

# HR220 Receiver User Guide



www.trimble.com



## Introduction

Thank you for choosing the Spectra Precision® Laser Receiver HR220 from the Trimble® family of precision instruments. The HR220 is a battery-operated laser receiver that detects a pulsed line laser beam and indicates its position relative to the beam using an LCD and simultaneous LEDs.

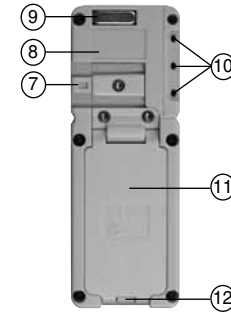
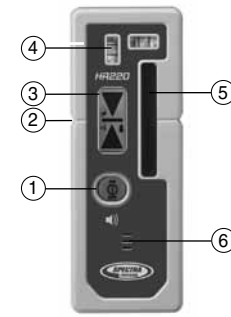
Before using the receiver, be sure to read this user guide carefully. Included in it is information about setting up, using, and maintaining the receiver. Also included in this manual are **CAUTIONS** and **Notes**. Each of these words represents a level of danger or concern. A **CAUTION** indicates a hazard or unsafe practice that could result in minor injury or property damage. A **Note** indicates important information unrelated to safety.

Your comments and suggestions are welcome; please contact us at:

Spectra Precision Division  
8261 State Route 235  
Dayton, Ohio 45424 U.S.A.  
Phone: (937) 245-5600  
(800) 538-7800  
FAX: (937) 482-0030  
Internet: www.trimble.com/spectra

## Features

1. **Power and Audio Button** – turns the receiver ON and OFF and changes the audio to LOUD, LOW or OFF.
  - a. **Automatic Shutoff** - If the photocell does not detect the laser beam for 30 minutes, the receiver shuts off automatically.
2. **Marking Notches** (both sides) – align with the on-grade portion of the photocell and are used to mark elevation readings. The marking notches are 50 mm (2 in.) from the top of the receiver.
3. **Liquid Crystal Display (LCD)** – displays the elevation, power, audio and battery status.
4. **Bubble vials** - aids in keeping receiver level in both horizontal and vertical planes.
5. **Photocell** – detects the laser beam when it strikes the receiver.
6. **Audio Port** – is the opening the sound comes out of.
7. **Clamp-Tab Recess** – is the area that the general-purpose clamp's release tab fits into.



## Features (cont.)

8. **Label** – shows the serial number and manufacturing date.
9. **Magnet**—holds the receiver on a wall molding, cross-T, runner, etc.
10. **LEDs** – show the position of the receiver relative to the laser beam (above grade [red], on grade [green] or below grade [blue]).
11. **Battery Housing** – holds 2 AA alkaline batteries.
12. **Battery Door Latch**– opens the battery compartment.

## How to Use the Receiver

### Installing/Removing the Batteries



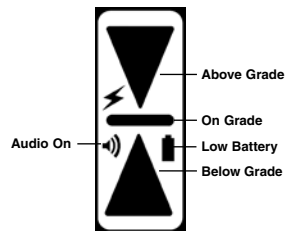
1. Release the battery door using your fingers, a coin, or a screwdriver. Open the door.
2. Install/Remove the 2 AA batteries noting the positive (+) and negative (-) diagram on the bottom of the battery housing.
3. Close the battery door and latch it shut.

## Learning the Receiver Functions

### Turning On/Off the Receiver

1. Press the power/audio button to turn on the receiver.
 

**Note:** When the receiver is initially turned on/off, all LCD symbols, LEDs, and the audio signal are turned on for one second.
2. Press and hold the power/audio button for one second to turn off the receiver.



### Selecting the Audio Function

The receiver always starts up with the audio mode (loud) active.

1. Press the power/audio button repeatedly to cycle the audio level - loud, low or off.

**Note:** If the audio function is on, the receiver beeps quickly when the receiver is above the laser beam, slowly when below it, and continuously when centered in the laser beam or on grade.

### Using the Receiver with a Laser

1. Press the power/audio button to turn on the receiver. Also make sure the Receiver Mode indicator on the laser is ON (if not, press the RECEIVER button on the laser).
2. Position the receiver so that its photocell faces the laser.
3. Move the receiver up/down until the LCD and LEDs show an on-grade reading.

**Note:** The LCD shows a down arrow when the receiver is above the laser beam, an up arrow when below it, and a horizontal line when centered in the laser beam. The LED is red for above grade, green for on grade, and blue for below grade.

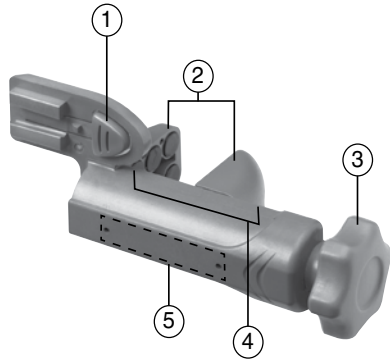
## LCD/LED/Audio Information

LCD Readout	Function	Audio Output	LED Indication
Down arrow ▼	High	Fast beeping tone	Top red LED: solid
Center bar & down arrow ▼	Fine-high	Fast beeping tone	Top red LED: flashing
Center bar —	On-grade	Continuous tone	Middle green LED: solid
Center bar & up arrow ▲	Fine-low	Slow beeping tone	Bottom blue LED: flashing
Up arrow ▲	Low	Slow beeping tone	Bottom blue LED: solid
			<b>LCD Indication</b>
Battery 🔋	Low battery	N/A	Flashing symbol
Horn 📢	Audio Loud	Loud	Solid symbol
	Audio Low	Low	Flashing symbol
	Audio Off	None	No symbol

## General-Purpose Clamp

The C61 clamp allows the receiver to be attached to a survey rod or wooden pole.

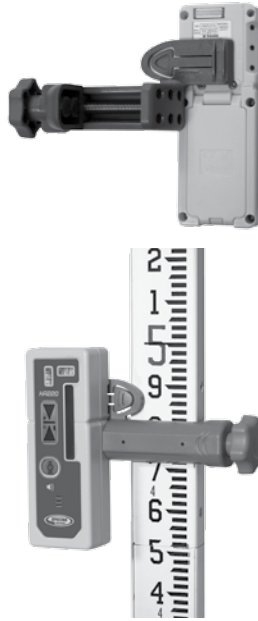
1. **Release Tab** – allows the receiver to be locked onto or released from the general-purpose clamp.
2. **Jaws** – close/open so that the general-purpose clamp can be attached to or released from a survey rod or wooden pole.
3. **Jaws Screw** – controls the closing/opening of the jaws.
4. **Reading Edge** – aligns with the receiver's on-grade marking notches.
5. **Bubble Screw Holes** – are where the optional 1277-6251S rod bubble kit is mounted.



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## Attaching the Receiver to a Grade Rod

1. Slide the general-purpose clamp into the receiver until it “clicks” into position.
2. Turn the jaws screw counterclockwise to open the clamp's jaws.
3. Slide the survey rod or wooden pole between the clamp's jaws.
4. Turn the jaws screw clockwise to hold the general-purpose clamp securely in place.



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## Specifications

Accuracy	±1.0 mm (±1/32 in.)
Elevation Readout	Front LCD and simultaneous rear corner LEDs (red, green, and blue)
Audio Control	Loud / Low / Off
Capture Height	50 mm (2 in.)
Marking Notches	50 mm (2 in.) below top of receiver
Power Source	2 AA alkaline batteries
Battery Life	50+ hours
Low-Battery Indicator	Flashing battery symbol on LCD
Automatic Shutoff	30 minutes after last laser strike or button press
Drop Resistance	1.5 m (5 ft) onto concrete at room temperature
Water Proof / Dust Proof	Yes - IP67
Operating Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
Regulatory Conformance	2004/108/EC; 2002/95/EC; 2002/96/EC

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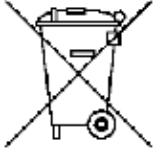
## Notice to Our European Union Customers

For product recycling instructions and more information, please go to: [www.trimble.com/environment/summary.html](http://www.trimble.com/environment/summary.html)

### Recycling in Europe

To recycle Trimble WEEE, call: +31 497 53 2430, and ask for the “WEEE associate,” or

mail a request for recycling instructions to:  
Trimble Europe BV  
c/o Menlo Worldwide Logistics  
Meerheide 45  
5521 DZ Eersel, NL



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## Request for Service

To locate your local dealer or authorized Trimble Service Center outside the U.S.A for service, accessories, or spare parts, contact one of our offices listed below.

### North & Latin America

Spectra Precision Division  
8261 State Route 235  
Dayton, Ohio 45424  
U.S.A.  
(800) 538-7800 (Toll Free)  
+1-937-245-5600 Phone  
+1-937-482-0030 Fax

### Europe

Trimble Kaiserslautern GmbH  
Am Sportplatz 5  
67661 Kaiserslautern  
GERMANY  
Tel +49-(0)6301-71 14 14  
Fax +49-06301-32213

### Africa & Middle East

Trimble Export Middle-East  
P.O. Box 17760  
Jebel Ali Free Zone, Dubai  
UAE  
+971-4-881-3005 Phone  
+971-4-881-3007 Fax

### Asia-Pacific

Trimble Navigation Singapore  
PTE Ltd.  
80 Marine Parade Road, #22-06  
Parkway Parade  
Singapore, 449269  
+65 6348 2212 Phone  
+65 6348 2232 Fax

### China

Trimble Beijing  
Room 2805-07, Tengda Plaza,  
No. 168 Xiwai Street  
Haidian District  
Beijing, China 100044  
+86 10 8857 7575 Phone  
+86 10 8857 7161 Fax  
[www.trimble.com.cn](http://www.trimble.com.cn)

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## Maintenance and Care

### System Cleaning

For maximum performance and accuracy always keep the display and receiver windows clean. When cleaning, apply very light pressure and use only a good quality glass cleaner on a soft cloth to clean the exterior of the receiver and its windows.

**CAUTION:** A dry cloth or abrasive organic cleaner could scratch or damage these surfaces.

**CAUTION:** Do not submerge the receiver.

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## Warranty

Trimble warrants the receiver to be free of defects in material and workmanship for a period of three years. For the first 24 months, Trimble or its authorized service center will repair or replace, at its option, any defective part for which notice has been given during the warranty period. For months 25-36 an exchange fee may apply.

Customers should send products to the nearest Authorized Factory, Dealer, or Service Center for warranty repairs, freight prepaid. In countries with Trimble Service Subsidiary Centers, the repaired products will be returned to the customer, freight prepaid.

Any evidence of negligent, abnormal use, accident, or any attempt to repair equipment by other than factory-authorized personnel Trimble certified or recommended parts, automatically voids the warranty.

Special precautions have been taken to ensure the calibration of the receiver; however, calibration is not covered by this warranty. Maintenance of the calibration is the responsibility of the user.

The foregoing states the entire liability of Trimble regarding the purchase and use of its equipment. Trimble will not be held responsible for any consequential loss or damage of any kind.

This warranty is in lieu of all other warranties, except as set forth above, including an implied warranty merchantability of fitness for a particular purpose, is hereby disclaimed. This warranty is in lieu of all other warranties, expressed or implied.

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Spectra Precision Division  
8261 State Route 235  
Dayton, Ohio 45424-6383  
U.S.A.

[www.trimble.com/spectra](http://www.trimble.com/spectra)



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