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FULL ELECTRONIC CONTROL
FULL-AUTOMATIC DIRECT-DRIVE TURNTABLE

KD-4100 4100R

INSTRUCTION MANUAL



This manual has been prepared for the KD-4100 and KD-4100R.
However, since the KD-4100 is sold without remote control function,
the sections that apply to the remote control function should be ignored
by KD-4100 owners.

 **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-4100/KD-4100R, 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-4100 Serial Number _____

Model KD-4100R 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 coreless and slotless DC motor turns at precise servo-controlled speeds for outstanding performance in terms of rumble, wow and flutter.

2. Full Electronic Control

The full electronically-controlled fully-automatic turntables KD-4100/KD-4100R are designed with KENWOOD's state-of-the-art technology. Only a feather touch of the operation switch is required to activate the tonearm, start play back and return the tonearm after play back.

In the repeat mode or during playback, the AUTO-CUT function can be actuated and manual operations can be performed.

3. Variable Speed Control

Permits precision speed settings using the power-line frequency as the reference, but can be varied $\pm 3\%$ for music pitch-matching.

4. Stroboscope

Indicates precise speed.

5. Precision Tonearm

Static balanced with anti-skate correction, the tonearm uses an EIA plug-in shell.

6. Cueing Lever

Viscous damped cueing lever raises and lowers tonearm for gentle pause operations.

7. Massive ARCB Base

The chassis base is of Anti-Resonance Compression Base (ARCB).

This massive ARCB is compression molded from limestone powders, glass powders and polyester resin to provide the ideal base structure.

8. Fully Accessible Controls

Unit can be operated while the dust cover is closed.

9. Remote Control Jack (KD-4100R)

In conjunction with the system remote-control center, automatic playback, repeat playback, auto-cut function and size selection can be selected.

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BEFORE APPLYING POWER

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

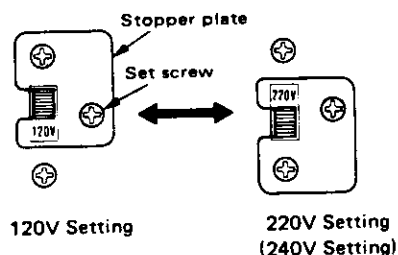
- Units shipped to the U.S.A. and CANADA are designed to operate on 120V AC only.

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 if used at extremely low, or freezing temperatures. The ideal ambient temperature is above +5°C (41°F).
- 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 fields such as TV sets, speaker systems, radios 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 rpm Adaptor

Counterweight

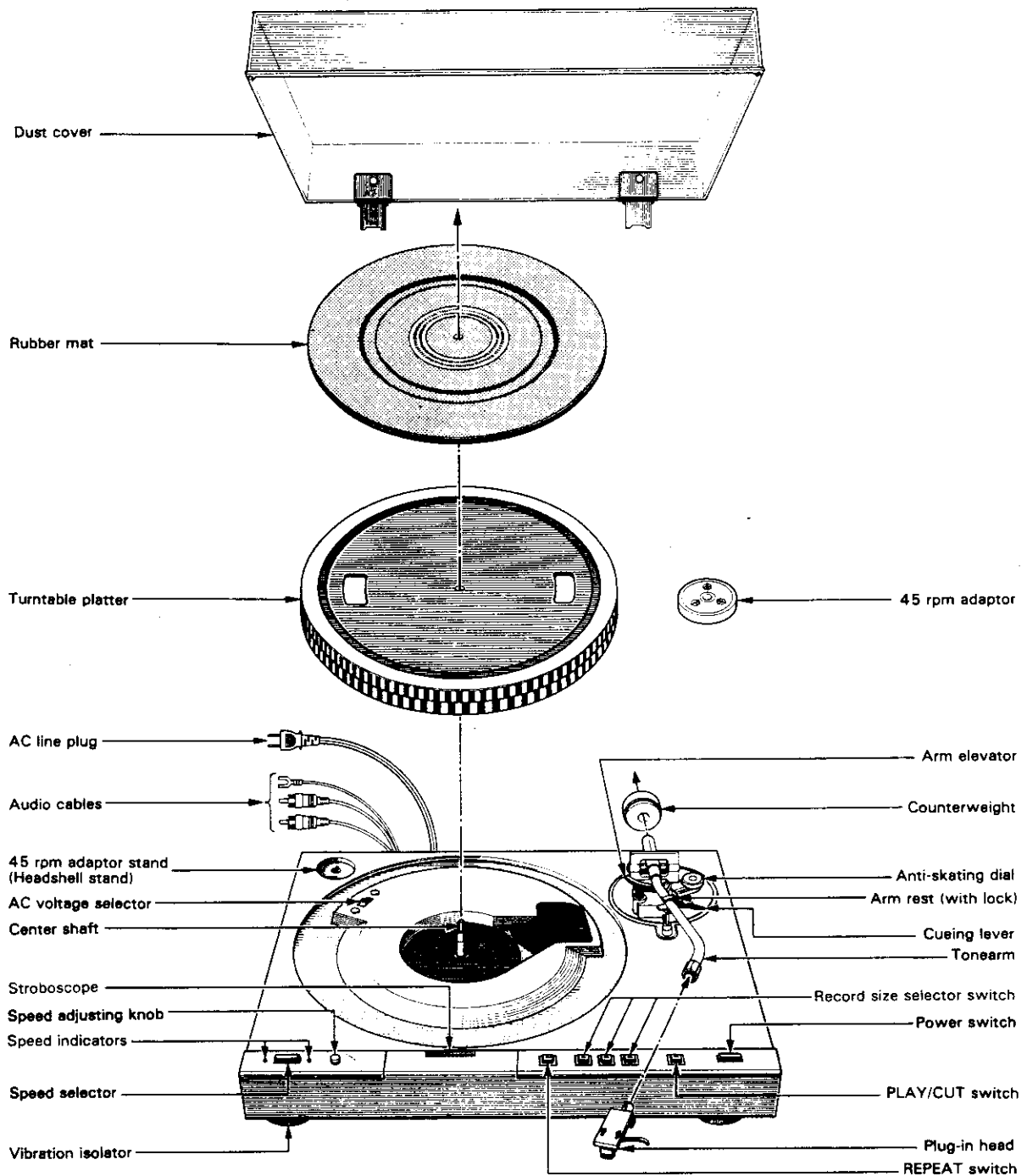


Fig. 1

ASSEMBLY

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 7. If your KD-4100/KD-4100R was purchased with a V-39MKIII cartridge, proceed as follows. Be sure to follow steps 1-6 in the sequence given.

1. Insert the plug-in head into the tonearm.

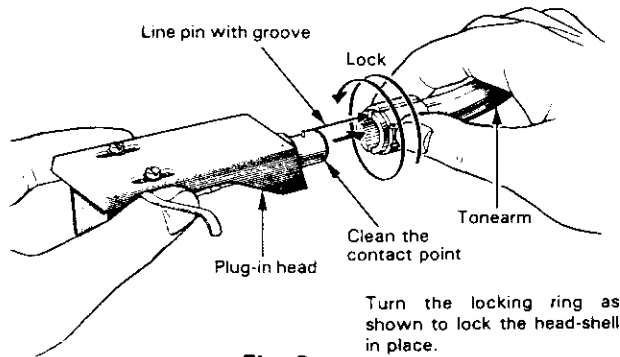


Fig. 2

2. Attach the tonearm counterweight to the rear of the tonearm.

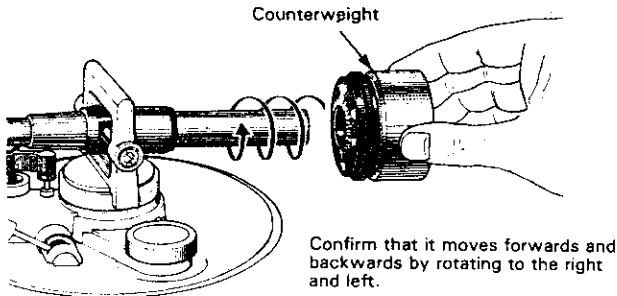


Fig. 3

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

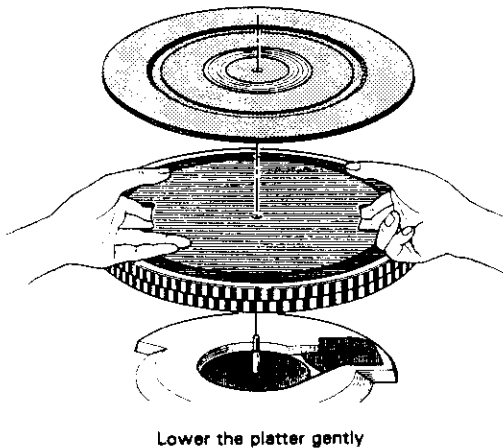


Fig. 4

4. Turn off power at your amplifier or receiver.
5. Connect the audio cables, then the AC cord.

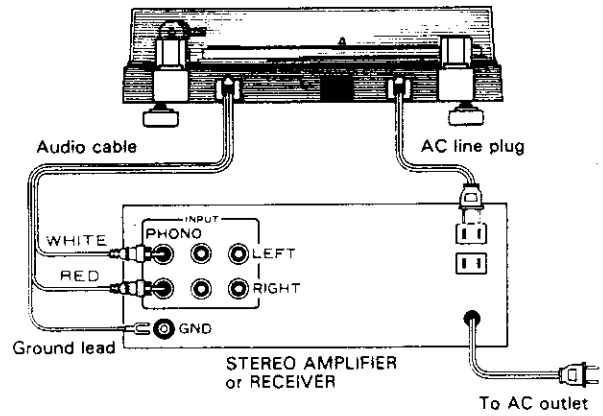


Fig. 5

6. Install the dust cover.

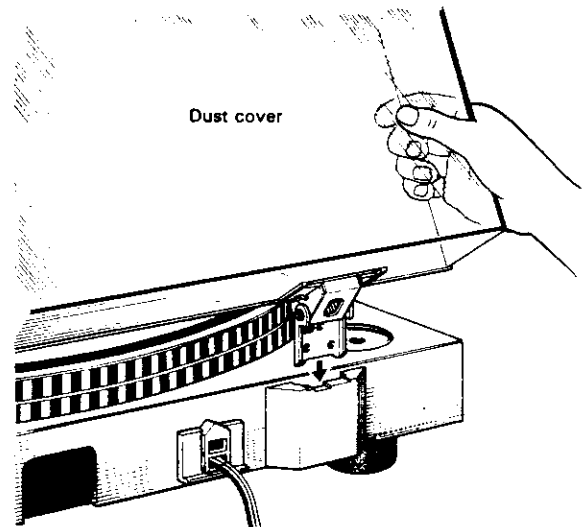


Fig. 6

NOTE: For proper setup, refer to installation recommendations on page 3.

TRACKING FORCE ADJUSTMENT

1. Confirm that the power switch is turned OFF.
2. Confirm that the anti-skating dial is set to "0" (Fig. 10) and the cueing lever is DOWN (▼).
3. Remove the stylus cover, release the tonearm from the arm rest, and turn the counterweight either to the right or left so that the tonearm balances perfectly in a horizontal position.

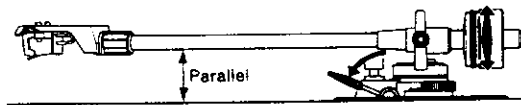


Fig. 7

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

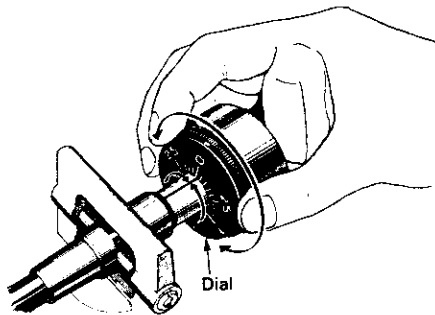


Fig. 8

5. Turn the counterweight to the right until the dial points to the tracking force recommended for your cartridge.

1.5-gram setting

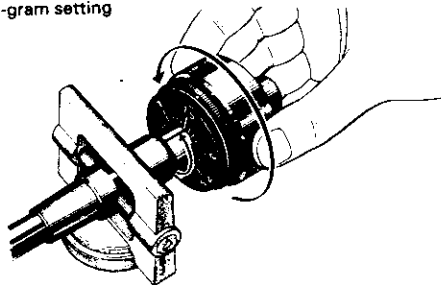


Fig. 9

6. Set the anti-skating dial to the same value as the tracking force for the cartridge.

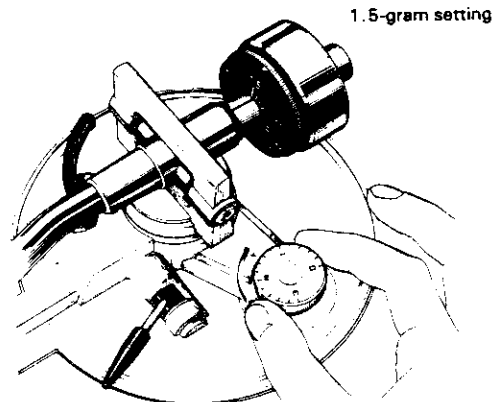


Fig. 10

NOTE:

The V-39MKIII cartridge is supplied with turntables that are shipped to certain areas of the world. 1.5 grams is the recommended optimum tracking force for the V-39MKIII cartridge.

HOW TO USE CUEING LEVER

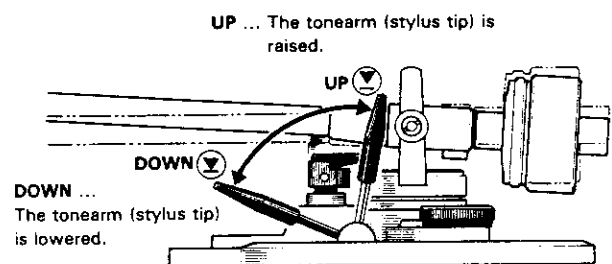


Fig. 11

This cueing lever is very useful when raising or lowering the stylus on the record in the manual mode. It protects the stylus tip and the record surface against damage.

NOTE:

To prevent damage to the arm elevator, do not clamp the tonearm on the arm rest when the cueing lever is UP (▼).

HOW TO ATTACH THE CARTRIDGE

The tonearm uses a standard EIA connector and accepts all 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. 12 for lead colors. Use a pair of tweezers or long-nosed pliers to handle the connectors.

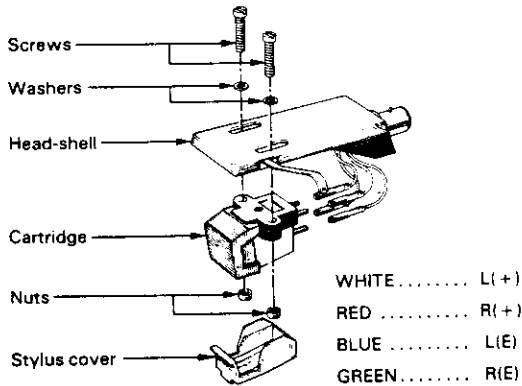


Fig. 12

- 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.

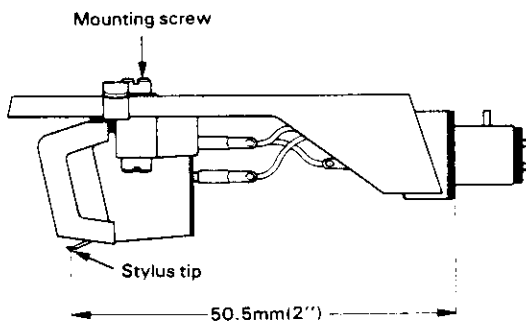


Fig. 13

- Plug the head with the cartridge into the tonearm, and follow steps 1 through 6 on page 5. Then adjust tracking force as explained on page 6 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 tonearm must never touch the arm elevator.
- The stylus must never touch the record surface when the tonearm swings horizontally during automatic action.

If corrective measures are found necessary, proceed as follows:

- Set the cueing lever to UP (▼). Loosen set screw at (A) in Fig. 14, and adjust elevator height so that the stylus is 8~10 mm (5/16" ~ 13/32") above the record surface. Tighten set screw (A).
- The height of the arm rest can be adjusted by first loosening set screw (B). Tighten snugly after adjustment has been made.

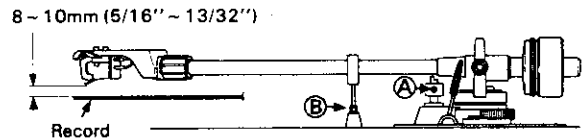


Fig. 14

NOTES:

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

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

SPEED ADJUSTMENTS

Although the speed of the KD-4100/KD-4100R is independent of line frequency, the stroboscope makes use of power-line frequency to permit precision adjustments of turntable speed. As shown in Fig. 15, two 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 rpm speed is selected, the upper row of marks 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 SPEED selector to the correct speed for the record.
2. Release the arm rest lock and set the cueing lever to UP (▲).
3. Release the tonearm from the arm rest in the manual mode (refer to page 9). Then, the turntable platter will start rotating automatically.
4. Adjust the SPEED ADJ knob so that the stripe pattern stands still. The pattern will move in the same direction that the knob is turned.

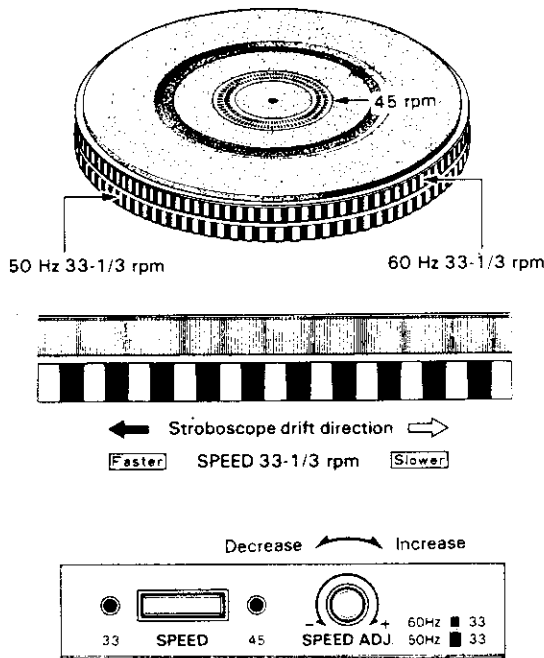


Fig. 15

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. Turn on POWER. Stroboscope will light.
3. Place a record on the turntable platter. If a 45 rpm record is used, the adaptor that is supplied must first be placed onto the center shaft.
4. Set the size selector to either 30, 25, or 17, whichever corresponds to the size (diameter in centimeters) of the record you wish to play.

NOTE:

Once the turntable enters the play mode (during which the built-in red LED of the PLAY/CUT switch lights), the size selector cannot be changed.

Before starting playback, always adjust this selector to the size of the record to be played.

5. Set the speed selector to 33 or 45, whichever corresponds to the correct speed for the record.
6. Release the tonearm from the arm rest lock. Confirm that the cueing lever is DOWN (▼).
7. By pushing the PLAY/CUT switch, the turntable platter will start rotating, and the tonearm shifts to the set position. The stylus will lower onto the record and playback will commence.
8. At the end of play, the tonearm will automatically return to the arm rest. Simultaneously, the platter will stop turning.

CUEING OPERATION

When it is desired to interrupt record play, set the cueing lever to UP (▲). The tonearm will rise, where it will remain in position as the record continues to turn.

When the cueing lever is again set to DOWN (▼), 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.

AUTO-CUT OPERATION

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

NOTE:

When the cueing lever is set to UP (▲) during the playback, the AUTO-CUT function cannot operate even if the PLAY/CUT switch is pushed. To achieve

this, manually return the tonearm to the arm rest, or set the cueing lever to DOWN(▼) and push the PLAY/CUT switch.

AUTO-REPEAT OPERATION

First push the REPEAT switch, then the PLAY/CUT switch for automatic replay. (the built-in red LED of the REPEAT switch lights, to indicate that the turntable is in the repeat mode). The REPEAT switch can be operated during playback. Push the REPEAT switch again for release from the repeat mode. The built-in red LED goes OFF to indicate this. Pushing the PLAY/CUT switch during repeat playing will cause the tonearm return to operate and release the repeat mode.

NOTE:

Pushing the REPEAT switch during the tonearm return operation will not effect the repeat mode.

MANUAL OPERATION

To replay the record starting from part way or in the manual mode, carry out the following.

1. Perform items 1 through 6 of the "FOR AUTOMATIC OPERATION" described on page 8.

NOTE:

Even in the manual mode, always adjust the size selector to the size of the record to be played before starting playback.

2. Set the cueing lever to UP(▲).
3. Release the tonearm from the arm rest lock and position the tonearm over the start of the desired cut in the record.
Releasing the tonearm from the arm rest will automatically start the turntable rotating.
4. Setting the cueing lever to DOWN(▼) will lower the stylus tip gently onto the record and playback will start.
5. Even in the manual mode, the tonearm will automatically return to the arm rest when the turntable platter stops.

NOTE:

In the manual mode, AUTO-REPEAT cannot be set. Setting the manual mode automatically excludes the repeat mode.

NOTICE:

1. Do not set the turntable in the Auto mode without placing a record on it.
2. Make sure that the record size selector is set for the record to be played. If not, the auto return mechanism starts to operate earlier than it should or does not operate at all. This is caused by the different positions of the end groove where the auto return mechanism operates.

3. When the PLAY/CUT switch is pushed with the tonearm clamped on the arm rest, turn the power switch OFF or push the PLAY/CUT switch after shifting the tonearm slightly to release the play mode.
4. As the play/cut and repeat switches do not function for approximately a second after turning the power switch on, allow a second to elapse before operating.
5. If the power switch is inadvertently turned off while functioning in auto-in, auto-return, auto-cut, the tonearm enters the "DOWN" mode and may damage the stylus tip or a disc record. Care must be exercised against this possibility. (Similar comments apply to power failure, etc.)
6. 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.
7. AUTO-RETURN action cannot be expected at the end of record play when playing off-size records and phono sheets. In such cases, the PLAY/CUT switch must be used to return the tonearm to the arm rest.

REMOTE CONTROL FUNCTION (KD-4100R)

In KD-4100R, remote control jacks are provided in the rear panel as shown in Fig. 16. In conjunction with SYSTEM REMOTE CONTROL CENTER RC-500, power ON/OFF, automatic playback, repeat playback, auto-cut function and disc size selection can be controlled remotely.

When connecting the control center, always use the cord supplied. For detailed operation of the control center, refer to the Instruction Manual of the RC-500.

When replaying the record under remote control, turning OFF the remote control power switch will not stop the turntable until play back is completed and the tonearm returns to the arm rest. This feature can be used as a sleep timer.

NOTE:

Turning OFF the power to the remote controller in the repeat mode will not cause the turntable to stop until the repeat mode is released.

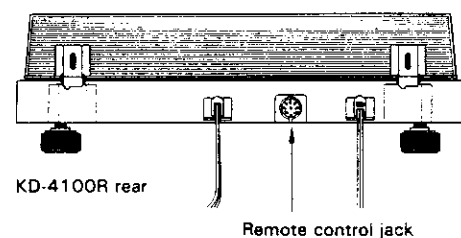


Fig. 16.

MAINTENANCE

CLEANING THE CABINET AND DUST COVER

Clean the cabinet and dust cover gently with a 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, benzine 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.

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 checkup 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.

RECORD HANDLING

When handling records, the sound grooves must not be touched with the fingers. Fingerprints on the sound grooves will soon collect dust. This can cause noise and excessive stylus wear. Therefore, the record should be carefully wiped with a good record cleaner before using.

Records must not be exposed to direct sunlight, heat radiating materials, dust, and moisture. They must not be piled up. Vertical storage is recommended. Careless storage will result in warped and damaged records.

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 17 shows how to replace the stylus for the V-39MKIII cartridge (standard accessory in countries other than the U.S.A., Canada and U.K.).

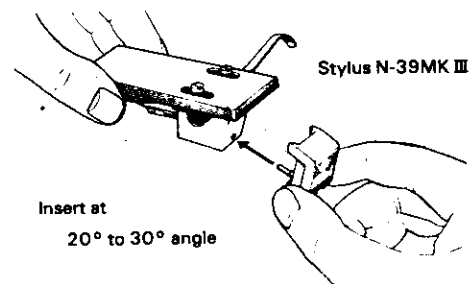


Fig. 17.

NOTES FOR TRANSPORT

When the unit must be moved to another place because of a change of residence, etc., it should be correctly packed in the packing materials furnished at the time of purchase. Even if these packing materials have been discarded, the unit must be disassembled into **the turntable, the counterweight, and the plug-in head (shell + cartridge)**. These components should be packed independently for transport.

Since this motor is DC type, it is not influenced by the source frequency. The unit will operate normally in both 50 and 60 Hz zones.

SPECIFICATIONS

MOTOR AND TURNTABLE

Drive System	Direct-drive system
Motors	Coreless & slotless DC servo motor 2-pole, 3-slot DC micro-motor (for automatic functions)
Turntable Platter	Diameter: 31 cm (12-3/16") Weight: 1.15 kg (2.54 lbs.) Aluminum alloy, die-cast
Speeds	2 speeds, 33-1/3 and 45 rpm
Speed Control Range	Within $\pm 3\%$
Wow & Flutter	Less than 0.03% (WRMS)
Rumble	DIN weighted Better than -71 dB

TONARM

Type	Static-balance type, S-shaped tubular arm
Effective Arm Length	225 mm (8-7/8")
Overhang	15 mm (9/16")
Tracking Error	± 1.5 degrees
Tracking Force Variable Range	0 to 3 grams
Usable Cartridge Weight	3 to 9 grams (with supplied headshell)

CARTRIDGE (U.S.A., Canada and U.K. models are not equipped with the V-39 MKIII.)

Furnished Cartridge	V-39 MKIII
Frequency Response	20 - 20,000 Hz
Output Voltage	2.3 mV (1,000 Hz, 5 cm/sec.)
Load Impedance	47 k ohms
Stylus	0.5 mil diamond
Optimum Tracking Force	1.5 +0.3, -0 grams
Replacement Stylus	N-39 MKIII

MISCELLANEOUS

Power Requirements	AC 120 V, 60 Hz: U.S.A. and Canada Models AC 240 V, 50 Hz: U.K. Model AC 120 V/220V (Switchable), 50/60 Hz: European and Military Models. AC 120 V/240V (Switchable), 50/60 Hz: Other countries
Power Consumption	7.0 watts: U.S.A. and Canada Models 20.0 watts: Other countries
Dimensions	W 440 mm (17-5/16"), H 140 mm (5-1/2") D 375 mm (14-3/4")
Weight	7.9 kg (17.4 lbs.)
Built-in Features	Electronically controlled full-automatic tonearm system (Automatic lead-in/return/cut/repeat) Anti-skating device Oil-damped cueing device Illuminated stroboscope Speed adjustment control Low capacitance phono cables Headshell and 45 rpm adaptor stand Stylus pressure direct readout counter Built-in vibration isolators
Supplied Accessory	Remote control jack (KD-4100R) 45 rpm adaptor Overhang gauge (U.S.A., Canada and U.K. Models only)

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



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