

DIRECT DRIVE FULL-AUTO PLAYER KP-5022

INSTRUCTION MANUAL



To the New KP-5022 Record player Owner :

Because Kenwood Electronics, Inc., takes great pride in the long tradition of quality components the name Kenwood represents, your purchase of a Kenwood record player places you in a distinguished family of connoisseurs of superb highfidelity sound reproduction.

The purpose of this manual is to acquaint you with the operating features of your new record player. You will notice that in every detail of planning, engineering, styling, operating convenience, and adaptability, we have sought to anticipate your needs and desires.

We suggest that you read this manual carefully. Knowing how to set up your record player to best advantage will enhance your listening pleasure right from the start. You will also become aware of the ease with which you can adjust your record player to meet your special requirements.

Turn the pages and become acquainted with the exciting features of your new record player, features that will remain new for endless hours of listening pleasure.

CONTENTS

KP-5022 FEATURES	3
BEFORE ASSEMBLING THE PLAYER	4
PLAYER PARTS NOMENCLATURE	5
HOW TO ASSEMBLE & ADJUST PLAYER	6
OPERATING INSTRUCTIONS	8
MAINTENANCE	10, 11, 12, 13
TROUBLE SHOOTING	14
KP-5022 SPECIFICATIONS	15

KP-5022 FEATURES

1. Direct Drive Mechanism

A 8 pole brushless DC servo motor is controlled by a voltage servo amplifier to maintain a constant speed of 33-1/3 or 45 rpm. This has made it possible to keep wow and flutter less than 0.05 percent (RMS). The SN ratio is more than 58 dB.

2. Unique, High Performance Pickup.

- Perfect Tracing Tapered Tone Arm.
- Total Lateral Balance.
- Plug-in Head Locking System.
- Direct Reading Stylus Pressure.
- Anti-Skating Mechanism.

3. Full Automatic Mechanism.

- Self-maintaining Circuit One Touch Operation.
- Easy Operation.

4. Built-in Pause and Elevation Mechanism.

5. This turntable features a double-floating scheme incorporating a panel-floating device coupled with insulators to prevent vibration and the consequent "howling" or oscillation encountered by many record players. The bottom panel is lined with punched ABS sheet.

6. Dual Function Stylus Position Gauge and Pilot Lamp.

7. Free-stop Action Player Cover.

8. Perfect CD-4 Record Reproduction Possible by Interchanging Stylus Lead.

- Low Capacity Audio Cord.

9. Extra Shell Stand Supplied.

About Direct Drive Mechanism

Almost all turntables now available use a high-speed motor with a belt drive or idler to reduce the speed to 33-1/3 or 45 rpm. Such mechanisms have merit in that vibration from the motor is absorbed by the belt or idler. On the other hand, in such mechanisms, the quality of the belt or idler is often inferior because quality of raw materials is not uniform and manufacture calls for precision that is not always available.

Another drawback of this type of mechanism is that high-speed motors generate vibration. To eliminate this problem, some quality players have adopted a motor which turns at a reduced speed, which eventually assures a constant speed. This system is called Direct Drive. However, it is expensive because it has to employ a servo mechanism which is expensive. Consequently, the use of this mechanism has been limited to expensive models without arm or cartridge, designed exclusively for the use of dedicated audiophiles.

KP-5022, however, is effectively designed to reduce the cost of the level of models using a synchronous motor, making it possible to use this mechanism in an automatic player.

BEFORE ASSEMBLING THE PLAYER

CHECK CARTON CONTENTS:

In addition to the Turntable and Rubber Sheet, the following small items are packed in a cardboard carton.

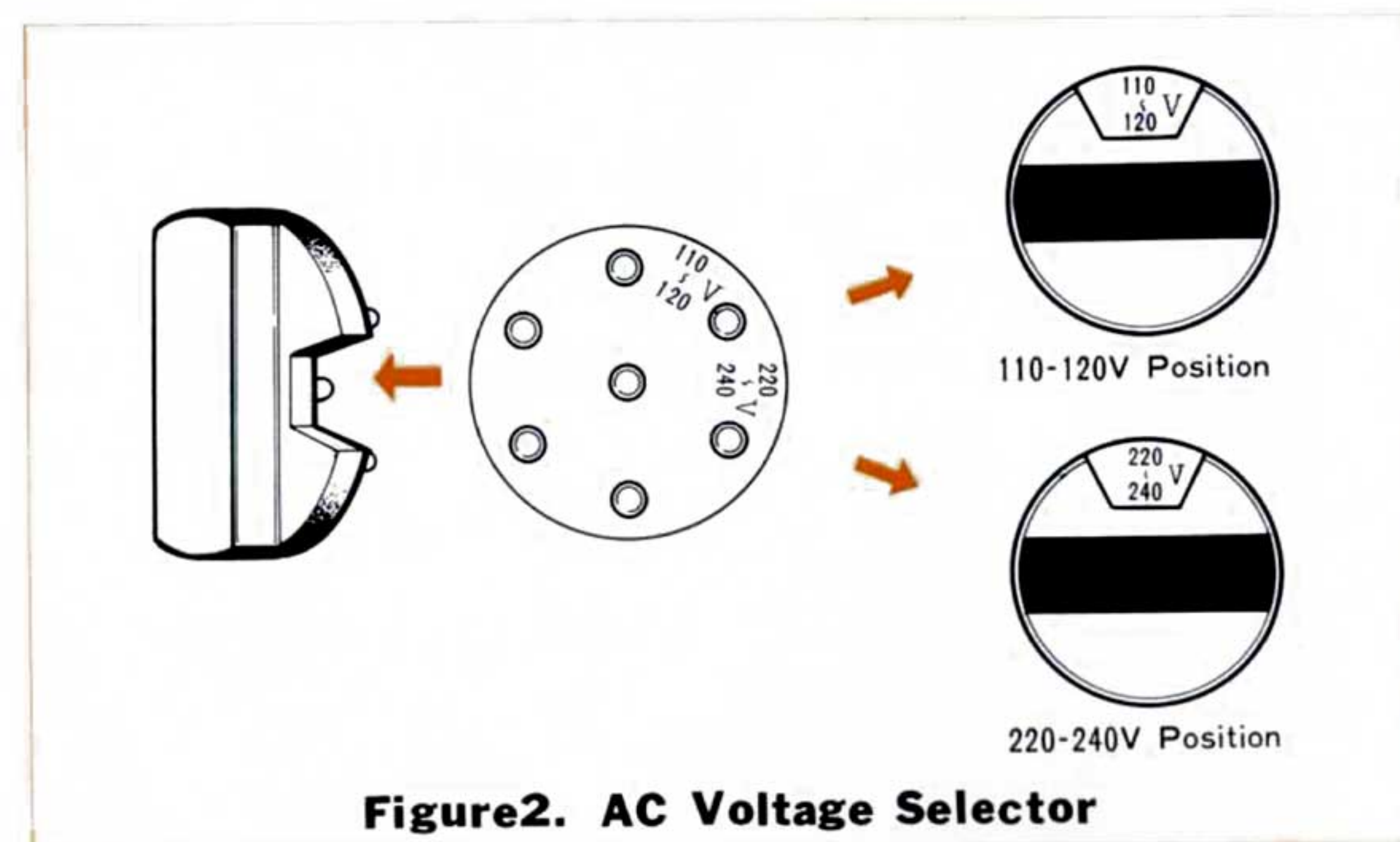
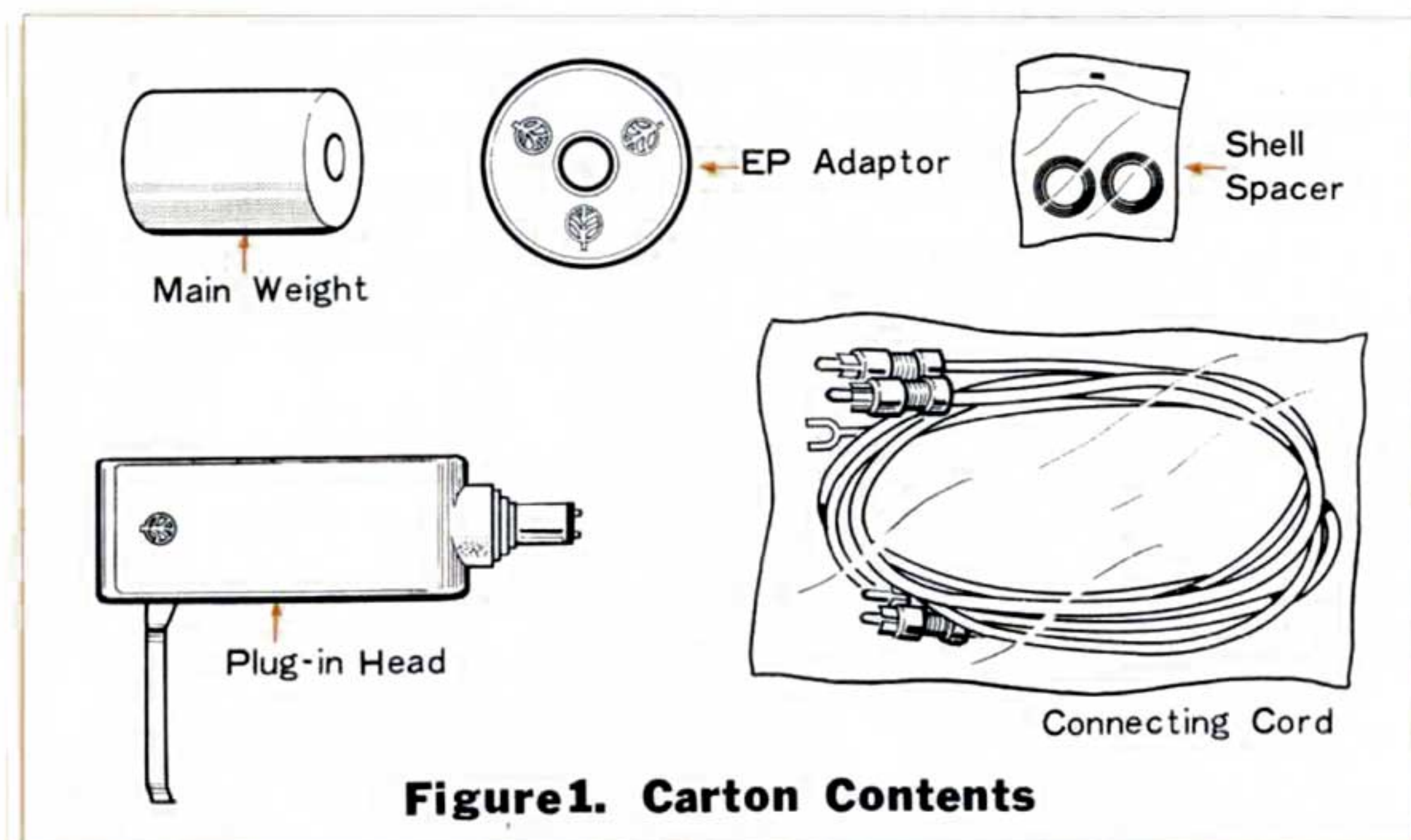
- Main Weight.
- Plug-in Head.
- Shell Spacer Shims.
- EP Adaptor.
- Connecting Audio Cord.

AC VOLTAGE SELECTOR:

This player is equipped with a AC Voltage Selector (this selector is located under the turntable) to enable operation from either 110 — 120V or 220 — 240V AC line sources.

Before inserting power cord into the AC line, check the setting of this selector which is pre-set to the voltage generally available in the areas to which this unit is shipped. This selector must be set to the side that matches the voltage of your power line.

To reset the Selector, pull out the Selector Plug and reinsert it firmly into the AC Voltage Selector with your line voltage appearing in the cutout of the Selector Plug.



PLAYER PARTS NOMENCLATURE

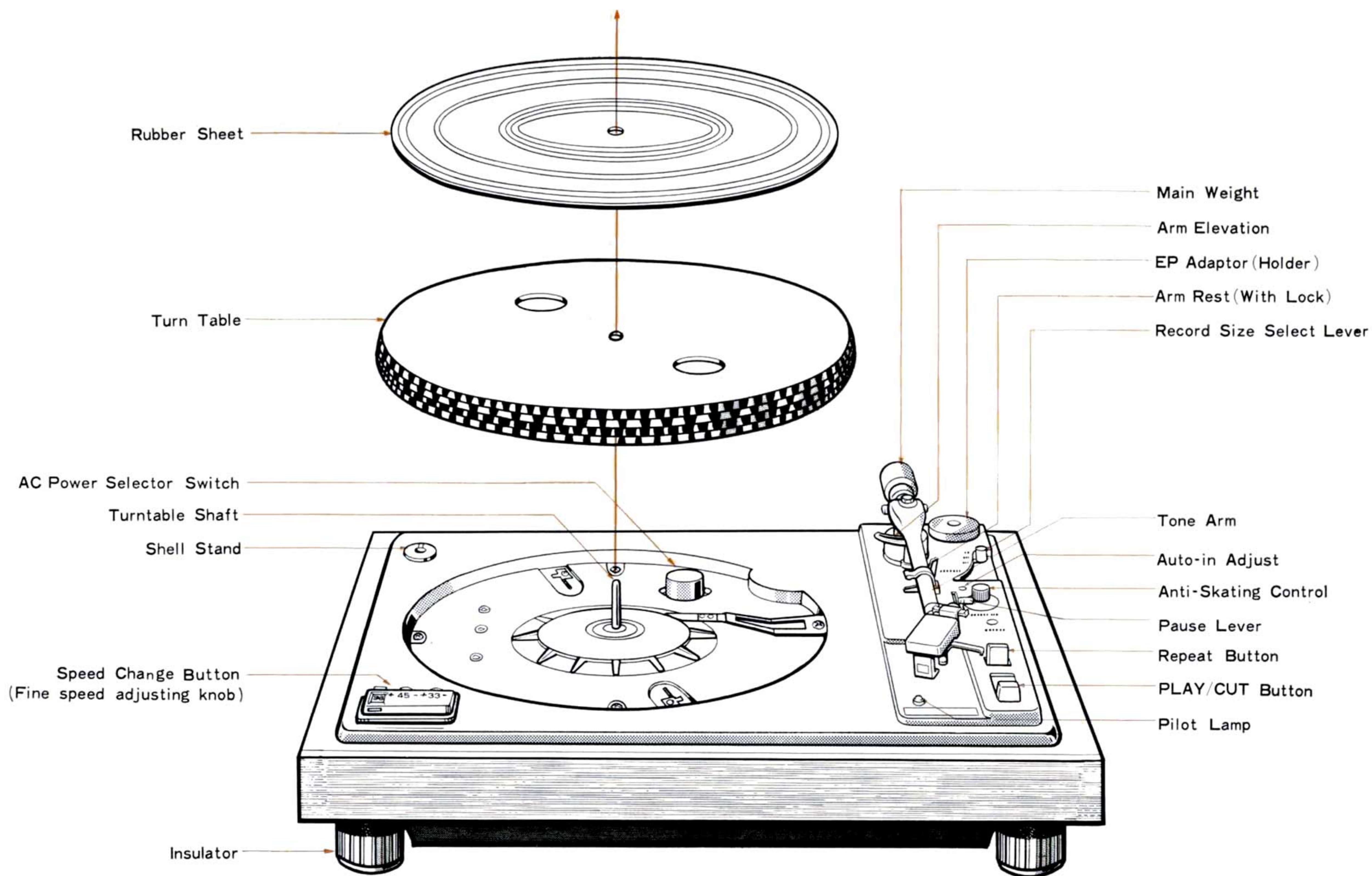


Figure3. Player Parts Nomenclature

HOW TO ASSEMBLE & ADJUST THE PLAYER

ASSEMBLY PROCEDURE:

1. Figure 4 shows the locations of the 4 bolts which are used to hold down the panel. They are no longer required when installing the player.
2. Place the turntable and the rubber sheet on the center shaft.
3. Next attach the plug-in head to the tone arm as follows. Push the LOCK slider button to the right as far as it will go, and insert the plug-in head into the tone arm after lining up their grooves. Then push the slider to the left toward LOCK. This will lock the plug-in head securely in place. (See Figure 5). Make sure that all contact points are thoroughly cleaned beforehand to ensure solid connections.
4. Attach the main weight to the rear of the tone arm as follows. First remove the stylus cover, and set the Anti-skating knob to "B". Then set the stylus pressure gauge located in front of the main weight to "0". Then attach the main weight and move it forward until the tone arm is perfectly balanced. This can be confirmed by noting that the pipe of the tone arm will be floating about 1 to 3

mm above the arm rest. (See Figure 6) Now if the stylus pressure gauge is set to position "2", it will mean that the tone arm is adjusted to the cartridge's optimum stylus pressure of 2 gr.

5. Connect the player output jacks with the connecting audio cord that is supplied with this unit to the PHONO input jacks of your stereo amplifier or receiver. Be sure to connect their respective LEFT and RIGHT channels correctly. The Ground (Earth) terminal from the player should also be connected to the GND terminal of your amplifier.
6. The player cover can be attached or removed easily according to your requirements. (See Figure 7).
7. You are now ready to adjust the insulators. For details, see page 13.

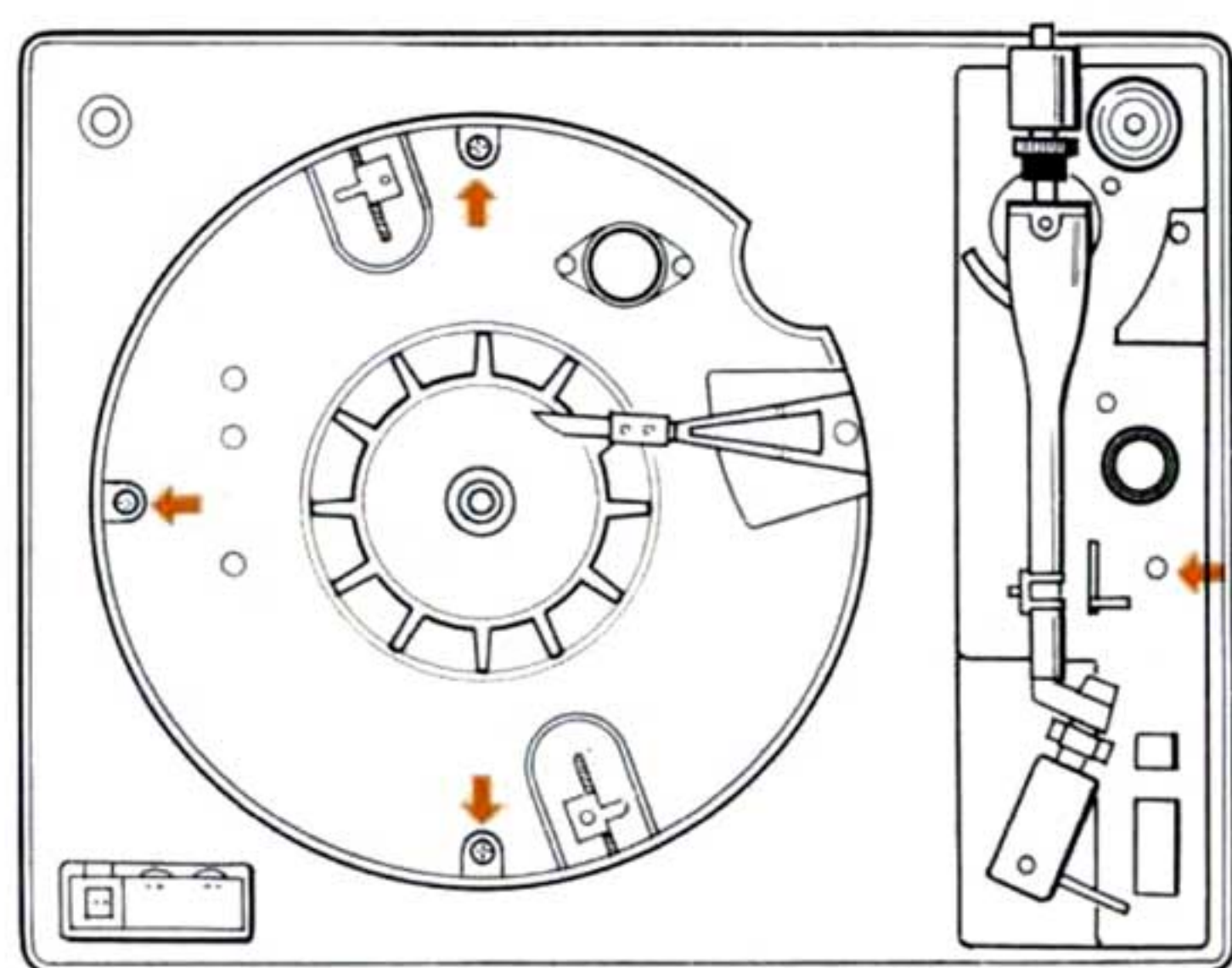


Figure 4. The Location of 4 Bolts

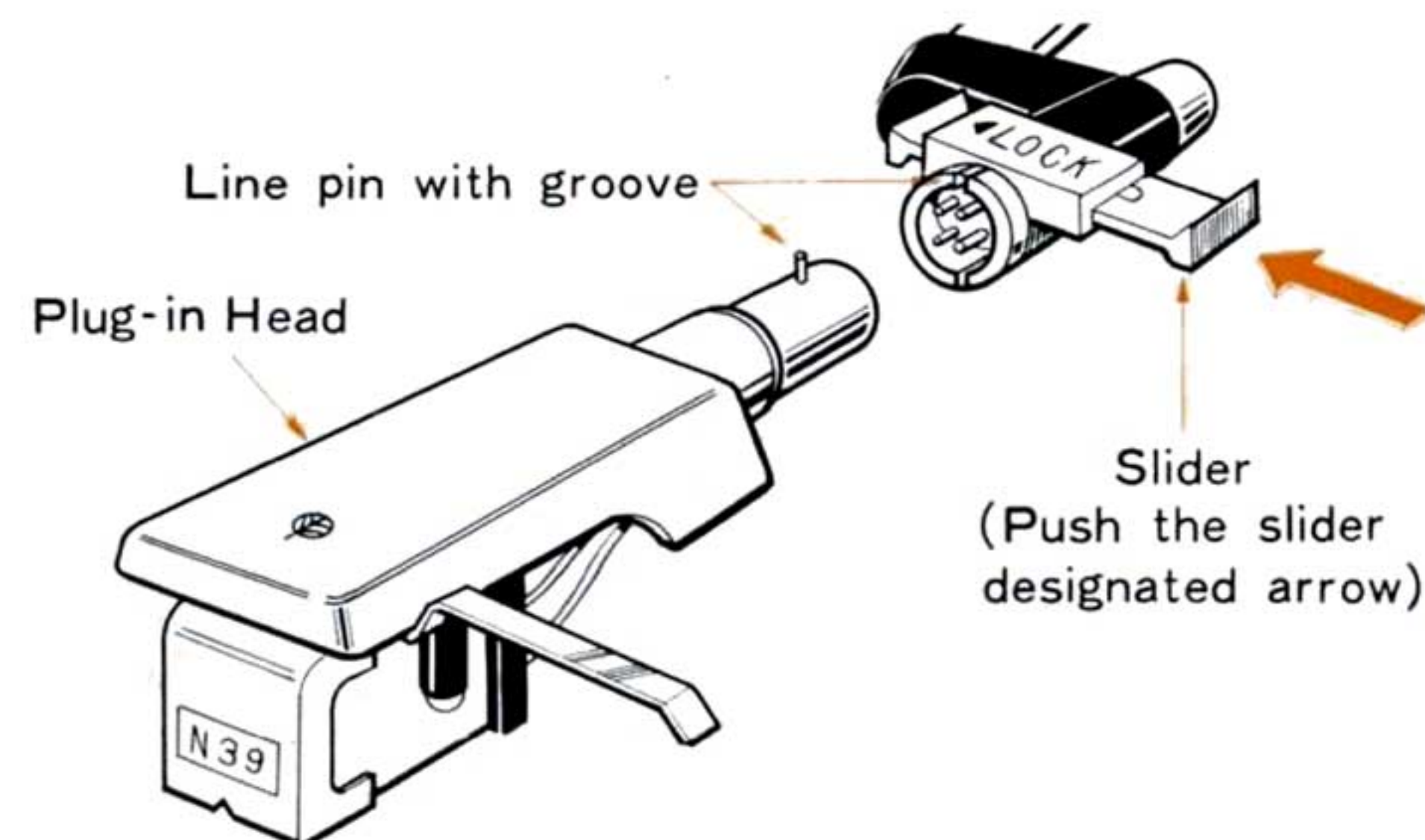


Figure 5. Attaching The Plug-in Head

HOW TO ASSEMBLE & ADJUST THE PLAYER

NOTES:

1. When records are being played on any record player, an undesirable inward side force is always exerted on the stylus toward the center of the record. Although this force may be very small, it will introduce a very slight distortion due to unequal stylus side forces on the wall of the record groove unless a compensating outward force is applied, as in the case of this record player. This is achieved in the KP-5022 with an inside force cancelling mechanism which is controlled by the Anti-skating Knob located at the center, to the right of the tone arm. Its correct setting will completely eliminate all side force distortion. This setting should be the same as, or slightly less than, the correct stylus pressure setting for the cartridge used. It should never exceed this value as this may adversely affect the automatic action of this player.
2. It must be remembered that it takes several seconds after switching for the turntable to stop. For example, after the turntable starts revolving with the SELECT lever set to MANUAL, the turntable cannot be made to stop immediately. Likewise, when the PLAY/CUT

button is pushed to stop a record which has been played part way through, it will take several seconds for the turntable to come to a stop. In both cases, a light click will be heard which indicates that the stop mechanism has been activated. It must also be remembered that it takes several seconds after the turntable has started to move for the stylus to land into the record groove.

3. Avoid operating the SELECT lever when the pipe arm is in a raised position at the start or end of record play.
4. The player cover can be attached or removed easily according to your requirements. See Figure 7.

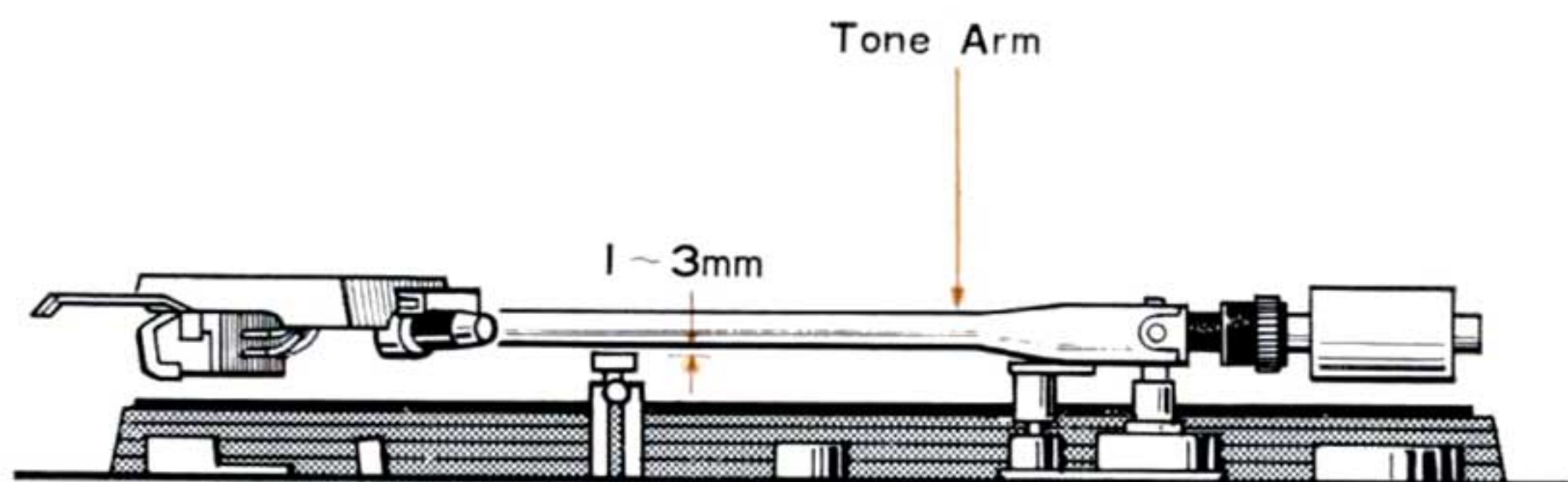


Figure6. Horizontally Balanced Arm Position

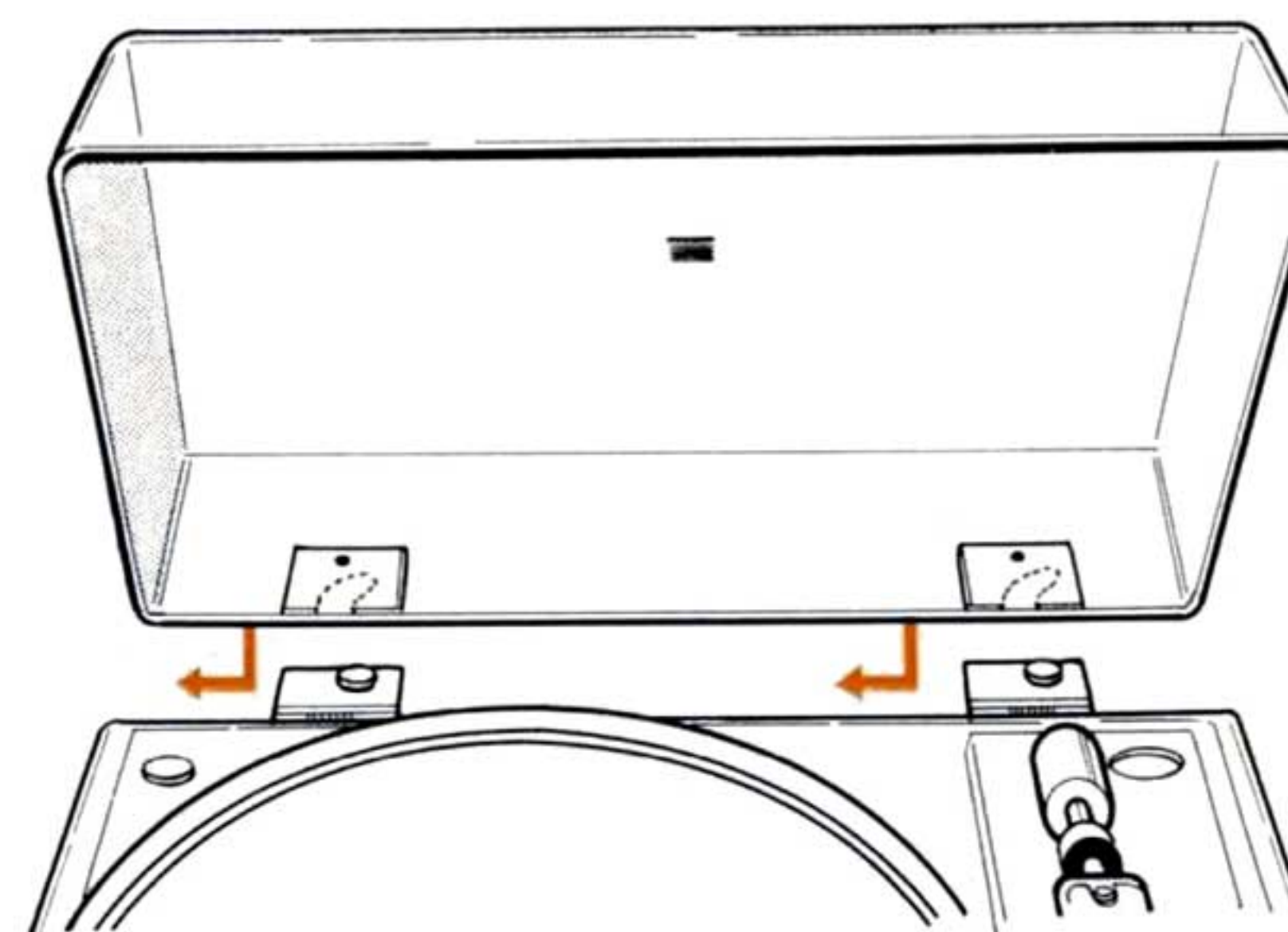


Figure7. How To Install The Cover

OPERATING INSTRUCTIONS

OPERATING HINTS:

Now that your player is assembled and adjusted, observe the following procedure for its operation.

1. Connect the player output jacks with connecting audio cord which is supplied with this unit to the PHONO input jacks of your stereo amplifier or receiver, and set their controls for PHONO operation.
2. Since the optimum stylus pressure for this player is 2 grams, set the Anti-skating Knob also to position "2".
3. Set SPEED CHANGE button to the speed of the record that you desire to play.
4. For Donut-style EP records which have large center holes, insert the EP adaptor, which is supplied as an accessory, over the center spindle.
5. Place the record on the turntable.
6. Set the SELECT lever to the size of the record chosen, (30 cm, 25 cm, 17 cm). Be sure to set to DOWN position for normal automatic operation.
7. Release the Arm Stand Lock and push the PLAY/CUT button. The turntable will revolve, and the arm will move automatically to start record play. Simultaneously the pilot lamp will light up to indicate that the record player is operating.
8. At the end of the record, the arm returns to the arm stand, power is switched off and the turntable comes to a stop, all automatically. For certain records with special groove patterns, the arm may not return automatically. In such a case, push the PLAY/CUT button. The arm will then return automatically and the turntable will stop too.

MANUAL OPERATION:

Follow the steps below when it is desired to play only a portion of a record, or when manual operation is preferred.

- a) Set SELECT lever to MANUAL.
- b) Grasp finger hook and move the arm over the starting point of the record you desire to play.
- c) Push PLAY/CUT Button. The arm will descend gently on the disc within several seconds and start record play.
- d) The arm returns and the turntable stops automatically within several seconds after the end of the record.

Note: Record play cannot be started within a radius of 2½ inches from the center of the disc.

When it is desired to stop a record which has been played part way through, push the PLAY/CUT Button. The arm will return and the turntable will stop automatically.

PAUSE LEVER:

This record player is equipped with a PAUSE LEVER located at the right of the turntable. It is handy when it is desired to play a certain passage over again, or when you wish to stop record play for a brief interval. It will raise the arm when switched to UP (▲). When switched to DOWN (▼), it will cause the arm to descend again and resume record play.

Note: The Pause Lever should always be set to DOWN position for normal automatic operation.

REPEAT LEVER:

It is possible to play the same record over and over again. To do so, pull the REP lever forward. This can be done at anytime; at the start of, or during record play. The same record will continue to be repeated as long as this lever is pulled forward. To terminate record play, push the REP lever back in the opposite direction. This can be done at any time; at the end of the record, or part way through it. The arm will return to its stand and the turntable will stop automatically.

OPERATING INSTRUCTIONS

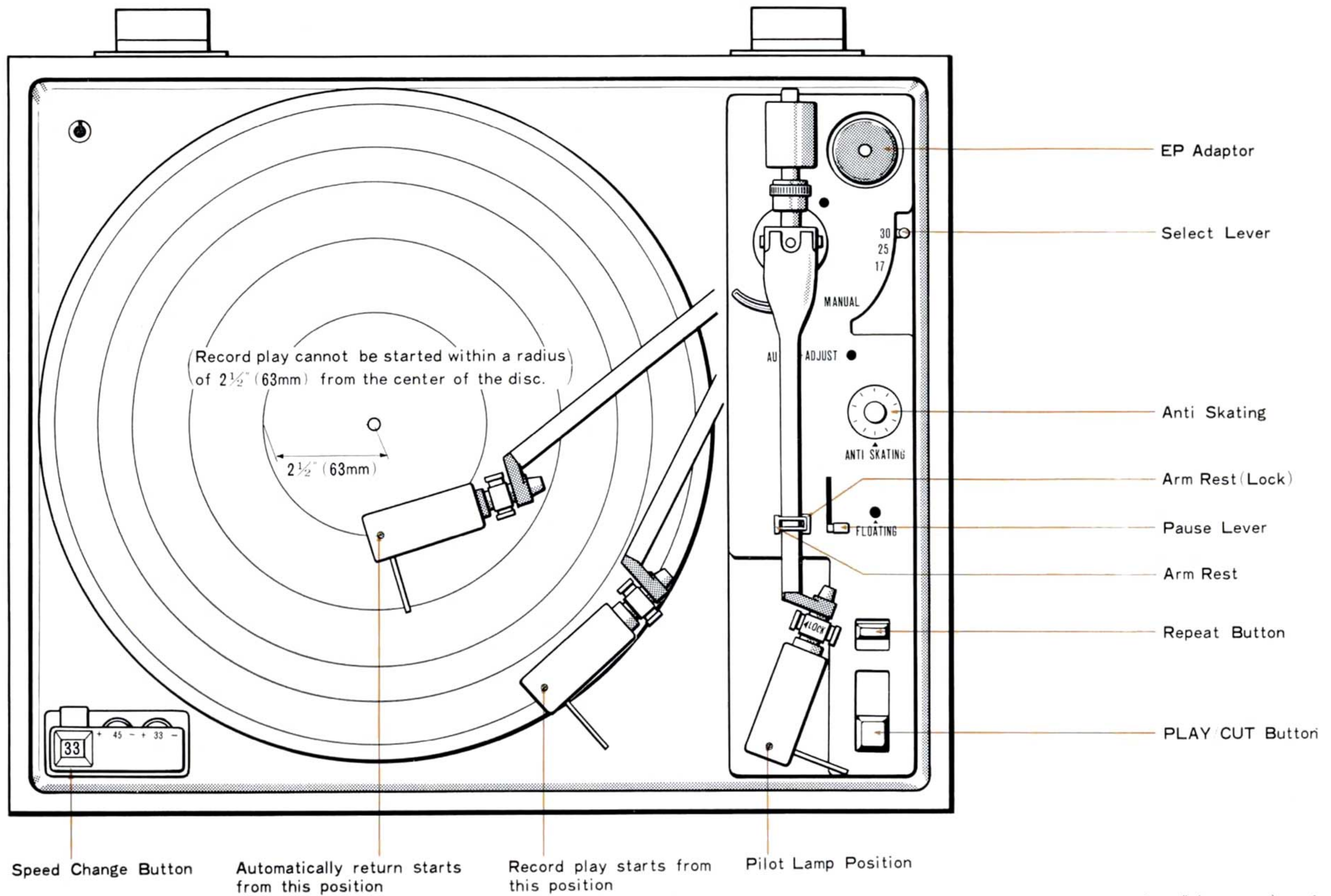


Figure8. Operation of The Player (12" (30cm) LP)

MAINTENANCE

STROBOSCOPE:

Stroboscope stripe markers are etched into the outer rim of the turntable to enable turntable speed accuracy checks. The upper two lines of markers are for 50 Hz use. They should be referred to in 50 Hz power source areas. The top line of stripes is used for 33 rpm checks, and the 2nd line, for 45 rpm checks.

The lower two lines of markers are used for turntable speed checks in 60 Hz power source areas. The upper line of the two is used for 33 rpm checks, and the lower (last) line is used for 45 rpm speed checks.

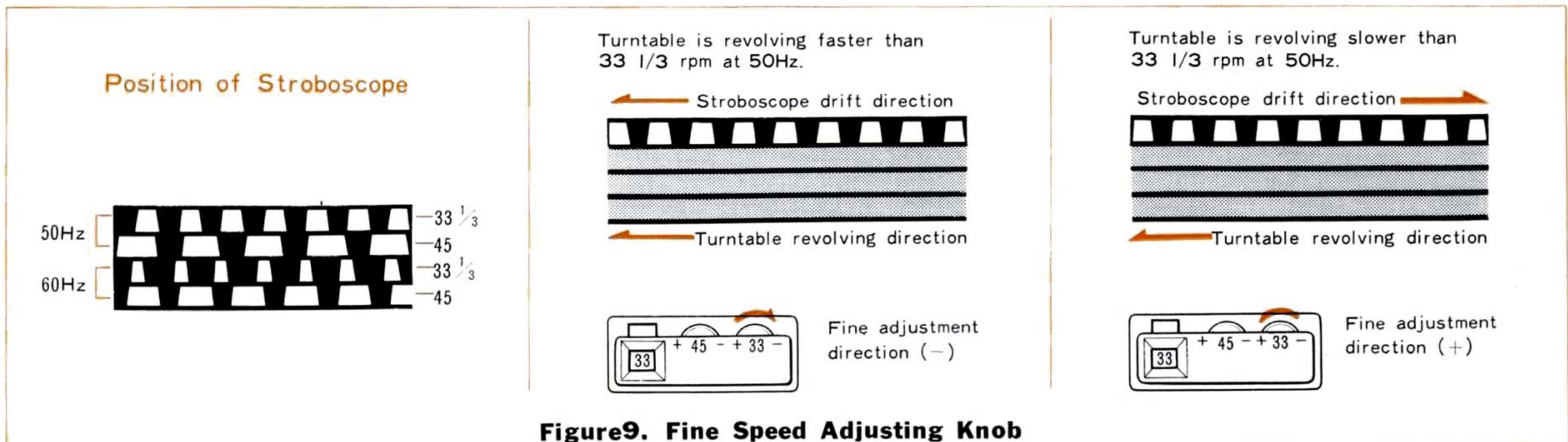
For example, in checking turntable speed accuracy in a 50 Hz power source area when playing a 33-1/3 rpm record, look at the top line of stripes. If the stripe appears to be stationary, it means that the turntable is revolving accurately at 33-1/3 rpm. If the stripe drifts to the left, it means that the turntable is turning slightly too fast. In such a case, the fine speed adjusting knob should be turned toward

"33 -" until the stripes appear to become stationary.

If the stripe drifts to the right, it means that the turntable is turning slightly too slow. Turn the fine speed adjusting knob toward "33 +" in this case, until the stripe appears to become stationary. (See Figure 9).

Note:

Artificial light from lamps or fluorescent tubes should be used when making stroboscope speed checks. Accurate adjustments cannot be made in sunlight alone.



MAINTENANCE

HOW TO REPLACE THE PLUG-IN HEAD:

The tone arm with the "one-touch" plug-in feature used in this record player will accept almost any cartridge that is commercially marketed. The correct position of the cartridge when attached to the Cartridge Insert is shown in Figure 10. As shown in the figure, the cartridge position should be adjusted so that the stylus point comes exactly over the center of the pilot lamp. Otherwise, the performance of the player will be adversely affected by overhanging and/or tracking errors, as well as faulty stylus landing position. This adjustment has already been made at the factory for the cartridge supplied with the KP-5022, so it is only necessary to attach and lock the plug-in head to the tone arm. Shims in two sizes, 0.5 mm and 0.8 mm are supplied to ensure solid connections in case the cartridge head shell is changed with another type and this results in loose connections.

NOTES:

1. Certain commercially marketed cartridges may not fit the head shell supplied with the KP-5022, in which case the shell, too, must be changed if such cartridges are used.
2. Whenever removing the plug-in head from the tone arm, be sure to hold the plug-in head with one hand before releasing the LOCK slider button.

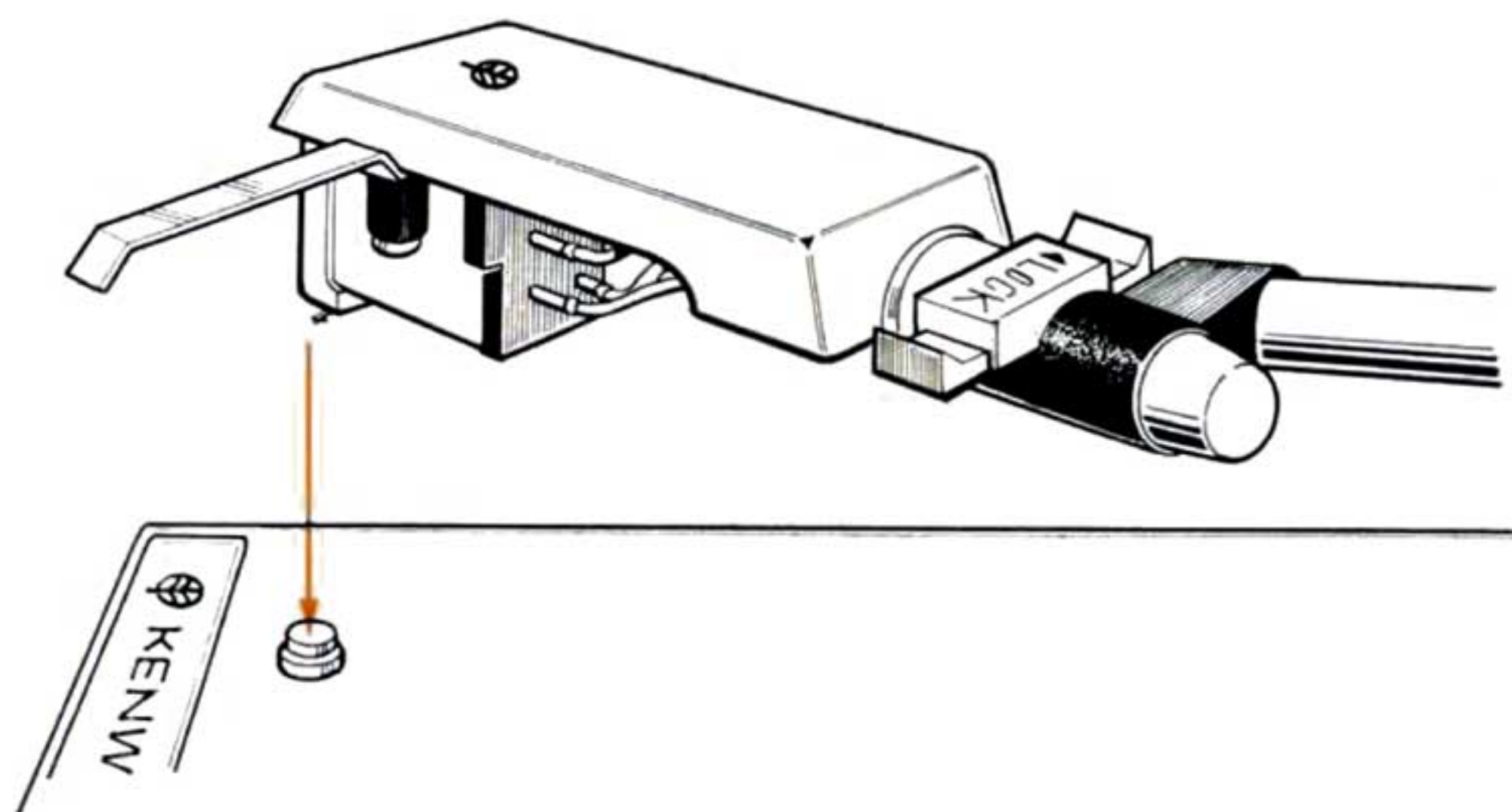


Figure 10. Pilot Lamp Position

HOW TO ADJUST ARM REST AND ARM ELEVATION HEIGHTS WHEN PLUG-IN HEAD IS CHANGED:

The distance between the stylus point and the record surface may vary when the plug-in head or cartridge is changed. In such a case the height of the arm rest and arm elevation should be adjusted as follows. (See Figure 11).

1. First swing the tone arm over the record. Adjust the arm elevation to a gap of approximately $2/8''$ (6 mm) between the stylus point and the record surface.
2. Next adjust the height of the arm rest after placing the Tone Arm on it. It should be adjusted so that the pipe arm barely rests on the arm elevation.

NOTE:

Be sure to release the tone arm boss from the Arm Stand lock before operating the player with the PLAY/CUT or REPEAT buttons. Failure to observe this will overload the automatic motor.

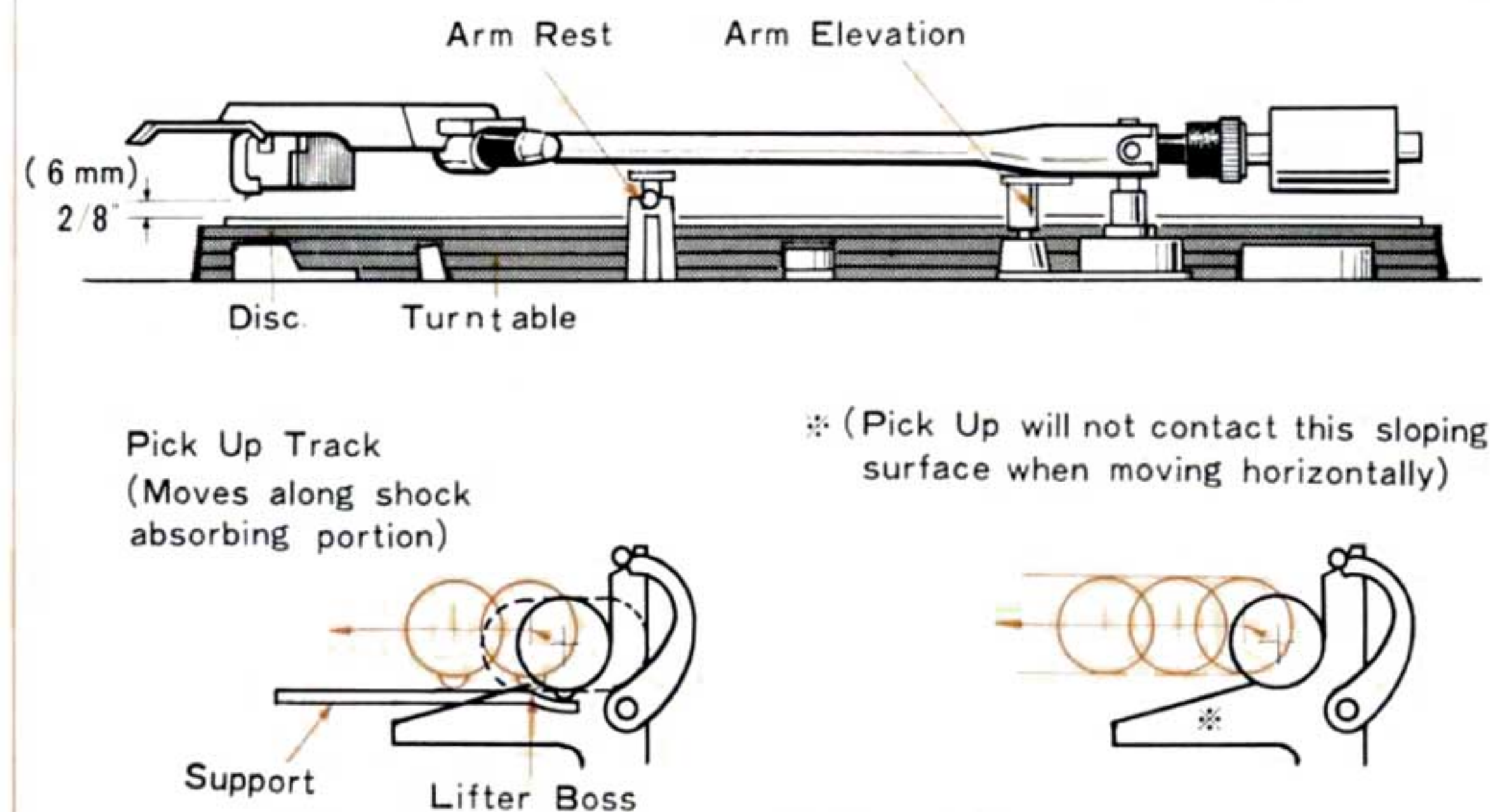


Figure 11.

MAINTENANCE

STYLUS LANDING POSITION ON LEAD-IN GROOVE OF RECORD:

This adjustment has already been made at the factory for the cartridge that is supplied with this record player. If a new type of cartridge is installed, readjustment may become necessary, in which case see Figure 12. Set SELECT lever to position "30". Insert a + screwdriver into the AUTO IN ADJUST hole and turn the adjustment screw. Turning the screw clockwise will move the stylus landing point inwards, and counterclockwise, outwards. The landing point will move about 1 mm for each complete turn of the adjustment screw.

HOW TO CHANGE THE CARTRIDGE:

When installing a replacement cartridge, first keep the head set screws slightly loose. Lock the pipe arm in the clasp on the arm stand. Tighten the two head set screws only after making sure that the stylus point is above the exact center of the Pilot lamp.

Stylus pressure of 2 grams is most suitable.

It is important to make correct connections if and when the cartridge is replaced. The white lead is left (+), blue lead left (E), red lead right (+) and green lead right (E).

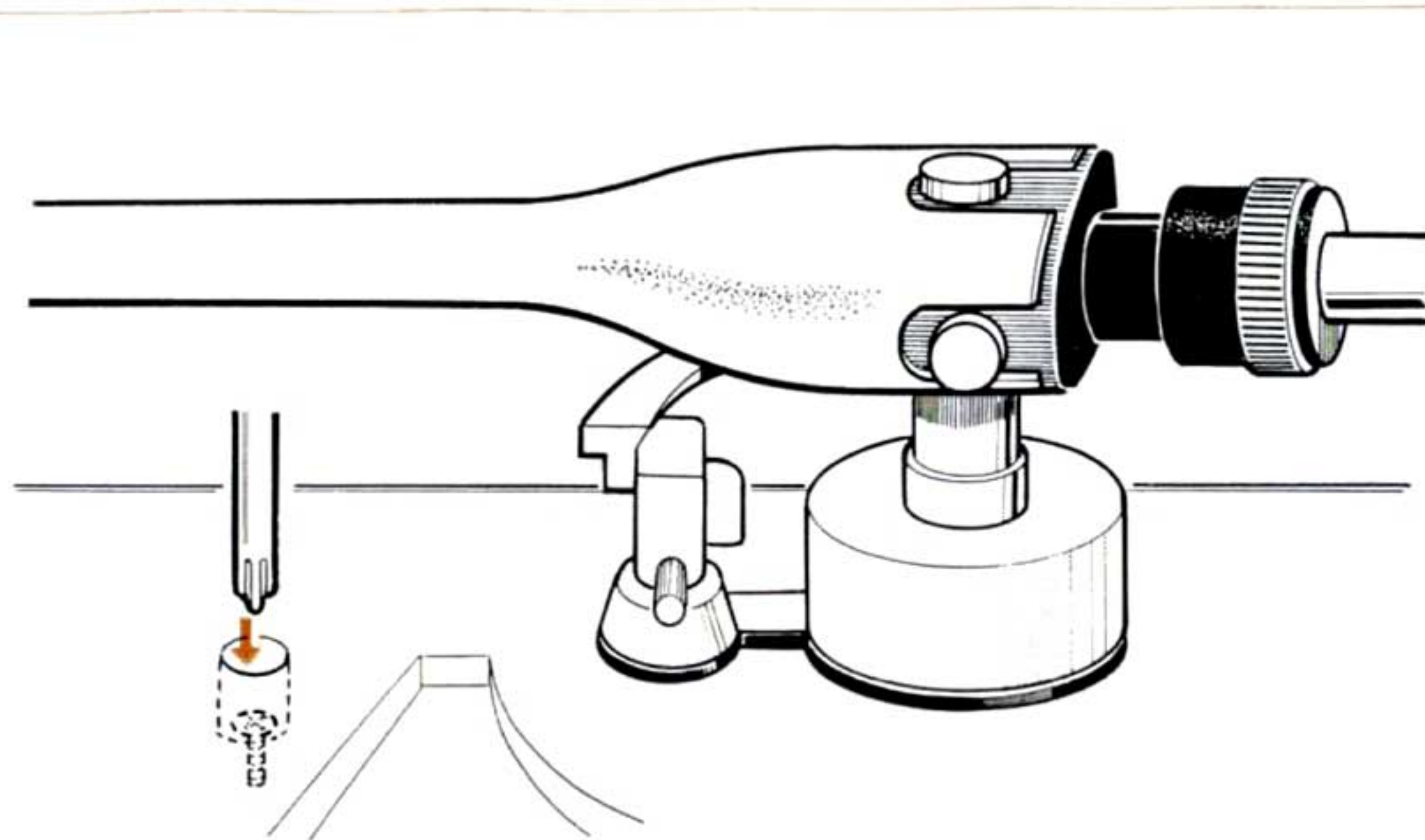


Figure12. How To Adjust The Stylus Drop Position

HOW TO REPLACE THE STYLUS:

A N-39 type stylus is used in this record player. Replacements may be obtained from the dealer from whom you purchased this record player.

To replace the stylus, first remove the plug-in head. Refer to Figure 5.

Now remove the stylus holder slowly and carefully by pulling forward at an angle of 20 to 30 degrees. The new stylus is inserted, also at a 20 to 30 degree angle as shown in Figure 13.

LIFE OF A STYLUS:

Diamond or sapphire styli are usually used in record players. A diamond stylus is used in this record player. It is normally good for 500 to 1,000 12 inch records played on one side, but this varies greatly depending on how it is used.

A worn stylus will cause treble tones to increase in harshness. A stylus should be replaced as soon as deterioration becomes noticeable in treble tone quality to prevent record wear.

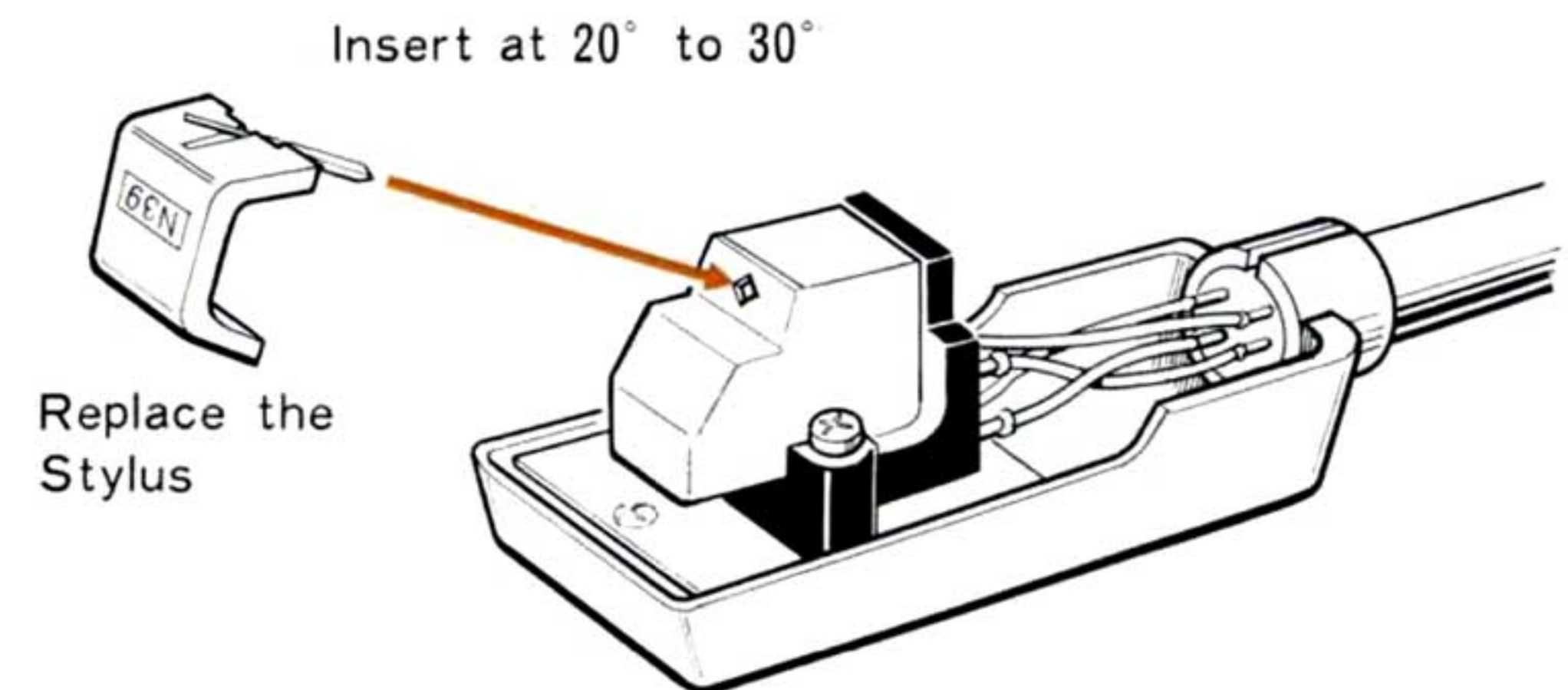


Figure13. How To Replace The Stylus

MAINTENANCE

ADJUSTING THE INSULATOR:

It is important for the turntable of a record player to be in a perfectly level position. Otherwise it will cause various adverse performance characteristics. The KP-5022 is equipped with insulators whose respective heights can be adjusted minutely to get a perfectly level turntable. Turning the insulator to the left increases the height, and turning it to the right decreases height. These insulators should be adjusted so that the bottom panel of the player floats about 3 — 5 mm above the table-top on which the player is positioned. (See Figure 14).

NOTES:

- (a) Hum may occur when the player output leads are too close to the power cord. Keep them separate and try reversing the power plug connection when hum is encountered. Induced hum also may occur as a result of the proximity of the record player cartridge to the power transformer of the amplifier unit. Try relocating the player and amplifier so that the cartridge and transformer leads are further apart.
- (b) Always use a silicon cloth for dusting and cleaning. Never apply benzene, thinner or carbon tetrachloride to the cabinet.

ADJUSTING THE STOP-ACTION OF THE ACRYL COVER:

The acryl cover for this player has a freestop action so that it can be made to come to rest at the position in which it is released. If it should close without stopping, the stop-action can be increased by turning the screws at the bottom of the hinges counterclockwise as shown in Figure 15.

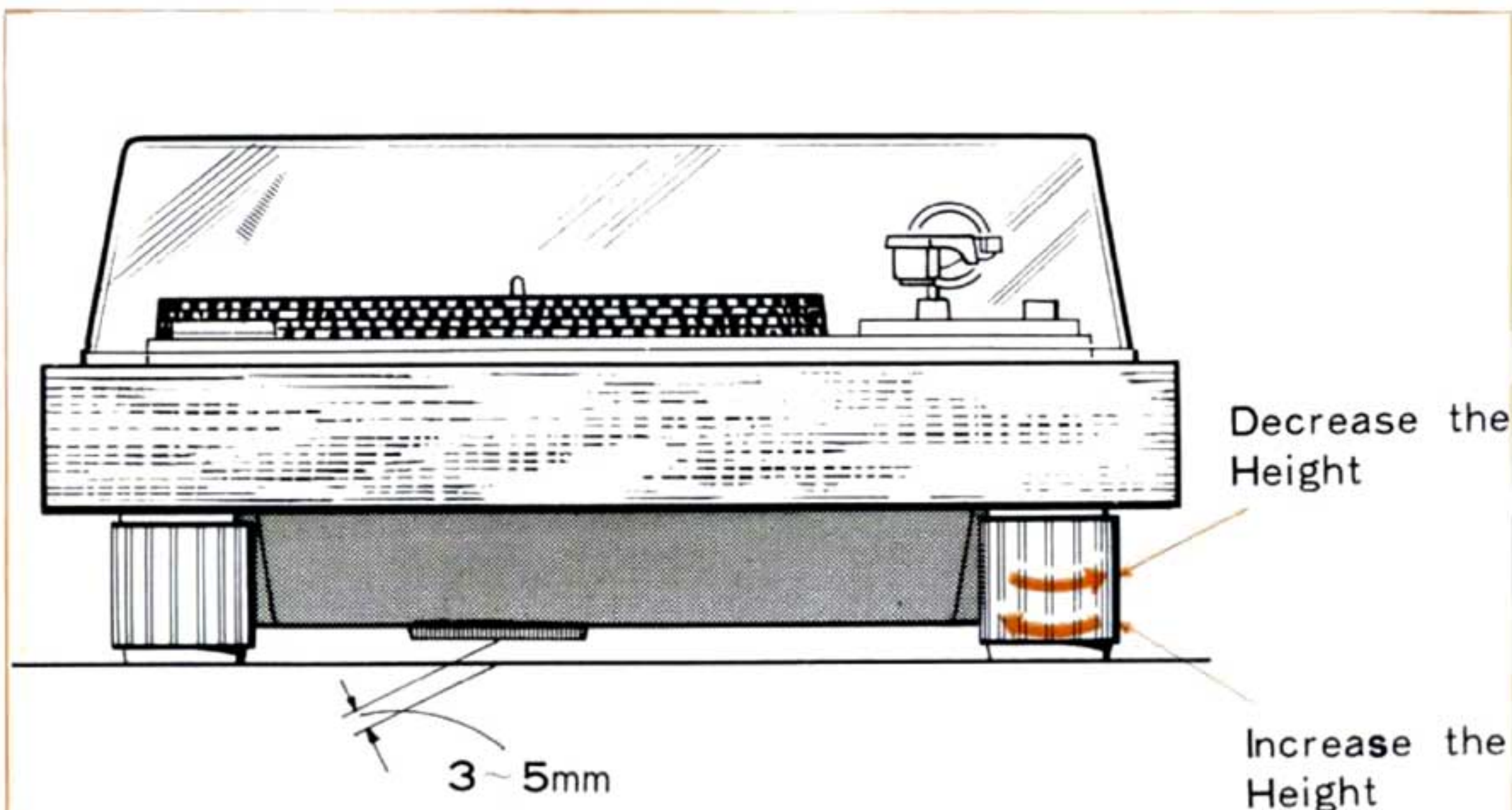


Figure14. Adjusting the Insulator

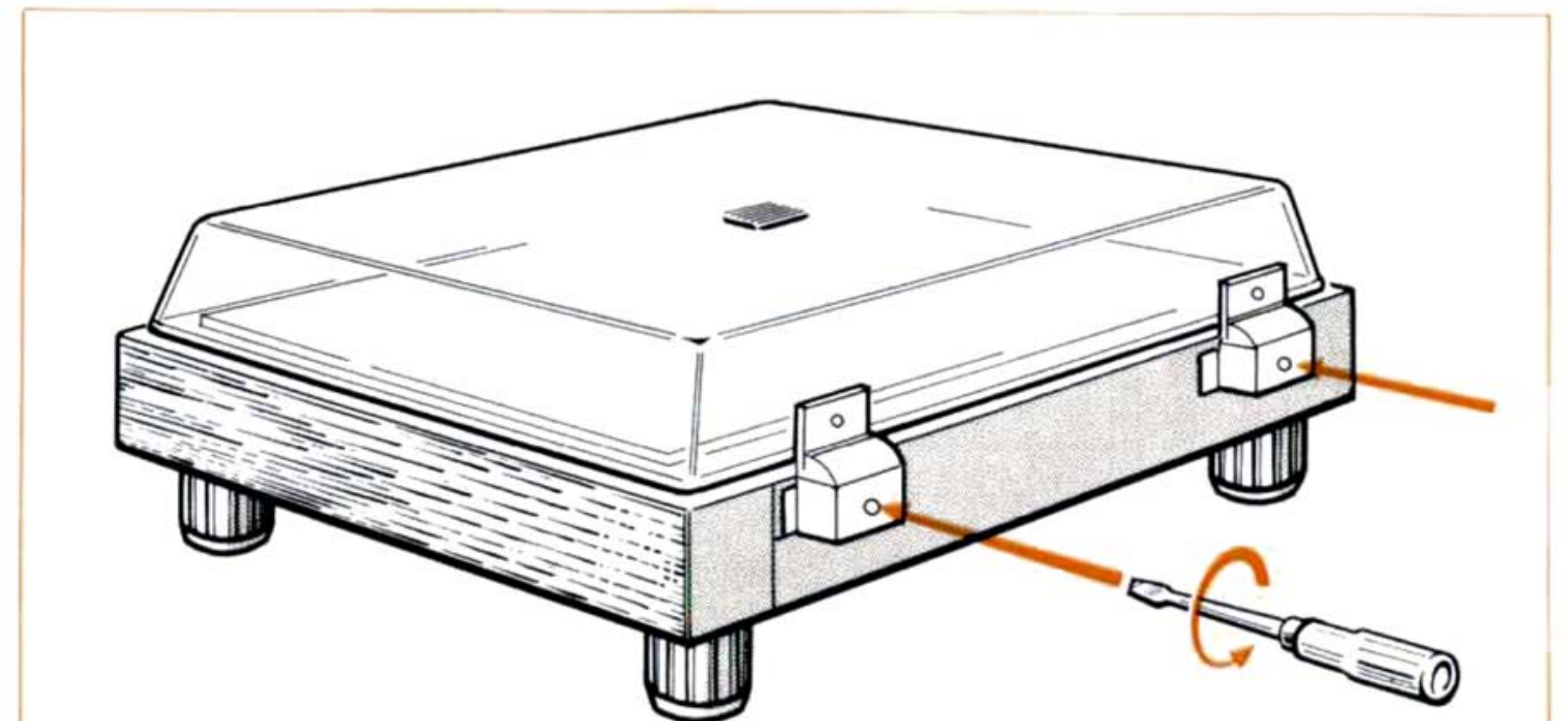




Figure15. Adjusting The Stop-action Of Acryl Cover

TROUBLE SHOOTING

In initially installing this player improper connections and operations may result in one of the following indications of trouble. Their possible cause and corrective measures are listed below to facilitate installation.

INDICATIONS

Remedy	Cause	Correction
Pick-up does not start when Switch or Repeat buttons are depressed.	SELECTOR may be at MANUAL. PAUSE may be at  .	Set SELECTOR to 30, 25 or 17. Set PAUSE to  .
Arm skips across record.	Anti-skating knob improperly set.	Set Anti-skating knob to a value less than optimum stylus pressure.
Stylus does not land in lead-in groove.	Improper adjustment.	See paragraph under "Stylus Landing Position on Lead-in Groove of Record", Page 12.
No pickup.	Excessive stylus pressure.	Adjust to optimum stylus pressure.
No sound from both left and right side or one side.	Player output cord or cords disconnected.	Check connections to amplifier.
Loud hum, no music.	Poor connection of player output cords.	Make solid connections to amplifier.
Loud hum with music.	Player output cord picking up hum from AC cord.	1. Separate output cords from AC cord. 2. Reverse AC cord plug.
Buzzing noise with Music.	Player output cord picking up TV signals.	Relocate output cord for minimum pickup.
Howling drowns out music when volume is increased.	Speaker vibration is picked up by player.	1. Separate player from speakers. 2. Relocate player and speakers. Avoid loose floor-boards.
Turntable does not turn.	1. Poor AC plug contact. 2. Speed Change Lever set improperly.	1. Check connection. 2. Set lever in proper position.
Poor tracing.	Excessive dust on record or stylus, worn stylus.	1. Remove dust from stylus. 2. Change stylus.

KP-5022 SPECIFICATIONS

Drive:

Direct Center-drive.

Motor:

D.C Servo Motor (8 pole 24 slot).

Turntable:

12 inch (30 cm) Solid die-cast aluminum alloy type.

Speed:

Two speeds, 33-1/3 and 45 rpm.

Wow-Flutter:

Less than 0.05% (WRMS).

Signal to Noise Ratio:

More than 58 dB.

Speed Control Range:

Within $\pm 3\%$ (Individual control for 33-1/3 and 45 rpm).

Tonearm:

Static Balance Type, Tapered pipe arm, Slide-locked EIA plug-in connector
Direct-reading stylus pressure.

Tracking Error:

± 1.5 degree.

Stylus Pressure Variable Range:

0 to 4 grams.

Cartridge:**Type:**

Moving magnet type.

Freq. Response:

20 Hz — 20,000 Hz.

Channel Separation:

More than 25 dB (1,000 Hz).

Output:

5 mV (1,000 Hz, 50 mm/sec).

Output Balance:

Less than 2.5 dB (1,000 Hz, 50 mm/sec).

Load Impedance:

50 K ohms.

Stylus Pressure:

2 ± 0.25 grams.

Stylus:

0.6 mil Diamond.

Compliance:

7×10^{-6} cm/dyne.

Replacement Stylus:

Type N-39.

Special Mechanism:

Auto-in.

Auto-cut.

Auto-repeat.

Auto-return.

Manual-in.

Disc size selector.

Pause elevation.

Anti-skating force control.

Head shell stand.

Height and flexibility-adjustable large insulator.

Pilotlamp for stylus adjust.

24 pole synchronous geared motor for arm drive.

Supplied Accessories:

EP Adaptor.

Low capacity audio cord with PiN plug.

Power Requirement:

AC 110 — 120 V / 220 — 240 V, 50/60 Hz.

Power Consumption:

5 watts.

Dimensions:

W 18-31/32" (482 mm), H 6-11/16" (170 mm), D 13-21/32" (347 mm).

Weight:

19.8 lbs (9 kg).

KP-5022 Serial No.

Owner



TRIO

A Product of
TRIO ELECTRONICS, INC.,
TOKYO, JAPAN.