

# Clarion

Owner's manual  
使用说明书

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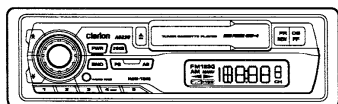
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# AB230

AM/FM CASSETTE PLAYER

AM/FM 盒式磁带放音机



## **INFORMATION FOR USERS:**

CHANGES OR MODIFICATIONS TO THIS PRODUCT NOT APPROVED BY THE MANUFACTURER WILL VOID THE WARRANTY AND WILL VIOLATE FCC APPROVAL.

# 1. FEATURES

## **Tuner**

Electronic Quartz-Locked PLL Tuning  
AM/FM Bands—1 AM, 4 FM  
20 FM/5 AM Touchbutton Memory  
Seek Up/Down Tuning  
Preset Station Scan (PS)  
Automatic Station Store (AS)  
**MAGI-TUNE** FM Reception System

## **Tape**

Auto Reverse  
Locking FF/REW  
Hard Permalloy Dual Gutter Head

## **Audio**

Electronic Audio Controls  
(Volume/Bass/Treble/Balance/ Fader)  
4-Way Balance Controls  
Z-Enhancer with 3 Mode Selector  
160 W (40 W × 4) Maximum Power Output

## **General**

Night Illumination  
Digital Quartz Clock  
Power ANT Turn-On Trigger  
Full Information LCD Display  
Monitor Mode  
DIN Chassis

## **Chassis**

DIN Chassis with ISO Mounting Capability  
Dimensions:  
178mm Width × 50mm Height × 152mm  
Depth

**Be sure to unfold and read the next page.**

请务必展开并阅读下页。

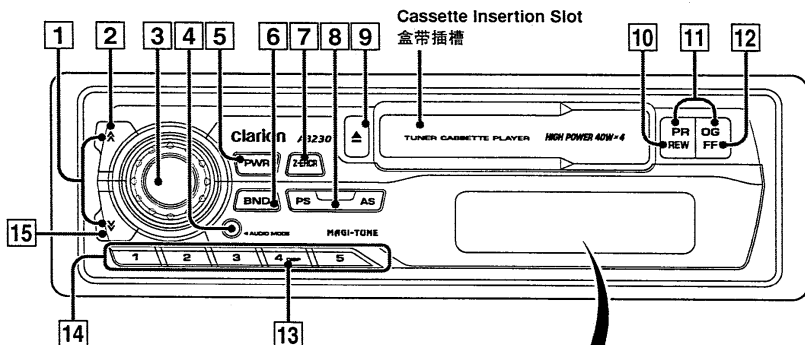


## 2. CONTROLS / 控制器

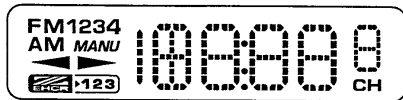
**Note:** Be sure to unfold this page and refer to the front diagrams as you read each chapter.

注意：您在阅读以下各个章节时，请展开本页，并参照这些前视图。

### SOURCE UNIT / 主机



### DISPLAY / 显示屏



## 3. BUTTON TERMINOLOGY

### Note:

• Be sure to read this chapter referring to the front diagrams of chapter 2. CONTROLS on page 3 (unfold).

- 1 Up and Down (▲ and ▼) Buttons
- 2 Function Button 1
- 3 Rotary Knob
- 4 A-M (Audio Mode) Button
- 5 POWER Button
- 6 BAND (Tuning Mode) Button
- 7 Z-EHCR (Z-Enhancer) Button
- 8 PS/AS (Preset Station Scan/Automatic Station Store) Button
- 9 Eject (▲) Button
- 10 REW (◀◀) Button
- 11 PROG (Program) Button
- 12 FF (▶▶) Button
- 13 DISP (Display Selector) Button
- 14 Preset Buttons
- 15 Function Button 2

## 4. CASSETTE PRECAUTIONS AND CARE

1. Tape slack can lead to operating difficulties. Remove tape slack before inserting a cassette, particularly when using C-90 or prerecorded cassettes.
2. Use C-30 to C-90 cassettes. Avoid using C-120 or longer cassettes (The very thin tape may stretch or break).
3. Clean the head periodically with a good commercial head cleaner. Avoid touching the head with magnetic or hard objects.
4. Do not oil the cassette mechanism.
5. Always remove the cassette from the mechanism when not in use. Exposure to direct sunlight, extreme temperatures or high humidity may damage cassettes.

## 5. OPERATION

### Note:

- Be sure to read this chapter referring to the front diagrams of chapter 2. **CONTROLS** on page 3 (unfold).

### Basic Operation

#### CAUTION

When this unit is turned on, starting and stopping the engine of a car with its volume raised to the maximum level may harm your hearing. Be careful about adjusting the volume.

- 1) Press the POWER button [5].
- 2) Turning the Rotary knob [3] clockwise increases the volume; turning it counterclockwise decreases the volume.
  - \* The volume level is from 0 (minimum) to 33 (maximum).

### Audio Mode Adjustments

Press the A-M button [4] to select the adjustment mode. The mode switches as follows each time the A-M button is pressed:  
BASS → TREB → BAL → FAD → Previous mode

### Adjusting the Bass

- 1) Press A-M button [4] and select "BASS".
- 2) Turning the Rotary knob [3] clockwise emphasizes the bass; turning it counterclockwise attenuates the bass.
  - \* The factory default setting is "0". (Adjustment range: -6 to +6)

- 3) When the adjustment is complete, press A-M button [4] several times until the function mode is reached.

### Adjusting the Treble

- 1) Press A-M button [4] and select "TREB".
- 2) Turning the Rotary knob [3] clockwise emphasizes the treble; turning it counterclockwise attenuates the treble.
  - \* The factory default setting is "0". (Adjustment range: -6 to +6)
- 3) When the adjustment is complete, press A-M button [4] several times until the function mode is reached.

### Adjusting the Balance

- 1) Press A-M button [4] and select "BAL".
- 2) Turning the Rotary knob [3] clockwise emphasizes the sound from the right speaker; turning it counterclockwise emphasizes the sound from the left speaker.
  - \* The factory default setting is "0". (Adjustment range: L9 to R9)
- 3) When the adjustment is complete, press A-M button [4] several times until the function mode is reached.

## Adjusting the Fader

- 1) Press A-M button [4] and select "FAD".
- 2) Turning the Rotary knob [3] clockwise emphasizes the sound from the front speakers; turning it counterclockwise emphasizes the sound from the rear speakers.
  - \* The factory default setting is "0". (Adjustment range: F9 to R9)
- 3) When the adjustment is complete, press A-M button [4] several times until the function mode is reached.

## Setting the Z-enhancer

This unit comes with three types of sound tone effects stored in memory. Select the one you prefer. \* The factory default setting is "Z-EHCR OFF". Each time you press Z-EHCR button [7], the tone effect changes in the following order. "Z-ENHANCER 1" → "Z-ENHANCER 2" → "Z-ENHANCER 3" → "Z-EHCR OFF" → "Z-ENHANCER 1"...

- Z-ENHANCER 1: bass emphasized
- Z-ENHANCER 2: treble emphasized
- Z-ENHANCER 3: bass and treble emphasized
- Z-EHCR OFF: no sound effect

## Switching the Display

While pressing the BAND button [6] press the DISP button [13] to enter the clock display mode. Main display → Clock display → Main display

## Setting the Clock

- 1) While pressing the BAND button [6], press the DISP button [13] to enter the clock display mode.
- 2) While pressing the BAND button [6], press and hold the DISP button [13] for 2 seconds or more. This enables the clock editing mode.
  - \* The editable fields will be indicated when the display flashes.
- 3) To move between the hour and minute fields, use the Up (hour) and Down (minute) buttons [1].
- 4) To store the clock setting, press the BAND button [6].

### Notes:

- If you select another operation mode before completing the above procedure, the clock setting operation will be canceled.
- Removing the vehicle's battery for a check or repair will cause the clock to reset to 1:00. Set the clock again if this happens.

## Tape Operation

### Loading Tapes

Insert the cassette tape into the Cassette insertion slot with the side on which the tape is exposed facing the right. Playback starts automatically.

\* When the end of the cassette tape is reached, the auto reverse mechanism is activated and the other side of the tape begins playing automatically.

### Note:

- Fully insert the cassette tape into the cassette insertion slot.

### Listening to a tape which is already loaded

Press the POWER button [5] to select the tape mode. Playback begins automatically.

### Ejecting Cassette Tapes

Press the Eject button [9]. The cassette tape is ejected.

### Fast-Forwarding and Rewinding

Use the FF button [12] and REW buttons [10].

▶▶: Press this to fast-forward the tape.

◀◀: Press this to rewind the tape.

\* It is possible to listen to the radio during fast-forward, rewind or search operations.

### Switching to the Other Side of the Tape

Press the PROG button [11] both the FF button [12] and REW button [10] together at the same time. Playback is switched automatically to the other side of the cassette tape.

## Radio Operation

### FM Reception

For enhanced FM performance the **MAGI-TUNE** tuner includes signal actuated stereo control and Multipath noise reduction circuits.

### Listening to the Radio

- 1) Press the POWER button [5] to select the radio mode. The radio turns on.
- 2) To tune to a desired preset station, first press the BAND button [6] and select FM1, FM2, FM3, FM4 or AM.  
The band changes as follows each time the BAND button is pressed:  
FM1 → FM2 → FM3 → FM4 → AM → FM1
- 3) Use the corresponding Preset buttons [15] to select the desired station.

### Seek Tuning

- 1) Press the BAND button [6] and select the desired band.
- 2) Press the Up or Down buttons [1] to seek Up or Down the frequency band. Seek tuning automatically stops when a station is found.

### Manual Tuning

- 1) Press the BAND button [6] to select the desired band.
- 2) Press and hold the BAND button for more than 2 seconds. "MANU" turns on and the manual tuning mode is selected.
- 3) Use the Up and Down buttons [1] to manually tune up or down the desired frequency band.

### Presetting Stations

A total of 25 stations can be preset, 5 each for the FM1, FM2, FM3, FM4 and AM bands.

#### Note:

- When a station is preset, the station previously stored in the memory at that position is cleared.

#### Presetting stations manually

- 1) Press the BAND button [6] to select the band at which to store the station.

- 2) Use the Up and Down buttons [1] to tune in the station to be preset.
- 3) Press and hold the corresponding Preset button [15] for at least 2 seconds to store the station into memory.

#### Auto store function (Automatic Station Store)

- 1) Press the BAND button [6] to select the band at which to store the stations.
- 2) Press and hold the AS button [8] for at least 2 seconds. Stations with good reception are automatically stored at preset to the five buttons [15] 1 to 5  
\* If there are fewer than 5 stations with good reception, the stations previously stored at the remaining buttons are not cleared.

### Preset Scanning (Preset Station Scan)

When the PS button [8] is pressed, the preset memory numbers flash and the stations are tuned in for 7 seconds each in the order in which they were stored. Press the PS button again to cancel the preset scanning mode.

## 6. TROUBLESHOOTING

Problem	Cause	Measure
Power does not turn on (or no sound is produced)	Fuse is blown.	Replace with a fuse of the same amperage as the old fuse.
	Connections are improper.	Read the attached "Installation/Wire Connection Guide" once again and wire properly.
Sound quality is poor.	Playback head is dirty.	Use a cleaning tape, etc. to clean the head.
No sound while unit can be operated.	Power ANT lead is shorted to the ground.	Turn the unit off, first. Remove all connecting wires from the power ANT lead, and turn the unit on, then re-connect a wire one by one to the power ANT lead. When sound is muted again, check the unit with a wire connected last.

## 7. SPECIFICATIONS

### FM Tuner

Frequency Range.....87.5 MHz to 108 MHz  
 Usable Sensitivity.....11 dBf  
 50 dB Quieting Sensitivity.....17 dBf  
 Alternate Channel Selectivity.....75 dB  
 Stereo Separation (1 kHz).....35 dB  
 Frequency Response ( $\pm 3$  dB)  
 .....30 Hz to 15 kHz

### AM Tuner

Frequency Range.....531 kHz to 1,602 kHz  
 Usable Sensitivity.....25  $\mu$ V

### Tape

Wow & Flutter (WRMS).....0.4%  
 Channel Separation (1 kHz).....35 dB  
 Signal to Noise Ratio.....120  $\mu$ s (normal): 40 dB  
 Frequency Response ( $\pm 3$  dB)  
 120  $\mu$ s (normal).....30 Hz to 16 kHz

### Power Amplifier

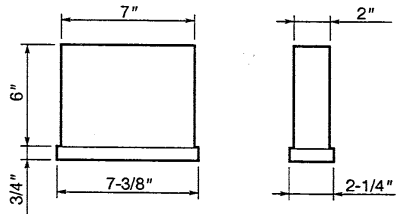
Maximum Power Output.....160 W (40 W  $\times$  4ch)  
 Continuous Average Power Output  
 .....14 W  $\times$  4, into 4  $\Omega$ , 20 Hz to 20 kHz,  
 1% THD

### Pre-Amplifier

Bass Control Action (100 Hz)..... $\pm 6$  dB  
 Treble Control Action (10 kHz)..... $\pm 6$  dB

### General

Power Supply Voltage  
 .....14.4 V DC (10.8 V to 15.6 V allowable)  
 Current Consumption..... Less than 10 A  
 Speaker Impedance  
 .....4  $\Omega$  (4  $\Omega$  to 8  $\Omega$  allowable)  
 Weight.....2.87 lb. (1.3 kg)  
 Dimensions  
 .....7" (178 mm) Width  $\times$  2" (50 mm) Height  $\times$   
 6" (152 mm) Depth



### Notes:

- Specifications comply with EIA Standards.
- Specifications and design are subject to change without notice for further improvement.

**Memo**