

Garrard GT20-1, GT25P-1 & GT35P-1

Garrard

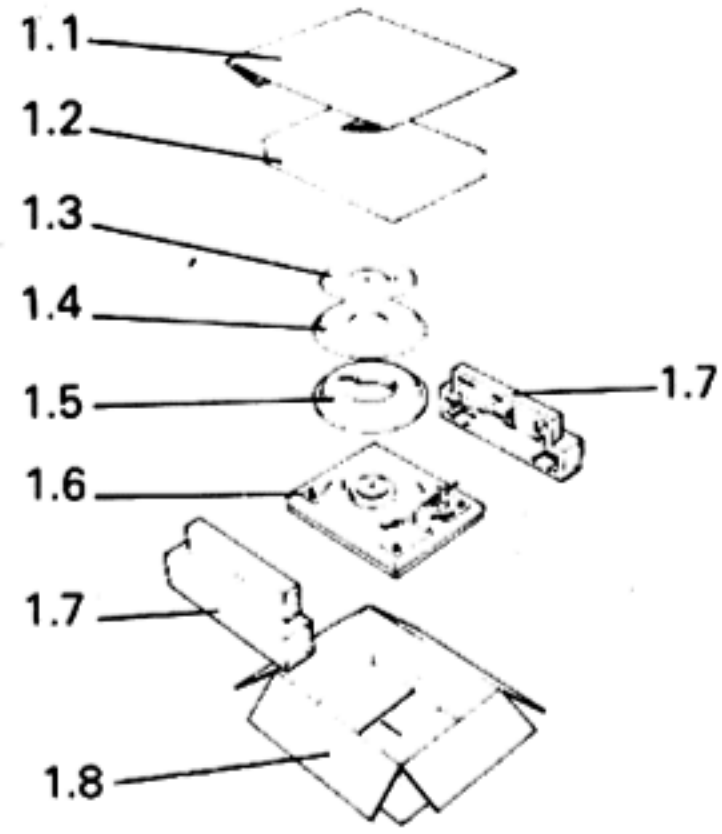


Fig. 1

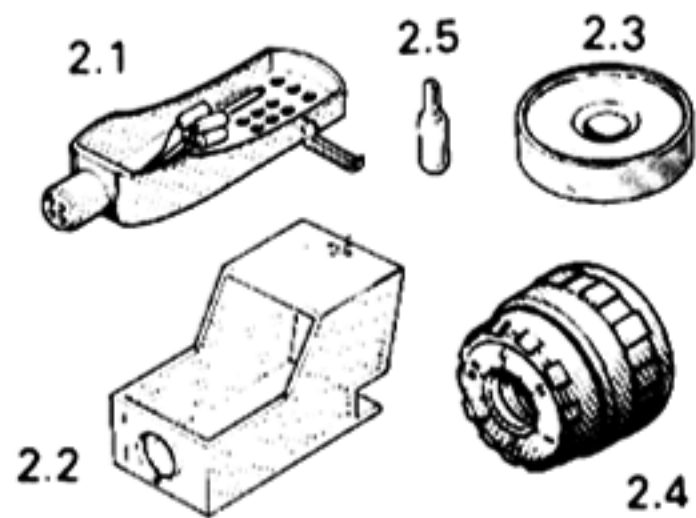


Fig. 2

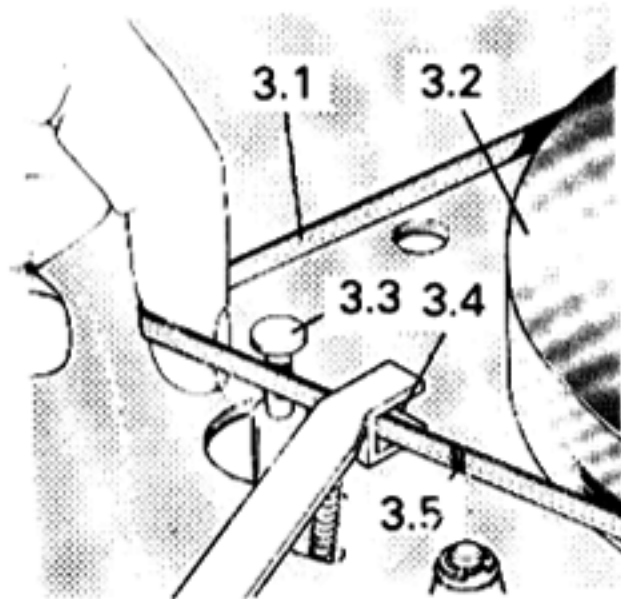


Fig. 3a

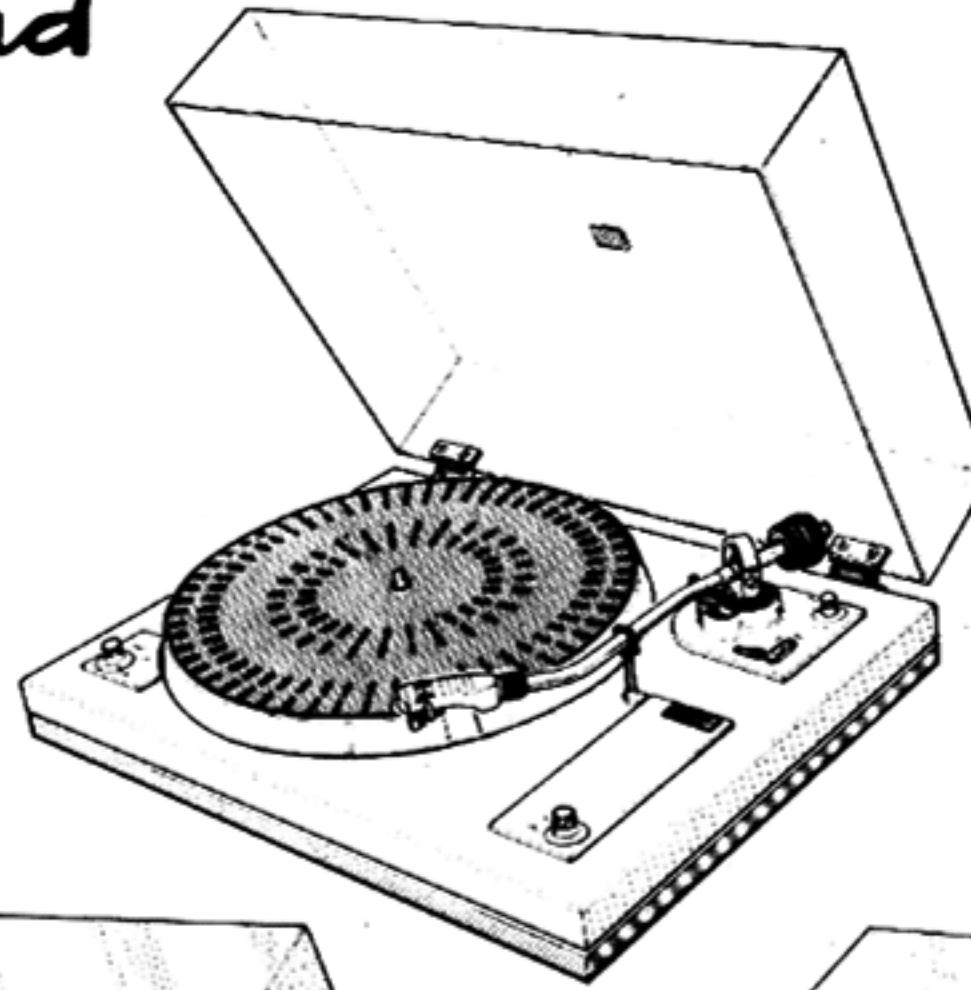


Fig. 3b

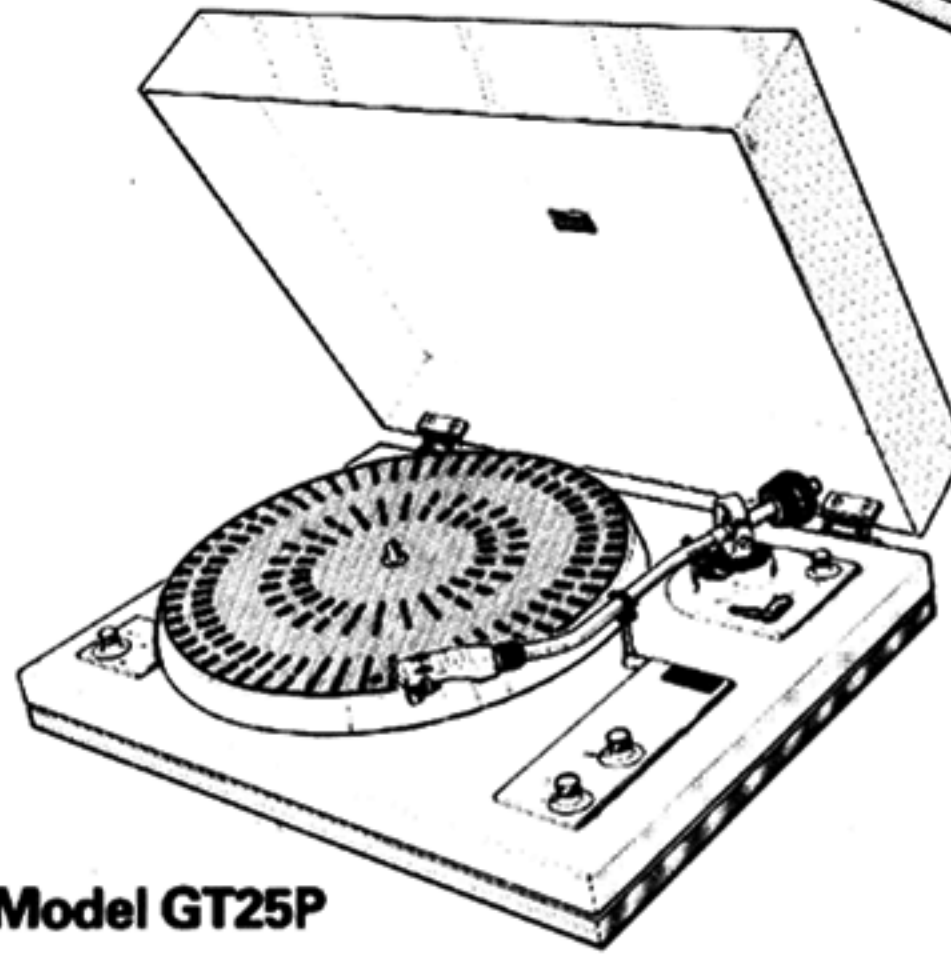


Fig. 3c

Model GT20



Model GT25P



Model GT35P

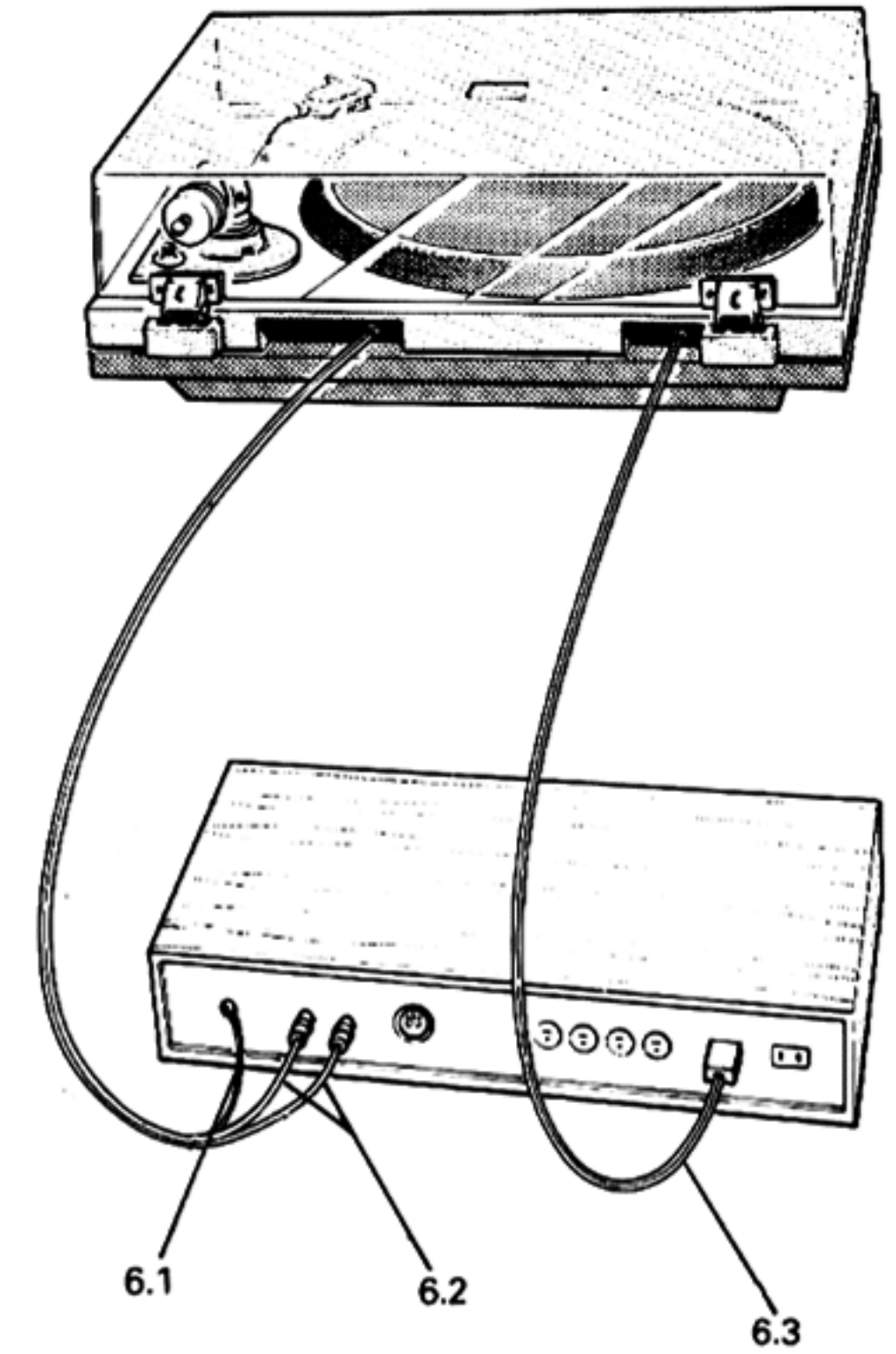
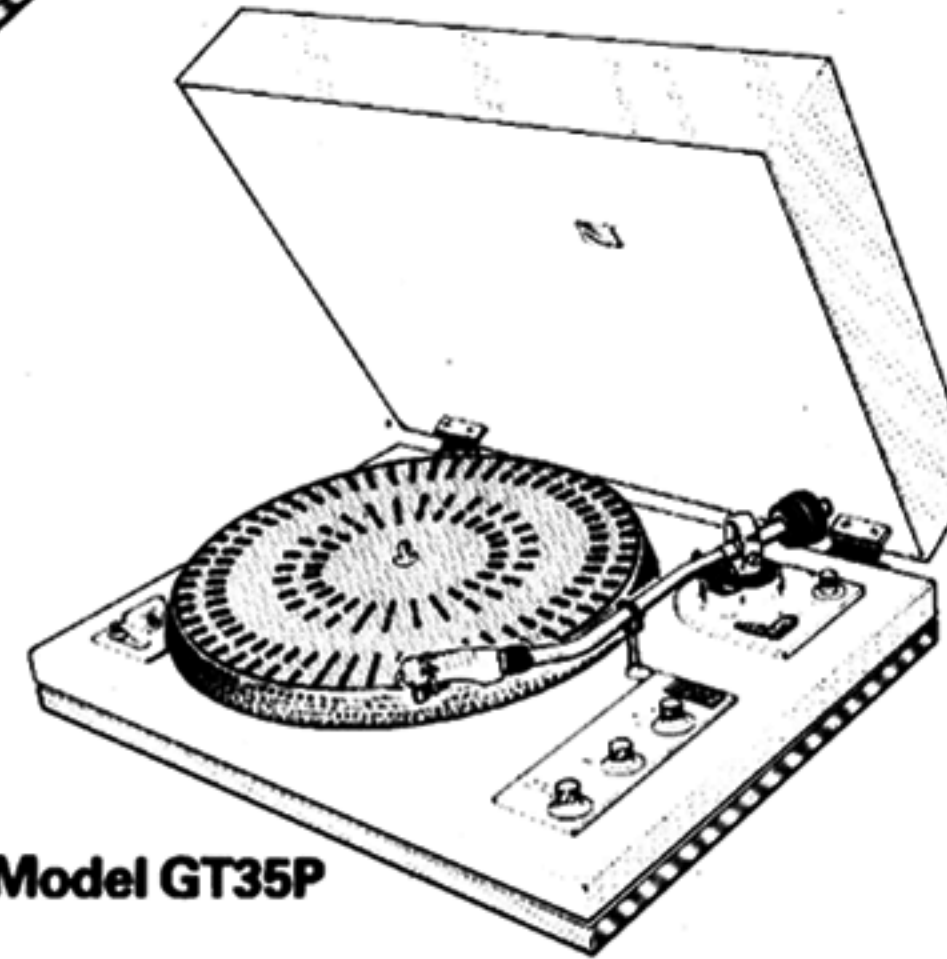
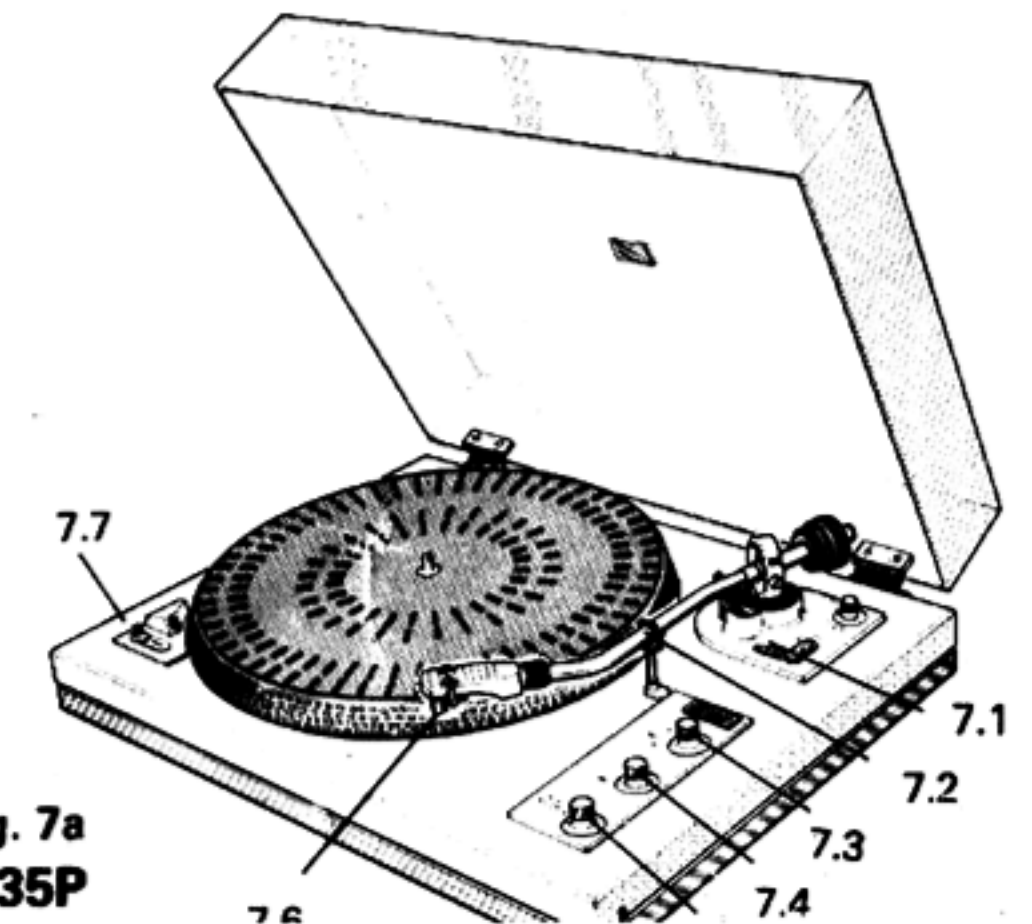


Fig. 6

Introduction

This series of 2-speed, belt-driven single record playing turntables has been introduced to meet the need for units with a high standard of performance combined with an elegant appearance and simple operation. Flexibility of use is a keynote of design, and a range of functions has been provided to suit most requirements. A wide choice of pickup cartridges can be fitted and used with a correspondingly wide range of amplifiers and receivers. Information in this manual applies to all models unless a particular one is mentioned.

Fig. 7a
Model GT35P



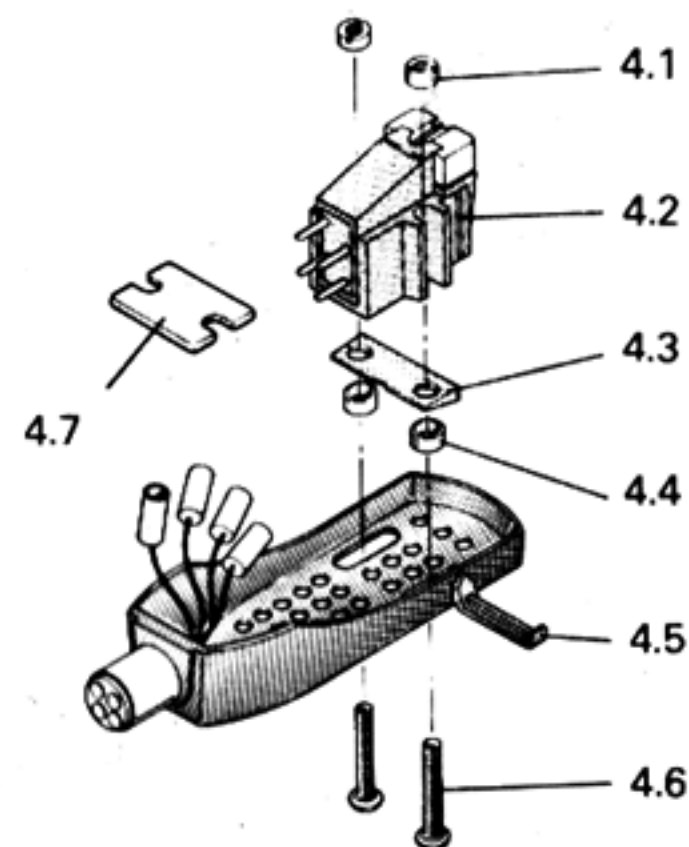


Fig. 4a

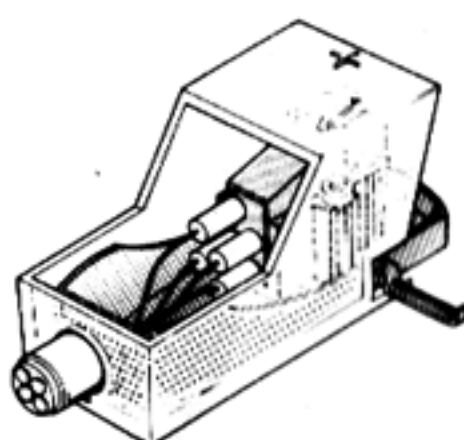


Fig. 4b

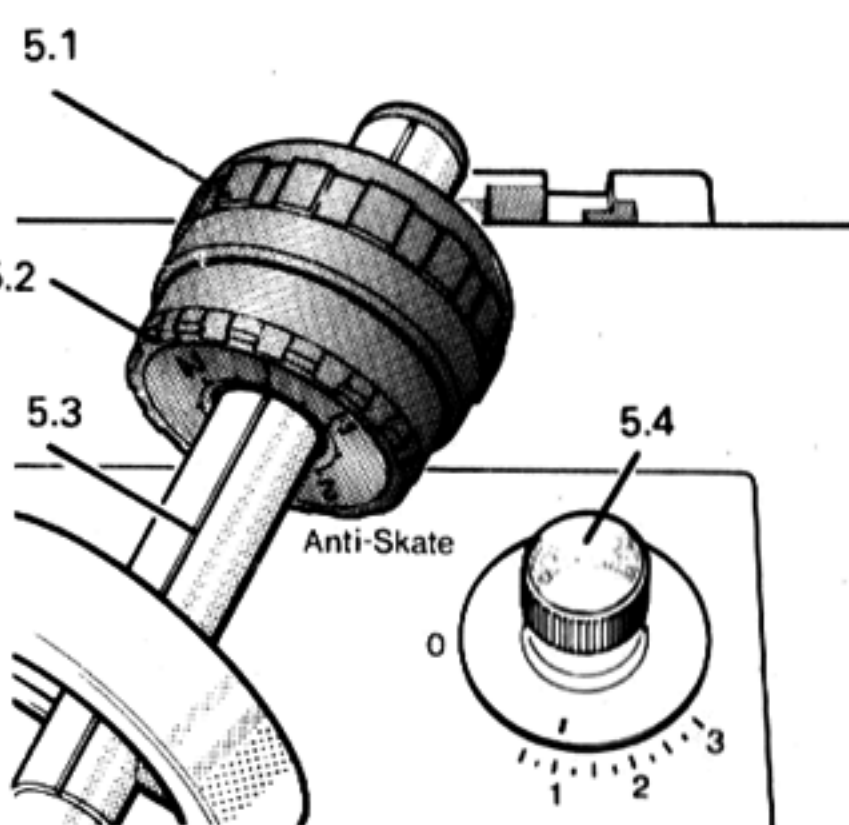


Fig. 5

Technical Details

Turntable

Diameter (mm)
Heavy, die-cast with easily cleaned mat
Flexible belt driven
Speeds 33 $\frac{1}{3}$, 45 rev/min

Pickup arm

Magnesium alloy plug-in pickup head shell, for cartridges with standard 2-hole-fixing
Jewel and ball-bearing pivots
Built-in stylus force indicator
Counterbalanced, tubular aluminium design
Anti-skate device
Viscous damped cueing control

Motor

Four-pole, synchronous-type
D.C. servo-controlled type with $\pm 3\%$ speed control

Performance (figures are typical)

Rumble, DIN A: (dB)
 'DIN B: (dB)
Wow and flutter, peak slow weighted (DIN): %

Mechanical functions

Automatic stop, with pickup arm returned to rest
Record reject facility

Construction and accessories

Integrated, low resonance mounting base
Counterbalanced, 'see through' dust cover
Power supply connecting lead (according to territory)
Audio connecting lead, with DIN or phono plugs (according to territory)

Garrard's policy is one of continued development and therefore the Company reserves the right to alter specifications without notice.

GT20 GT25P GT35P

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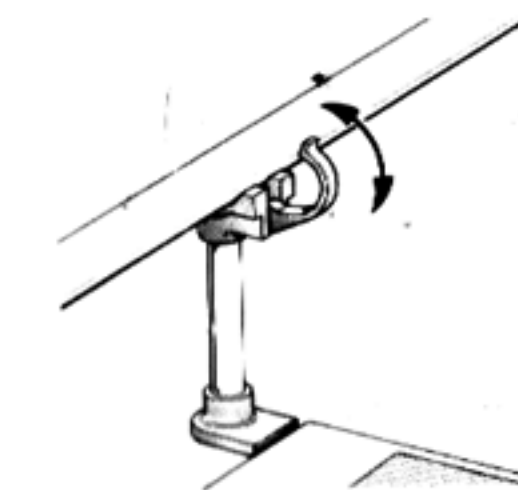


Fig. 7b

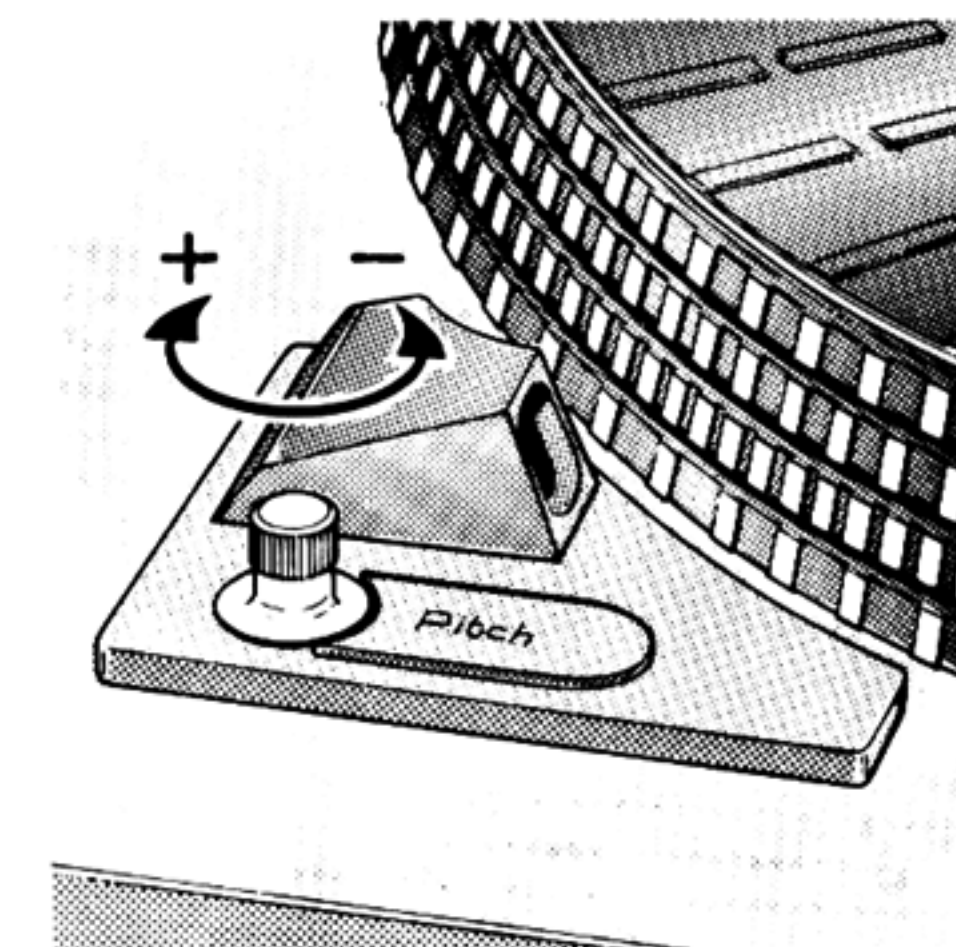
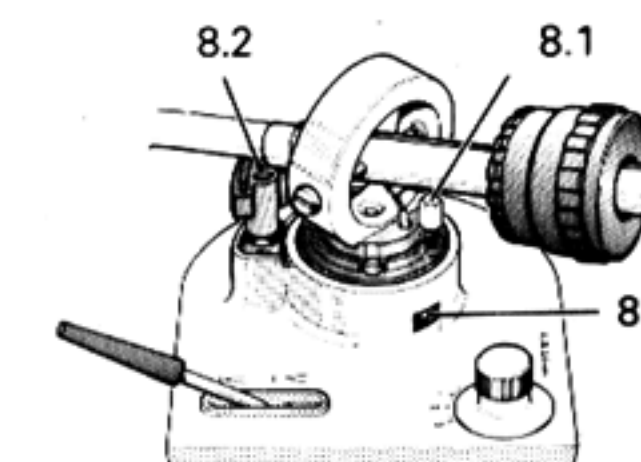
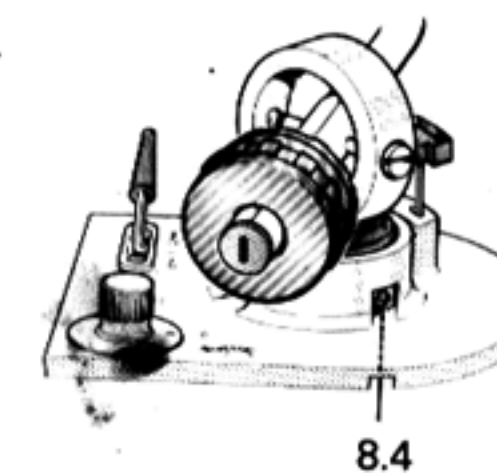


Fig. 7c
GT-35P



ig. 8a



ig. 8b

1 Unpacking

- 1 Open the carton (1.8) and read any instructions on its top flaps.
- 2 Remove the cardboard top pad (1.1) and lift out the moulded dust cover (1.2).
- 3 Place one hand on each side of the mounting base (1.6) and carefully lift out the complete assembly. Seek assistance for this stage rather than risk damage.
- 4 Remove both support mouldings (1.7) from the back and front of the base and take out all the accessories packed inside them.
- 5 Unpack the turntable disc (1.4) with its packing ring (1.5) and rubber mat (1.3).
- 6 Remove the wire tie from the pickup arm.
- 7 Store packing materials for possible future use.

2 Accessories

The following accessories will be found in the support mouldings (1.7):

- 2.1 A pickup head shell. If a pickup cartridge is not fitted, then fixing screws and nuts to fix one will be provided.
- 2.2 A gauge to align a cartridge in the shell for optimum tracking.
- 2.3 A 45 rev/min single large-hole record adaptor.
- 2.4 A pickup arm counterbalance weight.
- 2.5 A capsule of lubricating oil for routine maintenance.

3 Setting up

- 1 Fit the rubber drive belt (3.1) around the turntable drum (3.2) and motor pulley (3.3). Pass it through the gap in the speed change arm (3.4)*. The belt must not be twisted and any coloured identification mark (3.5) on the belt must face outwards. *Not on GT 35P.
- 2 Locate the turntable disc centrally on the drum and fit the rubber mat.
- 3(a) If there is a cartridge in the pickup head shell already, attach the shell to the pickup arm. To do this, secure the pickup arm to its rest, then fit the locating pin on the shell into the slot at the front of the pickup arm tube (Fig. 3b). Press the head gently inwards while turning the locking collar fully counterclockwise until the pin engages the collar as it turns and the head is drawn in firmly to make a good connection.
 - (b) If a cartridge is not fitted, obtain one suitable for your amplifier, then see Section 4 and paragraph 3 (a).
 - 4 Fit the counterbalance weight by pressing it onto the back of the pickup arm with its black calibrated barrel facing the front of the arm.
 - 5 Set stylus force and anti-skate control, see Section 5.
 - 6 Attach the connecting leads, see Section 6.
 - 7 Fit the dust cover. To do this, lift the front of the cover so that both spring-balanced hinges can be fitted to their slots at the back of the base (Fig. 3c).
 - *8 Secure the pickup arm, set the mode selector (7.4) to 'Manual' and rotate the turntable clockwise. Return the selector to 'Off' if it does not soon do so. Finally, set Auto control (7.5) to 'Start/Reject' and rotate the turntable again, six times.
* Not on GT20.

4 Fitting the cartridge

Disregard these instructions if a cartridge is already fitted.

- 1 Lock the pickup arm to its rest, by means of the safety catch, then turn the pickup arm head shell (4.5) over and fit the cartridge (4.2) to it. To do this, pass a pair of screws of suitable length (4.6) through the slots in the top of the shell, through the fixing holes or slots in the cartridge and into the pair of round nuts (4.1).

The shape of a small minority of cartridges causes them to slope sufficiently for the back to touch a record. If this happens, fit the tilt wedge inside the head shell, with its deep edge forward (4.3).

Similarly, a few cartridges are more shallow than most. These will cause the front of the arm to slope downwards when playing a record. In this case, fit one or two pairs of spacing washers (4.4), as shown, to level the arm.

If a light cartridge causes difficulty in setting stylus force, fit the slotted auxiliary weight (4.7) inside and next to the head shell.

5 Setting stylus force

- 1 Secure the pickup arm to its rest and place a record on the turntable.
- 2 Press the counterbalance weight (5.1), with its black calibrated barrel (5.2) facing the pickup head, about half-way along the tube at the back of the pickup arm.
- 3 Turn the anti-skate control (5.4) to '0' and remove the stylus guard or swing it aside, according to type.
- 4 Release the pickup arm and support it above the outside edge of the record, to safeguard the stylus.
- 5 Wind the weight backwards or forwards along the pickup arm until it balances with the stylus tip just clear of the record surface.
- 6 Secure the pickup arm to its rest again.
- 7 Hold the body of the balance weight still and turn its black barrel until the '0' mark is at the line (5.3) on the top of the pickup arm. Balance will be upset if the weight is accidentally turned with the barrel.

- 2 Push the tags on the four coloured connecting leads in the head shell onto the corresponding cartridge output pins (Fig. 4b), using a pair of tweezers if these are available.

Connecting leads use the following code:

- Red – Right channel signal
- Green – Right channel ground
- White – Left channel signal
- Blue (or Black) – Left channel ground

The cartridge will have its own output channel identifying code letters, normally close to the pins.

- 3 Slide the pickup head, complete with cartridge, into the setting gauge (Fig. 4b), taking care not to damage the stylus. With the cartridge body parallel to the sides of the head shell, the stylus tip must be vertically below the point at which the lines on the gauge cross. If it is not, reset the position of the cartridge.
- 4 Tighten both fixing screws equally and recheck the stylus position. If it is correct, remove the head from the gauge.

- 8 Turn the weight and barrel together in a counterclockwise direction (seen from the front of the arm) until the figure corresponding to the required stylus force in grams is at the line. The barrel is calibrated from 0–3gm in ¼gm steps.

Minimum stylus force with a capable cartridge is ¾gm.

Set the stylus force recommended by the cartridge manufacturer.

When Garrard fits a cartridge, its stylus force range (in grams) is shown on the identification ticket on the packing carton.

- 9 Set the anti-skate force, as follows:

Setting the anti-skate control

The anti-skate control (5.4) has a calibrated scale. Turn the control to correspond with the stylus force already set. For instance, if a cartridge calls for a stylus force of 1gm, set the calibration mark on the control to the figure '1' on the scale (as shown).

6 Connecting leads

The following instructions should be read together with the amplifier maker's recommendations. Consult your dealer in case of doubt.

Audio

The audio connecting lead is terminated either at two phono plugs or at a 5 pin DIN-type plug, according to territory. If the amplifier pickup (phono) input socket does not correspond to the plug(s) provided, please consult your dealer who will be able to recommend a suitable adaptor. Figure 6 shows the connecting panel at the back of an imaginary amplifier for illustration purposes only.

If the amplifier has R.C.A.-type phono input sockets –

- 1 Attach the phono plugs on the Garrard audio connecting lead (6.2) to these. Connect the red or brown plug to the right channel input and the white or grey plug to the left channel input.
- 2 Connect the bared end of the signal ground lead (6.1) to the ground terminal on the amplifier, to minimise hum.

If the amplifier has a 5 way DIN-type input socket –

- 1 Attach the 5 pin DIN-type plug on the Garrard audio connecting lead to this.
- 2 Connect the bared end of the signal ground lead (6.1) to the ground terminal on the amplifier, to minimise hum.

7 To play a record

- 1 Open the dust cover and place a record on the turntable. Check that the stylus guard has been taken off or swung clear, according to type, and that the stylus is correct for the record.
- 2 Select '33' or '45' rev/min speed.
- 3 Switch to 'On'. Release the pickup arm from its rest by moving the safety catch (7.2) aside. See also Fig. 7b.

Power supply

Connect the plug on the power supply lead (6.3) to any normal household a.c. outlet, or accessory outlet (preferably switched) on the amplifier.

Important (U.K. models)

If a power supply plug is not fitted, the colours of the wires in the mains lead of this apparatus may not correspond to the colours identifying the terminals in your power supply plug; proceed as follows: The blue wire must be connected to the terminal in the plug marked 'N' or coloured black. The brown wire must be connected to the terminal in the plug marked 'L' or coloured red. A 3 amp fuse must be fitted either in the plug or adaptor or at the distributor board.

Dual voltage range models

Before connecting to a power supply outlet socket, the setting of the voltage selector switch must be correct. To check this, lift the mat and look through one of the openings in the turntable. The sliding switch must show the nominal voltage of the local power supply – either 115 or 230V.

- 4 Slide the 'Cue' lever (7.1) to ∇ to raise the pickup arm, and position it over the record, using the finger lift (7.6).
- 5 Ease the 'Cue' lever to ∇ to lower the pickup onto the record.

After playing the record (GT25P and GT35P) the pickup arm will be returned to its rest and the player will switch off or:

- 6 Slide the 'Cue' lever to ∇ , return the pickup arm to its rest and ease the lever to ∇ . Switch to 'Off'. This can also be done while the record is playing.

At the end of play, secure the arm to its rest and remove the record. If no more records are to be played, close the dust cover.

To switch off before the end of play and return the pickup arm to its rest (GT25P and GT35P), turn the AUTO control (7.5) to 'Reject'.

To interrupt play for a short time, set the 'Cue' lever gently to ∇ . To continue play, slide it to ∇ .

To control record pitch

The D.C. servo controlled motor of the GT35P ensures that the turntable will revolve without variation from its exact 33 $\frac{1}{3}$ or 45 rev/min setting (7.3). It is revolving at the precise speed when the corresponding row of bars on the turntable rim (see below) appears to remain stationary when lit by the light emitting diode (L.E.D.).

Top row of bars – 45 rev/min, 50Hz power supply
2nd row of bars – 33 $\frac{1}{3}$ rev/min, 50Hz power supply
3rd row of bars – 33 $\frac{1}{3}$ rev/min, 60Hz power supply
Bottom row of bars – 45 rev/min, 60Hz power supply

To raise pitch by increasing speed, turn the pitch control knob (7.7) clockwise. To lower pitch, turn the knob counter-clockwise. See Fig. 7c. This facility can be used to compensate for out-of-pitch recordings. It also enables a musician to make adjustments to the pitch of an individual recording of up to approximately one semi-tone overall.

8 Service adjustments

Direction of rotation is described when looking at the head of an adjusting screw.

Pickup arm lifting height (Models GT25P and GT35P only)

After playing a record the pickup arm will rise, return to its rest then settle onto it and the unit switches off. A restrictor prevents the arm from lifting too high.

If adjustment is needed:

- 1 Switch the power off as the arm returns to its rest after playing a record and turn the restrictor screw (8.1) clockwise to disengage it.
- 2 Turn the lifting height adjusting screw (8.2) clockwise to reduce or counterclockwise to increase the height.

- 3 Reset the restrictor screw by turning it counterclockwise until there is about 1.5mm free upward movement at the front of the pickup arm.
- 4 Switch on again to allow the automatic cycle to be completed.

Pickup arm return position

If the pickup arm overshoots its rest after playing a record – set the 'Cue' lever to ∇ , move the arm fully outwards and steady it while turning the adjusting screw (8.4) clockwise one turn. Test again. Adjusting screw 8.3 is set during assembly.

9 Routine maintenance

Careful design has reduced the need for maintenance to a minimum, but attention to the following points will prolong trouble-free listening.

The pickup cartridge stylus

If the stylus tip gathers dust, sound quality will suffer. Stroke the dust away gently with an artist's camel-hair brush, working only from the back of the stylus towards the front to avoid bending it. Do not use solvent without the cartridge maker's approval.

Have the stylus tip examined under a dealer's microscope periodically for signs of wear. A worn or chipped tip damages records permanently.

The turntable mat

Remove the rubber mat from time to time and clean it with a soft brush or a slightly moist cloth.

The dust cover

Wipe this cover with a slightly moist cloth to remove dust and finger marks.

The drive system

Once a year lift off the turntable disc and apply a drop or two of oil from the capsule provided to the turntable centre bearing, at the position shown on Fig. 9. Be careful to keep oil off the driving surfaces of the motor pulley, drive belt and turntable drum and off your hands.

Wipe the driving surfaces with a clean lint-free cloth to remove any traces of foreign matter.



Fig. 9

10 Selected spare parts

Description of part	Part number
Pickup arm counterbalance weight	81153/001
Pickup head shell, Type H1, with fixing screws	80627/001
Cartridge setting gauge	80106/001
Turntable mat	80098/001
Drive belt	76992/001
Capsule of lubricating oil	78243/001
45 rev/min single-play adaptor	72698/001
Dust cover	80212/001

11 Service hints

Disconnect the unit from the power supply and protect the stylus whenever possible before investigating problems. Numbers in brackets under 'Cause and remedy' are those of relevant earlier sections.

Fault

Unit fails to start.

Cause and remedy

- 1 Turntable drive belt displaced or broken. Remove the turntable disc and refit or fit new belt (3).
- 2 Power supply lead insecurely connected. Push plug fully into power outlet socket.
- 3 Damaged power supply lead. Consult dealer.
- 4 No output from power source socket (check by connecting other equipment to it). If no power, consult dealer or qualified electrician.

Speed variation ('wow' or 'flutter')

- 1 Oil on drive belt. Remove the turntable disc and wipe the drive belt, motor pulley and turntable drum with a clean, dry cloth (9).
- 2 If the turntable spindle is dry, lightly oil it (9).
- 3 Recorded 'wow' or 'flutter'. No cure.
- 4 Record warped, dished or eccentric. No cure.

No sound output

- 1 Pickup cartridge leads or audio connecting leads insecure. Check connections.
- 2 Faulty cartridge or amplifier. Check by substitution if possible.

Distorted sound

- 1 Cartridge stylus clogged by dust. Clean it (9).
- 2 Check stylus force and anti-skate control settings (5). Reset to cartridge maker's recommended figure.
- 3 'Cue' control not moved fully to \perp .
- 4 Back of cartridge touches record. Fit the plastic tilt wedge (4).
- 5 Cartridge insecurely fitted. Check position with setting gauge and tighten fixing screws (4).
- 6 Pickup head shell loose. Tighten fixing collar (3).
- 7 Worn or damaged stylus. Consult dealer and fit new stylus if needed.

Low pitched noise through speakers ('hum', 'rumble' or acoustic feedback)

- 1 Connecting leads insecure. Check connections (6).
- 2 Try effect of removing and reversing power supply plug, if possible (6).
- 3 Turntable spindle requires lubrication. Carry out routine maintenance (9).
- 4 Player placed too near to speakers. Move it further away.
- 5 Recorded 'noise'. No cure.

Enquiries

Please contact your supplier or, in case of difficulty:
Garrard Engineering Limited,
Sales Service Department,
Newcastle Street, Swindon, Wiltshire
Telephone: Swindon (0793) 35381

or, in the U.S.A.:

Plessey Consumer Products,
Garrard Dealer Sales Division,
100 Commercial Street,
Plainview, New York 11803
Telephone: (516) 938-8900