

USER'S GUIDE

BACKEYE[®]
TFT LCD COLOUR Rear View Monitor

PLEASE READ CAREFULLY BEFORE USING AND KEEP FOR REFERENCE.

BRIGADE

Model: BE-868M

Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your dealer regarding this product.

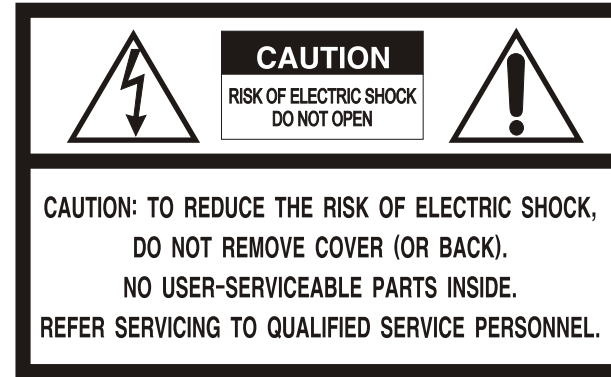
Model No.: BE-868M

Serial No.: _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electric shock, do not open the cabinet. Refer servicing to qualified personnel only.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

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CHARACTERS

TFT LCD Color Monitor

BE-868M (TFT LCD Monitor) is designed for the automobile rear vision system.

- **You can use the monitor from 10V DC power to 32V DC power.**
- **The monitor is automatically turned on when you set the gear lever into the "R" position.**
- **You can connect up to three cameras into the monitor.**
- **An accident can be avoided by hearing some noise through a microphone, built in the camera making you alert of dangerous situations.**

SUGGESTIONS

Safety

- Use only DC 10V to 32V.
- In case that dust or liquid was soaked into the case, please turn off power and consult the experienced technician before using.
- Do not cover air duct for preventing from considerable rise in temperature.

Installation

- Do not install the unit in an extremely hot or humid place (radiator, air duct, etc.) or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- The monitor is not designed for waterproof.

General cleaning information

- If your vehicle has been parked in direct sun light resulting in a considerable rise in temperature inside the vehicle, allow the unit to cool off before operating.
- Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzene as they might damage the finish of the unit.

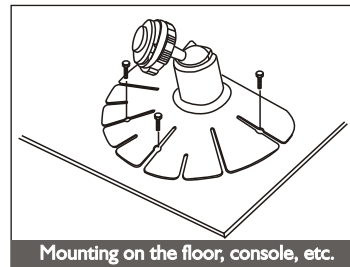
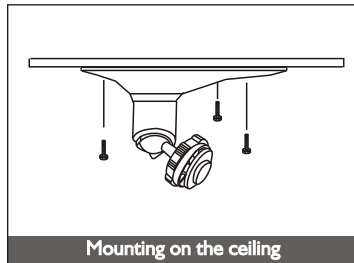
Warning

While driving, do not watch Video

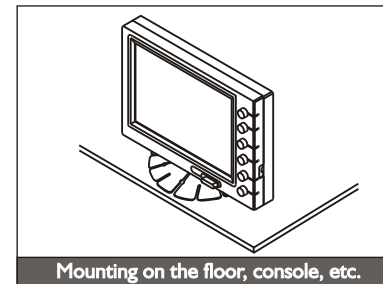
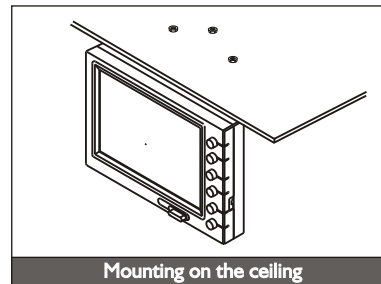
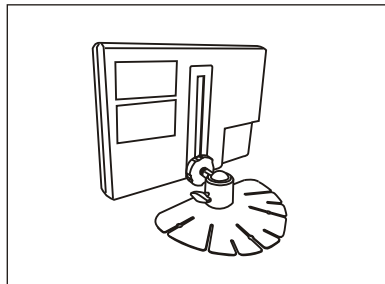
INSTALLATION OF MONITOR

Install the monitor on a place which can stand more weight than 5Kg (10.1b).

- Clean the place before installation.
- Remove the protective paper covering the bottom of the bracket.
- Stick the provided bracket on the surface and fix it firmly with the screws.

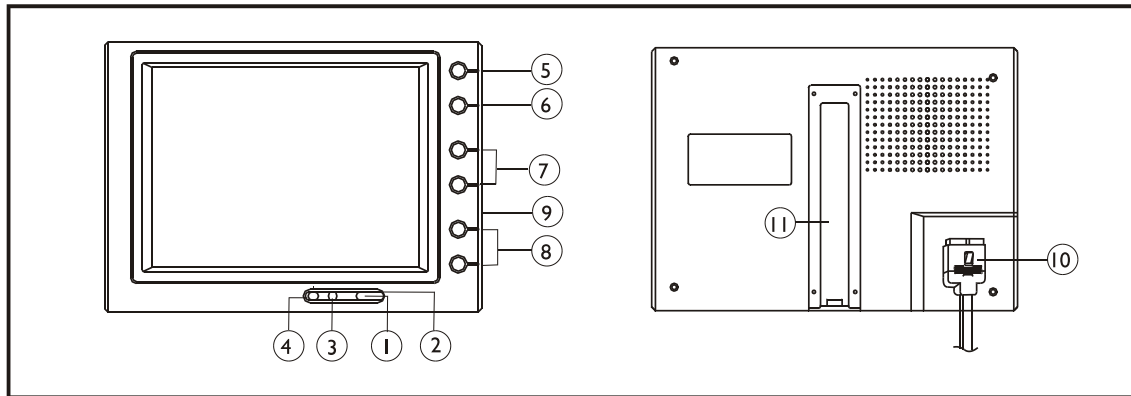


- Adjust the angle of the monitor and fasten the handle screws strongly.



EXPLANATION OF FUNCTION

- When power lamp of the monitor is on, the monitor is in stand-by mode. The monitor is not turned off until the ignition key on the off position.
- Shifting the gear into the reverse, the monitor automatically shows the view caught by the Camera 1.



FUNCTION

- 1) **POWER LED**
When the screen is turned on, it indicates power on and stand-by mode.
- 2) **POWER SWITCH**
Putting the gear into the reverse, the monitor automatically shows the view caught by The Camera 1.

EXPLANATION OF FUNCTION

3) REMOTE-CONTROLLER SENSOR (OPTION)

- The monitor is operated by a remote-controller.
- Point the remote-controller towards the sensor, on the front of the monitor in order to operate it.

4) BRIGHTNESS SENSOR (AUTOMATIC BRIGHTNESS CONTROL)

- The brightness of the monitor will be adjusted automatically with the CDS according to the circumstances.
- It is designed as a nightglow button on the monitor for customers' convince using it at night.
 - * This function above is working only when the day/night switch is on.

5) CAMERA SELECTOR BUTTON

- The cameras and A/V device can be selected, which is connected cameras into the monitor according to the turns as follows.

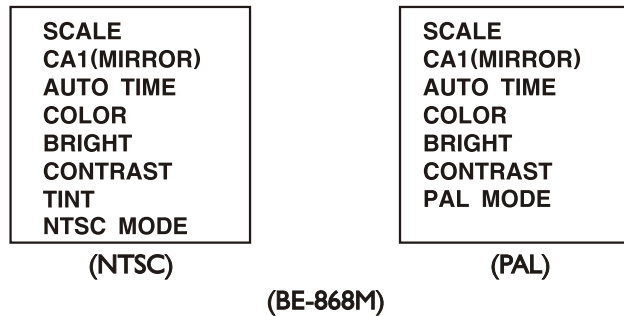
CA 1, CA 2, CA 3, A/V

The OSD indicates each camera on the monitor, which is being connected now.

EXPLANATION OF FUNCTION

6) MENU BUTTON

- If you press the button "MENU", the list of selectable function appears on the monitor.
- It shall be disappeared within 5 seconds otherwise you chose the function or any other input signal.



- Selectable function lists disappear within 5 seconds if there is no new input sign.
- You can control any function what you want to control any function on the function lists.

EXPLANATION OF FUNCTION

7) VOLUME UP, DOWN CONTROL BUTTON

- This button can adjust the speaker's volume.
- ▲ : Turning up the volume, press this button and it will be up gradually.
During process of this above, the marks below is shown on the monitor.
(| | | | | | | →)
- ▼ : Turning down the volume, press this button and it will be down gradually.
During process of this above, the marks below is shown on the monitor.
(← | | | | | |)
- The function above is preceded than any others. (But, this function does not work when the Auto Time function is being adjusted.)

8) CH UP, DOWN CONTROL BUTTON

- This button can select a function on the Menu presenting on the monitor.
- ▲ : To move the cursor upward, use this button
- ▼ : To move the cursor downward, use this button.

When the monitor is selected CA1

- ▲ : To see the "SCALE", use this button.
- ▼ : To remove the "SCALE", use this button.

EXPLANATION OF FUNCTION

9) DAY/NIGHT SWITCH.

- **If the Day/Night Switch is operated automatically otherwise it is off.**

10) INPUT TERMINAL

- **Camera controlbox will be connected to the input terminal.**

11) BRACKET RAIL

- **Mounting bracket is adjustable.**

EXPLANATION OF FUNCTION

METHOD OF ADJUST

1. SCALE CONTROL

- While driving, it can be measured that the distance from other cars or any objects behind with the electronic scale.
- To set up the scale, please follow the instruction as below.
 - 1) Press the "MENU" button
 - 2) Move the cursor to the "SCALE" with the Channel button.
 - 3) Press the "C.A. SEL" button.
 - 4) Select one of three scale types with the Channel button.
 - 5) Choose it with the "C.A. SEL" button.
 - 6) Press the "MENU" button.

2. CA1 (MIRROR) CONTROL

- 1) It can be easily selected that the mirror or normal image as followings.
- 2) Press the button "MENU".
- 3) Select the "CA1" by the button "CA. SEL".
- 4) Choose Mirror or Normal Image by the button "CH".
- 5) Select Mirror or Normal Image by the button "CA. SEL".
- 6) Press the button "MENU".

EXPLANATION OF FUNCTION

3. AUTO TIME CONTROL

- The scanning time of each camera can be set up according to your own demand.
 - 1) Press the button "MENU".
 - 2) Select the "AUTO TIME" by the button "CA. SEL".
 - 3) Choose the "AUTO ON" by the button "CA. SEL".
 - 4) Move to each camera by the button "CH" and set up the scanning time of each camera with the button "VOL". After finishing the setting, move to the next with the button "CH".
 - 5) Press the button "MENU" when you finish the setting up of the scanning time for each camera. Then you will go back to the initial screen or the OSD on the screen shall disappear automatically after 5 seconds.
Do not forget to change "Auto Off" into "Auto On" before your settle job.

4. COLOR CONTROL

- 1) Press the button "MENU".
 - 2) Select the "COLOR" by the button "CA. SEL".
 - 3) Adjust it by the button "CH".
 - 4) Press the button "MENU" when you finish the set-up.
- Then you will go back to the initial screen or the OSD on the screen shall disappear automatically after 5 seconds.

EXPLANATION OF FUNCTION

5. BRIGHTNESS CONTROL

- 1) Press the button "MENU".**
 - 2) Select the "COLOR" by the button "CA. SEL".**
 - 3) Adjust it by the button "CH".**
 - 4) Press the button "MENU" when you finish the set-up.**
- Then you will go back to the initial screen or the OSD on the screen shall disappear automatically after 5 seconds.**

6. CONTRAST CONTROL

- 1) Press the button "MENU".**
 - 2) Select the "CONTRAST" by the button "CA. SEL".**
 - 3) Adjust it by the button "CH".**
 - 4) Press the button "MENU" when you finish the set-up.**
- Then you will go back to the initial screen or the OSD on the screen shall disappear automatically after 5 seconds.**

EXPLANATION OF FUNCTION

7. TINT CONTROL (NTSC SYSTEM ONLY)

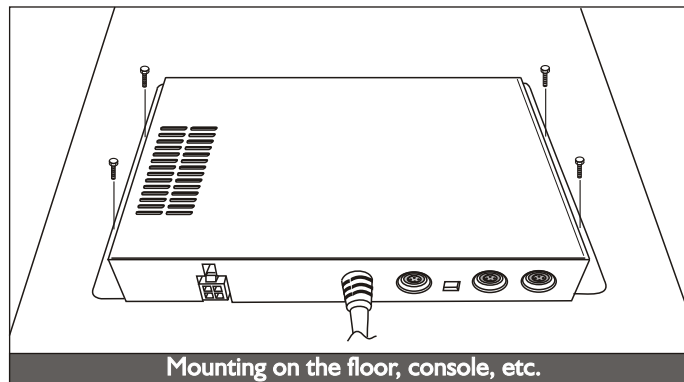
- 1) Press the button "MENU".**
 - 2) Select the "TINT" by the button "CA. SEL" .**
 - 3) Adjust it by the button "CH".**
 - 4) Press the button "MENU" when you finish the set-up.**
- **Then you will go back to the initial screen or the OSD on the screen shall disappear automatically after 5 seconds.**

8. NTSC MODE / PAL MODE

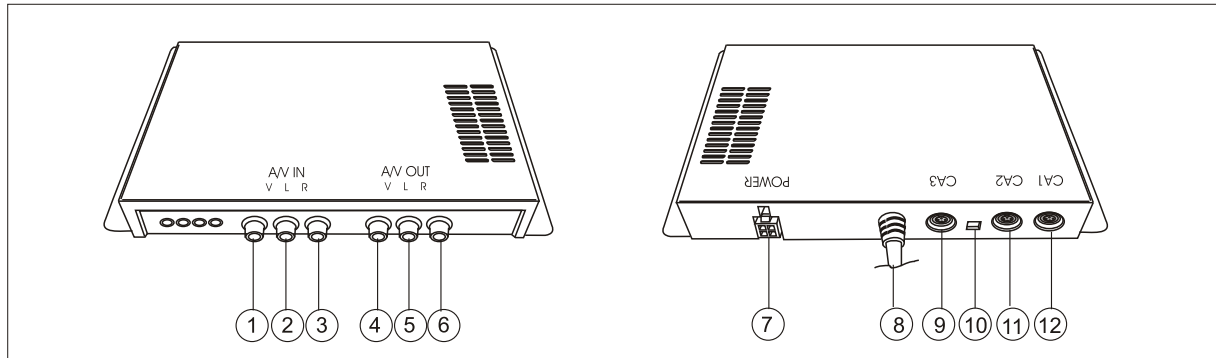
- **User can select a mode of PAL or NTSC system on the screen.**
- 1) Press the button "MENU".**
 - 2) Move the cursor to the "PAL" or "NTSC" mode with CH button.**
 - 3) Select "PAL" or "NTSC" mode by the button "CA.SEL".**
 - 4) Press the button "MENU" when you finish the set-up.**

INSTALLATION OF CAMERA CONTROLBOX

- Install the camera controlbox on the place which can stand more weight than 5Kgs (10.1b).
- Fix the camera controlbox with the provided screws as the drawings below.



EXPLANATION OF FUNCTION



AUDIO/VIDEO INPUT TERMINAL

1. **Video Input** : External Image Signal is input and it on the screen.
2. **Audio Input (L)** : In stereo, "L CH" is input as main channel but it presents on the monitor as mono type because the monitor is designed for mono type.
3. **Audio Input (R)** : In stereo, "R CH" is input as subsidiary channel but it presents on the monitor as mono type because the monitor is designed for mono type.

EXPLANATION OF FUNCTION

AUDIO/VIDEO OUTPUT TERMINAL

4. Video Output : Image Signal is output through this terminal, which presents on the screen.
5. Audio Output (L) : In stereo, "L CH" is output as main channel.
6. Audio Output (R) : In stereo, "R CH" is output as subsidiary channel.

7. POWER INPUT JACK

Connect the provided power cable into the camera contro box such as the drawings(Page15). Push and insert firmly the clip of power cable into the connector of camera controlbox. On the contrary, plug out the power cable pressing the clip of connector.

HOW TO CONNECT

- The red : Connect the red wire to the car battery (10V ~ 32V DC) power terminal which is energized with the ignition key in the accessory position. If not, battery shall be discharged.
- The black : Connect the black wire to a metal point of the car firmly.
- The green : Connect the green wire to the switched power output terminal of the R(reverse) gear.

EXPLANATION OF FUNCTION

8. MONITOR CONNECTING CONNECTOR

Check the plug of monitor & jack of the signal cable connecting connector and connect this jack to the signal cable connecting connector of monitor firmly.

10. MIRROR / NORMAL SCREEN MODIFICATION SWITCH

When the switch is on, the screen is normal image.

When the switch is off, the screen is mirror image.

Camera 1 is controlled by the monitor. Camera2 and camera3 are controlled only by this switch.

9,11.CAMERA 2,3 INPUT JACK (4-PIN MINI DIN)

Connect to the cameras equipped with 4-pin mini DIN connector the camera controlboxes.

12. CAMERA 1 INPUT JACK (4-PIN MINI DIN)

Connect to the camera equipped with 4-pin mini DIN connector. The camera controlbox supplies power to the camera (MAIN CAMERA).

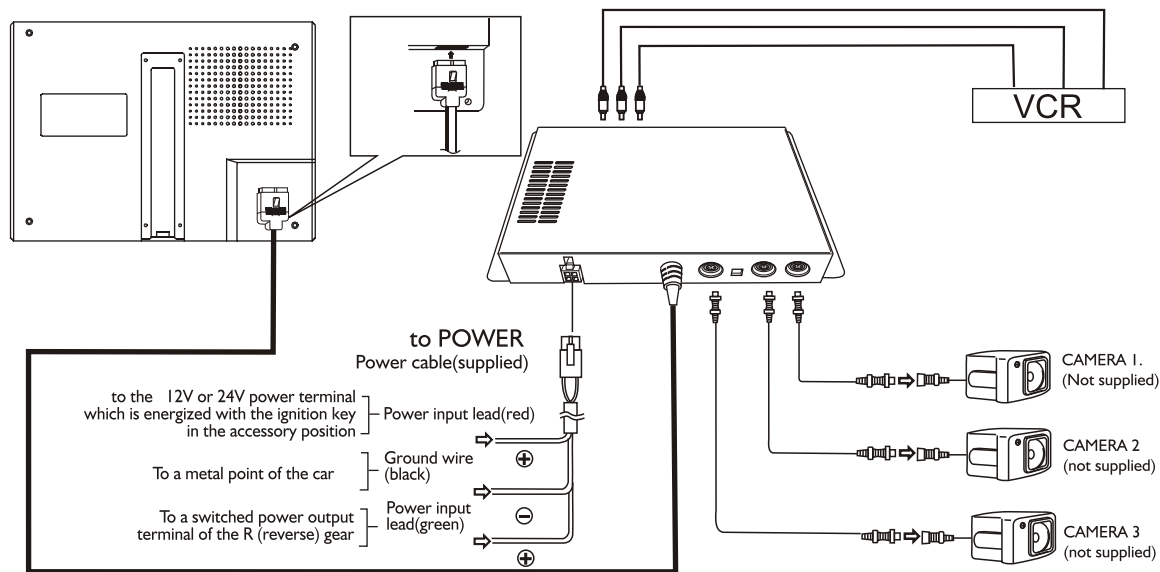
CONNECTIONS

CAUTION

- Before making the connection, disconnect the ground terminal of the car battery for avoiding short circuits and the plugs should be fully inserted into the connectors or jacks.

IN CASE OF CONNECTING 3 CAMERAS

- Connect camera 1 to main camera. (when you set the change lever to the reverse position, display an image from camera 1 before everything)
Connect camera 2.
Connect camera 3.



SPECIFICATIONS

Model No.: BE-868M (MONITOR)

Power input	: DC 12V(from camera controlbox)	Supplied acc'y	: Mounting bracket (1)
Power cons.	: max 12 watt.		Screw kits (1)
Video system	: NTSC, PAL standard signal		Instruction manual (1)
Sync. System	: Internal		
LCD panel size	: 6.8 inch diagonal color		
Field of view	: Top: 10°, Bottom: 30°, Left: 45°, Right 45°		
Screen size	: 138(W) X 103(H)mm		
Resolution	: 1152(W) X 234(H)		
Auto dimmer	: Auto/Manual selectable		
Color configuration	: R.G.B. Stripe		
Auto con./bright.	: Day& Night sensor		
O.S.D control	: Bright, Contrast, Color, Tint(NTSC System Only), Image Select CA 1 (mirror/normal), auto scan time, scale on/off		
Power connecter	: 16p GPIB connector		
Speaker	: Approx. 40 x 20mm, impedance: 8Ω , 0.2 watt max.		
Finish	: Black (PC/ABS)		
Operating temp.	: 0°C ~ +60°C(32°F ~ 140°F)		
Storage temperature	: -25°C ~ +80°C(-13°F ~176°F)		
Ambient condition	: Indoor use only		
Vibration	: 4G		
Dimensions	: 196(W) X 140(H) X 30(D) mm 7.7(W) X 5.5(H) X 1.2(D) inch		
Weight	: Approx. 1.0kg		

SPECIFICATIONS

Model No.: BE-830CM (CAMERA CONTROLBOX)

Power input	: DC 10V~32V (Car battery)
Power cons.	: max. 18 watt.
Video system	: NTSC, PAL standard signal
Sync. System	: Internal
Video input	: 4 CH (3 mini DIN, 1 RCA), Composite, 1Vp-p 75Ω
Audio input	: 4 CH (3 mini DIN, 1 RCA)
Video output	: 1 RCA, Composite video signal, 1Vp-p 75Ω
Audio output	: 2 RCA, 150mV RMS, 47K
Case material	: Steel
Operating temp.	: -10°C ~ +60°C (14°F ~ 140°F)
Storage temperature	: -25°C ~ +80°C (-13°F ~ 176°F)
Ambient condition	: Indoor use only
Vibration	: 4G
Dimensions	: 185(W) X 117(H) X 28(D) mm 7.3(W) X 4.6(H) X 1.1(D) inch
Weight	: Approx. 1.0kg
Supplied acc'y	: Power cord 2m (1) Screw kits (1)

* Design and specifications are subject to change without notice.

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