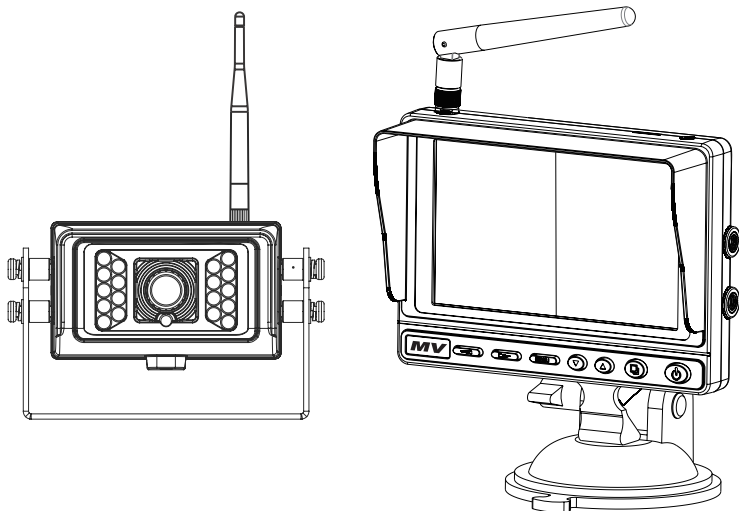


MobileVision[®]

Owner's/Installation Manual



Digital Wireless Safety
Camera Monitor System

Model: MV-BC1

For Technical Assistance, please call (310) 735-2000,
or visit www.magnadyne.com

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Introduction

Congratulations on the purchase of the Mobilevision 5" Monitor Camera System. This system has been designed to provide years of trouble-free operation.

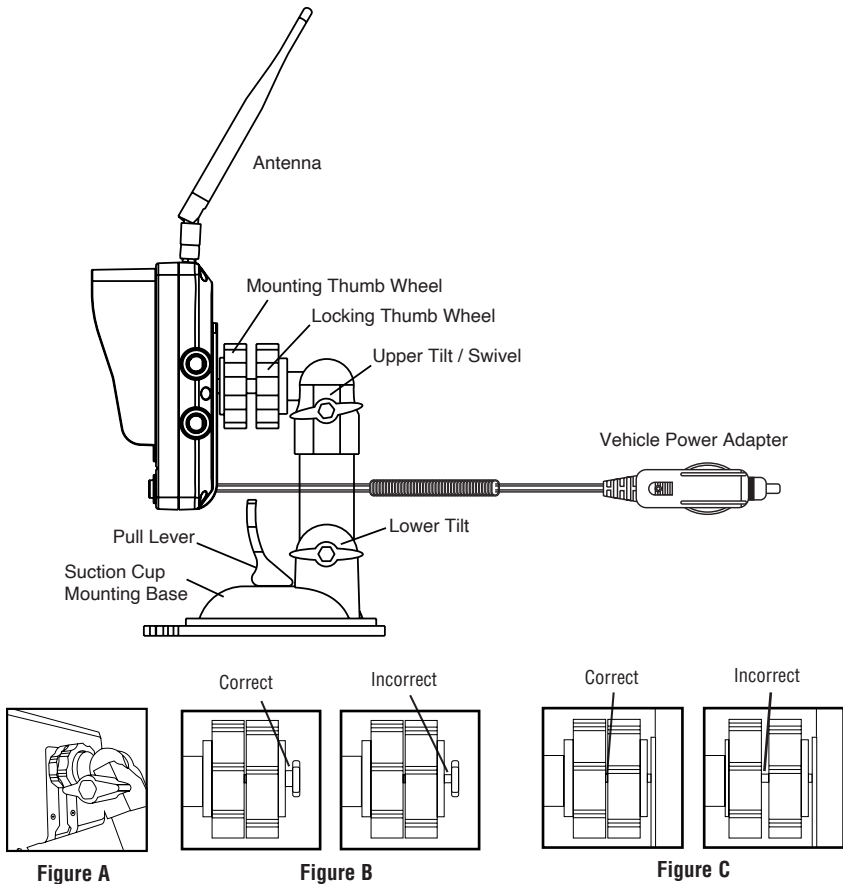
The information in this manual provides detailed instruction on how to properly install, operate and maintain your new MV-BC1 camera system.

This product must be installed and used in accordance with this manual. Any alterations to this product that enables it to be used in any way other than intended or designed could distract the driver and result in an accident causing injury or death. Magnadyne Corporation disclaims any and all liability that may result from failure to install and operate in any other manner in which this was intended.

What's in the Box

Monitor with Vehicle Adapter
Suction Cup Mounting Base
Rearview Camera and Mounting Hardware
6 Foot Camera Power Cord
Camera Power Cord Adapter
Antennas
Instructions

Monitor Installation

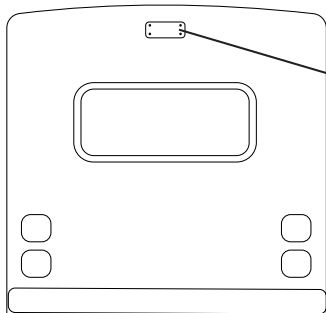


1. Loosen the mounting thumb wheel on the suction cup mounting base, so the mounting nut attached to the monitor mounting thumb wheel can slide completely into the monitor's base mounting slot (Figure A).
Note: Make sure the nut is aligned correctly to allow the narrow side of the nut to slide all the way into the small channel of the monitor's base mounting slot. (Figure B)
2. Tighten the mounting thumb wheel against the monitor. Lock the mounting thumb wheel in place by tightening the locking thumb wheel. (Figure C)
3. Position the suction cup mount onto desired flat smooth surface location and secure into place using the pull lever. Make sure to remove protective packing plastic sheet from bottom of suction cup.
4. Adjust the monitor to desired viewing position by loosening the upper tilt / swivel and lower tilt adjustments. Tighten to hold in desired viewing position.
5. Install the antenna onto the monitor.

MobileVision Factory Pre Wired Installation

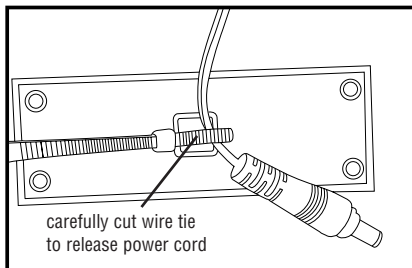
If your vehicle is Pre Wired and ready for the MV-BC1 Camera / Monitor System the back of your vehicle will have a MobileVision Pre Wired plate in this general location and the plate will look like the below illustration.

⚠ DISCONNECT VEHICLE POWER BEFORE STARTING INSTALLATION



1) Pre Wired Camera Power Lead:

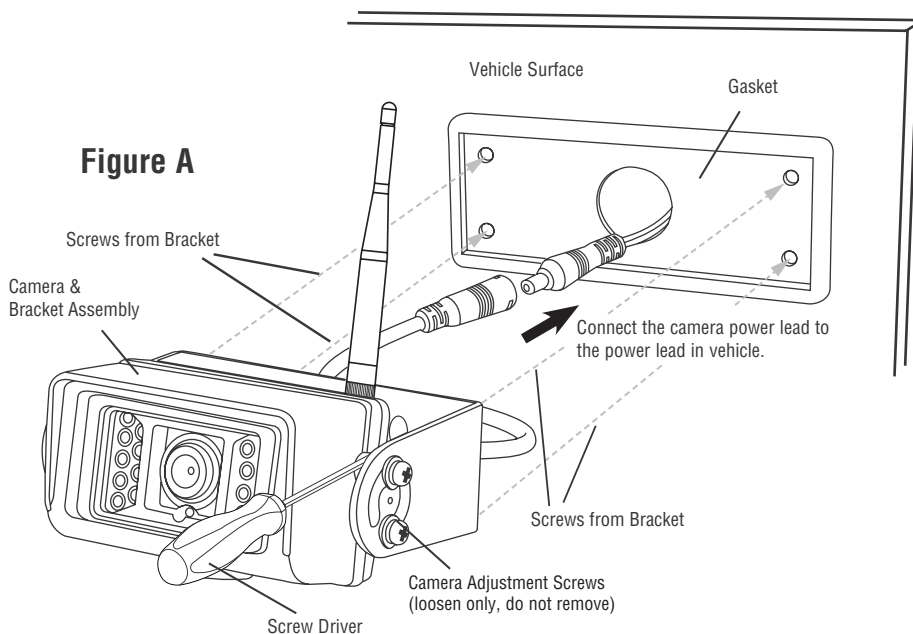
- Remove 4 screws from plate. **Store the screws** as you will use these to attach the camera in step 2 .
- Wire tied to the back of the plate is the camera power cord. Carefully cut the wire tie to release the power lead. Use caution not to damage power lead. Plastic cover may be discarded.



2) Mounting the Camera to the Vehicle:

- Make sure vehicles power lead passes through the gasket's large center hole. Use precaution to prevent lead from falling into vehicle.
- Connect the camera and vehicle power leads. Make sure the connectors are securely twist-locked together.
- Push the connected power leads back through the 3/4" hole in the middle of the gasket and into vehicle.
- Without removing camera adjustment screws from bracket, align the camera and bracket with the gasket and pre-drilled holes in the vehicle. Using the 4 screws removed in Step 1, attach and secure the camera, bracket and gasket into position using a screw driver inserted between the camera and the bracket wall. Make sure antenna mounting screw is facing up. (Figure A)
- Adjust viewing angle of camera by loosening camera adjustment screws and then tighten.
- Mount the antenna on camera.

⚠ Test System Operation before adding any additional sealant to permanently mount camera.



System Operation:

- Power up vehicle.
- Turn on monitor.
- Check for camera operation.
 - Camera and monitor are paired.
 - If camera is not paired, proceed to section on camera pairing in this manual.

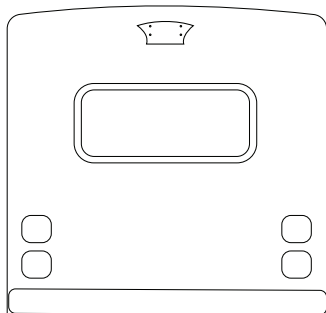
Non-MobileVision Factory Pre Wired Installation

If your vehicle is equipped with another manufacturers camera pre wired kit other than MobileVision, install the MV-BC1 Camera / Monitor System using the following steps.

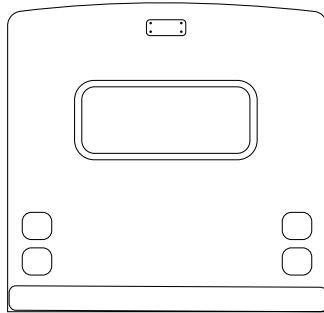
DISCONNECT VEHICLE POWER BEFORE STARTING INSTALLATION

How to Identify if your vehicle has a camera pre wired kit and ready for MV-BC1 installation.

A.



B.



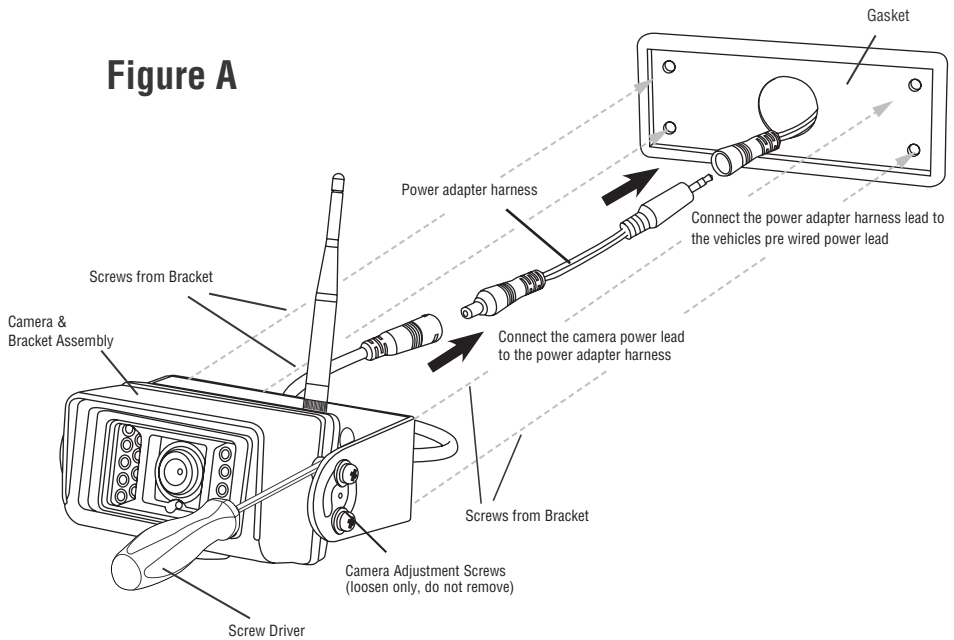
Option A - Installation

If your vehicle has a pre wired install cover plate with the above illustrated shape follow these steps to install the camera.

- Unscrew the plate from the back of the vehicle and remove the plate and gasket. Store the screws as you will use these to attach the camera and gasket.
- Unattach power lead from pre wired plate or locate in the area.
- Make sure vehicles power lead passes through the gasket's large center hole. Use precaution to prevent lead from falling into vehicle.
- Use supplied adapter power harness to connect camera and vehicle power leads. (Figure A) Make sure the connectors are securely twist-locked together.
- Push the connected power leads back through the 3/4" hole in the middle of the gasket and into the vehicle.
- Without removing camera adjustment screws from bracket, align the camera and bracket with the gasket and pre-drilled holes in the vehicle. Using the 4 screws removed in Step 1, attach and secure the camera, bracket and gasket into position using a screw driver inserted between the camera and the bracket wall. Make sure antenna mounting screw is facing up. (Figure A)
- Adjust viewing angle of camera by loosening camera adjustment screws and then tighten.
- Mount the antenna on camera.

 **Test System Operation before adding any additional sealant to permanently mount camera.**

Figure A



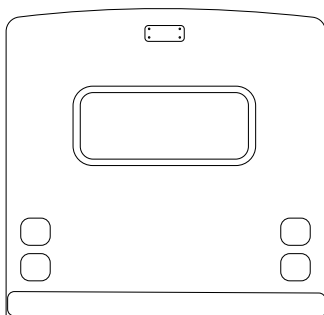
System Operation:

- Power up vehicle.
- Turn on monitor.
- Check for camera operation.
 - Camera and monitor are paired.
 - If camera is not paired, proceed to section on camera pairing in this manual.

Non-MobileVision Factory Pre Wired Installation (continued)

! DISCONNECT VEHICLE POWER BEFORE STARTING INSTALLATION

B.



Option B - Installation

If your vehicle has a pre wired install cover plate with the above illustrated shape follow these steps to install the camera.

- Unscrew the plate from the back of the vehicle.
- Unattach power lead from pre wired plate.
- Align supplied MobileVision PVC gasket with predrilled holes pulling vehicles power lead through center 3/4" hole.
- Use supplied adapter power cable to connect camera and vehicle power leads. (Figure A)
- If vehicle power leads are not terminated or the adapter does not match the connector on the vehicle power harness, follow these steps: (Figure B)
 - If connector present, cut connector off and strip the vehicle wire approximately 1/4".
 - Cut the supplied 6' power cord unterminated end to the desired shorter length and strip wire to approximately 1/4".
 - Test the vehicle power leads to identify 12V+ and 12V-.
 - Connect the red power harness lead to the vehicle 12V+ lead.
 - Connect the black power harness lead to the vehicle 12V- lead.
 - Make sure connections are secure and protected to prevent electrical shorts.
- Push the connected power leads back through the 3/4" hole in the middle of the gasket and into the vehicle.
- Without removing camera adjustment screws from bracket, align the camera and bracket with the gasket and pre-drilled holes in the vehicle. Using the 4 screws removed in Step 1, attach and secure the camera, bracket and gasket into position using a screw driver inserted between the camera and the bracket wall. Make sure antenna mounting screw is facing up. (Figure A)
- Adjust viewing angle of camera by loosening camera adjustment screws and then tighten.
- Mount the antenna on camera.

! Test System Operation before adding any additional sealant to permanently mount camera.

Non-MobileVision Factory Pre Wired Installation (continued)

Figure A

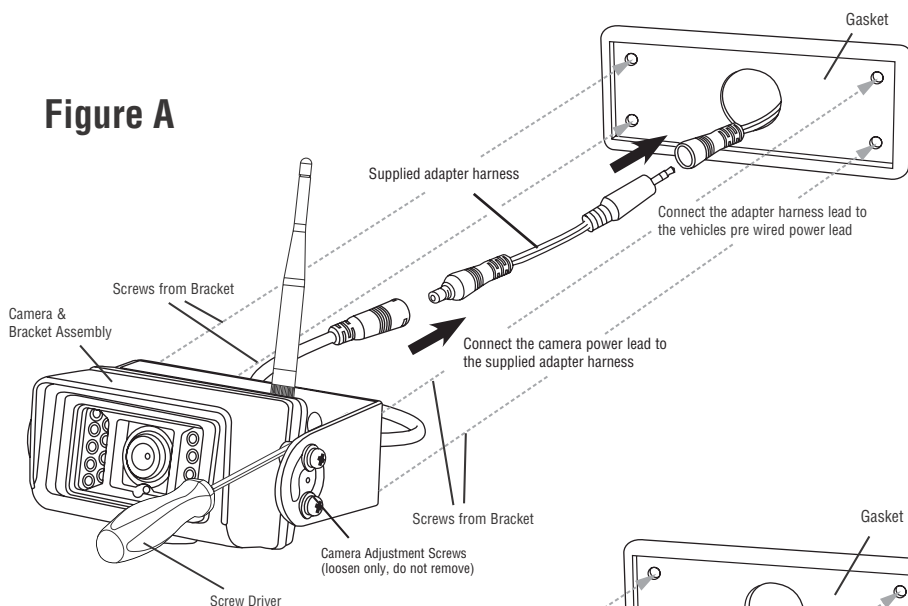
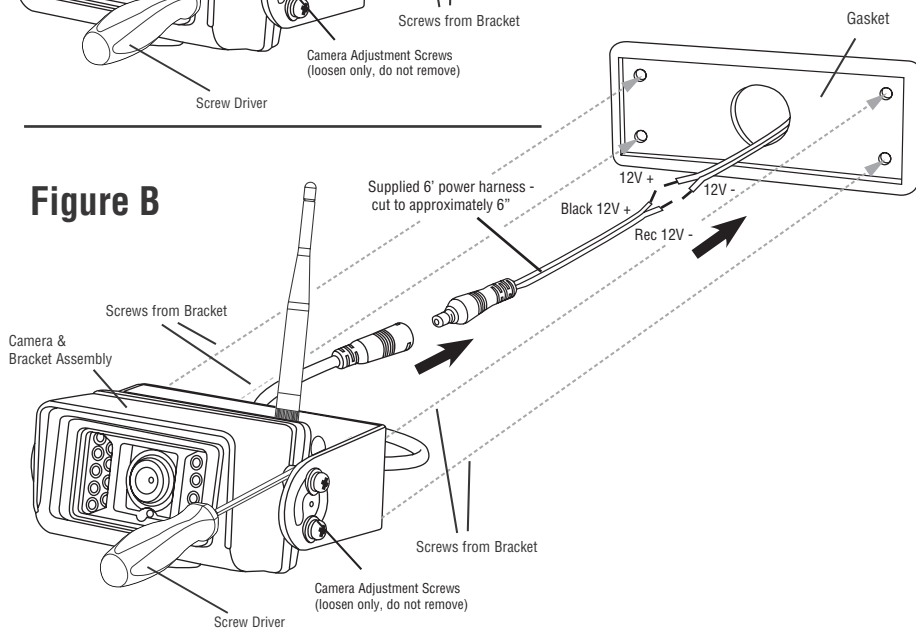


Figure B

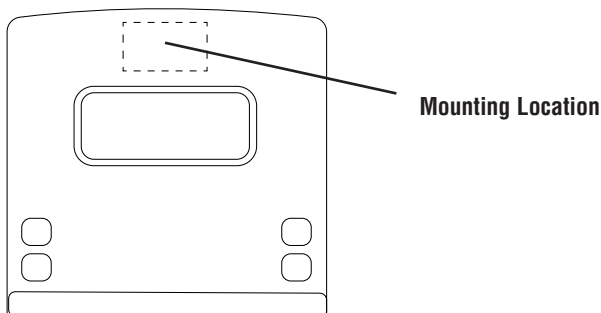


System Operation:

- Power up vehicle.
- Turn on monitor.
- Check for camera operation.
- Camera and monitor are paired.
- If camera is not paired, proceed to section on camera pairing in this manual.

New Installation - No Factory Pre Wires Present

! DISCONNECT VEHICLE POWER BEFORE STARTING INSTALLATION



1) Mounting Location:

- Identify a suitable mounting location near the roof line centered on the rear of the vehicle 2 or more inches above or below running lights to prevent degrading image and reducing night vision.
- Make sure there are no wires, glass or other items that will prevent the installation. Be sure the mounting location will allow for the drilling of a 3/4" hole to run the power cable to the camera.
- Once a proper mounting location has been identified, use the supplied template on page 19 of this manual to mark and drill the 3/4" hole. The supplied screws for attaching the camera to the vehicle are self tapping but it may be necessary to use the template to mark and drill pilot holes.

2) Power Source Connection:

Option 1 - Ignition Power

- Locate a 12V+ source that is controlled by the vehicle ignition switch. This power source will provide power to the camera whenever the vehicle is running.

Option 2 - Back Up Only

- Connect the power lead to the right or left back-up light usually located in the tail light assembly.

3) Wiring to Camera:

- Once a power source has been identified, route the power harness from the power source to the 3/4" hole drilled for the camera.

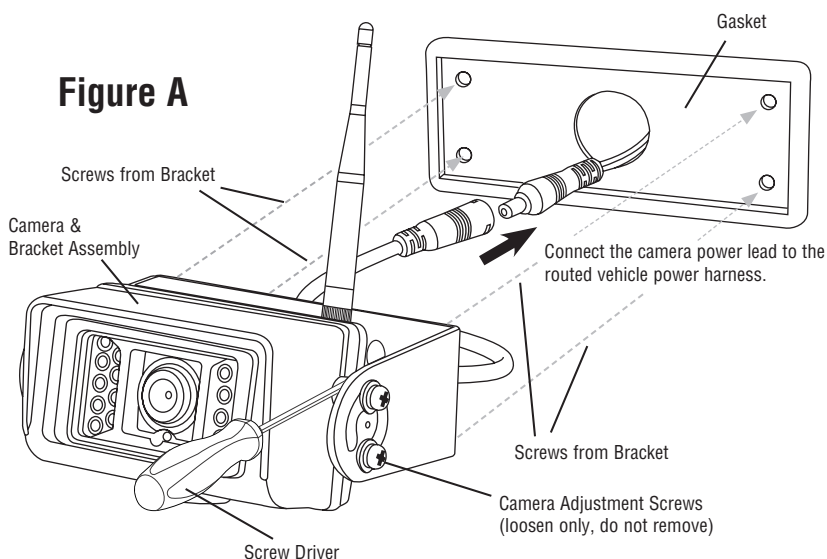
Note: If additional wire length is needed, be sure to use 18 gauge wire and connect the extension length to the end of the power harness - do not cut off the connector. Be sure to keep 12V+ and 12V- in proper order. Make sure connections are secure and protected to prevent electrical shorts.

New Installation - No Factory Pre Wires Present (continued)

4) Mounting Camera:

- Make sure vehicles power lead passes through the gasket's large center hole. Use precaution to prevent lead from falling into vehicle.
- Connect the camera and vehicle power leads. Make sure the connectors are securely twist-locked together.
- Push the connected power leads back through the 3/4" hole in the middle of the gasket and into vehicle.
- Without removing camera adjustment screws from bracket, align the camera and bracket with the gasket and pre-drilled holes in the vehicle. Using the supplied 4 screws, attach and secure the camera, bracket and gasket into position using a screw driver inserted between the camera and the bracket wall. Make sure antenna mounting screw is facing up. (Figure A)
- Adjust viewing angle of camera by loosening camera adjustment screws and then tighten.
- Mount the antenna on camera.

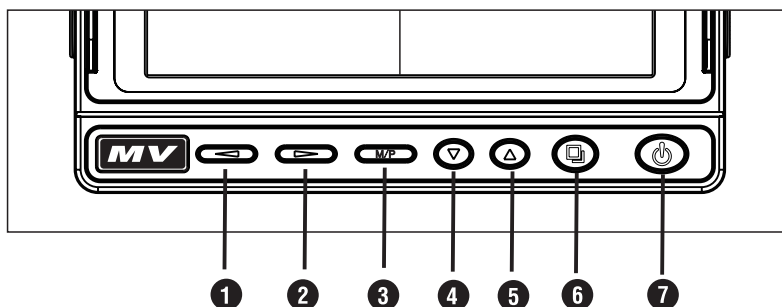
! Test System Operation before adding any additional sealant to permanently mount camera.



System Operation:

- Power up vehicle.
- Turn on monitor.
- Check for camera operation.
 - Camera and monitor are paired.
 - If camera is not paired, proceed to section on camera pairing in this manual.

Button Operations



1) Multifunction Button

- Volume Down in camera view.
- Left selection for menu settings.

2) Multifunction Button

- Volume Up in camera view.
- Right selection for menu settings

3) Multifunction Button

- Push to open menu, push again to close menu. Push and hold for 3 seconds to enter camera pairing mode.

4) Multifunction Button

- Down selection control when in Menu view.
- Down camera selection and split camera screen control in camera view.

5) Multifunction Button

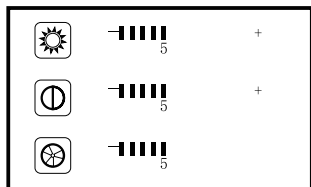
- Up selection when in Menu view.
- Up camera selection and split camera screen control in camera view.

6) Multifunction Button

- Split screen selection in camera view. Press and release to change multiple camera views.
- Select button while in menu settings mode.

7) Power On / Standby Button

- In standby mode, the button is illuminated red. The screen is off. The screen will view a camera when a trigger input is active. When the trigger is removed, the screen will return to off.
- In power ON mode, the button is not illuminated and the screen will display the #1 camera by default.



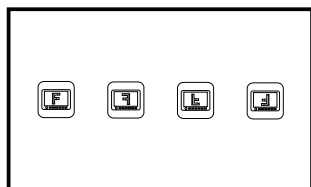
1) Picture Setting:

Enter the main menu, choose Picture and press OK.

A) Brightness: 0-10 (Press Left/Right to adjust)

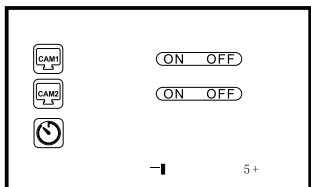
B) Contrast: 0-10 (Press Left/Right to adjust)

C) Color: 0-10 (Press Left/Right to adjust)



2) Mirror/Normal Image Settings:

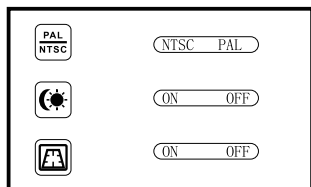
Set the CAM1/CAM2 Image in 4 modes.



3) Auto Scan Setting:

A) Set CAM1/CAM2 auto scan mode on/off.

B) Set camera auto scan time.



4) Additional Settings:

A) NTSC or PAL system switch.

B) LED screen ambient light sensor on/off.



C) Distance grid setting

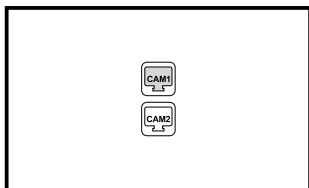
- Turn on/off the distance grid for CAM 1

Note:


When making a selection in auto SCAN mode, the CAM1/CAM2 will switch automatically until either the ▼▲ buttons are pressed. Multi-screen display model menu key operation is valid.

Camera Pairing

- The camera must be powered off prior to pairing procedure (disconnected from power)
- Turn on the monitor then press and hold the “**M/P**” button on the monitor’s front panel for a few seconds. The monitor screen will display the camera selections with **CAM 1** highlighted. 
- Use the up/down ▼▲ buttons on the monitors to select the camera position that you want to pair the new camera to.
- Press the  button on the monitor to select the input location and the monitor screen message will change to “**PAIRING START 50**”
- Apply power to the camera by plugging the camera’s power lead into the vehicle power lead. When pairing is completed, the screen will change to the camera viewing angle.
- Repeat above steps to pair an additional camera.

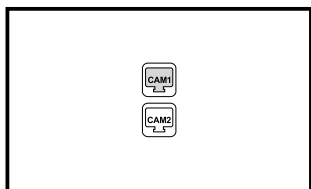


Replace an in-active or broken camera:

- 1) With the monitor on, make a note of the defective camera position (**CAM 1**, **CAM2**), then install the replacement camera. Leave the power wires disconnected.
- 2) Press and hold the “**M/P**” button on the monitor’s front panel for a few seconds. The monitor screen will display the camera selections with **CAM 1** highlighted.
- 3) Use the up/down ▼▲ buttons on the monitor to select the camera position that you want to pair the new camera to.
- 4) Press the  button on the monitor to select the input location and monitor screen message will change to “**PAIRING START 50**”
- 5) Apply power to the replacement camera. When pairing is completed, the screen will change to the camera viewing mode.

Swapping Camera Positions:

There may come a time that you want a particular camera to show up under a specific position on the monitor. Re-arranging the cameras to different positions is the same procedure as setting up a “**New Installation**”.



Make note of the camera and the positions you want them in and follow the pairing procedure for “**New Installation**”.

Although this monitor requires little care, you can still maintain its condition and performance by following these steps:

- Keep the system away from excessive moisture, extreme heat or cold, and magnetic fields.
- Occasionally clean the monitor screen with a damp soft cloth.

Should you experience any problem with the system please refer to the troubleshooting guide prior to returning your system for repair.

Note 1: The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified personnel.

Note 2: Do not expose the unit to water or excessive moisture. this could cause electrical shorts, fire or other damage.

Troubleshooting

Only qualified personnel should remove the cover or service this unit. The warranty will become invalid if factory security seal is broken.

Symptoms	Solutions
Unstable Image	<ul style="list-style-type: none"> • Low-Voltage – Check Battery • Check Generator • If the system is wireless, move vehicle to another location, as the problem may be caused by outside interference.
Cloudy Image	<ul style="list-style-type: none"> • Clean Dirty Camera Lens • Clean Dirty Monitor Lens • Adjust Contrast • Adjust Brightness
No Power/Picture	<ul style="list-style-type: none"> • Check Fuses • Check if AV Cable is Properly Connected to Monitor
No Sound	<ul style="list-style-type: none"> • Check Volume Level and Audio Connection
No Color	<ul style="list-style-type: none"> • Check Color Level Settings
Monitor Does Not Display Image When Vehicle is in Reverse	<ul style="list-style-type: none"> • Check the Green Reverse Trigger Wire for Proper 12 Volt Connection. • Check Video Inputs to Ensure they are Properly Connected

Specifications


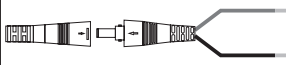
MobileVision's M160-W Specifications

Display Device:	Color TFT-LCD
Size:	5" Digital Screen
Operation Frequency:	2.4GHz
Receiving Sensitivity:	≤86dBm (1MHZ QPSK MD300RE)
Resolution:	800 x (RGB) x 480
View Angle (LR/UD):	L/R: 70/70 U/D: 50/70
Contrast Ratio:	300:1
Luminance (cd/m ²):	300
Response Time (ms):	25
Load Dump:	DC 12+87V/400ms
Operating Temperature:	-20°C~+60°C
Storage Temperature:	-30°C~+80°C
Operating Voltage Range Supply:	DC8V~32V (5W Max)
Dimension (LxWxT):	141 x 100 x 51 (mm)
Transmission Power:	18dBm with Power Control
Audio Consumption:	≤ 1W
Current Consumption:	350mA (DC 12V)

MobileVision's CAM175-WPL Specifications

Camera:	Color CMOS Camera
Image Pick-Up Device:	1/3" Color CMOS
Picture Elements:	NTSC: 960 (H) x 480 (V); PAL: 960 (H) x 480 (V)
Horizontal Resolution:	600 TV Lines
Minimum Illumination:	3.0 Lux (F:1.2) / 0 Lux At Night (IR LED ON)
IR-CUT:	Automatic Switch Day and Night Mode
View Angle:	120°
Waterproof Rating:	IP69K
Shockproof Rating:	10G
Microphone Sensitivity:	-34 ± 1dB
Current Consumption:	210mA 9 (DC 12V)
Operating Voltage Range:	DC11-32V (3W Max)
Dimension:	108 (W) x 75 (H) x 70.5 (D)mm

Cable Interface Definition

Monitor	Camera
	

Backing Up Your Vehicle

Do not backup your vehicle while looking at the monitor. Always look in the direction of your vehicles motion. Use the monitor only as an aid in safety confirmation. The actual distance may be different than it appears in the monitor. The range of the image in the monitor is limited. Always be aware that blind spots may exist and not appear at all times on your monitor.

The product is intended to assist in safe driving and allows the driver to have a broader field of vision during backup. You, as the driver, are solely responsible for the safe operation of your vehicle and the safety of your passengers and pedestrians, and for abiding of all state and local traffic regulations. Do not use any features of this system to the extent it distracts you from safe driving. Your first priority while driving should always be the safe operation of your vehicle. MobileVision will not accept any responsibility whatsoever for accidents and/or injuries resulting from failure to observe these precautions or safety instructions

Cautions

- FCC REGULATIONS STATE THAT ANY UNAUTHORIZED CHANGES OR MODIFICATIONS TO THIS EQUIPMENT MAY VOID THE USER'S AUTHORITY TO OPERATE IT.
- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE
- THIS DEVICE IS INTENDED FOR CONTINUOUS OPERATION.
- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK AND ANNOYING INTERFERENCE USE ONLY THE RECOMMENDED ACCESSORIES.

ONE (1) YEAR LIMITED WARRANTY

Magnadyne Corporation or its authorized agents will within one year from the date of sale to you, repair, replace or refund the retail sales price of said product or any part thereof, at the option of the Magnadyne Corporation or its authorized agents, if said product or part is found defective in materials or workmanship, when properly connected and operating on the correct power requirements designated for the specific product. This warranty and Magnadyne Corporation or its authorized agent's obligations hereunder do not apply where the product was; damaged while in the possession of the consumer, subjected to unreasonable or unintended use, not reasonably maintained, utilized in commercial or industrial operations, or serviced by anyone other than Magnadyne Corporation or its authorized agents, or where the warning seal on the product is broken or the power and/or plugs are detached from the unit. Magnadyne Corporation or any of its authorized agents will not assume any labor costs for the removal and reinstallation of any product found to be defective, or the cost of transportation to Magnadyne Corporation or its authorized agents. Such cost are the sole responsibility of the purchaser.

This warranty does not cover the cabinet appearance items or accessories used in connection with this product, or any damage to recording or recording tape, or any damage to the products resulting from improper installation, alteration, accident, misuse, abuse or acts of nature.

MAGNADYNE CORPORATION OR ITS AUTHORIZED AGENTS SHALL NOT BE LIABLE TO ANYONE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OR CLAIMS EXCEPT THOSE ACCORDED BY LAW. NO EXPRESSED WARRANTY OR IMPLIED WARRANTY IS GIVEN EXCEPT THOSE SET FORTH HEREIN. NO IMPLIED WARRANTY SHALL EXTEND BEYOND ONE YEAR FROM THE DATE OF SALE.

This warranty extends only to the original purchaser of the product and is not transferable. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

“NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the User's authority to operate the equipment.”

Defective merchandise should be returned to the original point of purchase or secondly, to Magnadyne Corporation, 1111 W. Victoria Street, Compton CA 90220. Return Authorization must be obtained before sending, or merchandise may be refused.

Cut Out Template on Dotted Line

