ZONE DEFENSE

SYSTEM 323-1-4

Navigation Input

Please read this manual thoroughly before operating the unit,

ZONE DEFENSE
Saint Petersburg, Florida
(866) 672-1212
(7" LCD 4 Camera 22-pin Monitor Cable)
V1. 0

TABLE OF CONTENTS

ZONE DEFENSE™ offers systems to meet any need and price point within the RV/Trucking Industries. Our systems offer unparalleled features designed for professional drivers. Zone Defense develops, manufactures and markets, among other devices: products and applications developed to transmit voice, video, audio and data either individually or in any combination with one another. The Company has also developed, manufactured and marketed different kinds of underwater video cameras, lights and accessories for the marine, commercial, transportation, trucking and consumer retail markets.

OPTIONAL TRUCK - TRAILER CABLE
Zone Defense Trailer Coil Cable
Auxiliary Coiled 2-Camera Cable with 2 Receptacles for Zone Defense Camera Cables. Part# 359A2

Important! – Please Read This Manual Before Installing!

Congratulations on the purchase of your Zone Defense™ System. Zone Defense is a leader in vehicle observation systems. When properly installed and used, your System 323-1-4 is designed to provide you with years of trouble-free operation. This manual contains important information required to properly install and operate the unit. Please read this manual thoroughly before beginning.

All Zone Defense products are strictly intended to be installed as a supplement and Zone Defense observation systems and/or products are not intended for use as substitutes for rear-view mirror devices, or for any other standard motor vehicle equipment required to be installed on vehicles by law. Zone Defense products contribute to improving the vehicle operator's field of view. Our products are no substitute for proper defensive driving techniques, observance of traffic laws and motor vehicle safety regulations.

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Warnings!
Installation Location

It is unlawful in most jurisdictions for any person(s) to drive a motor vehicle equipped with a television viewer/screen located at any point forward of the back of the driver's seat (or in any location that is visible, directly or indirectly), to the driver while operating the vehicle. The system 323-1-4 is designed to be used primarily as a rear observation device. In any installations where Systems 323-1-4 products are used to display television broadcasts or recorded video playback, installation *location* must adhere to local laws and regulations.

Tampering

To prevent electrical shock, **DO NOT OPEN THE MONITOR CASE.** There are potentially harmful voltages inside the monitor. There are no user serviceable parts inside any of the components of the Zone Defense products. If tampering is detected, the warranty will be considered void.

e24 FC

1

WARNING

♦ Do not place heavy object on cables or cover them with rugs or carpets.
♦ Do not place cables where they can be pinched or stepped on.
♦ Designed as a driving aid. Watching videos, broadcasts, DVDs and/or any images other than intended driving assistance cameras is prohibited.

CAUTION

♦ To avoid damage to electronic circuit, stop using this product while doing welding work to the vehicle and/or trailers.
♦ Never immerse any component in water, and do not employ spray cleaners. When cleaning, use damp lint-free cloth only.
♦ Connect this unit only to other compatible devices.
♦ Make sure all cables are connected properly; improper cable connections may damage the camera and the monitor.
♦ Make sure all cables are connected firmly.
♦ Cables should not be allowed to touch hot or rotating parts, such as engine, ventilator, etc.
♦ Do not locate the monitor near heat generating vents or devices.
♦ Turn off power to the monitor when connecting the camera.

Monitors are not designed to be waterproof. Exposure to water, such as rain, may damage the unit.

2

MONITOR

Display Device: 7" Color TFT-LCD with digital screen
Audio Output: Max. 1W
Loudspeaker: one 15 x 24mm round loudspeaker
Power Supply: 10v-32v
Outer dimensions: 182mm(W) x 122mm(H) x 26mm(T) without flush mount;
               198mm(W) x 138mm(H) x 31mm(T) with flush mount
Dot Pitch: 0.192(W) x 0.1805(H)
Resolution: 800 x 3(RGB) x 480
Contrast: 500: 1
Brightness: 400cd/m²
Viewing Angle: U: 50 / D: 60, R/L: 70
Operating Temperature -20~+ 70° C, RH90%
Storage temperature -30~+ 80° C, RH90%

1 / 3" COLOR CCD SENSOR SPECIFICATIONS (REAR)

With Audio and IR
TV System: NTSC
Effective Pixels: 512 x 492 pixels
Sensing Area: 4.9mm x 3.7mm
Scanning System: 2:1Interlace
Sync. System: Internal
Resolution: 420TV lines
Horizontal Sync. Frequency: 15.734KHz
Vertical Sync. Frequency: 60Hz
Minimum Illumination: 0 Lux
BLC: Auto
Microphone: Yes
Video Output: 1.0vp-p, 75Ohm
AGC: Auto
White Balance: Auto
S/N Ratio: Better than 48dB
Electronic Shutter: 1/60 ~ 1/10,000
Current Consumption: Max. 300mA
Power Supply: DC12V
Operating Temperature: —20° C ~ 70° C, RH95% MAX
Storage Temperature: —40° C ~ 80° C, RH95% MAX
Lens: f = 2.8mm/F=2.0
Lens Angle: 100° Vertically 130° Horizontally (May vary depending on system configuration)

1 / 3" COLOR CCD SENSOR SPECIFICATIONS

(SIDE OPTIONAL)
Without Audio Image Device: SHARP
Effective Pixels: 512 x 582 pixels / 512 x 492 pixels
Sensing Area: 4.9mm x 3.7mm
Scanning System: 2:1Interlace
Sync. System: Internal
Resolution: 420TV lines
Horizontal Sync. Frequency: 15.625KHz / 15.734KHz
Vertical Sync. Frequency: 50Hz / 60Hz
Minimum Illumination: 0 Lux/F1.2 with IR
Video Output: 1.0vp-p, 75Ohm
Gamma Consumption: 0.45
AGC: Auto

3

BLC: Auto
White Balance: Auto
S/N Ratio: Better than 48dB
Electronic Shutter: 1/60(NTSC) / 1/50(PAL) ~ 1/10,000 Seconds
Power Supply: DC12V
Current Consumption: Max. 300mA
Operating Temperature: −20° C ~ 70° C, RH95% MAX
Storage Temperature: −40° C ~ 80° C, RH95% MAX
Lens: f= 2. 8mm / F = 2.0
Lens Angle: 120° (Standard)

ALL SPECIFICATIONS ARE SUBJECT TO CHANGE

SYSTEM COMPONENTS

7-Inch Flat Panel

I/F Remote

Infrared Color w/ audio
Rear Camera

Cable

33'

22-pin AV Monitor
Cable
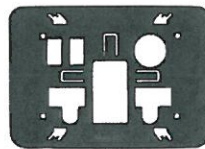
Universal Mount

Sun Shield

Angle Adjustment screws
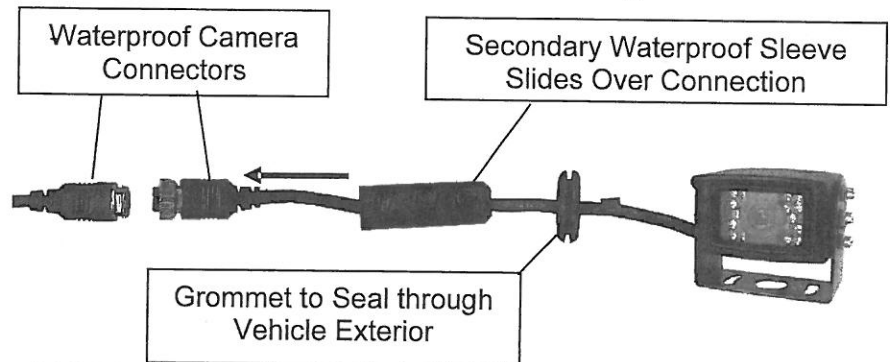U-support bracket(optional)

Flush Mount

Detaching Piece

4

This monitor can be mounted in dash, hanging or seating in any position, whichever is suitable to the driver to observe the images. Take care not to block any necessary viewing area when mounting.

Mounting Monitor

1. After determining the monitor's location, position the monitor support bracket, mark the bolt hole's location and then drill the holes. Be careful not to drill into any other surface that may be hidden.

2. If supplied, use washers on mounting screws. Attach monitor bracket. Check installation before mounting monitor.

3. Mount the monitor to the support bracket with supplied 4 angle adjustment screws.

4. Connect one end of the power cable (wire) to the proper connections. Connect the other end of the power cable (plug) to the monitor; connect the monitor and the camera with the system connecting cable.

Camera Mounting

Waterproof Camera Connectors

Secondary Waterproof Sleeve Slides Over Connection

Grommet to Seal through Vehicle Exterior

5/8-inch hole needed to pass connector through the exterior wall. Be careful not to drill a hole so large that the grommet will not seal. Before drilling make sure there are no obstacles in the way in the drill bit. Check to make sure wall thickness is suitable for weatherproof grommet. Use proper hardware to mount camera.
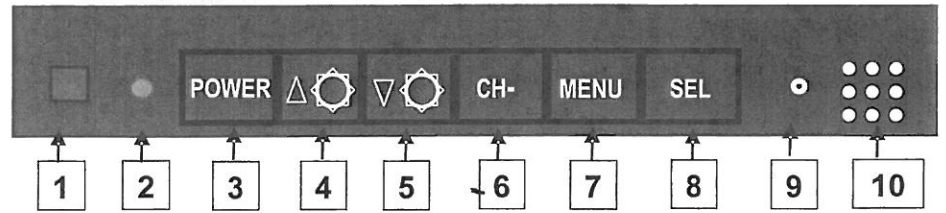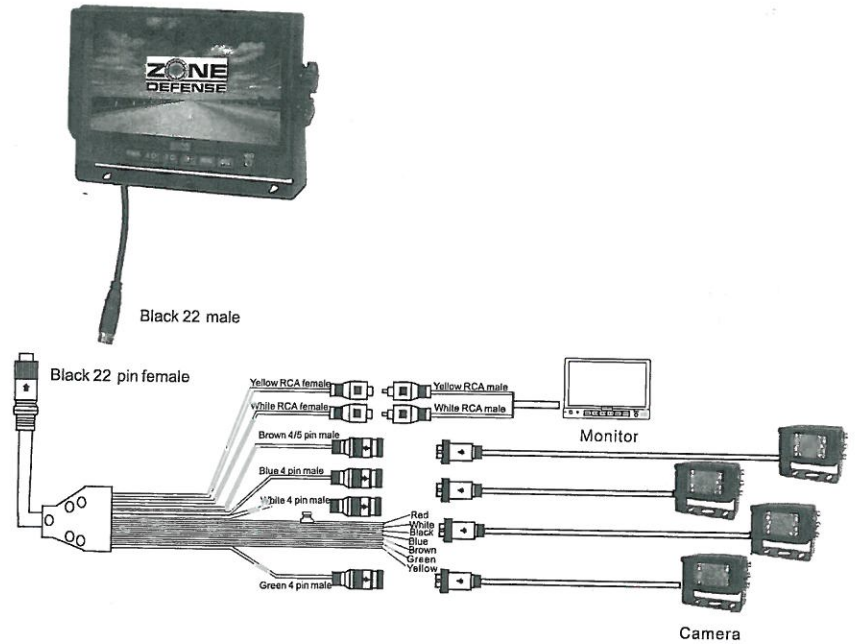
1. Remote Signal Receiver Window
2. Power Indicator Light
3. Power Off/On button
4. Brightness Increase Options Control Button
5. Brightness Decrease
6. Channel – (Down button)
7. Menu Control Button
8. SEL Switches between AV 1, AV2, AV3, AV4
9. Video Output
10. Loudspeaker

6
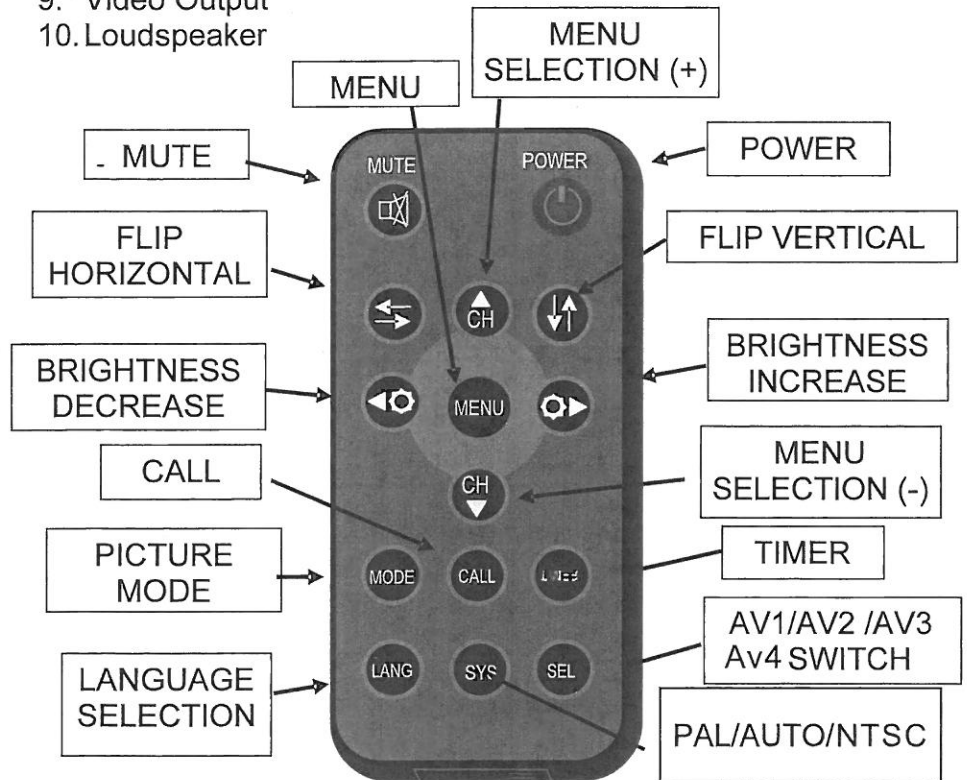
1. Black 4/5 pin male for Camera 1 / Camera 2 / Camera 3 / Camera 4.
2. Single red wire to positive power supply of DC/10-32V.
3. Single black wire to GND.
4. Single brown wire to positive power wire of back-up light.
5. Single white wire to positive power wire of left light .
6. Single blue wire to positive power wire of right light .
7. Single green wire to any other trigger control.
8. Yellow RCA female for video output .
9. White RCA female for audio output.

MENU:

Press MENU in turn to display options as follows:

    1. PICTURE
    2. OPTION
    3. SYSTEM

1. Picture

(Note Color adjustment valid on Navigation input channel only)
The BRIGHT, CONTRAST, COLOR,VOLUME options will
display on the screen as illustrated below.

- Press CH- to select BRIGHT

```
┌─────────────────────────────┐
│ PICTURE                     │
│                             │
│ BRIGHT                 50   │
│ CONTRAST               50   │
│ COLOR                  50   │
│ VOLUME                 50   │
│                             │
│ |||||||||||||||||||......   50   │
└─────────────────────────────┘
```

Press △○ /▽○ to adjust the Brightness level

8

- Press CH- to select CONTRAST

```
PICTURE

BRIGHT               50
CONTRAST             50
COLOR                50
VOLUME               50

|||||||||||||||||||||||..............   50
```

Press △◯ / ▽◯ to adjust the contrast.

2. Option

LANG, SCALE, CAM1, CAM2, CAM3, CAM4 options will display
on the screens as illustrated below:

```
OPTION

LANG              ENGLISH
SCALE             NORMAL
CAM1              NORMAL
CAM2              NORMAL
CAM3              NORMAL
CAM4              NORMAL
```

Press △◯ / ▽◯ to select ENGLISH / FRENCH / ITALIAN
PORTUGUESE / SPAINISH / RUSSIAN / DUTCH / GERMAN

- Press CH- to select SCALE.

```
OPTION

LANG            ENGLISH.
SCALE           NORMAL
CAM1            NORMAL
CAM2            NORMAL
CAM3            NORMAL
CAM4            NORMAL
```

Press △◯ / ▽◯ to select ON/OFF. Scale refers to the reversing distance indicator displayed on the monitor.

- Press CH- to select CAM1.

```
OPTION

LANG            ENGLISH.
SCALE           NORMAL
CAM1            NORMAL
CAM2            NORMAL
CAM3            NORMAL
CAM4            NORMAL
```

Press △◯ / ▽◯ to select NORMAL / MIRROR

3. SYSTEM

FACTORY PRE SET FOR APPLICATION
DO NOT ADJUST
The COLOR-SYS, BLUE BACK, HORIZONTAL, VERTICAL, ZOOM functions will display on the screen as illustrated below:

10

- COLOR-SYS

  (pre factory adjusted for your application, do not adjust)

```
SYSTEM

COLOR SYS      PRE SET
BLUE BACK      ON
HORIZONTAL     ⇄
VERICAL        ↓↑
ZOOM           0
```

Press △✿ / ▽✿ to select PAL / AUTO / NTSC.

- Press CH- to select BLUE BACK.

```
SYSTEM

COLOR SYS      PRE SET
BLUE BACK      ON
HORIZONTAL     ⇄
VERICAL        ↓↑
ZOOM           0
```

Press △✿ / ▽✿ to select ON / OFF.

- Press CH- to select ZOOM.

```
SYSTEM

COLOR SYS      PRE SET
BLUE BACK      ON
HORIZONTAL     ⇄
VERICAL        ↓↑
ZOOM           0
```

Press △✿ / ▽✿ to select 0 / 1.
0 stands for 16:9
1 stands for 4:3

11

Trouble Shooting Chart

Symptom	Cause	Solution
Small - Unstable image	Monitor improper voltage	Check the voltage of power supply
Black image	Monitor improper voltage	Check fuse, check power cable, wires or connections (look for loose or broken wires)
White image	Monitor/Camera	Check main system cable. Make sure all connectors are connected properly. If ok, check 4 pin camera /monitor cable
Blurred image	Dirty camera lens	Clean camera lens
Engine noise or Static lines	Monitor	Check ground and +12V DC source.
No light displayed on monitor	Broken fuse or low brightness level	Check if the brightness has been turned to the lowest level
No image	No power or unplugged connector	Check power and check for unplugged or broken camera cable

Technical Support

For help with Zone Defense technical support, please email us.
Email: techsupport@ZoneDefenseTruck.Com
         techsupport@ZoneDefenseRV.Com
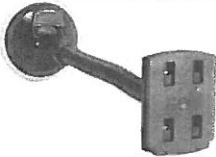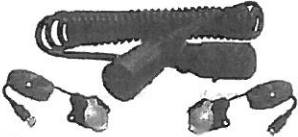
Phone support: 866-672-1212

ZONE DEFENSE

RV Parts/Sales Inquiries Sales@ZoneDefenseRV.Com
Trucking Parts/Sales Inquires Sales@ZoneDefenseTruck.Com

12

Optional Equipments	
	Windshield Pedestal Monitor Mount - Part # 400A E-Z Windshield Mount allows the monitor to be removed when not in use.
	Zone Defense Truck/5th Wheel Coil Cable - Part# 359A Auxiliary Coiled Camera Cable With 2 Receptacles
	Zone Defense Camera Cables 20 Meter Cable Part #358 15 Meter Cable Part #358A 10 Meter Cable Part #358B
	Color Camera Part # 312-313C Optional I/R Non-Color camera w/ cables and 5m camera Cable
	Dome Camera Part # 312-313D Color infrared camera w/ adjustable angle view and 5m camera Cable

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BV 5/08

13

ZONE
DEFENSE

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