Kestrel®

Pocket Weather® Tracker

with HORUS® Atrag™ Ballistics Software

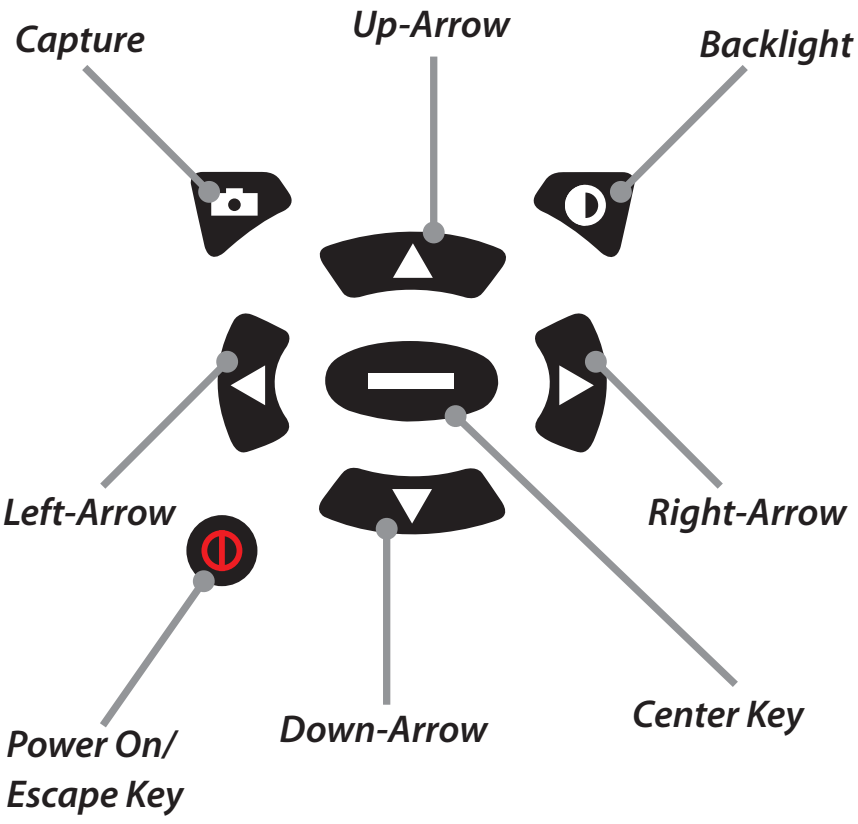
Instruction Manual For:

Kestrel® Pocket Weather® Tracker with Horus® ATRAG™ Ballistic Calculator

Made in the USA

BASIC NAVIGATION

The Kestrel has seven navigation keys:



QUICK TIPS:

Compass must be calibrated in order for directional features to work in Horus mode, and it can only be calibrated in Weather mode.

Pressing ⏻ will allow you to exit out of a particular screen.

When a ballistics parameter is underlined, this means that the value is unable to be changed manually on the current screen either because it is a calculated value or one determined by the sensors.

Press and hold ⏻ for 2 seconds will power down the Kestrel reguardless of current screen.
Press ◐ twice in rapid succession to instantly change between Weather mode and Horus mode.

Any changes in information are automatically saved upon exiting the current screen. There are 3 exceptions to this rule where an "accept"screen appears upon exiting: the Target Range estimator, the Target Speed estimator, and the Drop Truing screen.

GETTING STARTED WITH KESTREL ATRAG BALLISTICS

The three main data input groups are gun, target and environment. The aiming solutions for Elevation, Windage, and Coriolis are displayed on the Main Horus screen.

1. Gun Information

GUN	▶ Laru308
MV	2550fps
BC	0.470
BW	175gr
BD	0.308in
ZR	100m
BH	2.50in
RT	11.00in
RTd	Right
Click	1/mil
True Drop	
Delete this gun	

2. Target

TARGET	A
Active	Yes
TR	1000
DoF	000°
Ideg	0°
Icos	1.000°
TS	0mph
TD	L-R
WD	12oc
WS1	5mph
WS2	10mph

A box indicates amount of data shown on display.

Data below box indicates additional information available by pressing ▼

3. Environment

ENVIRONMENT	
Auto	No
Lat	42˚F
Temp	75˚F
SP	29.48inHg
RH	50%
Dalt	1729ft
Coriol	Yes
Wdir	Onetgt

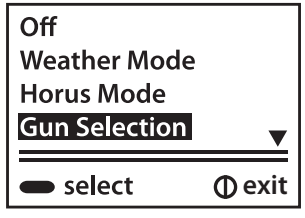
These three main data groups determine an accurate firing solution. The first step in getting a firing solution is selecting your gun.

GUN SELECTION

The Gun Selection screen allows you to choose a preconfigured gun or build your own. You may create and store up to 9 user-created guns. A user-created gun is defined as a gun that has been modified for one or more parameter values of the New Gun or any of the library guns.

When a New Gun is modified, the name instantly changes to UserGunX (where X is a number suffix to ensure the name is unique). If a library gun (whose name ends in a letter) is modified, a number will appear at the end to create a unique name. If a library gun (whose name ends in a number) is modified, a letter will appear at the end to create a unique name.

- Turn on the unit. From the Main Horus screen, press ⏻ to access the Main Setup Menu.
- Press ▼ to highlight "Gun Selection."



- Press — to enter Gun Selection Screen. Here, you may choose a preconfigured gun or build your own.

To Choose a Preconfigured Gun:

- Press ▲ or ▼ to scroll through the different guns.
- Press ▶ to turn your selected gun "on" or "off". "On" means the gun is available to be selected in Horus mode. "Off" means the gun is not available to be selected. For example, setting multiple guns to "On" allows you to quickly switch gun configurations without going back to the Main Setup Menu.

Gun select	11
▶Laru308	On
▶User Gun2	On
▶User Gun	Off
▶300WinMag2	Off

- When the desired gun is highlighted, press — to enter the Gun Information screen.

To Build A Gun:

You can build and name your gun on the gun selection screen.

- Use ▼ to highlight New Gun and press —.

Gun select	11
▶MaruGun308	On
▶AR15a	On
▶300WinMag1	Off
▶New Gun	Off

- This will take you to the gun information screen where you may adjust all gun parameters. Press up or down to highlight the gun parameters.
- Use ▲ and ▼ to adjust each value.

• To name your gun, scroll up to highlight "Gun" and press .

GUN	New Gun
MV	2900fps
BC	0.533
BW	190gr
BD	0.308in

• You will see a cursor appear under the first letter of New Gun. Use the and buttons to scroll through the alphabet and numbers 0-9 and several symbols. Pressing inserts a space between characters. You can choose between upper and lowercase letters.

• Once you're on the desired letter, use to move the cursor to the next space in the gun name. Continue until the gun name is complete.

• When gun name is complete, press button to save. (Gun will also automatically save upon exiting screen.)

• Press to will exit from the current screen.

Gun Library

There is room in the Kestrel for up to 50 library guns. Several library guns are pre-programmed in each Kestrel, but this can be modified by building a new gun library on a computer using the Horus Gun Library software, and downloading the new gun library to the Kestrel (either via Bluetooth connection or the Kestrel wired interface). Downloading a new gun library will automatically overwrite the previous library guns in the Kestrel (but not any user-created guns).

GUN INFORMATION SCREEN

Once you have selected your gun. You're now ready to enter or modify all relevant parameters pertaining to the set-up of your rifle. These parameters include muzzle velocity, ballistic coefficient, bullet weight, bullet diameter, zero range, bore height, rifle twist, rifle twist direction, and sight adjustment (click).

• On the Gun Information screen, press up or down to highlight the gun parameters.

• Use and to adjust the value.

• Press to enter the highlighted parameter's screen. Here you are also able to adjust the parameter's value as well as the unit of measure. (For example, meters per second to feet per second.)

• On the Gun Information screen, you also have the option to delete the gun by highlighting "Delete this Gun" and pressing the button.

• Press to exit to Main Horus screen once all values are correct.

See below for more information on Muzzle Velocity and Ballistic Coefficient.

Muzzle Velocity

• Use and to highlight "MV".

• Press to enter MV screen.

• Use and to adjust the value.

Notes on Muzzle Velocity

• When a bullet is in the transonic range, a small dot will appear to the left of the muzzle velocity value (figure 1).

• When a bullet is in the subsonic range a larger dot will appear to the left of the muzzle velocity value. (figure 2)

GUN	▶ Laru308
MV	·1360fps
BC	0.470
BW	175gr
BD	0.308in

Figure 1

GUN	▶ Laru308
MV	•1103fps
BC	0.470
BW	175gr
BD	0.308in

Figure 2

- In cases where the bullet is supersonic, there are no dots next to the muzzle velocity value.

MV-Temp Table

This allows you to enter and maintain a table of muzzle velocities based on temperature. If an entry is input into the table, the muzzle velocity is applied at all temperatures (this means that the value is then locked and cannot be altered by using ◀ and ▶ on the gun information screen) If two or more entries are input into the table, the Kestrel uses the linear interpolation and the temperature sensor to determine the appropriate muzzle velocity (Note: this value will only change if the temperature changes and you exit and re-enter the gun information screen; once a muzzle velocity value is entered for a particular temperature, you can not make another muzzle velocity value for the same temperature.)

- To access MV-Temp table, scroll to MV (Muzzle Velocity) to highlight it and press —, then use ▼ to scroll to MV-Temp and press — to enter.

Muzzle velocity	
MV	2900fps
feet per sec	
MV-Temp	

- Press — while "New entry" is highlighted to enter the Table Item screen.
- Use ▲ or ▼ to scroll to "Temp" and "MV". Use ◀ and ▶ to adjust each value.

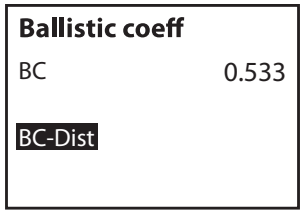
Table item	
Temp	10°F
MV	2900fps
Clear	

- To clear a Table Item, scroll down to Clear and press —.
- Press ⏻ to exit to return to the Gun Information screen.

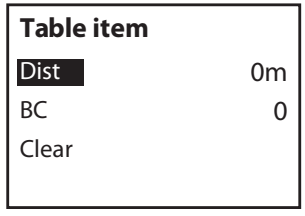
BC-Dist Table

This allows you to enter and maintain a table of ballistic coefficients based on distance. If only one entry is input into the table, the ballistic coefficient is applied at all distances (this means that the value is locked and cannot be altered by using ◀ and ▶ on the gun screen). If two or more entries are input into the table, the Kestrel uses the linear interpolation and the target range to determine the appropriate ballistic coefficient (Notes: this value will only change if the target range changes; once a ballistic coefficient value is entered for a particular distance, you cannot make another ballistic coefficient value for the same distance.)

- To access the BC-Dist table, scroll to BC (Ballistic Coefficient) to highlight it and press —, then use ▼ to scroll to BC-Dist and press — to enter.



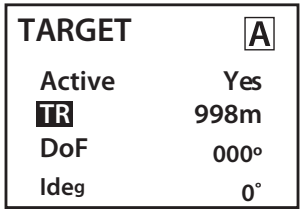
- Use ▲ and ▼ to scroll to any existing parameters. Use ◀ and ▶ to adjust each value.
- To add a new entry, highlight "New Entry" and press —.
- Use ▲ and ▼ to scroll to "Dist" and "BC". Use ◀ and ▶ to adjust each value.
- To clear a Table Item, scroll down to Clear and press —.
- Press Φ to exit to return to the Gun Information screen.



TARGET SCREEN:

You can customize up to five targets for location, distance, direction, declination, and wind.

- From the Main Horus screen, use ▲ or ▼ to highlight "Tgt" and press — to enter the Target screen.



- Use up and down to highlight a parameter.
- Use ◀ and ▶ to adjust values for each parameter.
- Press — to enter the highlighted parameter's screen. Here you are able to adjust the parameter values as well as the unit of measure.

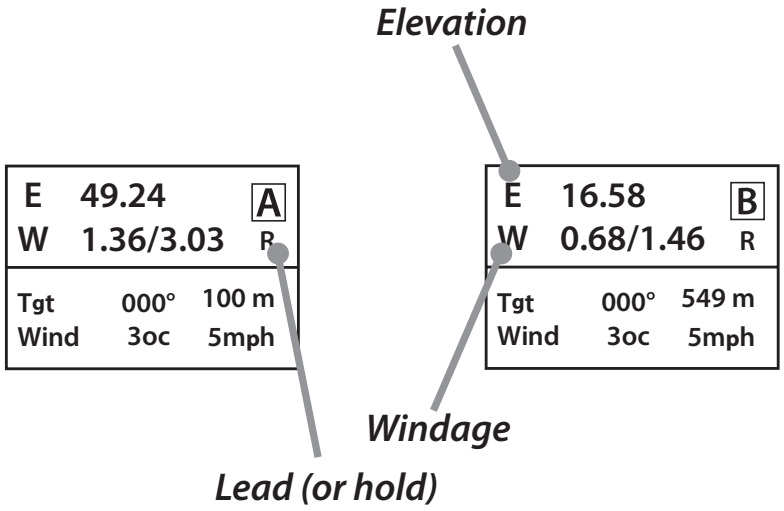
(For example, yards to meters.)

Multiple Targets

- You may create up to 5 targets (A-E) by using ▲ until "Target" is highlighted and then pressing ◀ or ▶ to move on to the next target. After changing targets the parameters can be changed by repeating the steps outlined above.

Active

- The "Active" status of Target A defaults to "Yes" because the Kestrel must have at least one active target at all times.
- To make a target active, on the Target screen use ▲ or ▼ to highlight "Active" and use ◀ or ▶ to change to "Yes." To make a target inactive, use ◀ or ▶ to change to "No".
- Setting a target's "Active" status to "Yes" allows you to view the firing solution for that target on the Main Horus screen.
- If multiple targets are active, you can use ◀ or ▶ to scroll between all active targets (and their respective firing solutions) on the Main Horus screen.



Target A is the current active target.

Target B is the current active target

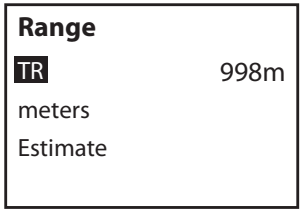
Target Range

- Use ▲ or ▼ to highlight "TR".
- Use ◀ and ▶ to adjust the value.

Target Range Estimator

This function estimates the range of a target based on size, image and calculated range.

- When "TR" is highlighted, press — button to enter Range screen.



- Use ▼ to highlight "Estimate" and press — to enter Range Estimate screen.
- Use ▲ or ▼ to highlight a parameter.
- Use ◀ and ▶ to adjust values for each parameter.
- When all parameters are set, press Ⓞ to escape.
- An "Accept" screen will appear, scroll to "Yes" if you would like to accept values. Use — to select the highlighted option.

Wind Direction & Wind Speed

There are two wind speed measurements on the target screen (WS1 and WS2) for minimum and maximum wind speed as well as wind direction (WD). You have the option to manually adjust the wind speed and wind direction values or use the capture feature to automatically get a reading.

Manual mode

- Use ▲ or ▼ to highlight "WD", "WS1", or "WS2".
- Use ◀ and ▶ to adjust values for each parameter.

Capture mode

- In the Target screen, press — to enter into either the "WD", "WS1", or "WS2" screen.
- Press — to enter into the capture mode.
- Face the back of the Kestrel directly into the wind and press — to start and stop the capture mode.

- The data collected in capture mode will automatically adjust the "WD", "WS1", and "WS2" values in the Target screen.

Note: WS1 can never be greater than WS2 value. The WS2 value will automatically adjust to ensure that this remains true.

Direction of Fire

Direction of Fire (DoF) is an absolute frame of reference to true north. The value is the direction the gun barrel is pointng with respect to the values on a compass. Direction of Fire can be manually adjusted or obtained using the "capture" feature.

Manual mode

- Use ▲ or ▼ to ensure that "DoF" is highlighted.
- Use ◀ and ▶ to adjust the value.

Capture mode

- When "DoF" is highlighted, press — to enter the DoF screen.
- Use ▼ to scroll to "Capture".
- Press — to enter into the capture mode.
- Face the back of the Kestrel directly toward the target and press —.
- The data collected in capture mode will automatically adjust the DoF value in the Target screen.

Inclination Angle

Inclination angle is the angle between the target and the horizontal as seen by the shooter. This variable is expressed in the Target screen as "Ideg" or "Icos" where Ideg is in degrees, and Icos is the cosine angle. These can be manually adjusted by highlighting one and using the ◀ and ▶ to change the value. Changing one will automatically change the other appropriately.

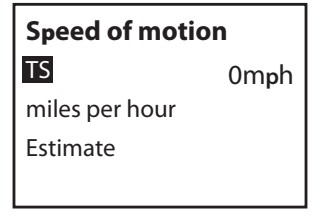
Target Speed

- Use ▲ or ▼ to highlight "TS".
- Use ◀ and ▶ to adjust the value.

Target Speed Estimator

This function estimates the speed of a target based on range, movement, and time.

- When "TS" is highlighted, press — button to enter Speed of Motion screen.



- Use ▼ to highlight "Estimate" and press — to enter Speed Estimate screen.
- Use ▲ or ▼ to highlight a parameter.
- Use ◀ and ▶ to adjust values for each parameter.
- When all parameters are set, press ⏻ to escape.
- An "Accept" screen will appear, scroll to "Yes" if you would like to accept values. Use — to select the highlighted option.

Target Direction

- Use ▼ to highlight "TD".
- Use ◀ and ▶ to adjust "L-R" (left to right) or "R-L" (right to left).

** For information on "True Drop", please see page 19.*

ENVIRONMENT SCREEN:

The Environment screen contains all atmospheric parameters such as temperature, station pressure, and relative humidity. Setting the "Auto" parameter to "Yes" automatically imports the Kestrel's sensor data into the Environment screen. The "Auto" parameter can also be set to "Manual" when it is highlighted by using ◀ or ▶ while in the Manual setting the temperature (Temp), station pressure (SP), and relative humidity (RH) can be manually adjusted.

ENVIRONMENT	
Auto	No
Lat	42° N
Temp	75° F
SP	29.48inHg

- Use ▲ or ▼ to highlight a parameter.
- Use ◀ and ▶ to adjust the values for each parameter.

Coriolis will default to "Yes" unless you manually change it to "No". While it's on the "Yes" setting, this means that coriolis is taken into account for the ballistics solutions.

Density altitude will automatically adjust according to the adjustment of the relevant environmental parameters. This parameter cannot be manually changed because it is a calculated value.

***Note:** station pressure ("SP") is pressure reading is unadjusted for sea level. Sometimes this is mistakenly called barometric pressure in ballistics software. Barometric pressure is a pressure reading adjusted for sea level. When shooting, station pressure is required. Station pressure can be measured with the Kestrel by setting the reference altitude to zero on the Barometric Pressure screen in weather mode.*

RANGE CARD SCREEN

The Range Card screen shows detailed information about the ballistic solution at various ranges that apply to the currently selected target and gun. The screen displays three columns comprised of the Range (in the left column) and two other variables. The other variables that can be displayed are ballistics solutions based on "Wnd1"; "Wnd2"; "Lead"; "Elev"; or further information on bullet flight characteristics such as remaining velocity ("RemV"); remaining energy ("RemE"); time of flight ("ToF"); and maximum ordinate, or height above the line of sight to the target ("MaxO"). Please see Page 26 for a sample Range Card.

- Use ▲ or ▼ to scroll to a particular range.
- Use ◀ and ▶ to scroll across and view all available parameters.

RANGE CARD A		
Rng	Elev	Wnd1
300	5.50	L0.13
400	9.42	L0.19
500	14.06	L0.27

RANGE CARD A		
Rng	Lead	RemV
300	0.00	1991
400	0.00	1823
500	0.00	1666

Example of "Rng"clumn remaining fixed while 2 other columns can be changed.

Range Increment

- Use ▬ while in the Range Card to enter the Range Settings screen.
- Use ◀ and ▶ to adjust the range increment to the desired value. You may adjust the increments to show in 10, 20, 25, 50 or 100 units of measure (yards or meters).
- Press Φ to exit "Range Increment" screen.

***Note:** The Range Card will display range values up to 4000 yards, or the closest equivalent in meters, depending on the range increment.*

Remaining Velocity

- A small dot will appear to the left of the muzzle velocity value to indicate the bullet is in the transonic range.
- A larger dot will appear to the left of the muzzle velocity value to indicate the bullet is in the subsonic range.

RANGE CARD		A
Rng	RemV	RemE
800	·1272	629
900	•1177	538
1000	•1101	471

BALLISTICS SCREEN

The Ballistics screen displays complete information about the ballistic solution that pertains to the currently selected target and gun. The only parameter whose value can be altered in this screen is the "Range" (this can be done by using  and to adjust the value).

- Use  or  to scroll to a particular parameter.
- Use  to enter into a parameter screen for further information about it or change unit of measure.
- Use  to return to the Ballistics screen.

***Note:** An R or an L will appear beside each solution to indicate which side of the target you should aim.*

ATrag Signature Feature

TRUE DROP

In an ideal world, shooters would go into the field knowing exactly how their chosen combination of gun and ammunition will perform, calculated ballistic solutions would always be correct, and a properly delivered shot would always hit the target. In the real world, ballistic data is often imperfect, and even well delivered shots often miss.
The best way to deal with this is to allow ballistic parameters to be adjusted to reflect what is actually observed. When this is done correctly, overall accuracy can be significantly enhanced. The Horus Kestrel includes a Drop Truing screen to support this valuable function.

- When all parameters are set, press  to escape.
- On the Gun screen, use  to highlight the "True drop" item
- Press  to enter the Drop truing screen.
- In the Drop Truing Screen, use  or  to highlight the parameter you wish to change.
- The parameters that can be adjusted are "BC" (ballistic coefficient), "MV" (muzzle velocity), or "Range".
- This adjustment is made so that the calculated elevation correction matches what is actually observed.

QUICK KEYS: DIRECTION OF FIRE & WIND SPEED

The Direction of Fire (DoF) and Wind Speed (WS1 & WS2) Quick Key feature allows you to quickly and easily change the values of these parameters from the Main Horus screen without entering into the Target screen. It minimizes the number of button presses and time by instantly capturing these values from one screen- the Main Horus screen.

Direction of Fire Quick Key

- Pressing the  button while Tgt is highlighted will enter the DoF setting mode.

- The Tgt heading will change to T▶ to indicate the setting mode.
- The direction will be continuously updated on the target line.
- Pressing the button again will capture the current direction as DoF.
- The Tgt heading will return to its normal state.

Note: If the compass is not calibrated, a new screen will pop up to aleart you that capture won't work until compass is calibrated.

Wind Speed Quick Key

- Pressing the button while Wind is highlighted will enter the Wind setting mode.
- The Wind heading will change to W▶ to indicate the setting mode.
- The moving 5-second average for windage and wind speed will be continuously updated on the wind line.
- The moving 5-second average for wind solution will be continuously updated.
- Pressing the button again will capture the current wind speed.
- The Wind heading will return to its normal state.
- The Wind line will show the captured relative wind direction and wind speed.

Note: If the compass is not calibrated, a new screen will pop up to alert you that capture mode won't work until compass is claibrated.

GLOSSARY OF TERMS

Active gun: When a gun is made active, ballistic solutions for that gun pertaining to all active targets are readily displayed. Ballistic solutions for guns that are inactive are not displayed.

Aiming/Ballistic solution: This consists of sight corrections for windage, elevation (and in the case of a moving target, lead) for a selected active gun and target, along with other calculated values such as bullet velocity and energy. On the main Horus screen, only elevation and windage are displayed. On the Range Card and Ballistic Info screens, detailed ballistic solution data is available.

Subsonic: The speed at which the bullet is slower than the speed of sound. Bullet velocities in this range will be displayed with a large dot to the left of the value.

Target: A target is characterized by its direction, range, inclination angle, and applicable wind; a moving target has a direction and speed of motion. Targets are identified by a single letter: up to five can be described, designated by the letters A through E. It's important to note that wind is specific to a target – each active target has its own wind specification.

Transonic: The speed at which the bullet slows to the speed of sound. This is also seen as the boundary between supersonic and subsonic. Bullet velocities in this range will be displayed with a small dot to the left of the value.

BALLISTIC & ENVIRONMENTAL QUICK REFERENCE

Target Screen

Active – tells whether this target is currently active
TR – target range
DoF – direction of fire (relative to true north)
Ideg – inclination angle (negative means the target is below the shooter)
Icos – inclination cosine (cosine of the inclination angle)
TS – target speed
TD – target direction of movement
WD – current wind direction (direction from which wind is blowing, relative to DoF)
WS1 – typical current wind speed
WS2 – maximum current wind speed

Gun Screen

MV – muzzle velocity
BC – bullet ballistic coefficient
BW – bullet weight
BD – bullet diameter
ZR – zero range
BH – bore height
RT – rifling twist rate (distance in which bullet achieves 360 degrees of rotation)
RTd – rifling twist direction (right = clockwise from the shooter's perspective)
Click – assigns an angular value to sight clicks

Environment Screen

Auto – controls whether values for temperature, barometric pressure, and relative humidity are obtained automatically (from the Kestrel's weather-meter functions) or are manually set by the user.
Lat – allows the user to specify the latitude (north or south of the equator) that will be used when calculating Coriolis corrections.
Temp – temperature
SP – station pressure (actual pressure at the gun's location)
RH – relative humidity
Dalt – density altitude (calculated from pressure, temperature & humidity)
Coriol – controls whether Coriolis corrections are included in ballistic calculations.
Wind – controls whether wind direction is controlled manually or automatically.

Range Card Screen

Elev – the elevation sight correction
Wndg – the windage sight correction based on WS1 (see Target screen, above)
Wdg2 – the windage sight correction based on WS2 (see Target screen, above)
Lead – the lead sight correction (for a moving target)
RemV – the downrange bullet velocity
RemE – the downrange bullet energy
ToF – the bullet's time of flight
MaxO – the bullet's maximum ordinate (height above the line of sight to the target)

Ballistics Data Screen

Range – the range for which the ballistic solution is calculated
Elev – elevation correction
Wndg – windage correction (based on WS1)
Wdg2 – windage correction (based on WS2)
Lead – lead correction, based on specified target motion
vCori – vertical Coriolis correction
hCori – horizontal Coriolis correction
Drift – bullet drift correction

RemV – remaining velocity
RemE – remaining energy
ToF – time of flight
MaxO – maximum ordinate (highest point the bullet reaches in flight)
Drop – total drop distance
Rtrns – range at which transonic velocity transition begins
Rt 75% – distance at which a bullet is 75% through the transonic range
Rsubs – range at which bullet velocity becomes subsonic

Range Estimation Screen

Target – the size of the target on which estimation is based
Image – the apparent size of the target as it appears in a telescopic sight
Range – the calculated range, based on the target and image sizes

Speed Estimation Screen

Range – the range at which the speed estimation will be done
Mvmt – the apparent movement of the target as it appears in a telescopic sight
Time – the time (in seconds) during which movement was measured
Speed – the calculated speed, based on range, movement and time

True Drop Screen

Range – the range at which test firing is being done
Drop – the elevation correction calculated for the specified range
BC – the ballistic coefficient used in the current elevation calculation
MV – the muzzle velocity used in the current elevation calculation

Sight Adjustments

TMOA – true minute of angle
MIL – USMC mils

Sample of full Range Card data relative to data seen on display

RANGE CARD		[A]							
Rng	Elev	Wnd1	Wnd2	Lead		RemV	RemE	ToF	MaxO
100	0.06	0.10	0.21	0.00		2355	2155	0.134	0.87
200	2.28	0.22	0.47	0.00		2169	1828	0.279	3.79
300	5.56	0.34	0.72	0.00		1991	1541	0.437	9.27
400	9.49	0.47	0.99	0.00		1823	1291	0.609	18.00
500	14.12	0.61	1.31	0.00		1666	1078	0.798	30.98
600	19.33	0.75	1.62	0.00		1520	897	1.004	48.99
700	25.34	0.90	1.96	0.00		1388	748	1.230	73.51
800	32.25	1.06	2.31	0.00	•	1272	629	1.477	106.0
900	40.21	1.22	2.67	0.00	•	1177	538	1.745	148.0
1000	49.24	1.36	3.03	0.00	•	1101	471	2.034	201.0
1100	59.34	1.49	3.37	0.00	•	1042	422	2.340	266.2
1200	70.40	1.63	3.71	0.00	•	995	385	2.662	344.5
1300	82.46	1.75	4.04	0.00	•	955	354	3.000	437.3
1400	95.35	1.82	4.29	0.00	•	920	329	3.350	545.3
1500	109.1	1.91	4.57	0.00	•	888	307	3.712	669.7
1600	123.7	2.00	4.84	0.00	•	860	287	4.088	812.3
1700	139.2	1.99	5.00	0.00	•	833	269	4.477	973.9
1800	155.5	2.04	5.22	0.00	•	808	253	4.876	1155
1900	172.7	2.08	5.42	0.00	•	784	239	5.287	1359
2000	190.9	2.11	5.62	0.00	•	761	225	5.713	1586
2100	210.0	1.96	5.63	0.00	•	739	212	6.152	1839
2200	230.0	1.95	5.78	0.00	•	718	201	6.602	2118
2300	250.7	1.94	5.93	0.00	•	698	189	7.063	2424
2400	272.7	1.92	6.06	0.00	•	679	179	7.539	2762
2500	295.9	1.89	6.19	0.00	•	660	169	8.031	3134
2600	320.2	1.44	5.90	0.00	•	642	160	8.537	3542
2700	345.6	1.35	5.97	0.00	•	624	151	9.055	3985
2800	372.2	1.25	6.03	0.00	•	607	143	9.588	4468
2900	399.7	1.14	6.08	0.00	•	590	135	10.13	4990
3000	428.8	1.02	6.11	0.00	•	574	128	10.70	5560
3100	459.5	0.88	6.14	0.00	•	558	121	11.28	6182
3200	491.6	L0.23	5.18	0.00	•	542	114	11.88	6855
3300	525.2	L0.46	5.11	0.00	•	527	108	12.49	7581
3400	560.1	L0.71	5.02	0.00	•	512	102	13.12	8363
3500	596.6	L0.98	4.92	0.00	•	498	96	13.76	9206
3600	635.0	L1.28	4.80	0.00	•	484	91	14.43	10119
3700	675.8	L1.59	4.66	0.00	•	470	86	15.12	11110

Specifications

	Feature	Abbreviation	Units	Minimum	Maximum
Target	Active Targets	N/A	A through E	1	5
	Target Range	TR	yards	25	4000
			meters	23	3658
	Wind Direction	WD	o'clock	1	12
			degrees	0	360
	Wind Speed	WS1 or WS2	mph	0	50
			m/s	0	22
			km/h	0	80
			fps	0	73
			knots	0	43
	Direction of Fire	DoF	degrees	0	360
			o'clock	1	12
	Inclination Angle	Ideg	degrees	0	60
	Inclination Cosine	Icos	no units	1.000	0.500
	Target Speed	TS	mph	0	50
			m/s	0	22
			km/h	0	80
			fps	0	73
			knots	0	43
	Target Direction of Movement	TD	Left to Right OR Right to Left		
Gun	Name Characters	N/A	0 through 9; A-Z; a-z; -+/.:&* and space		
	Muzzle Velocity	MV	fps	300	4500
			m/s	91	1372
	Ballistic Coefficient	BC	no units	0.100	2.000
	Bullet Weight	BW	grains	10	1500
			grams	0.6	97.2
	Bullet Diameter	BD	inches	0.10	1.00
			mm	2.54	25.40
	Zero Range	ZR	yards	25	1000
			meters	23	914
	Bore Height	BH	inches	0.10	5.00
			cm	0.25	12.70
	Rifling Twist	RT	inches/revolution	1.00	36.00
			cm/revolution	2.54	91.44
	Twist Direction	RTd	Left OR Right		
	Sight Adjustment	Click	/mil	1	10
			/tmoa	1	10
Environment	Latitude	Lat	degrees	90S	90N
	Temperature	Temp	fahrenheit	-50	140
			celsius	-46	60
	Station Pressure	SP	inHg	12.00	32.00
			mb	406.4	1083.6
			hPa	406.4	1083.6
			psi	5.89	15.72
	Relative Humidity	RH	%	1	100
	Density Altitude (computed)	Dalt	ft	-10732	32767
			meters	-3271	9987
	Coriolis	Coriol	Yes OR No		

Instruction Manual For:
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Kestrel® Pocket Weather® Meters are designed and manufactured in the USA by:

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