

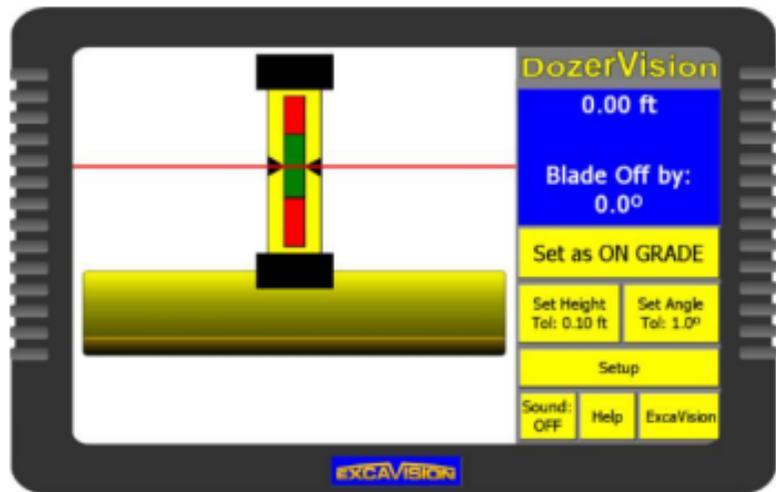
DOZERVISION

Laser guidance for bulldozers and scrapers
User's Manual



DOZERVISION

DozerVision is a measuring instrument for bulldozers, road graders and scrapers that provides an affordable method to maintain grade on the dozer blade elevation and lateral slope. It can also be used on excavators by adding two sensors.



Advantages

- No need to have laser receiver visible from cab: You see it all on the screen.
- Easy to use. No symbols to learn. All buttons in plain English.
- Augmented reality: See the laser beam right on the display in the cab.
- Monitor the blade position by watching the screen and/or by adjustable sounds
- Wireless – installs in minutes.
- Easily adjust height and blade angle tolerances
- Help menus built in for easy learning.
- Upgradeable to ExcaVision.

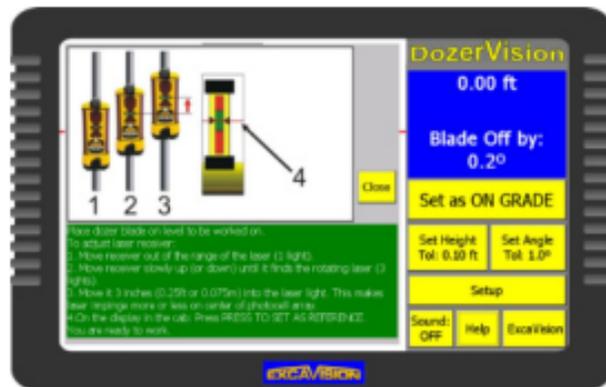
DozerVision has three components: a laser receiver that mounts on a rod attached to the blade, a slope sensor on the blade to detect its lateral angle, and a display inside the cab. The sensor and laser receiver are wireless, making DozerVision very easy to install.

How to use DozerVision

- 1. Turn on the three components:** Display in the cab, laser receiver, and the lateral sensor on the dozer blade.
- 2. Set the height tolerance,** i.e. the maximum height difference from exact grade, for example 0.1 ft or 0.025 meters.
- 3. Set the maximum lateral angle tolerance,** for example 1 degree.
Note: The height and lateral tolerances are stored in the system so they only have to be adjusted the first time.

4. Adjust the laser receiver height.

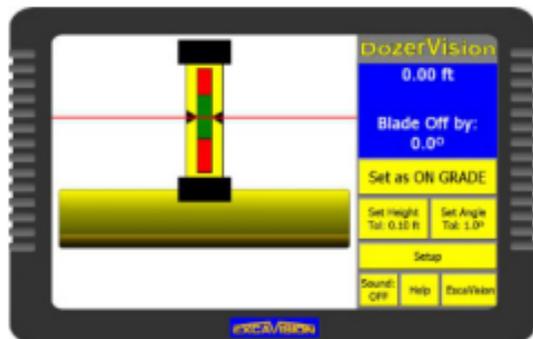
- Have the dozer blade at the correct height and slope on the ground.
- Adjust the laser receiver height so that the laser light strikes the receiver more or less in the middle of the photocell array. The photocell array is about 0.5 ft long (0.15 m). Move the laser receiver until the three lights come on, indicating that the laser is being received, then move it by 0.25 ft (0.075 m) more, so the laser impinges more or less the middle of the photocell array. See the screen below (press Help to see this screen).
- Press Set as ON GRADE button on screen.



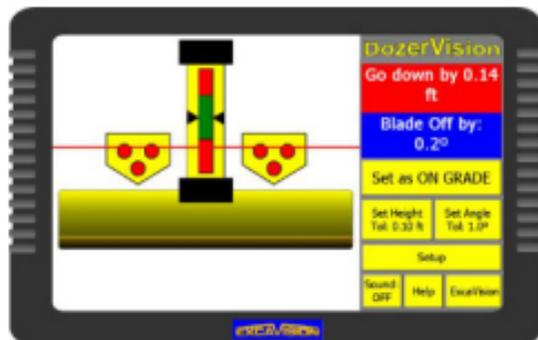
5. Start working!

Monitoring your work

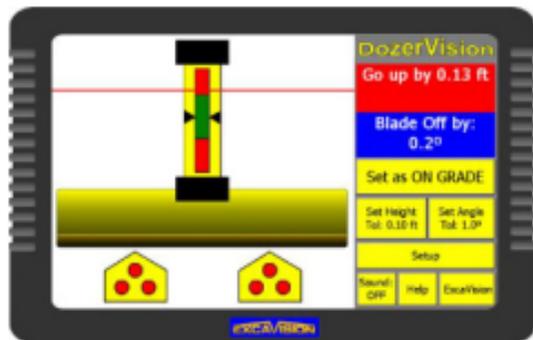
Here are some screenshots while using DozerVision.



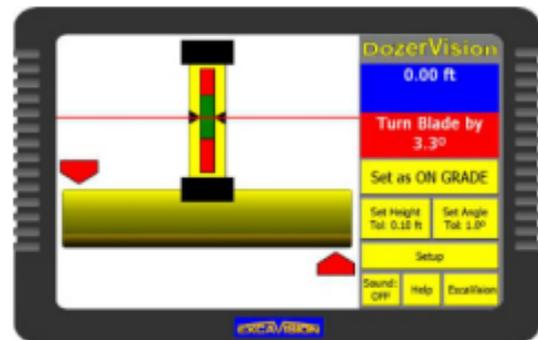
Press "Press Set as ON GRADE"



Blinking arrows: Blade is too high. Go down



Blinking arrows: Blade is too low. Go up

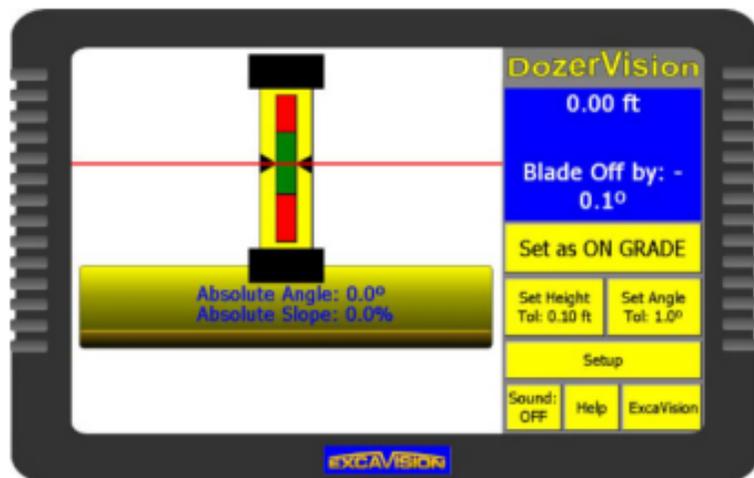
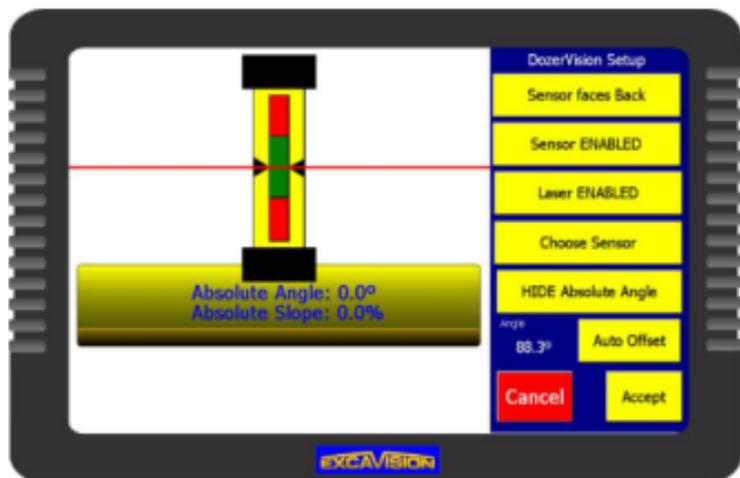


Red arrows: Rotate blade

The Setup Screen

- You can disable the blade angle sensor if you don't have to monitor the blade angle.
- You can disable the laser receiver if you only need to monitor the blade angle.
- Choose Sensor: You can choose which sensor to use as blade sensor.

- You can VIEW or HIDE the absolute angle and slope of the blade. For this you have to calibrate the blade angle sensor, so it shows 0 degrees when the blade is perfectly horizontal. Use a level to adjust the blade perfectly horizontal and press Auto Offset. DozerVision stores this angle so you only need to do this the first time the Absolute Angle feature is adjusted.



Note: The Absolute Angle is the blade angle from horizontal; The Blade Off by: is the angle from where Set as ON GRADE was pressed

Installing DozerVision



1. Install the display in the cab: Glue the mounting plate to the window or where display is visible. Plug to 12V or 24V from cigarette plug or machine power.

2. Weld or mount a rod to fasten the automatic laser receiver to the blade.

3. Mount the transmitter on the laser receiver. Use the plate that came with the DozerVision installation kit to mount the transmitter, i.e. the grey box with yellow cable connector, as in picture above.

4. Weld the steel sensor guard to the blade.

5. Install the blade angle sensor as in picture. You can install it at any angle but the label has to face either to the front or to the back. For best radio reception, have the sensor face back, i.e. towards the cabin of the machine.

DozerVision is ready to work!

Installation example



Note: wireless laser transmitter mounted underneath the laser receiver. The wireless blade angle sensor is mounted behind the blade and facing the cab.



Mount the display where you can easily reach the screen.

Frequently asked questions

The display starts in ExcaVision. How do I get to DozerVision?

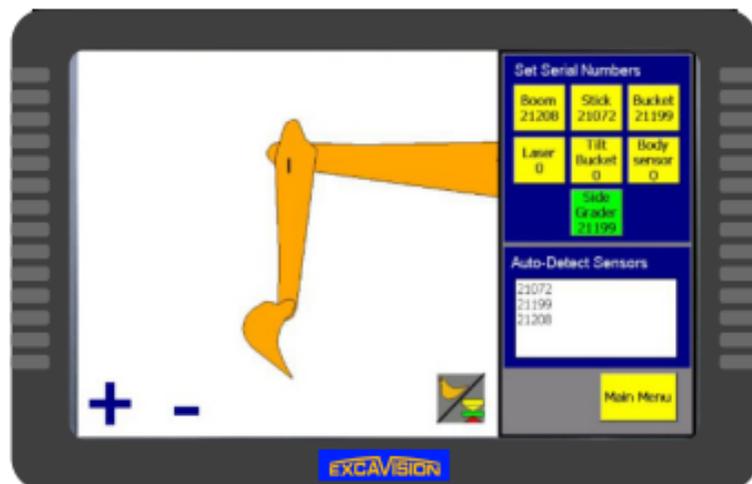
Answer: If the display starts with ExcaVision, press **Main Menu – Settings – Tools – Other Apps - DozerVision**. After choosing DozerVision, the display will start with DozerVision next time it is powered up.

The DozerVision screen shows "Not receiving Blade sensor"

Answer:

1. Check that the sensor is turned on and the batteries (3xAA) have enough charge. You can also do this in the built-in Sensor Monitor (**Main Menu – Settings – Tools – Sensor Monitor**). Check the voltage on the sensor.
2. Check if the serial number of the Bucket sensor is registered in the display (**Main Menu – Settings – Sensor Setup**).

Setting sensor serial numbers in the display: The DozerVision comes with the DozerVision sensors serial numbers already programmed. DozerVision only uses the one sensor and the Laser receiver. If the serial numbers are incorrect, press **Main Menu – Settings – Sensor Setup**. This screen will appear



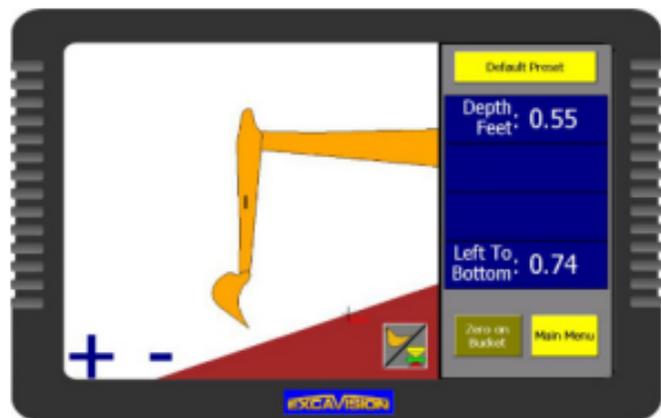
If the sensor is turned on, its serial number will appear in the Auto-Detect Sensors screen. Press the proper sensor key (Boom, Stick, Bucket, Tilt Bucket, or Body sensor) key to choose the proper serial number. If the sensor is not on and you know its serial number you can also key it in here.

The **laser receiver serial number** can be keyed in by pressing Laser and entering the serial number of the laser transmitter. This number can be found on the laser transmitter (grey box). You can also make the laser be detected automatically. Just make the rotating laser impinge on the laser receiver, then the serial number will appear in the Auto-Detect Sensors screen.

Can I use my DozerVision on an excavator?

Answer: Yes! DozerVision can easily be upgraded to a full ExcaVision depth monitor for backhoes and excavators. ExcaVision is a powerful tool for improving excavator performance by allowing the operator to dig exactly to grade without having to go outside and measure. ExcaVision has all the features needed to dig perfect trenches, foundations, footings, etc.

Simply add a boom and stick sensor to DozerVision! Since the DozerVision's display and sensor are the same as for ExcaVision, you only need to add two or optionally more sensors to upgrade DozerVision to ExcaVision.



ExcaVision display. Digging an embankment

EXCAVISION

For more information please visit www.excavision.com

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