

INTRODUCTION

The BACKEYE Observation System has been designed to provide years of trouble-free operation. Please read this manual thoroughly. This manual contains instructions to ease the installation of the camera and monitor. The BACKEYE Observation System is a supplement to standard rear-view mirror systems, and will provide additional rear-view vision when installed and maintained properly.

The BACKEYE Observation system is not intended in any way to be a substitute for careful, cautious, defensive driving or for the consistent adherence to all applicable traffic laws and motor safety regulations. This product is not intended to be a substitute for rear view mirrors or for any other motor vehicle or boat equipment mandated by law.

FEATURES

BE-900C CAMERA

- ~ Auto White Balance (AWB)
- ~ Back Light Compensation (BLC)
- ~ 320,000 pixel image sensor
- ~ 6 Infra-Red LED
- ~ Min 0.1 Lux sensitivity
- ~ Automatic electronic iris provides a clearer, more consistent image in low and bright light
- ~ Wide-angle lens (130° Diag.) provides a broad viewing area
- ~ Compact design and lightweight ease installation in most vehicles
- ~ Waterproof Aluminum Die-Casting Housing
- ~ Built-in microphone for audio pick up (See Fig. 6)
- ~ Waterproof cable connection
- ~ Fully Waterproof (IP67)

BE-100C CAMERA - Optional

- ~ Auto White Balance (AWB)
- ~ Back Light Compensation (BLC)
- ~ 290,000 pixel image sensor
- ~ 6 Infra-Red LED
- ~ Min 0.5 Lux sensitivity
- ~ Automatic electronic iris provides a clearer, more consistent image in low and bright light
- ~ Wide-angle lens (130° Diag.) provides a broad viewing area
- ~ Compact design and lightweight ease installation in most vehicles
- ~ Waterproof Aluminum Die-Casting Housing
- ~ Built-in microphone for audio pick up (See Fig. 6)
- ~ Waterproof cable connection
- ~ Fully Waterproof (IP67)

BE-956M TFT LCD COLOUR 5.6" MONITOR

- ~ FCC / CE / e-marking
- ~ Day/night switch
- ~ Brightness control
- ~ Colour control
- ~ Volume control
- ~ Two camera inputs and Camera Selector Switch
- ~ Power/stand-by switch
- ~ Mirror/Normal selection switch
- ~ Monitor pigtail:
 - Power socket
 - Camera1 and Camera2 input socket

CONTENTS OF 1 COMPLETE SYSTEM

BE-900C CCD CAMERA:

- 1-Camera
- 1-Camera bracket
- 4-Attachment screws with washers (M4 x 15)
- 1-Wind deflector

BE-956M MONITOR:

- 1-Monitor
- 1-Monitor bracket

BEFORE INSTALLATION:

1. This system operates from 10 volts DC to 32 volts DC, negative ground.
2. Please install this system according to the instructions in this manual.
3. Do not disassemble the camera or the monitor. This voids the warranty. Disassembling the camera will compromise the Waterproof seal.
4. Connect the system to an ignition switched power source. Connection to a battery source will reduce battery life.

WARNING

1. To prevent electrical shock, DO NOT OPEN THE MONITOR CASE. There are potentially lethal voltages inside the monitor. There are no user serviceable parts inside. If evidence of tampering is detected, the warranty will be considered void.
2. Keep monitor away from leaking water, rain, moisture etc. It is NOT waterproof. Any moisture inside the monitor could cause extensive damage.
3. Use the thumbscrews to mount the monitor to bracket.
4. Do not cover air dusts. Monitor needs proper ventilation to prevent overheating.

INSTALLATION INSTRUCTIONS

BE-900C CAMERA

1. Attach camera bracket (see Fig. 1) to upper portion of vehicle. Attachment point must be sturdy enough to support camera and bracket.
2. Attach camera to bracket using M4 bolts provided. Adjust angle as indicated in Fig. 2. (Use rear bumper and back of vehicle as a reference point.)
3. Wind deflector may be installed. The deflector is designed to reduce the build up of dust, dirt and moisture on the camera lens. (See Fig.3.)

BE-956M MONITOR

1. Attach monitor inside vehicle in a location convenient to the driver (e.g. center of dash, overhead or in dash).
2. Use a compression plate to attach the monitor bracket to the dash or overhead.
3. Adjust mounting angle of the monitor to allow driver to easily view the screen from all seat positions. (See Fig. 4.)

CABLE

1. The camera-to-cable connection and the monitor pigtail are waterproof. Be sure to orient the cables properly.
2. Do not run the cable over sharp edges or corners. Do not kink the cable. Keep the cable away from hot and rotating parts.
3. Place all excess cable in convoluted tubing.
4. Wire the cable securely.

WIRING CAMERA AND MONITOR

1. See wiring diagram for connections to ignition, ground and back up circuit. (See Fig. 5.)
2. Wiring camera: Drill a 22mm - diameter hole into vehicle body near the camera and bracket. Connect camera connector to extension cable in vehicle. Push extra cable into vehicle (be careful not to kink cable) and fit grommet into hole. Apply sealant around grommet to increase resistance to water penetration.
3. Wiring monitor pigtail: Insert extension cable into camera 1 and camera 2 position. Bundle excess cable together using a cable tie or vinyl tape. This will avoid possible damage to cable during operation. (Fig. 5)
4. Wiring power cable: The red wire is connected to an ignition power source, the black wire is connected to chassis ground, and the green wire is connected to the vehicles back up circuit.

FUNCTIONS AND OPERATION

MONITOR

1) STANDBY LED

When the red LED is turned on, it indicates power on. Putting the gear into the reverse, the view of camera 1 shall be shown on the monitor.

2) POWER SWITCH

Press the power switch to turn the monitor on or off.

3) CAMERA / AV SELECTOR

Depress the selector to select the camera (CA1, CA2) and press the selector to select the AV input signal.

4) NIGHT / DAY SWITCH

Normally, this switch should be in the out position. When you view the picture at night or in a tunnel etc., Depress the switch to reduce the picture brightness.

5) CAMERA SELECTOR

Depress the camera selector to select the camera connected to the camera 1. Press the camera selector to select the camera connected to the camera 2.

6) MONITOR PIGTAIL & EXTENSION CABLE

- POWER SOCKET

Insert the supplied power cable connector firmly until it is locked. To remove the power connector, press in the clip and pull out the connector, while holding the clip down.

- CAMERA INPUT SOCKET (CAMERA 1, CAMERA 2)

There are two Mini DIN type connectors for the video camera inputs.

7) VOLUME CONTROL

Adjust the volume control for the desired sound level.

8) BRIGHT CONTROL

Adjust the Bright control for the best overall picture or display brightness. Turn clockwise to increase picture brightness and counterclockwise to decrease it.

9) COLOUR CONTROL

Adjust the colour control for the desired intensity of colour.

Turn clockwise to increase intensity of colour and counterclockwise to decrease it.

10) TINT CONTROL (NTSC system only)

Adjust the tint control for the desired image colour.

Turn clockwise to increase image colour and counterclockwise to decrease it.

11) AUDIO / VIDEO OUTPUT JACK

Connect audio, video output connector to a second monitor or VCR input with a RCA phone type connector cable.

12) AUDIO / VIDEO INPUT JACK

For just monitoring on screen, put the plug of A/V signal into this Jack.

13) MIRROR / NORMAL SELECTION SWITCH

When the switch is in MIR position, the picture will be shown reverse.

When the switch is in NOR position, the picture will be displayed normally.

* Camera 1 & Camera 2 are operated individually.

CAUTION

1. DO NOT OPEN THE CAMERA CASE. This will break the camera's Waterproof seal. If evidence of tampering is detected, the warranty Will be considered void.
2. Do not recommend mounting the camera near the lower area of the vehicle (e.g. bumper). This reduces the view of the camera and increases the chance of physical damage to the camera.
3. Use only the Inner Hexagonal screw and washers to mount the camera.

MAINTENANCE

Remove dust and dirt with a damp soft cloth. Heavier dirt should be removed with a damp soft cloth and mild detergent. Do not use strong cleaning agents containing gasoline, thinner, benzene or alcohol. These substances may damage the exterior surface of the monitor.

CAUTION

1. Before drilling, be sure no cable or wiring is on the other side. Be sure to drill a 22mm - diameter hole only.
2. Feed as much cable as possible into vehicle and clamp securely. This reduces the possibility of it being hooked or snagged.
3. Keep all cables away from HOT, ROTATING and ELECTRICALLY NOISY components.
4. To increase protection of cable, place all excess wire and extension cable in convoluted tubing.
5. Do not twist camera cable and do not cut camera pigtail or cable.

SPECIFICATIONS

BE-900C CAMERA

VIDEO SYSTEM NTSC / PAL
PICK-UP DEVICE CCD
IMAGE SIZE 1/3 inch
SYNCHRONIZATION INTERNAL
REQUIRED ILLUMINATION 0.1 lux MINIMUM
VIDEO OUTPUT 1V (p-p), 75 ohm
OPERATING VOLTAGE 12 Vdc
POWER CONSUMPTION MAX 2.4W
(AT 12 Vdc)

OPERATION TEMPERATURE

-30°C TO +50°C

WEIGHT

0.48Kg

DIMENSION (W x H x D) mm

69 x 41 x 59

BE-100C CAMERA - Optional
VIDEO SYSTEM NTSC / PAL
PICK-UP DEVICE CCD
IMAGE SIZE 1/3 inch
SYNCHRONIZATION INTERNAL
REQUIRED ILLUMINATION 0.5 lux MINIMUM
VIDEO OUTPUT 1V (p-p), 75 ohm
OPERATING VOLTAGE 12 Vdc
POWER CONSUMPTION MAX 2.4W
(AT 12 Vdc)

OPERATION TEMPERATURE

-30°C TO +50°C

WEIGHT

0.25Kg

DIMENSION (W x H x D) mm

69 x 11 x 59

BE-956M MONITOR

VIDEO SYSTEM NTSC / PAL
PICTURE TUBE 5.6 INCH COLOUR
TFT LCD SCREEN 960(H) X 234(V)
PICTURE RESOLUTION 0.5W (8 ohm)
AUDIO OUTPUT MAX 5.4 Watts
POWER CONSUMPTION -10°C ~ +60°C
OPERATION TEMPERATURE DC10 V ~ DC32 V
OPERATION VOLTAGE 380 g
WEIGHT APPROX. 181 x 136 x 32
DIMENSION (W x H x D) mm

DISCLAIMER:

The use of the BE-956 BACKEYE Observation system does not guarantee or promise that the user will not be in an accident or otherwise not collide with an object. The BACKEYE Observation system is not intended in any way to be a substitute for careful and cautious driving or for the consistent adherence to all applicable traffic laws and motor safety regulations. This product is not intended to be a substitute for rear-view mirrors or for any other motor vehicle or boat equipment mandated by law.

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