

# OPERATING MANUAL

## ROSTRA OBSTACLE SENSING SYSTEM



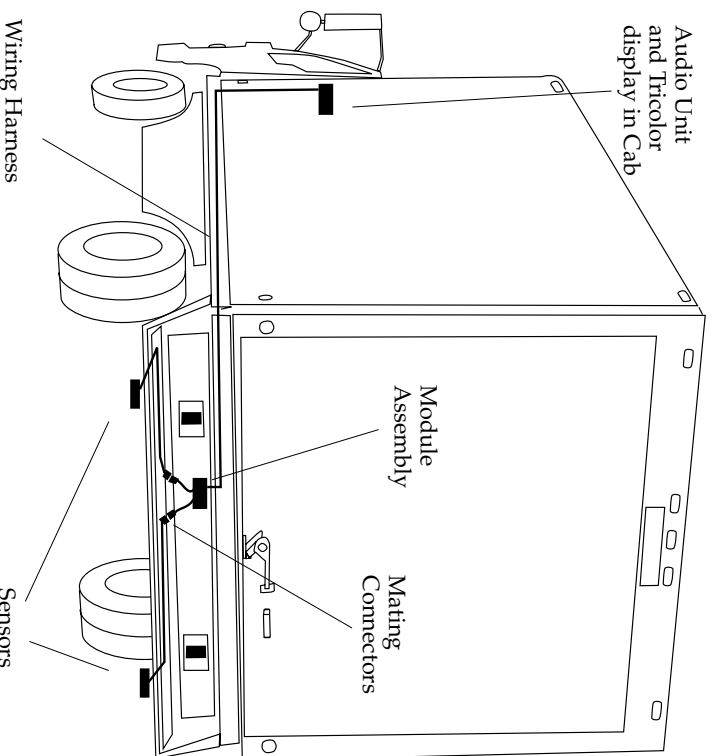
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## SYSTEM OVERVIEW

RearSentry™ is a state-of-the-art obstacle detection system. The system uses a microwave signal to detect obstacles in a vehicle's "blind spots."

When an obstruction is detected in the sensor's coverage area, the sensor determines the distance to the obstacle. This information is then instantaneously converted into a tricolor display and an audible alert. The RearSentry™ is not affected by adverse weather conditions, such as extreme heat or cold, rain, sleet, snow, hail, mist, or fog.



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Manufacturer

Made in the



# GENERAL OPERATING INSTRUCTIONS

## Obstacle Detection

The RearSentry™ detects obstacles up to 12 feet behind a vehicle. Before the RearSentry™ can provide obstacle alerts, the following must occur:

- The vehicle ignition must be in the “On” position.
- The vehicle must be in reverse gear.
- The vehicle or the obstacle must be moving.

The RearSentry™ will detect obstacles within the sensor coverage area. However, obstacle density and moisture content will affect the sensitivity of the RearSentry™ sensors. For these reasons, some objects may not be detected until they are closer to the rear bumper of the vehicle than the outermost detection zone. (Please see the section entitled “Detection Zones.”)

For example, a relatively low-density object, such as a utility pole, sign, or fence post, may not be detected when it is located in the Safe Zone, but may be detected in the Alert Zone. In addition, in some cases, a small object such as a ball or a small shrub may not be detected. When an obstacle is detected in the Hazard Zone or the Danger Zone, stop the vehicle immediately.

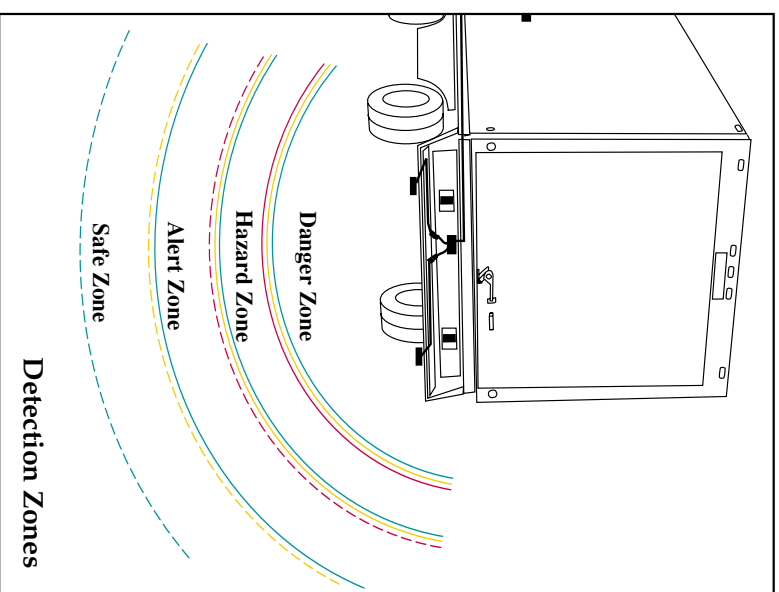
### VERRIDING PRECAUTIONS

- The RearSentry™ system is designed to supplement other safety practices by enhancing driver awareness of difficult-to-see areas.
- Failure to operate the RearSentry™ in the manner specified in this manual could result in personal injury, property damage, or possibly death.
- Always inspect behind and below your vehicle prior to backing up to eliminate the possibility of property damage and bodily injury.
- Always use caution when backing up.
- Responsibility for safe operation of the vehicle remains with the driver.

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## Detection Zones

The RearSentry™ sensor coverage area is divided into four zones as shown in the figure below.



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## Driver Alerts

The table below shows the types of visual and audio alerts provided by the RearSentry™ when an obstacle is detected within each detection zone. Should obstacles be located in more than one zone, the RearSentry™ will provide alerts for the closest one.

### Detection Zone Alerts

Detection Zone	LED Indication			Audio Alert
	Green Light	Yellow Light	Red Light	
Safe Zone	Flashing	None	None	None
Alert Zone	Solid	Flashing	None	Slow beeping
Hazard Zone	Solid	Solid	Flashing	Fast beeping
Danger Zone	Solid	Solid	Solid	Continuous tone

### Operation When No Obstacles Are Detected

When no obstacles are detected, the visual display unit will show a solid green light indicating that the RearSentry™ is turned on and that no obstacles are detected.

### Cleaning and Care

The RearSentry™ does not require cleaning or special care.

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## Getting Started

After your RearSentry™ has been professionally installed in your vehicle and you have thoroughly reviewed the Operating Manual, take a few moments to familiarize yourself with the RearSentry™ by following these steps:

1. To ensure proper installation and operation of your RearSentry™, have another individual stand outside the car to verify proper obstacle clearance and to ensure traffic avoidance while you become familiar with the operation of the RearSentry™.
2. In your driveway or in a quiet parking lot, identify an obstacle, such as a parked vehicle or a building.
3. Park your vehicle so that the rear bumper is approximately 20 feet from the obstacle.
4. With your vehicle still in "Park" and the vehicle ignition turned on, the visual display should not show any lights, nor should the RearSentry™ sound any alerts.
5. With the brakes applied, place your vehicle in reverse gear. The visual display should show a solid green light.
6. Slowly release the brakes and begin to back your vehicle toward the obstacle.
7. As you back your vehicle closer to the selected obstacle, you should receive the audio and visual alerts outlined in the "Detection Zone Alerts" table. Continue backing toward the obstacle until you receive the alerts for the Hazard Zone or the Danger Zone. **Be advised that the obstacle may not appear in both of these zones** (see "Obstacle Detection"). Once the obstacle is detected in the Danger Zone or the Hazard Zone, place your vehicle in "Park." Have the individual assisting you estimate the distance between the vehicle bumper and the obstacle.
8. Repeat this entire procedure using other obstacles. Because of differences in obstacle moisture content and density, the RearSentry™ will detect some obstacles further away from the vehicle bumper than others (see "Obstacle Detection").

Please remember that the RearSentry™ is a driver's aid. Safe operation of the vehicle is the driver's responsibility.

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## PRECAUTIONS AND LIMITATIONS

To ensure proper operation of your new RearSentry™, the following precautions and limitations of the RearSentry™ (and those which are addressed in other parts of this manual) must be considered at all times:

- The RearSentry™ operates only while the vehicle is in reverse gear. In addition, either the vehicle or an obstacle must be moving for the driver alerts to function. The RearSentry™ is intended to be useful at low speeds (five miles per hour or less) only.
- The moisture content of the obstacle may affect its detection.
- The RearSentry™ will not detect obstacles under the bumper.
- The system sensors are affected by tall grass and may not provide proper obstacle sensing if the vehicle is located in an unmowed area such as a meadow or other off-road situation.
- The RearSentry™ will not detect obstacles properly if you are towing a trailer behind the vehicle in which the RearSentry™ is installed.
- The RearSentry™ may work unsatisfactorily on vehicles with bumpers that are less than 14" above the ground.
- The RearSentry™ does not provide accurate obstacle detection on vehicles more than seven feet wide.
- Detection ranges may vary according to the size and material composition of various obstacles. A small object which is very close to the rear of the vehicle may not be detected.
- Moving in reverse down a steep slope may produce momentary signals. Moving in reverse when carrying a heavy load over rough surfaces may produce false signals. Moving in reverse toward a ninety degree angle (such as the corner of a building) may distort detection; exercise caution in these circumstances.
- Damage to the rear bumper/fascia of your vehicle which leaves the RearSentry™ misaligned or bent may cause inaccurate detection.

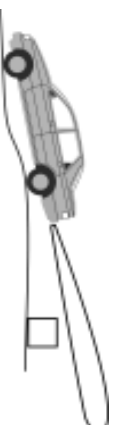
### Detection Diagram



**Obstacle is NOT detected.**



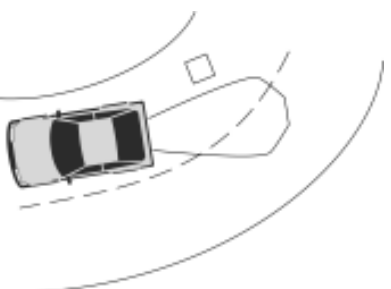
**Obstacle IS detected.**



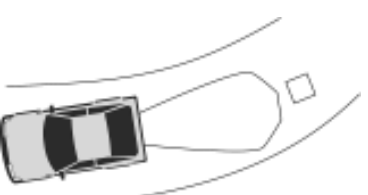
**Obstacle is NOT detected.**



**Obstacle IS detected.**



**Obstacle is NOT detected.**



**Obstacle IS detected.**

## TROUBLESHOOTING GUIDE

PROBLEM	CHECK THE FOLLOWING
LED does not display any lights.	<ul style="list-style-type: none"> <li>• Make sure that the vehicle reverse light bulbs are working properly.</li> <li>• Verify that the vehicle ignition is either "On" or in "Accessory" mode.</li> </ul>
LED is working properly, but system is not detecting obstacles.	<ul style="list-style-type: none"> <li>• Make sure that the vehicle is in reverse gear and either the vehicle or an obstacle within the sensor range is moving.</li> <li>• Confirm that the vehicle is not parked in tall grass.</li> </ul>
Audio alert sounds, but is barely audible.	<ul style="list-style-type: none"> <li>• Check the volume control knob on the audio control unit.</li> </ul>
Audio alert sounds, but LED display is not working.	<ul style="list-style-type: none"> <li>• Check the LED harness connections to audio control unit.</li> </ul>
Red or yellow LED light is illuminated and/or audio alert sounds, but no obstacle is present within 8 feet of the rear bumper.	<ul style="list-style-type: none"> <li>• Verify that no obstacles are located within the detection zone.</li> <li>• If the car is parked on a hill with the rear end of the car pointed down the hill, this may be a normal condition.</li> </ul>

If you continue to have difficulties with the operation of your RearSentry™, please contact our Technical Assistance Hotline at (910) 277-1828 between the hours of 8 a.m and 5 p.m. (EST), Monday through Friday.

## 60-MONTH/50,000-MILE LIMITED WARRANTY

Rostra Precision Controls, Inc. (the Company), warrants to the original retail purchaser of this product that should this product or any part thereof, under normal use and conditions, be proven to have defective material or workmanship within 60 months or 50,000 miles of the original purchase, whichever first occurs, such defects will be repaired or replaced (at the Company's option) without charge for the parts. This warranty does not apply to batteries or normal wear and tear associated with the Product.

To obtain repair or replacement within the terms of this warranty, the product is to be delivered, transportation prepaid, with proof of warranty coverage (e.g., dated bill of sale) and specification of defects, to the installing dealer and/or retailer.

This warranty does not cover costs incurred for the removal or reinstallation of the product, and/or related components, and/or damage to the vehicle's electrical system or components.

This warranty does not apply to any product or part thereof which, in the opinion of the Company, has been damaged through alteration, improper installation, misuse, neglect, accident, or customer abuse.

This warranty is in lieu of all other expressed warranties or liabilities. ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, SHALL BE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. ANY ACTION FOR BREACH OF ANY WARRANTY HEREUNDER, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, MUST BE BROUGHT WITHIN A PERIOD OF 66 MONTHS FROM DATE OF ORIGINAL PURCHASE. IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WHATSOEVER. No person or representative is authorized to assume for the Company any liability other than expressed herein in connection with the sale of this product.

THE EXTENT OF THE COMPANY'S LIABILITY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT PROVIDED ABOVE, AND IN NO EVENT SHALL THE COMPANY'S LIABILITY EXCEED THE PURCHASE PRICE PAID BY THE PURCHASER FOR THE PRODUCT. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damage, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Customer's Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Dealer Name: \_\_\_\_\_  
 Dealer Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Date Purchased: \_\_\_\_\_ Date Installed: \_\_\_\_\_  
 Make & Year of Vehicle: \_\_\_\_\_  
 Mileage at Installation: \_\_\_\_\_

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