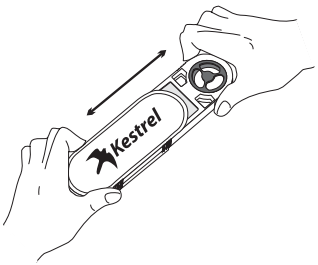
Kestrel® 1000
Pocket Wind™ Meter

NK

Current, Maximum and Average Wind Speed

OPERATION

1) Slide off Cover.



2) Turn On: Press [ON] to turn on unit.

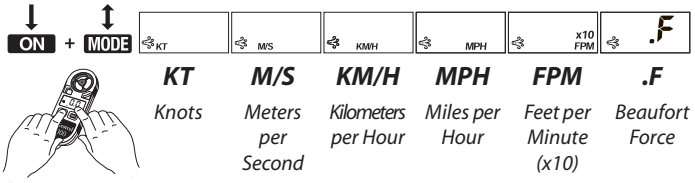
3) Select Operating Mode: Press and release [MODE] to change the operating mode. You can select a different operating mode at any time.

Current Wind Speed

MAX
Maximum 3-Second Gust Since Power On

AV
Average Wind Speed Since Power On

4) Select Measurement Scale: Hold down [ON] while pressing [MODE] to change the measurement scale. You can select a different scale at any time.



KT	M/S	KM/H	MPH	FPM	.F
Knots	Meters per Second	Kilometers per Hour	Miles per Hour	Feet per Minute (x10)	Beaufort Force

5) Take a Measurement: Simply point the unit into the air flow you wish to measure.

The Kestrel turns itself off automatically after 30 minutes of no button presses.

SPECIFICATIONS

Wind Speed Functions

Modes: Moving 3-second average, maximum 3-second gust since power on (MAX) and average since power on (AVG).

Units: Knots (KT), meters per second (M/S), kilometers per hour (KM/H), miles per hour (MPH), feet per minute (FPM) and Beaufort force (".F").

On-Axis Accuracy: greater of ± 3% of reading or ± least significant digit.

Off-Axis Response: -1% @ 5°, -2% @ 10°, -3% @ 15°.

Accuracy Degradation: (loss of accuracy due to impeller bearing wear) < 2% after 100 hours use at 7 M/S [14 KT, 25 KM/H, 16 MPH, 1400 FPM].

Minimum Speed: 0.3 M/S [0.6 KT, 1.0 KM/H, 0.7 MPH, 59.0 FPM].

Maximum Speed: 40 M/S [78 KT, 144 KM/H, 89 MPH]; 1,990 FPM (display limit).

Display

Type: Reflective 2 ½ digit LCD.

Digit Height: 10 mm (0.4 in.).

Update: 1 second.

Range and Resolution: Depends on measurement scale selected – see chart:

Scale	Range	Resolution
KT, M/S, KM/H	0.0-19.9	0.1
MPH, °C & °F	20-199	1
FPM	0-1,990	10

Display Temperature Limitations: Normal operation from -15°C to 60°C [-4°F to 140°F]. Below -15°C [-4°F], accurate readings may be taken by keeping the unit warmer than -15°C [4°F] and exposing it for the minimum time necessary to take a reading (less than one minute).

Automatic Shutdown: After 30 minutes of no button presses.

Environmental

Sealing: Electronics enclosure IP67 – water resistant to 1 m. [3 ft.]. Floats.

Shock: Drop tested to 2 m. [6 ft.].

Storage Temperature: Prolonged exposure to temperatures below -20°C [-4°F] or above 80°C [176°F] may cause permanent damage.

Physical

Buttons: Two sealed tactile rubber buttons control all functions.

Battery: User-replaceable CR2032 coin cell. Typical life, 400 hrs.

Impeller: 25 mm [1 in] diameter, sapphire bearings, light weight. User-replaceable impeller/housing assembly.

Case: Slip-on case prevents damage to display and moving parts.

Dimensions: 122 x 42 x 14 mm. [4.8 x 1.7 x 0.6 in]; case, 117 x 46 x 19 mm. [4.6 x 1.8 x 0.7 in.]; lanyard, 0.5 m. [10 in.].

Weight: Unit, 43 g. [1.5 oz.]; slip-on case, 23 g. [0.8 oz.].

MAINTENANCE & TROUBLESHOOTING

Storing Your Kestrel

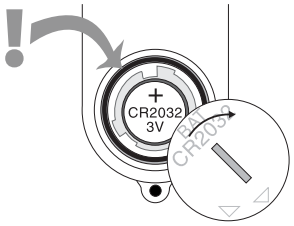
Avoid storing your Kestrel where it will be exposed to temperatures below -20°C [-4°F] or above 80°C [176°F] for extended periods of time. Doing so may permanently damage the LCD, electronics, battery or enclosure. (Note that the inside of a car parked in the hot sun can reach very high temperatures.) If the temperature of the actual LCD of your unit exceeds 70° C [158° F], it will temporarily become solid black until it cools down to below this temperature.

Use of the Lanyard and Cover

Your Kestrel is shipped with the slip-on cover captivated by the lanyard to prevent loss. If you prefer to be able to remove the cover entirely, open the lanyard end cap with a small screw driver, then remove the slip-lock. Slide the cover completely off the lanyard, then reassemble the slip-lock and lanyard end cap as before.

Replacing the Battery

When your display grows dim or blank, replace the battery. Use a large coin to open the battery compartment. Insert a new CR2032 coin cell (available where watch batteries are sold), positive (+) pole up.
When replacing the battery door, be sure to keep the black rubber o-ring seated in the groove on the case back.



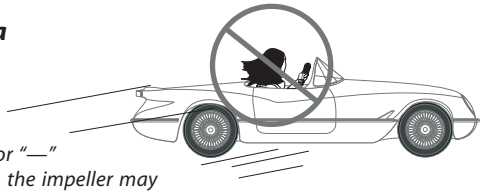
Why does the Impeller Appear Imbalanced?

It is NORMAL for the impeller to oscillate as it comes to a stop. It is NOT imbalanced. Rather, it contains a very small magnet which responds to the earth's magnetic field. This does not affect the accuracy of the windspeed readings because the magnetic field applies both a braking and an accelerating force which cancel each other. The impeller has been calibrated to be accurate to within at least ± 3%.

High Speed Use

After several hours of sustained operation over 25 M/S (~49 KT, 90 KM/H, 56 MPH or 4,923 FPM), your Kestrel will lose some accuracy due to wear of the sapphire bearings in the impeller assembly. If you require accurate high AND low speed measurements, we recommend a second impeller.

Troubleshooting a Damaged Impeller



If the impeller rotates, but only "0" or "—" shows on the display, the impeller may no longer be sending a signal to the unit. Test the unit by turning it on and placing it near an electromagnetic source (i.e. back of computer monitor or TV). If the display shows any number other than "0" or "—", the unit does not need to be returned but does need a new impeller assembly. Contact Nielsen-Kellerman or your place of purchase to order a replacement.

Replacing the Impeller

Press FIRMLY on the sides of the black impeller housing with your thumbs to remove the entire housing. When inserting the new impeller, be sure the arrow is facing the display side of the unit, and is aligned with the top of the meter. Press on the sides of the housing rather than the center.

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BEAUFORT SCALE

*The **Beaufort Scale** is a system for estimating wind force without the use of instruments based on the visible effects of the wind on the physical environment. The behavior of smoke, waves, trees, etc., is rated on a 13 point scale. The scale was devised in 1805 by the British naval Commander Sir Francis Beaufort (1774-1875) and is still commonly used by mariners.*

Force	Description	Kts
0	Calm	0
1	Light Air	1-3
2	Light Breeze	4-6
3	Gentle Breeze	7-10
4	Moderate Breeze	11-16
5	Fresh Breeze	17-21
6	Strong Breeze	22-27
7	Near Gale	28-33
8	Gale	34-40
9	Strong Gale	41-47
10	Storm	48-55
11	Violent Storm	56-63
12+	Hurricane	64+

WARRANTY & SERVICE

Warranty

Your Kestrel is covered by a full parts and labor warranty for one year from your date of purchase. The provisions of this warranty do not apply to: a) batteries, whether contained in a unit or sold individually; b) units which have been subjected to misuse, negligence, accident or improper maintenance or application; or c) units which have been repaired or altered by a party other than Nielsen-Kellerman's employees or agents without Nielsen-Kellerman's prior written consent.

Parts and Service

To order replacement parts for your Kestrel or obtain warranty service please contact Nielsen-Kellerman or your original place of purchase.

ADDITIONAL INFORMATION

What is a "Kestrel"? The American Kestrel is the smallest North American falcon. Beautiful and highly adaptable, it can be found virtually everywhere in North America. It is unique among falcons for its ability to both hover at very low speeds and dive at very high speeds.

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