

FULLY-AUTOMATIC DIRECT-DRIVE TURNTABLE

# KD-5070

INSTRUCTION MANUAL



 **KENWOOD**

# INTRODUCTION

Your choice of this product indicates that you are a devotee of excellence in sound reproduction. We appreciate your patronage and take pride in the long tradition of quality components that the name Kenwood represents.

So that you can get the most out of your KD-5070, we suggest that you take the time to read through this manual before you hook up and operate your system. This will acquaint you with operating features, and system-connection considerations, so that your listening pleasure will be enhanced right from the start. You will notice that in all aspects of planning, engineering, styling, operating convenience and adaptability, we have sought to anticipate your needs and desires.

Keep this manual handy for future reference.

## FOR YOUR RECORDS

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your Kenwood dealer for information or service on this product.

Model: KD-5070 Serial Number:

## UNPACKING

Unpack the unit carefully and make sure that all accessories and cables are put aside so they will not be lost.

Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

## WARNING:

**TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

# FEATURES

- 1. Direct-Drive Turntable**  
The 20-pole, 30-slot brushless DC motor turns at precise servo-controlled speeds for outstanding performance in terms of rumble, wow and flutter.
- 2. Variable Speed Control**  
Permits precision speed settings using power-line frequency as the reference, but can be varied  $\pm 3\%$  for music pitch-matching.
- 3. Stroboscope**  
Indicates precise speed setting.
- 4. Manual or Fully Automatic Action**  
Tone arm positioned and lifted automatically to start and end records. Automatic shut off at end of play. Manual control if desired.
- 5. Auto Repeat**  
Continuous repeat plays if desired.
- 6. Precision Tone Arm**  
Static balanced with anti-skate correction, the tone arm uses an EIA plug-in shell.
- 7. Cueing Lever**  
Viscous damped cueing lever raises and lowers tone arm for gentle pause operations.
- 8. Massive ARCB Base**  
The chassis base is of ARCB (anti-resonance compression base). It is molded of limestone particles, glass powders, and unsaturated polyester resin to provide the ideal base structure.

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# BEFORE APPLYING POWER

**IMPORTANT:** Read carefully before you plug this unit into a power outlet.

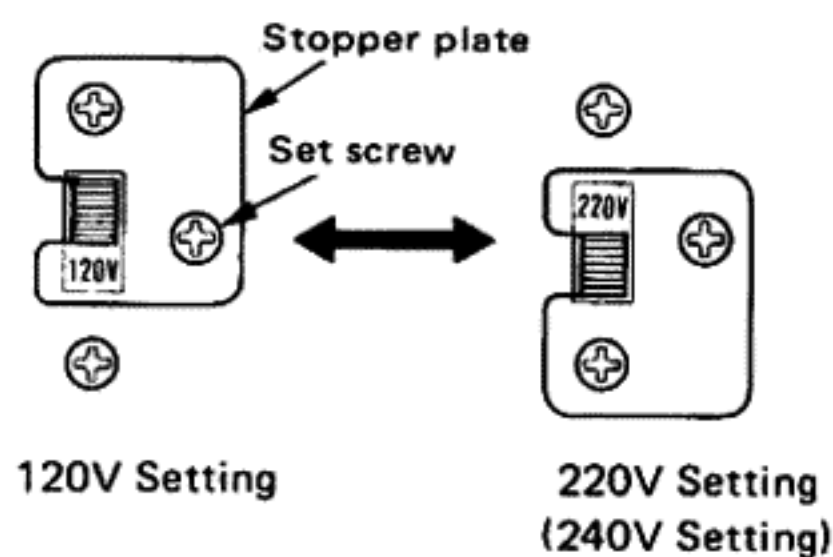
- Units shipped to the U.S.A. and CANADA are designed to operate on 120V AC only.

They are not equipped with an AC Voltage Selector Switch and the following description of such a switch should be disregarded.

- Units shipped to all other countries are equipped with an AC Voltage Selector Switch beneath the turntable platter. The following description of this switch should be carefully read.

## AC VOLTAGE SELECTOR

- This unit operates on 120V or 220V (240V) AC. The AC Voltage Selector Switch is preset at the factory to the voltage generally available in the destination area. Before operating this turntable, make sure that the position of the AC Voltage Selector matches your line voltage.



- If the setting of the AC Voltage Selector Switch on your unit is not set correctly to your line voltage, it must be reset.

1. Remove the set screw and stopper plate.
2. Switch the lever to opposite side.
3. Lock the lever by attaching stopper plate with the set screw.

- Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC Voltage Selector Switch.

## POWER FREQUENCY

- This turntable is driven by a DC motor, and will work equally well on 50 Hz or 60 Hz power frequency.

## INSTALLATION

- Install the unit on a flat, vibration-free rigid table or stand.
- Do not place the unit near a heat producing equipment such as a radiator. Avoid direct sunlight.
- The unit may not function properly when used in atmosphere of extremely low temperature or freezing temperature. The ideal ambient temperature is over +5°C.
- Do not store or use the unit in a dusty location or in a moist atmosphere. Select a location where air is well ventilated.
- Keep the unit away from a source of magnetic field such as TV set, speaker system, radio or magnetized objects.
- Operate the unit on rated power supply voltage ( $\pm 5\%$ ). Irregular power voltage will result in incorrect operation.

# PARTS NOMENCLATURE

- Check to see that the packing carton contains all the component parts shown in the Figure below, before you begin to assemble the turntable.
- See page 5 for assembly procedure.

- You will find the smaller parts in the small parts box, also included in the carton.

Plug-in Head  
45 r.p.m. Adaptor  
Main Weight

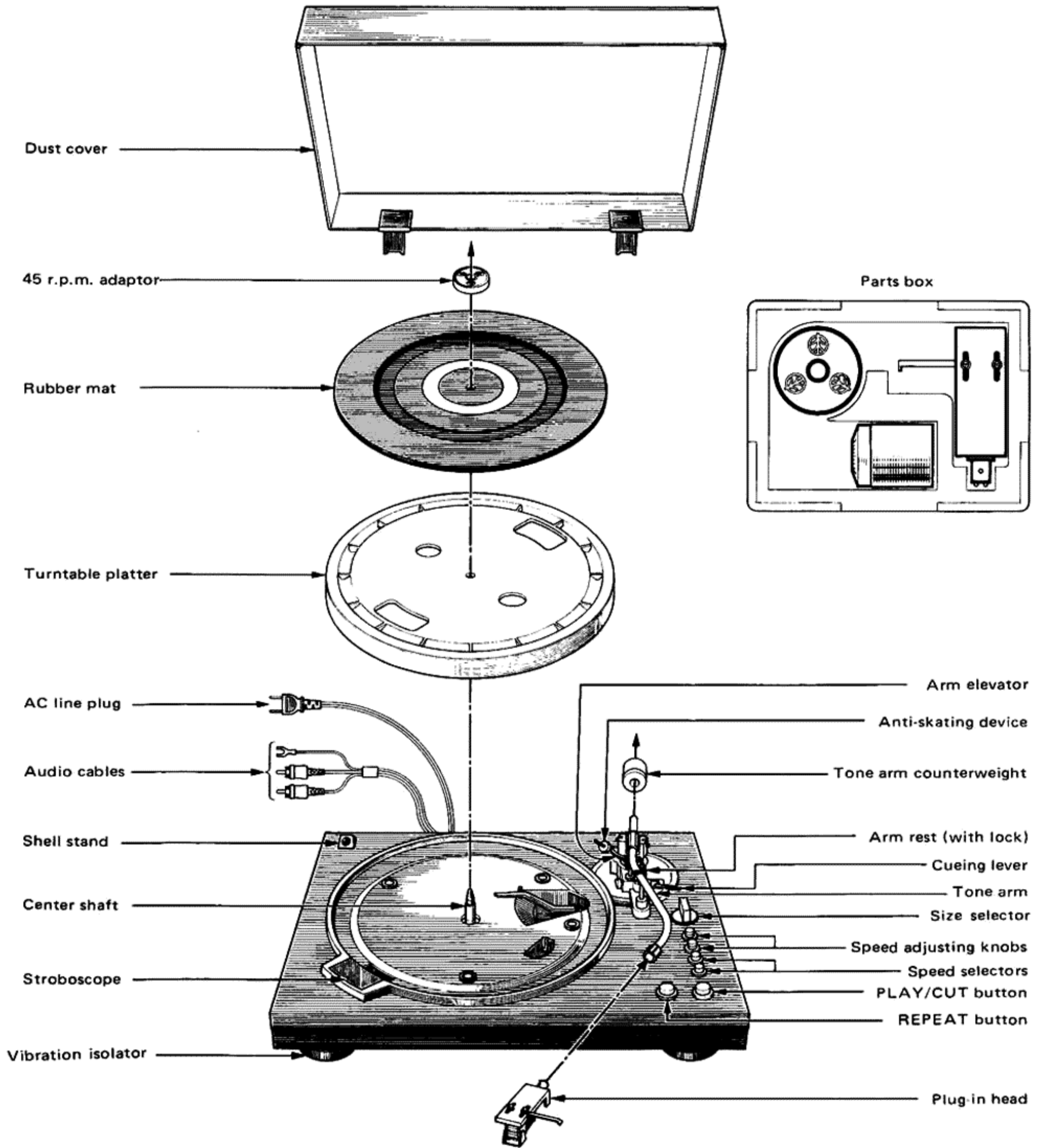


Fig. 1

# ASSEMBLY PROCEDURE

Units shipped to the U.S.A. and Canada are sold without phono cartridges. Before proceeding with assembly, install the cartridge into the head shell as shown on page 9. If your KD-5070 was purchased with a DM-11 cartridge, proceed as follows. Be sure to follow steps 1-6 in the sequence given.

1. Insert the plug-in head into the tone arm.

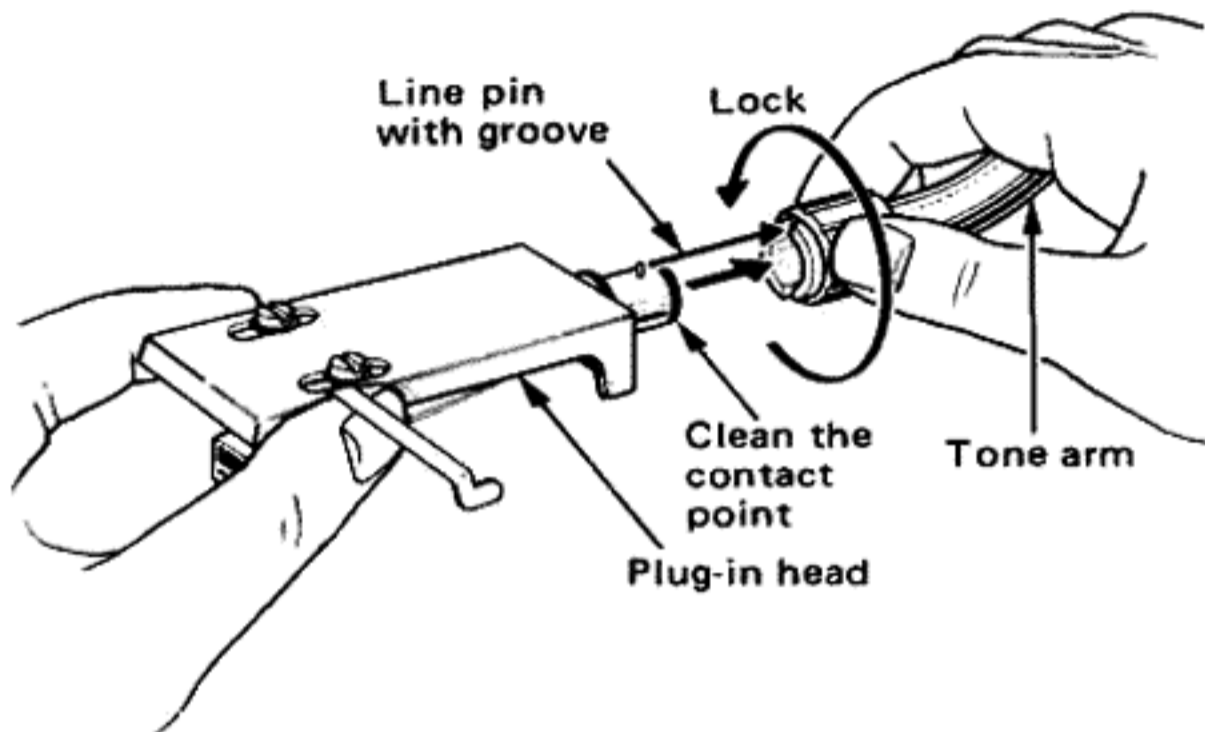


Fig. 2

2. Attach the tone arm counterweight to the rear of the tone arm.

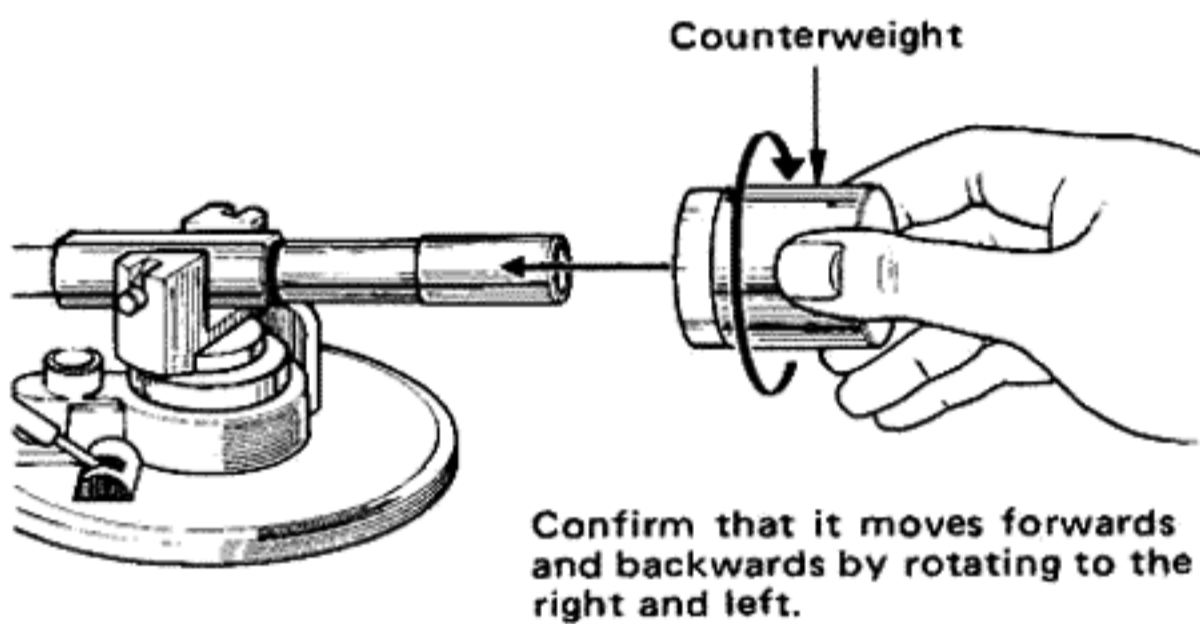


Fig. 3

3. Place the turntable platter and rubber mat on the center shaft.

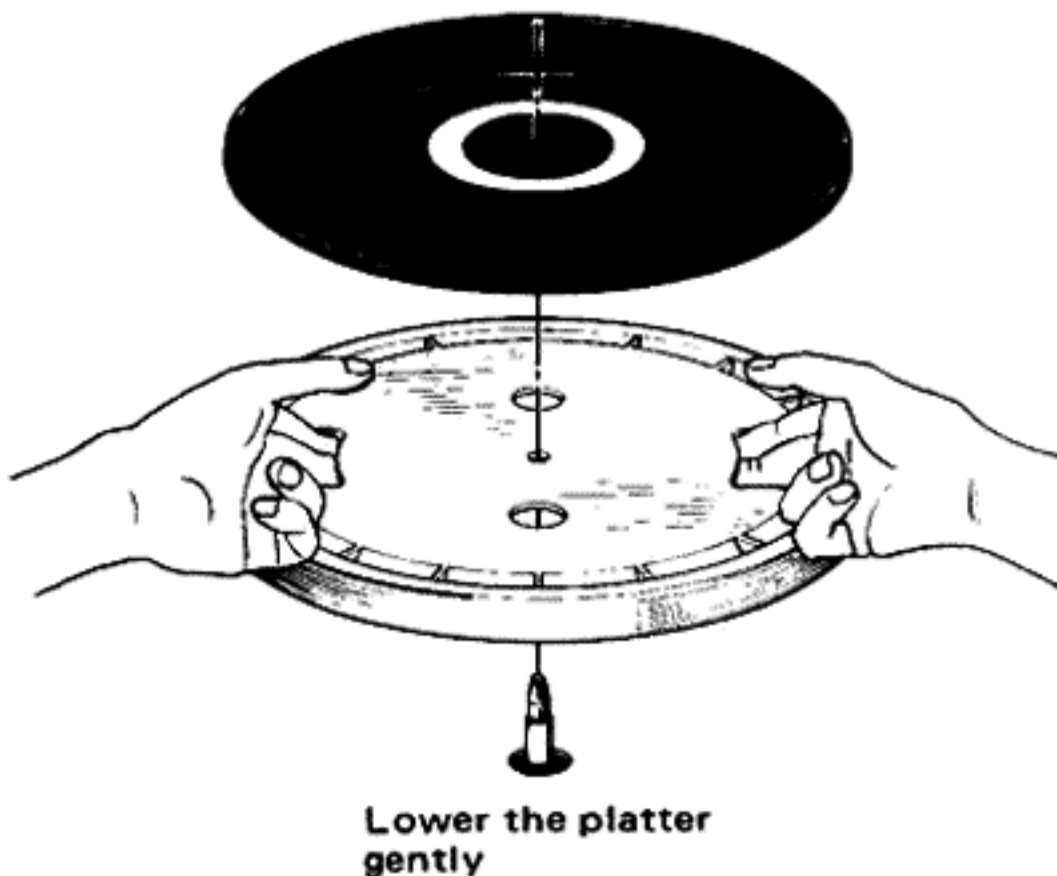


Fig. 4

4. Turn off power at your amplifier or receiver.

5. Connect the audio cables, then the AC cord.

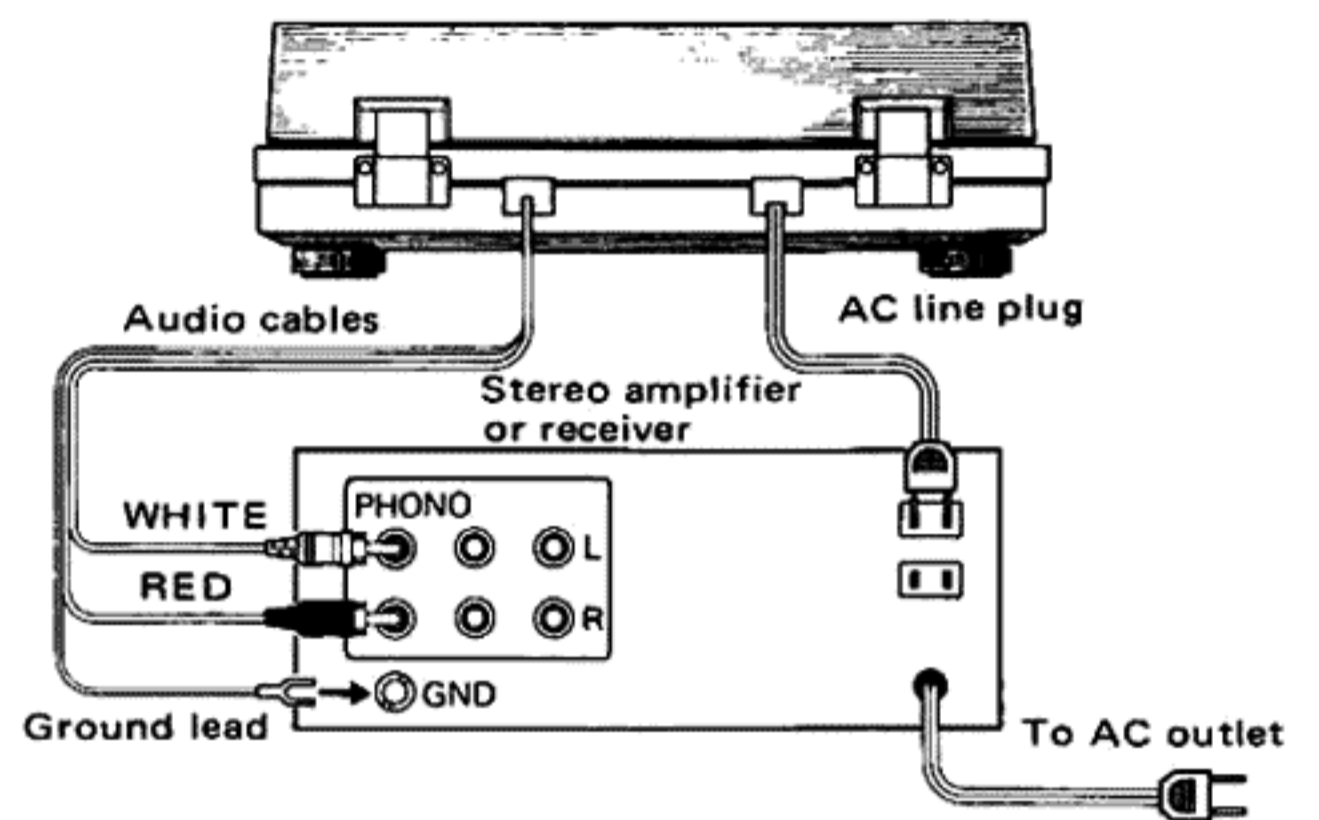


Fig. 5

6. Install the dust cover.

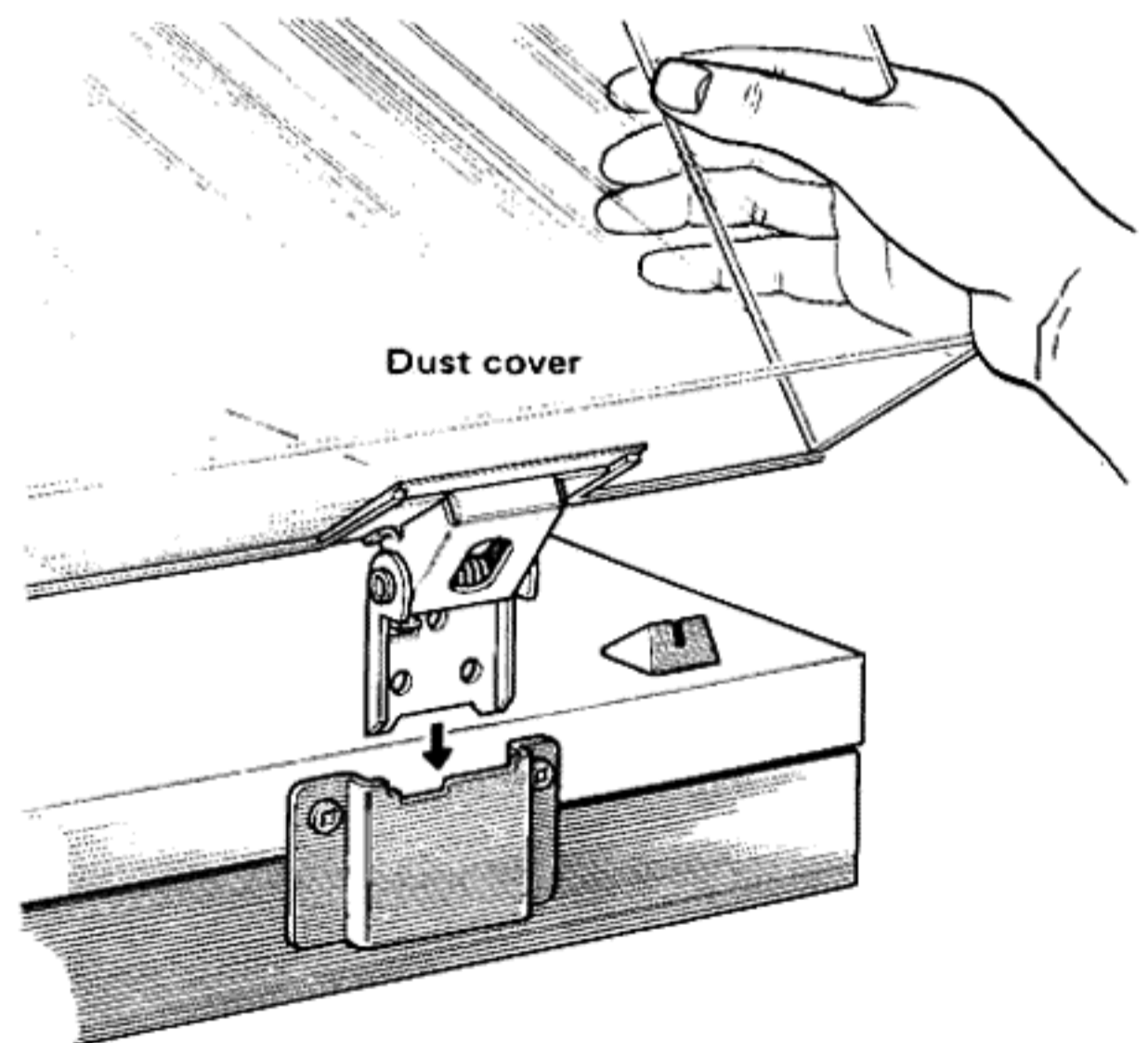


Fig. 6

# TRACKING FORCE ADJUSTMENT

1. First, insert the AC line plug into an AC outlet. Set the size selector to MANUAL and push the PLAY button. Disconnect the AC line plug when the arm elevator has descended.
2. Confirm that the anti-skating rod is hooked on the spring (Fig. 10) and the cueing lever is  $\nabla$  (down).
3. Remove the stylus cover, release the tone arm from the arm rest, and turn the counterweight either to the right or left so that the tone arm balances perfectly in a horizontal position.

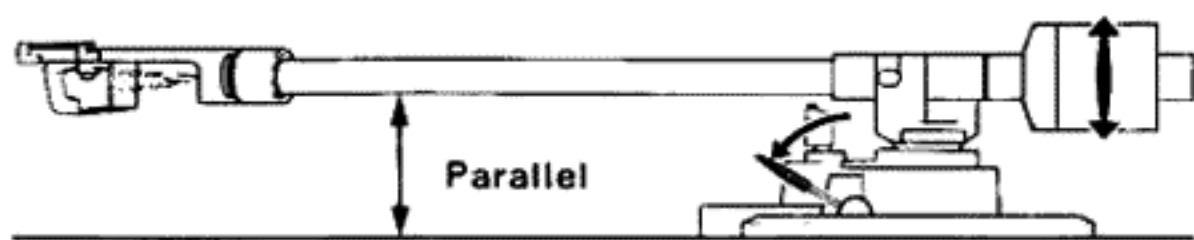


Fig. 7

4. Return the tone arm to the arm rest. Now hold the counterweight in place and turn only the dial ring so that the "0" lines up with the mark on the top of the arm.

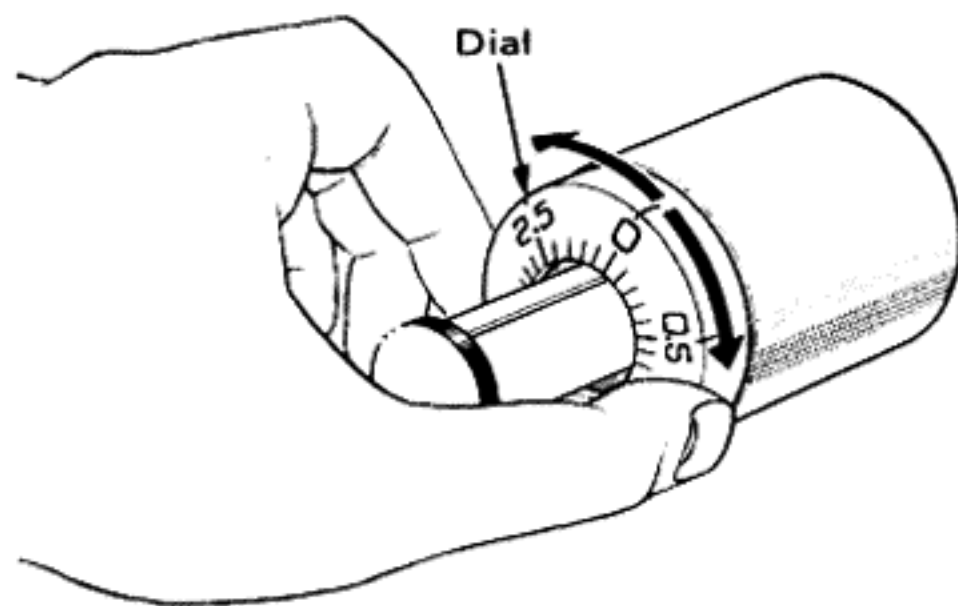


Fig. 8

5. Turn the counterweight to the right until the dial points to the tracking force recommended for the cartridge that is used.

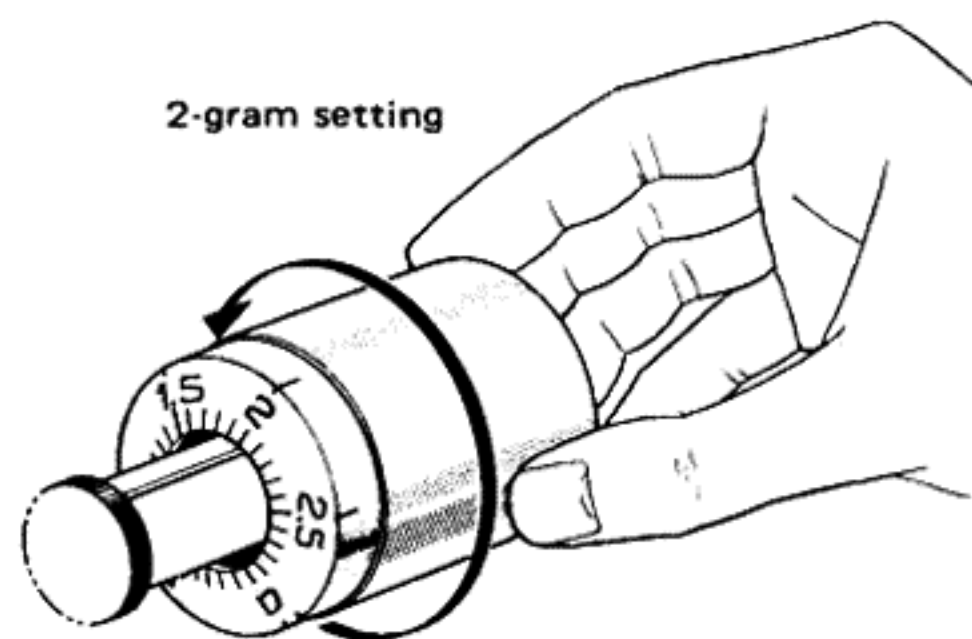


Fig. 9

6. Slide the anti-skating weight and set it to the same value as the tracking force for the cartridge. Release the rod from the spring (Figs. 11, 12).

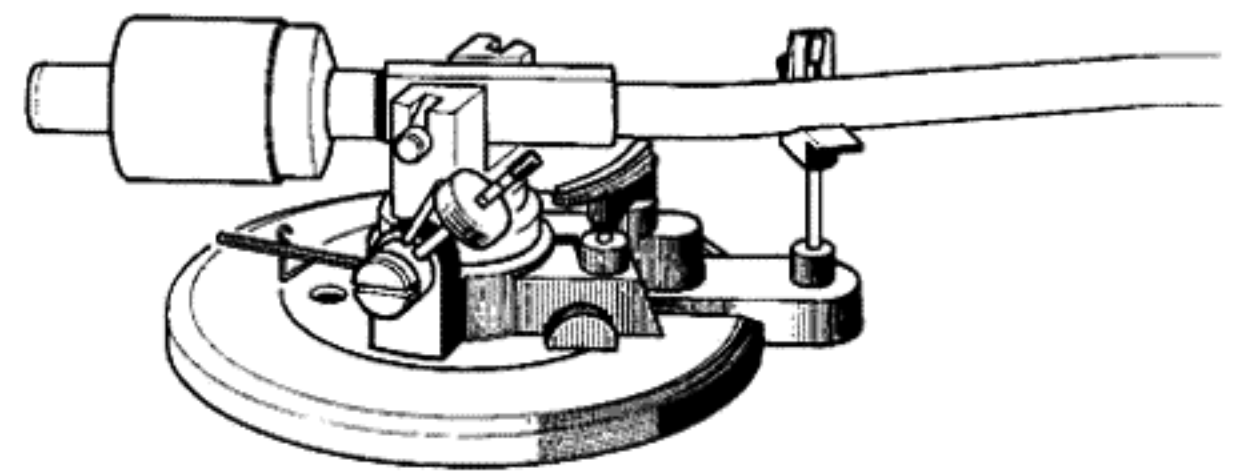


Fig. 10

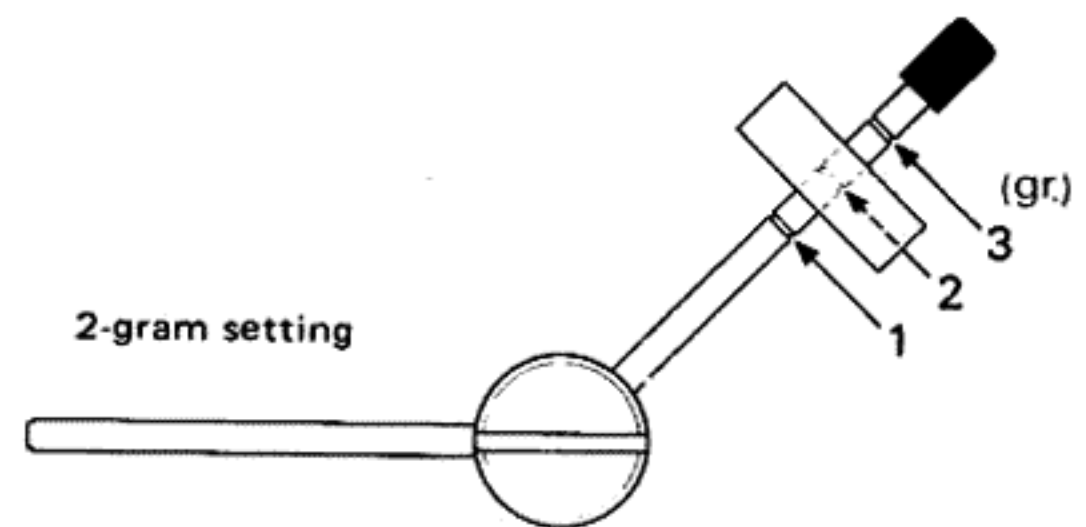


Fig. 11

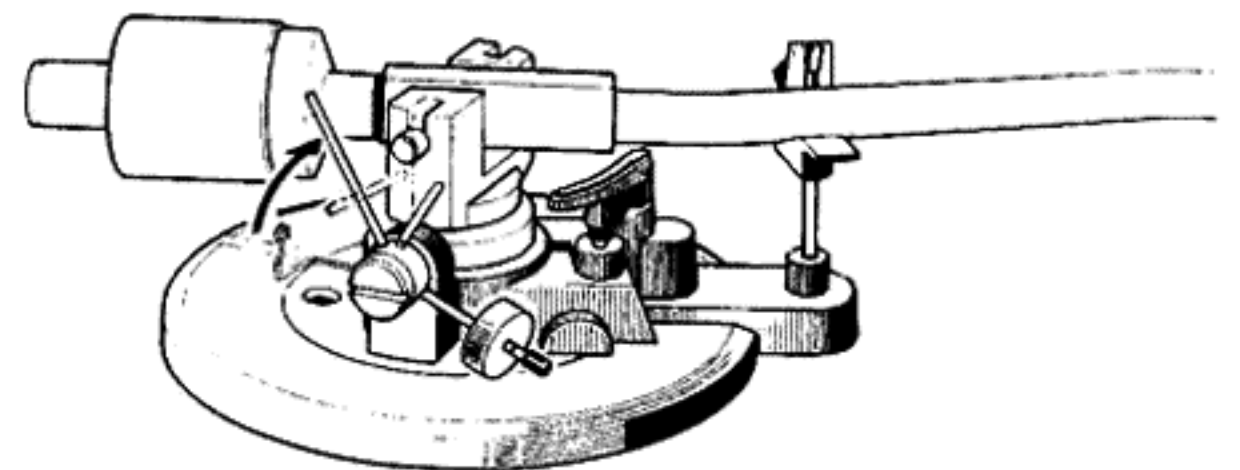


Fig. 12

7. Insert the AC line plug into an AC outlet and push the CUT button. The arm elevator will rise and the platter will stop turning simultaneously.

## NOTE:

The DM-11 cartridge is supplied with turntables that are shipped to certain areas of the world. Two grams is the recommended optimum tracking force for the DM-11 cartridge.

# SPEED ADJUSTMENTS

Although the speed of the KD-5070 is independent of line frequency, the stroboscope makes use of power-line frequency to permit precision adjustments of turntable speed. As shown in Fig. 13, four stripe patterns are etched into the circumference of the turntable platter. These are illuminated by a flashing lamp whose flash rate is determined by line frequency. When the turntable is turning at the correct speed, the applicable pattern will appear to stand still. For example, if the unit is operated from 60 Hz power and the 33-1/3 r.p.m. speed is selected, the row of marks second from the bottom will stand still when speed is correct. A very slight speed error will cause the pattern to drift to the left or right. If speed is too high the pattern drifts in the same direction as turntable rotation. Drift in the opposite direction indicates that speed is too low. Adjust the appropriate speed knob until the pattern slows to a dead stop.

## ADJUSTMENT PROCEDURE

1. Set the size selector to MANUAL and push the PLAY button to rotate the turntable platter.
2. Set the speed selector to the correct speed for the record.
3. Adjust the speed adjusting knob so that the stripe pattern stands still. The pattern will move in the same direction that the knob is turned.

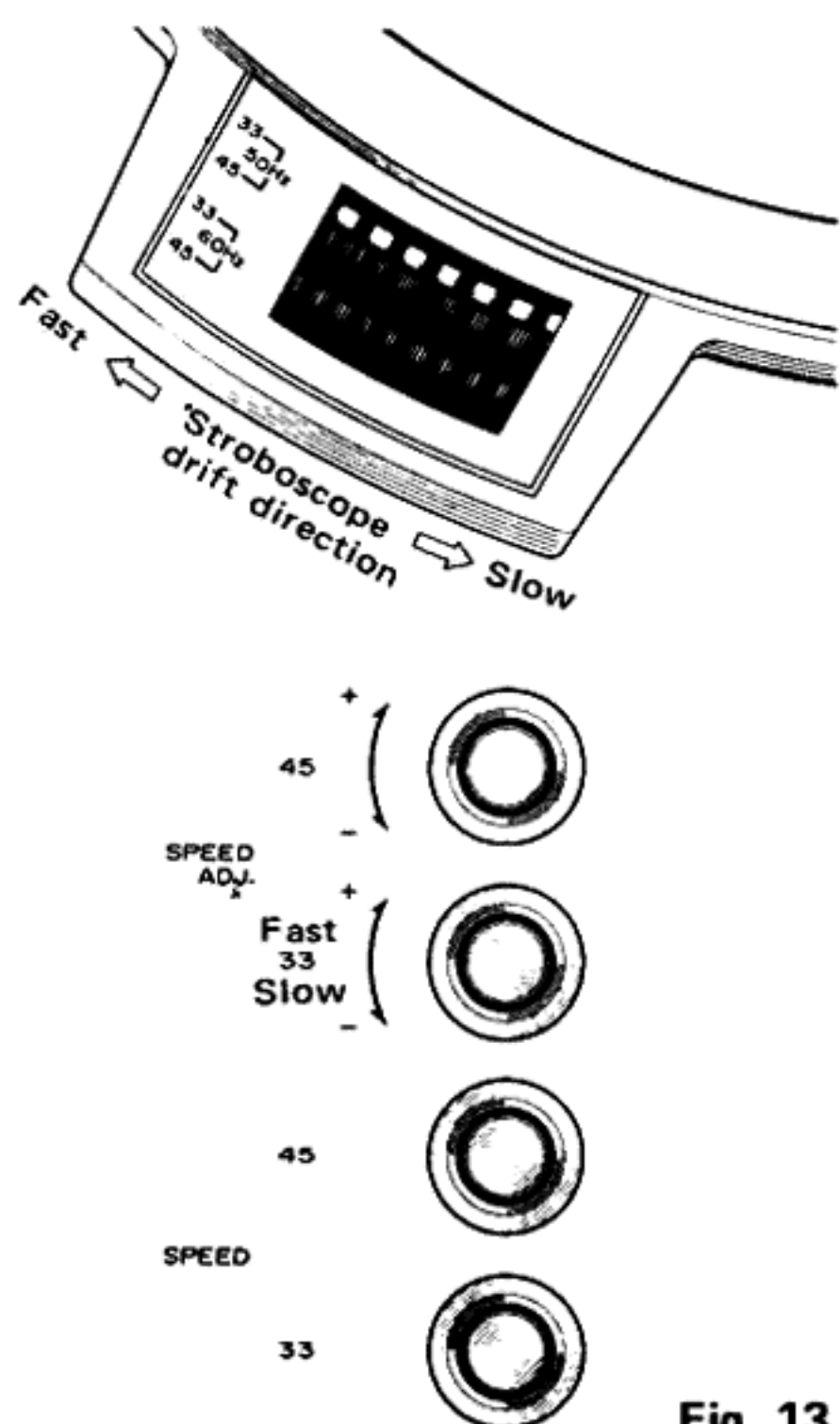


Fig. 13

# OPERATING INSTRUCTIONS

## FOR AUTOMATIC OPERATION

1. Before operating the turntable, recheck the connections to the amplifier and amplifier control settings to see that they have been made correctly. Also check the tracking force adjustment (See on page 6).
2. Place a record on the turntable platter. If a 45 r.p.m. record is used, the adaptor that is supplied must first be placed onto the center shaft.
3. Set the size selector to 30, 25, or 17, whichever corresponds to the size (diameter in centimeters) of the record you wish to play.
4. Set the speed selector to 33 or 45, whichever corresponds to the correct speed for the record.
5. Release the tone arm from the arm rest lock. Set the cueing lever to  $\nabla$ . Push the PLAY button. The turntable will revolve and the tone arm will descend automatically to place the stylus on the lead-in record groove.
6. At the end of play, the tone arm will automatically return to the arm rest. Simultaneously, power will be cut off and the platter will stop turning.

## CUEING OPERATION

When it is desired to interrupt record play, set the cueing lever to  $\nabla$ . The tone arm will rise, where it will remain in position as the record continues to turn.

When the cueing lever is again set to  $\nabla$ , the stylus will descend and record play will resume at approximately the same point where it was cut off.

The cueing lever should always be handled carefully. Rough handling may cause stylus position to shift away from the point of interruption.

### NOTE:

For automatic functions the cueing lever should be set to  $\nabla$ .

## FOR AUTO-CUT OPERATION

If you wish to stop reproduction part way through a record, push the CUT button. The tone arm will return automatically to the arm rest, and the turntable platter will stop turning.

## FOR AUTO-REPEAT OPERATION

To obtain repeated plays of a record, depress the REPEAT button; it will latch in the down position. This can be done at the start of record play or after the record has been started with the PLAY button. The record will repeat continuously. To stop the repeat action press CUT. This will release the REPEAT button: it will pop up, and the auto-cut cycle will start.

## FOR MANUAL OPERATION

Set the size selector to MANUAL. You will then be able to start record play at any part of the record by swinging the tone arm over the desired position manually and pressing the PLAY button. The tone arm will then descend, and the stylus will track the record groove to reproduce the desired passage.

## NOTES:

1. Do not touch the size selector when the tone arm is moving on or off the record.
2. During the MANUAL mode, several seconds must elapse before the stylus begins its descent after the turntable platter starts turning. A similar time lapse is required before the turntable platter begins to stop after the tone arm has returned to the arm rest during AUTO-RETURN or AUTO-CUT action. In either case, a light click will be heard beforehand.
3. The anti-skating device must be adjusted to the same value as the tracking force setting. Poor sound quality and other adverse effects may result if the anti-skating adjustment is not made correctly.
4. AUTO-RETURN action cannot be expected at the end of record play when playing off-size records and phono sheets. In such cases, the CUT button must be used to return the tone arm to the arm rest.

Record play cannot be started within a radius of 63 mm (2½") from the center of the disk.

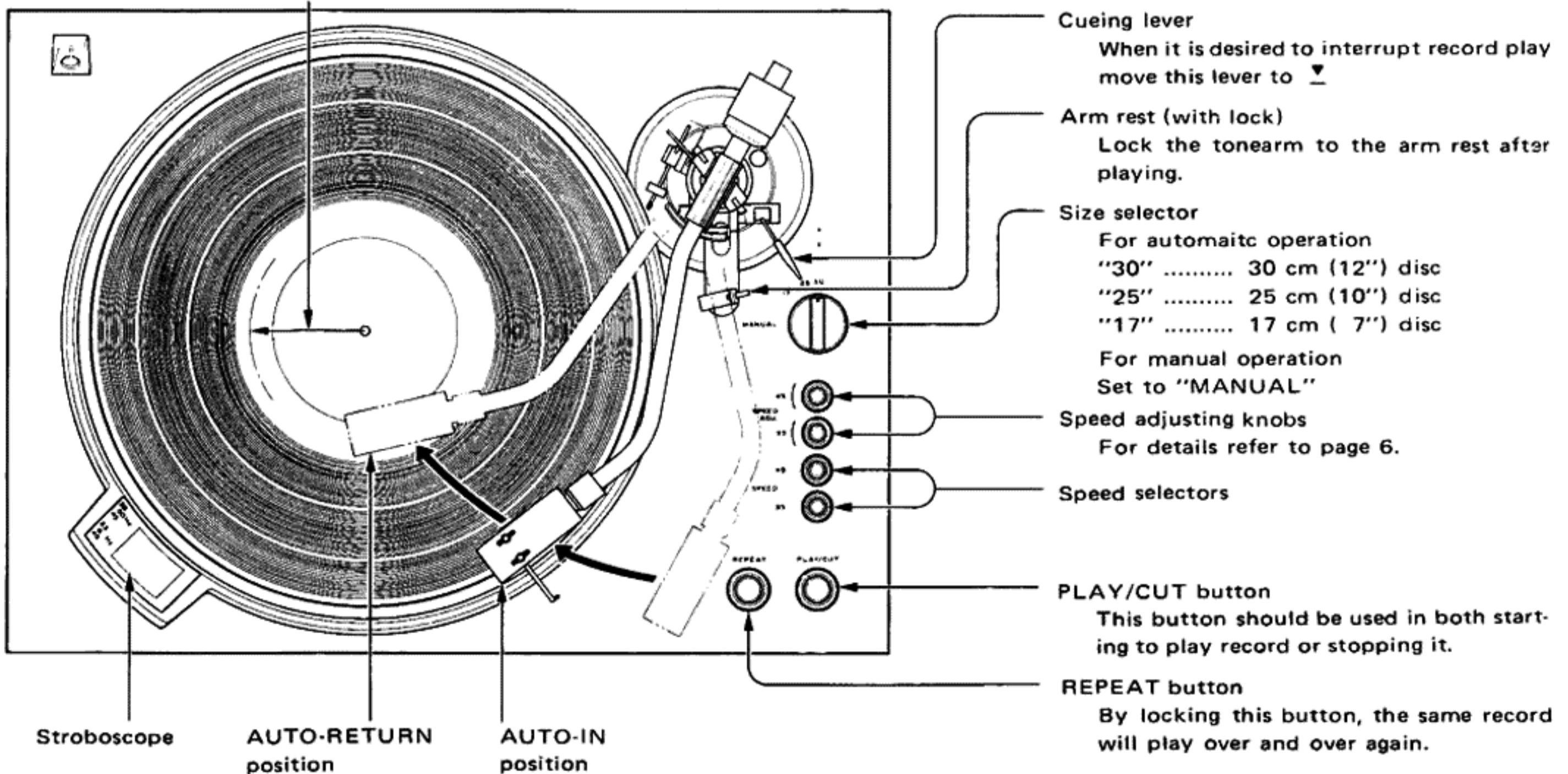


Fig. 14



# HOW TO ATTACH THE CARTRIDGE

The tone arm uses a standard EIA connector and accepts any head shells that comply with that standard (most available today). The supplied head shell will accept all available quality cartridges.

- Carefully push the connectors of head-shell leads onto the appropriate pins of the cartridge. Refer to Fig. 15 for lead colors. Use a pair of tweezers or long-nosed pliers to handle the connectors.

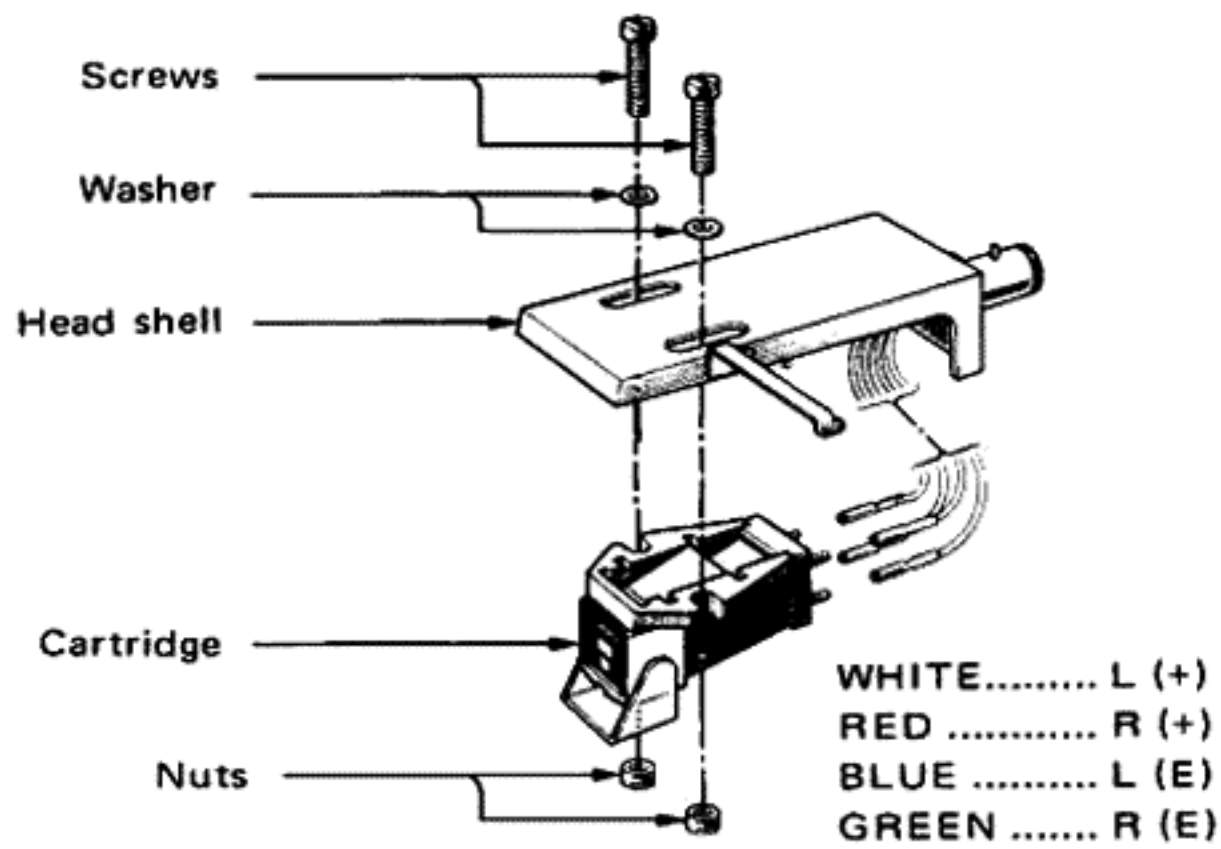


Fig. 15

- Attach the cartridge to the head shell with the screws and nuts that are supplied but do not tighten the screws. Next you must make the overhang adjustment as follows:

The figure below shows the head shell and cartridge in about actual size and correct position. Adjust your cartridge to the head shell accordingly, and lock it in place by tightening the screws securely.

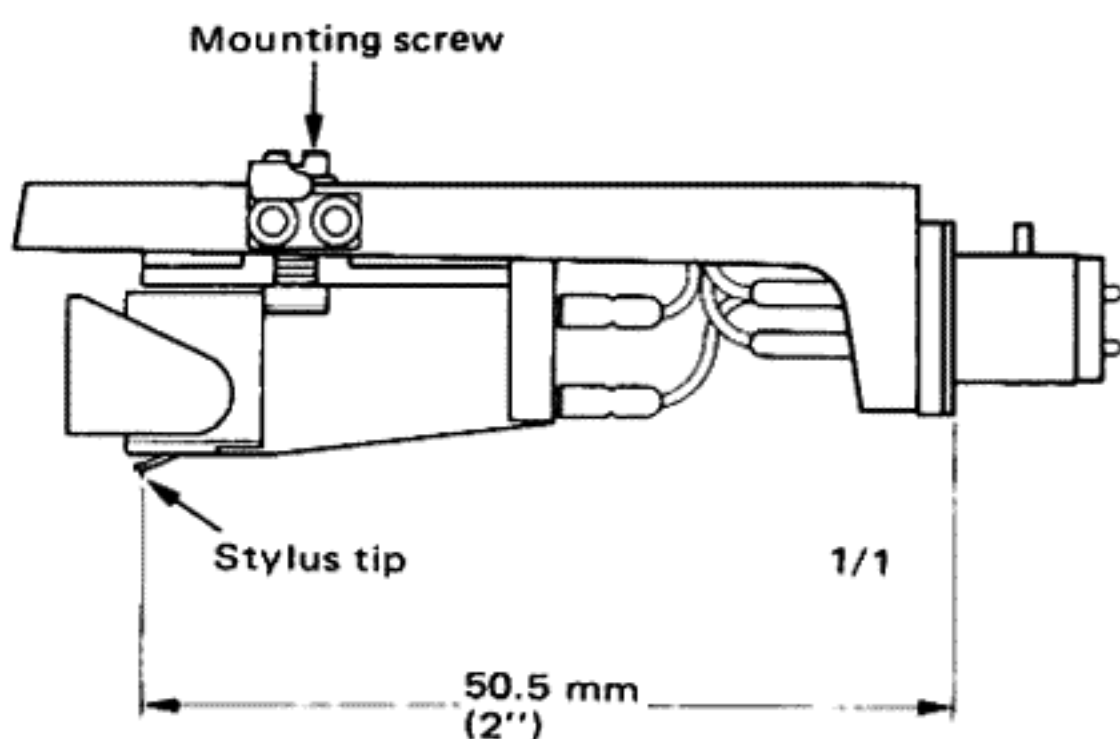


Fig. 16

- Plug the head with the cartridge into the tone arm, and readjust tracking force as explained on page 5 so that it conforms to the cartridge-manufacturer's recommendation.

## STYLUS HEIGHT ADJUSTMENT

If the height of the newly replaced cartridge is considerably different from that of the accessory cartridge, the following checks are required:

- During record play, the tone arm must never touch the arm elevator.
- The stylus must never touch the record surface when the tone arm swings horizontally during automatic action.

If corrective measures are found necessary, proceed as follows:

- Set the cueing lever to  $\nabla$ . Loosen the set screw at A in Fig. 17, and adjust elevator height so that the stylus is 6 ~ 8 mm above the record surface. Tighten set screw A.
- Set the cueing lever to  $\nabla$ . Set the size selector to MANUAL, and depress the PLAY button. Adjust the height of the stylus above the record surface with screw B.
- The height of the arm rest can be adjusted by first loosening the set screw at C. Tighten snugly after adjustment has been made.

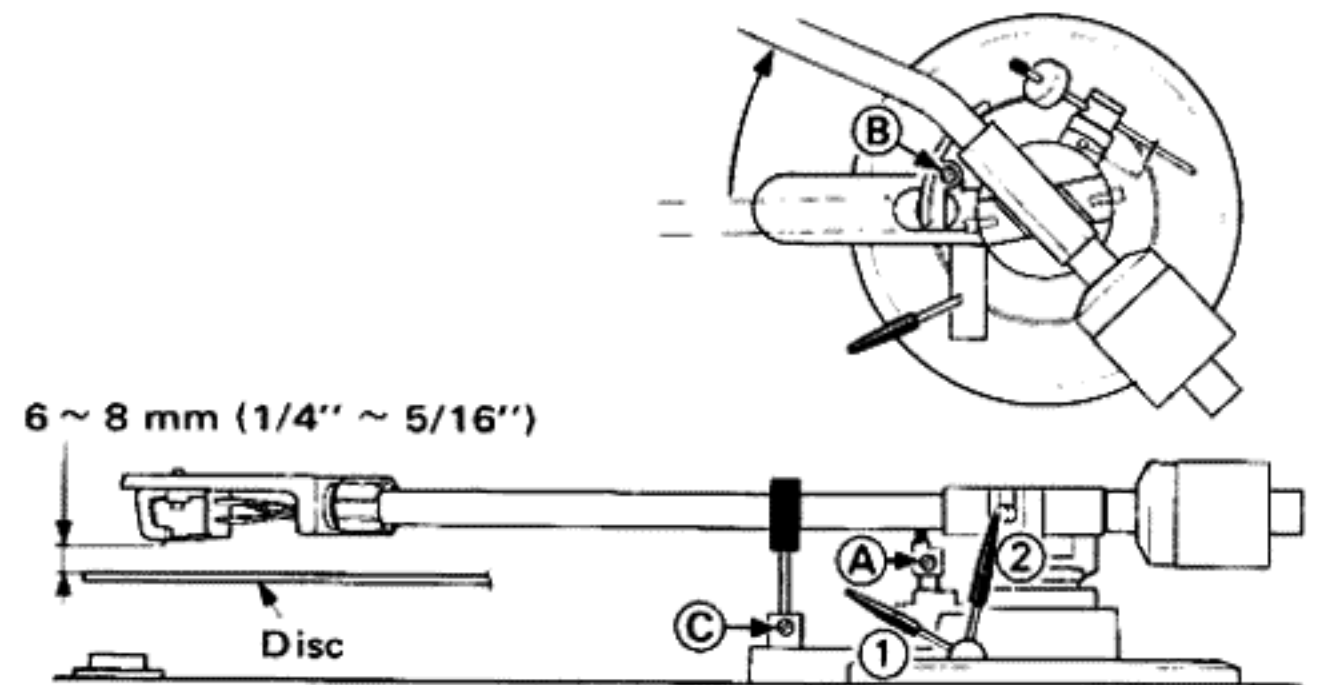


Fig. 17

### NOTES:

The plug-in head can be mounted or removed after completing the following:

- Clamp the tone arm on the arm rest.
- Turn amplifier volume control to 0 or the power switch to OFF.

# MAINTENANCE

## STYLUS LANDING POSITION ON LEAD-IN GROOVE OF RECORD

This adjustment has already been made at the factory but may require fine readjustment depending on the cartridge that is used. To make this adjustment see Fig. 18. Set the size selector to 30. Remove the cap. Insert a + screwdriver into the Auto-In adjust hole and turn the adjustment screw. Turning it 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.

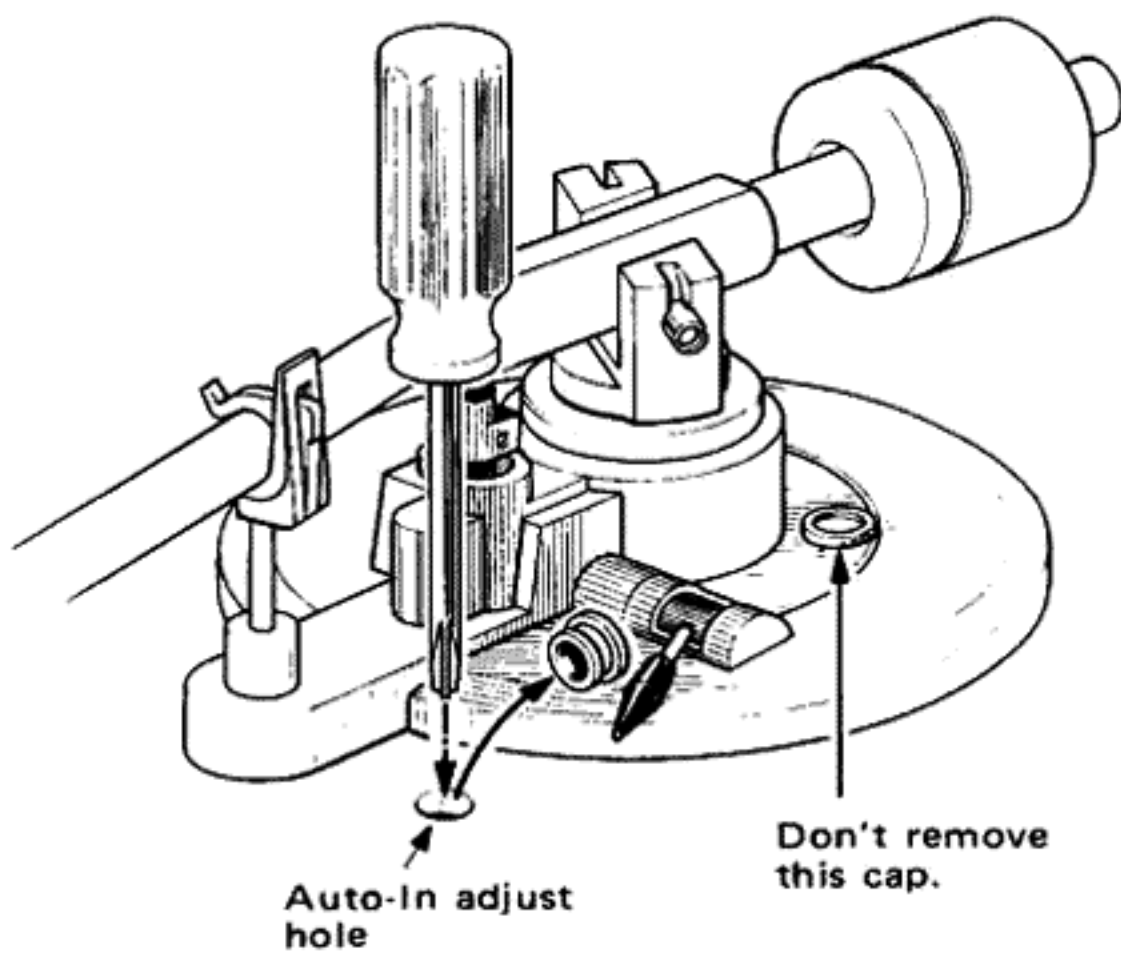


Fig. 18

## CLEANING THE CABINET AND DUST COVER

Clean the cabinet and dust cover gently with dry cloth or silicone cloth. In case of stubborn soil, wipe with a cloth dampened in soap suds or mild detergent and well wrung out.

Never use thinner, alcohol, benzene or other volatile liquids.

## MOTOR LUBRICATION

The motor employs permanently-lubricated bearings. It will operate for more than 20,000 hours without attention to lubrication.

## STYLUS LIFE

The stylus point is very delicately made and it should be handled with great care. Dust accumulating at the tip should be removed with a soft brush by brushing off lightly. A stylus is good for playing a 30 cm (12 inch) LP record about 500 times, but this varies greatly depending on how it is used.

A worn stylus will cause treble tones to increase in harshness. The stylus should be replaced as soon as this becomes noticeable. This will prevent record wear.

## STYLUS REPLACEMENT

A replacement stylus may be obtained from your Kenwood dealer. To replace the stylus, refer to the literature packed with the cartridge.

Figure 19 shows how to replace the stylus for the DM-11 cartridge (standard accessory in countries other than the U.S.A. and Canada).

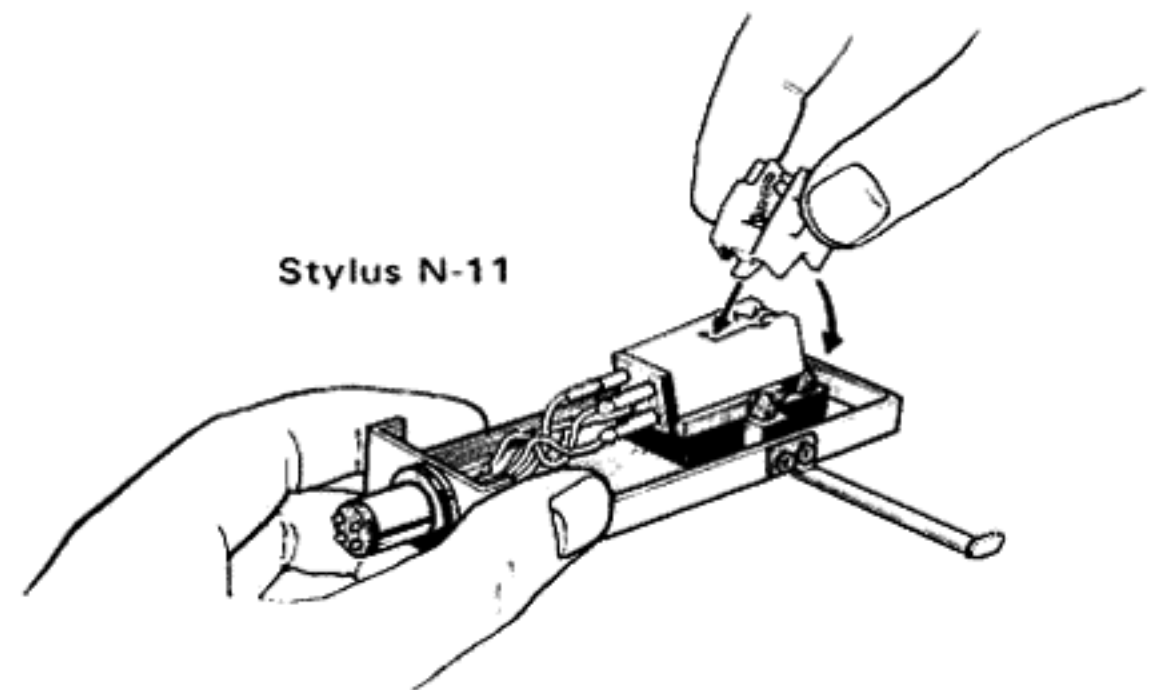


Fig. 19

## PERIODIC CHECK-UP

Because a turntable is a mechanical device it is subject to the effects of wear and misadjustment that occurs due to normal handling. Even if your unit appears to function normally, a periodic check-up at intervals of two years or so is recommended to ensure a long service life and proper operation.

Check with your Kenwood dealer or authorized Kenwood service representative.

# IN CASE OF DIFFICULTY

If difficulty is experienced after making the initial set up, the table below might help to eliminate the problem. If the trouble cannot be corrected, check with your Kenwood dealer.

Symptom	Cause	Correction
Pick-up does not start when PLAY/CUT or REPEAT buttons are depressed.	1. Size Selector may be at MANUAL. 2. Cueing may be at $\nabla$ .	1. Set Size Selector to 30, 25 or 17. 2. Set cueing to $\nabla$ . (See page 7, 8)
Arm skips across record.	Anti-Skating Weight improperly set.	Set Anti-Skating Weight to a value equal to or less than optimum tracking force. (See page 6)
Stylus does not land in lead-in groove.	Improper adjustment.	See paragraph under "Stylus Landing Position on Lead-in Groove of Record" page 10.
No pick-up.	Excessive stylus pressure.	Adjust to optimum tracking force. (See page 6)
No sound from both left and right channels or one channel.	Turntable output cable or cables disconnected.	Check connections to amplifier.
Loud hum, no music.	1. Poor connection of turntable output cables. 2. Poor plug-in Head connection.	1. Make solid connections to amplifier. 2. Make solid connections.
Loud hum with music.	Turntable output cable picking up hum from AC cord.	1. Separate output cables from AC cord. 2. Reverse AC cord plug.
Buzzing noise with music.	Turntable output cable picking up TV signal.	Relocate output cord for minimum pick-up.
Howling drowns out music when volume is increased.	Speaker vibration is picked up by turntable.	1. Separate turntable from speakers. 2. Replace turntable and speakers.
Turntable platter does not turn.	Poor AC plug contact.	Check connection Make sure AC outlet is active.
Poor tracking.	Excessive dust on record or stylus, or worn stylus.	1. Remove dust from stylus or record. 2. Change stylus.

# SPECIFICATIONS

## MOTOR & TURNTABLE

Drive System	Direct-drive system
Motor	20-pole, 30-slot brushless D.C. servo motor (for turntable) 12-pole synchronous gear motor (for automatic functions)
Turntable Platter	31.6 cm (12½ inch) diameter aluminum alloy die-cast Weight: 1.50 kg (3.30 lbs.) Moment of inertia 330 kg·cm <sup>2</sup>
Speeds	2 speeds, 33-1/3 and 45 r.p.m.
Speed Control Range	Within ±3% (Individual control for 33-1/3 and 45 r.p.m.)
Wow & Flutter	Less than 0.025% (WRMS)
Rumble	DIN weighted better than -73 dB DIN unweighted better than -53dB

## TONE ARM

Type	Static-balance type, S-shaped tubular arm, EIA plug-in connector.
Effective Tone Arm Length	225 mm (8-7/8 inch)
Overhang	15 mm (9/16 inch)
Tracking Error	±1.5 degrees
Stylus Pressure Variable Range	0 to 3 grams
Usable Cartridge Weight	3 to 10 grams

## CARTRIDGE (U.S.A., Canada and U.K. Models are not equipped with the DM-11 cartridge.)

Furnished Cartridge	DM-11
Stylus	N-11 with 0.5 mil diamond
Frequency Response	20 Hz to 20,000 Hz
Output Voltage	3.5 mV (1,000 Hz, 5 cm/sec.)
Optimum Tracking Force	2.0 ± 0.3 grams
Load Impedance	50 kohms
Replacement Stylus	N-11

**ADDITIONAL FEATURES:**

- Fully-automatic tone arm system (Automatic lead-in/return/cut/repeat)
- Illuminated stroboscope
- Anti-skating device
- Viscous-damped cueing device
- Fine speed adjusting controls
- Low capacitance phono cables
- Manual operating functions
- Disc size selector
- Headshell stand
- Stylus pressure direct readout dial
- Built-in vibration isolators

**Note:** Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

## MISCELLANEOUS

Power Requirements	AC 120V, 60 Hz: U.S.A. and Canada models AC 240V, 50 Hz: U.K. model AC 120V/220V (Switchable), 50/60 Hz: European models AC 120V/240V, (Switchable), 50/60 Hz: Other countries
Power Consumption	9.0 watts
Dimensions	W 480 mm (18-7/8") H 156 mm (6-1/8") D 367 mm (14-7/16")
Weight	11.5 kg (25.3 lbs.)

**SUPPLIED ACCESSORIES:** 45 rpm record adaptor

## CABINET

Material	Construction of cabinet is anti-resonance compression base (ARCB) with injection molded bottom cover. This massive ARCB is compression molded from limestone particles, unsaturated polyester resin, limestone and glass powders.
Cabinet Ass'y Weight	5.5 kg (12.10 lbs.)
ARCB Weight	4.7 kg (10.34 lbs.)



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