

## **Kestrel 4500 Shooter's Weather Meter FAQ**

### **1) Which Kestrel Models are designed specifically for shooting?**

NK has two models that are designed for solving for ballistics solutions: the Kestrel with Horus Ballistics and the Kestrel with Applied Ballistics. Unless otherwise specified (H – Horus only, AB – Applied Ballistics only), this FAQ applies to both models.

### **2) What are the main differences between the two models?**

These models are very comparable to one another in that both use ballistics parameters of the weapon and round, target characteristics, and environmental conditions to solve for a correct elevation firing solution (elevation and wind hold). The main difference is that the AB model has a choice between using G1 or G7 ballistics curves or custom drag curves as measured and documented by Bryan Litz of Applied Ballistics. The Horus unit currently only has G1 capability. In addition, there are differences in the ballistic calibration techniques. The AB unit calibrates the muzzle velocity and a drop scale factor (DSF) where the Horus unit calibrates the muzzle velocity and the ballistic coefficient. Both have extensive pre-configured gun libraries that can be downloaded to your Kestrel for quick use in the field.

### **3) Do I need to have a computer connection to use these Kestrels, or can they be used as a standalone units?**

These units can be used without a computer connection but this requires configuring the gun/bullet profiles on the Kestrel itself. This can be a little tedious as the user will need to do some research on the parameters of the particular gun and bullet they are using and configure each entry individually. In addition, the Applied Ballistics Custom Curves™ are ONLY available via the companion gun loader application. NK recommends having a computer connection in order to get the best value from the ballistics systems.

### **4) What computer platforms are compatible with the gun loader applications for these Kestrel units?**

Currently these units need a Windows platform to connect to the gun profile loading applications. These units will also connect to Android based platforms via Bluetooth to supply environmental data to other ballistics applications that have enabled this feature (see <http://www.nkhome.com/kestrel/software-partners/> for a current list). (These applications are provided by 3<sup>rd</sup> party developers and may be purchased through the Google Play store.) However, the user will not be able to access the gun profile libraries or ballistics solutions through Android. Unfortunately the Kestrel cannot connect to any MAC or Apple based platforms due to restrictions on data sharing via Bluetooth with these platforms.

### **5) Once an Apple application is developed, will my Kestrel be able to connect to it? Or can I upgrade the software for this?**

No. The Kestrel currently cannot connect to Apple products and NK does not support this type of connection. Unfortunately there will not be any upgrade available of the current units to connect to Apple products.

**6) Can I convert my unit from Applied Ballistics to Horus or vice-versa?**

No. You are not able to convert a Horus to Applied Ballistics model or vice-versa. For users that wish to switch units, NK offers a Customer Care Discount which provides the customer a generous credit for trading in their current unit towards the purchase of a new model.

**7) How do I calibrate my barometric pressure for shooting?**

Station Pressure is pressure that is unadjusted for sea level. Sometimes, this is mistakenly called barometric pressure in ballistic software. Barometric pressure is a pressure reading adjusted for sea level. When shooting, station pressure is REQUIRED. Station pressure can be displayed on the Kestrel by setting the reference altitude to zero on the Barometric Pressure screen in Weather mode. To do this, go to the barometric pressure screen, hit the center button, highlight Ref Alt parameter, use the left and right arrows until Ref Alt is zero, hit the center button to exit. Please note that the firing solution is always calculated using station pressure, so setting the reference altitude is not necessary for obtaining a correct firing solution.

**8) How do I calibrate the barometric pressure and altitude so that it is correct at my location?**

In order to calibrate the barometric pressure and altitude to your location you will need to research your current altitude. This information can be found through an internet search. Once you have identified your altitude, go to the Barometric Pressure screen in Weather Mode. Hit the center button to enter the Ref Baro screen. Scroll down to Ref Alt and hit the left and right button until the parameter matches the altitude you researched above. Scroll down to Synch Alt and hit the right button to turn ON. Hit the center button to exit this screen, please take note of the new barometric pressure reading. Once you have noted the pressure shown, hit the down button to go to the Altitude screen. Hit the center button to enter the Ref Alt screen. Hit down arrow to select the Ref Baro and use the right and left buttons to adjust the Ref Baro to what you noted previously (after entering Ref Alt). Once this matches, hit the center button to exit. You are now calibrated to your current location.

**9) How often do I need to update the reference altitude (i.e. calibrate the pressure)?**

You should not have to adjust the reference altitude once it has been entered unless you change altitudes. As long as you remain at the same altitude, your barometric pressure will read correctly. Your altitude may vary however due to changes in atmospheric pressure. To recalibrate the altitude, please enter the current reading on the barometric pressure as your Ref Baro on the altitude screen.

**10) How does humidity affect the overall ballistics solution?**

The effects of relative humidity are the most minimal of all atmospheric effects. Spanning the range from 0% to 100%, humidity only affects air density by a total of 0.7%. A reasonable policy for someone wishing to simplify their use of a ballistics program is to set the humidity input to 50% and they will never incur any more than 0.3% error in air density.

**11) I cannot seem to locate the gun profile software, can you please help me?**

All the Kestrel Support software can be found here: <http://www.nkhome.com/support/kestrel-support/manuals-and-downloads>

**12) I bought the non-Bluetooth version, how can I access the gun library software?**

For non-Bluetooth users, the Kestrel PC Interface and Cable are required to connect to a computer and access the gun libraries. For information about this product, please go here:

<http://www.nkhome.com/kestrel/accessories/computer-interface.php>

**13) I am having trouble connecting my Kestrel using the PC Interface and cable, please help me.**

First please ensure that you are using the latest drivers. If you are using an NK supplied Interface and cable, you can download the latest USB drivers here: <http://www.nkhome.com/support/kestrel-support/manuals-and-downloads> If you are using a different brand, please check the internet to ensure you have the latest.

Once the latest drivers are installed, you should check to see if you are connected. Please go to Control Panel->Devices and Printer (or Drivers) and you should see a Prolific device with a COM# underneath it. Please note the COM# (e.g., COM5) and ensure that this is the same COM port being used in the gun library software.

Another issue could be that the Kestrel is turned off; the unit should be on when connecting. If you have a Bluetooth version but are connecting through the PC Interface cradle, please ensure that Bluetooth is disabled first.

**14) I am having trouble connecting my Kestrel using Bluetooth, please help me.**

Please see *Connecting my Kestrel using Bluetooth – Shooter's Weather Meter* for more information.

**15) I am trying to connect to the computer software but my computer freezes up or receives this error "Cannot determine the state of the device".**

The most likely cause of these issues is that you are trying to connect via the wrong COM port number. Please go back to Control Panel->Devices and Printers and note the COM port number assigned. Change the COM port in the application to this number and this should resolve the issue..

**16) Can I connect my Kestrel to a Laser Range finder using the Bluetooth module to automatically input my range?**

No. Currently Kestrels cannot connect to Laser Range Finders. This is a feature that may be developed for future products. We welcome your input on the desirability of this and other shooting-related features – please feel free to share at [techsupport@nkhome.com](mailto:techsupport@nkhome.com).

**17) Is there a mobile application that will allow me to view my firing solutions remotely?**

No. Currently there is no application for remote viewing of the ballistic solutions. This is a feature that may be developed in the future.

**18) I am trying to use the Kestrel Communicator program simultaneously with my gun library program but I am getting errors, please help.**

This is a computer COM port resolution issue. You cannot be connected simultaneously to both programs through the same COM port. If you are trying to connect to Kestrel Communicator, disable the connection

in the gun library program first (or close the program). If you are connecting to the gun library, you must close Kestrel Communicator program since the COM port will be open if the program is open.

**19) How do I calibrate my compass on my Kestrel?**

First please ensure that you have the battery shim inserted properly. Enter the main menu by pressing the On/Off button. Scroll down until you see System and hit the center button. Scroll until you see Compass Calibration and hit the center button. Hold the Kestrel upright and hit the center button to start calibration. Slowly rotate the unit upright in your hand three times or until you see calibration complete. If you get a "Magnetized Battery" error, please open the battery case, rotate the batteries slightly in place and try again.

**20) I tried numerous times to calibrate the compass after rotating the batteries and still get a Magnetized Battery" error, please help me.**

This may be caused by the brand type of battery you are using. While magnetic signature is often related to particular batches of batteries, in our experience the following types of batteries offer the fewest problems with strong magnetic signature: Energizer Ultimate Lithium (also recommended for their leak resistance), Rayovac alkaline – all types, Duracell Ultrapower/Ultra Advanced/Procell alkaline. Types that seem to have problematic magnetic signatures more frequently include Energizer Advanced Lithium, Energizer Industrial alkaline, Kirkland brand – all types and Duracell Copper Top alkaline.

**21) All my compass readings show a derivative of North (i.e., East, West, South not displayed), can you help me?**

Please ensure that you are holding the unit vertically when taking compass measurements. Holding the unit horizontally will erroneously show directions all relating to North. If you are using the Kestrel properly and still not seeing directions other than north, please contact Nielsen-Kellerman for technical assistance.

**22) My battery life was at 90% and then all of a sudden dropped to 0% and died, what is going on?**

NK recently began shipping all Kestrel Ballistics Meters with lithium batteries because their sealed construction prevents battery leakage and corrosion damage. The discharge curve of lithium batteries is characterized by showing very little drop in voltage until they are very near their end of life, then suddenly dropping off entirely in a short time. Most Kestrel units in the field have a battery discharge model based on alkaline batteries, so the fuel gauge readings are not accurate. A software update is currently being developed to better gauge the battery capacity of Lithium batteries. Until this software update is complete, Lithium batteries may show at 90% or higher for the life of the battery and then suddenly drop at the very end. The batteries are lasting just as long as they were designed, it is the Kestrel that is not gauging the battery capacity correctly.

**23) Can I use Alkaline batteries with these units?**

While you can use alkaline batteries with the Kestrel, NK recommends using Lithium since they are lighter, provide better performance in cold temperatures, and most importantly do not leak and cause corrosion damage as may sometimes happen with even reputable brands of alkaline batteries. If you do choose to use alkaline batteries, please INSPECT AND REPLACE THEM FREQUENTLY, do not use them below 10%

remaining life, and do not store the unit for extended periods with batteries installed. Battery corrosion is not covered under NK's warranty policy.

**24) How do I capture the Wind Direction and/or the Direction of Fire (DoF) on the Kestrel?**

First please ensure the compass is calibrated. While on the ballistics screen, select the Target parameter and hit the center button. Scroll down until you see DoF and hit the center button. Scroll down to Capture and hit the center button. Point the back of the Kestrel towards the target and hit the center button to capture the direction. For wind direction, highlight WD in this same menu and follow the instructions above. Please note: Wind direction will be displayed in relation to the DoF.

**25) I am getting a pixelated screen or frozen screen on start-up, what is going on?**

Many times this is a condition that is caused when the memory is full on the device and the batteries are reinserted. This condition can be corrected by clearing the memory. Please follow these directions: Remove the batteries. Hold the power button for 30 seconds. Reinsert the batteries. Wait 1 to 2 minutes for the frozen or pixelated screen to clear. Go to the Main Menu->Memory Options->Clear Log. Periodically clearing the log should prevent this situation from happening again.

**26) I went to change the batteries and now my unit will not power on, please help.**

If your Kestrel will not turn on after putting in fresh batteries, the issue is most likely caused by a faulty battery door. The battery door is no longer making contact to the batteries properly. Please contact NK and they will send you a replacement battery door to install yourself. If this doesn't resolve the issue, the unit will need to be sent in for repair.

**27) Can I use the Kestrel with the NightForce® Beast scope? Will the firing solution display MOA/MILS down to the hundredths of a decimal?**

Yes. The resolution for MOA and MILS is to the hundredths of a decimal. The Kestrels should work very well with this scope.