

KRC-930

### 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 cassette-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.

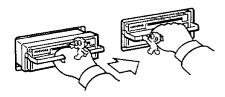
Model KRC-930 Serial number \_\_\_\_\_\_\_

©PRINTED IN JAPAN B64-0062-00(K)(T) 93/12 11

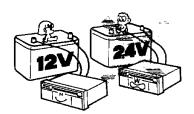


# TO PREVENT ELECTRIC SHOCK, FIRE AND OTHER INJURY. PLEASE NOTE THE FOLLOWINGS:

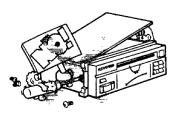
Secure the locks on the detachable case.



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



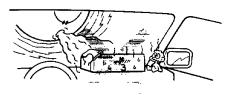
 Do not open enclosure, such as front panel, top or bottom cover.



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



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



• Do not dash water on the unit.



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



 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.

#### **CLEANING**

- 1. Turn the power off, before cleaning the unit.
- Do not use any type of abrasive pad, thinner, benzine and any such kind of objects.
- 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.



#### 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.

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### **POWER AND LOUDNESS**

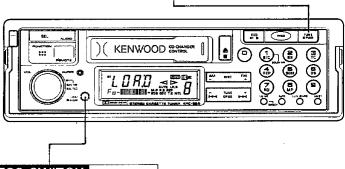
#### POWER ON/OFF

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

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

#### ALL MODE STAND-BY

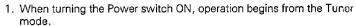
Tap the Power switch. (The power remains in the ON condition and Wait For Operation of each mode state.)



#### LOUDNESS SWITCH

When listening at low volume levels, tapping this switch will activate the loudness circuit which will compensate for the human ear's decreased response.





2. Explain how to operate hereafter with the power ON.

3. When a telephone call is received while the phone interface lead of the detachable case ① is connected, it will be displayed as "CALL" and the equipment will go into ALL MODE STAND-BY condition. When canceling ALL MODE STAND-BY, each mode has to be operated.

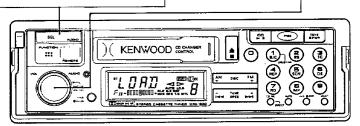
This function will not be in operation for the initial 10 seconds of the ignition key switch being switched ON.



### **AUDIO CONTROL**

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.

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

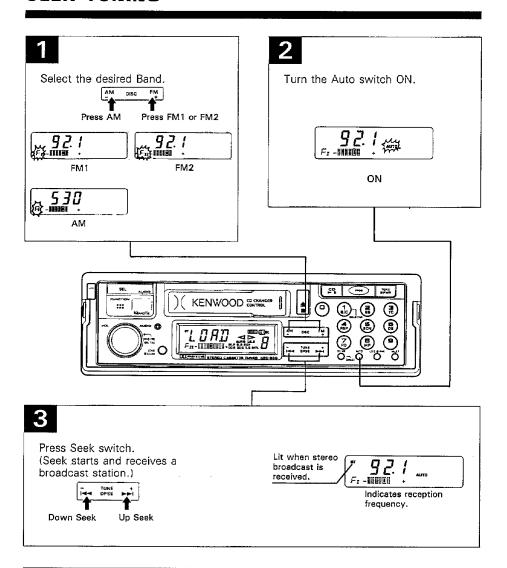


Display		Turn counterclockwise	Turn clockwis <del>e</del>
Adjust the Volume	→ Head State Stat	Volume decreases	Volume increases.
Adjust the Bass respo	nse  - 26 36 38 38 38 38 38 38 38 38 4 +  Decreases - Flat - Increases	Bass decreases.	Bass increases.
Adjust the Treble resp	Decreases — Flat — Increases	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.

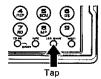


• The player will return to volume control function when more than 5 seconds elapses after pressing the Audio switch or the Audio controller, or by pressing the Audio switch for more than 1 second.

### **SEEK TUNING**



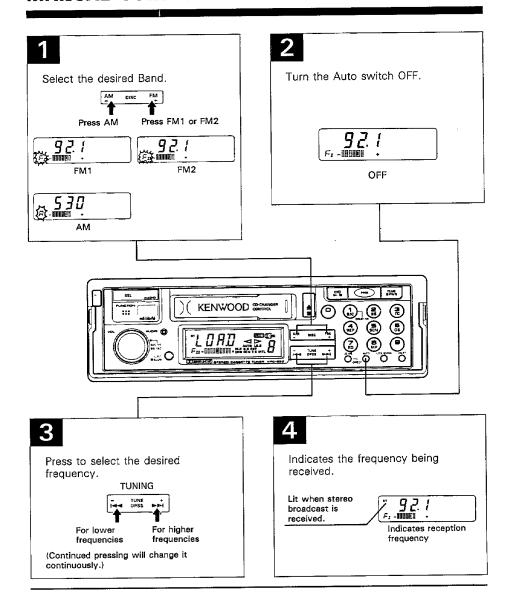
### <Local tuning>



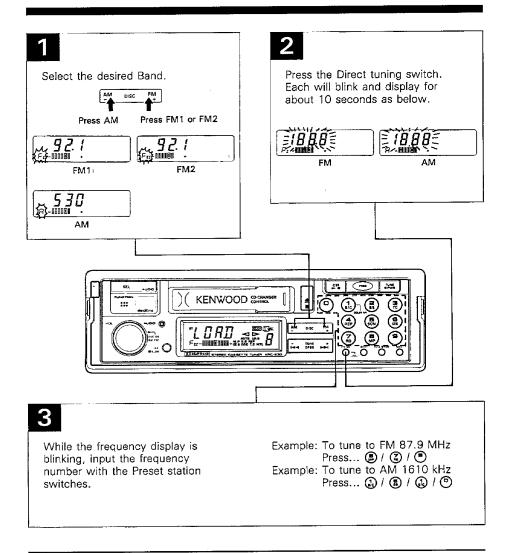


 If the Local switch is turned ON during SEEK TUNING and AUTO MEMORY, it will stop at stations only with satisfactory reception conditions.

## **MANUAL TUNING**



### DIRECT ACCESS TUNING

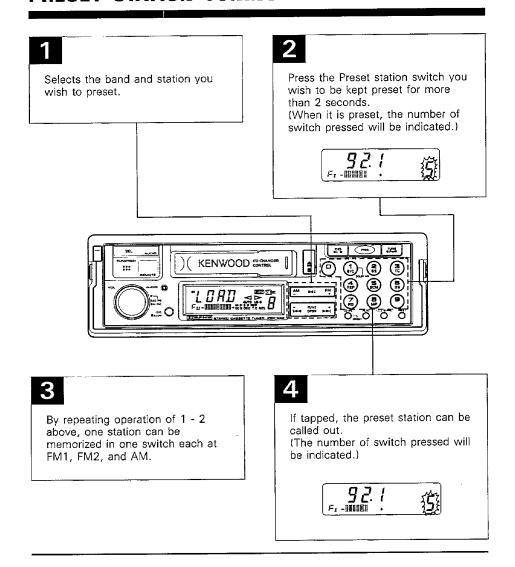




• Numbers other than a receiving frequency cannot be input.

-- 1

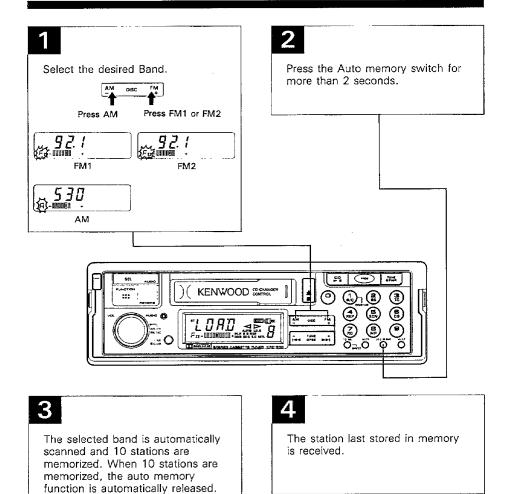
## PRESET STATION TUNING



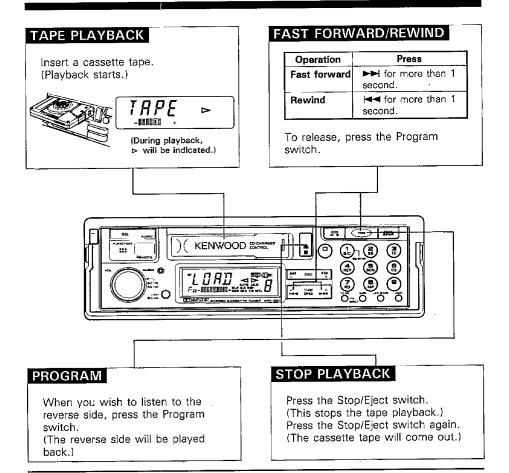


 If preset is to be made anew on the switch already preset, what was preset before will be replaced with what is to be preset.

### **AUTO MEMORY**



### TAPE PLAYBACK



#### <Playback side>

When inserted with the side A up.

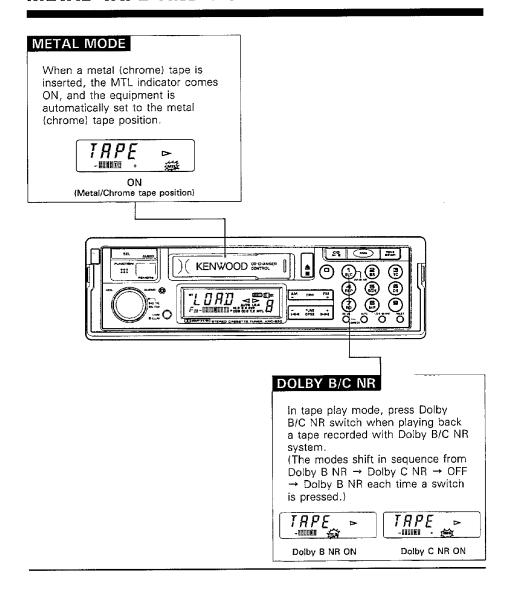
Indicator	Playback side
<b>&gt;</b>	Side A
۵	Side B

This will be reversed when inserted with the side B up.

#### <How to change the modes>

Present Mode	Destina- tion Mode	Press
Tape	Tuner	Tap the Tuner switch (Tape playback stops)
Tuner, CD Changer	Tape	or A cassette tape should be inserted.

### METAL TAPE AND DOLBY NR



### DIRECT PROGRAM SEARCH SYSTEM

### 1 BACKWARD SEARCH

During playback of a program, tap the switch for the same number of times as the number of programs to be skipped.

This allows to search a program located in the backward direction of the present program by skipping up to 9 programs. (The number of programs to be skipped is displayed blinking on the program count display.) Example:

When pressed once
(Searching the beginning of present program)

When pressed 4 times

(Searching the third program before the present program)

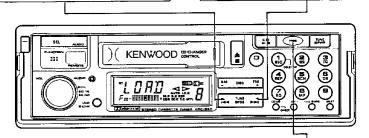
### 1 FORWARD SEARCH

During playback of a program, tap the ►► switch for the same number of times as the number of programs to be skipped.

This allows to search a program located in the forward direction of the present program by skipping up to 9 programs. (The number of programs to be skipped is displayed blinking on the program count display.) Example:

When pressed once
(Searching the beginning of the next program)
When pressed 5 times

(Searching the fifth program after the present program)



2

The rewind or fast forward operation is released when the beginning of the program selected in step 1 is detected, and tape playback starts from that position.

#### TO RELEASE

Press the Program switch to release the Direct Program Search in the middle.



- Please note that in case of the following tapes, sometimes the Direct program search system does not function properly.
- 1. When an interval between the music is less than 5 seconds.
- When a recorded portion of the low sound volume continues for more than 5 seconds.
- Depending on recording conditions, a search may not be conducted to the beginning of the musical track being played when initiated at an early part of the track.

### **INDEX SCAN**

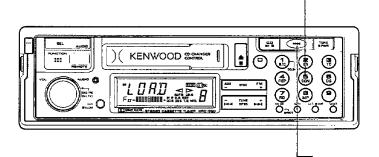
1

Press the Index scan switch. (While in the Index scan mode, the below indication is repeated.)



2

Tape is fast forwarded until the beginning of the next program is searched.



3

After the beginning of the searched program is played, the tape is fast forwarded again, and repeats the same operations for other programs on tape.

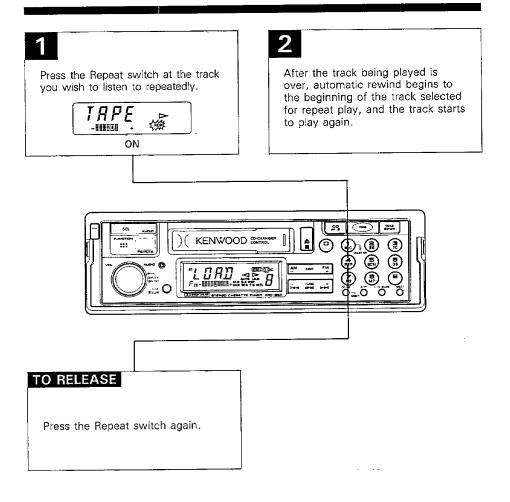
4

When the beginning of a desired program starts to be played, press the Program switch. (Index scan is released and normal tape playback starts.)



- Please note that in case of the following tapes, sometimes the Index scan does not function properly.
- 1. When an interval between the music is less than 5 seconds.
- 2. When a recorded portion of the low sound volume continues for more than 5 seconds.

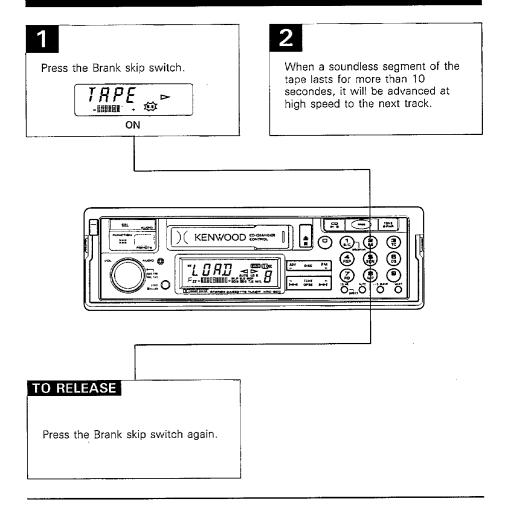
### REPEAT PLAY





- Please note that in case of the following tapes, sometimes the Repeat play does not function properly.
- 1. When an interval between the music is less than 5 seconds.
- 2. When a recorded portion of the low sound volume continues for more than 5 seconds.

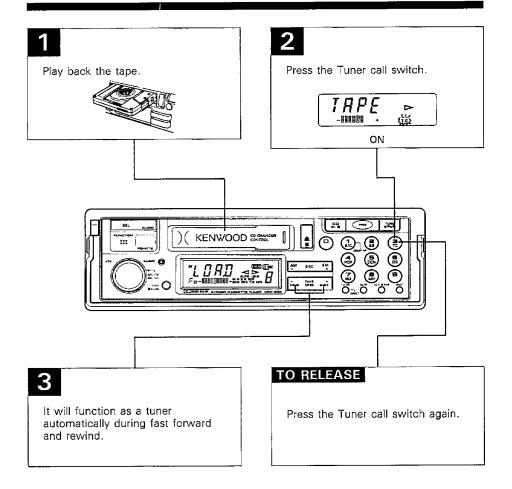
### **BLANK SKIP**



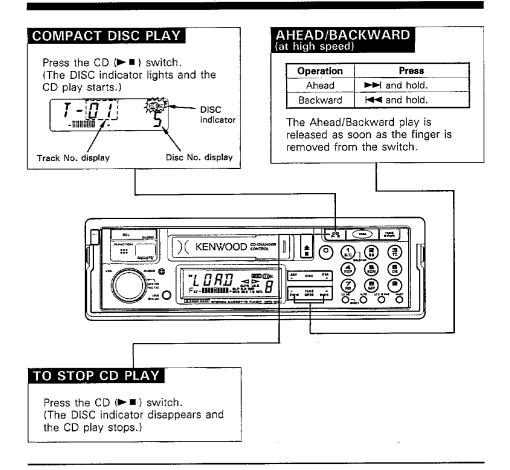


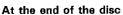
- When the below described recorded tape is used, Blank skip may not fuction correctly. However, this is not a malfunction.
- Even when there is more than 10 seconds between tracks, Blank skip may not operate if there is excessive background noise recorded, as this will not be recognized as "soundless."
- Blank skip may operate even in the middle of a recorded track, if there is a segment recorded at an extremely low sound level which last for more than 10 seconds. (In this situation, Blank skip should be set to "OFF.")

## **TUNER CALL**



## **COMPACT DISC PLAY (CD-changer is used)**





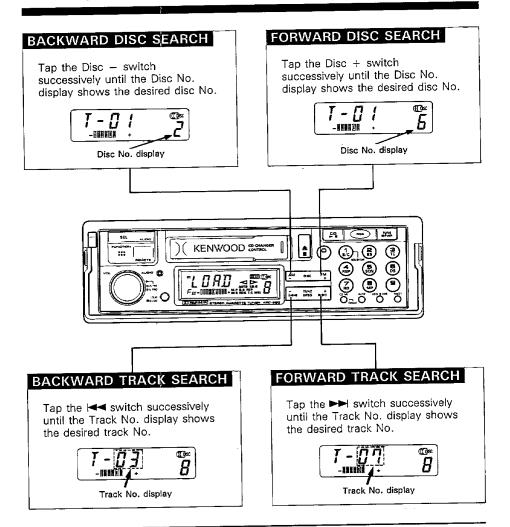


When disc reaches the end of the last selection of the next disc starts automatically. At the end of the last disc, the unit will go back to the beginning of the first disc, and the play will restart.

#### <How to change the modes>

Present Mode	Destin- ation Mode	Press
CD- Changer	Tuner	Tap the Tuner switch  (Compact disc play stops)
Tuner, Tape	CD- Changer	GD

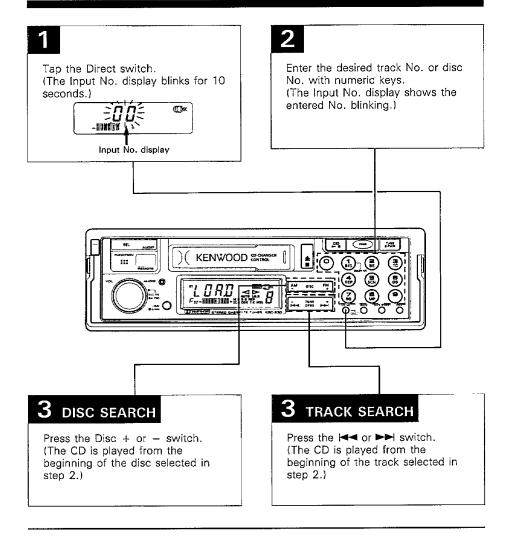
## TRACK/DISC SEARCH (CD-changer is used)





- If Backward Track Search is initiated while track No. 1 is being played, the play position always returns to the beginning of track No. 1 and other tracks cannot be searched.
- If Forward Track Search is initiated while the last track of a disc is being played, no operation takes place.
- The Disc No. display of No. 10 Disc is "0".

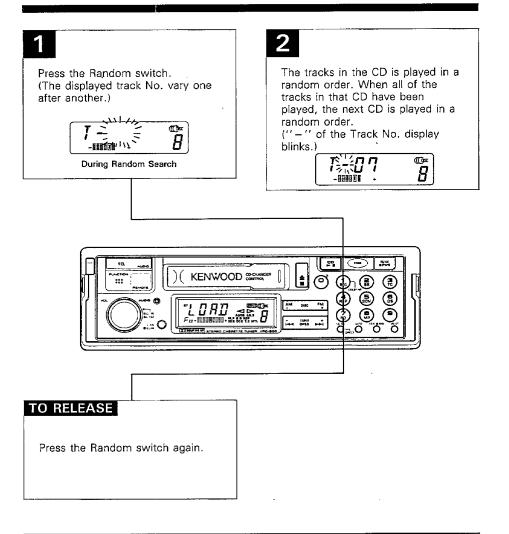
## **DIRECT TRACK/DISC SEARCH (CD-changer is used)**





- To release Direct Track/Disc search, do not press any numeric key for 10 seconds, or tap the Direct switch again.
- In case "E-(Number)" appears on the display window, please see page 39.
- Direct Track/Disc Search cannot be initiated during Memory Play, Track Scan or Random Play operation.

## RANDOM PLAY (CD-changer is used)



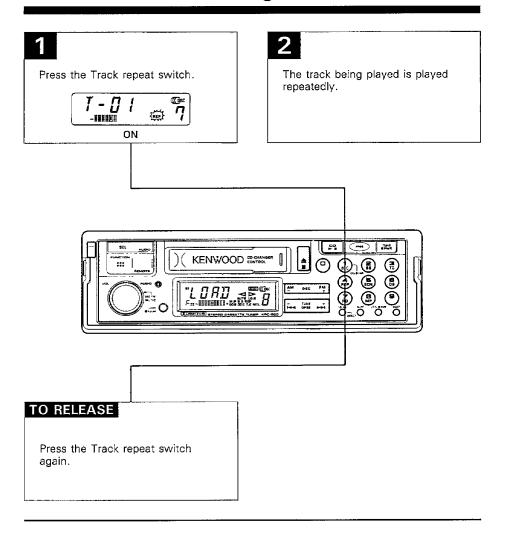


 When the Disc magazine is eject, Random play should be initiated again.



Pressing the switch during Random Play changes the track to the next random selection.

## TRACK REPEAT (CD-changer is used)



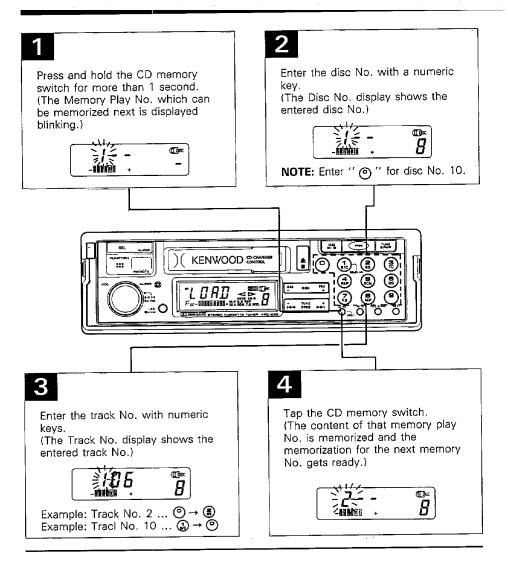


 When the Disc magazine is eject, Track repeat should be initiated again.



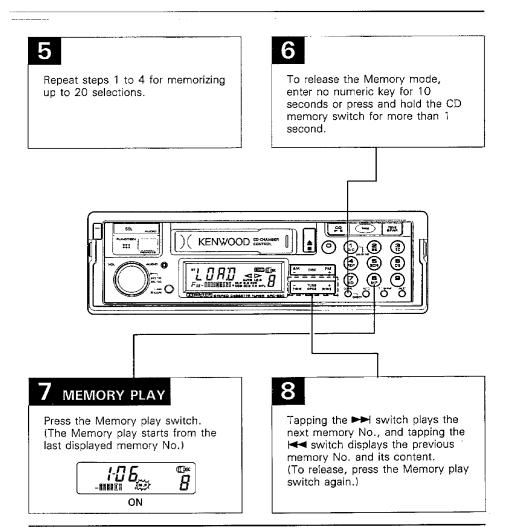
 Ahead/Backward CD Play (at high speed) cannot be initiated during Track Repeat.

## MEMORY PLAY (CD-changer is used)





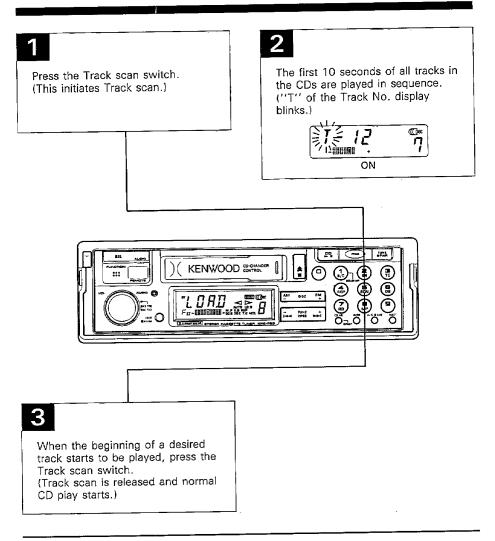
- To change the memory contents, tap the I◄ or ►►I switch until the memory No. of the content to be changed is displayed, then perform operations in steps 2 to 4 for that No. To clear the memory content, enter "② → ③ → ③".
- In case "E-(Number)" appears on the display window, please see page 39.



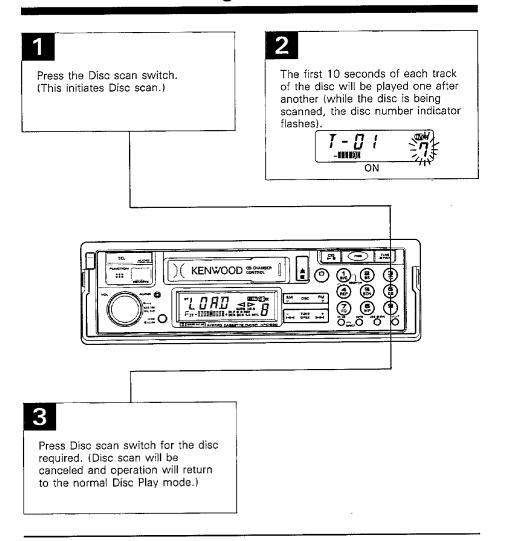


- When the Disc magazine is eject, Memory play should be initiated again.
- Direct track/disc search is not possible during Memory Play.

## TRACK SCAN (CD-changer is used)

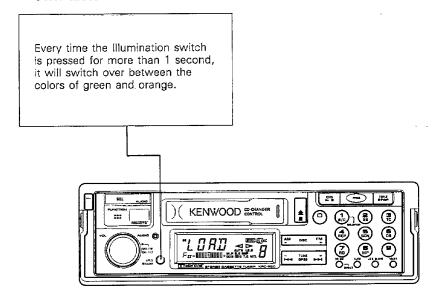


## **DISC SCAN (CD-changer is used)**



### SELECTABLE ILLUMINATION

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

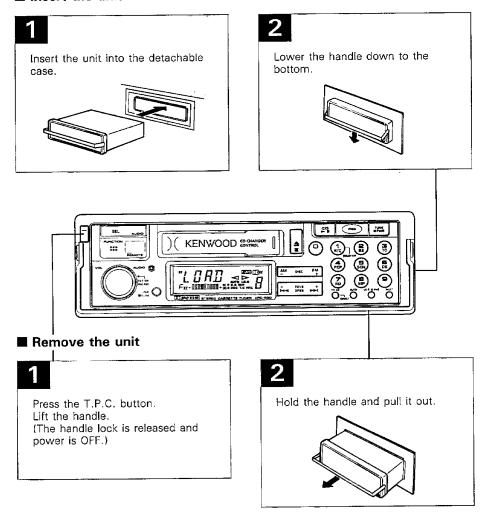




 Keeping connected the Automatic illumination/Dimmer control lead of the Detachable case (1), the illumination become dark synchronized with the car's light. Even during the power is OFF, turning ON the car's light control the illumination lights up.

## INSERTION/REMOVAL OF UNIT

#### ■ Insert the unit





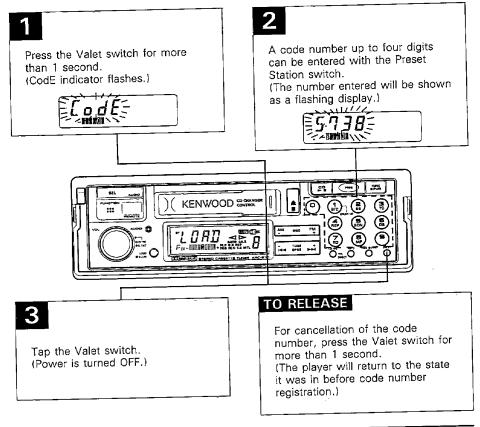
 Be sure to eject the cassette tape before removing the unit.



 When turning the Power OFF during unit removal, operation will resume from the mode selected at the time the power was turned OFF.

## **CODE PROTECTION**

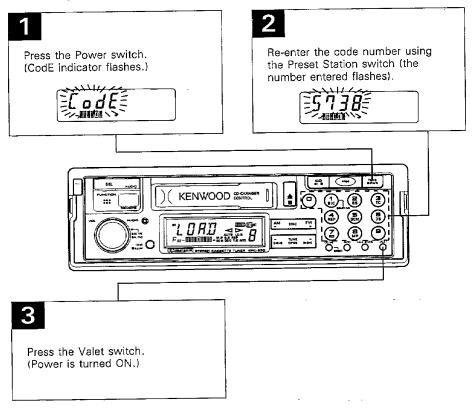
- A code number can be registered to prevent misuse.
  It can be set so that the equipment will not operate until the code number registered at the time of Power OFF is re-entered at the time of Power ON.
- Registration of code number.





 Blank and "0" are treated as different codes. Example: "1" and "0001"

### ■ Turning the power ON.



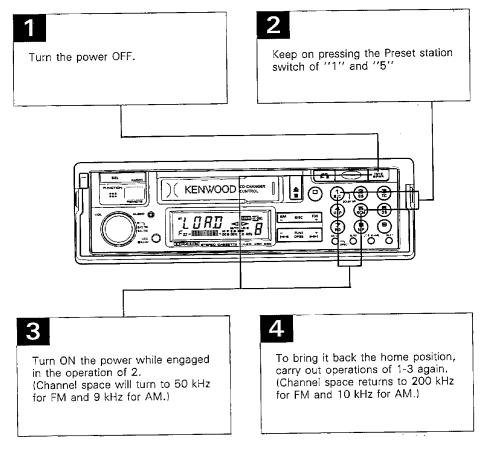


 If each operation is not performed within 10 seconds of pressing the Power switch, the power will be automatically turned OFF.

## **CHANNEL SPACE SELECTION**

■ The KRC-930 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.





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

### CARE AND MAINTENANCE

#### Notes on handling tape

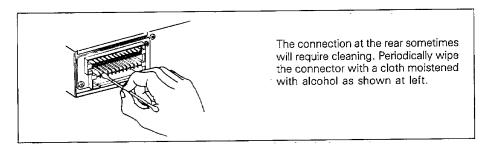
- Before loading a cassette, check the tape for slack. If there is slack tape, remove it
  using a pencil to turn one of the spools in the cassette shell.
- Do not expose the cassette tape to direct sunlight. Leaving a cassette at high temperature or humidity can deform the cassette shell or tape.
- 120-minute tape is very thin. Avoid its use, because it can easily be twisted around the pinch roller.

#### Head cleaning

Magnetic particles from the tape adhere to the head surface after a long period of use, resulting in noise and poor quality sound. Clean the head with cleaning tape available at your KENWOOD dealer. And follow the directions with the head cleaner.

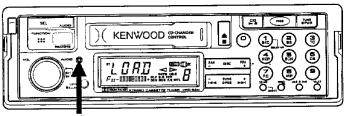
#### **CAUTION:**

 The KRC-930 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

 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

## **ACCESSORIES AND INSTALLATION**

#### ■ ACCESSORIES

No.	Part name	External View	Number of units
1	Detachable case	The state of the s	1
2	Metal mounting strap	000550055555555555	1
3	Hex. bolt (M5×20)	(D)	1
4	Hex. nut (M5)		2

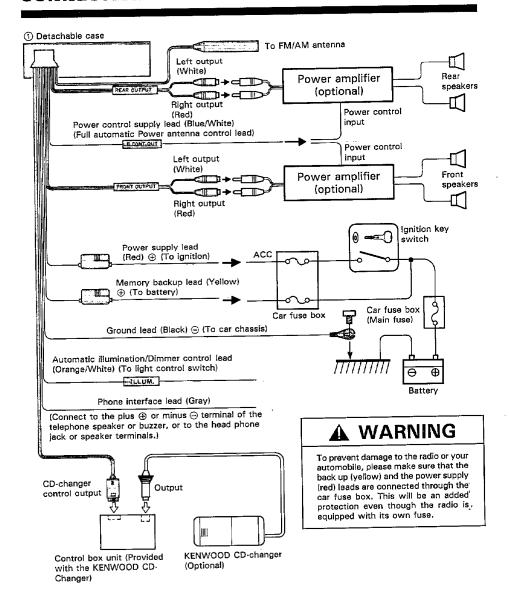
#### **■ INSTALLATION**

- Before installation and wiring, remove the 
   \(\text{terminal of the battery to prevent short-circuiting.}\)
- 2. Connect the input and output cords of the system.
- 3. Connect the ground to the metal chassis of the car.
- 4. Connect the memory backup lead (yellow).
- 5. Connect the power supply lead (red).
- 7. After installation, surely press the Reset button.

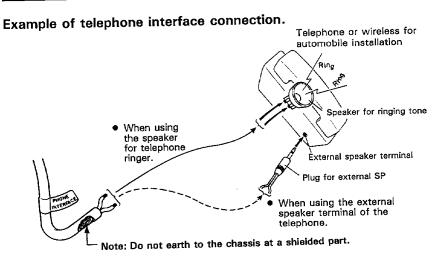


- If a fuse is blown, first check that the associated wires are not short-circuited then replace the fuse with a new one having the same capacity.
- Secure unconnected wires properly so that they do not contact the vehicle chassis.
- Do not remove the caps attached to the unused terminals.

### CONNECTIONS



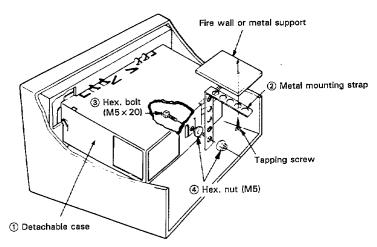
## **CONNECTIONS**



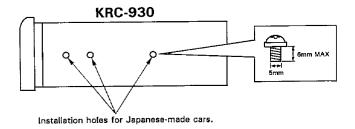
\* When extending a cable, be sure to use a shielded cable.

## **INSTALLATION**

■ 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.



■ Tighten up the TP screw (M5) into the following three holes when installation is made for Japanese-made cars.





• If an "ELECTRONIC CHASSIS LOCK" (optional) is to be used with this unit, then, buy a "CK-50A".

## 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
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.
Tonal quality is inferior.	Head is stained.	Carry out head cleaning.
Tape creaks.	Head is stained.	Carry out floor discriming.
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.
Phone interface does not function.	Phone interface lead is not connected correctly.	Connect it correctly according to the connecting method.
Phone interface functions although it is not used. (Displays "CALL" indication).	Conductor is contacting chassis and so on as phone interface lead is clipped or the cap at the tip is off.	Wire in such a way that the conductor of phone interface lead does not contact chassis and so on.

### ■ When the KENWOOD CD-changer is connected:

Symptom	Cause	Remedy
CD play does not start.	Power switch is not turned ON.	Turn the power switch ON, then press the CD (►■) switch.
The specified disc is not played and the next disc is played.	<ol> <li>The specified disc is too dirty.</li> <li>The disc is placed upside down.</li> <li>Two discs are set in the same position.</li> <li>The specified disc is placed in a position with a different number.</li> <li>The disc is damaged or scratched seriously.</li> </ol>	<ol> <li>Clean the disc.</li> <li>Eject the magazine and reinsert the disc correctly.</li> <li>Eject the magazine and set each disc correctly.</li> <li>Eject the magazine to check the disc number and the position number, then specify again.</li> <li>Play other discs.</li> </ol>
No sound is output while the changer indicator is shown.	Volume is set to the minimum level.     The incorporated microcomputer is not operating correctly.     System connections are made imperfectly (power cord, connection of pre-out jacks, or speaker connections, etc.).	<ol> <li>Increase the volume level.</li> <li>Press the Reset button of this unit.</li> <li>Check the connections according to the instruction manual. If anything is wrong, reconnect it correctly.</li> </ol>
During memory play, a track or disc which has been memorized is not played.	The memorized disc No. and/or track No. does not exist.	Perform memorying again correctly.
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 or memory play.	Release random play or memory play.

Other than the previous, this unit displays various error indications to show the following messages.

E-00: The CD-changer control output is not connected.

E-01: No disc magazine in the changer, or the magazine is not set completely.

E-02: No discs in the disc magazine.

E-03: The specified track is not present on the disc.

(Example: This appears when the 15th track is specified for a disc on which only 10 tracks are contained.)

E-04: Disc is too dirty.

Condensation has occurred on the disc, or water drops are on the disc.

Disc is set upside down.

E-05: Memory play switch is pressed with no memory.

E-99: Operation incorrect due to something being defective.
Press the Reset button on this unit.
If the "E-99" indication does not disappear with this operation, consult your nearest KENWOOD Service Agent.

**E-0D:** • When the temperature exceeds 60°C, the protection circuit is engaged to stop any operation. At this time, this indication will appear.

 Open a window or turn the air-conditioner ON to lower the temperature. After a while, this indication will go out.

 This indication also appears for several seconds when making connections, or when the Reset button is pressed,

**E-0E:** This is displayed when the condition of "E-0D" is released.

LOAD: This indication appears while a disc is being changed inside the changer.

CAUTION: Memory play, Random play, Track repeat or Track scan cannot be initiated while the LOAD indication is displayed.

<sup>\*</sup> When no indicator appears in this unit and only illumination appears, the cable connector may nearly be disconnected,

## **SPECIFICATIONS**

Specifications subject to change without notice.

FM Tuner SectionFrequency Range (200 kHz space) $87.9 \text{ MHz} \sim 107.9 \text{ MHz}$ $(50 \text{ kHz space})$ $87.5 \text{ MHz} \sim 108.0 \text{ MHz}$ Usable Sensitivity $12.0 \text{ dBf} (1.1 \mu\text{V/75 ohms})$ $50 \text{ dB Quieting Sensitivity}$ $15.2 \text{ dBf} (1.6 \mu\text{V/75 ohms})$ Frequency Response ( $\pm 3 \text{ dB}$ ) $30 \text{ Hz} \sim 15 \text{ kHz}$ Signal to Noise Ratio $73 \text{ dB}$ Selectivity $100 \text{ dB}$ Capture Ratio $1.5 \text{ dB}$ Image Response Ratio $70 \text{ dB}$ IF Response Ratio $120 \text{ dB}$ Stereo Separation (1 kHz) $40 \text{ dB}$
$\begin{tabular}{lll} \textbf{AM Tuner Section} \\ Frequency Range (10 kHz space) & .530 kHz \sim 1,700 kHz \\ & (9 kHz space) & .531 kHz \sim 1,611 kHz \\ Usable Sensitivity & .28 dB (30 \muV) \\ \end{tabular}$
Audio Section           Tone Action
General         Operating Voltage       14.4 V (11 ~ 16 V allowable)         Current Consumption       0.8 A at Rated Power         Installation Size (W × H × D)       182 × 52 × 159 mm         (7-1/6 × 2 × 6-1/4 in.)
Weight