

VECTOR
PRO LAUNCH SYSTEM



User Guide

Includes VFit, VTeach, and
VRange

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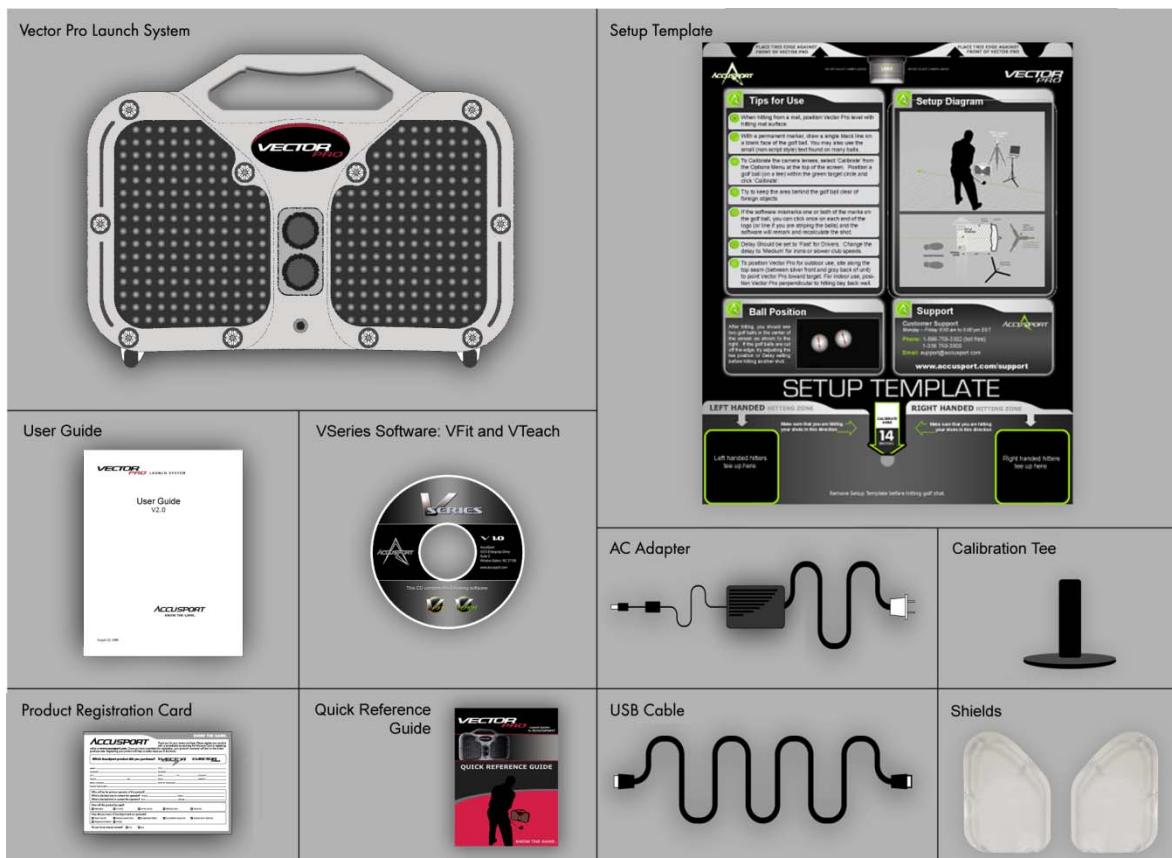
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GETTING STARTED

Congratulations on your AccuSport Vector Pro Launch System purchase. You have chosen to do business with the leader in launch system technology. To validate the AccuSport warranty, receive notification of software updates and gain access to free technical support, please register your product by filling out the enclosed warranty card, or by going to www.accusport.com to complete the online registration.

To ensure trouble-free, reliable operation, read this user guide before setting up and using your Vector Pro. Please visit the AccuSport web site at www.accusport.com for advanced topics and breaking news about AccuSport products.

Vector Pro Launch System Components



Note: VFit and VTeach software ships standard with each Vector Pro purchase. The VRange software is an add-on module that can be purchased for an additional cost.

Computer Requirements

The Vector Pro Launch System works with personal computers that meet the following computer requirements:

Windows XP Home or Professional - Service Pack 2 – (32 BIT ONLY)

- **CPU:** Intel (only) Pentium 4 with minimum 1.7 GHz processor
Recommended - Intel (only) Pentium 4 - 2.0 GHz or above

Intel (only) Core 2 duo minimum 1.83 GHz processors
Recommended – Intel (only) Core 2 duo 2 Ghz or above
- **Memory:** More memory required if shared with graphics memory
Minimum 1 GB
Recommended – 2 GB
- **Hard Disk:** 80 GB minimum
Recommended - 160+ GB
- **Optical Drive:** CDROM drive required to install Windows XP
- **Ports:** At least one available USB 2.0 port
IEEE1394 – (for Video Camera use only)
- **Video Card:** 24 bit color (128 MB dedicated Video Memory)
1024 x 768 minimum resolution
128 MB dedicated video graphics memory
Microsoft Direct x 9c or higher
VGA/DVI port (2 ports are needed for dual monitor support)

Windows Vista – (32 BIT ONLY) – Home Premium Recommended

- **CPU:** Intel (only) Pentium 4 with minimum 1.7 GHz processor
Recommended - Intel (only) Pentium 4 with 2.0 GHz or above

Intel (only) Core2 duo with minimum 2 GHz processors
Recommended – Intel (only) Core2 duo 2.4 GHz or above
- **Memory:** Minimum 1.5 GB
Recommended 3 GB or more
- **Hard Disk:** 80 GB minimum
Recommended – 160+ GB
- **Optical Drive:** DVD drive required to install Windows Vista
- **Ports:** At least one available USB 2.0 port
IEEE1394 – (for Video Camera use only)
- **Video Card:** 24 bit color
1024 x 768 minimum resolution
128 MB dedicated video graphics memory
Microsoft Direct x 9c or higher
VGA/DVI port (2 ports are needed for dual monitor support)

Video Camera Specifications

If a video camera is used, it must meet the following specifications:

- Microsoft Windows (WDM) Compliant
- Digital – not analog
- Firewire connection to computer
- 30 frames per second minimum
- Resolution: 640 x 480 pixels minimum
- Ability to manually adjust shutter speed
- Gain adjustment (light amplifier)
- Wide angle lens

Note: Future support will be added for high definition video camcorders.

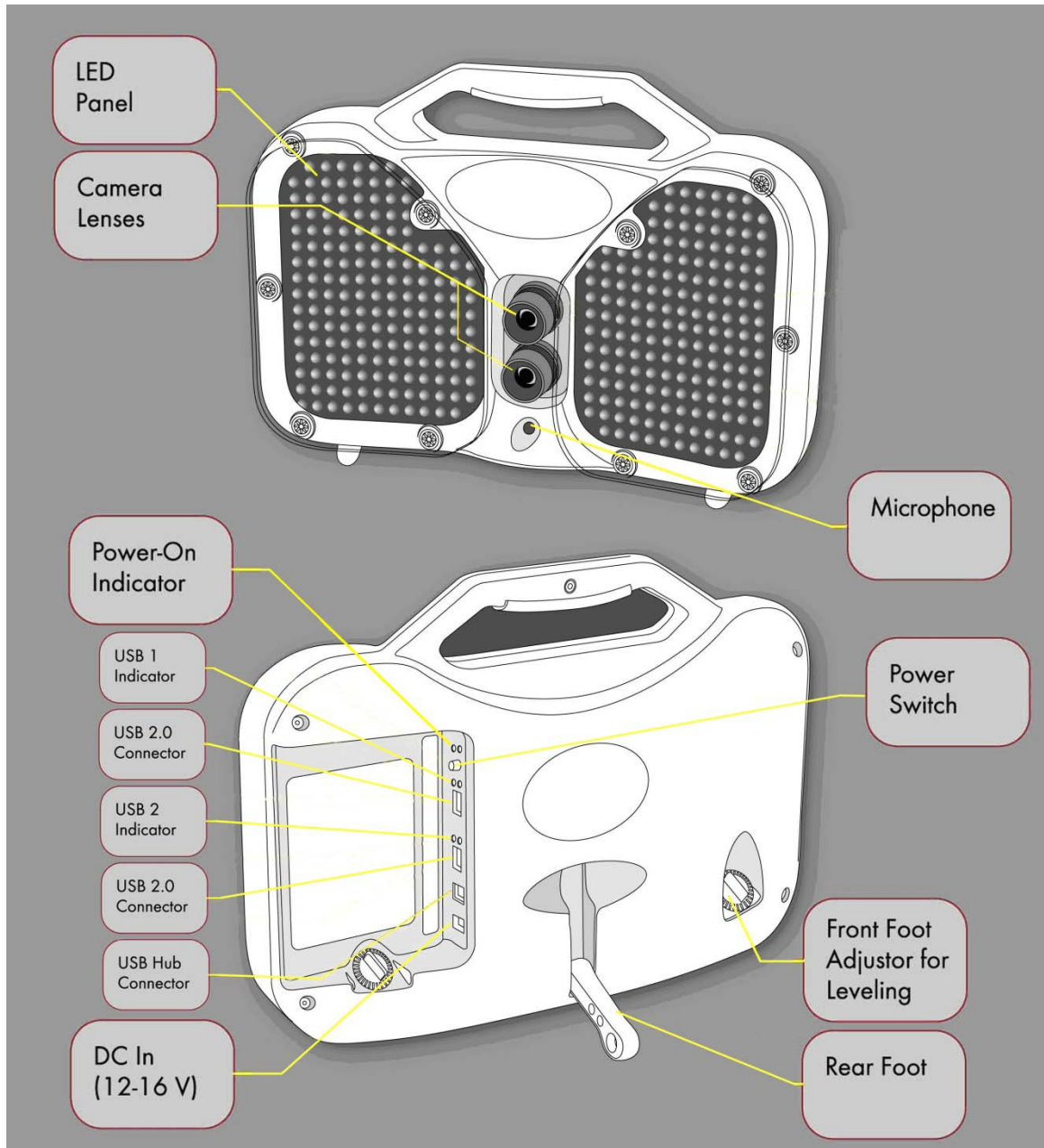
Safety Instructions

- Follow all warnings and instructions marked on the product.
- Do not drop the Vector Pro or subject it to mechanical shocks.
- When taking a swing, do not hit the Vector Pro.
- Install the protective shields before first use, and always use the protective shields to avoid damage to the Vector Pro.
- Do not open the Vector Pro unit. It contains high voltages and delicate components. Opening the Vector Pro could result in personal injury or harm to the unit, and will void the warranty.
- Do not allow moisture to enter the Vector Pro.
- Use only approved accessories. To prevent harm to the Vector Pro or the computer system, use only the supplied cables and power adapters.

Care and Handling

- The Vector Pro unit contains a rechargeable battery. To recharge the Vector Pro, turn off the unit, connect the supplied AC adapter and plug it into an AC outlet overnight or for at least 6 hours.
- When necessary clean the Vector Pro lenses using any photographic or eyeglass cleaning kit. Paper towels or tissue are not recommended.
- The outside of the Vector Pro case can be cleaned using a damp cloth. Turn off and disconnect the Vector Pro before cleaning. Do not allow liquid to enter the case.

AccuSport Vector Pro Illustration



Prior to Software Installation – Windows XP

The following steps should be taken to prevent the Windows XP Operating System from shutting down the computer's USB ports, and to prevent the Computer from slowing down its processor speed, while the Vector Pro Launch Monitor is in use.

Power Options Settings

- 1) Select the Windows XP **Start** Button
- 2) Select the **Control Panel**
- 3) Select **Power Options**
- 4) Under **Power Schemes**, use the drop down to select **Always On**.
- 5) Click **Apply**, then **OK** at the bottom right side of this window.

USB Power Saving Settings

- 1) Select the Windows XP **Start** Button
- 2) Right-Click on **My Computer**
- 3) Select **Manage**
- 4) When the 'Computer Management' window opens, select **Device Manager**
- 5) Scroll down the hardware list on the right until 'Universal Serial Bus Controllers' is visible
- 6) Select the Plus (+) sign next to 'Universal Serial Bus Controllers' and the USB devices will be revealed.
- 7) Right-click on the first 'Root Hub' listed and select **Properties**
- 8) From the 'USB Root Hub Properties' window, select the **Power Management** tab
- 9) **Uncheck** the box labeled "Allow the computer to turn off this device to save power"
- 10) Click **OK** at the bottom of this window.
- 11) Repeat steps 8 through 11 for all the remaining 'Root Hubs' listed under the 'Universal Serial Bus Controller' heading

Prior to Software Installation – Windows Vista

The following steps should be taken to ensure the Power Options on a Windows Vista based computer are set correctly in order to work with the Accusport Vector Pro Launch monitor and Software.

Power Options Settings

- 1) Select the Windows Vista **Start** Button
- 2) Select the **Control Panel**
- 3) Select **Power Options** (You may have to Select the “Classic View” link in the top right corner of the window in order to view the ‘Power Options’ icon)
- 4) Select **High Performance**
- 5) Next, select **Change Plan Settings**

Note: For the following procedure the “On Battery” setting is only available on laptop computers. For Desktop computers the “On battery” and “Plugged In” labels are not present but the layout is similar. This procedure can still be used to ensure Desktop Computers with power saving features are set-up correctly for the Vector Pro.

- 6) Select the **Put the Computer to Sleep** option
 - o Set “On Battery” to **Never** by clicking on the down pointing arrow next to the “minute” numerals and selecting ‘Never’.
 - o Set “Plugged In” to **Never** by clicking on the down pointing arrow next to the “minute” numerals and selecting ‘Never’.
- 7) Select the **Change Advanced Plan Settings** link. (A new window will be displayed)
 - o Select the plus (+) sign next to the Hard Disks label and set all displayed “Minutes” to read **Never** by holding down the left mouse button on the down pointing arrow next to the minute numerals until the “Minutes” display reads ‘Never’.
 - o Select the plus (+) sign next to the “Turn off Hard Disks After” label Set all displayed “Minutes” to read **Never** by holding down the left mouse button on the down pointing arrow next to the minute numerals until the “Minutes” display reads ‘Never’.
 - o Select the plus (+) sign next to the **Sleep** label

- Select the plus (+) signs next to "Sleep After," and set all displayed "Minute" fields to read **Never** or **Off** by holding down the left mouse button on the down pointing arrow next to the minute numerals until the "Minutes" display reads "Never" or "Off"
 - Select the plus (+) sign next to "Allow Hybrid Sleep," and set all displayed "Minute" fields to read **Never** or **Off** by holding down the left mouse button on the down pointing arrow next to the minute numerals until the "Minutes" display reads "Never" or "Off"
 - Select the plus (+) sign next to "Hibernate After", and set all displayed "Minute" fields to read **Never** or **Off** by holding down the left mouse button on the down pointing arrow next to the minute numerals until the "Minutes" display reads "Never" or "Off"
- 8) Select the plus (+) sign next to the **USB settings** label.
- Then, select the plus (+) sign next to the "USB selective suspend setting" label.
 - Ensure both fields read **Disabled**. If they do not, select the down pointing arrow for each field , in turn, and select "Disabled"
- 9) Select the plus (+) sign next to the **Processor Management** label
- Then, select the plus (+) sign next to the "Minimum Processor State" label
 - Change settings for the "On Battery" and "Plugged In" labels to 100 percent (%) by holding down the left mouse button on the up pointing arrow next to the percentage (%) display till it reads 100 percent (%)
 - Then select the plus (+) sign next to the "Maximum Processor State"
 - Change settings for the "On Battery" and "Plugged In" labels to 100 percent (%) by holding down the left mouse button on the up pointing arrow next to the percentage (%) display till it reads 100 percent (%)

- 10) In the bottom right corner of the page select **Apply** and then **OK**.
- 11) The previous Power Options Settings page is now displayed, select the **Save Changes** key.
- 12) Exit the final Power Options window by clicking the Red –“**X**” button to complete your set-up.
- 13) Turn Vector Pro **Off**
- 14) **Restart** the Computer

Disabling User Account Control (Windows Vista)

We recommend disabling the User Account Control to prevent the Windows Vista Operating System from blocking the software and keeping it from launching, or causing an error message on opening the application.

- 1) Left Click on the **Start Button** (Vista Windows Symbol)
- 2) Left Click on **Control Panel**
- 3) Left Click on **User Accounts** (If you cannot see a "User Accounts" Icon click on the "Classic View" link in the left hand column of the window, then repeat the first part of step 3)
- 4) Left Click on **Turn User Account Control On or Off**
- 5) Uncheck the **User Account Protection** checkbox
- 6) Click on **OK**
- 7) Left Click on **Yes** to Restart the computer

Please call Accusport Customer Support (336) 759 3300 x2, or e-mail support@accusport.com, if any problems are encountered while following this procedure. Note: Some versions of Vista do not allow for users to disable the User Account Control.

Software Installation (Windows XP and Vista)

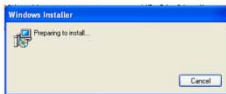
The following steps are for Windows XP. Though cosmetically different, the Windows Vista installation follows the same procedure.

For Vector Pro first time setup, you must install and configure the software on your computer. Complete the software installation before connecting the Vector Pro to your computer.*

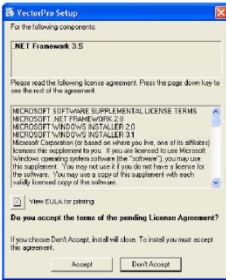
*Refer to pages 9-12 to configure power options and UAC (Vista only) prior to installing the software

Before installing the VSeries software, verify that you have at least 1GB of computer memory if using Windows XP or at least 1.5 GB of computer memory if using Windows Vista.

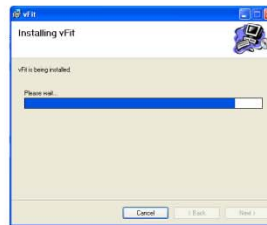
If the software installation does not auto-run, go to My Computer and double-click your CD Drive



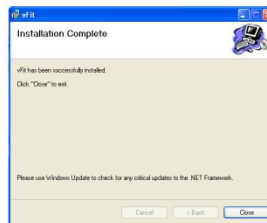
1. The Windows Installer “Preparing to Install” window will appear.



2. If the Vector Pro setup .net Framework v3.5 window appears, click **Accept**.



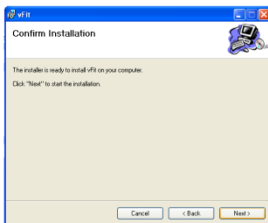
5. The “Installing software” window will appear.



6. When the “Installation Complete” window appears, click **Close**.




3. When the “Welcome to the software Setup Wizard” window appears, click **Next**.



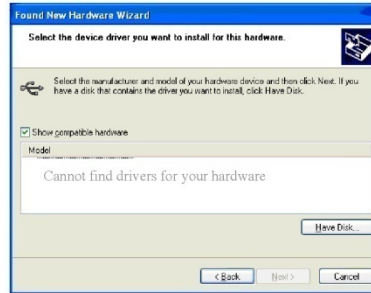
4. The “Confirm Installation” window will appear, click **Next** to install the software.

Hardware Installation (Windows XP)

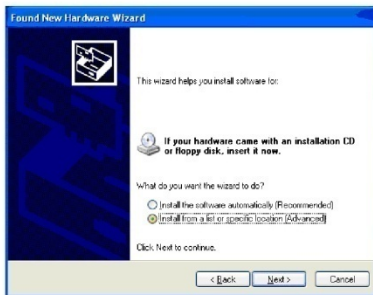
1. Install the two Vector Pro protective shields. The product warranty will not cover damages to the unit during use without the shields.
2. Use the AC adaptor to connect the Vector Pro to a power source.
3. Use the USB cable to connect the Vector Pro to your computer. Note: The USB symbol  on your computer will indicate where to insert the cable.
4. Fold the rear foot down on the back of the Vector Pro and set the unit on the ground.
5. Power on the Vector Pro. Two high pitched beeps will sound.



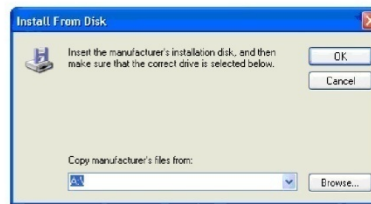
6. The Welcome to the Found New Hardware Wizard screen will appear. In response to the question, "Can Windows connect to Windows Update to search for software?" select **No, not this time**. Then click **Next**.



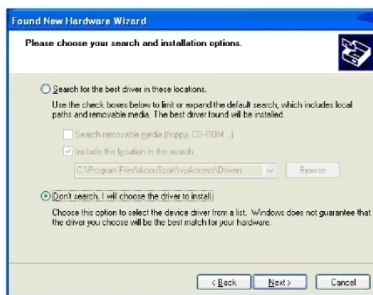
9. When asked to select the device driver you want to install for this hardware, click **Have Disk**.



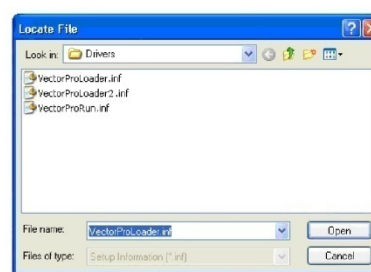
7. Vector Pro does not require a CD or floppy disk for set up, so select **Install from a specific location (Advanced)**. Click **Next**.



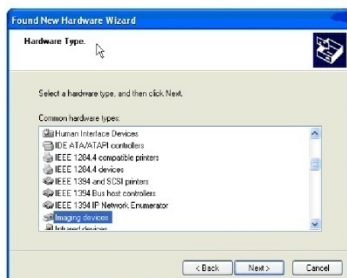
10. In the next screen, click **Browse**. Vector Pro does not require a CD or floppy disk for set up.



8. When directed to "Please choose your search and installation options," click **"Don't search. I will choose the driver to install."** Click **Next**.



11. Use the Look in: dropdown to browse to C:\Program Files\AccuSport\vpProcess\Drivers and hit **Open** or simply type C:\Program Files\AccuSport\vpProcess\Drivers in File name and click **Open**.



8a. If a window opens asking you to select hardware type, select **Imaging devices** and click **Next**. If this window does not open, proceed to step 9.



12. In the Install from Disk window, click **OK**.



13. In the Found New Hardware Wizard window, click **Next**.



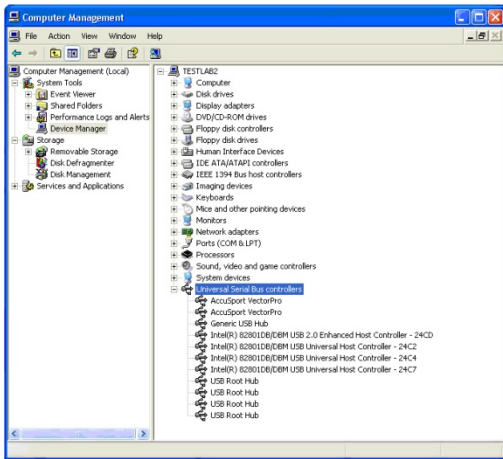
14. When this Hardware Installation window appears, click **Continue Anyway**.



15. In the Completing the Found New Hardware Wizard window, click **Finish**.

The Found New Hardware Wizard window will appear for up to three more times. Repeat steps 6 - 15.

When the Vector Pro hardware installation is complete, Windows will give you the message, "Your new hardware is installed and ready to use."




16. Follow these steps to confirm that the hardware is properly installed:

1. Click **Start** at the lower left corner of your computer screen.
2. Right click **My Computer** and select **Manage**.
3. Click **Device Manager**.
4. Double click **Universal Serial Bus Controllers**.
5. Check to see that AccuSport Vector Pro is listed *twice*.
6. We recommend restarting the computer after the driver installation is complete.

After installing the software, you can access the User Guide at anytime by clicking Help in the menu bar of the Software.

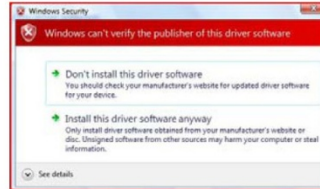
NOTE: Always use the same USB port on the computer that the drivers were initially installed on. Otherwise, you may have to reinstall the hardware drivers.

Hardware Installation (Windows Vista)

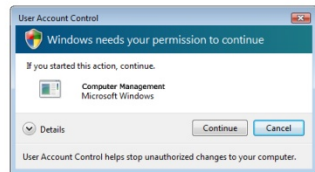
1. Install the two Vector Pro protective shields. The product warranty will not cover damages to the unit during use without the shields.
2. Use the AC adaptor to connect the Vector Pro to a power source.
3. Use the USB cable to connect the Vector Pro to your computer. Note: The USB symbol  on your computer will indicate where to insert the cable.
4. Fold the rear foot down on the back of the Vector Pro and set the unit on the ground.
5. Power on the Vector Pro. Two high pitched beeps will sound.



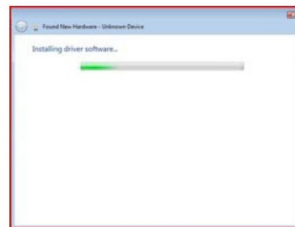
6. The Found New Hardware Wizard will appear. Select "Locate and install driver software" to continue.



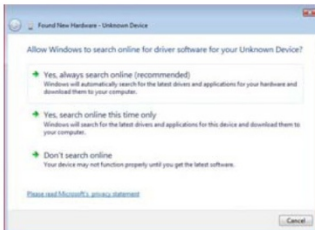
11. When the "Windows can't verify the publisher of this driver software" window appears, click **Install this driver software anyway**.



7. If User Account Control windows appears click Continue.

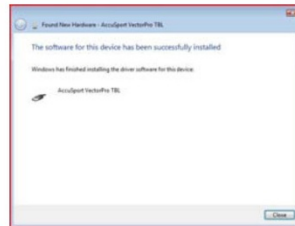


12. The Installing driver software window... will appear.

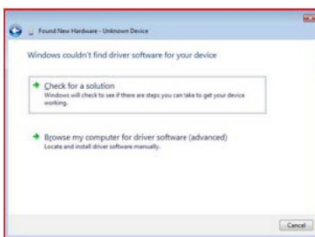


8. The Found New Hardware - Unknown Device will appear. Select "Don't search online".

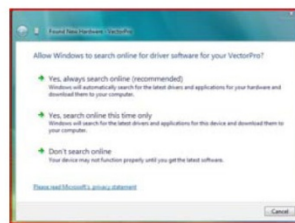
***This message may not appear on some computers*



13. After the device driver has finished installing you will see a message "The software for this device has been successfully installed". The device listed will be either "AccuSport VectorPro TBL" or "AccuSport VectorPro TBL2". Hit Close button to continue.

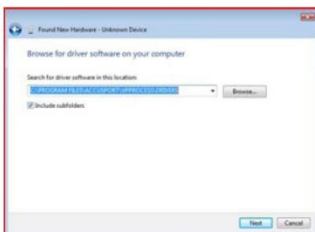


9. Select "Browse my computer for driver software (advanced)" to continue.



14. The Found New Hardware - VectorPro will appear. Select "Don't search online".

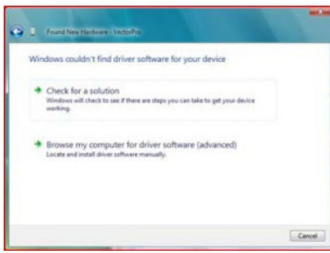
***This message may not appear on some computers*



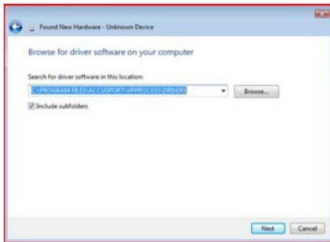
10. Type C:\Program Files\AccuSport\vpProcess\Drivers in File name and click **Next** or click **Browse** and navigate to the C:\Program Files\AccuSport\vpProcess\Drivers folder and click **OK**.



15. The message "Insert the disc that came with your VectorPro" will appear. Select "I don't have the disc. Show me other options" to continue.



16. Click "Browse by computer for driver software (advanced) to continue.



17. Type C:\Program Files\AccuSport\vpProcess\Drivers in File name and click **Next** or click **Browse** and navigate to the C:\Program Files\AccuSport\vpProcess\Drivers folder and click **OK**.



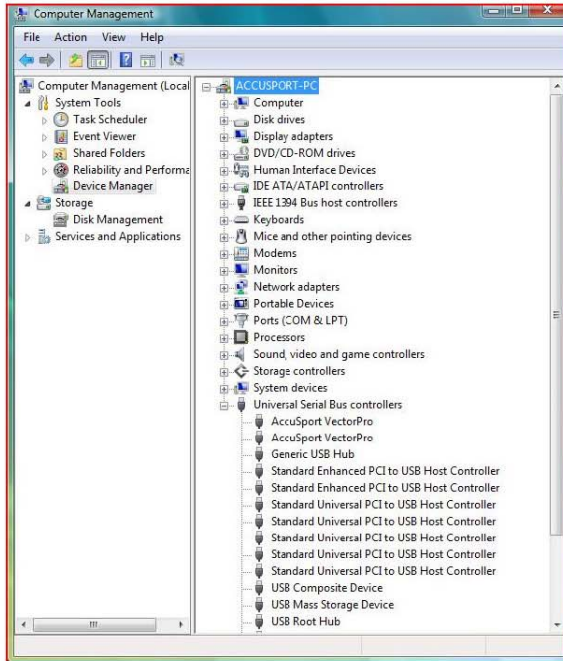
18. When the Windows can't verify the publisher of this driver software window appears, click **Install this driver software anyway**.



19. The Installing driver software window... will appear.



20. After the device driver has finished installing you will see a message "The software for this device has been successfully installed". Hit Close button to finish.



22. Follow these steps to confirm that the hardware is properly installed:

1. Click **Start** at the lower left corner of your computer screen.
2. Right click **Computer** and select **Manage**.
3. Click **Device Manager**.
4. Double click **Universal Serial Bus Controllers**.
5. Check to see that AccuSport Vector Pro is listed *twice*.
6. We recommend restarting the computer after the driver installation is complete

After installing the software, you can access the User Guide at anytime by clicking Help in the menu bar of the Software.

NOTE: Always use the same USB port on the computer that the drivers were initially installed on. Otherwise, you may have to reinstall the hardware drivers.

SETTING UP

Charging the Battery

If you are using a fully charged battery, no AC power source is needed. If the battery is not charged, or if you will be using the Vector Pro for an extended time period, use the AC adapter to plug into an electrical outlet.

To charge the battery, plug the Vector Pro into an outlet via the AC adapter. Make sure the Vector Pro unit is turned Off, and allow the unit to charge overnight or for at least six hours.

Starting the Software

Power on the computer and connect the Vector Pro to your computer via the USB cable. Double click the VFit , VTeach , or VRange  icon on your computer desktop to start the software. Once the software has opened, power on the Vector Pro unit.

Calibration



A reminder will appear when the software is brought up indicating that you must calibrate to receive accurate data. Calibration can be accessed by clicking Options in the menu bar of the software and selecting Calibrate.



Using your setup template and calibration tee, position the ball within the dotted green target and click Calibrate.

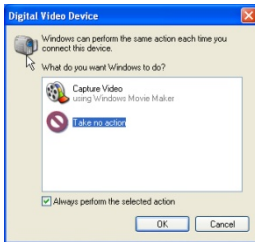


A message will appear briefly stating Calibration Successful and will then redirect to the main software screen. If camera lens calibration is not successful, go back and repeat the calibration process.

VTeach Software Only - Video Camera Installation (Optional)

If you are using a video camera with Vector Pro, follow these steps for one-time installation before the first use. If you are not using a video camera, proceed to step 6.*

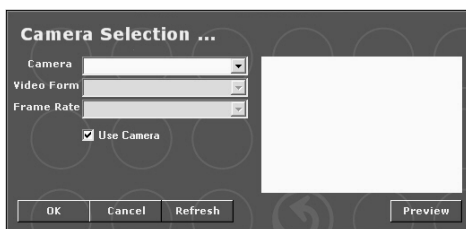
1. Power on the video camera and computer.
2. Plug the camera into the computer.



3. When the Windows Digital Video Device dialog box opens, click **Take No Action**. Click the check box that says **Always perform the selected action**.

4. Click **OK** to close the Digital Video Device dialog box.

5. Start the VTeach software by double clicking the VTeach icon on your computer desktop.



6. When the Camera Selection dialog box appears, click the camera drop down and select your camera. The video form and frame rate will automatically appear in the dialog box. *If you are not using a video camera, uncheck **Use Camera** and click **OK**.

7. Click **Preview** to see streaming video from your camera.
8. Click **OK** to close the dialog box.

The camera icon in the upper left corner of the screen will glow green when a video camera is connected. It will be black if no camera is connected.

To change to another camera, repeat the above steps for the new camera.

If your camera is turned on and video does not appear in the video window, click the camera icon in the upper left corner. When the Camera Settings box opens, click **Use Video**. Click **OK** to close the box. Back on the Instruction screen, streaming video appears in the Swing Video window. Refer to this live video as you position and focus the camera to capture the swing.

SOFTWARE FEATURES

Navigating the User Interface

Session, score, ball launch measurements, ball flight information and student data are displayed in the same manner for each software module. That information and the menu bar are explained here, beginning in the upper left corner with the menu bar, and then moving clockwise around the screen.



Camera: Camera icon in the upper left corner opens a window for video camera installation and settings. The icon glows green when a digital camcorder is installed.



Vector Pro Connected/Vector Pro Not Connected: logo glows green or black to indicate whether or not Vector Pro is connected to the computer.



Expand Window Tabs: *This menu option is available in VRange only.* Click on the green arrows to display windows of Shot History, Image View, What If Analysis, Top Down View, and Profile.



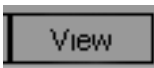
Exit: Closes the software.



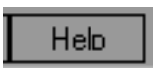
Reports: Opens the Reports Screen for printing reports of recorded data. (See Appendix A for report samples.)



Options: Clicking this feature allows Calibration access or select Preferences to modify settings related to weather, right or left handed golfer, measurement units, score and shot analysis options.



View: *This menu option is available in VRange only.* Selecting this feature gives you the option to select the range distance, change aspect, select day or evening effects, change tracer type, and select plotting preference.



Help: Opens the User Guide and other information about

Vector Pro. You can scroll through the user guide or click a topic in the table of contents to go directly to that information.



Clear: Clears all shot data and plots on the screen.



Minimize: Minimizes software screen.



Shot Navigator: Controls which shot of a session is displayed. Click the arrow above the first circle to view a previous shot in the current session. Click the arrow below the second circle to move to the next saved shot. *This option is not available in VRange.*



Score: The software scores each shot, in a range from 0 to 100, based on all the parameters of that shot.

Ball Launch Measurements

The shot dials located at the bottom of the software convey information about every shot.



Ball Speed: Measures in miles per hour (MPH), feet per second (FPS), kilometers per hour (km/h) or meters per second (m/s). To change units, click Options>Preferences.



Club Speed: Calculates within 1 to 2 miles per hour (MPH) (MPH), feet per second (FPS), kilometers per hour (km/h) or meters per second (m/s). To change units, click Options>Preferences.



Launch Angle: Displayed in degrees.



Descent Angle: Calculated angle of the golf ball in relation to the ground as it descends from the apex of its flight.



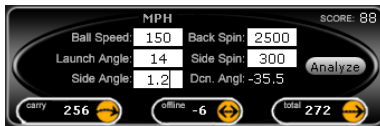
Back Spin: Displayed in RPMs.



Side Spin: The label below the number indicates draw/hook, fade/slice, or center. Displayed in RPMs.



Side Angle: The label below the number indicates push, pull or center. Displayed in degrees.



What if Analysis: This function allows you to input different launch information for shot comparison. Launch information may be modified, analyzed and compared to other shots. After filling in hypothetical launch condition values such as speed, spin, launch angle, side spin and side angle, click Analyze to update.

Note: In VRRange, this option is available by selecting the 3rd green arrow (window expansion tab) on the left.



Ball Flight Analysis: Carry, offline and total distance appear across the top of the screen. White numbers show data from the current shot. Gold numbers show the average of all shots in that item. Total Distance includes carry and roll. The direction offline will be represented by an "R" for Right and an "L" for Left.

Managing Student Information



Select Student: Click the pen icon to enter new student information or to access stored data for a returning student.

The buttons at the top of the window allow you to toggle between Student Information, Activity and Item for a golfer. To save data for later retrieval, click the arrow icon at the lower left labeled Student before beginning. The Student Information window opens for entering new information or searching for an existing student name. To view all existing students, click Find and then click the Select drop down arrow.

For a new student: click New User, then enter name and contact information. Select Right Handed or Left Handed. Click Save to save the information and go to the Activity Window. Click Close to close the window without saving student information.

For a returning student: enter the student's first or last name and click Find. The Select window will display a stored name. If the one shown is not the student you are looking for, open the drop down to see other names. Click to select the student. For a new session for a returning student, select the name and click Save.

Use the Session drop down to select a saved session. Then click View to see those shots and the stored data. As it is entered into the Session field, the software automatically posts the date with the name of the saved session. To view a saved session, select the session and click View. Once a session is saved, no shots can be added or deleted.

A saved session for Student "Demo" is included with the software.


To edit student information: enter the changes and click Save to update the record.

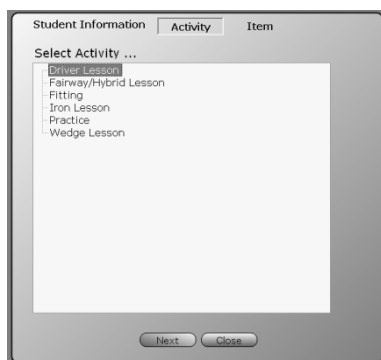
To delete a session: select the student and session and click the Delete button on the session line.

To delete an existing student record and all associated activity, select the student and click the Delete button beside the student's name.

Click Close to close the window. The student's name appears in the lower left of the screen.

Managing Activities

 **Activity:** Opens window for selecting an activity and item.



After you save information in the Student Information Window, the Activity window will automatically open. You can also click the Activity button on the Student Information screen or the arrow icon at the bottom right labeled Activity to open the Select Activity window.

You may choose one of the default activities or items, or add new ones. After selecting the activity and item for a particular session, click Next to go to the Select Item screen. The selected activity appears at the top of the screen, the selected item appears at the bottom of the screen.

To add an activity:

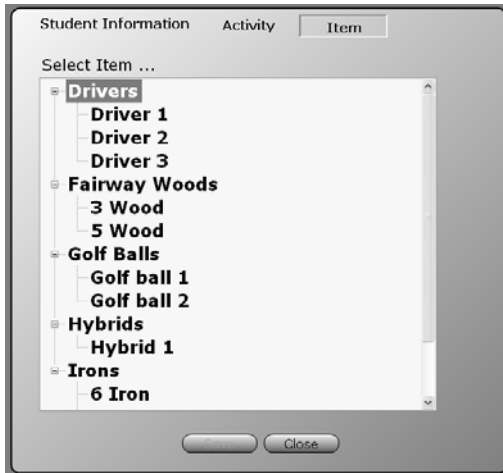
1. Right click within the Select Activity box.
2. Click Add New Category.
3. Click the words A New Category, which appear in the activity list.
4. Click the box around the words A New Category, and enter the name of the new activity.

To remove an activity: right click in the box and left click Remove.

Managing Items



Select Item: Click the pen icon to open a drop down to select the club or ball that you are working with.



Various default items exist within these categories. Click the + and - signs to expand or compress each category.

To add a new category:

1. Right click within the Select Item box.
2. Click Add New Category.
3. Click the words New Category, which appear in the category list.
4. Click the box around New Category and enter the name of the new category.

To add a new item:

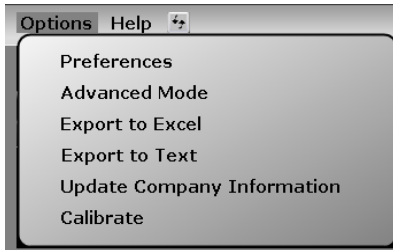
1. Click to highlight the appropriate category.
2. Right click on the category.
3. Click Add New Item.
4. When the words, "New" and the name of that category appear, click the box around the words and enter the name of the new item.

To remove a category or item: right click on the category or item and left click Remove.

Click Save to save selections or Close to close the box without saving changes.

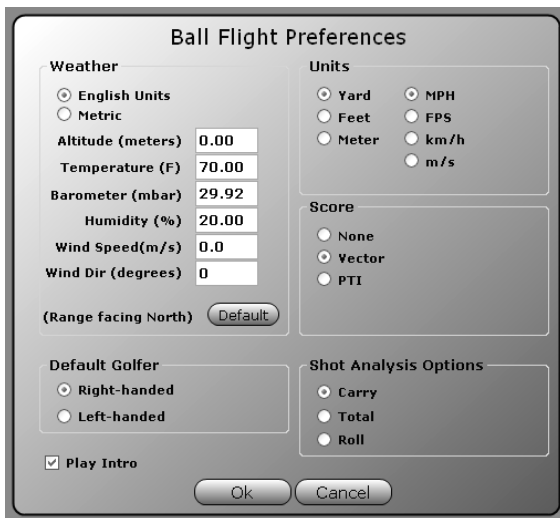
*****Once a Student, an Activity, and an Item have been specified, all shots hit within that session will be automatically saved.***

Options Menu



Click **Options** at the top of the screen to open this window for adjusting various settings of the software, as described below.

Preferences (Image needs to be modified to remove “Play Intro”)



Weather: conditions under which you are hitting the ball. Wind direction should be set at zero degrees if the ball flies directly into the wind, at 180 degrees if the ball flies downwind, at 90 degrees if the wind is coming from the right, and at 270 degrees if the wind is coming from the left.

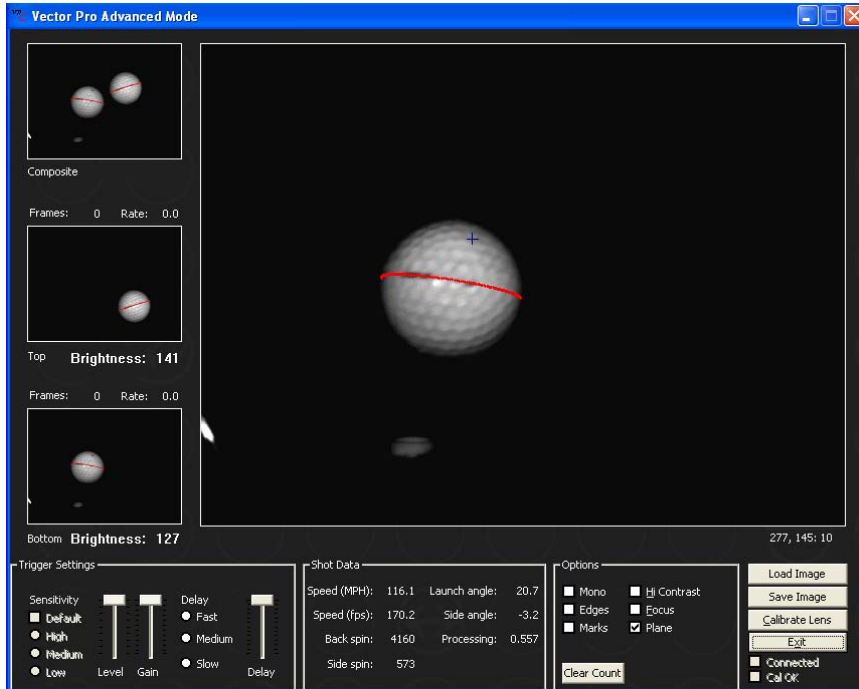
Default button in the weather box restores default settings.

Default Golfer: right or left-handed default if student information is not entered.

Units: measurement for distance and ball and club head speed.

Score: The software scores each shot, in a range from 0 to 100, based on the flight efficiency related to ball speed. Power Transfer Index (PTI), also known as Smash Factor, a quotient of ball speed over club speed, is an older scoring technique, first used when speed was the only information available in ball flight measurement. The PTI number will usually fall somewhere between 1.4 and 1.5.

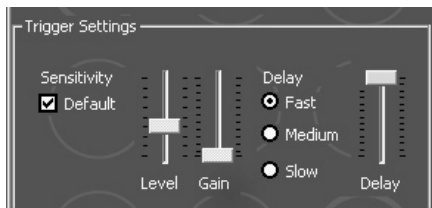
Advanced Mode



The Advanced Mode displays detailed information about the golf shot including the images from the top and bottom cameras, microphone trigger settings, and image enhancement options including mono, edges, marks, and plane. In addition, there is

a High Contrast switch used by the system outdoors and a focus mode for manually focusing and setting the brightness of the cameras. In a few cases, AccuSport Customer Support may ask you to adjust these settings with their supervision.

The Trigger Setting will display the following:



Default sensitivity should be used for all clubs and hitting conditions. Fast delay is appropriate for most conditions. Slow iron shots may require the delay be set to medium. Be sure to change the delay back to fast when hitting drivers.

Exporting to Microsoft Excel

If you already have Microsoft Excel on your computer, you can click the Export to Excel from the Options Menu to export text to an excel spreadsheet.

Exporting to Text File

You may click the Export to Text icon to export shot data to a text file.

Update Company Information

You can personalize your reports by updating your company information. This information will be included on all printed reports.

Calibrate



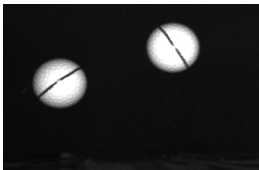
Calibration matches the brightness and focus of the two camera lenses. Use Calibration at setup and when lighting conditions change.

Marking the Ball

The Vector Pro Launch System uses black marks on the golf ball to measure the ball flight parameters. The marks must face the Vector Pro camera lens **vertically** when the ball is positioned for hitting. No other ball marks should be visible to the Vector Pro camera. If making your own marks, they should be made using a black sharpie on a blank face of a white ball.

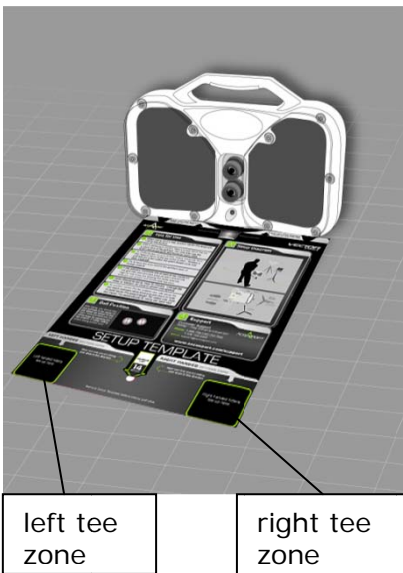


Logo Method - Most golf balls on the market today provide a marking with a straight line type orientation as pictured, or you may also use the stripe method below.



Stripe method - Draw a black stripe at least one inch long on the blank face of the ball. The mark must be clearly visible when it is facing the Vector Pro and must be drawn perfectly straight. There are a number of golf ball marking devices commonly used in the industry. Any of these will work for striping the ball for use with the Vector Pro.

Positioning the Ball



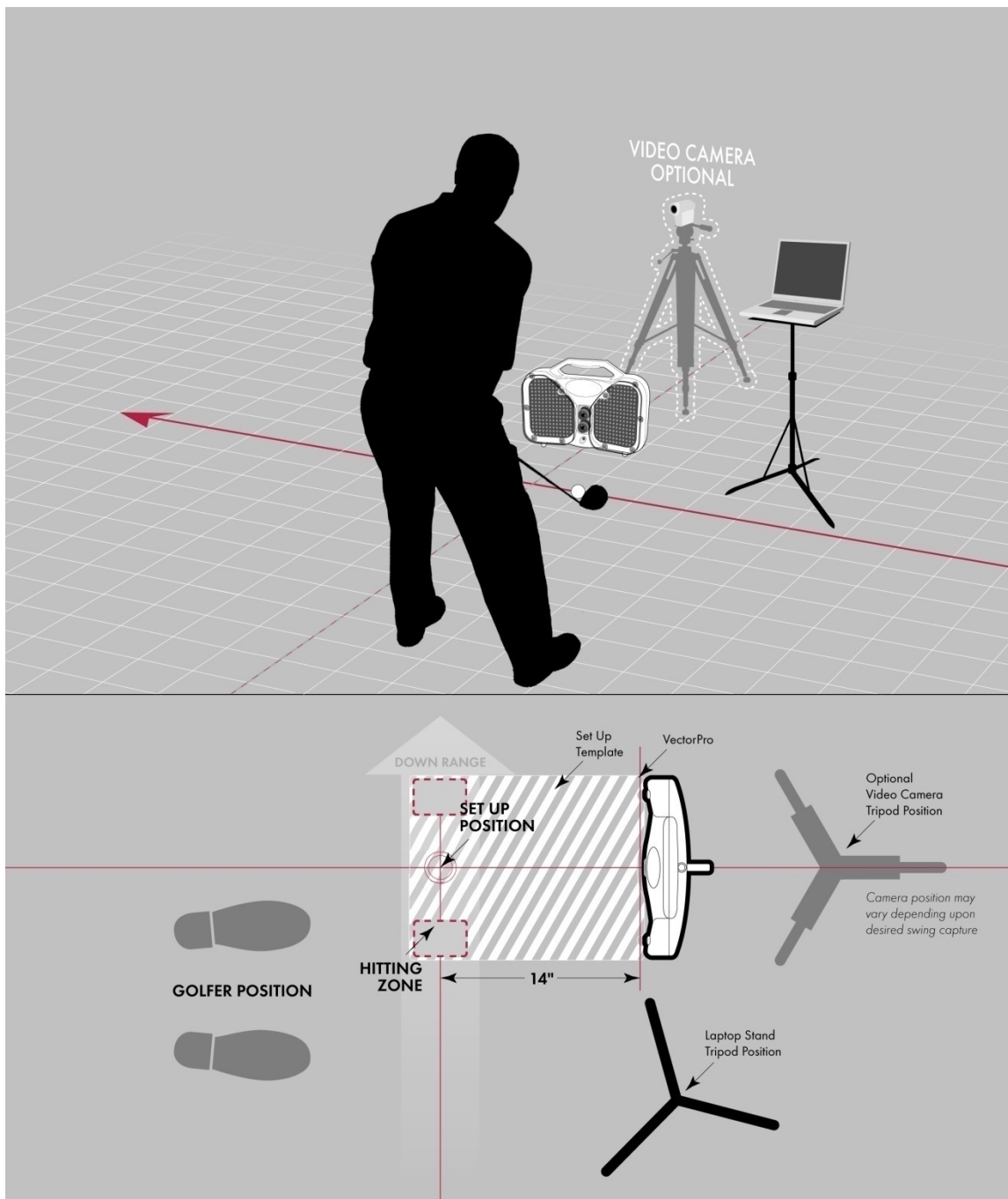
Use the Setup Template to tee up the ball in the correct position. If you are not using the Setup Template, review the setup illustration on page 32, to understand the golfer position and hitting zones. Tee the ball up in the **Right Tee Zone** for a **right handed golfer**.

For a left handed golfer, tee up the ball up in the **Left Tee Zone**. **Make sure to Click Options in the menu bar of the software and select Preferences. In the Default Golfer box, select **left handed**.*

**** Note: Do NOT leave Setup Template in place when hitting shots***

Positioning the Vector Pro, Laptop Computer, Video Camera

Diagram shows positioning for right handed golfers.

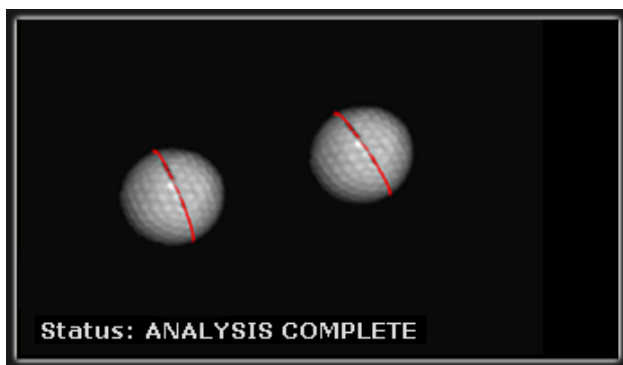


Left handed golfers, tee up in left handed hitting zone, and change software settings in the Student Information Window or click Options in the menu bar and select Preferences.

Hitting your first shot:

After hitting the ball, review the image in the right corner of the screen. To measure ball flight parameters, the software needs 2 balls in the image window. If a clear ball image does not appear, or if you receive the message, "Analysis Terminated," move the tee position slightly down range or up range for the next shot. The marks on each ball should be clear, ball dimples should be distinguishable and ball outlines should be completely visible – not fading into darkness or cut off the edge of the screen. For advanced troubleshooting select **Options** and choose **Advanced Mode**.

Image Window



The image window is located in the right corner of the software and shows a composite image of the ball from the top and bottom camera. The Vector Pro Launch System uses black marks on the golf ball to measure the ball flight parameters; those marks are indicated in red by the software

to validate how the shot was measured. If the software misreads the black marks, the ball can be remarked by clicking once on each end of the appropriate mark. Error messages can also be viewed in this window to assist in troubleshooting problems related to shot capture.

Note: In VRange, the image window can be viewed by selecting the middle green arrow on the left.

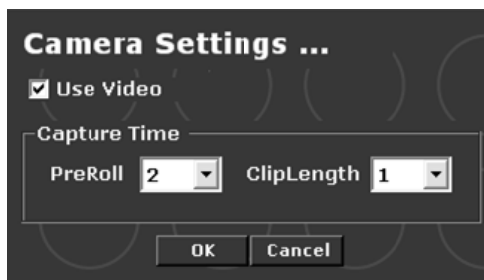
VTeach Software

This section describes software features unique to the VTeach Module.



Please refer to pages 13-33 for standard information regarding the software installation, software features, managing student information and calibration.

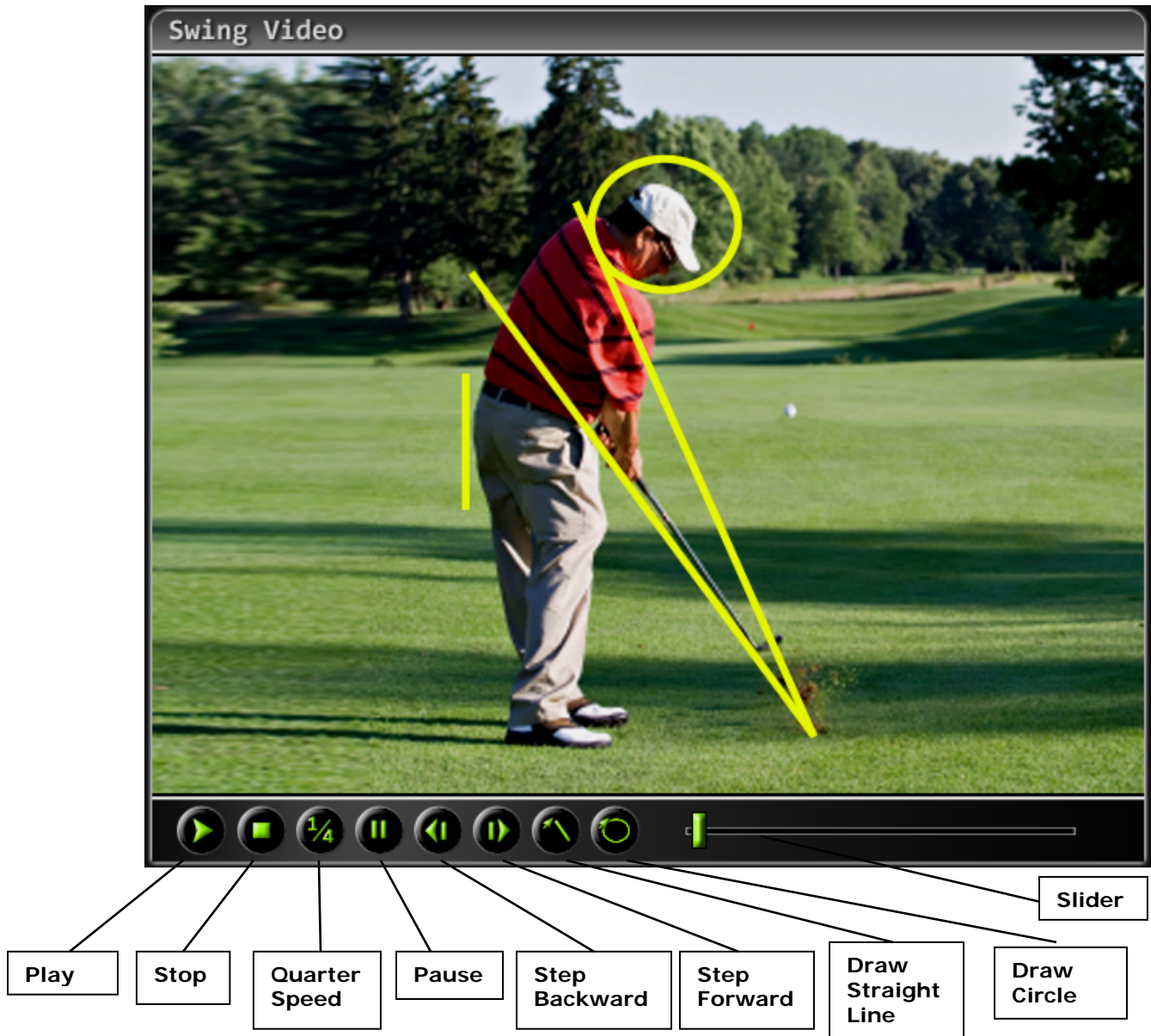
Camera Settings



Click on the camera icon in the top left corner of the screen. The drop down allows you to set video pre roll and clip length. Each video recording is triggered by the sound of the club striking the ball.

Pre Roll is the number of seconds the software tells the camera to go back and record prior to impact. Clip Length is the total number of seconds per video recording.

Swing Video



1. When your video camera is on and installed, live video appears in the Swing Video window. Adjust the camera to frame the student's motion to be analyzed.
2. Set to record mode on your video camera.
3. Have the golfer hit the ball. VTeach will record and save the image, replay it once, and then stop.
4. Shot data will appear on the VTeach Screen.
5. Use the video navigation buttons to play/pause, stop, play at quarter speed, or step the video clip forward or backward.
6. Click and drag the slider just below the Swing Video window to step the video forward, backward or pause it at a particular spot.

On Screen Annotation



To use the drawing tools for swing video annotation, pause the video at the spot at which you wish to draw.

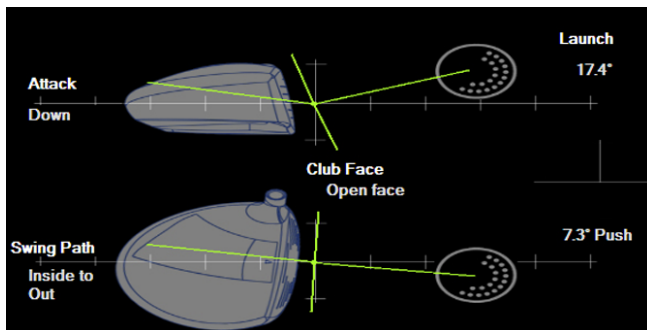


Click the pen tip, then click and drag the pointer across the video image to draw a straight line.

Click the circle, then click and drag the pointer across the video image to draw a circle.

Right click on a drawn line or circle to modify or delete it.

Club Impact

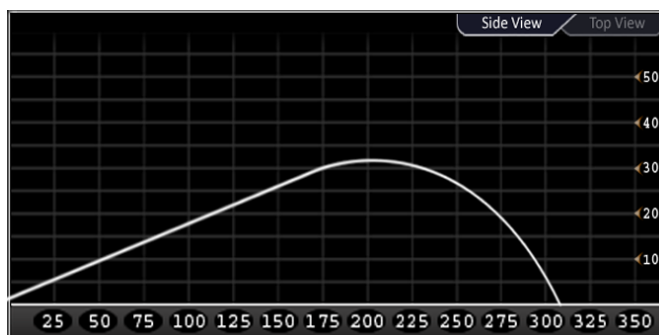


The Club Impact window shows angle of attack. The graphic at the top of the screen shows a side view of the club and effective ball loft.

The lower graphic shows the club path and indicates whether the face was open or

closed when the ball was struck.

Profile



Profile shows a top down and side view of the ball flight based upon the measured ball launch information and AccuSport's best-in-the-industry flight model.

VFIT SOFTWARE

This section describes software features unique to the VFit Module.



The top of the Fitting Screen contains the Shot History Table. Click the tabs located in the middle of your screen to change the lower window to display Analysis, Profile or Club Impact. When you click to highlight a row in Shot History (shown in blue), the data from that shot appears in the lower windows.

Please refer to pages 13-33 for standard information regarding the software installation, software features, managing student information and calibration.

Shot History Table

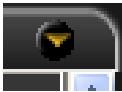
Clear Plots		Shot History														Show Averages Only	
Item	Shot	Plot	Shot Score	Ball Speed	Club Speed	Launch Angle	Back Spin	Side Spin	Side Angle	Carry	Offline	Total	Roll	Desc Angle	Max Height	Total Spin	Flight Time
Select Item ...			73	110	82	20.8	5467	-950	0.5	157.9	12	163	5	-46	29	5670	5.8
Select Item ...	1	None	70	98	77	21.1	5901	-1375	0.4	132.9	13	137	4	-44	23.0	6084	5.1
Select Item ...	2	None	72	105	83	21.1	6384	-2028	-2.7	142.8	12	145	2	-47	27.1	6707	5.5
Select Item ...	3	None	86	110	82	18.2	5229	401	1.9	162.5	0	169	7	-42	25.8	5249	5.7
Select Item ...	4	None	63	117	88	21.4	5833	-1073	6.2	168.5	34	173	4	-49	34.8	5971	6.3
Select Item ...	5	None	63	117	88	21.4	5833	-1073	6.2	168.5	34	173	4	-49	34.8	5971	6.3
Select Item ...	6	None	78	116	82	20.8	4228	603	-3.4	181.9	-23	191	9	-44	32.2	4274	6.3
Select Item ...	7	None	78	105	77	21.9	4863	-2104	-5.4	148.2	10	154	6	-44	26.4	5456	5.5

Shot History Table (continued)

In Shot History, data is grouped and summarized by item, as shown above, the gold colored line of each group. Click on +/- box in the item field to collapse the data to display average lines only for each item.

Individual or item averages may be selected for plotting in the Profile view. To plot an item, click on the tab labeled Profile, click the box in the plot column of Shot History for a particular shot or average; select a color for plotting that item.

To delete a shot in the Shot History table, select the row, right click on it and then click delete shot.



Click on this icon to display a full screen view of the shot history table.

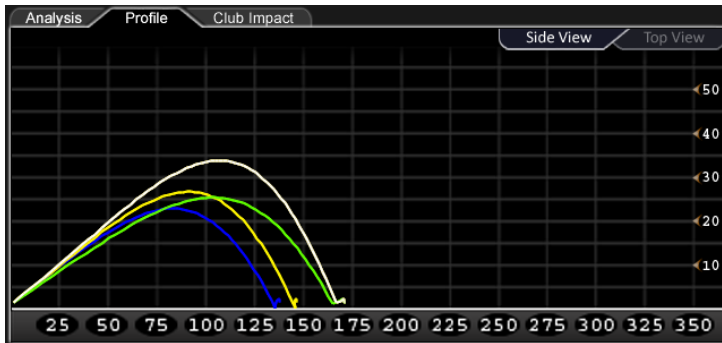
Shot Analysis

Analysis	Profile		Club Impact																	
	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17							
750	193.2	197.9	202.4	206.7	210.8	214.8	218.6	222.2	225.6	228.9	232.0	235.0	237.9							
1000	204.1	208.5	212.7	216.7	220.5	224.1	227.6	230.8	234.0	237.0	239.8	242.5	245.0							
1250	213.3	217.3	221.1	224.8	228.2	231.5	234.6	237.6	240.4	243.0	245.5	247.9	250.2							
1500	220.9	224.6	228.0	231.3	234.4	237.3	240.1	242.7	245.2	247.6	249.8	251.9	253.8							
1750	227.1	230.4	233.5	236.4	239.2	241.8	244.3	246.6	248.8	250.8	252.8	254.6	256.3							
2000	232.0	235.0	237.7	240.3	242.8	245.1	247.3	249.4	251.3	253.1	254.8	256.4	257.9							
2250	235.8	238.4	240.9	243.2	245.4	247.5	249.4	251.2	252.9	254.5	256.0	257.4	258.7							
2500	238.6	241.0	243.2	245.3	247.2	249.0	250.8	252.4	253.9	255.3	256.6	257.8	259.0							
2750	240.7	242.8	244.7	246.5	248.3	250.0	251.5	252.9	254.3	255.5	256.7	257.7	258.7							
3000	242.0	243.9	245.7	247.4	248.9	250.4	251.8	253.0	254.2	255.3	256.4	257.3	258.2							
3250	242.9	244.6	246.2	247.7	249.1	250.4	251.6	252.8	253.9	254.9	255.6	256.2	256.7							
3500	243.3	244.8	246.3	247.7	248.9	250.1	251.0	251.8	252.4	253.0	253.4	253.8	254.0							
3750	243.3	244.6	245.8	246.8	247.6	248.4	249.0	249.6	250.0	250.4	250.6	250.8	250.9							
4000	242.2	243.2	244.1	244.9	245.5	246.1	246.5	246.9	247.2	247.4	247.5	247.6	247.6							
4250	240.5	241.3	241.9	242.5	243.0	243.4	243.8	244.0	244.2	244.3	244.3	244.3	244.2							

Click the tab in the middle of the screen labeled, **Analysis**. The chart displays various computed launch angle and back spin conditions. The yellow box shows the distance achieved by the initial launch conditions. Surrounding cells show the distances of various launch angle and spin rate

combinations. If a box is black, there is no significant gain or loss in distance. Red indicates a loss of distance and green indicates a gain in distance

Shot Profile



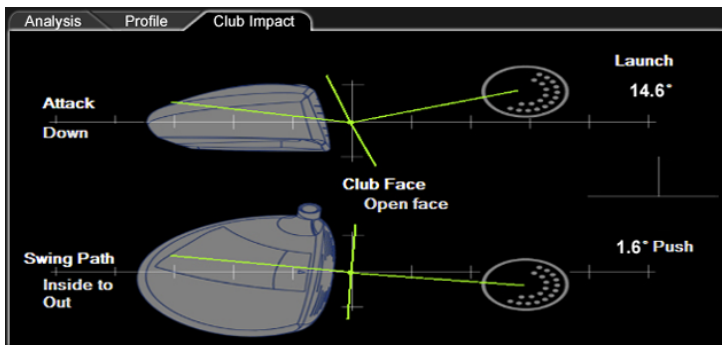
Click the tab labeled, **Profile**. Then click the plot cell in Shot History to select a color for plotting a shot. All shots will stay as plotted until you select **none** in the plot cell.

**The current shot whether just hit, or currently selected, will always be plotted in white.*

Multiple shots can be viewed as individual flight profiles, or as a single profile representing the average through Shot History (by plotting the gold average line in the shot history window).

Launch data may be modified for a "What If" plot. Change the values and then click **Analyze** to see the plot of a hypothetical shot (shown in white).

Club Impact



Click the tab labeled, **Club Impact**. This tab displays the angle of attack and club path for the selected shot. This view does not change for a "What If" analysis.

VRANGE SOFTWARE

This section describes software features unique to the VRange software module. The VRange software is serial number specific and must have a license key for the program to work beyond the evaluation period. VRange is a separate add-on module to the VSeries software. VRange can be displayed in four different range/hole views: 105yds, 155yds, 225yds, and 325yds.

Please refer to pages 13-33 for standard information regarding the software installation, software features, managing student information and calibration.

VRange Demo

A 7 day evaluation copy of the VRange software was included with your Vector Pro shipment. It is also available for download at www.accusport.com. To purchase VRange and to receive the license key (exclusive to specified Vector Pro unit serial number), contact Customer Support at 866-759-3302 ext. 2.

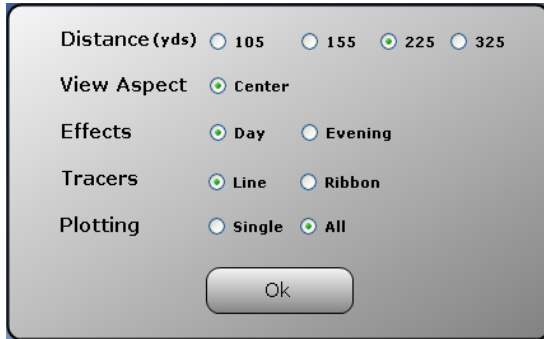


VRange Features

There are five expandable windows available in the VRange Software. To display the window simply click on the applicable tab.



View Menu Option



Select **View** from the Options menu to display range options for distance, view aspect, day or evening effects, tracer type, and plotting preference.

Distance: Four distance views are available in VRange: 105 yards, 155 yards, 225 yards, and 325 yards.

View Aspect: Center aspect is currently the only option available.

Effects: The driving range can be viewed in either day or evening view.

Tracers: Shots can be displayed in either line or ribbon format

Plotting: Select **All** to display tracers of every shot during a session or select **Single** to display the current shot. To compare specific shots, select a color for that shot in the plot column of the shot history table. To view only specific shots, change plotting to single mode.

Shot History

Item	Shot	Plot	Shot Score	Ball Speed	Club Speed	La Ar
Select Item			61	97	83	
Select Item	1	White	73	116	82	
Select Item	2	White	56	117	88	
Select Item	3	White	0	0	NaN	
Select Item	4	White	68	105	83	
Select Item	5	White	83	110	82	
Select Item	6	White	73	116	82	
Select Item	7	White	73	116	82	

Select the green tab at the top left to access the Shot History table.

In Shot History, data is grouped and summarized under the gold colored average line for each item. Click on +/- box in the item field to collapse the data to display average lines only for each item.

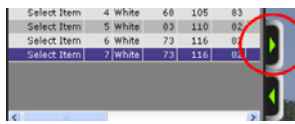
Individual shots or item averages may be selected for plotting in the Profile and Range view. To plot an item, click the box in the plot column of Shot History for a particular shot or average; select a color for plotting that item. The tracer changes to the plot color selection in the main range view, the top down view and the side profile view.

To delete a shot in the Shot History table, select the row, right click on it and then click delete shot.



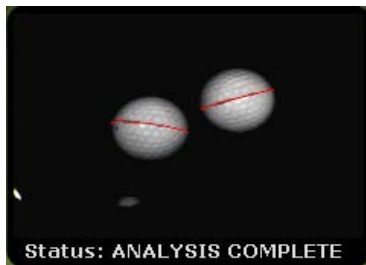
Reset Plots: Click to clear all plotted shots from the range

Avg Only: Check this box to display only the averages for each item.



Click on the secondary expansion arrow to expand the shot history window to include all columns. In expanded view, the arrow will then face left, and clicking it again will cause the window to revert back to compact view for better viewing of the range.

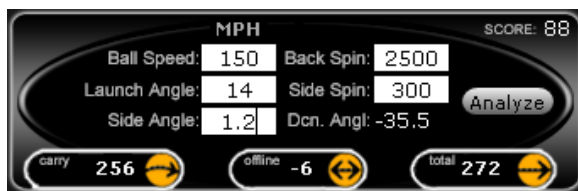
Image Window



Select the middle green arrow on the left to display the Image window.

The image window shows a composite image of the ball from the top and bottom camera. The software uses the black line on the golf ball to measure the spin; those marks are indicated in red by the software to validate how the shot was measured. If the software misreads the black marks, the ball can be remarked by clicking once on each end of the black line. Error messages can also be viewed in this window to assist in troubleshooting problems related to shot capture.

“What if” Analysis



Select the bottom green arrow on the left to display the What If Analysis window.

This function allows you to input different launch information for shot comparison. Launch information may be modified, analyzed and compared to other shots. After filling in hypothetical launch condition values such as speed, spin, launch angle, side spin and side angle, click Analyze to update.

Top Down View

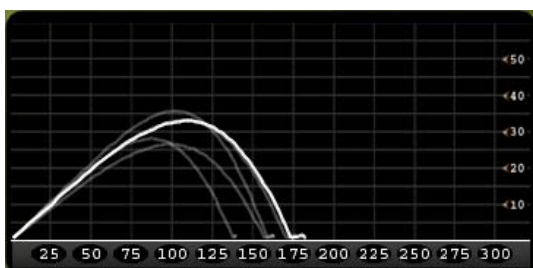


Select the top right green tab for a top down view of the shot profile.

Similarly to the VFit software, colors can be selected by clicking the plot cell in the Shot History and selecting a color to compare different shot profiles within the software.

**** Refer to page 38 for additional information on plotting shots.***

Side Profile View



Select the bottom right green tab for a side view of the shot profile.

Similarly to the VFit software, colors can be selected by clicking the plot cell in the Shot History and selecting a color to compare different shot profiles within the software.

**** Refer to page 38 for additional information on plotting shots.***

CUSTOMER SUPPORT

You can reach AccuSport Customer Support by phone or email:

Phone: 336-759-3300 x2

Toll-free: 866-759-3302 x2

support@accusport.com

Please have your serial number available.

HOURS: Monday – Friday 8:00 am to 5:00 pm EST

Free customer support during regular business hours.

Weekend support available Saturday (10:00 am to 5:00 pm) and Sunday (1:00 to 5:00 pm). There is a per incident fee.

If the Vector Pro warranty has expired, the customer is responsible for all shipping costs.

Visit our website www.accusport.com for additional user tips.

FREQUENTLY ASKED QUESTIONS

General Questions

Whom should I contact with questions about Vector Pro or the AccuSport warranty?

You can reach AccuSport Customer Support by phone or email:

Phone: 336-759-3300 x2

Toll-free: 866-759-3302 x2

support@accusport.com

Please have your serial number available.

HOURS: Monday – Friday 8:00 am to 5:00 pm EST

Free customer support during regular business hours.

Weekend support available Saturday (10:00 am to 5:00 pm) and Sunday (1:00 to 5:00 pm). There is a per incident fee.

If the Vector Pro warranty has expired, the customer is responsible for all shipping costs.

Visit our website www.accusport.com for additional user tips.

How can I get more information on Vector Pro?

Contact our sales department at 336-759-3300 (or toll-free: 866-759-3302). Press 1 for sales. Or email sales@accusport.com.

How does Vector Pro connect to my computer?

Vector Pro connects to your computer via USB 2.0. For capturing swing video at least one FireWire IEEE 1394 port is also required.

How do I know if my computer has a USB 2.0 port?

1. Right-click **My Computer** and select **Manage**.

*Note: Windows XP users may need to click **Start** to access **My Computer**.*

2. Click **Device Manager**.

3. Click the (+) sign next to **Universal Serial Bus Controllers** (in the right windows pane).

4. Manufacturer names are listed in front of each USB Host Controller or Root Hub. They should be labeled as follows;

- i. If Enhanced Host Controller and/or USB 2.0 Root Hub Device are listed, then the computer has USB 2.0 ports.
- ii. If the phrases USB 2.0 or Enhanced do not appear with any of the USB references, then the computer has USB 1 or 1.1 ports.

Note: If Universal Serial Bus Controllers is not listed, there is a problem with the USB controller or the USB controller is not enabled in the computer's BIOS. Please contact the computer or card manufacturer for updated drivers and/or for information on how to fix or enable the USB controller.

Do I have the latest software version? If not, where do I get it?

To verify your software version, please contact Customer Support. If your version is out of date, we can arrange for you to download a newer version of software if available. If downloading the software is not an option, we can also send a CD, however, there is a charge for CD copies of the software.

How does Vector Pro work?

Vector Pro is triggered by the sound of the club hitting the golf ball. The cameras capture two images of the ball, which are transferred to a computer. Advanced image analysis software determines the size, rotation, vertical path and distance between the two images. The software utilizes this information to accurately measure ball speed, launch angle, back spin, side spin and push/pull, and to calculate club head speed and angle of descent.

Can I use irons with Vector Pro?

Yes. In addition to drivers, irons can be used on the Vector Pro with little to no adjustment. Keep in mind that the Vector Pro needs to be positioned at the same level as the hitting mat. We also recommend changing the 'Delay' setting in the software to *Medium* for iron capture.

Will Vector Pro work for a left handed player?

Yes. To go from a right handed to a left handed player, or vice versa, simply change the settings in the Student Information Window or click Options in the menu of the software and select Preferences.

Does AccuSport provide product training?

The Vector Pro Launch System is the industry leading launch monitor with a host of features. Training packages are available at an extra cost. For details, contact Customer Support.

Do I need to register my Vector Pro?

Yes. Registering your Vector Pro will activate your warranty. In addition, it will assure that your contact information is entered into our system so that you can receive software announcements and technical support for the warranty period. You can register your Vector Pro at www.accusport.com or by contacting Customer Support.

Will Vector Pro work on an Apple Mac?

No. The Vector Pro Launch System will only work on 32-bit Personal Computers (PCs) using Windows XP Home or Professional, as well as Windows Vista Operating Systems.

How accurate is club speed?

Vector Pro club speed is accurate to within 2 mph. This calculation is derived from ball speed, launch angle, back spin, side spin and push/pull, all of which are measured parameters.

Is there a chart for optimal launch angle and spin rate?

Since each golfer's swing is different, there are too many variables for a printed chart. However, you can use the "what if" feature of the VFit Analysis Screen to enter different shot information - such as launch angle and spin rate - in order to determine the impact of these changes on an individual golfer's ball flight.

Why is the green power light on the Vector Pro blinking?

The green LED power light on the side of Vector Pro glows when Vector Pro is powered on. It blinks when the internal battery is not fully charged. If the battery is low and needs charging, Vector Pro will emit a beeping sound.

Using Vector Pro

How important is ball placement?

Ball placement is crucial. If the ball is not placed in the correct hitting area or is not at the stated 14 inches, +/- 1 inch, from the launch monitor, the ball capture or launch data will be affected. The Setup Template indicates where the ball should be placed for set-up and hitting.

How do I charge the battery?

To charge, plug the Vector Pro into an outlet via the AC adapter. Making sure the power on the Vector Pro unit is "Off", allow the unit to charge overnight or for at least six hours.

Do the preference settings have a significant impact on ball flight?

Preferences related to altitude and weather do impact ball flight. The ball will fly higher and farther at high altitude than at sea level. Therefore, if you set your preferences for Colorado, and then take your Vector Pro to Florida, you must change the preferences, or Vector Pro will show the ball going farther and higher than it would actually travel. For the most accurate readings, you should set the preferences according to the conditions that you are in.

Wind direction should be set at zero degrees if the ball flies directly into the wind, at 180 degrees if the ball flies downwind, at 90 degrees if the wind is coming from the right, and at 270 degrees if the wind is coming from the left.

Does it matter what kind of golf balls I use?

We recommend using a white ball with as few markings as possible, so that the software can clearly read the straight lined type logo, or line you have drawn on the ball. Be sure the ball is properly marked (page 23.) Range balls or limited flight balls will affect measured launch data.

What are the Marks, Mono, Plane and Edges check-boxes in Advanced Settings for?

First, remember that anything in Advance Settings is for experienced users only. If you are an experienced user then this explanation will be helpful to you.

Marks: show what the software recognizes as significant marks on the golf ball. Ideally, the logo used or black line should be the only, or at least the predominant mark highlighted in blue.

Mono: allows you to check the brightness setting. When the Mono button is checked, the white circle in place of the golf ball should extend to the edges of the ball. If it does not, recalibrate the Vector Pro with the tee position 14 inches away.

Plane: displays a plain red line around the golf ball. If using a black line or logo, the red line should overlap it. This confirms that the software is reading the marks on the ball correctly.

Edges: confirms that the brightness and focus are properly set to allow the software to read the entire ball surface.

Troubleshooting

When I try to load the drivers an error message appears telling me there is no information on my hardware contained in the file.

Contact Customer Support: (866) 759-3302 or support@accusport.com

I'm getting an error message that says this device is not recognized.

Contact Customer Support.

The Driver Installation Problem Solving Procedure below addresses the following questions and problems:

How do I update the Vector Pro driver?

The Hardware Update Wizard does not appear when I turn on my Vector Pro for the first time.

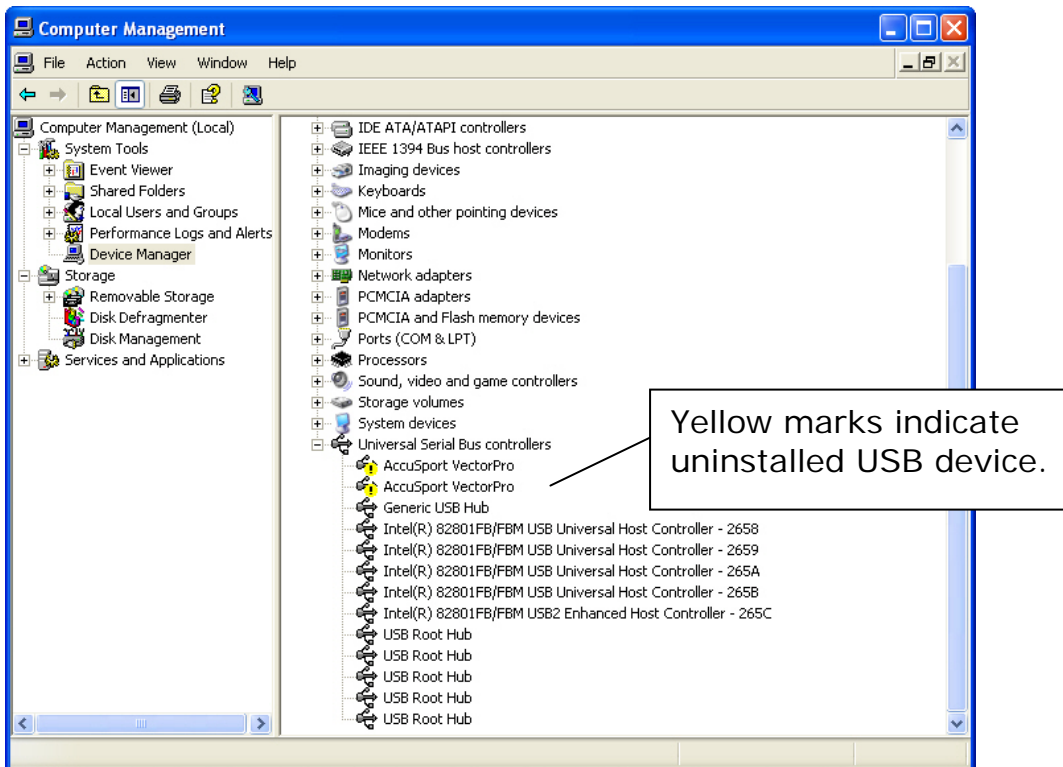
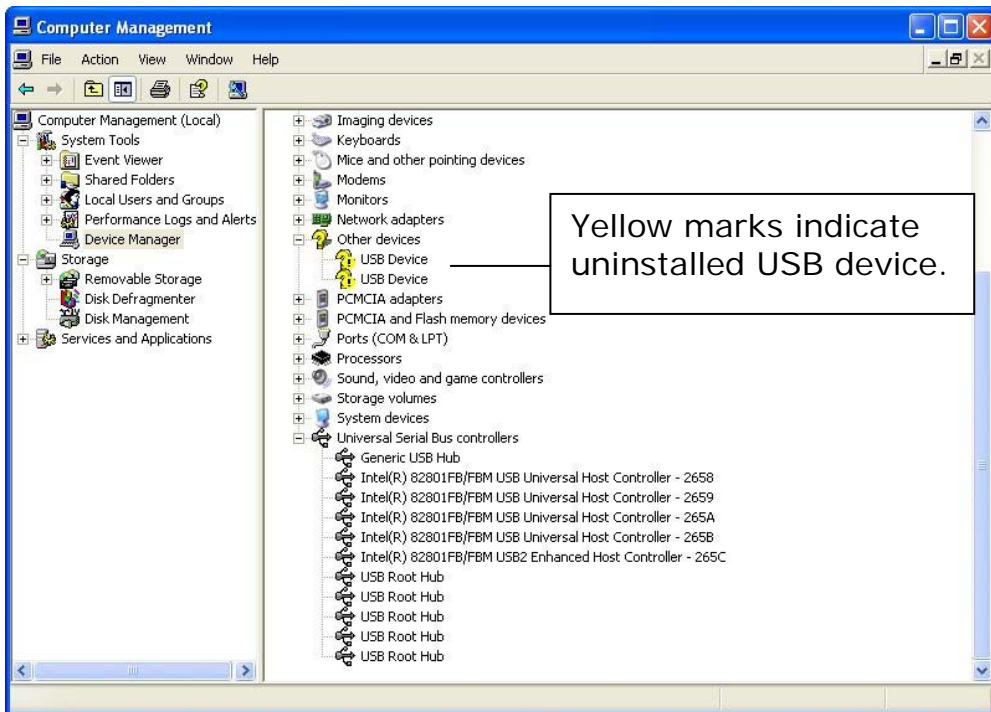
The User Guide says I will need to install four drivers but only two instances of the wizard appear.

For these driver installation issues, use this procedure:

Driver Installation Problem Solving Procedure

1. In Windows click **Start**.
2. Right Click **My Computer**.
3. Click **Manage**.
4. Click **Device Manager**.

The right window panel shows hardware currently installed or connected to your computer. The window will look similar to the one of the following:



The yellow question marks or exclamation marks indicate that these drivers need to be installed using the procedures on page 14 for Windows XP, page 17 for Windows Vista.

The logo or line on the ball is not visible on the image.

1. Select Options and Calibrate to re-calibrate the lenses.
2. Make sure that the logo or line is vertical and faces the right edge of the Vector Pro when you tee up the ball.

I hit one shot and software will not capture any more.

Your computer's processor may not be running at full speed or the computer may have tried to enter sleep mode. Make sure that your computer processor is running at full speed:

1. Click on the windows **Start** button
2. Right click **Control Panel**
3. Select **Performance and Maintenance**
4. Double left click **Power Options**. (If using windows classic look, you should go straight to the **Power Options** icon and double left click.)
5. From the **Power Schemes** drop down box, select **Always On**, select **Apply**, then **OK**. Then restart your computer.
6. If this does not solve the problem, call Customer Support.

There is part, one, or no golf balls on the screen.

1. Be sure Vector Pro is on the same level as the mat.
2. If the ball image is cut off at the side, use the setup template to verify that you are teeing up the ball correctly and that it is 14 inches from the Vector Pro.
3. Click Options on the menu bar and select Advanced Mode. Verify that the 'Default' box is checked for trigger sensitivity, located in the lower left corner.
4. Click Options on the menu bar and select Advanced Mode. Verify that Fast is being used for drivers and Medium for irons or slow swing speeds.

I am getting launch data for drivers, but the system is not capturing irons.

1. Make sure that Vector Pro is on the same level as the mat and that the ball is not being hit below the cameras.
2. Click Options on the menu bar and select Advanced Mode. Verify that the 'Default' box is checked for trigger sensitivity, located in the lower left corner.
3. If the ball image is cut off at the side of the screen, use the setup template to verify that you are teeing up the ball correctly.
4. If your swing speed with an iron is less than 80 mph, change the Delay setting in Advanced Mode to Medium.
5. Tee up the ball a bit closer to the center line straight out from the Vector Pro lenses, still 14 inches away from the unit.

I am getting strange or incorrect readings.

This may be due to lighting conditions, loss of calibration, incorrect system preferences or low battery.

1. Select Options and Calibrate from the menu bar and recalibrate the lenses.
2. Make sure the ball is marked properly, and that the software is reading the correct mark, not some other spot on the ball.
3. If the problem persists, click Options/ Preferences in the menu bar of the software, and make sure the wind speed, altitude and temperature settings are correct.
4. If the battery is low, charge it or use an alternate power source.

The ball image screen is completely white.

Go to Options>Advanced Mode and verify that the 'Mono' box is not checked.

I cannot see the stripe on the balls.

Make sure when placing the ball in front of Vector Pro that the black line is vertically facing the Vector Pro.

The golf ball is blurry.

Select Options and Calibrate from the menu bar and recalibrate the lenses.

Error Messages

Analysis Terminated

This message indicates that the ball strike has not been correctly captured. If the ball image is cut off at the top of the screen, ensure the Vector Pro is level to your hitting surface or tilt Vector Pro back slightly. If the ball image is cut off at the side, use the setup template to verify that you are teeing up the ball correctly and that it is 14 inches from the unit and modify the delay settings in Advanced Mode. Typically Fast delay is ideal for drivers and Medium delay is used for irons or slower swing speeds.

Ball to close

The ball is less than 12 inches away from the Vector Pro. Be sure that the golf ball has been teed up/placed 14 inches from the Vector Pro and hit another shot.

Ball too far

The ball is greater than 18 inches away from the Vector Pro. Be sure that the golf ball has been teed up/placed 14 inches from the Vector Pro and hit another shot.

Check Ball Speed

The ball speed is either less than 21mph or greater than 235 mph. This message could also be caused by incorrect ball markings.

Check Launch Angle

Be sure that the Vector Pro preferences are not incorrectly set to left handed for a right handed player or to right handed for a left handed player. This may also indicate a topped shot.

Check Side Angle

The side angle is greater than (+/- 12 degrees).

Low Ball Edge Quality

The ball/ tee placement is incorrect. Use the supplied template to ensure that the ball was hit at the required 14 inches from Vector Pro and from within the appropriate hitting zone. If the distance is correct, select Options and Calibrate from the menu bar to recalibrate the lenses.

Low Planes

Balls may not have been marked properly.

Marks too Small

To be sure that Vector Pro can read the marks on the ball, first check that the logo or line is vertical and facing the right edge of the Vector Pro when you tee up the ball.

If the ball is incorrectly marked or dirty, or if it has significant marks on it other than the logo or line, remark or change the ball.

No Balls Found

This message appears if none, one, or only part of a ball can be seen on the image screen. Use the setup template to ensure that the ball was hit at the required 14 inches from Vector Pro.

Use the setup template to be sure that the ball was teed up in the proper hitting area. For right handed players, this is normally inside the right edge of the Vector Pro. For left handed players, this is normally inside the left edge of Vector Pro.

For hitters with slower swing speeds, select Options and Advanced Mode from the menu bar and change the delay setting to Medium or Slow. Typically Fast is recommended for Drivers and Medium for irons or slower swing speeds.

No Planes

Balls may not have been marked properly, or ball may have been placed on the tee with marks facing away from Vector Pro.

APPENDIX

Appendix A: Sample Reports

VECTOR PRO

Fitting Report
by AccuSport

Item	#	Carry	Offline	Total	Ball Speed	Launch	Back Spin	Side Spin	Push/Pull	Club Speed	Score
Driver 1, 9.5, reg											
	1	248.4 (0.2)	15.7 (1.3)	258.3 (0.2)	159.4 (0.1)	30.0 (0.1)	3812 (4)	-407 (26)	-0.1 (0.2)	111.0 (0.1)	76.8 (0.5)
	2	248.7	14.4	258.6	159.6	29.9	3812	-398	-0.2	111.1	77.3
	3	248.4	15.4	258.3	159.5	30.0	3802	-480	-0.1	111.1	76.9
	4	248.4	16.1	258.3	159.4	29.9	3812	-398	0.1	111.0	76.6
	5	248.2	16.3	258.1	159.4	30.0	3815	-403	0.1	111.0	76.5
	6	248.3	15.8	258.2	159.4	30.0	3815	-400	0.0	111.0	76.7
	7	248.1	13.8	258.0	159.2	30.0	3815	-403	-0.4	110.9	77.5
	8	248.3	16.2	258.2	159.4	30.0	3813	-398	0.1	111.0	76.6
	9	248.4	16.2	258.3	159.4	29.9	3810	-396	0.1	111.0	76.6
	10	248.5	14.7	258.4	159.5	29.9	3813	-398	-0.2	111.1	77.2
Driver 2, 10.5, stiff											
	1	196.4 (0.6)	9.5 (1.2)	207.9 (0.9)	118.5 (0.3)	29.9 (0.0)	2806 (51)	-298 (28)	-0.1 (0.2)	80.6 (0.3)	87.1 (0.6)
	2	195.2	9.8	209.1	119.3	29.9	2834	-295	0.0	81.2	86.8
	3	195.2	7.8	206.7	118.1	29.9	2844	-241	-0.0	80.4	87.9
	4	195.5	9.8	207.2	118.4	29.9	2836	-296	0.1	80.6	86.8
	5	197.3	9.0	206.9	118.2	29.9	2832	-295	-0.1	80.5	87.2
	6	197.3	8.1	209.0	118.5	30.0	2736	-278	-0.3	80.5	88.3
	7	196.0	9.2	207.4	118.5	29.9	2838	-298	-0.1	80.7	87.0
	8	196.5	8.9	207.9	118.8	30.0	2836	-298	-0.2	80.8	87.2
	9	197.4	10.7	209.2	118.6	29.9	2730	-340	-0.2	80.5	87.0
	10	196.6	11.9	208.3	118.2	29.9	2730	-339	0.2	80.3	86.3
	10	195.8	9.8	207.3	118.5	29.9	2839	-298	0.1	80.7	86.7

01/Jan/2006 14:30 Fitter: Tom Jones Custom Clubs Customer: James Johnson Page 1 of 1

The Fitting Report shows flight analysis and launch measurements of each shot. Averages of the items are ranked highest to lowest by score, carry or offline. User can type additional notes or comments in the space below.

VECTOR PRO

Vector Pro Lesson Summary
by AccuSport

Skill: Driver Consistency

Club	Shot #	Carry	Offline	Total	Ball Speed	Launch	Back Spin	Side Spin	Push/Pull	Club Speed	Score
Driver											
	1	248.7	14.4	258.6	159.6	29.9	3812	-398	-0.2	111.1	77.3
	2	248.4	18.4	268.3	159.5	30.0	3802	-480	-0.1	111.1	76.6
	3	248.4	15.4	258.3	159.5	30.0	3815	-399	-0.1	111.0	76.9
	4	248.4	16.1	258.3	159.4	29.9	3812	-398	0.1	111.0	76.6
	5	248.2	16.3	258.1	159.4	30.0	3815	-403	0.1	111.0	76.5
	6	248.3	15.8	258.2	159.4	30.0	3815	-400	0.0	111.0	76.7
	7	248.1	13.8	258.0	159.2	30.0	3815	-403	-0.4	110.9	77.5
	8	248.3	16.2	258.2	159.4	30.0	3813	-398	0.1	111.0	76.6
	9	248.4	16.2	258.3	159.4	29.9	3810	-396	0.1	111.0	76.6
	10	248.5	14.7	258.4	159.5	29.9	3813	-398	-0.2	111.1	77.2

Shot Analysis:
The main problem identified was slice. Correcting this problem will improve your score by 10 points.

The main causes of slicing are:

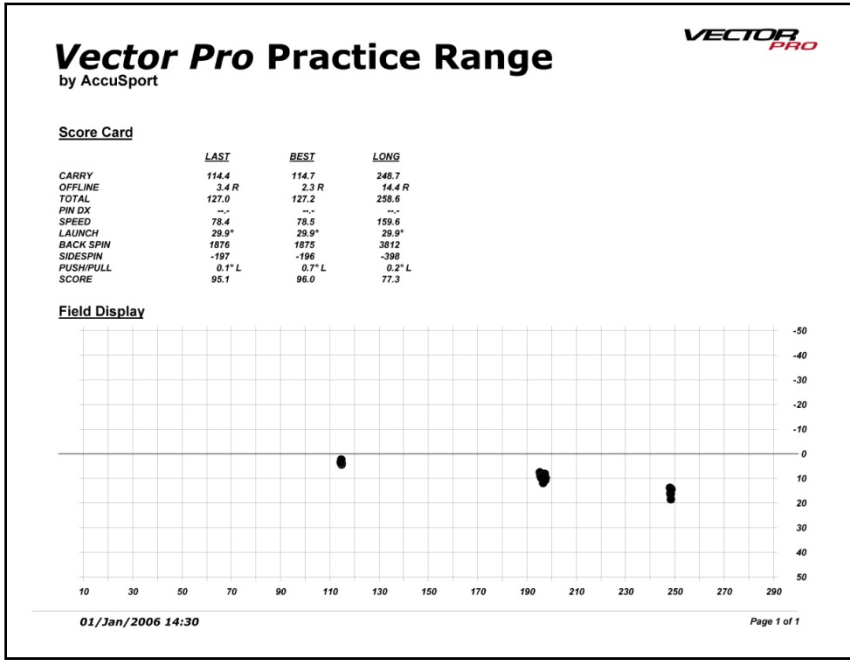
(This area is for the instructor to list the reason(s) why the student is slicing the shot)

Instructor Notes:

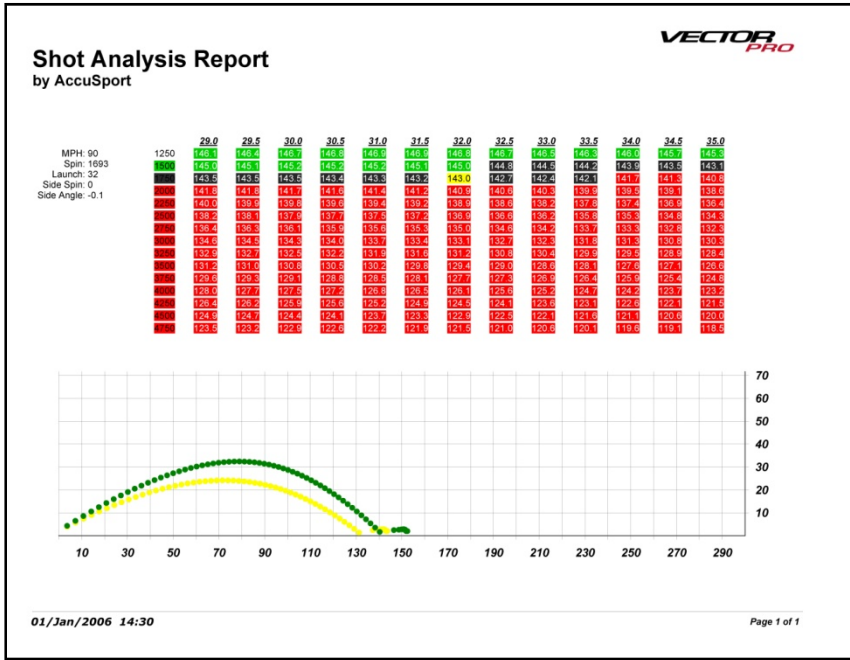
(This area is for the instructor to list the drills that the student should practice to correct the problem)

01/Jan/2006 14:30 Instructor: Tom Jones Golf Academy Student: James Johnson Page 1 of 1

The Lesson Summary indicates the skill addressed and shows ball flight analysis and launch measurements for each shot. It lists any problems that need work, and gives space for the instructor to identify causes and note drills for practice.



The Practice Range Report is a scorecard of key shot parameters for last, best and longest shot (using selected performance measure) and longest shot.



The Shot Analysis Report chart shows the effect of increasing or decreasing the launch angle or spin rate of a shot. Each cell of the spreadsheet represents the yardage of a shot. Green cells indicate more distance, red cells less distance and black means no noticeable

change. Here the graph below the chart shows the original shot profile in yellow and a "what if" shot with greater launch angle in green.

Shots Report
by AccuSport



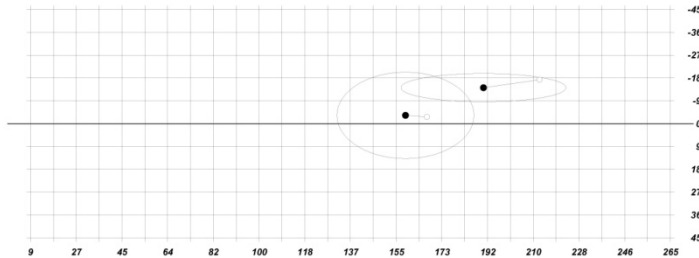
Item	#	Carry	Offline	Total	Ball Speed	Launch	Back Spin	Side Spin	Push/Pull	Club Speed	Score
Driver 1, 9.5, reg	1	248.4 (0.2)	15.7 (1.3)	258.3 (0.2)	159.4 (0.1)	30.0 (0.1)	3812 (4)	-407 (26)	-0.1 (0.2)	111.0 (0.1)	76.8 (0.5)
	2	248.7	14.4	258.6	159.6	29.9	3812	-398	-0.2	111.1	77.3
	3	248.4	18.4	258.3	159.5	30.0	3802	-480	-0.1	111.1	75.6
	4	248.4	15.4	258.3	159.5	30.0	3815	-399	-0.1	111.0	76.9
	5	248.2	16.3	258.1	159.4	30.0	3815	-398	0.1	111.0	76.6
	6	248.3	15.8	258.2	159.4	30.0	3815	-400	0.0	111.0	76.7
	7	248.1	13.8	258.0	159.2	30.0	3815	-403	-0.4	110.9	77.5
	8	248.3	16.2	258.2	159.4	30.0	3813	-398	0.1	111.0	76.6
	9	248.4	16.2	258.3	159.4	29.9	3810	-396	0.1	111.0	76.6
	10	248.5	14.7	258.4	159.5	29.9	3813	-398	-0.2	111.1	77.2
Driver 2, 10.5, stiff	1	196.4 (0.8)	9.5 (1.2)	207.9 (0.9)	118.5 (0.3)	29.9 (0.0)	2806 (51)	-298 (28)	-0.1 (0.2)	80.6 (0.3)	87.1 (0.8)
	2	197.6	9.8	209.1	119.3	29.9	2834	-295	0.0	81.2	86.8
	3	195.2	7.6	206.7	118.1	29.9	2844	-241	-0.0	80.4	87.9
	4	195.8	9.8	207.2	118.4	29.9	2836	-298	0.1	80.6	86.8
	5	195.5	9.0	206.9	118.2	29.9	2832	-295	-0.1	80.5	87.2
	6	197.3	8.1	209.0	118.5	30.0	2736	-278	-0.3	80.5	88.3
	7	196.0	9.2	207.4	118.5	29.9	2838	-298	-0.1	80.7	87.0
	8	196.5	8.9	207.9	118.8	30.0	2836	-298	-0.2	80.8	87.2
	9	197.4	10.7	209.2	118.6	29.9	2730	-340	-0.2	80.5	87.0
	10	196.6	11.9	208.3	118.2	29.9	2730	-339	0.2	80.3	86.3
	11	195.8	9.8	207.3	118.5	29.9	2839	-288	0.1	80.7	86.7
Driver 3, 12, reg	1	114.6 (0.2)	3.5 (0.5)	127.2 (0.2)	78.5 (0.1)	30.0 (0.1)	1860 (20)	-197 (3)	-0.1 (0.3)	52.3 (0.1)	95.0 (0.4)
	2	114.8	4.3	127.4	78.6	30.0	1876	-197	0.3	52.4	94.3
	3	114.6	3.6	127.2	78.5	30.0	1875	-196	-0.1	52.3	94.9
	4	114.5	3.6	127.0	78.5	30.0	1875	-196	-0.0	52.3	94.9
	5	114.6	3.0	127.1	78.5	30.0	1873	-195	-0.3	52.3	95.4
	6	114.9	3.9	127.6	78.5	29.9	1812	-187	0.1	52.2	94.9
	7	114.5	3.7	127.1	78.5	29.9	1874	-195	0.0	52.3	94.8
	8	114.7	2.3	127.2	78.5	29.9	1875	-195	-0.7	52.3	96.0
	9	114.5	3.8	127.1	78.5	30.0	1878	-197	-0.1	52.3	94.9
	10	114.4	3.5	127.0	78.4	30.0	1873	-195	-0.1	52.2	95.0
	11	114.4	3.4	127.0	78.4	29.9	1876	-197	-0.1	52.3	95.1

The Shots Report presents select information from Shot History. It includes the shot details and summary information for each shot group.

Shots Summary Report
by AccuSport



Item	#	Carry	Offline	Total	Ball Speed	Launch	Back Spin	Side Spin	Push/Pull	Club Speed	Score
Driver 1, 9.5, reg	1	248.4 (0.2)	15.7 (1.3)	258.3 (0.2)	159.4 (0.1)	30.0 (0.1)	3812 (4)	-407 (26)	-0.1 (0.2)	111.0 (0.1)	76.8 (0.5)
Driver 2, 10.5, stiff	1	196.4 (0.8)	9.5 (1.2)	207.9 (0.9)	118.5 (0.3)	29.9 (0.0)	2806 (51)	-298 (28)	-0.1 (0.2)	80.6 (0.3)	87.1 (0.8)



The Shots Summary Report is a summary of Shot History data. The plot below shows shot location for each summary line (black dots) as well as the standard deviation of each shot group (white dots).