CrankShooter Radar™ Product manual

Do you know how hard you can shoot on goal?

The CrankShooter Radar™ can help you find out. The CrankShooter Radar™ Sensor will help measure your improvement in shot speed while also having fun testing yourself against your friends!

- Measure your shooting speed. Warning – *never shoot directly at the device. Always have a net or other protection placed in front of the CrankShooter Radar™. Follow the instructions in the manual provided in the box.*
- Lightweight and easy to use. Unlike most radar sensors, this product does not require a second person to point it at the object. Just place it behind the goal or net and start shooting.
- Measures speeds up to 150 mph.
- The tripod included makes it possible to place the sensor on many different surfaces. It also makes it possible to adjust the CrankShooter Radar for different angles for a more accurate reading.
- The bright LED display is easy to read from a distance.
- Speaker with a pre-recorded voice announces the speed of your shot.
- Automatic battery saver – extends the life of batteries when the device is not in use.
- Requires five AA batteries. *Please note that batteries are not included*.
- Stores the speed of your last ten shots.

Specifications

Still Mode speed range: 3 to 150 mph

When in ***Still Mode***, speeds lower than 3 mph will not be recorded. For example, if a lacrosse player shoots a ball, the sensor can record the ball's speed even it is lower than 25 mph. However, in the ***Move Mode***, the object's speed must be higher than 25 mph in order for the sensor to record the speed.

Move Mode speed range: 25 to 150 mph

When in ***Move Mode***, speeds lower than 25 mph will not be recorded. This feature prevents the sensor recording the speed of the player rather than the object. For example, if a lacrosse player runs towards the goal to shoot, it is impossible to run faster than 25 mph. However, the ball's speed will be faster than 25 mph. If ***Still Mode*** is used, the sensor may record the player's movement speed, not that of the ball. Using ***Move Mode*** ensures that the sensor records the ball's speed only.

Distance from the sensor (goal or net) to the object or player: Approximately max. 40 ft. and min. 3 f`t.

Battery requirement: Five AA batteries (not included)

Operating time: Voice Mode deactivated, up to 20 hours. Voice Mode activated, up to ten hours Operating

Temperature range: 32 – 104 °F

Battery installation

The CrankShooter Radar™ requires five AA batteries to operate. Please note that batteries are not included. To install, open the back cover and carefully insert batteries as indicated. After inserting the batteries, replace the cover. Use a screw driver that fits the screws well. The device switches off automatically if no speed has been recorded in a five-minute period.

Instructions for use

1. Push “On/Off” button to start and stop the device.
2. Push “KPH or MPH” button to choose a unit of measurement. The LED light will indicate your choice.
3. Push “Voice” button to have the speaker announce the speed. Push again to switch off.
4. Push “Still/Move” button to choose a mode. When the display reads F0, it is in “Still Mode”. When the display reads F1, it is in “Move Mode”. Shooting on Goal from a stationary position is considered “Still Mode” as the body movement speed is relatively low. Running toward the goal straight on or from an angle is considered “Move Mode”.
5. Push the “REC” button to view the last ten speeds recorded.

Recommendations

1. Always place the CrankShooter Radar™ behind a goal or net. Make sure that the target area, goal or net is in good condition and capable of protecting any surrounding objects.
2. Make sure that the distance between the CrankShooter Radar™ is behind the goal/net and yourself or the object is no more than 40 feet and no less than 3 feet for a more accurate reading.
3. Depending on what type of sport you wish to test, you may need to use the tripod to get a more accurate reading. However, the device can also be placed directly onto the ground or floor.
4. Always place the CrankShooter Radar™ behind a protection of some kind. The product will break if hit by an object.
5. In order to achieve the most accurate result, we recommend adjusting the angle of the CrankShooter Radar™ using the tripod so that the object flies in a direct line towards the sensor.
6. There are certain mathematical phenomena that could affect the accuracy of measurement. One of these is the Doppler effect. The CrankShooter Radar™ will measure the relative speed of an object as it approaches the sensor. If the object is in a direct line with the sensor, the measured speed will be more exact. As the angle of incidence increases, moving either right or left of this direct line will cause the accuracy to decrease. The measured speed will become less accurate as you move off this center line. The phenomenon is called the cosine effect. Please read the section on the cosine effect below for further information. To improve accuracy, remember to keep the object in a direct line with yourself and not perpendicular.

Cosine effect on target

The CrankShooter Radar™ will measure the relative speed of an object as it approaches the sensor. If the object is in a direct line with the sensor, the measured speed will be more exact. As the angle of incidence increases, moving either right or left of this line will cause the accuracy to decrease. *The measured speed will become less accurate as you move off this center line*. This phenomenon is called the cosine effect.

It is difficult to produce a 100% accurate reading. However, the CrankShooter Radar™ is sensitive and accurate enough for the relative results be as accurate as possible and to measure improvement, identify differences and to be used as a high-performance training tool.

Note:

1. It is important to take care to protect the CrankShooter Radar™ when it is in use. Always place the sensor behind a net or goal to protect it from being hit by the object used.
2. Always make sure that the surroundings are safe when kicking, throwing or shooting an object. Never kick, throw or shoot an object when another person is at risk being hit.
3. This product can emit a radio frequency and may cause interference to radio communications. If the product does cause a disturbance to radio or television reception, which can be ascertained by turning the product off and on, we recommend attempting to correct this as follows:

- Reorient or relocate the receiver of the radio or television
- Increase the separation between the equipment and receiver
- Turn off the CrankShooter Radar™ or the radio/television