

KENWOOD

CD TUNER

FILE

KDC-93R

KDC-83R

INSTRUCTION MANUAL

KENWOOD CORPORATION



Take the time to read through this instruction manual. Familiarity with installation and operation procedures will help you obtain the best performance from your new CD tuner.

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 KDC-93R/83R Serial number _____

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WARNING

CAUTION

The use of optical instruments with this product will increase eye hazard.

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna

Relocate this equipment with respect to the receiver

Move this equipment away from the receiver

Plug this equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

- As the laser beam used in this compact disc player is harmful to the eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.

FCC WARNING:

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

NOTE:

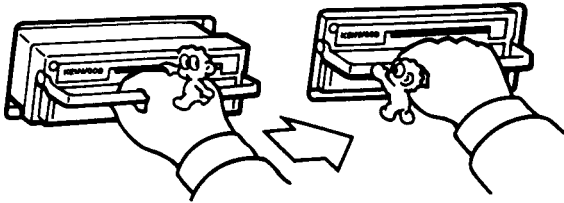
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment may cause harmful interference to radio communications, if it is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

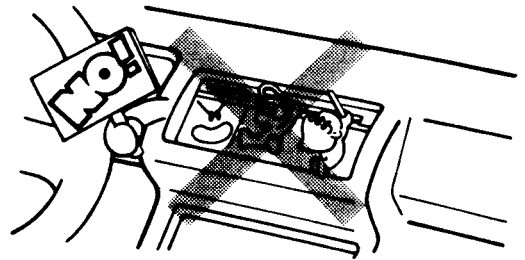
WARNING

TO PREVENT ELECTRIC SHOCK,
FIRE AND OTHER INJURY.
PLEASE NOTE THE FOLLOW-
INGS:

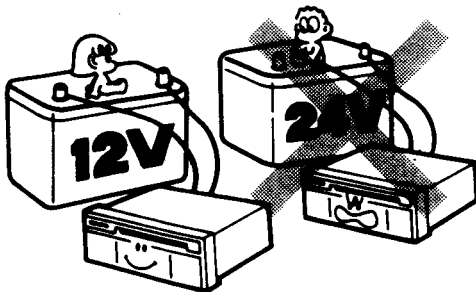
- Secure the locks on the detachable case.



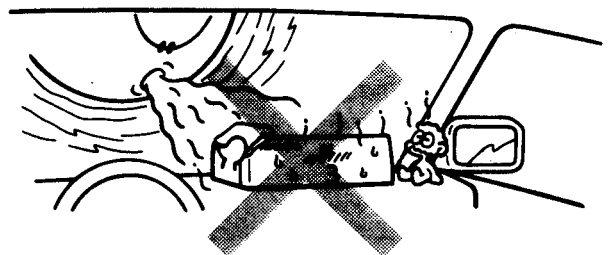
- Do not drop pieces of metal, needles, coins and other electrically conductive materials into the unit.



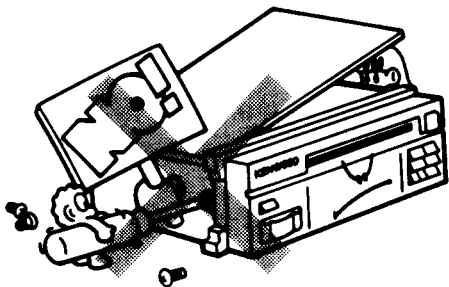
- The unit is designed to be connected 12 V DC and negative grounding.



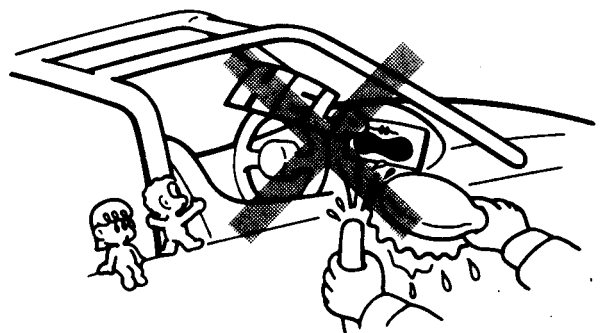
- Do not place the unit, where it will be exposed to direct sunlight or close to heating device.



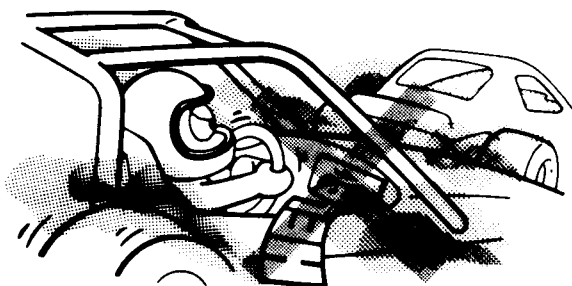
- Do not open enclosure, such as front panel, top or bottom cover.



- Do not dash water on the unit.

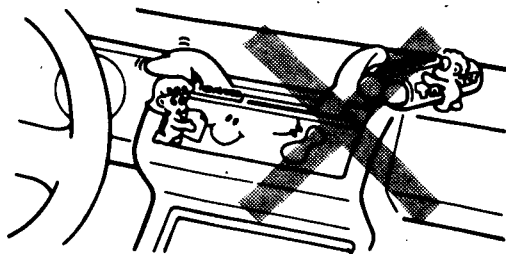


- Do not place the unit in areas of excessive dust, high humidity or on unstable surfaces.



CLEANING

1. Turn the power off, before cleaning the unit.
2. Do not use any type of abrasive pad, thinner, benzene and any such kind of objects.
3. Wipe the front panel and other exterior surfaces of the unit with a soft dry cloth or a soft cloth lightly moistened with a neutral detergent.



- If an abnormal smell or smoke is detected, immediately turn the power off.



- If you have difficulty in installing the set in your car, please contact your KENWOOD dealer.

BEFORE USE

Note on Operation

- The CD Player is designed to be connected to 12 V DC and negative grounding.
- Avoid mounting the CD Player where it is likely to be exposed to direct sunlight, hot air or water. Also, avoid mounting it where there is excessive vibration. Take care not to allow any metal objects or water to enter the interior of the CD Player.
- When you use the CD Player for the first time, or if you have replaced the battery, push the RESET button with the tip of a pencil or similar pointed object.
- If a disc is inserted violently, sometimes a protection circuit will function and stop the operation. Should the protection circuit function, turn the power switch OFF once and then turn it ON again.

About Condensation

- When a disc or disc magazine is brought from a low-humidity place to a car where there is high humidity due to rain, etc., water vapor may condense on the disc. Or, when the main unit of the changer is installed under the dashboard, condensation may occur on the surface of the optical lens immediately after turning on the heater. If the CD player is operated in this condition, the laser pickup may not correctly read out the signal, or dropouts may occur occasionally. Thus, correct operation may not be obtained. In such cases, dehumidify the disc, or remove the disc magazine from the changer and leave it for about one hour, at which time correct operation will resume.
If the CD player does not operate correctly after a long time interval, consult your dealer or nearest KENWOOD Service Station.

About temperature

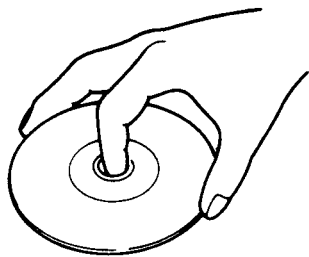
- When a car is exposed to sunlight with all the windows closed, the temperature inside will rise considerably. When it rises above 60 degrees C, a circuit that protects the interior will function, displaying "HOLD" and the compact disc may sometimes cease to operate. In such a case, the compact disc cannot be played back and therefore use it by pressing the reset switch by all means after lowering the temperature inside the car by either running your air conditioner or by driving your car a while opening the windows and after the display of "HOLD" disappears.

Handling of compact disc

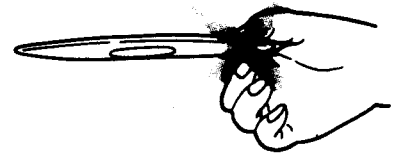
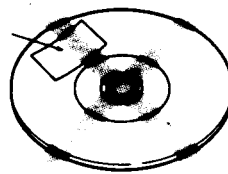
- Stains, dust or scratches on the disc or warping of the disc will cause malfunction such as skipping. Handle the disc in the following manner so that you may enjoy the beautiful sound of the CD Player for a long time.

< Handling the disc >

Hold the disc without touching the music storage area (glistening rainbow colors). Do not apply a paper tape to the label on the disc nor to the music storing area.



Paper tape

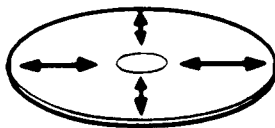
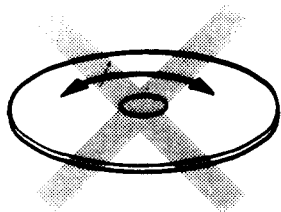


< Storage of compact disc >

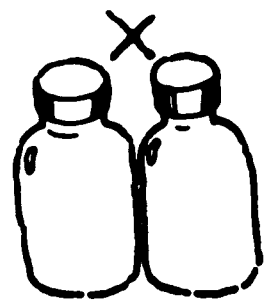
- Do not put the disc where it is exposed to direct sunlight, heat or humidity.
- Especially in summer, never leave the disc exposed to direct sunlight or placed on the seat or dashboard with the windows closed because the temperature will rise considerably and the disc will warp.
- When the player is not in use for an extended period of time, remove the disc magazine from the changer, and store it in a place which is not subject to high temperature or high humidity.
Be sure to store the discs in their cases or in the magazine. Do not leave them outside of the case or magazine, or piled up, or leaning on a slant. This may cause scratches, dirt or warping.

< Cleaning of compact disc >

If there are fingerprints or stains on the disc, remove them by lightly wiping it with soft cotton cloth from the center toward the outside edge. Never use thinner or benzine. Also, avoid using conventional record cleaner.



Soft cotton



Thinner

Benzine

POWER, VOLUME AND LOUDNESS

POWER ON/OFF

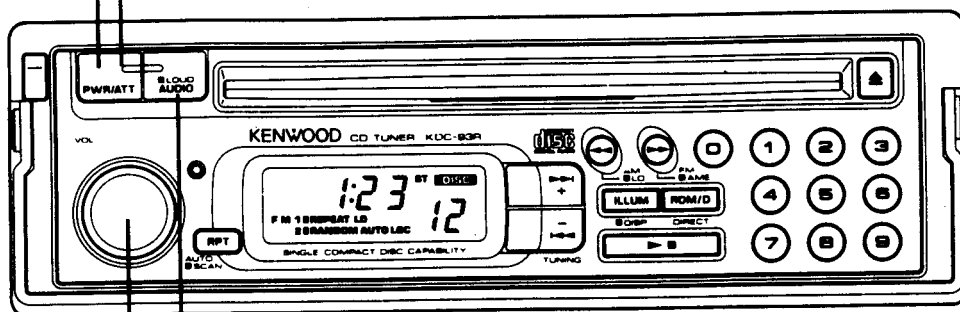
Press the Power switch.
(The power goes ON.)

Press the Power switch for more than
1 second.
(The power goes OFF)

ATTENUATOR SWITCH

Tap the Attenuator switch.
(The volume instantaneously drops.)

Tap the Attenuator switch again.
(The previous volume resumes.)

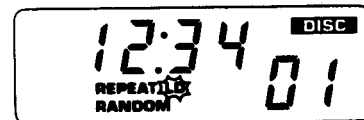


VOLUME

Turning this knob clockwise, in-
creases the volume, and turning
counterclockwise, decreases.

LOUDNESS SWITCH

When listening at low volume levels,
press this switch for more than 1 se-
cond will activate the loudness circuit
which will compensate for the human
ear's decreased response.



ON



1. Turning the power ON automatically turns this unit to a tuner mode.
2. Explain how to operate hereafter with the power ON.

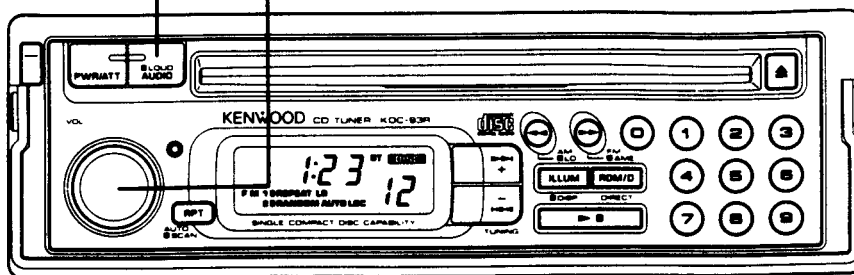
AUDIO CONTROL

1

Pressing the Audio switch will enable the audio control. Unless it is pressed, Volume and it becomes possible to adjust in the order of Bass, Treble, Balance and Fader and back to Volume if pressed every time.

2

Adjustment will be made by the Audio controller respectively. For operations and display, refer to the following table.



Display	Turn counterclockwise	Turn clockwise
Adjust the Volume 	Volume decreases	Volume increases.
Adjust the Bass response 	Bass decreases.	Bass increases.
Adjust the Treble response 	Treble decreases.	Treble increases.
Adjust the Balance of the right and left channels 	The left sound will be emphasized.	The right sound will be emphasized.
Adjust the Balance of the front and rear speakers 	The front sound will be emphasized.	The rear sound will be emphasized.

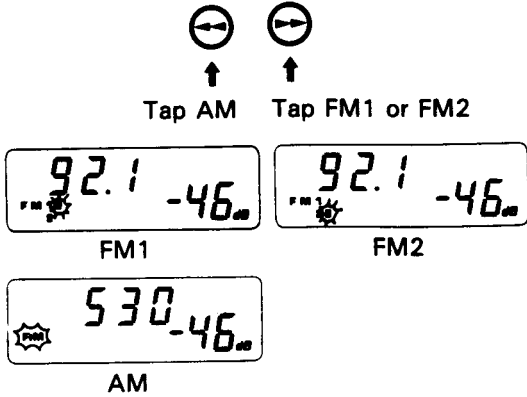


- The player will return to volume control function when more than 5 seconds elapses after pressing the Audio switch or the Audio controller, or by pressing the Audio switch for more than 1 second.

SEEK TUNING

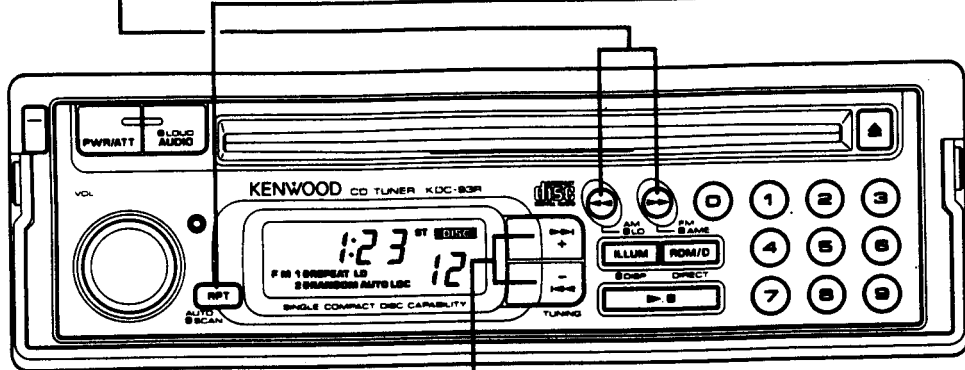
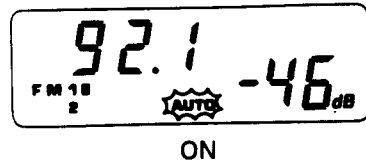
1

Select the desired Band.



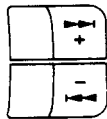
2

Turn the Auto switch ON.



3

Press Seek switch
(Seek starts and receives a broadcast station.)



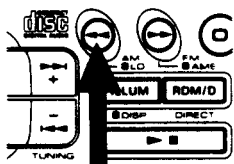
← Up Seek
← Down seek

Lit when stereo broadcast is received.

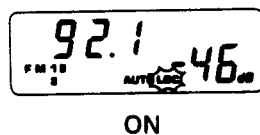


Indicates reception frequency.

<Local tuning>



Press for more than 1 second

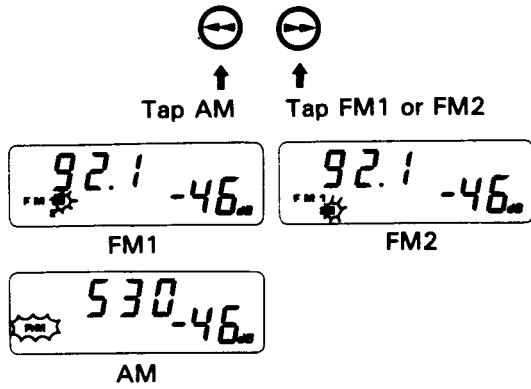


If the Local switch is turned ON during SEEK TUNING and AUTO MEMORY, it will stop at stations only with satisfactory reception conditions.

MANUAL TUNING

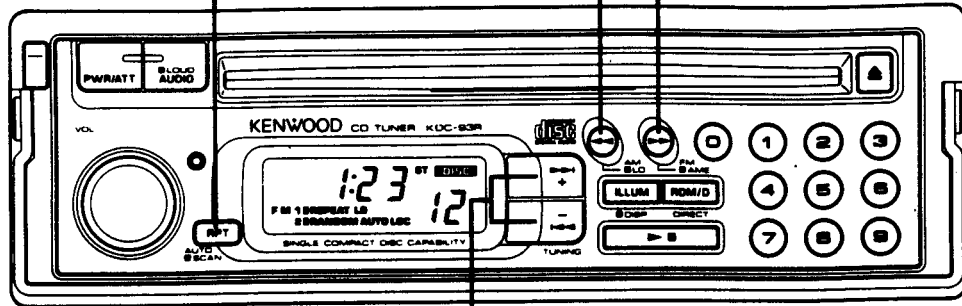
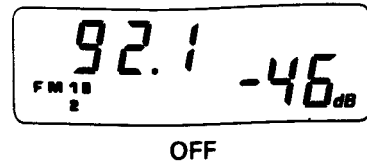
1

Select the desired Band.



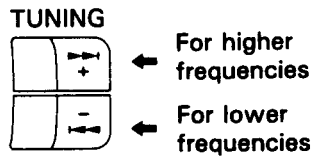
2

Turn the Auto switch OFF.



3

Press to select the desired frequency.

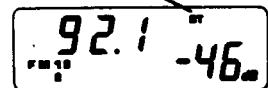


(Continued pressing will change it continuously.)

4

Indicates the frequency being received.

Lit when stereo broadcast is received.

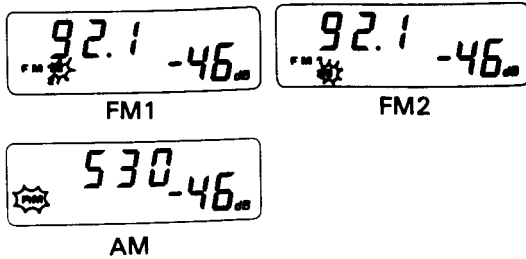
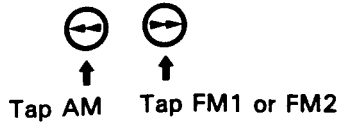


Indicates reception frequency

DIRECT ACCESS TUNING

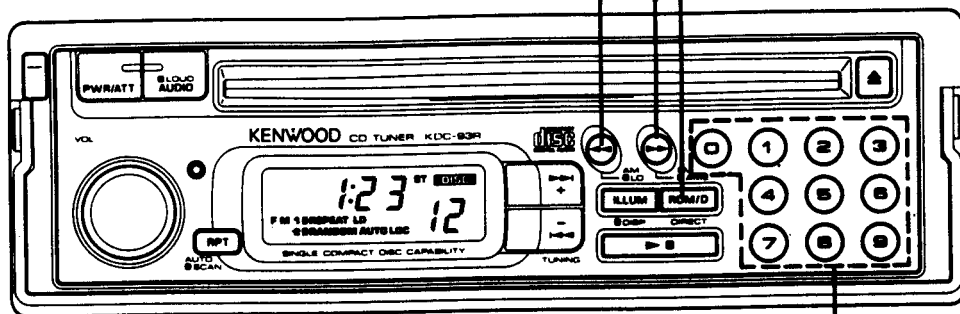
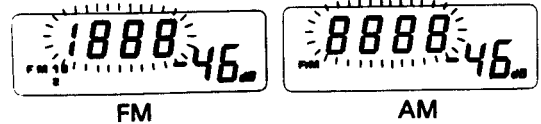
1

Select the desired Band.



2

Press the Direct tuning switch. Each will blink and display for about 10 seconds as below.

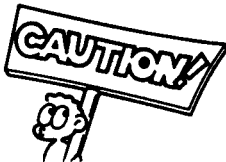


3

While the frequency display is blinking, input the frequency number with the Preset station switches.

Example: To tune to FM 87.9 MHz
Press...**(8)**/**(7)**/**(9)**

Example: To tune to AM 1610 kHz
Press...**(1)**/**(6)**/**(1)**/**(0)**



- Numbers other than a receiving frequency cannot be input.

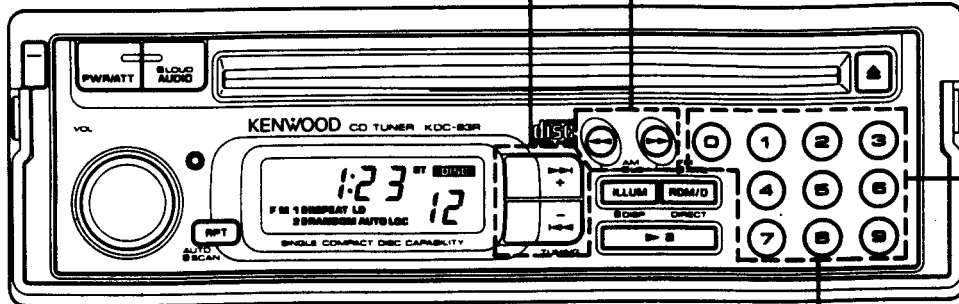
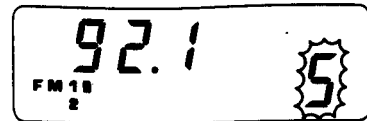
PRESET STATION TUNING

1

Selects the band and station you wish to preset.

2

Press the Preset station switch you wish to be kept preset for more than 2 seconds. (When it is preset, the number of switch pressed will be indicated.)

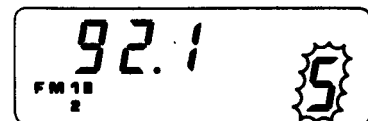


3

By repeating operation of 1 - 2 above, one station can be memorized in one switch each at FM1, FM2 and AM.

4

If tapped, the preset station can be called out. (The number of switch pressed will be indicated.)

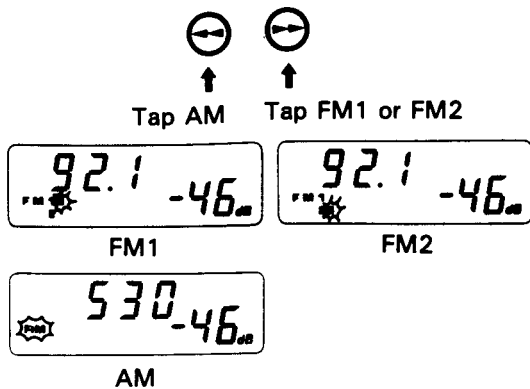


- If preset is to be made anew on the switch already preset, what was preset before will be replaced with what is to be preset.

AUTO MEMORY

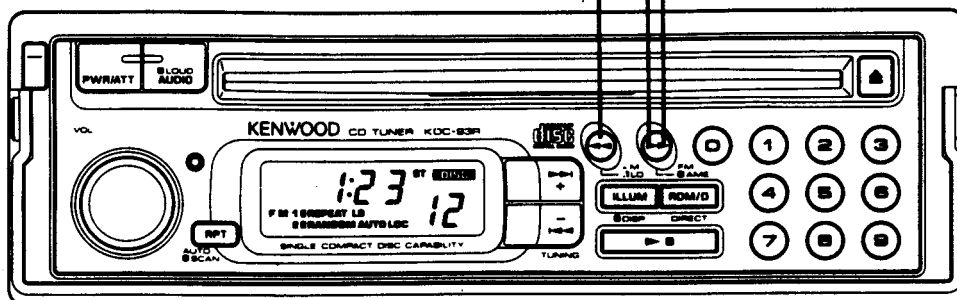
1

Select the desired band.



2

Press the Auto memory switch for more than 2 seconds.



3

The selected band is automatically scanned and 10 stations are memorized. When 10 stations are memorized, the AUTO MEMORY function is automatically released.

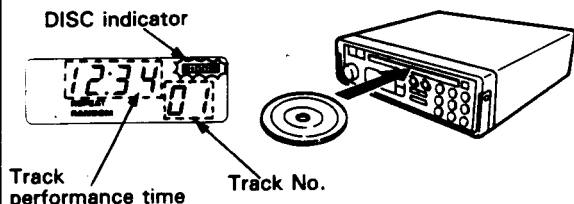
4

The station last stored in memory is received.

COMPACT DISC PLAY

COMPACT DISC PLAY

Insert a 12 cm CD and an 8 cm CD with the label sides up.
 (The disc will be drawn in, starting the Disc Indicator to light ON.)
 Every time you press the Play/Stop switch, it plays/stops.

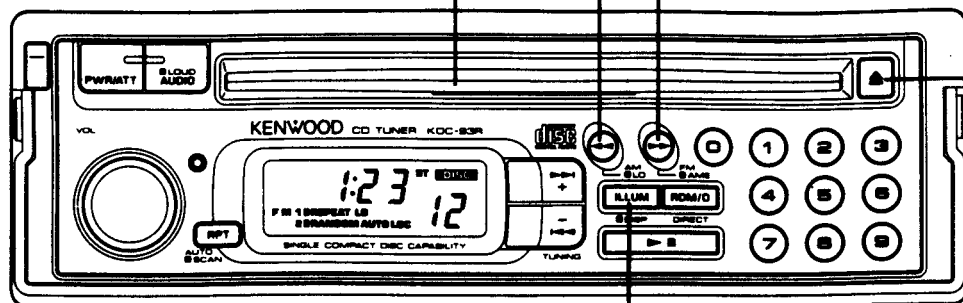


AHEAD/BACKWARD

(at high speed)

Operation	Press
Ahead	▶▶
Backward	◀◀

The Ahead/Backward play is released as soon as the finger is removed from the switch.

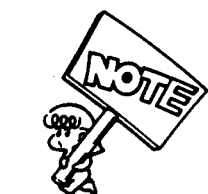


EJECT

Press the Eject switch.
 (The disc will come out.)

TIME DISPLAY

Press the Display switch for more than 1 second.
 (Every time you press it, it switches over between the track performance time and the disc remaining time. When the remaining time is displayed, "—" will appear.)



- Turn the Ignition key OFF and after 15 seconds the disc play will start from the beginning of the track that was stopped.
- In case of a 12 cm CD, automatic loading and play can be made if the Play/Stop switch is pressed in the eject condition. Furthermore, if more than 15 seconds elapse in the ejection condition, it will automatically load and stop. (In case of 8 cm CD, it does not work this way)
- When a disc is already inserted, do not insert another disc into the inserting slot

TRACK SEARCH & DIRECT TRACK SEARCH

TRACK SEARCH

BACKWARD TRACK SEARCH

Press the ◀◀ switch successively until the Track No. display shows the desired track No.



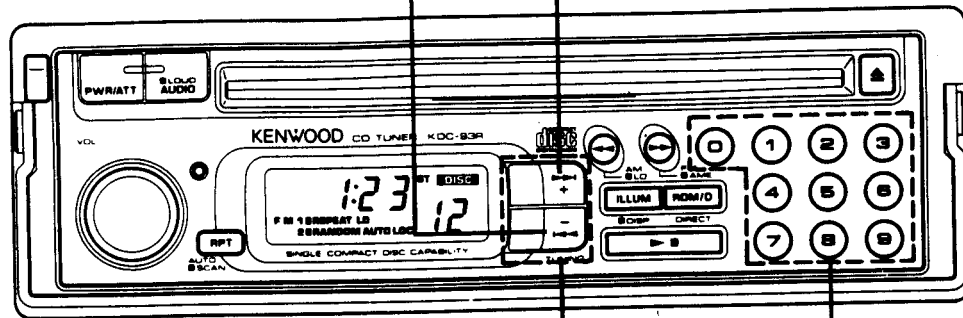
Track No. display

FORWARD TRACK SEARCH

Press the ▶▶ switch successively until the Track No. display shows the desired track No.



Track No. display



DIRECT TRACK SEARCH

1

Enter the desired track No. with numeric keys.
(The Input No. display shows the track No. blinking.)



Track No. display

Example: The third number
Press ... ③

Example: The tenth number
Press ... ①/⑩

2

Press the ◀◀ or ▶▶ switch within 5 seconds after you press the Track No. switch.

(Disc play will start from the beginning of track you desired.)



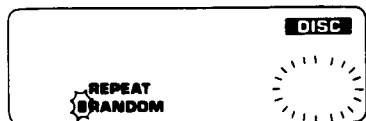
- If you specify a track number that is not in the disc, it will make a direct search to the final track.

RANDOM PLAY & REPEAT PLAY

■ RANDOM PLAY

1

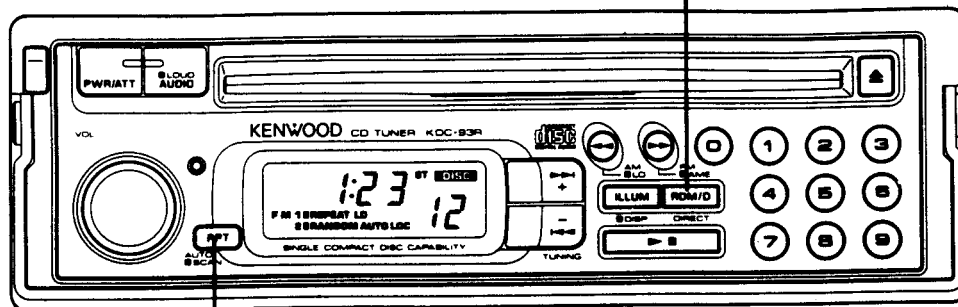
Press the Random switch.
(The dot display of RANDOM indicator lights ON, changes the track number display one after another and selects the track.)



During Random Search

2

The tracks in the CD is played in a random order.
(To release, tap the Random switch again.)



■ REPEAT PLAY

1

Tap the Track repeat switch.



ON

2

The track being played is played repeatedly.
(To release, tap the Track repeat switch again.)

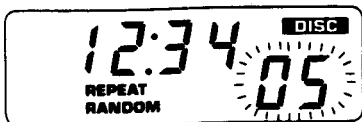


- Pressing the ►► switch during random play changes the track to the next random selection.

TRACK SCAN

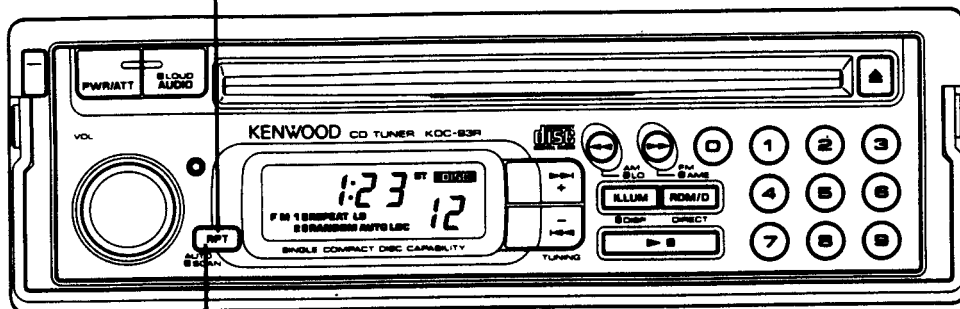
1

Press the Track scan switch for more than 1 second.
(Scan play will be turned ON, blinking the track number display.)



2

The first 10 seconds of all tracks in the CDs are played in sequence.



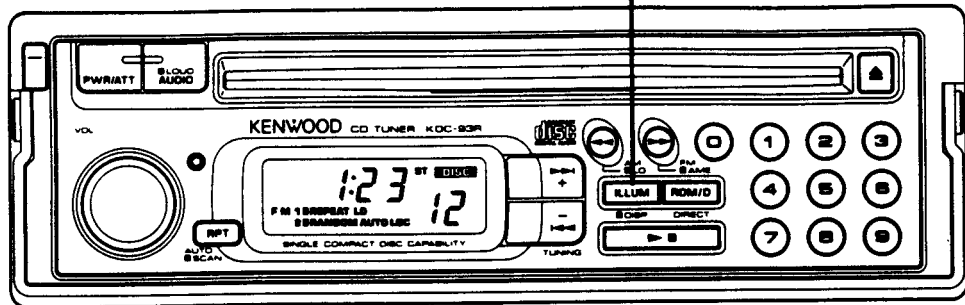
3

When the beginning of a desired track starts to be played, press the Track scan switch.
(Track scan is released and normal CD play starts.)

SELECTABLE ILLUMINATION

- Illuminations can be changed to fit the type of car or to suit your own taste.

Every time the Illumination switch is tapped, the color will switch over between green and orange.



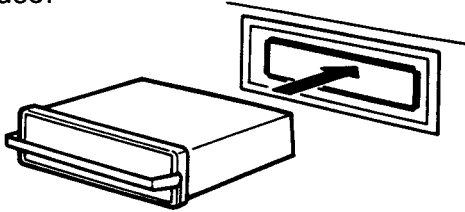
INSERTION/REMOVAL OF UNIT

< Functions of the KDC-93R >

■ Insert the unit

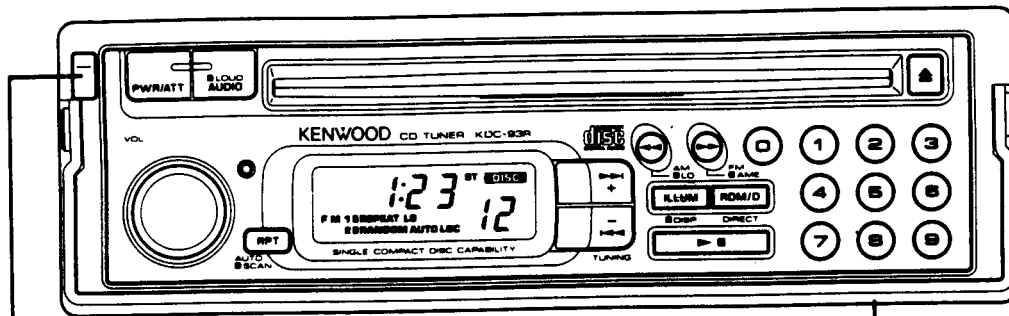
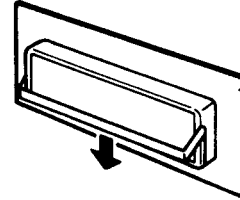
1

Insert the unit into the detachable case.



2

Lower the handle down to the bottom.



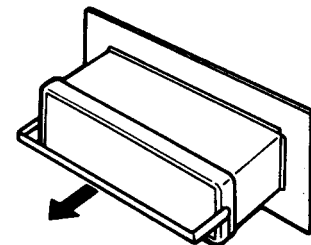
■ Remove the unit

1

Press the T.P.C. button.
Lift the handle.
(The handle lock is released and power is OFF.)

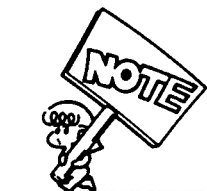
2

Hold the handle and pull it out.



When the handle is lifted

If you lift the handle during operation of CD, the unit will turn OFF and go into falling time. (Falling time locks the CD mechanism for removal of the unit.) During falling time you will hear a long beep, when the falling time is complete you will hear a short beep, indicating the unit is ready for removal. The CD mechanism will automatically lock when it is not in use. If you lower the handle, the unit will revert to its original state.



Please allow falling time before removing the unit.

CHANNEL SPACE SELECTION

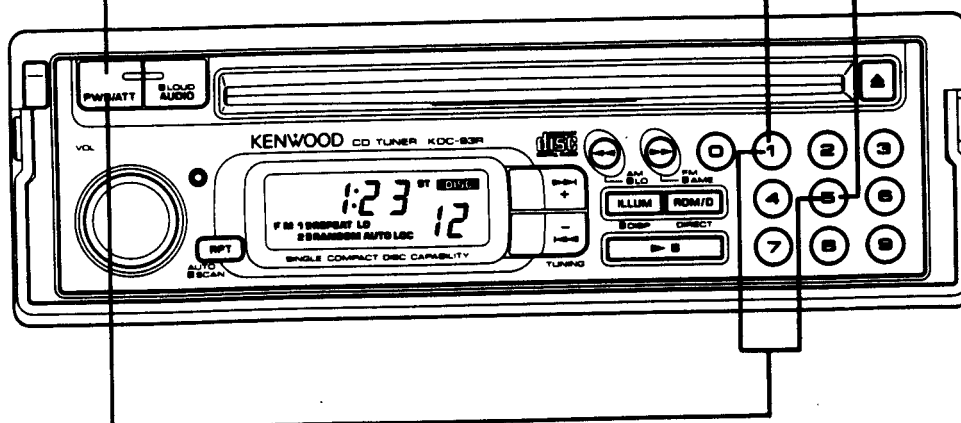
- The KDC-93R/83R has a channel space select function. Two spacing frequencies are available for both FM and AM, 200 kHz or 50 kHz for FM, and 10 kHz or 9 kHz for AM.

1

Turn the power OFF.

2

Keep on pressing the Preset station switch of "1" and "5".

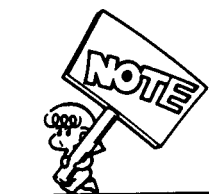


3

Turn ON the power while engaged in the operation of 2.
(Channel space will turn to 50 kHz for FM and 9 kHz for AM.)

4

To bring it back to the home position, carry out operations of 1 - 3 again.
(Channel space returns to 200 kHz for FM and 10 kHz for AM.)

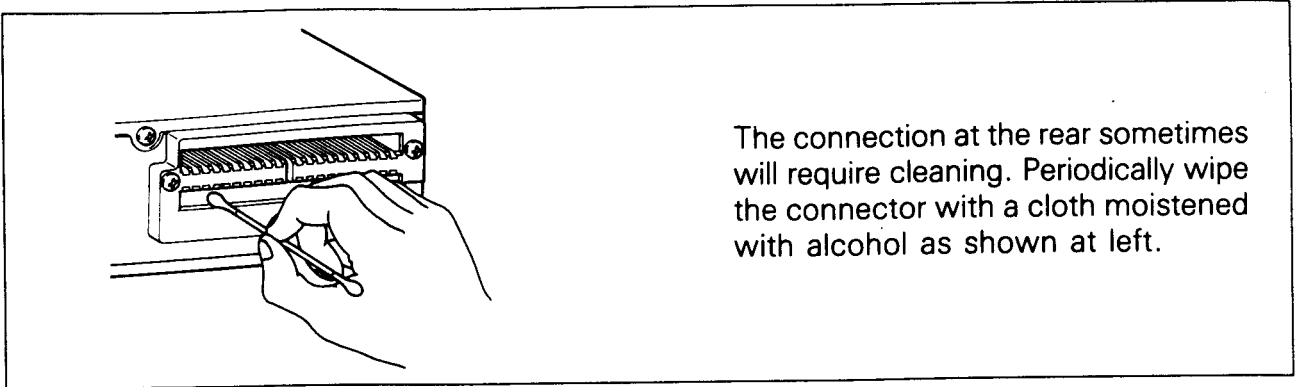


- When the channel space is changed, the memorized contents are stored.
- The channel space selection is not used in United States or Canada.

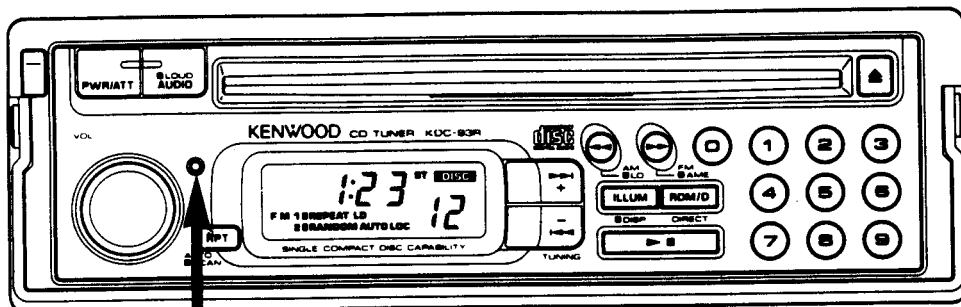
CARE AND MAINTENANCE

CAUTION:

- The KDC-93R includes a lithium backup battery to retain memory in the microprocessor. If the unit can no longer retain its memory, this lithium battery may have been discharged. In this case, bring the unit in to our authorized service center. This backup lithium battery life is estimated at about 7 years.



- If your set malfunctions or operates abnormally, first press the Reset button. If the malfunction persists, leave the set as it is and please call your KENWOOD dealer.

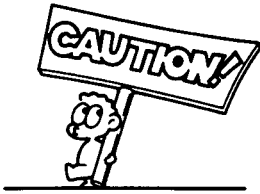


Reset button

INSTALLATION

■ INSTALLATION

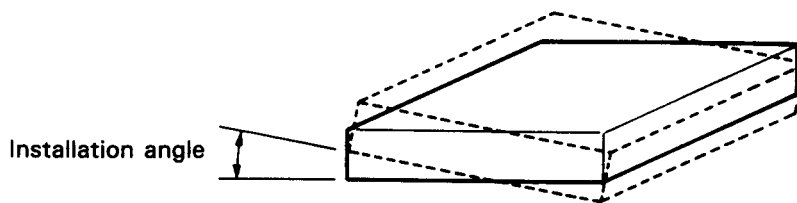
1. Before installation and wiring, remove the \ominus terminal of the battery to prevent short-circuiting.
2. Connect the input and output cords of the system.
3. Connect the ground to the metal chassis of the car.
4. Connect the back-up power supply lead (yellow).
5. Connect the accessory power lead (red).
6. Install the set and after confirming the installation and wirings are correct, connect the \ominus terminal of the battery.
7. After installation, surely press the Reset button.



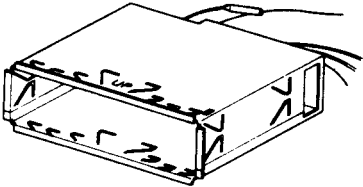
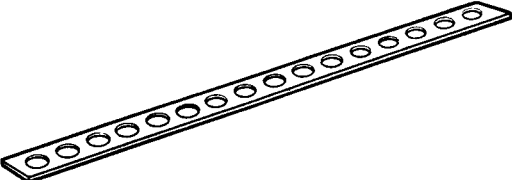



- If a fuse is blown, first check that the associated wires are not short-circuited then replace the fuse with a new one having the same capacity.
 - Secure unconnected wires properly so that they do not contact the vehicle chassis.
 - Do not remove the caps attached to the unused terminals.
- As the unit uses BTL output, always connect the without stripe speaker wires to the \ominus terminals of the speaker systems. Never let the \ominus speaker wires touch and never connect them to the chassis (ground). Do not let the speaker terminals come into contact with the chassis (ground). Insulate any unused output wire to prevent a short circuit.

■ Installation angle

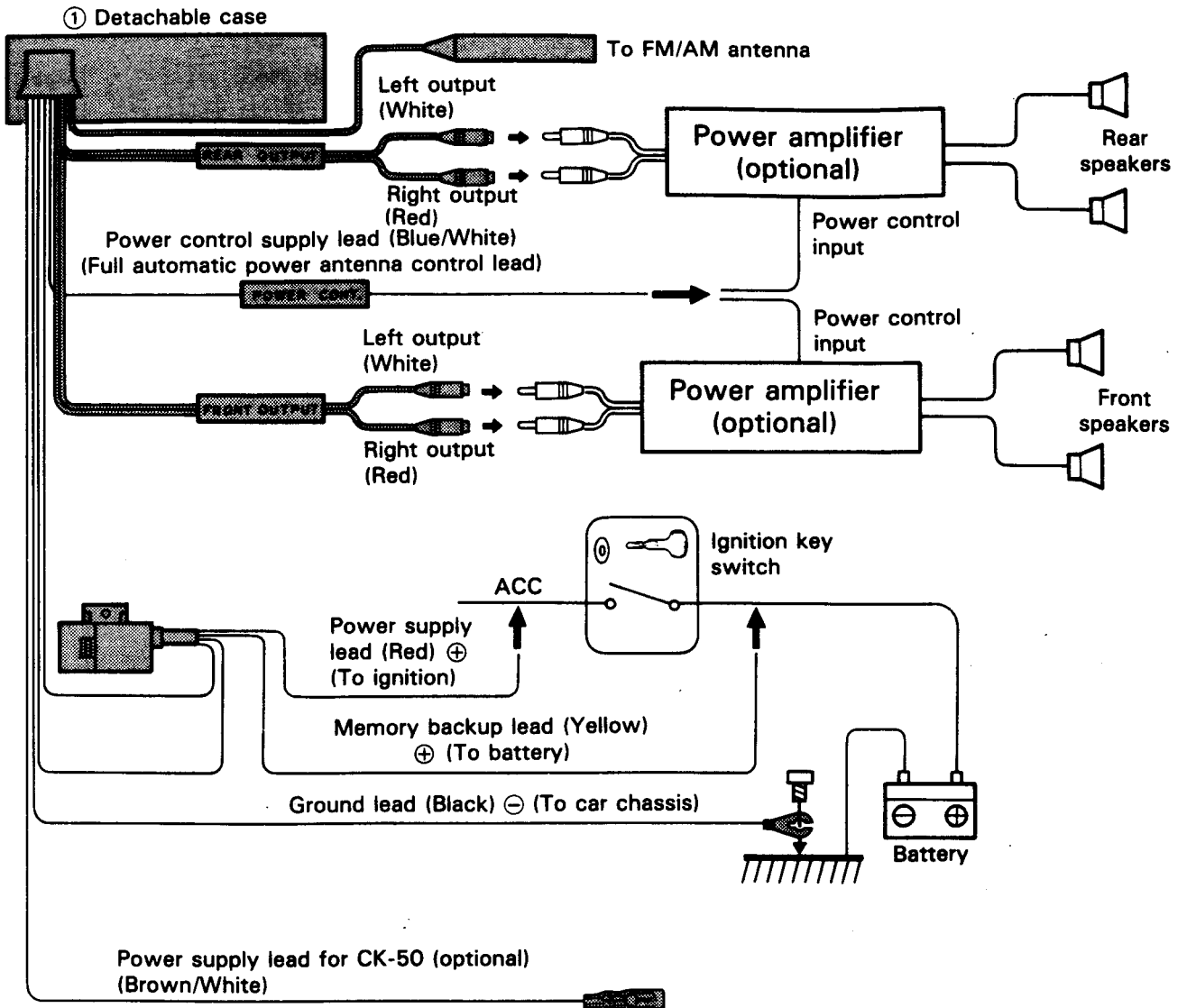
This unit should be installed with an angle of less than 30° from the horizontal surface.



ACCESSORIES (KDC-93R)

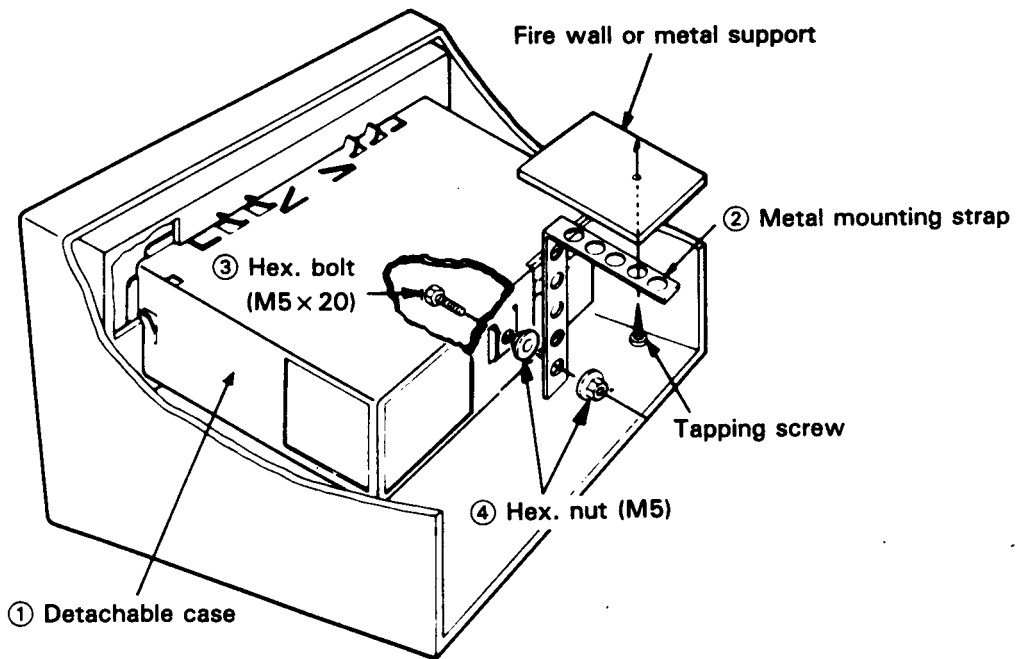
No.	Part name	External View	Number of units
①	Detachable case		1
②	Metal mounting strap		1
③	Hex. Bolt (M5 × 20)		1
④	Hex. nut (M5)		2
⑤	Collar (M5)		1

CONNECTIONS (KDC-93R)

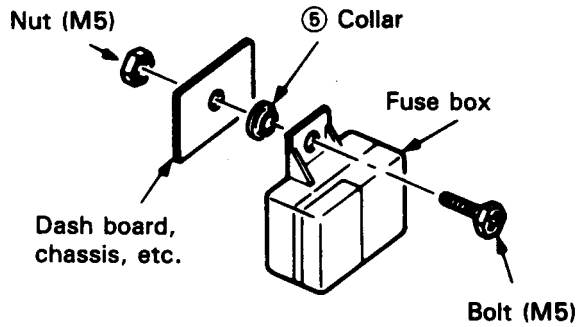


INSTALLATION (KDC-93R)

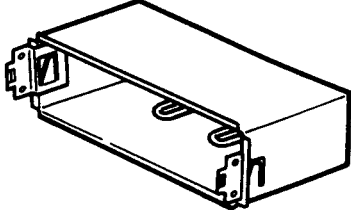
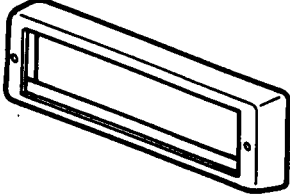
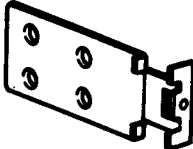
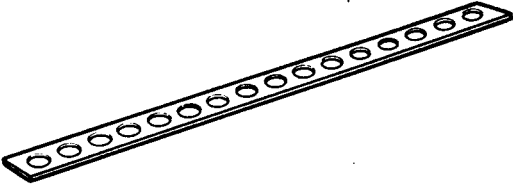
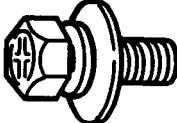


- Insert the ① detachable case into the console and clamp with the claws. If the detachable case cannot be inserted, cut off the console with a file.



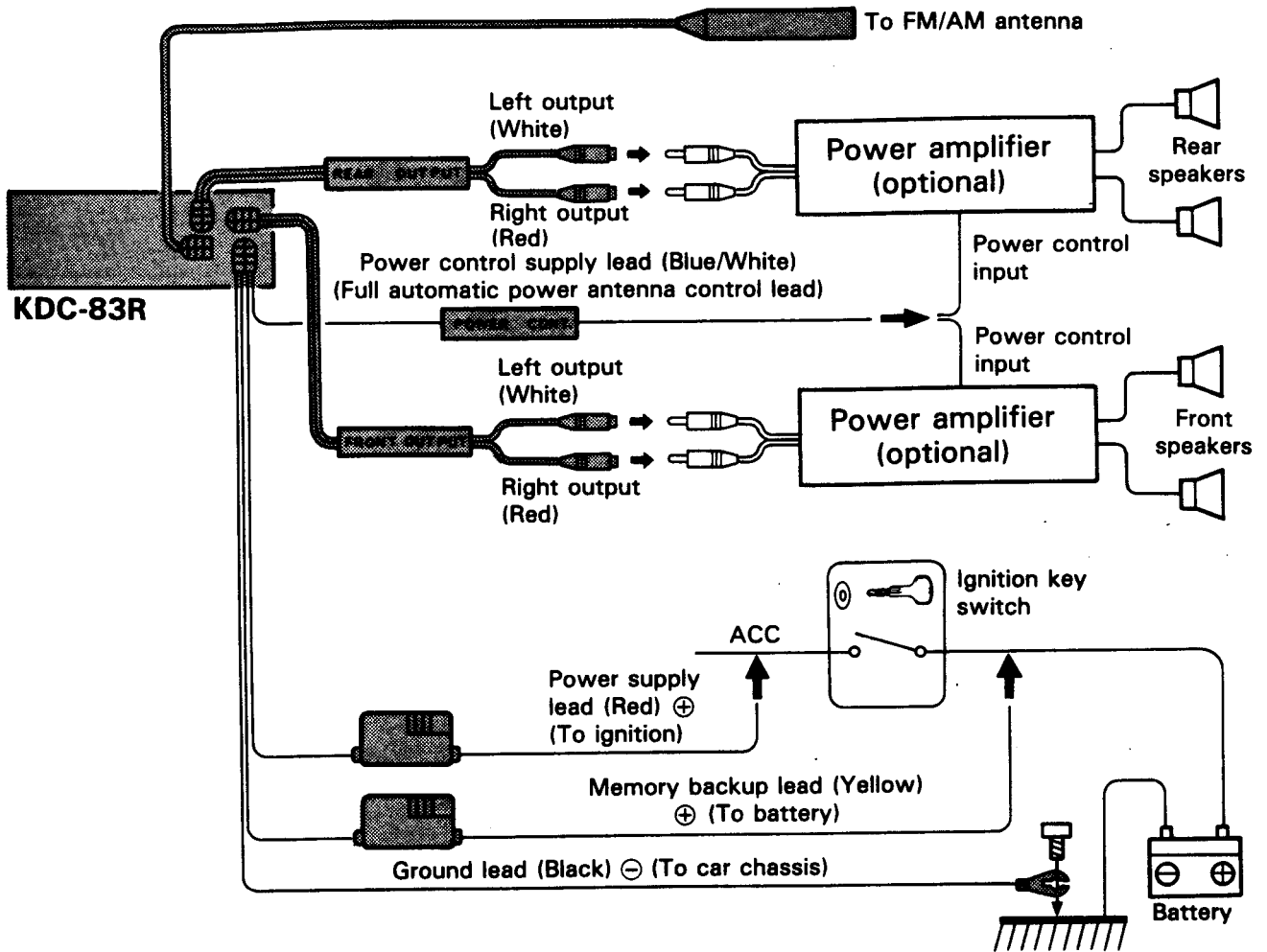
■ Install the fuse box



ACCESSORIES (KDC-83R)

No.	Part name	External View	Number of units
①	Mounting sleeve		1
②	Trimmed panel		1
③	Bracket		2
④	Metal mounting strap		1
⑤	Washer assemblies screw (M4 × 6)		1
⑥	Flat head screw (M4 × 6)		4
⑦	Wrench		2

CONNECTIONS (KDC-83R)

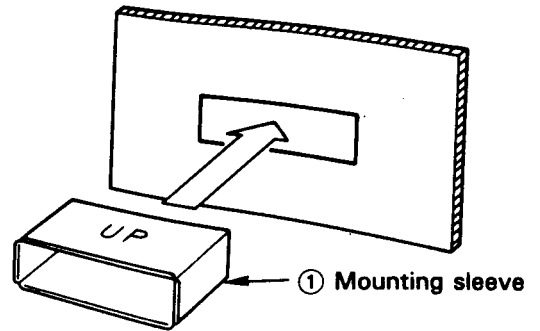


INSTALLATION (KDC-83R)

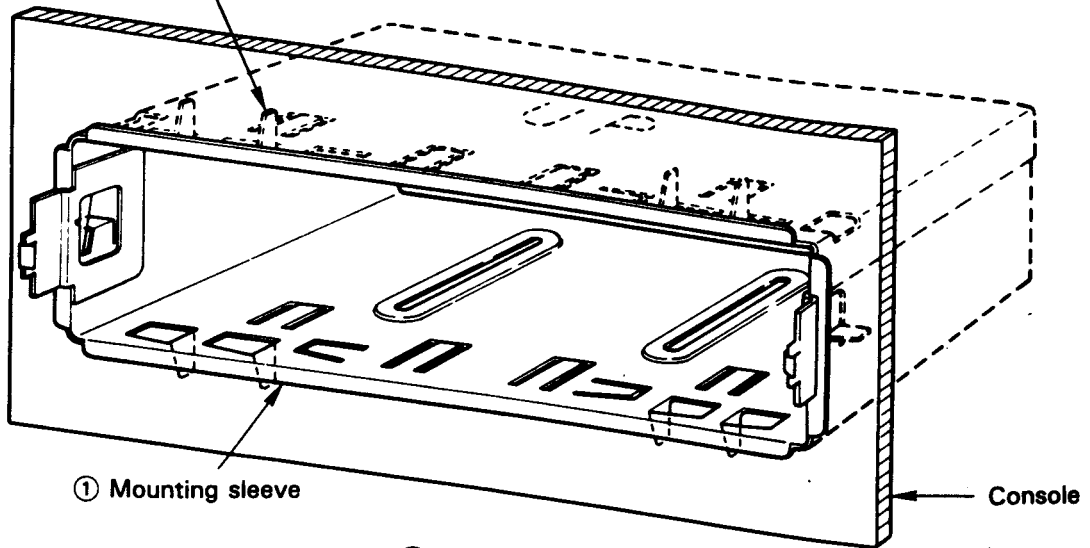
1. Install the ① Mounting sleeve.

- Install the ① Mounting sleeve to the chassis with lugs. Bend the lugs using a screwdriver.

* The lugs differ depending on the thickness of the dash panel.

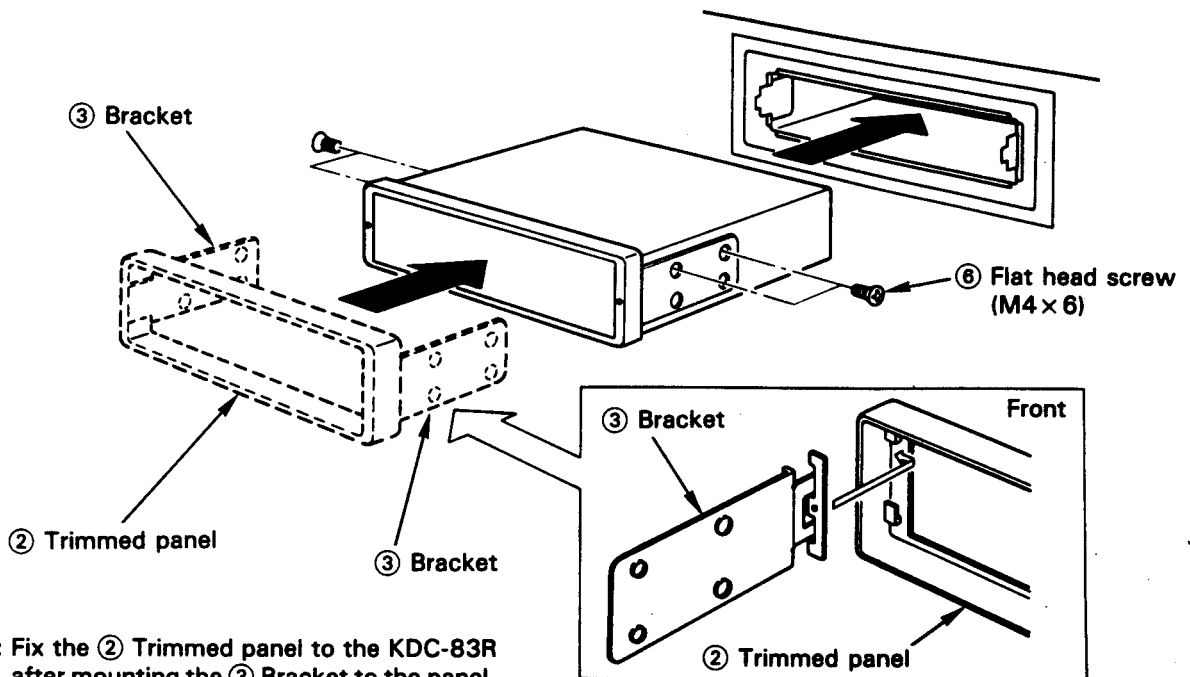


* Insert the ① Mounting sleeve with its letter "UP" upward.



2. Insert the KDC-83R into the ① Mounting sleeve.

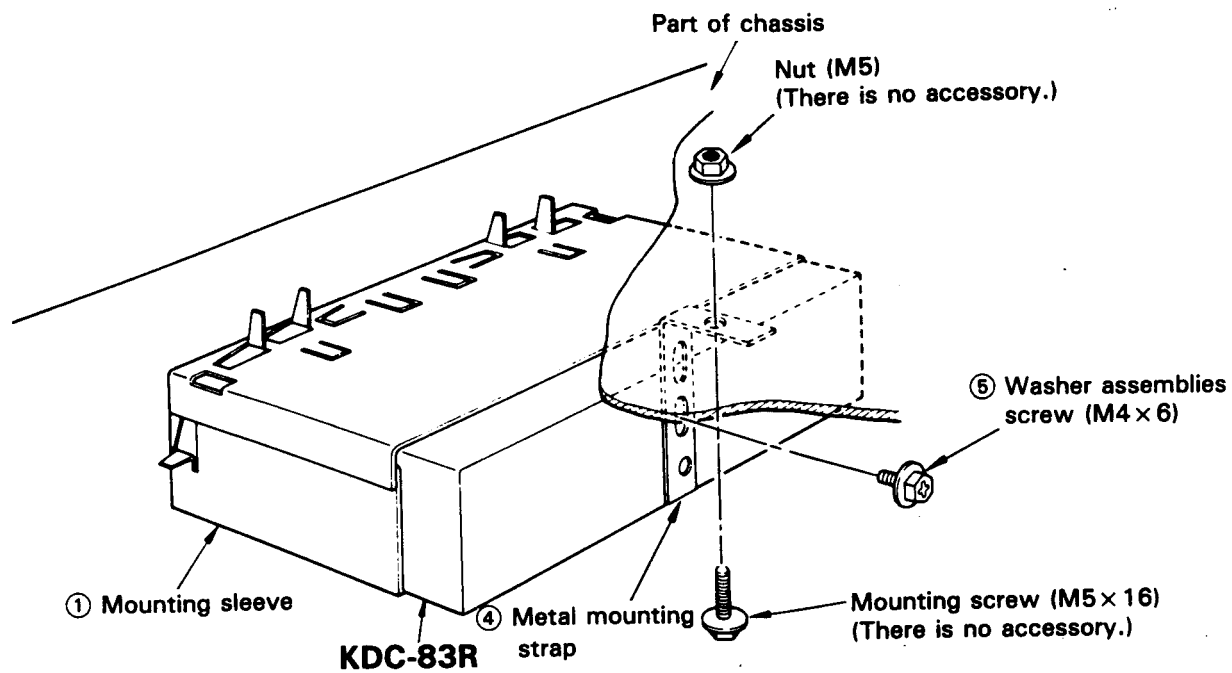
- Mount the ② Trimmed panel with ③ Brackets to the unit as shown in the figure.
- * Insert the unit into the ① Mounting sleeve, and it will be fixed with both sides.



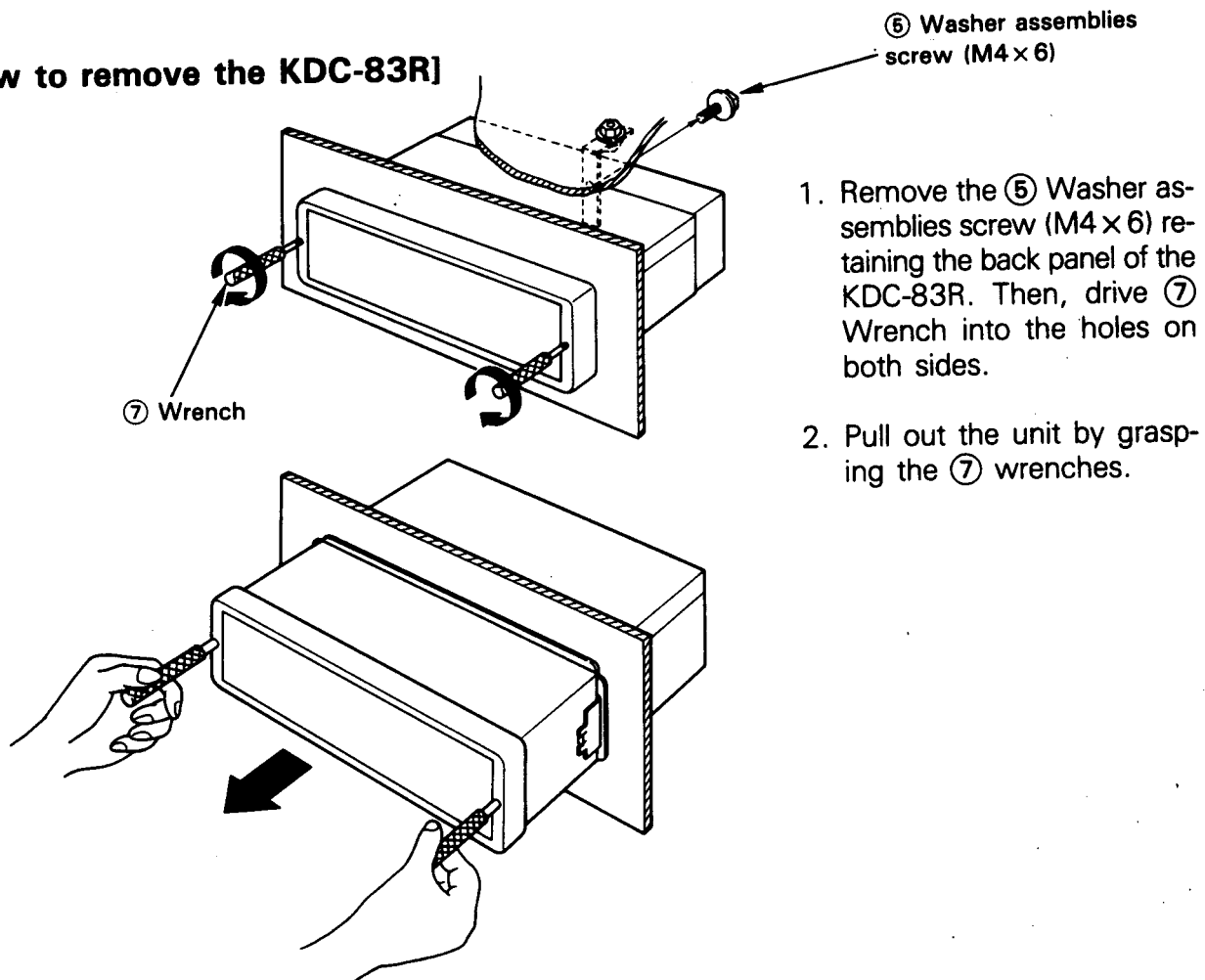
Note: Fix the ② Trimmed panel to the KDC-83R after mounting the ③ Bracket to the panel.

INSTALLATION (KDC-83R)

3. Fix the KDC-83R with a back brace



[How to remove the KDC-83R]



TROUBLESHOOTING GUIDE

What often appears to be a malfunction is often due to user error in operation or connection. When trouble occurs with your unit, please check the following before calling for service.

Symptom	Cause	Remedy
Compact disc cannot be inserted.	A compact disc has already been inserted and you are trying to insert another disc.	Eject the previously inserted disc and insert another one.
A disc is ejected immediately after being inserted.	<ol style="list-style-type: none"> 1. The compact disc is inserted upside down. 2. The compact disc is very dirty. 	<ol style="list-style-type: none"> 1. Insert the disc with the labeled side facing up. 2. Clean the disc (refer to "Cleaning of compact disc").
Even when the required track is specified, the specified track is not played or the player does not function.	The player is set to RANDOM PLAY.	Release RANDOM PLAY.
Sound is skipped by vibrations.	The compact disc is dirty or damaged.	If the sound skips even while the car is stationary, clean the compact disc (refer to "Cleaning of compact disc").
The sound quality is poor due to noise during playback.	<ol style="list-style-type: none"> 1. The compact disc is damaged or dirty. 2. The sound recorded in the compact disc itself is poor. 	<ol style="list-style-type: none"> 1. Clean the compact disc (refer to "Cleaning of compact disc"). 2. Try playing another compact disc. If its sound quality is good, the poor sound was due to the disc itself.
No sound one channel	The balance/fader control is extremely rotated to one side.	Adjust the balance/fader control.
Poor reception	The antenna is not extended.	Extend the antenna.
Operation switches do not function.	Correct operation is not obtained due to a sudden change in the power voltage, etc.	Press the Reset button of the front panel.

SPECIFICATIONS

Specifications subject to change without notice.

Disc Section

Laser Diode.....	GaAlAs ($\lambda = 780 \text{ nm}$)
Digital Filter (D/A).....	4 Times Over Sampling 16 bit (Linear)
Sampling Frequency	44.1 kHz
Conversion Rate.....	176.4 kHz
Spindle Speed	500 ~ 200 rpm (CLV)
Wow & Flutter	Below Mesurable Limit
Frequency Response ($\pm 1 \text{ dB}$)	5 Hz ~ 20 kHz
Total Harmonic Distortion (1 kHz)	0.005%
Signal to Noise Ratio	90 dB
Dynamic Range	90 dB
Channel Separation.....	85 dB
Laser Diode Properties	
Material.....	GaAlAs
Wavelength.....	780 nm
Emission Duration	Continuous
Laser Output Power.....	Less than 44.6 μW

* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

FM Tuner Section

Frequency Range (200 kHz space)	87.9 MHz ~ 107.9 MHz
(50 kHz space)	87.5 MHz ~ 108.0 MHz
Usable Sensitivity	12.0 dBf (1.1 $\mu\text{V}/75 \Omega$)
50 dB Quieting Sensitivity	15.2 dBf (1.6 $\mu\text{V}/75 \Omega$)
Frequency Response ($\pm 1 \text{ dB}$)	30 Hz ~ 15 kHz
Signal to Noise Ratio	73 dB
Selectivity	70 dB
Capture Ratio	1.5 dB
Stereo Separation (1 kHz)	40 dB

AM Tuner Section

Frequency Range (10 kHz space)	530 kHz ~ 1,700 kHz
(9 kHz space)	531 kHz ~ 1,611 kHz
Usable Sensitivity	27 dB μ

Audio Section

Tone Action (BASS).....	100 Hz $\pm 8 \text{ dB}$
(TREBLE).....	10 kHz $\pm 8 \text{ dB}$
Preout Level.....	1.0 V

General

Operating Voltage.....	14.4 V (11 ~ 16 V)
Current Consumption	1.0 A
Operating Temperature.....	- 10 ~ 50 $^{\circ}\text{C}$
Installation Size (W x H x D).....	180 x 50 x 161 mm (7-1/16 x 1-15/16 x 6-5/16 in.)
Weight.....	2.2 kg (4.8 lb)