correct speed.
3. Place short manual play record spindle in position, also adaptor if playing 7″—45 r.p.m. records with large centre hole.
4. Move record platform to rear position.
5. Place record on turntable.
6. Switch manual control to "On", unclip pickup arm from rest and place pickup on record.

To Operate for Automatic Play

1. Proceed as for 1 and 2 above.
2. Place the appropriate automatic play record spindle in position for the type of record to be played.
3. Set record platform. Rear position for 12″ and forward position for 10″ records. For 7″ records, use large record spindle when platform position is immaterial.
4. Place any number of records up to 6 of the same speed and size on the record spindle step. Support them with the record platform clip if the sloping record spindle is used.
5. Unclip pickup arm and switch on by moving automatic control to "On".

Reject

To reject a record, move the automatic control to "Reject". The pickup will immediately rise and return to its rest position and the motor will switch off. If more than one record is loaded switching to "Reject" causes the next record to play.

Stop

To stop, leaving the pickup on the record, move the manual control to "Off". The same record will continue to play if the manual control is then switched to "On". To stop the unit with the pickup on its rest, move the automatic control to "Off". The pickup will immediately rise, return to its rest and the unit switch off.

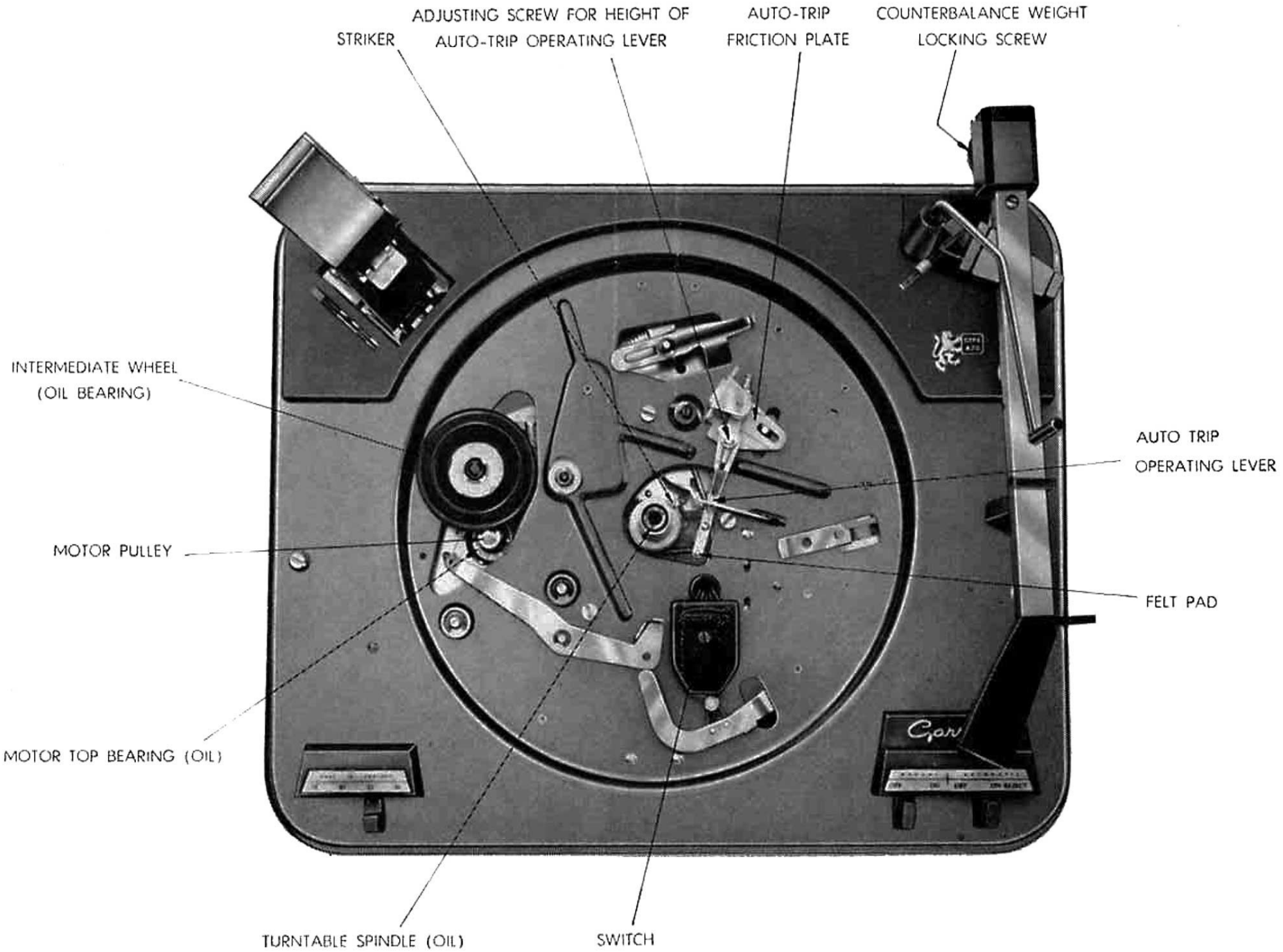
STRIKER
ADJUSTING SCREW FOR HEIGHT OF AUTO-TRIP OPERATING LEVER
AUTO-TRIP FRICTION PLATE
COUNTERBALANCE WEIGHT LOCKING SCREW
INTERMEDIATE WHEEL (OIL BEARING)
AUTO TRIP OPERATING LEVER
MOTOR PULLEY
FELT PAD
MOTOR TOP BEARING (OIL)
TURNTABLE SPINDLE (OIL)
SWITCH

Diagram 2

Maintenance

The motor, turntable spindle and rubber intermediate wheel bearings are of the oil retaining type and rarely need lubricating. When the need for oil is apparent, hold the intermediate wheel away from contact with the motor pulley and lubricate the top motor bearing with a fine grade of machine oil. Also lubricate the intermediate wheel bearing, the bearing in the top of the turntable spindle and, occasionally, the bottom motor bearing. Remove any excess oil particularly from the motor pulley, rubber intermediate wheel and inside turntable rim by wiping these driving surfaces with a clean cloth. Other oiling points are shown on diagrams two and five. Include lever pivot points if stiffness in the mechanism becomes noticeable. Also smear cam faces with a light grade of grease.

To remove the turntable, being very careful not to bend the trim ring if fitted, first remove the turntable mat by carefully easing it off the centre boss, then lift off the outer turntable shell. Next remove the nameplate in the centre by levering it upwards with a screwdriver or penknife in one of the slots. The retaining clip is then accessible and should be removed. Remove the turntable with foam mat attached by lifting with the fingers, applying equal pressure on diametrically opposite sides. Should the turntable be difficult to remove, place the short manual spindle in position and while lifting the turntable as described, get an assistant to give the top of the manual spindle a light tap with a piece of wood, such as the handle of a screwdriver.

The turntable should be replaced with the unit in its switched off position, being careful to keep the rubber mat flat to avoid damage to the trim ring. See instructions on page six.

Installation

Dimensions

The Type A70 is 15″ long x 12¼″ back to front* by 2⅝″ below and 5¾″ above top of motor board. An additional ¼″ on the height and all round the edges is required to permit the unit to float freely on its suspension springs.

*An extra 1¼″ is also required at the rear of the pickup arm and on the right hand side to allow clearance for the counterbalance weight. See template.

Fitting

The motor board should be drilled and cut out to the template supplied. Do not moisten the template as it may distort, but fix it to the board with self adhesive tape.

Having opened the carton, remove cardboard packing and accessories. Lift out the unit with fingers under the back and front edge of the unit plate. The heavy outer turntable and its rubber mat will be found packed under the bottom liner; be very careful when handling the rubber mat not to bend the trim ring if fitted.

If no power supply socket is fitted, connect the power supply to the motor lead or voltage changeover block, whichever is fitted, and an earth lead from the motor earthing tag to a good earthing point. Should a voltage changeover block be fitted to your unit check that its connections are as shown on its cover. Also if not already fitted, connect the audio leads from the amplifier to the pickup connector muting switch as shown on diagram 3.

Set the transit screw clips to a vertical position then place the unit in position over the motor board with the four mounting springs locating in the recesses of the board. See template. When transporting the unit, the transit screws are temporarily turned counterclockwise to clamp the unit against the motor board. Recommended motor board thickness is $\frac{5}{16}''$ to $\frac{1}{2}''$; should a thicker board be used it may be necessary to recess the transit screw holes from the underside to clear the transit screw clips.

The heavy outer turntable has been balanced and to maintain the full advantage of this, marking in the form of a triangle on the inner and outer turntable ensures a balanced turntable assembly where the triangles line up.

For assembling the pickup counterbalance weight see instructions under "Pickup Arm and Bias Compensator".

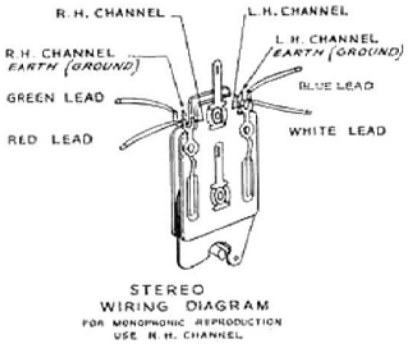

Diagram 3

For monophonic reproduction when a stereophonic pickup is fitted, parallel the two channels.

When phono-jack leads are fitted, Brown phono lead is R.H. Channel (Red pickup wire) Grey phono lead is L.H. channel (White pickup wire). For monophonic play use Brown phono lead.

Pickup Arm and Bias Compensator

Unpack the pickup arm counterbalance weight and slide the weight on the rear of the pickup arm as in diagram two. Fit the counterbalance weight locking screw under the weight with the rubber damping washer next to the screw head, then the metal washer. Temporarily tighten this screw.

If the unit is received without a pickup cartridge, the cartridge of your choice should be fitted using the hardware supplied with the pickup shell. See "Fitting Cartridge".

When the cartridge is in position see that the pointer on the side of the pickup arm, indicating stylus pressure, is set to its rear position, i.e. no stylus pressure spring tension. If not, set the pointer to this condition by turning the adjusting screw under the arm counterclockwise, looking from overhead.

Next, with the pickup arm perfectly free to pivot up and down, adjust the position of the counterbalance weight, by loosening its locking screw and sliding the weight along the arm until the arm balances horizontally, then tighten the locking screw.

The stylus pressure required is then applied by turning the adjusting screw under the arm clockwise, each click representing an increment of approximately $\frac{1}{4}$ gram and the markings representing approximately 0 to 5 grams.

Since the pickup arm skating force, which manifests itself when there is low pivot friction, is related to stylus pressure, the bias compensator setting will depend on the stylus pressure previously applied. The longer arm of the bias compensator, carrying a setting weight, is notched according to stylus pressure. The notches represent approximately 1 to 5 grams from inner to outer notch. The setting weight should be set to the appropriate notch. Grip the side of the setting weight when adjusting its position and do not slide it nearer to the arm pivot than is necessary.

Fitting Cartridge

A plug in pickup shell, designated M8, is used on the Type A70. This may be supplied with or without a pickup cartridge. The pickup head kit, part number 71208, comprises pickup shell, less cartridge and accessory kit, part number 71216, allowing a wide range of cartridges to be fitted.

The accessory kit consists of three alternative pairs of screws, two washers, two spacers and a weight. The cartridge should be secured centrally to the pickup shell using the screws of the appropriate length. Use the washers under the screw heads if the holes in the cartridge harness are larger than the screw heads. Use the spacers between cartridge and pickup shell if more clearance is required. Use the weight as ballast if a lightweight cartridge is fitted weighing less than 5 grams.

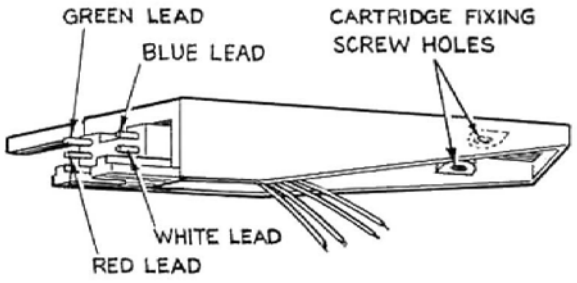

Diagram 4
M8 PICKUP SHELL

Connect the colour coded leads in the pickup shell to the connection tags on the cartridge. If the cartridge terminations are sockets a special connector should be used. Lead connections should be made as follows:—

Red to Right Channel Signal

Green to Right Channel Ground

White to Left Channel Signal

Blue to Left Channel Ground

Information on its connections are usually supplied with the cartridge. For cartridges having three connections, use the green as the common or join the green and the blue leads together to use these as a common. For monophonic cartridges use the red and green leads. Tuck away any leads not required.

Voltage and Frequency

The Type A70 may be supplied either as a dual voltage model suitable for 100/130 volts and 200/250 volts A.C., or as a low voltage model for 100/130 volts A.C. It may be used on 50 or 60 cycles according to the size of motor pulley supplied.

The motor pulleys are colour finished for easy identification, nickel for 50 and brass for 60 cycle power supply. When ordered for use on either of these frequencies the correct pulley will be fitted.

If the unit is connected to an amplifier with its wiring not isolated from the power supply, isolating components, condensers or transformers, should be incorporated in the pickup circuit, otherwise the pickup circuit can become live. If in doubt consult your radio dealer.

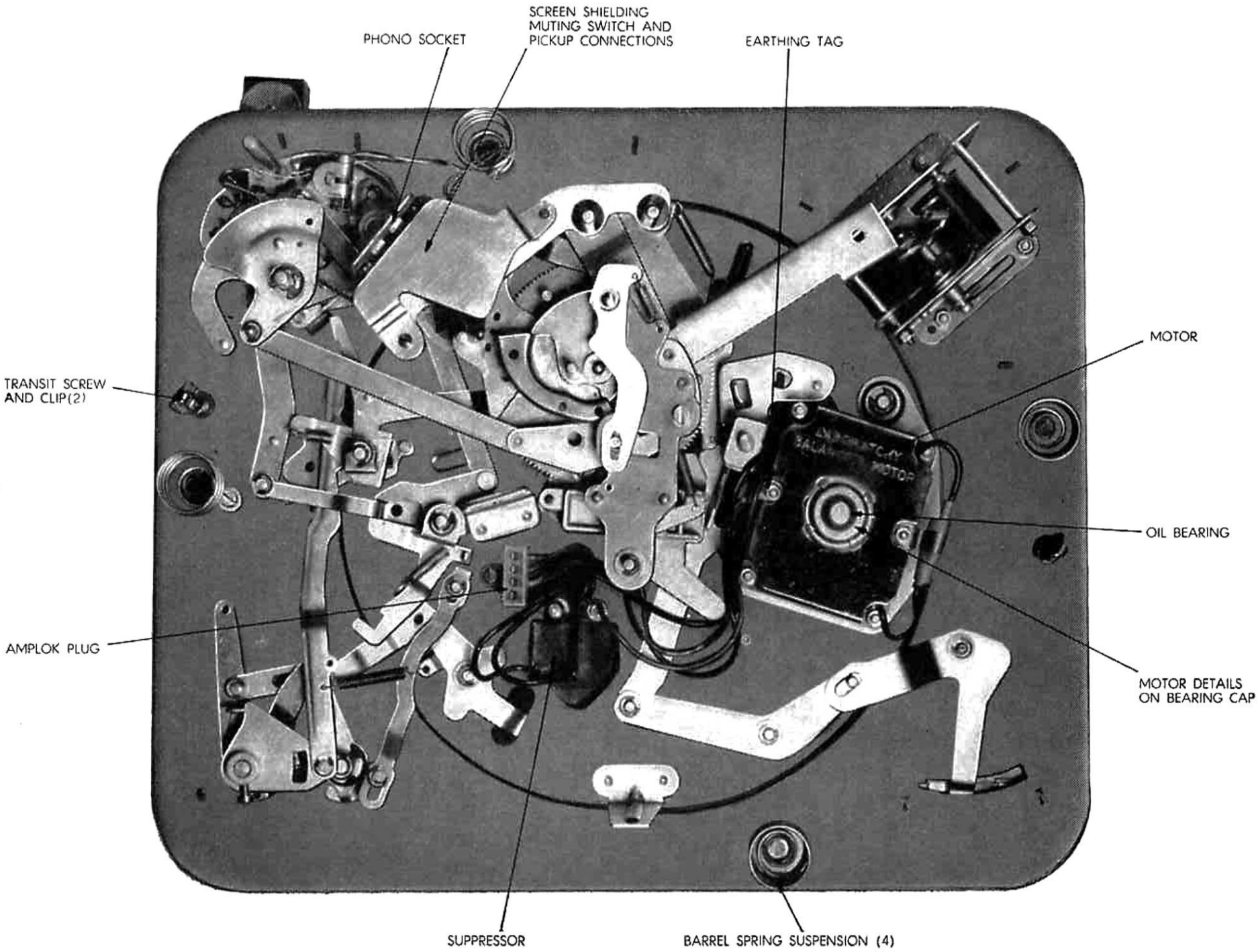
PHONO SOCKET
SCREEN SHIELDING
MUTING SWITCH AND
PICKUP CONNECTIONS
EARTHING TAG
MOTOR
TRANSIT SCREW
AND CLIP(2)
OIL BEARING
AMPLOK PLUG
MOTOR DETAILS
ON BEARING CAP
SUPPRESSOR
BARREL SPRING SUSPENSION (4)

Diagram 5

Service Adjustments

These notes are included to assist in making any minor adjustments that may become necessary. When making an adjustment not involving the pickup, protect it by fitting its protecting clip, or if a turnover pickup having a safety mid position, turn to this position to protect the styli from possible damage.

Speed

The Type A70 is designed to give the desired turntable speed within close tolerances. Should, however, the turntable run excessively fast or slow, the motor pulley may not be correct for the frequency of the power supply. These pulleys are colour finished for identification, nickel for 50 and brass for 60 cycles. To gain access to the motor pulley, remove the turntable as described under "Maintenance".

Should the speed vary during playing, examine the motor pulley, rubber intermediate wheel and inside of turntable rim for traces of oil and wipe thoroughly with a clean cloth. Check that the motor pulley is in its correct position on the motor shaft with the intermediate wheel running in the centre of the appropriate pulley step and not rubbing the side of the adjacent step. Reposition the pulley if necessary and tighten its locking screws.

Motor

If the motor fails to start when the unit is switched on, check the power supply to see that the current is reaching the motor. Disconnect the power supply and check the switch to ascertain that the switch blades are clean and making good contact. If a dual voltage model, check the setting and secureness of the links in the changeover block and make sure the motor is suitable for the voltage of the power supply. Motor details will be found stamped around the flange of the bottom bearing cover.

Pickup Dropping Position

This is factory set for optimum accuracy, but adjustment may be required after fitting a new pickup cartridge or to play non standard records. To adjust, turn the horizontal screw situated immediately under the pickup arm cross pivot, clockwise to move the pickup arm inward and counterclockwise to move outward. See diagram one.

Pickup Height

The distance the pickup lifts when on auto can be adjusted by turning the screw on top of the pickup arm just to the rear of the cross pivot. Turning the screw clockwise raises the pickup, counterclockwise lowers it. The height should be set by placing six records on the turntable and turning the adjusting screw so that the stylus clears the top record by $\frac{1}{8}''$ as it passes over it when returning to its rest position.

Pickup Stylus Pressure

This is set as described under "Pickup Arm and Bias Compensator".

Pickup Tracking

Should there be a tendency for the pickup to track incorrectly especially at low stylus pressures, check that the Bias Compensator is set to suit the stylus pressure and that this pressure is that recommended by the pickup cartridge manufacturer. See that the stylus is not damaged or worn and make sure that the leads from the rear of the pickup arm are free and clear the sides of the slot where they pass through the unit plate.

Pickup Muting Switch

This switch short circuits both channels of the pickup connections while the changing mechanism is in action. If faulty, check that its switch blades function properly and that it is actuated by the changer mechanism.

Auto Trip

The auto trip is of patented design, being extremely light and sensitive in operation. A special feature is that the trip is completely disconnected from the pickup arm from the commencement of the trip operation. It is the well proved velocity type which is actuated by the accelerated movement of the pickup as it reaches the run out groove in the centre of the record. It is set to commence operation when the stylus reaches a radius of $2\frac{7}{8}''$ from the centre.

Should the trip continually fail to operate, leaving the pickup running in the centre of a record, remove the turntable as described on page five and adjust the height of the auto trip operating lever. Give the adjusting screw for height of operating lever, diagram two, about a half turn clockwise to raise the lever. This will enable it to engage the cam on the striker, as the pickup movement accelerates. Also check that the auto trip friction plate, diagram two, is clean and free from oil and dust.

SPARE PARTS LIST

When ordering spare parts, quote the model type, code (from inspection label), part number, colour if part is colour finished and voltage range for motor parts.

Description	Part Number
Record Spindle (Sloping)	52764
Record Spindle (Large) Type LRS3 ...	52950
Manual Record Spindle	51347
Manual Adaptor for 45 r.p.m. records ...	50391
Turntable (Inner)	53394
Turntable (Heavy Outer)	57578
Rubber Mat with Trim Ring	59790
Foam Mat	57753
Rubber Intermediate Wheel Drive ...	53883
Pickup Arm (Complete)	70975
Motor Pulley 50 cycles	55643
Motor Pulley 60 cycles	55644
Cover for Changeover Block (Dual Voltage Model)	58179
Fixing Nut	41012
Cover for Switch Block	51327
Fixing Screw	40343
Switch Contact Spring	41686
Rotor Spindle with Rotor	54929
Garrard M8 Pickup Head Kit (Less Cartridge)	71208
Bias compensator Assembly	70988
Screw for above	71098
Spacer for above	71099
Stylus Pressure Spring	41792
Foam Damping Pad (4)	71084

If a Garrard cartridge is fitted and a spare is required, quote the cartridge type. Replacement styli, both sapphire and diamond, are available for all Garrard pickup cartridges.

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