



# Operator's Manual

## LaserLynx™ / LaserLynx Lite™

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# 1 Introduction

This manual contains the following chapters:

- Install LaserLynx Lite™ Software

Follow the instructions in this chapter to install the LaserLynx Lite software onto your computer and then perform a HotSync® operation to add the application to a handheld device. You can skip this chapter if you already have LaserLynx Lite running on a handheld device.

**Note:** Please refer to the *FieldLynx Operator's Manual* for instructions on installing and operating the LaserLynx Plug-in on a FieldLynx unit.

- Set up the Laser

The instructions in this chapter explain how to set up the laser and target pole for either the LaserLynx HS or the LaserLynx Pro model laser.

- Record a Measurement

After you have installed the LaserLynx Lite application onto a handheld device and set up the laser, follow the steps in this chapter to record a measurement for a throw or horizontal jump.

- Operating Hints

We suggest you follow the standard operating procedures described in this section when using LaserLynx Lite during a competition.



## 2 Install LaserLynx Lite Software

You must first install the LaserLynx Lite software onto your handheld device. Skip this chapter if your handheld device already has LaserLynx Lite installed. Refer to the *FieldLynx Operator's Manual* to learn how to install the LaserLynx Plug-in onto a handheld device.

### Before you begin

Before completing the instructions in this chapter, you need the following items:

- Computer with a floppy disk drive
- HotSync® cradle or cable
- Handheld device running the Palm™ Operating System (Palm™ OS) version 3.0 or higher
- LaserLynx Lite software on a floppy disk

### Install LaserLynx Lite onto a computer

1. Insert the LaserLynx Lite disk into the computer's floppy drive.
2. Click the Microsoft Windows Start button and choose Run.
3. Type: A:\Setup.exe and then follow the instructions on the screen to complete the installation. Check the box that says, "Yes, I want to view the README File," and then click Finish to launch the Readme file.
4. When the Readme file appears on your screen, follow its instructions to:
  - Connect the HotSync® cable or cradle to your computer
  - Install the Palm Desktop® software
  - Install the LaserLynx Lite application onto your handheld
  - Obtain a LaserLynx Lite serial number if you do not already have one
  - Assign the LaserLynx Lite serial number

After you have installed the LaserLynx Lite application onto your handheld device, continue to chapter 3 to set up the laser.



## 3 Set Up the Laser

You have purchased either a LaserLynx Pro or LaserLynx HS model laser. Follow the instructions in this chapter to set up the laser for use with throwing events and horizontal jumping events. This chapter points out where the setup instructions vary for each laser. If you have questions not answered in this manual, please refer to the manufacturer's setup instructions that came with the laser.

### Before you begin

Before you set up the laser, make sure you have all of the components that came with your laser (see Figure 1). If you are setting up LaserLynx at a throwing event, you need a measuring tape to measure the radius of the throwing circle.

Also, you need a second person to hold the target pole when taking measurements.

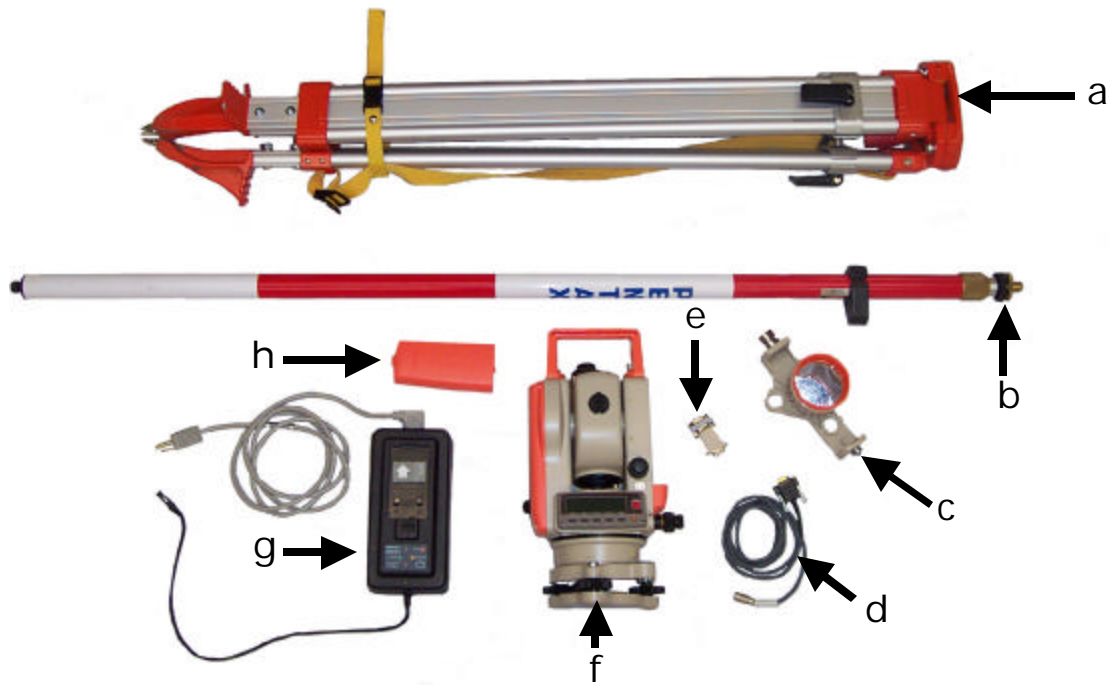
### Laser components

The laser you purchased is either:

- LaserLynx Pro, model number PCS-215
- LaserLynx HS, model number DA-020F

The laser contains the following components:

Figure 1: LaserLynx components



**Note:** Shown here are the components in the LaserLynx Pro model laser. The contents may look slightly different if you purchased a LaserLynx HS model laser.

Not shown: handheld device clamp

- a. Tripod
- b. Target pole
- c. Prismatic reflector
- d. Serial cable
- e. Null modem/gender changer
- f. Sighting unit
- g. Battery charger
- h. Battery

### **Connect the battery to the sighting unit**

**Warning:** If you change a battery during a competition, you must redo the control measurement or your measurements will not be accurate! You learn how to set the control measurement later in this chapter.

## **LaserLynx HS**

You may need to charge the battery before you first use the laser. Please refer to the manufacturer's manual that came with the LaserLynx HS model laser for battery charging instructions. Then, follow these steps to connect the battery to the sighting unit.

1. Notice the LaserLynx label covering the battery compartment on the sighting unit.
2. Open the compartment and slide the battery pack until it clicks into place. The words, "Battery Pack," appear upside-down when the battery is connected properly.
3. Close the door to the battery compartment. Continue to the next section, "Set up the tripod."

## **LaserLynx Pro**

You may need to charge the battery before you first use the laser. Please refer to the manufacturer's manual that came with the LaserLynx Pro model laser for battery charging instructions. Then, follow these steps to connect the battery to the sighting unit.

1. Notice the LaserLynx label on the sighting unit of the LaserLynx Pro laser.
4. Facing the LaserLynx label, slide the orange battery pack along the left side of the sighting unit until the battery pack clicks into place. Continue to the next section, "Set up the tripod."

## **Set up the tripod**

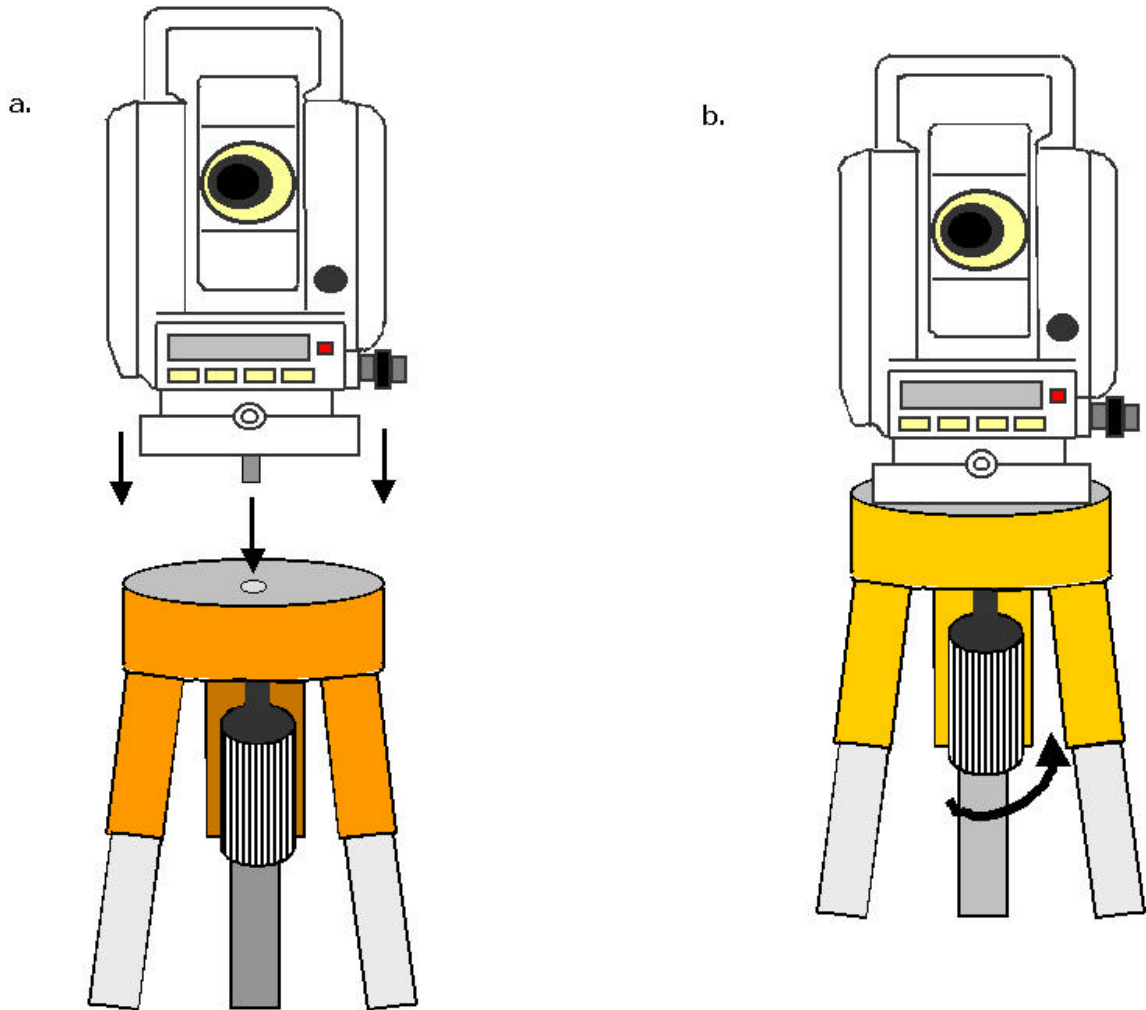
After you have attached a battery to the laser's sighting unit, you can then set up the tripod.

1. Set up the tripod about 10 meters away from the throwing circle or jump pit. You should have a clear line of sight to anywhere a fair throw or jumper might land.
2. Open the legs of the tripod equal width apart.
3. Flip the black levers on the tripod legs and extend them so the top of the tripod is at about chest height.
4. Step back and look at the tripod. Then, adjust the legs so that the tripod tabletop appears as level as possible. You will make finer adjustments to level the tripod later.
5. If you are outside, push the legs of the tripod into the ground by stepping on the orange footrests at the base of the tripod. Then, continue to the next section, "Connect the sighting unit."

## **Connect the sighting unit**

1. Place the sighting unit on the tripod tabletop with the laser aperture facing the throwing circle or the take-off board. The laser aperture is located on the opposite side of the laser from the eyepiece.
2. Remove the lens cap from the laser aperture.
3. Slide the sighting unit around on the tripod tabletop until the threaded hole lines up with the securing screw and orange handle beneath the tripod tabletop.
4. Turn the orange handle to secure the sighting unit to the tripod tabletop. Then, continue the next section, "Level the tripod."

Figure 2: Sighting unit attachment to tripod tabletop



## Level the tripod

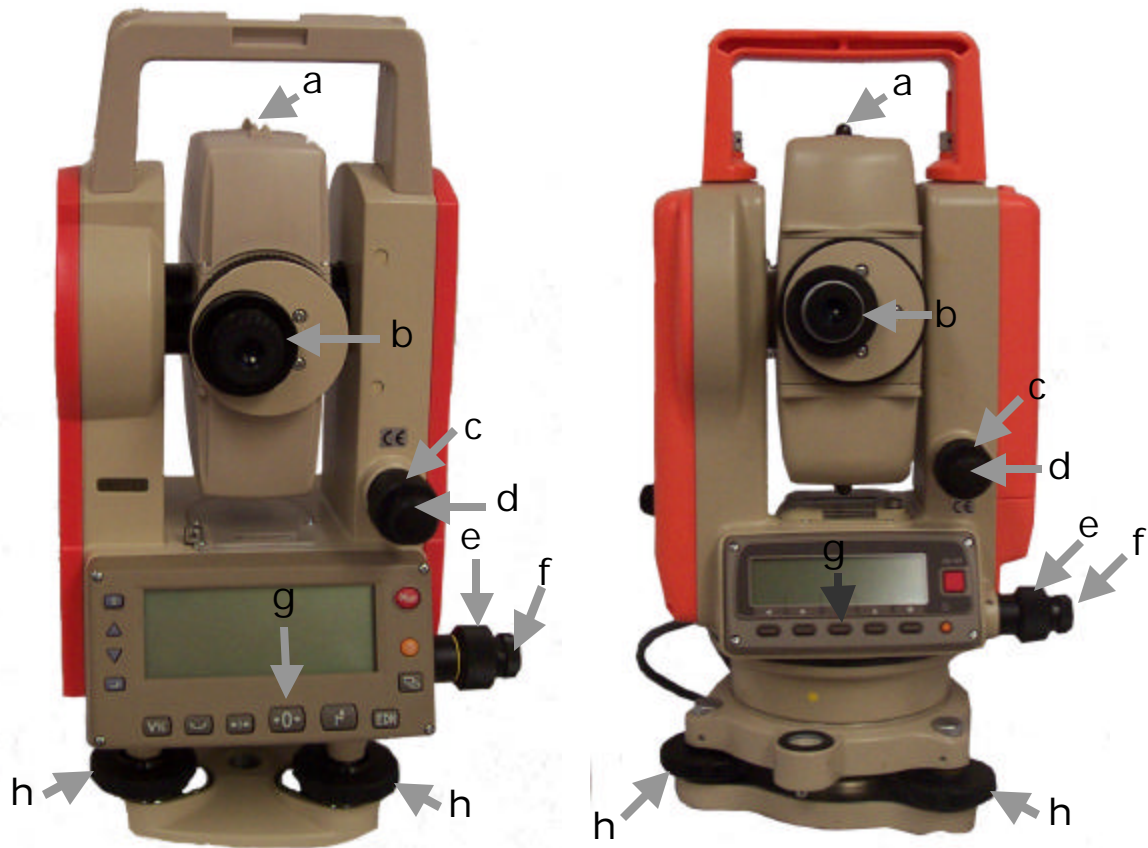
Now that the sighting unit is attached to the tripod, you must make fine adjustments to level the tripod.

1. Notice the round level on the sighting unit.

- On the LaserLynx HS model, the round level is directly below the laser aperture.
- On the LaserLynx Pro model, the round level is on the bottom of the sighting unit base.

Turn the precision level adjusters (see label “h” in Figure 3) until the bubble is centered in the middle of the level.

Figure 3: Sighting unit components



**LaserLynx HS**

- a. Site
- b. Eyepiece
- c. Fine adjustment knob – tilt
- d. Tilt release knob

**LaserLynx Pro**




- e. Fine adjustment knob - rotation
- f. Rotation release knob
- g. Zero-set button
- h. Precision level adjusters

2. Locate the additional cylindrical levels on the sighting unit. Continue to move the precision level adjusters until the bubble in all of the cylindrical levels is also centered. When all of the bubbles on the sighting unit levels are centered, the tripod is level. Now, continue to one of the following sections:
  - “Set the unit of measurement” if you are measuring in English and you need to change your laser setting from metric
  - “Measure the throwing circle” if you are measuring a throwing event
  - “Connect the handheld device to the laser” if you are measuring a jumping event



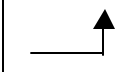
### Set the unit of measurement

Your laser must measure in the same units as that of the LaserLynx application running on the handheld device. By default, your laser is set to measure in metric. If you want to change this to English, follow the steps for LaserLynx Pro or LaserLynx HS in this section.

#### LaserLynx Pro

1. Make sure the LCD on the laser is turned off.
2. Hold down the  key while simultaneously turning on the LCD. The **Init. Set B** screen appears briefly, and then another screen is displayed.
3. Press the  key until you get to the **Dist. Unit** screen.
4. Press the  key to highlight **m**.
5. Press the OK key to save the setting.

#### LaserLynx HS

1. Make sure the LCD on the laser is turned off.
2. Press and hold the gray “S” key and the  key while simultaneously pressing the ON/OFF button.
3. Press the “S” key five times, until the **m/f/ft-in** setting flashes.
4. Press the  key until **ft-in** appears at the bottom of the LCD.
5. Press the  key again to save your setting.

### Measure the throwing circle

Skip to “Connect the handheld device to the laser” if you are using LaserLynx Lite to measure a horizontal jumping event.

1. Use a tape measure to determine the radius of the throwing circle. Record the measurement somewhere, as you will enter this value later into the LaserLynx Lite handheld application.
2. Use a tape measure to find the exact center of the throwing circle. Do this by measuring the widest width across the circle and dividing the number by 2.

3. Make a mark in the exact center of the circle. Then, continue to the next section, “Connect the handheld device to the laser.”

### **Connect the handheld device to the laser**

1. If your laser came with a handheld device clamp, tighten it to one of the legs of the tripod.
2. Connect the serial cable to the sighting unit.
  - On the LaserLynx HS, connect the serial cable to the port labeled “Data” near the laser aperture.
  - On the LaserLynx Pro, remove the black rubber stopper from the port below the laser aperture and connect the cable to the port.
3. Connect the null modem/gender changer to the end of the serial cable if it is not already connected.
4. Attach the HotSync® cable or cradle to the null modem/gender changer.
5. Connect the handheld device to the HotSync® cable or cradle and continue to “Set up the target pole.”

### **Set up the target pole**

1. Screw the prismatic reflector into the target pole, turning until secure.
2. Flip the target pole so the prismatic reflector is touching the ground.
  - If you are measuring a throwing event:
    - a. Ask someone acting as a marker to set the target pole in the center of the throwing circle.
    - b. Have the marker face the prismatic reflector toward the laser aperture on the sighting unit while holding the target pole as upright and as still as possible. Continue to “Use the site to find the prismatic reflector.”
  - If you are measuring a horizontal jumping event:
    - a. Ask someone acting as a marker to set the target pole on the near corner of the take-off board.
    - c. Have the marker face the prismatic reflector toward the laser aperture on the sighting unit while holding the target pole as upright and as still as possible. Continue to “Use the site to find the prismatic reflector.”

### **Use the site to find the prismatic reflector**

1. Turn the rotation release knob counter-clockwise so the sighting unit moves freely on its base.
2. Look through the site on top of the sighting unit and rotate the sighting unit until you can see the target pole while looking through the site. Once the target pole is in view, turn the rotation release knob clockwise to lock it.
3. Turn on the laser by pressing the red button on the LCD.
4. If the laser aperture is locked in place, turn the tilt-release knob counter-clockwise to unlock it.
5. With the laser turned on, move the laser aperture all of the way up and all of the way down so that it moves above and below the horizon. You are finding the vertical scope when you do this. You will hear a short beep when the laser aperture finds the vertical scope.

**Note:** After a few minutes of idle time, the laser may turn itself off. If this happens, press the red LCD button to turn on the laser again, and rotate the laser aperture through the horizon again to find its vertical slope. Any time you turn on the laser, you must find its vertical slope.

6. Look through the site on top of the sighting unit once more and move the laser aperture until you can see the prismatic reflector on the bottom of the target pole. When you can see the prismatic reflector through the site, turn the tilt release knob clockwise to lock it. Then, continue to the next section, “Focus on the prismatic reflector.”

### Focus on the prismatic reflector

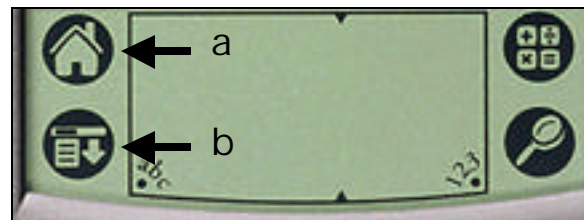
1. Now that you have the prismatic reflector in view using the site, look through the eyepiece on the sighting unit.
2. Turn the large, fine adjustment knobs beneath the smaller rotation and tilt release knobs until the prism is centered when looking through the lens.
3. Notice that the eyepiece has two adjustment rings. Turn the smaller adjustment ring until you see crosshairs when looking through the lens.
4. Turn the larger adjustment ring on the eyepiece to focus the prism until the image is crisp. The crosshairs on the lens should center on the middle of the prism. If not, make sure the marker is holding the target pole as upright as possible and turn the fine adjustment knobs until the crosshairs on the lens center on the middle of the prism. Once you are focused on a crisp image of the prismatic reflector, continue to “Set up LaserLynx Lite.”

### Set up LaserLynx Lite

If you are using the LaserLynx Plug-in with a FieldLynx unit, please refer to the *FieldLynx Operator's Manual* for operation instructions.

1. Turn on the handheld device and tap the Applications button on the silkscreen (see Figure 4).

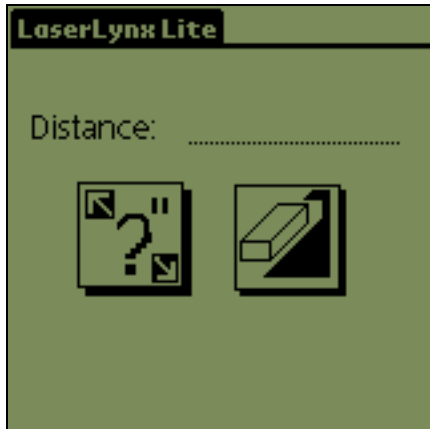
Figure 4: Silkscreen buttons



- a. Application button
- b. Menu button

2. Tap the LaserLynx Lite icon. The LaserLynx Lite main screen appears (Figure 5).

Figure 5: LaserLynx Lite main screen



3. Tap the Menu button on the silkscreen.
4. Tap Preferences from the pick list.
5. Tap Metric or English to select the method of measurement you want to use.  
**Note:** The LCD on the laser must match the measurement method you use in LaserLynx Lite. For example, if you set LaserLynx Lite to English, the laser LCD must also be set for English. For instructions on changing the laser's unit of measurement, please go back to "Set the unit of measurement" on page 14.
  - If you are measuring a throw:
    - a. Tap the Throwing Circle Radius text box.
    - b. Tap the arrows to enter the radius measurement you recorded earlier. Tap OK when done.
    - c. If not already checked, tap the Horizontal Throw checkbox and continue to "Set the control measurement."
  - If you are measuring a horizontal jump, tap the Horizontal Jump checkbox and continue to "Set the control measurement."

**Reminder:** After a few minutes of idle time, the laser may turn itself off. If this happens, press the red LCD button to turn on the laser again, and rotate the laser aperture through the horizon again to find its vertical slope. Any time you turn on the laser, you must find its vertical slope.

### Set the control measurement

1. Tap the Laser tab at the top of the screen.
2. From the pick list, tap LaserLynx HS if you are using the LaserLynx HS model laser or LaserLynx if you are using the LaserLynx Pro model laser.
3. With the handheld device connected to the HotSync® cable or cradle, tap Set Control(s)....
  - If you are measuring a throw:
    - a. Make sure the marker is holding the prismatic reflector in the middle of the throwing circle and tap the ? icon (see Figure 6) to get the control measurement.
    - b. Wait until the "Dist To Circle Center" is calculated.

- c. Tap Done twice to return to the LaserLynx Lite main screen. Continue to chapter 4 to record a measurement.

Figure 6: ? icon



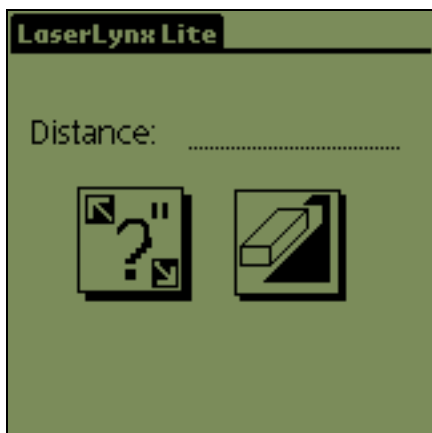
- If you are measuring a horizontal jump:
  - a. Make sure the marker is holding the prismatic reflector on the near corner of the take-off board and tap Near.
  - b. Tap the ? icon (see Figure 6) and wait until the “Dist to Board” is calculated.
  - c. Have the marker move the target pole to the far corner of the take-off board and tap Far.
  - d. Focus the laser on the prismatic reflector again using the site to find the prismatic reflector and then focusing on it.
  - e. When you have focused on the prism again, tap the ? icon and wait until the “Dist to Board” measurement for the far corner of the board is calculated.
  - f. Tap Done twice and continue to chapter 4 to record a measurement.

## 4 Record a Measurement

Now that you have found the control measurement for the throwing circle or the take-off board, you are ready to measure a competitor's throw or jump.

1. Make sure the handheld device is turned on and that you are at the LaserLynx Lite main screen (Figure 7).

Figure 7: LaserLynx Lite main screen



2. After the competitor throws or jumps, have the marker take the target pole to the mark and angle the prismatic reflector toward the laser aperture. Once the marker has found the mark, make sure the target pole is held as upright and as still as possible.
3. Focus the laser on the prism.
4. When you are focused on the prism, tap the ? icon on the LaserLynx Lite main screen and wait for the distance measurement to appear. This is the distance of the competitor's throw or jump.
  - **Note:** There is no way to undo clearing a measurement! When you clear a measurement, it is deleted permanently from memory. To clear the distance, tap the eraser icon (Figure 8).
  - To take the measurement of a throw or jump for the next competitor, repeat the steps in this section.

Figure 8: Eraser icon





## 5 Operating Hints

This chapter contains suggested steps to follow when operating LaserLynx/LaserLynx Lite during a competition.

### **Safeguard the tripod**

Avoid setting up the tripod so that one of the tripod legs is between your legs when you look through the eyepiece. This helps you avoid tripping on a tripod leg and moving the tripod.

Also, make sure the eyepiece is at a level where you must lean forward slightly to look through it. This will keep your feet further away from the legs of the tripod and will minimize the potential of moving it.

### **Lock the rotation release**

If the sighting unit is left idle for more than five minutes, it turns off. Be careful not to rotate the laser base after the laser has turned itself off, or else you will have to redo the control measurement. To avoid this, make sure you lock the rotation release by turning the knob when not in use.

### **Find the vertical scope**

Whenever you turn the laser on, make sure you rotate it through the horizon using the tilt release knob to find the vertical scope again. Remember that every time you turn the laser back on after it has turned itself off, you must find the vertical slope again.

### **Verify your first few measurements**

The first time you use the laser to take measurements during a competition, verify your measurements with a steel measuring tape. If the laser does not match the tape measurements:

- Make sure the tripod is level by checking all three level indicators.
- Redo the control measurement.

### **Take a zero-set measurement**

We recommend that before you take the control measurement, you take a zero-set measurement to reference. Throughout the competition, you can reference the zero-set measurement to make sure the tripod has not been moved or bumped. This is especially helpful during indoor competitions when the tripod is more likely to move if bumped.

1. Set up the tripod as detailed in chapter 3.
2. Turn on the laser.
3. Find a fixed point somewhere on the horizon. Pick something that will not move during the competition. For example, use the corner of a wooden sign at the end of the stadium.

4. Focus the laser on the fixed point.
5. Press the zero-set button on the LCD twice so that it reads 0.
  - On the LaserLynx HS model, the zero-set button looks like this: →0←.
  - On the LaserLynx Pro model, the button looks like this: ▼.
6. Frequently throughout the competition, aim the laser back at the fixed point on the horizon. When you do so, the LCD on the laser should read 0. If it reads anything other than 0, it means the tripod was bumped or moved and you must redo the control measurement.

### Use the Mark Components screen

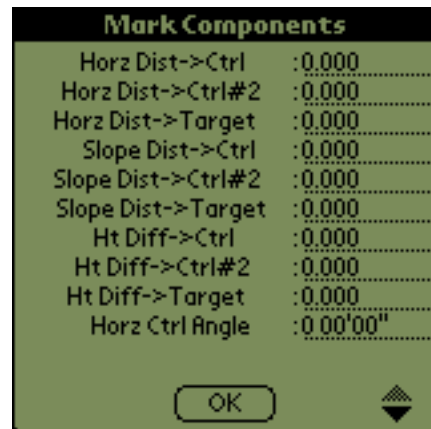
**Note:** The Mark Components screen is only available in the LaserLynx Lite application.

You can use the Mark Components screen in the LaserLynx Lite application to view all of the measurements the distance calculation is made from. Viewing this screen gives you an idea of how LaserLynx Lite calculated the distance measurement.

To view the Mark Components screen:

1. Start at the LaserLynx Lite main screen.
2. Tap the Menu button.
3. Tap Components from the pick list. The Mark Components screen appears (see Figure 9). Tap the arrow in the bottom right corner of the screen to scroll through the list of values.

Figure 9: Mark Components screen



This completes the *LaserLynx/LaserLynx Lite Operator's Manual*.

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