

Zelocity

PureLaunch Launch Monitor



Operating Instruction Guide

www.zelocity.com.

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Congratulations on your new Zelocity PureLaunch Ball Flight/Launch Monitor, the state-of-the-art in golf performance monitoring. We recommend that you read through these instructions in their entirety before beginning to set up and use the equipment. You may want to keep this guide handy when using the PureLaunch the first few times. Please contact us with any questions at 1-888-ZELOCITY or visit our website at www.zelocity.com.

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PureLaunch Operating Guide

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PureLaunch Specifications

General:

- Launch monitor with two integrated Doppler-radar transceivers
- Shot data transferred via USB connection to personal computer (not included)
- PureLaunch computer software provided for end user interface and presentation
- Outputs include Club Speed, Ball Velocity, Carry Distance, Power Transfer Ratio %, Launch Angle, and Ball Spin

Applications: Custom Club Making, Club Fitting, Advanced Golf Instruction, Serious Golfers

Performance:

- For use with right-handed and left-handed golfers
- Indoor or outdoor use; No calibration required; Setup time less than 1 minute
- Ball Spin measured using reflective-striped ball or calculated using non-striped ball
- Integrated microphone for Club Speed measurement at impact

Convenience:

- Portable, compact design; Fold-out legs and carrying handle
- 10 ft. USB cable provided for communication from computer to PureLaunch
- No field maintenance required; One (1) year factory warranty; Repaired at factory
- Operates using Battery or AC power outlet; Recharge ~ 10 hrs; Avg. Life ~ 6 hrs

Construction:

- Tubular steel frame with rugged ABS/PC plastic radomes and processor cover
- Power switch, USB connector, AC power connector
- External LED indicators for Power ON/OFF and Radar ARMED/NOT ARMED

Power:

- Removable, rechargeable 12V DC Ni-Cad batteries provided (2 provided)
- 120V, 25W AC Power Transformer provided for recharging or AC operation
- Input Voltage (auto-sensing): 90-135V at 50/60 Hz or 180-265V at 50/60 Hz

Software:

- Compatible with WinXP Home, WinXP Professional, Win2000 operating systems
- PureLaunch software size: ~ 500 Kb
- Screen resolution: 1024 by 768 pixels (minimum)

Dimensions: Standing: (H x W x D): 30 ¹/₄" x 18" x 25"

Folded: $(H \times W \times D)$: 5 ½" x 18" x 34" Weight: 12.2 lbs, including 1.3 lb battery

Shipping: (H x W x D): 12" x 36" x 31"; 26 lbs; One (1) unit

per container

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Environment:

- Operating temperature: 40° to 120°F; 10% to 90% Relative Humidity
- Non-operating storage conditions: -20° to 130°F; 10% to 90% Relative Humidity
- Compliant with Federal Communications Commission (FCC) product regulations

DECLARATION OF CONFORMITY

We, Zelocity Corporation, 14500 N. Northsight Blvd., Suite 205 Scottsdale, Arizona 85260 Phone 480-556-6007

declare under our sole responsibility that the product

Zelocity PureLaunch

complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- -- Reorient the receiving antenna
- -- Increase the separation between the equipment and receiver
- -- Move the computer away from the receiver
- -- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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Getting Started

Before using your Zelocity PureLaunch, check to ensure that all components have been received. A complete parts list for PureLaunch contains the following items.

- 1. PureLaunch Launch Monitor
- 2. PureLaunch Software CD
- 3. Operating Instruction Guide
- 4. AC Power Supply/Battery Charger
- 5. Two (2) rechargeable batteries
- 6. Universal Serial Bus (USB) cable
- 7. Supply of 1/4" width reflective strips



If you have not received these items or if any item appears damaged, contact your Zelocity salesperson.

ATTENTIONATTENTION***

A ferrite bead is installed on the PureLaunch USB serial cable to reduce electromagnetic and radio-frequency interference.

Any replacement cable must contain a properly installed ferrite bead.

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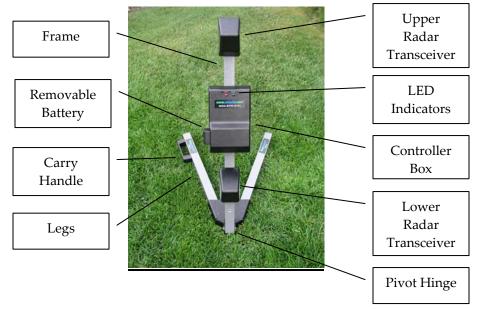


The PureLaunch Launch Monitor

The PureLaunch sits on the ground or floor, with the front of the unit pointed straight down the target line.



The legs pivot around the frame and fold up for carrying and storage. Use the latch near the pivot hinge to secure the legs to the frame during transit. Align the latch key by turning it until you begin to feel resistance. Lock the key in place with a ¼ turn clockwise.



Battery Charging

The PureLaunch can be connected directly to an AC outlet or powered by battery. The battery has an LED indicator light on the end and a small button which activates the light. The light emits the following colors:

GREEN: Battery is charged

YELLOW: Battery is nearing depletion & needs to be recharged

RED: Battery is depleted

Powering the PureLaunch with batteries in YELLOW or RED state may cause inconsistent readings.

To charge the PureLaunch battery:

- 1. Plug the power supply into a surge protected AC outlet.
- 2. Plug the power supply connector into the socket on the PureLaunch battery.
- 3. Charge the PureLaunch battery for a full 12 hours.

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A fully charged battery will power the PureLaunch for 6 - 8 hours of typical operation. For your convenience, two (2) batteries have been included with the unit.

Installing the PureLaunch Software

ATTENTIONATTENTION***

Install the PureLaunch software program in the computer BEFORE connecting the unit to the PC via the USB cable the first time. Once the program is installed, it will reside on the hard drive and does not have to be installed again.

To install the program, insert the PureLaunch software CDROM included with your shipment and insert it into the CD drive of the computer to be used with the launch monitor. Once the CD is inserted in the drive, the software will automatically begin the installation process. The automatic installation wizard will run. Follow the instructions given by the wizard to install the software.

After the software programs are loaded, you will see the following prompt to connect the launch monitor to the computer.



Follow the steps given in the next section to power ON the launch monitor.

ATTENTION: DO NOT click OK at this point.

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Powering the PureLaunch

If using the PureLaunch under AC power, plug the power supply connector into the socket on the underside of the controller box and the other end of the cord into the AC outlet. If using battery power, insert the battery as shown in the picture, with the arrow on the battery pointed toward the front of the controller box.



Power the unit ON using the power switch located on the right side of the bottom of the Controller Box, as shown. The red LED indicator marked "POWER" is lit when the unit is powered up.

Then plug the USB cable into the PureLaunch and then into the PC.

After making the connection, WAIT for several seconds until Windows starts the Found New Hardware Wizard.



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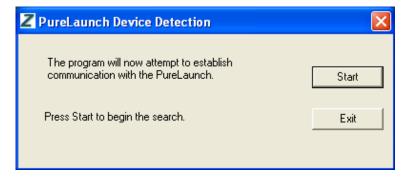


Select the option to [Install the software automatically] and Click Next. All necessary device drivers are included on the PureLaunch installation CDROM. Follow the wizard's instructions to complete the driver installation process.

Then go back to the ALERT window and click OK.



Next, you will see the following PureLaunch installation wizard prompt for establishing communication with the device. Select Start to establish communications between the PureLaunch and the PC. Settings will be saved for future use of the PureLaunch.



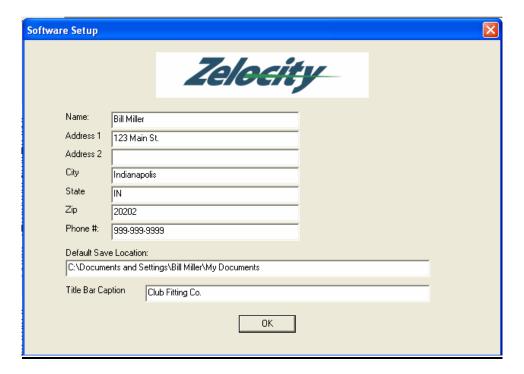
After the installation process is complete, you will see a Zelocity PureLaunch program icon (blue letter 'Z' with the word PureLaunch under it) on the computer's desktop.

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Getting Started with PureLaunch Software

Selecting the Zelocity PureLaunch icon from the desktop will bring up the PureLaunch program. The first time you enter the program, you will be prompted for Software Setup information shown in the pop-up window.



- 1. The name, address, and phone data you enter will show up as contact information on the Session Summary Report.
- 2. The Default Save Location is the preferred folder for filing your sessions. You may override this location when saving files.
- 3. The Title Bar Caption shows up in the header of each screen and in the program title bar at the top of each window.

Once this data has been entered and saved, you will not be prompted for it again. If you want to edit it later, choose the Options tab and select Software Setup.

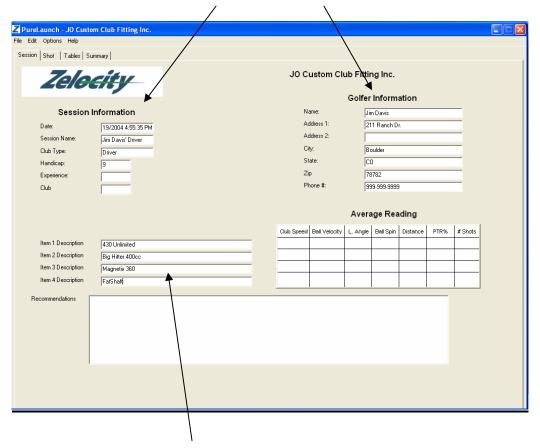
Next are instructions for setting up a PureLaunch session.

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Setting Up a PureLaunch Session

Use the Session tab to record Session and Golfer information.



Next, enter up to four (4) Items being tested in this session. If you have more than four items, simply group the items to be tested into sets of up to four each, then create additional sessions and relate them using similar file names.

Items to be tested can be anything you choose, such as:

- one type of club by different manufacturers
- one club type and manufacturer but different shaft flexes
- one club but different manufacturer or type of golf ball
- one club but different grip sizes

The text descriptions typed in these fields carries forward to the remaining screens and the Session Summary Report.

To the right of the Item list is the Average Reading table. This table will be populated for each of the items as data is generated during the session. Averages are calculated for any number of shots up to 10 shots total for each item. The program allows more than 10 shots to be hit, but data for the 10^{th} shot will be overlaid for the purpose of computing the average.

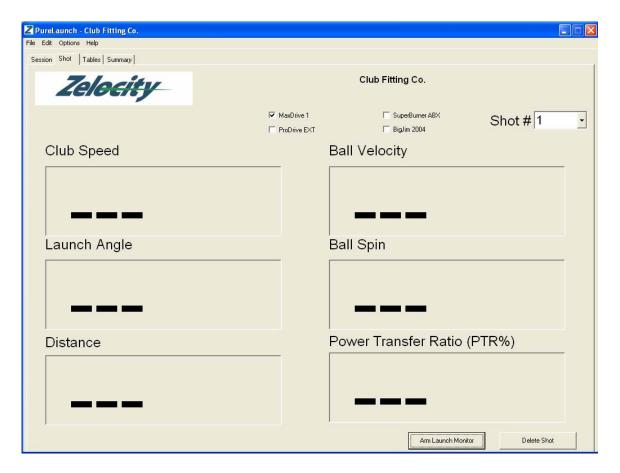
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At the bottom of the tab is the Recommendations block. Recommendations and notes for the session may be entered here, based on data visible in the Average Reading table. The Recommendations text block is shared with the Data Tables tab for ease of access. Text entered into this block prints on the Session Summary Report.

Recording Shots in a PureLaunch Session

The Shot tab contains check boxes for the four items being tested. Checking the box allows shots to be recorded for that item. The shot counter will advance after each shot is hit, up to a count of 10. As indicated, shots after 10 for an item replace the 10th shots' data.



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Position the golfer and launch monitor as shown. The PureLaunch can be used indoors or outdoors. If using indoors with a net, ensure at least 12 feet of clear ball flight from tee position to the net, in order for sufficient data to be gathered to record measurements.



The front edge of the PureLaunch is positioned five feet, or 60 inches, behind the golf ball, pointed down the target line as shown.

Ensure the golfer's feet and the bottom of the launch monitor are in approximately the same horizontal plane, i.e., one is not higher or lower than the other.

Once the golfer is in position to hit the shot, you must ARM LAUNCH MONITOR using the button near the bottom of the Shot tab. Clicking this button will activate the radar, after which the PureLaunch waits to "hear" the club impact the ball via the integrated microphone. When armed, the green LED indicator labeled ARMED lights up and the unit waits for the impact trigger. After the monitor hears the impact, the PureLaunch tracks the flight of the ball and displays measurements.

ATTENTIONATTENTION***

In some situations, clicking ARM LAUNCH MONITOR results in the following error.

You may receive this error message if, while the PC and PureLaunch are connected, you shut off power to the PureLaunch launch monitor, or to your laptop. If this occurs, you may lose communication



via the USB port. To reestablish connection, shut down the PureLaunch application, power off the PureLaunch unit, then back on. Then restart the PureLaunch program.

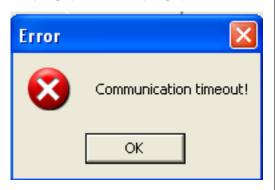
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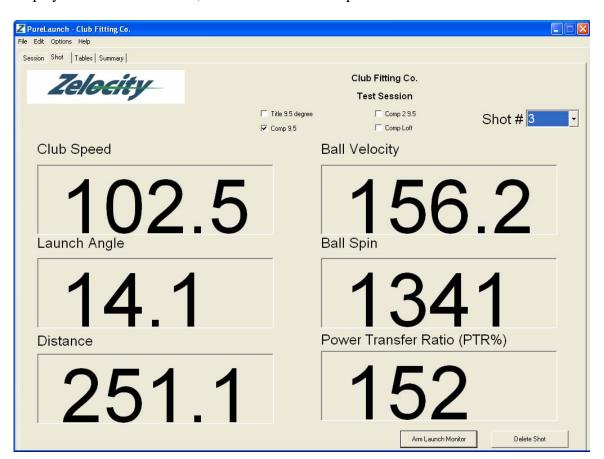
ATTENTIONATTENTION***ATTENTION***

To conserve battery power, the PureLaunch disarms itself if not triggered within 30 seconds of being armed. If this occurs, a communication timeout error message is displayed.

The error can be cleared by simply clicking OK and re-arming the monitor by clicking the ARM LAUNCH MONITOR button at the bottom of the Shot tab.



Once the PureLaunch is successfully armed and a shot is hit, you will see measurements displayed on the Shot screen, as shown in this example.



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Data Displayed in Shot Tab:

- Club Speed is speed of the club head at impact, in miles per hour.
- Ball Velocity is speed of the ball after impact, in miles per hour.
- Launch Angle is angle of flight from horizontal, in degrees.
- Ball Spin is total spin, in revolutions per minute (RPM).
 - O PureLaunch measures ball spin when the golfer hits a ball with a ¼" reflective adhesive strip—around it's circumference as shown, initially placed perpendicular to the target line.



- O PureLaunch calculates ball spin when it does not see a reflective strip on the ball.
- Distance is Carry Distance (distance the ball flies in the air before hitting the ground), in yards; PureLaunch measures distances for shots with 60 yards carry and above
- Power Transfer Ratio % is calculated as Ball Velocity / Club Speed x 100%, an indication of centeredness of impact between the ball and club face. An exception to this rule is the thin or topped shot, which may show a high ratio even though off-center impact was made.

The shot can be deleted from the Shot tab immediately after it was hit using the Delete Shot button on the bottom right side of the screen, or at any point thereafter by selecting the Shot # from the shot counter and hitting the Delete Shot button. Make certain you are in the appropriate test item before you delete shots. If a shot is deleted by mistake, choose the Undo Delete option from the Edit menu.

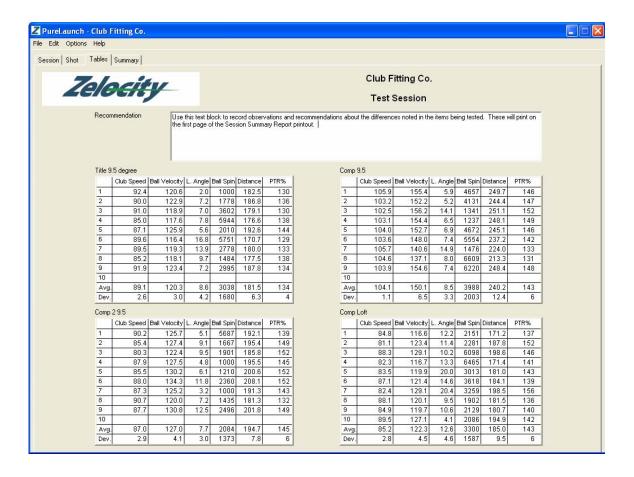
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Reviewing Shots in a PureLaunch Session

The Tables tab displays measurements for all shots recorded in each test item in the session. The bottom two rows in each table show the average and standard deviation for each set of data. These averages are also displayed in the Average Reading table on the Session tab.

You may write text in the Recommendation block on this tab or on the Session tab. This text will print on the Session Summary Report printout.

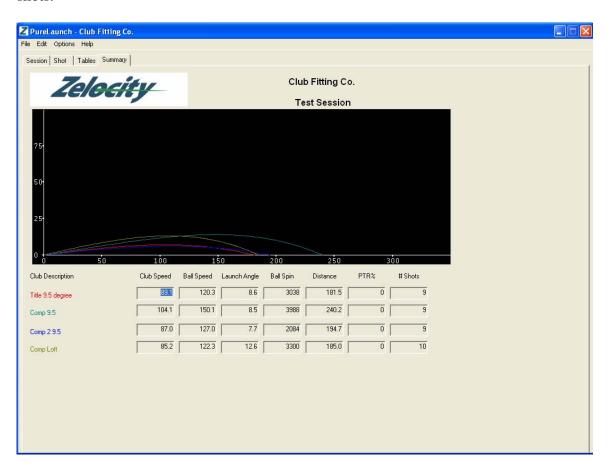


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Summarized Graphical Results from a PureLaunch Session

Average measurements for each test item are displayed graphically and in tabular form on the Summary tab. The test items are shown in different colors, with the color of the item corresponding to the color of the line on the graph. In the following example, the red line on the graph shows the average of the measurements for the "Title 9.5 degree" shots.



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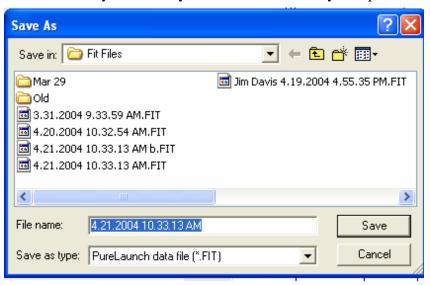


Managing Files

In the File menu, the software allows you to save your sessions. You may accept the

default file name (date plus time) or rename it. Files are saved in the default file location as defined in the Software Setup window, or you can override the default location as desired.

Once the session is saved, it can be reopened at any time by selecting Open from the File menu.



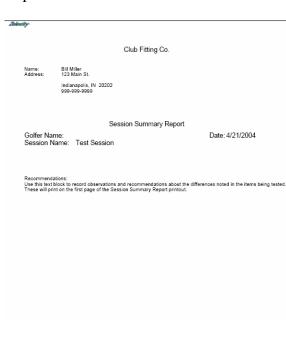
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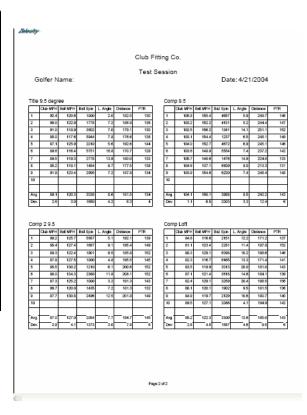




Printing the Session Summary Report

Selecting the Print option from the File menu will print the 2-page Session Summary Report as shown.





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Troubleshooting and Q&A

- 1) Ensure the ball is 60" in front of the leading edge of the base of the PureLaunch.
- 2) Ensure the golfer's feet and the base of the PureLaunch are in the same horizontal plane, i.e., neither is higher or lower than the other.
- 3) For measuring ball spin, ensure the reflective strip is ¼" wide, completely covers the circumference of the ball, and is positioned perpendicular to the target line before being hit.
- 4) If there are more than four (4) items to test, one method is to use multiple sessions and relate them with similar filenames to keep track.
- 5) If one or more measurements fail to display on the Shot tab after a shot is hit, PureLaunch could not gather a sufficient amount of data for the shot. This could be the result of ambient electrical noise or other interference with the radar signal on that shot, such as the golf club coming back in front of the unit soon after the ball is struck.
- 6) Occasionally, shots hit with the wedges and short irons may not create a loud enough sound to trigger the PureLaunch. This could be the result of slow club speed and/or hitting the ground behind the ball.
- 7) Outside of the PureLaunch v1.1 program, there are no settings that need to be changed by the end user. Doing so will cause unpredictable and invalid results.
- 8) There are no field replaceable or serviceable parts in the PureLaunch monitor. Removing the radomes or processor cover voids the warranty.
- 9) Q: Can I position the PureLaunch to the right or left of the target line? A: This is not recommended since it may adversely impact the ability to make accurate measurements.
- 10) Q: Can I swap out the computer I use with my PureLaunch? A: Yes, you simply need to install the software and drivers on whatever computer you wish to use with the device (prior to connecting the USB cable).
- 11) Q: Can I use the software with previous versions of Windows, like Win95, Win98, Windows/NT or Macintosh? A: The PureLaunch software is not certified and is not supported on these operating systems.
- 12) Q: Can I set my display settings to 600 x 800 screen resolution? A: PureLaunch screens are designed for 1024 x 768 pixel resolution at a minimum.
- 13) Q: Why does my Power Transfer Ratio % sometimes look good for topped shots? A: Topped (also called thin or bladed) shots can be launched very quickly relative to club head speed, but with topspin (which causes the ball to dive into the ground) instead of backspin (which causes the ball to lift). Since PTR% is a function of only two factors, ball velocity and club head speed, topped shots may show a high ratio even though other aspects of the ball flight (e.g., spin and launch angle) are undesirable. The user can delete these shots as desired, using the Delete Shot button on the Shot tab.

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- 14) Q: What if some of the measurements displayed are clearly not accurate for the shot I just hit? A: Check your setup and ensure monitor, golfer, and ball are in the correct positions. If setup is correct and measurements are still out of bounds, contact us. It is possible that software corruption has occurred and is causing invalid results to be displayed.
- 15) Q: What other items might help me use the PureLaunch in the field? A: Three items that we have used include a laptop stand, laptop screen shade, and a 6' tape measure.

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Warranty

This warranty applies only to the original purchaser of this product.

Subject to Obligations or Exclusions found below, this Zelocity PureLaunch is warranted against manufacturing defects in materials and workmanship for the period of one year for parts and labor.

This warranty includes telephone technical support and software upgrades at no charge for the PureLaunch product for the period of one year.

Each warranty period commences on the date of purchase by the original purchaser. Warranted services must be performed at the Zelocity Corporation factory or an authorized Zelocity Service Center. The warranty will be voided should anyone other than the Zelocity factory or an authorized Zelocity Service Center service the product or open the product casing.

Obligations & Exclusions

Zelocity Corporation will, at its option, repair or replace the defective product at no additional charge except as set forth below. If the returned part is not found to be defective, then no warranty work will be preformed. Repair components, parts and replacement products will be furnished on an exchange basis and will be either reconditioned or new. All replacement parts and products become the property of Zelocity Corporation. This warranty does not include service to repair damage as a result of modification of the product, misuse, abuse, neglect, negligence, vandalism, accident, or abnormal conditions including but not limited to war, flood, accident, lighting, fire, wind, or other acts of God or damage caused by occurrences over which Zelocity Corporation has no control.

No charges for time or materials used in making repairs or corrections by parties other than Zelocity Corporation will be paid by Zelocity Corporation. The warranty is void if any improper alteration or service is performed without written authorization from Zelocity Corporation.

This warranty will be honored only upon presentation of the original, dated bill of sale.

If the equipment has been connected to an incorrect power source, or is improperly installed (if applicable) by a party other than Zelocity Corporation, the warranty is voided.

This warranty shall not cover adjustment of customer-operated controls or products that have been altered, replaced or have missing serial numbers. This warranty shall not apply to uncrating, setup, installation or the removal and installation of products for warranty.

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Warranty service may be obtained by delivering the product or component part to Zelocity Corporation's service center. If this product is delivered by mail, you agree to insure the product or assume the risk of loss or damage in transit, to prepay original shipping charges to the service center location and to use the original shipping container or equivalent. Repaired products will be returned to you by surface delivery at Zelocity Corporation's expense or by air freight at buyer's expense.

All expressed and implied warranties for this product including the warranties of merchantability and fitness for a particular purpose are limited in duration to a period of one year from the date of purchase, and no warranties, whether expressed or implied, will apply after this period. Some states do not allow limitation on how long an implied warranty lasts, so the above limitations may not apply to you.

If this product is not in good working order as warranted above, your sole remedy shall be repair or replacement as provided above. In no such event will Zelocity Corporation be liable to you for any damages, including lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to sue such a product, even if Zelocity Corporation has been advised of the possibility of such damages or for any claim by any other party.

The foregoing in lieu of all other expressed warranties and Zelocity Corporation does not authorize any party to assume for it any obligation or liability. In no event shall Zelocity Corporation be liable for special or consequential damages arising from the use of this product or anything other than its expressed purpose or for any delay in the performance of this warranty due to causes beyond Zelocity Corporation's control.

CAUTIONCAUTION***CAUTION***

MAKING CHANGES OR MODIFICATIONS TO THIS PRODUCT,
UNLESS EXPRESSLY APPROVED BY ZELOCITY CORPORATION,
MAY VOID THE RIGHT TO OPERATE THIS EQUIPMENT.

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