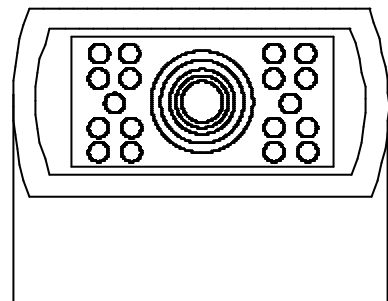
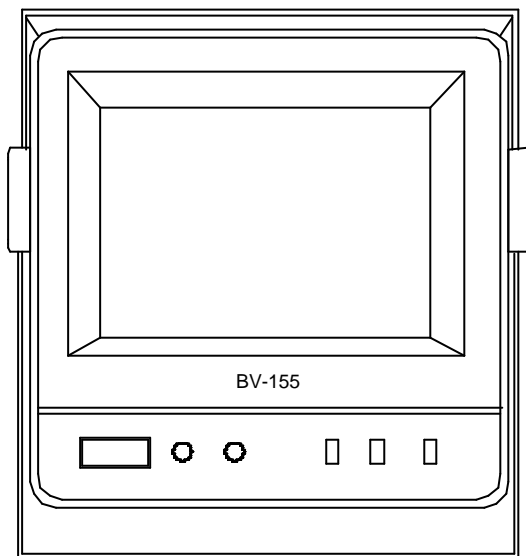


# VEHICLE CCTV SYSTEM

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## VBV-155

Model:  
VBV-155M MONITOR  
VBV-100C CAMERA



**INTRODUCTION**

This vehicle CCTV system has been designed to provide years of trouble-free operation. Please read this manual thoroughly. This manual contains instructions to make the installation of the camera and monitor easier. The vehicle CCTV system is a supplement to standard rear-view mirror systems, and it provides additional rear-view vision when installed and maintained properly. It is not intended in any way to be a substitute for careful and cautious driving. If applicable traffic laws and motor safety regulations must still be adhered to.

**FEATURES****BV-100C CAMERA**

290,000 pixel image sensor  
Field of view 110° Diag and  
Auto White Balance (AWB)  
Back Light Compensation (BLC)  
0.1 Lux sensitivity (18 IR-LED)  
Automatic electronic iris provides a clearer, more consistent image in low and bright light  
Compact design and lightweight ease installation in most vehicles.  
Waterproof cable connection (IP67)  
Wind deflector reduces build up of dirt on lens  
CE / e- marking

**BV-155M 5.5" CRT MONITOR**

Brightness/Contrast control  
Two camera inputs and Camera Selector Switch  
Power/stand-by switch

- Mirror/Normal selection switch/Day/Night Switch
- CE / e- marking

**CONTENTS OF 1 COMPLETE SYSTEM****BV-100C CCD CAMERA:**

- Camera
- Camera bracket
- Attachment screws with washers
- Wind deflector

**BV-155M MONITOR:**

- Monitor
- Snap-on sun visor
- Monitor bracket
- Power harness with locking connector
- Range markers
- Thumb screws

Special cable: 1-20 metre cable with waterproof connector. Oil, gas  
resistant. UV stable  
Documents: 1 – Operations manual

**BEFORE INSTALLATION**

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

**WARNING**

- . 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.
- . Keep monitor away from leaking water, rain, moisture etc. It is NOT waterproof. Any moisture inside the monitor could cause extensive damage.
- . Use the thumbscrews to mount the monitor to bracket.
- . Do not cover air ducts. Monitor needs proper ventilation to prevent overheating.

**INSTALLATION INSTRUCTIONS****BV-100C CAMERA**

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

**BV-155M MONITOR**

- . Attach monitor inside vehicle in a location convenient to the driver (e.g. center of dash, overhead or in dash) (Fig.4.)
- . Use a compression plate to attach the monitor bracket to the dash or overhead.
- . Adjust mounting angle of the monitor to allow driver to easily view the screen from all seat positions. (Fig. 5)

**CABLE**

1. The camera-to-cable connection and the monitor pigtail are waterproof. Be sure to position 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 connection diagram for connections to ignition, ground and back up circuit. (See Fig. 6.)
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: Insert extension cable into camera #1 position. If 2 cameras are used, be sure to mark each extension cable properly and plug second cable into camera #2 position. Bundle excess cable together using a cable tie or vinyl tape. This will avoid possible damage to cable during operation.
4. The red wire is connected to an ignition power source, the black wire is connected to chassis ground, and the brown wire is connected to the vehicle's reverse light circuit.

**FUNCTIONS AND OPERATION****MONITOR**

- 1) POWER SWITCH  
Press the power switch to turn the monitor on or off.
- 2) STANDBY LED  
When the red LED is turned on, it indicates power on. When reverse gear is selected the images picked up by camera 1 will be shown on the monitor.
- 3) CONTRAST CONTROL  
The contrast can be adjusted to suit settings for "DAY/NIGHT".
- 4) BRIGHT CONTROL  
The brightness can be adjusted to suit settings for "DAY/NIGHT".
- 5) CAMERA SELECTOR (CA1)
- 6) CAMERA SELECTOR (CA2)  
Select CA2 to view camera 2
- 7) NIGHT / DAY SWITCH
- 8) CAMERA 1  
Input connection to camera extension cable.
- 9) Camera 2  
Input connection to additional camera extension cable.
- 10) VIDEO OUTPUT  
Connect video output connector to a second monitor or VCR input with a RCA phono type connector cable.
- 11) AUDIO OUTPUT  
Connect Audio output connector to a second monitor or VCR input with a RCA phono type connector cable.
- 12) EXTERNAL SPEAKER (Optional)  
The monitor can be linked to an external speaker
- 13) MIRROR / NORMAL SELECTION SWITCH  
When the switch is in MIR position, the picture will show reverse image.  
When the switch is in NOR position, the picture will show a normal image. \* Camera 1 & Camera 2 are operated individually.
- 14) POWER CONNECTION:  
PIN 1: Ground - Black  
PIN 2: +12/24Vdc ignition - Red  
PIN 3: Reverse circuit - Orange  
PIN 4: Dimmer - White

**CAMERA**

Waterproof cable connector (See Fig. 7)

**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. We 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****BV-100C CAMERA**

VIDEO 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)

RESOLUTION	420 TV LINES
OPERATION TEMP	-20°C TO +70°C
WEIGHT	0.2Kg
DIMENSION (W x H x D)mm	70 x 44 x 54

**BV-155M MONITOR**

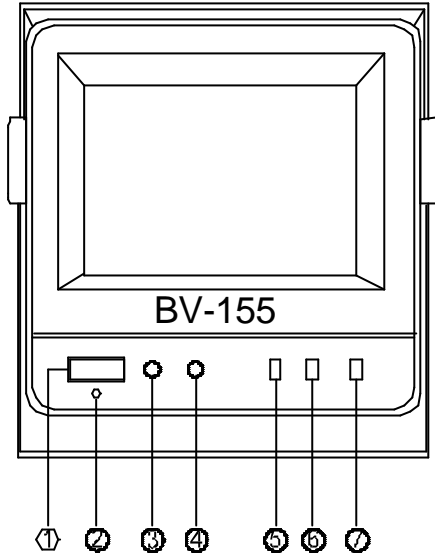
VIDEO SYSTEM	CCIR
PICTURE TUBE	5.5 INCH PICTURE
PICTURE RESOLUTION	600TV LINES
POWER CONSUMPTION	MAX. 1A
OPERATION TEMPERATURE	-10°C TO +50°C
OPERATION VOLTAGE	DC10 V – DC32 V
WEIGHT APPROX.	1.46Kg
DIMENSION (W x H x D)mm	154 x 143 x 190

**DISCLAIMER**

The use of the VBV-155 Vehicle CCTV system should not in any way be used as a substitute for careful and cautious driving. Traffic laws and motor safety regulations must always be adhered to.

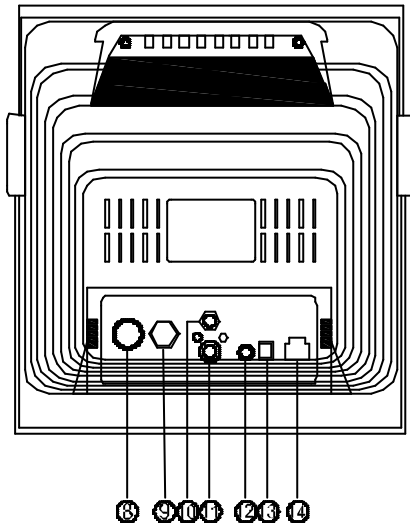
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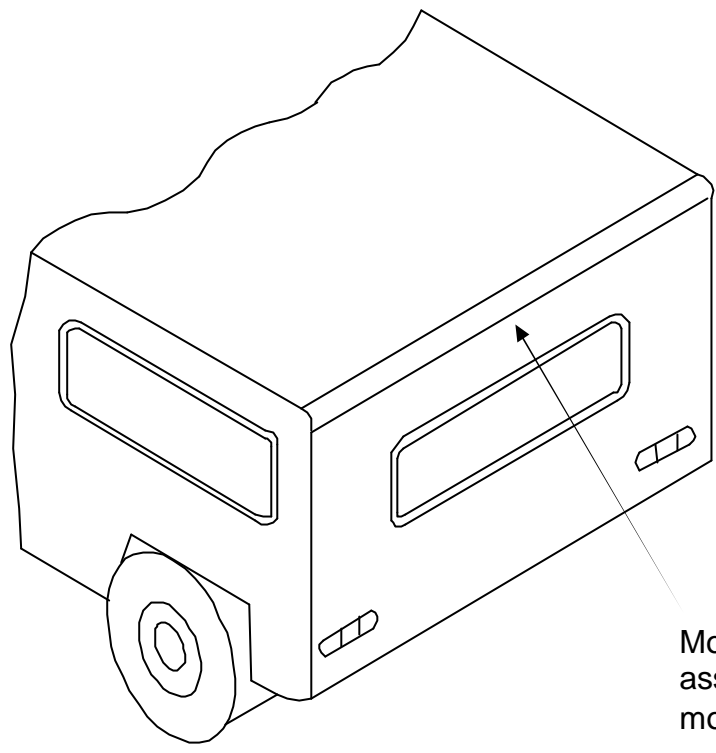
Front View

- 15. Power Switch (ON/Standby)
- 16. Standby LED
- 17. Contrast Control
- 18. Brightness Control
- 19. Camera 1
- 20. Camera 2
- 21. Day/Night switch

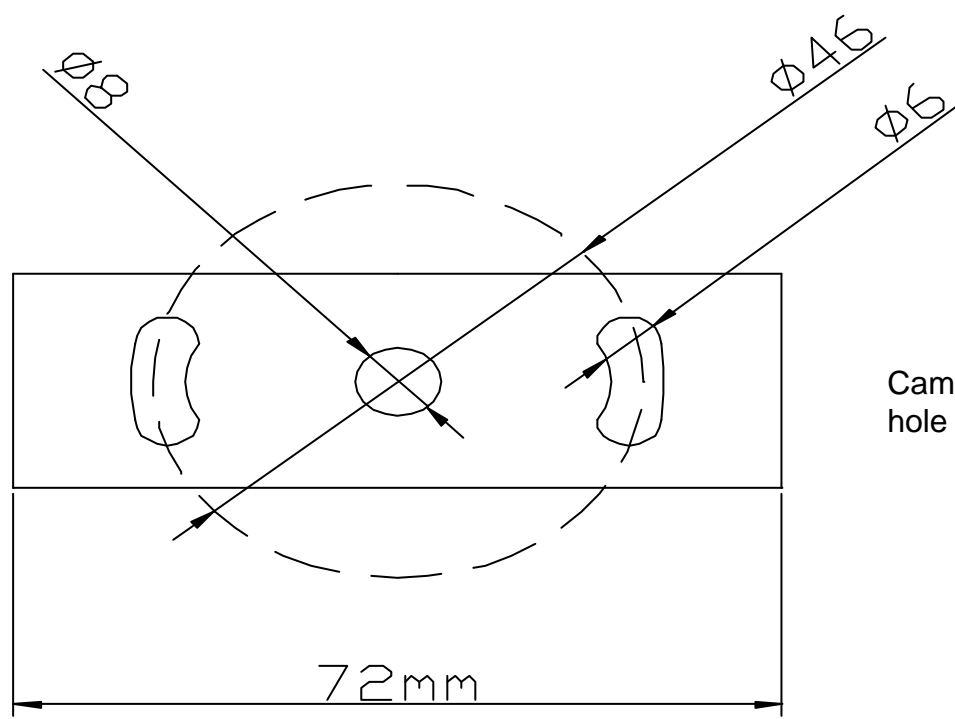


Rear View

- 1. Camera 1 input
- 2. Camera 2 input
- 3. Video output
- 4. Audio output
- 5. External Speaker
- 6. Mirror/Normal Switch
- 7. Power socket
  - Ground (BLACK)
  - Positive (RED)
  - Reverse (BROWN)
  - Dimmer (WHITE)

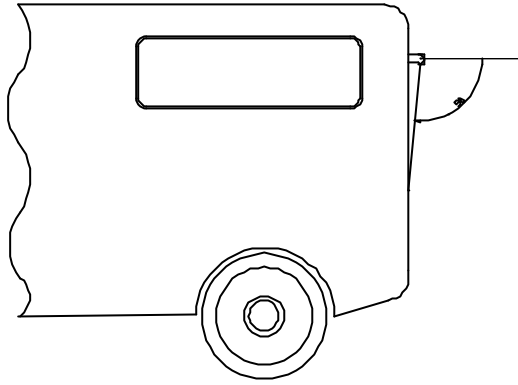


Mount camera assembly high-mounted. Centred.

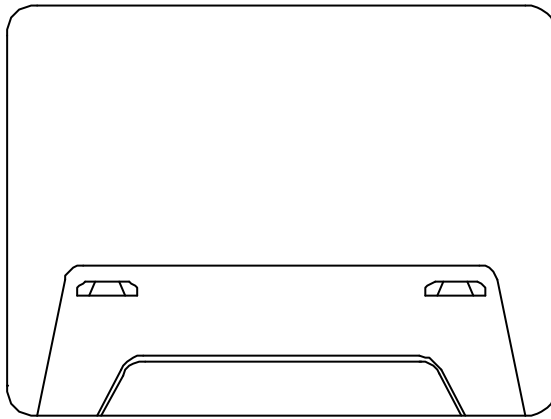


Camera mounting hole pattern.

Fig.1



Approximately 90-degree field of view



Back of vehicle, viewing at monitor screen

Fig. 2

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Optional wind deflector

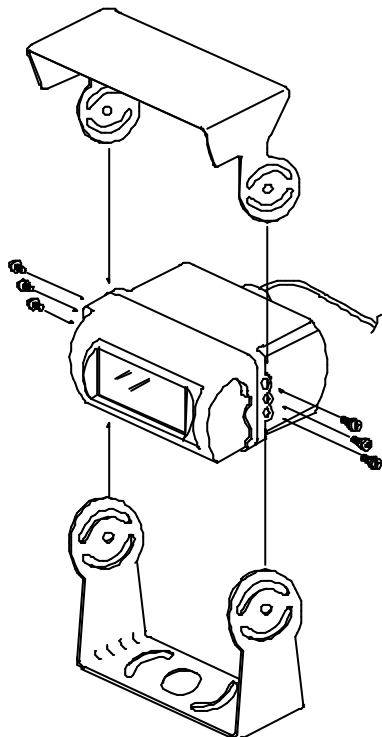
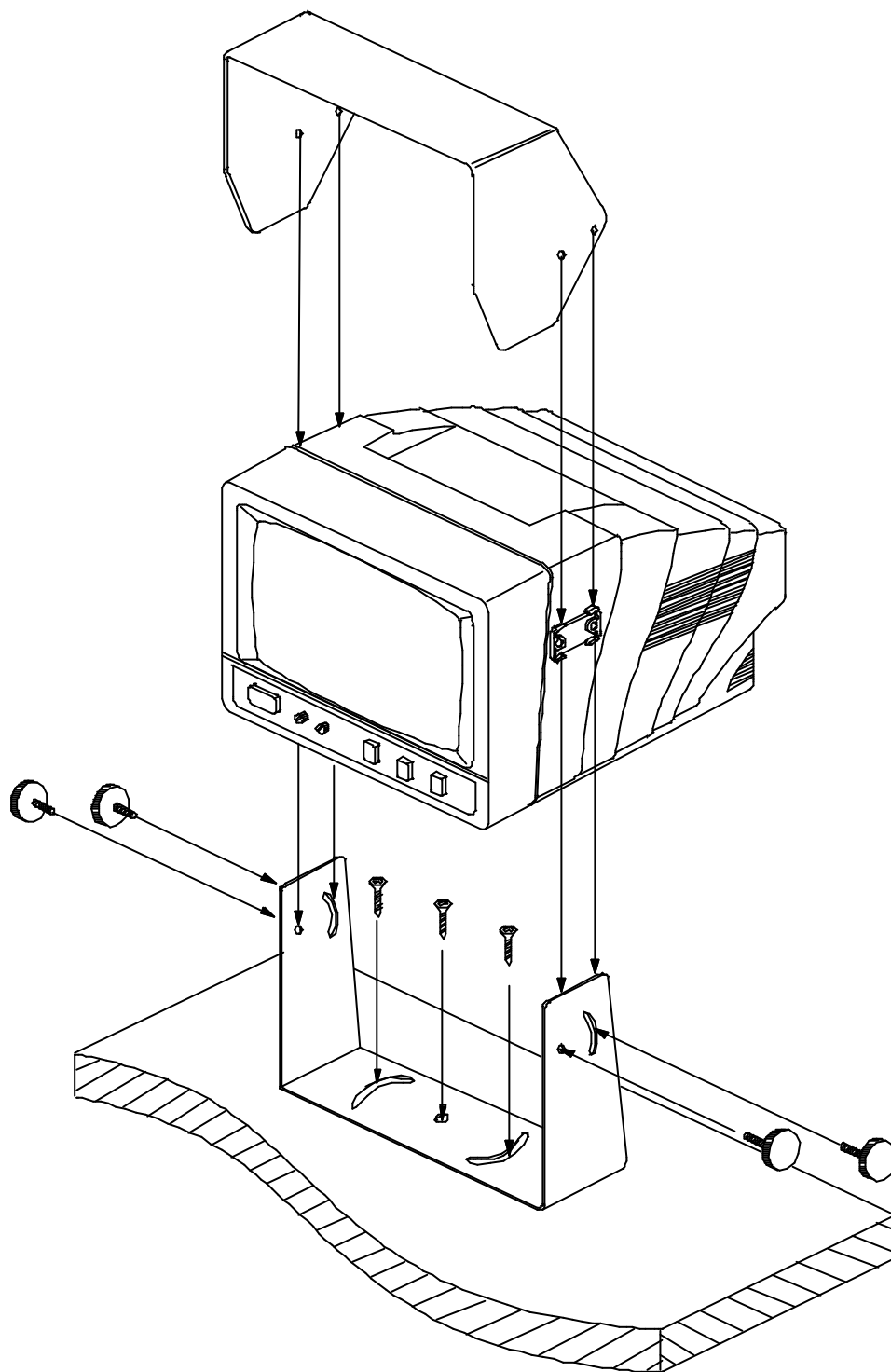
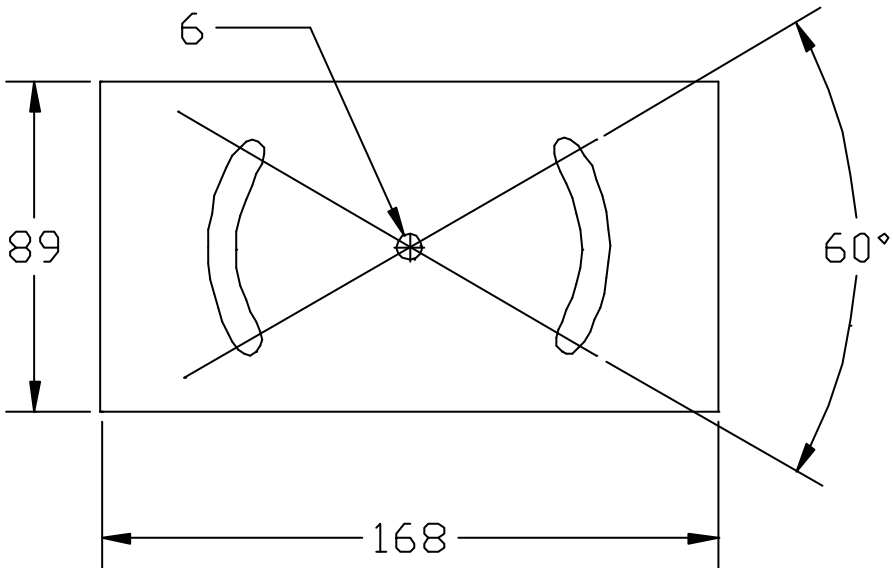
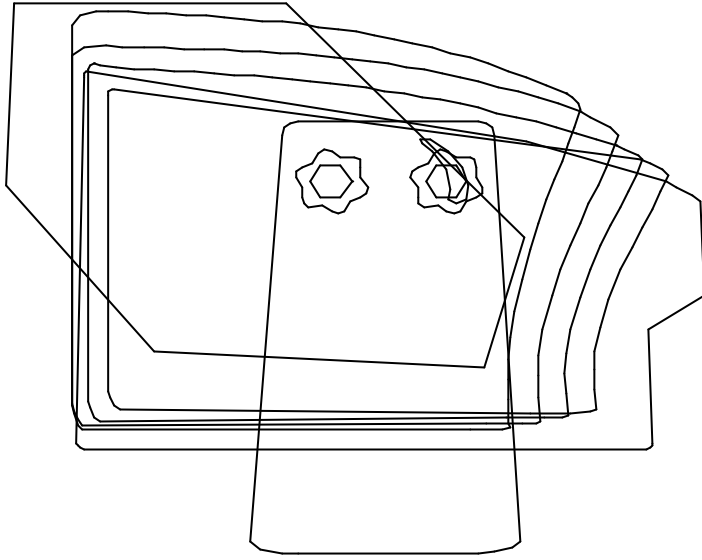


Fig. 3



Steel plate for reinforcement (recommended for secure mounting)

Fig.4



Monitor mounting hole pattern.

Fig. 5

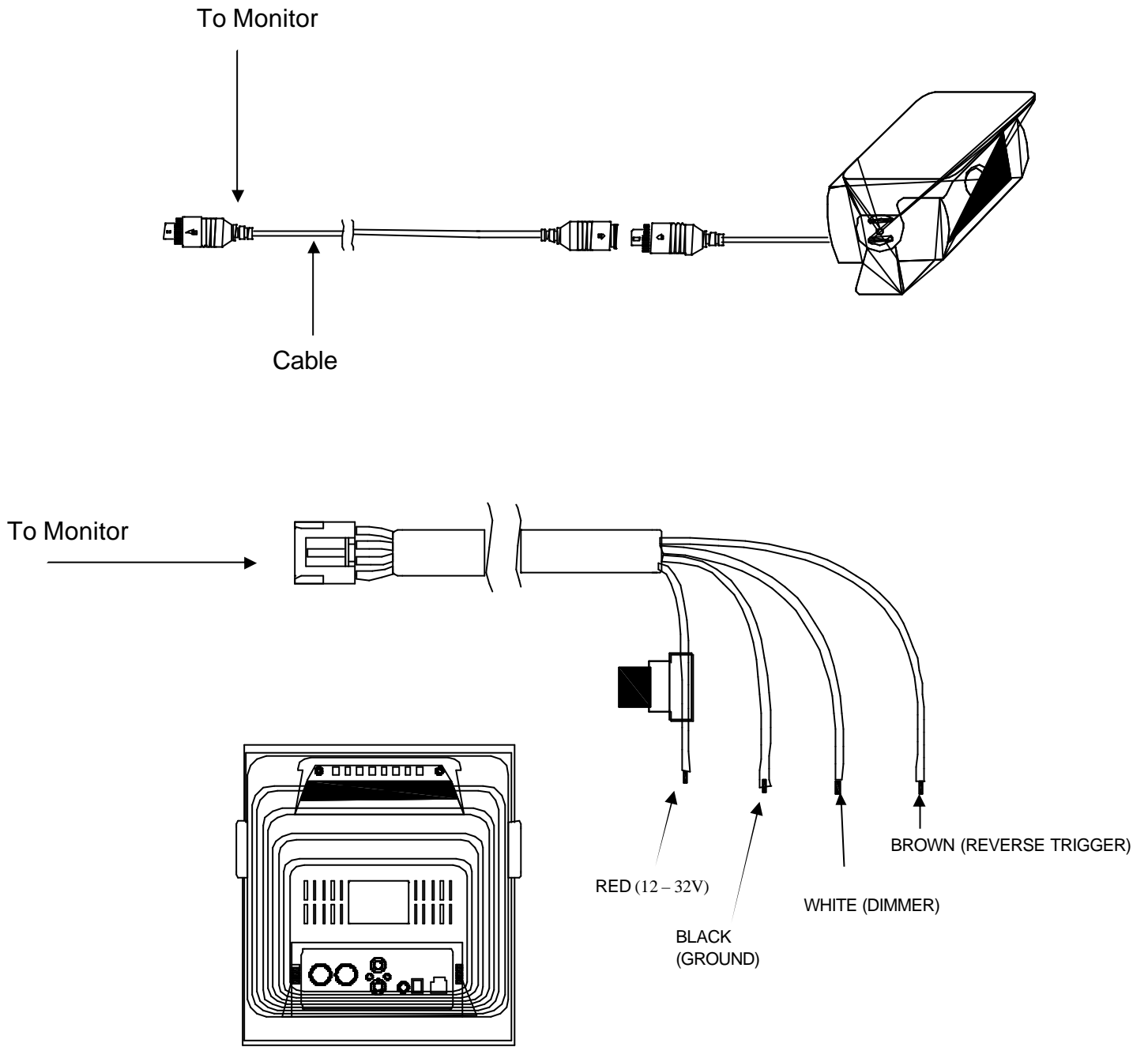


Fig. 6

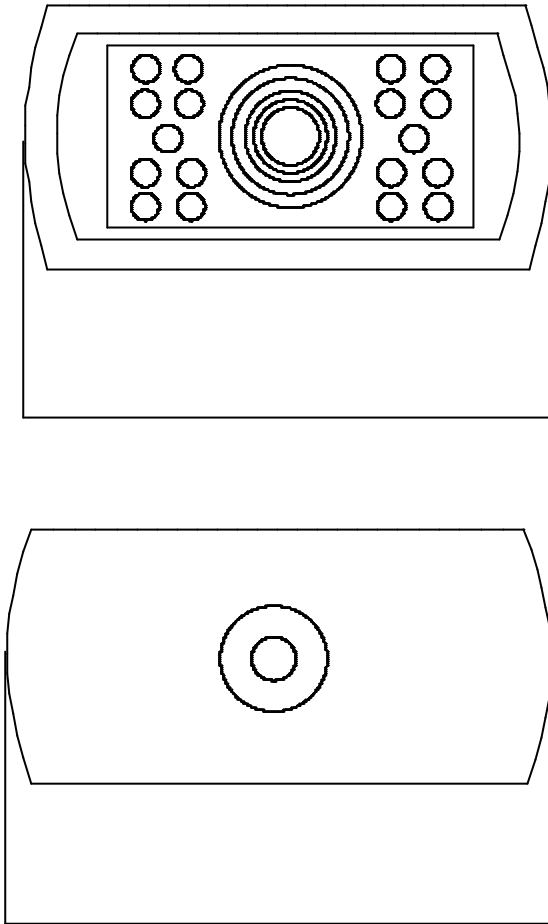


Fig.7

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