HR320 Receiver
User Guide



SPECTRA PRECISION

HR320

www.spectraprecision.com

Introduction

Thank you for choosing the Spectra Precision® Laser HR320 from the family of precision products. The HR320 is a battery-operated laser receiver that detects a rotating laser beam and indicates its position relative to the beam using LCD symbols.

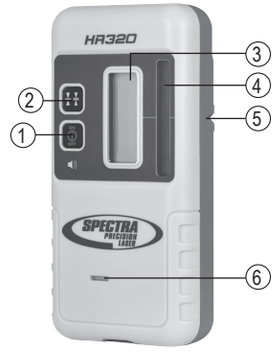
Before using the receiver, be sure to read this user guide carefully. Included in it is information about setting up, using, and maintaining the receiver. Also included in this manual are **CAUTIONS** and **Notes**. Each of these words represents a level of danger or concern. A **CAUTION** indicates 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:

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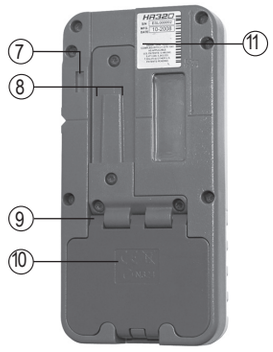
Receiver

Features and Functions



1. **Power/Audio Button**—is a multi-functional button that is used to turn on/off the receiver and adjust the volume.
2. **Grade-Sensitivity Button**—allows you to select the receiver's on-grade sensitivities, which include fine: 2.0 mm (1/16 in.) and coarse: 6.0 mm (1/4 in.).
3. **Liquid Crystal Display (LCD)**—shows the elevation, grade sensitivity, audio, and battery status.
4. **Photocell**—detects the laser beam when it strikes the receiver.
5. **Marking Notch**—align with the on-grade portion of the photocell and is used to mark elevation readings. The marking notch is 50.0 mm (2 in.) from the top of the receiver.
6. **Audio Port**—the sound comes out of this opening.

7. **Clamp-Tab Recess**—the general-purpose clamp release tab fits into this area locking the clamp in place.
8. **Clamp Slots**—allows the clip-on general-purpose clamp to attach to receiver.
9. **Battery Housing**—holds two AA alkaline, Ni-MH, or Ni-Cd batteries.
10. **Battery Door**—holds the batteries securely in place.
11. **Label**—shows the serial number and manufacturing date.



How to Use the Receiver

Installing/Removing the Batteries



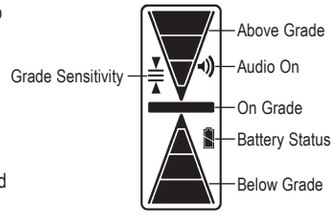
1. Open the battery door using a coin or your thumbnail.
2. Install/Remove the 2 AA batteries noting the positive (+) and negative (–) diagram inside the housing.
3. Push down on the battery door until it "clicks" into position.

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, all LCD symbols, and the audio signal are turned on for one second (diagnostic mode). After the diagnostic mode is complete, the grade sensitivity (fine) and the audio (loud) symbols appear.



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 through the audio levels, which include loud, off, and soft.

   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.When audio is off, a single beep indicates laser is detected.

Selecting the Grade Sensitivity

The receiver always starts up with the on-grade sensitivity (fine) active.

1. Press the grade-sensitivity button repeatedly to select between fine: 2.0 mm (1/16 in.) and coarse: 6.0 mm (1/4 in.) grade sensitivity.

Using the Receiver with a Laser

1. Press the power/audio button to turn on the receiver.
2. Position the receiver so that its photocell faces the laser.
3. Move the receiver up/down until the LCD show an on-grade reading.

LCD/Audio Information

LCD Readout		Function	Audio Output
Down arrow	▼	High	Fast beeping tone
Center bar & down arrow	▼	Fine-high	Fast beeping tone
Center bar	—	On-grade	Continuous tone
Center bar & up arrow	▲	Fine-low	Slow beeping tone
Up arrow	▲	Low	Slow beeping tone
Battery		Full battery	NA
Battery		Low battery	N/A
Horn		Audio on/soft/loud	Single beep
Fine		Fine grade sensitivity	N/A
Coarse		Coarse grade sensitivity	N/A

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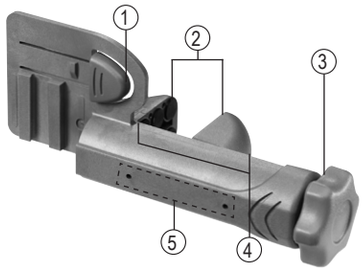
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General-Purpose Clamp

The C59 general-purpose clamp allows the receiver to be attached to a grade rod or wooden pole.

Features and Functions



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 grade 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 notch.
5. **Bubble Screw Holes**—are where the optional 1277-6251S bubble vial kit is mounted.

Attaching the Receiver to the Grade Rod or Wooden Pole

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 grade rod or wooden pole between the clamp's jaws.
4. Turn the jaws screw clockwise to hold the general-purpose clamp securely in place.



Receiver Specifications

LCD Channels	5
Capture Height	50.0 mm (2 in.)
Acceptance Angle	90°
On-Grade Sensitivity	Fine: 2.0 mm (1/16 in.) Coarse: 6.0 mm (1/4 in.)
Power Source	Two 1.5-V batteries (type LR6/AA)
Battery Life @ 20 °C (68 °F)	Alkaline: 70 hours
Battery Indicator	LCD battery symbol
Beeper volumes	High: 100+ dBA Low: 75 to 85 dBA
Automatic Shutoff	30 minutes after last laser detection or push-button actuation
Spectral Sensitivity	Operates with red visible and infrared rotating lasers with wavelengths between 610 and 900 nm
Marking Notch	50.0 mm (2 in.) below top of receiver
Operating Temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Storage Temperature	–40 °C to +70 °C (–40 °F to +158 °F)
Weight	0.3 kg (12 oz)
Dimensions (H x W x D)	16.3 cm x 7.4 cm x 2.9 cm (6.4 in. x 2.9 in x 1.14 in.)

Protecting the Environment

The unit, accessories and packaging ought to be recycled.

All plastic parts are marked for recycling according to material type.

Do not throw used batteries into the garbage, water or fire. Remove them in compliance with environmental requirements.

EMC Declaration of Conformity

This receiver has been tested and found to comply with the limits for a Class B digital device for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communication, and is pursuant to part 15 of the Federal Communication Commission (FCC) rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This receiver generates radio frequency. If it's not used in accordance with the instructions, it may cause harmful interference to radio or television reception. Such interference can be determined by turning the receiver off and on. You are encouraged to try eliminating the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the laser and the receiver.

For more information, consult your dealer or an experience radio/television technician.

CAUTION: Changes or modifications to the receiver that are not expressly approved by Spectra Precision LLC could void authority to use the equipment.

Declaration of Conformity

Application of Council Directive(s):	89/336/EEC
Manufacturer's Name:	Spectra Precision (USA) LLC
Manufacturer's Address:	3333 Warrenville Rd. Unit 200 Lisle, IL 60532 U.S.A
European Representative Address:	Spectra Precision (Kaiserslautern) GmbH Am Sportplatz 5 67661 Kaiserslautern, Germany
Model Number:	HR320
Conformance to Directive(s):	EC Directive 89/336/EEC using EN55022 and EN50082-1
Equipment Type/Environment:	ITE/residential, commercial & light industrial
Product Standards:	Product meets the limit B and methods of EN55022 Product meets the levels and methods of IEC 801-2, 8 kV air, 4 kV contact IEC 801-3, 3 V/m 26 to 1000 MHz 80%, @ 1 kHz

Warranty

Spectra Precision LLC warrants the receiver to be free of defects in material and workmanship for a period of three years.

Spectra Precision LLC 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. If required, travel and per diem expenses to and from the place where repairs are made will be charged to the customer at the prevailing rates.

Customers should send the product to the nearest authorized service center for warranty repairs, freight prepaid. In countries with Spectra Precision LLC subsidiary service centers, the repaired product will be returned to the customer, freight prepaid.

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

The foregoing states the entire liability of Spectra Precision LLC regarding the purchase and use of its equipment. Spectra Precision LLC 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 any implied warranty merchantability of fitness for a particular purpose, are hereby disclaimed. This warranty is in lieu of all other warranties, expressed or implied.

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