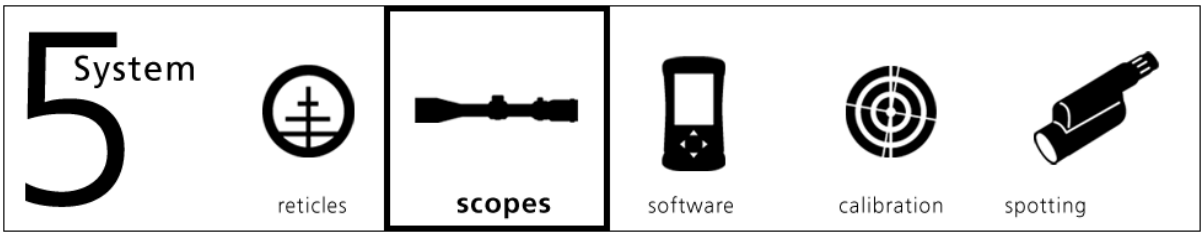

THE HAWK™ 3-12x50

H-425™ RETICLE

User's Manual

HORUS©
AN UNDENIABLE ADVANTAGE

January 7, 2008

FOR INFORMATION OR SALES

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Table of Contents

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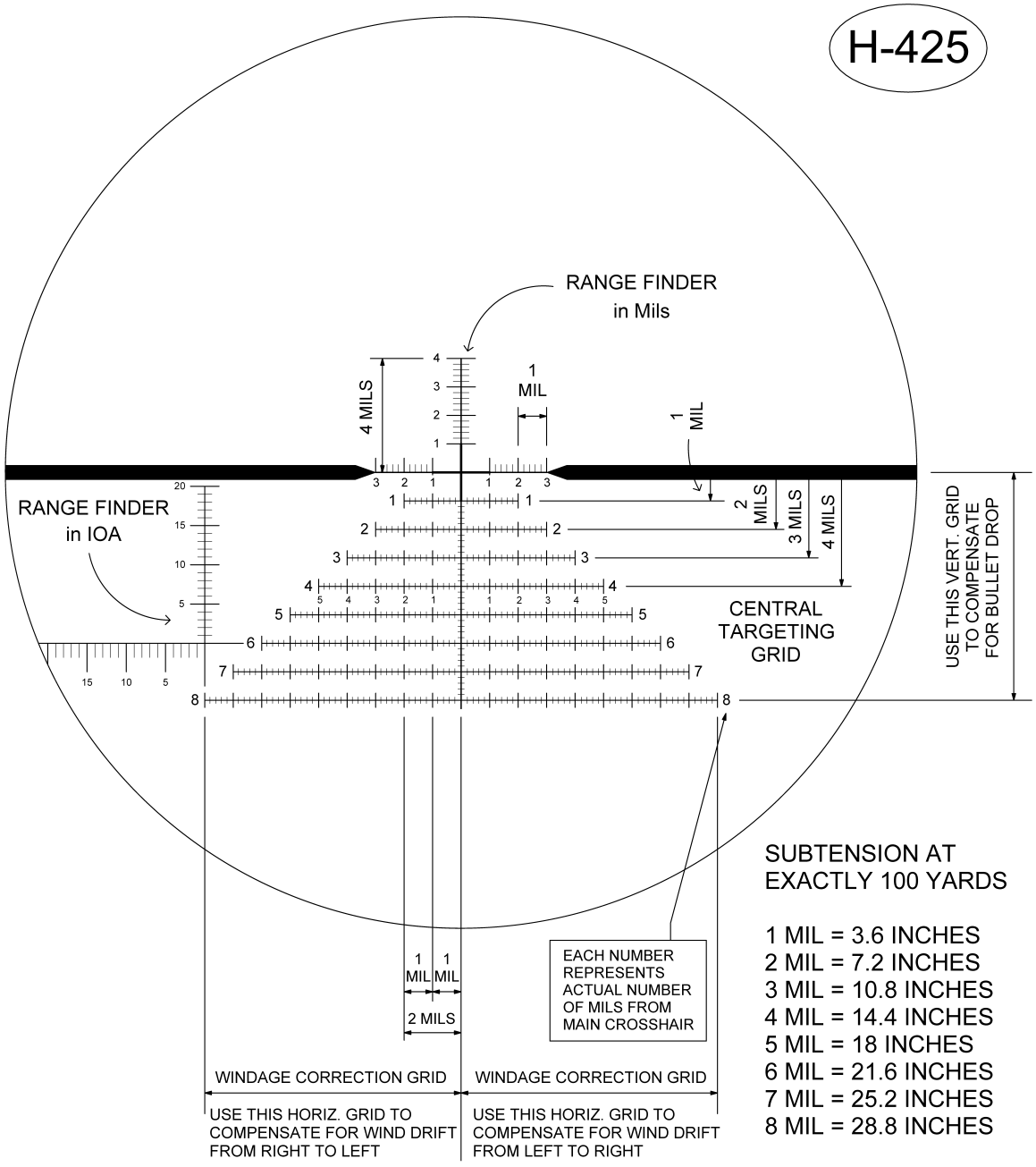
THE HAWK™
SPECIFICATIONS

Model	**Hawk™**
Power	**3-12X50**
Length	**13.6 inches**
Weight	**23oz**
Tube Diameter	**30mm**
Wall Thickness	**2.6mm**
Material	**6061-T, 340 HV Hardness**
Tube	**1 piece**
Exterior Finish	**Black Anodize**
Lenses	**11 + Reticle**
Lens Coating	**Multi Coated**
Objective	**50mm**
Field of View	**8.29m - 2.5m @ 100m**
Eye Relief	**4.5"-3.24" (115.5-83mm)**
Exit Pupil	**12.5-3.1mm**
Twilight Factor	**14.14@ 4X, 28.28@12X**
Reticle	**HH-425®**
Adjustment	**1 Click = .3 inch (1/10 Mil Radian)**
Adjustment Range	**Elev. 40 moa (14 mils)**
Shockproof	**1,200 Gs**
Waterproof	**5 meters**
illuminated	**No**
Turret Caps	**Yes**

S P E C I F I C A T I O N S

MID RANGE - NON ILLUMINATED



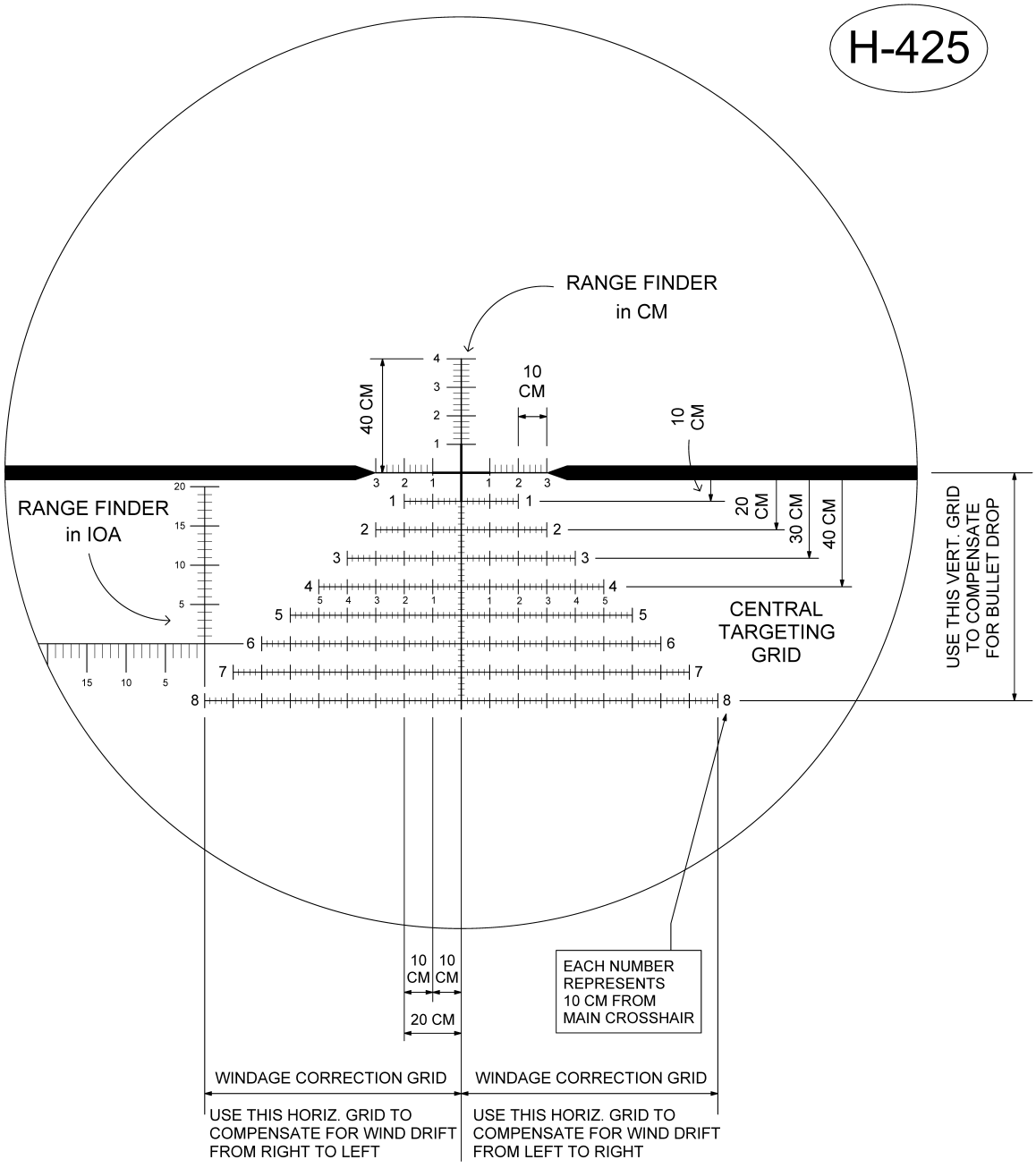
SUBTENSION AT
EXACTLY 100 YARDS

1 MIL = 3.6 INCHES
2 MIL = 7.2 INCHES
3 MIL = 10.8 INCHES
4 MIL = 14.4 INCHES
5 MIL = 18 INCHES
6 MIL = 21.6 INCHES
7 MIL = 25.2 INCHES
8 MIL = 28.8 INCHES

S P E C I F I C A T I O N S

MID RANGE - NON ILLUMINATED

1 MIL = 10 CM @ 100 YARDS



THE HAWK ™

Congratulations on the purchase of the Horus "HAWK"™. You have purchased a scope that will work on any rifle. In fact, you no longer need a separate scope for each rifle you own. The HAWK™ will work on all your rifles.

The HAWK™ will allow you to extend your hunting zone out to 600 yards. The Hawk ™gives you accuracy necessary to humanely dispatch game. " Guess-ta-mation" and "wishful thinking" shots that result in wounded game are eliminated.

Many hunters have rifles capable of making solid game hits out to 600 yards. Yet they only take shots at 100 yards or less. Why, because there was no simple way to accurately know where to hold or how many come-up clicks to put into the elevation knob.

The Horus Vision® Hawk™ 3-12X50 Optic is fitted with the new Horus H-425 Reticle™. It is basically the same reticle found in our tactical long range Falcon series scopes but still allow sufficient lines to accommodate most popular calibers to ranges to 600 yards or more. Each major line on this optic covers to 3.6 inches at 100 yards.

This reticle was designed for the general hunter who can use the reticle without the use of the Horus Vision Software in the field. While the Horus Vision Software may be used, each scope has been provided with range cards that are applicable for use with popular hunting cartridges.

GENERAL HUNTING APPLICATION------Level 1

The scope you have just purchased has solved all your general hunting needs. The HAWK™ is simple to use and understand. The HAWK presents a simple concept----"MATCH THE GRID LINES NUMBER TO YOUR BALLISTIC DATA". We have done the math by developing range (data) cards for the most popular hunting cartridges. Attach the Range/Data card that matches your ammo to your rifle stock. ZERO your rifle at exactly 100 yards. After initial zeroing, JUST HOLD AND SHOOT. The HAWK's™ patented reticle does the work. Clicking the elevation and windage knobs is no longer necessary.

For example: You have a .375 H&H hunting rifle. Your ammo is 300 gr Barnes Bullet. You have been provided with pre-calculated ballistic cards with the purchase of your HAWK™ (see next page). Find the one that matches your ammo, cut that card out and attach it to your rifle stock. Then, zero your rifle at exactly 100 yards. Now, by using the Hawk™ Targeting Grid you can make accurate shots out to 600yards and beyond with confidence and **WITHOUT CLICKING YOUR ELEVATION OR WINDAGE KNOBS ON THE HAWK™**

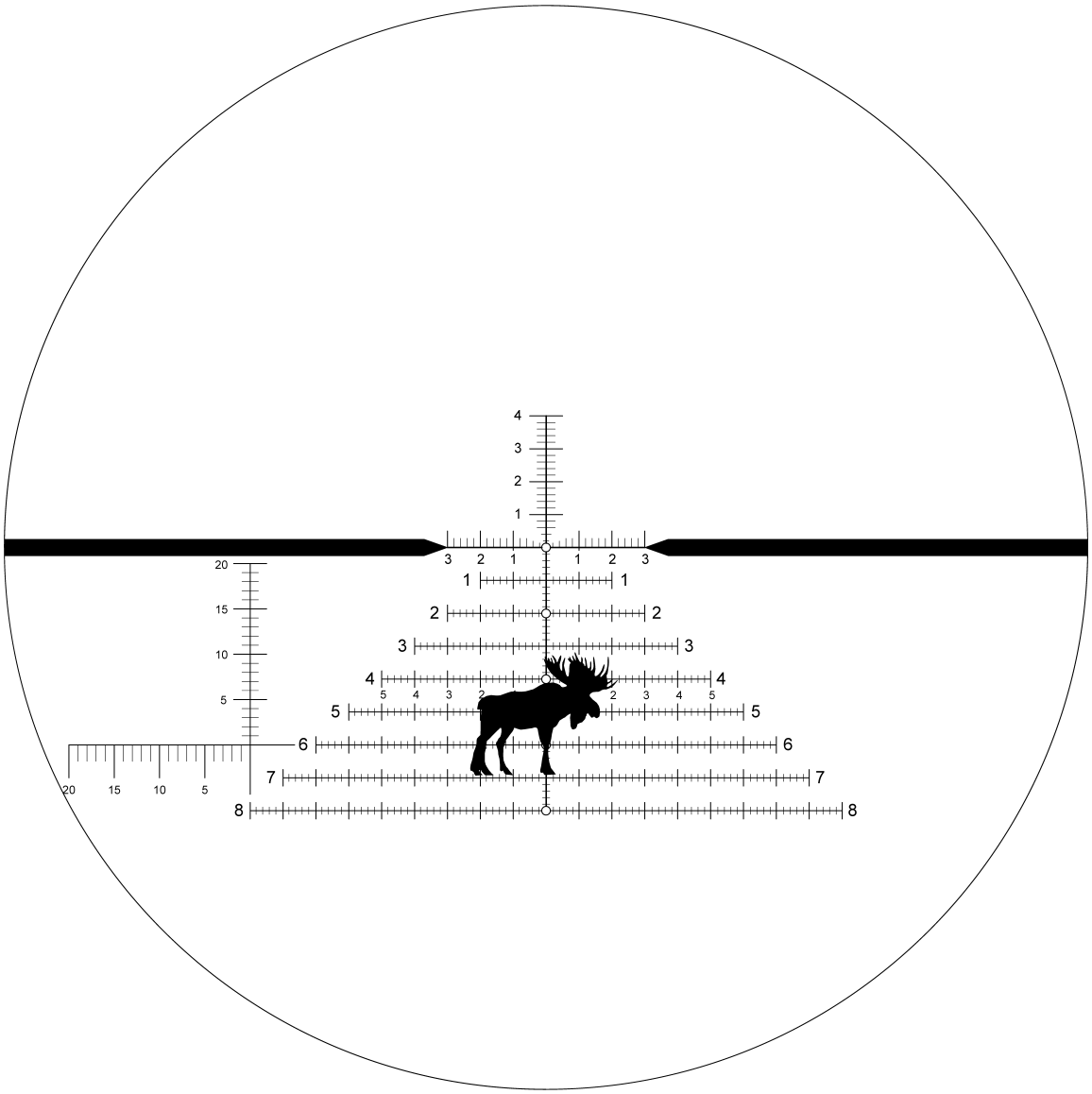
RANGE (DATA) CARD EXAMPLE

.375 H+H PMC 300 Gr. Barnes B.C. : .548 @ 2500 fps

10 MPH Wind Full Value

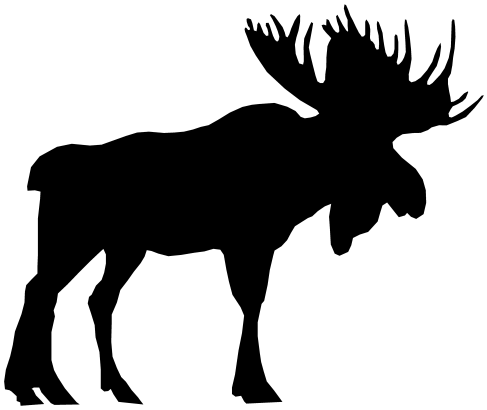
Line Number Elevation Hold	Range	Wind Hold
0	100	0.17
1	240	0.52
2	350	0.77
3	440	1.02
4	525	1.25
5	600	1.48
6	670	1.68
7	740	1.88

You spot a trophy at 600 yards, looking at the chart above, 600 yards equals an elevation hold of 5.0. So you place line 5 of your Hawk's reticle on the target and squeeze the trigger?

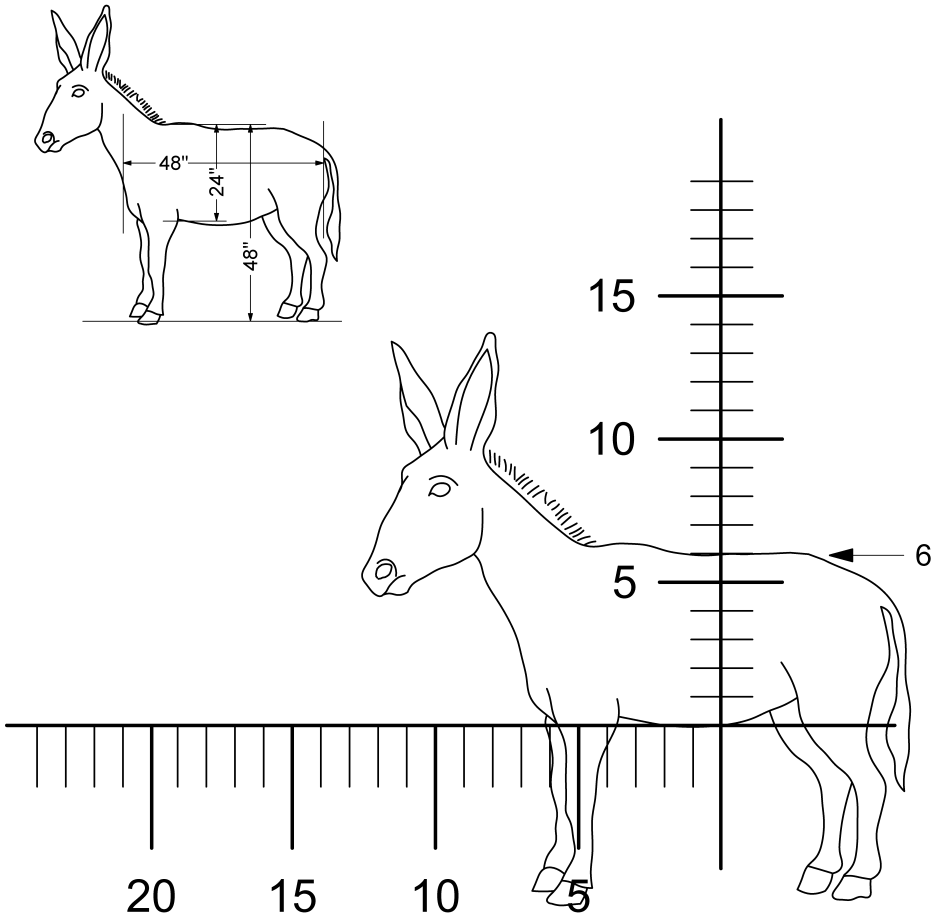


H-425 Reticle

IT IS THAT SIMPLE!



HOW TO USE THE RANGEFINDER

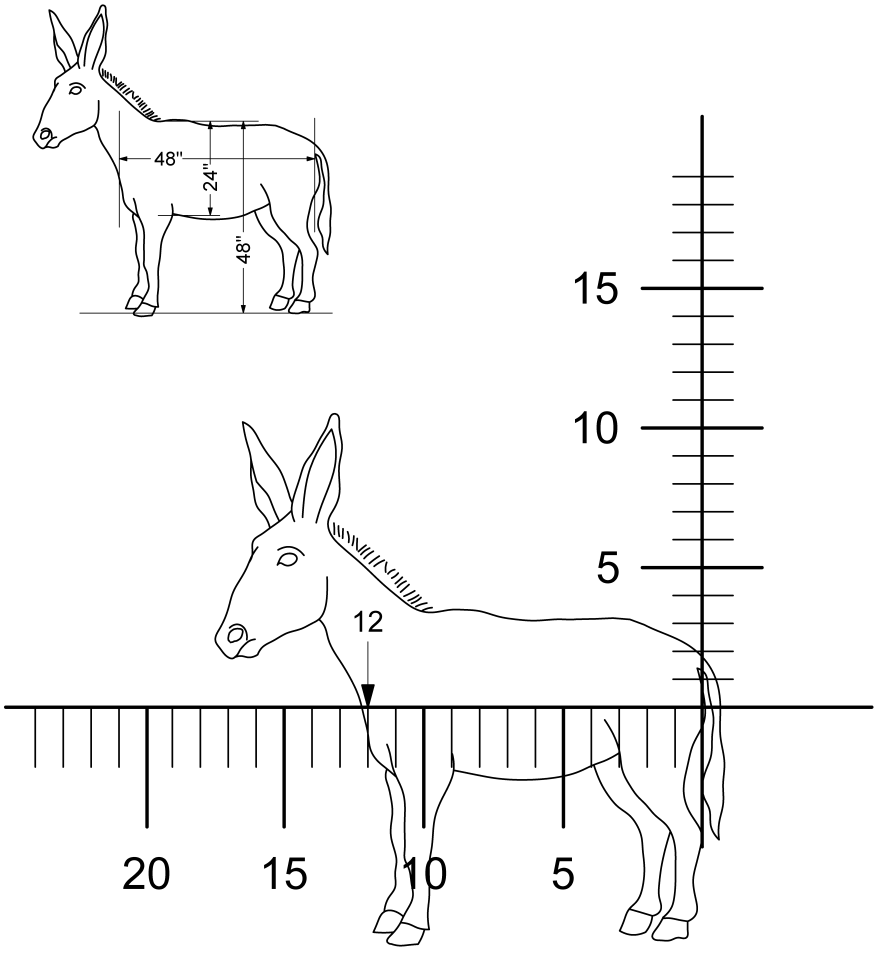


EXAMPLE : FERAL DONKEY

$$\frac{24"}{6} = 400 \text{ YARDS}$$

$$\frac{\text{ANIMAL CHEST HEIGHT (24")}}{\text{RANGEFINDER MEASUREMENT (6)}} \text{ X } 100 = 400 \text{ YARDS}$$

HOW TO USE THE RANGEFINDER



EXAMPLE : FERAL DONKEY

$$\frac{48"}{12} = 400 \text{ YARDS}$$

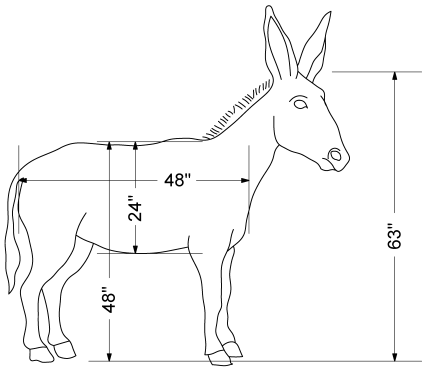
$$\frac{\text{ANIMAL LENGTH (48")}}{\text{RANGEFINDER MEASUREMENT (12)}} \text{ X 100 = 400 YARDS}$$

How to use the Horus Reticle

This is a brief overview of how to use the Horus Reticle.
Please refer to each corresponding section in this book for a detail explanation of items 1 through 4 below.

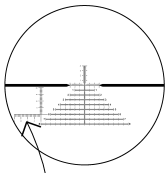
1 TARGET

Know the standard size of your target.



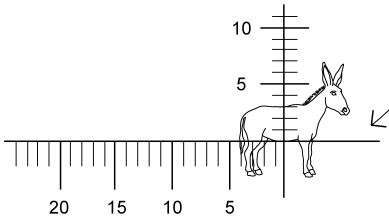
2 RANGE FINDER

Determine distance of the target with the Range Finder.



FORMULA:

$$\frac{\text{Target Height (in inches)}}{\text{Range Finder Measurement}} \times 100 = \text{Yards}$$



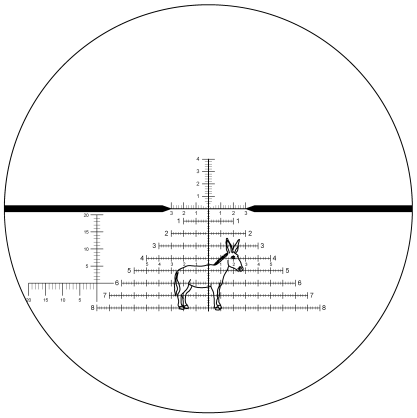
Animal Chest Height = 24"

Range Finder Measurement = 3

$$\frac{24}{3} \times 100 = 800 \text{ Yards}$$

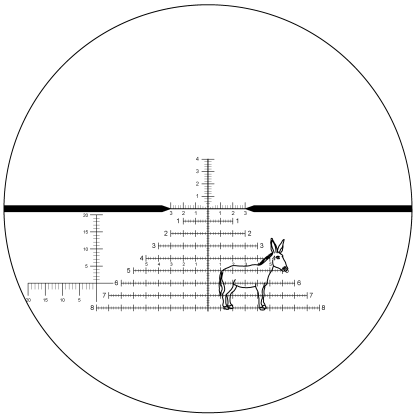
3 USE TARGET GRID

Find the yardage value that matches ballistic calculations.
We used a 300 Win Mag for this example.
The ballistic calc. for a 300 Win Mag indicates 800 yards at around line 5.75.



4 WINDAGE CORRECTION

We will assume a 20 MPH wind from left to right for this example.
The ballistic calc. for a 300 Win Mag indicates a 20 MPH wind at line 5.75 at 3.4 Hackmarks to the right.



HUNTING WITH CUSTOM AMMO-----LEVEL 2

Horus Vision® has also provided you with a copy of our "1st HIT ACCURACY SOFTWARE"™ with the purchase of your Hawk™. With this software you can calculate your own Range/Data Cards that factors in your rifle, your ammo, and your environmental conditions. This will allow you a greater degree of accuracy than the range (data) cards provided since all rifles shoot differently and ammunition performs differently under different conditions. However, in most cases, the range cards provided will work very well for your hunting experiences.

HUNTING AND ACCURATE ENGAGEMENT OF TARGETS----LEVEL 3

As you become more proficient with the use of your Hawk's™ patented reticle, you may wish to obtain Horus' Falcon manual which goes into greater amount of detail and instruction on the use of the Patented Horus Vision® reticles, the ATRAGMP™ Software for handheld PDAs, and the Kestrel 4000™ weather station. The Falcon manual is available On-Line. Please visit our website www.horusvision.com/manuals.

MOUNTING YOUR HAWK™ ON YOUR RIFLE:

Before you begin to mount your scope to your rifle, please review the following safety rules first:

- Do Not Attempt of Mount your scope to a loaded Rifle. Be sure that your rifle is unloaded
- Remove the magazine
- Open the bolt and insert your finger into the chamber to be certain there is not a round lodged in there.
- Visually inspect the bore of the rifle to insure that no round is in position to discharge
- Failure to determine that your rifle is unloaded can result in serious injury or death.

The Hawk™ requires 30mm Rings. Rings are available in steel and aluminum, and are available in three different heights: standard, high, and extra- high. The decision depends upon your rifles configuration and personal choice.

The first step is to mount the bottom portion of the ring to the mounting device (usually a rail) on the rifle, making sure that the spacing is correct and will not interfere with the Turret section of the scope. Next, place the scope on to the bottom ring positioning it far enough rearward to effect a proper eye relief. Then attach the top portion of the ring tightening the screws enough to prevent the scope from falling out of the mounts but loose enough to enable you to adjust the scope forward and aft and to rotate the scope to insure proper vertical alignment. .

To establish proper eye relief, hold your rifle at the ready position, waist high, and close your eyes. Now position the rifle into your shoulder in the firing position. Then…open your eyes. If the eye relief position is correct, you should be viewing the full field of view clearly through the occular lens. If your image is not complete or clear, lower the rifle and gently move the scope forward or aft and repeat the above exercise. Continue this procedure until the viewing area is correctly viewed through the occular lens when you open your eyes. After you are satisfied that the scope is properly aligned on the rifle, repeat this exercise four or five times in quick succession to insure that your positioning is correct. Finally, tighten the scope ring screws to about 15-20 inch pounds of pressure (about the force you can exert on a thumb screw with your thumb and fore finger).

ZEROING YOUR HAWK™:

In order to use the range cards provided with your scope, it is necessary that you zero your rifle at exactly 100 yards. It is critical that the measurement of your zero range be precise. So check to be sure that your zero target is exactly 100 yards from the muzzle of your rifle.

The following recommended method of zeroing will eliminate problems, save time and save ammunition:

a. Select a 100 yard range for a 'zero' if you intend to use the range cards provided. (You may zero at any range you desire if you choose to use any of Horus Vision's® software).
b. Measure the distance from the rifle to the target with a steel tape to insure a precise 'zero' measurement.
c. Use an 18x18 sheet (or larger) of paper with a ½ inch vertical and horizontal line drawn which intersect at the center of the paper.
d. Set the Hawk™ power ring to 12X.
e. Visually place the Main Duplex (or cross hair) of the Horus Reticle™ so it overlays the vertical and horizontal lines on your target. Fire your first shot when the overlay is 'perfectly aligned'. Adjust windage and elevation knobs to center the shot at the intersection of the vertical and horizontal lines on your target.
f. Overlay and fire…repeat 'e' and 'f' above until all shots are successfully centered at the intersection of the 'target's vertical and horizontal lines.
g. Again, visually place the Horus Reticle™ to overlay the vertical and horizontal lines on your target. Fire a second shot. If the shot placement is not exactly at the intersection of the vertical and horizontal lines on your target, repeat step 'g' until your last shot is perfectly in the center of your target. Your rifle is now zeroed and in perfect calibration with the Horus Reticle™!
h. Now put the turret covers back on the elevation and windage knobs. Make sure they are tight. From this point on, use only the Hawk's™ Reticle for elevation, windage and lead adjustments. The turret knobs stay at your initial zero point!
i. Remember to zero and train with the ammunition that you will be using.

WIND

The Horus Reticle has a uniform targeting grid that allows you to plot points for the effects of wind at various ranges. Your Range Card is calculated with the effects of a steady 90 degree (full-value) crosswind at 10 mph. For 20 mph wind, simply double the value of the grid plot points of 10 mph. If the wind is blowing at 15 mph, simply use a multiply of 1.5. For half value winds, divide by the appropriate number. i.e. a 10 MPH half value wind would equate to a 5 MPH full value wind.

Use the method that best suits your needs to "read" wind, but remember that at extended ranges, wind effects are multiplied.

SECOND SHOT CORRECTION™

The Horus Reticle features a unique method for rapidly correcting your aim on your second shot – without taking your eye off the target or the rifle from your shoulder.

If you miss your first shot, you can use the custom reticle's precisely marked grid lines for second-shot correction to get off a quick second shot and put the bullet on target.

Second-shot correction allows you to make a rapid, and very accurate second shot without any calculations and without fiddling with any windage or elevation knobs.

◊ On your second shot, you will repeat your first shot exactly in reference to your shooting position, sight picture, and trigger control. The only difference will be the point of targeting on the reticle.

◊ After your first shot you must remember

- exactly what elevation marker line you employed.
- exactly where you held your target, and
- precisely where the first bullet impacted in relation to your target.

◊ Look through the scope, put the crosshairs exactly where you originally aimed, then **note exactly where the bullet impacted in reference to the grid. That point of impact on the grid becomes your new targeting point** for a quick and accurate second shot.

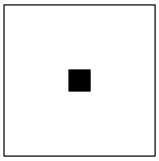
Example: You are shooting at a long-range target, using dead center of Line 8 on the custom reticle for the drop compensation. After firing and missing the bulls eye, note where bullet impacted on the target. Now look through your scope. Put dead center of Line 8 on your target. Without moving off the target, **note on the grid where the bullet struck.**

- Say the bullet struck on Line 6 – 4 hack marks to the right of center.
- Line 6, 4 hack marks to the right is your new aiming point (crosshair).
- Place your target on Line 6 – 4 hack marks to the right. Squeeze the trigger.

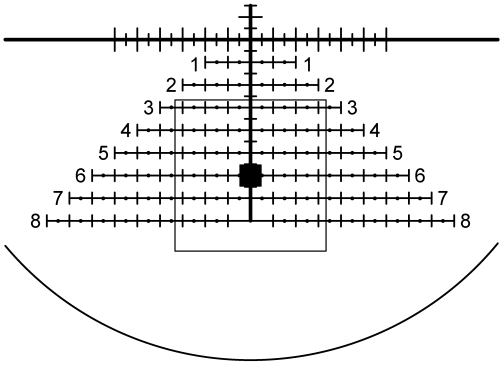
If you followed these instructions, you should hit the target.
With a little practice, you will do it quickly and almost without a thought.

2ND SHOT CORRECTION™

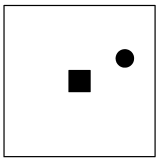
1 Target



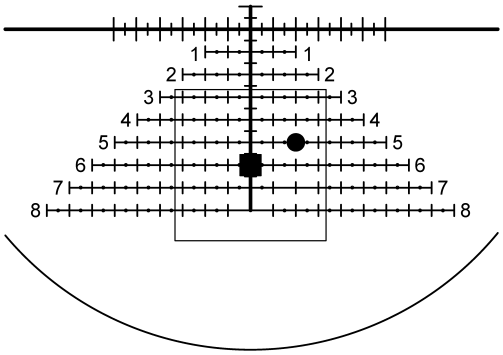
2 Range calls for using line #6 for drop compensation- put target on line #6 and shoot.



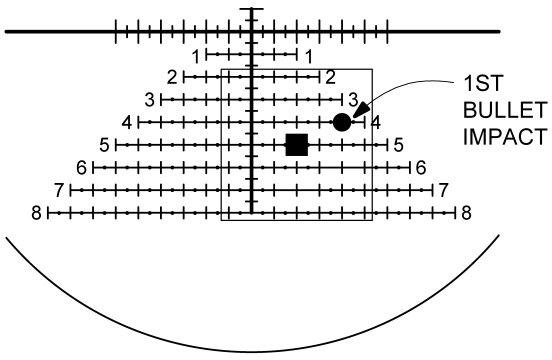
3 Bullet misses bullseye - Impact is high and to the right.



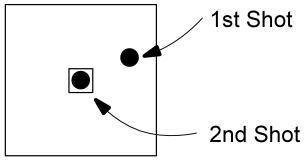
4 Look through rifle scope and put bullseye on original aiming point (central crosshair of line #6). Note: bullet impact, line 5, 2 hackmarks right.



5 Now use line #5, 2 hackmarks to the right as your main targeting crosshairs.



6 If you did everything properly, you should have a bullseye.



RANGE (DATA) CARD EXAMPLE

.243 WIN. 100 Gr. B.C. : .430 @ 2950 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.20
1	310	0.65
2	440	1.01
3	550	1.28
4	640	1.56
5	720	1.82
6	800	2.09
7	870	2.35
8	920	2.54

25/06 REM NOSLER 120 Gr. B.C. : .391 @ 2950 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.22
1	300	0.70
2	420	1.04
3	520	1.34
4	610	1.66
5	690	1.95
6	760	2.22
7	820	2.47
8	880	2.73

RANGE (DATA) CARD EXAMPLE

6.5 REM MAG 140 Gr. SBT B.C. : .530 @ 2800 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.18
1	290	0.52
2	410	0.77
3	520	1.01
4	620	1.24
5	710	1.47
6	790	1.69
7	860	1.88
8	930	2.09

.270 WIN 140 Gr. Bear Claw B.C. : .292 @ 2950 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.30
1	280	0.91
2	390	1.35
3	480	1.78
4	550	2.12
5	620	2.51
6	670	2.80
7	720	3.11
8	770	3.41

RANGE (DATA) CARD EXAMPLE

7 mm REM MAG SIERRA 175 Gr. SBT B.C. : .533 @ 2800 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.17
1	300	0.51
2	440	0.79
3	550	1.01
4	650	1.23
5	750	1.49
6	830	1.70
7	900	1.90
8	980	2.11

.308 WIN 175 Gr. SBT B.C. : .496 @ 2610 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.18
1	260	0.55
2	370	0.82
3	470	1.06
4	550	1.30
5	630	1.54
6	700	1.75
7	770	1.97
8	830	2.18

RANGE (DATA) CARD EXAMPLE

30/06 REM SBT 175 Gr. B.C. : .501 @ 2800 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.19
1	280	0.53
2	410	0.82
3	520	1.07
4	610	1.30
5	700	1.56
6	770	1.76
7	850	2.00
8	910	2.19

.300 WIN MAG FED 190 Gr. G.M. MATCH B.C. : .533 @ 2900 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.17
1	300	0.51
2	430	0.77
3	550	1.01
4	660	1.26
5	750	1.49
6	830	1.70
7	910	1.91
8	980	2.11

RANGE (DATA) CARD EXAMPLE

.338 WIN MAG BARNES 250 Gr. X B.C. : .521 @ 2750 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.18
1	280	0.52
2	400	0.78
3	510	1.02
4	600	1.25
5	690	1.50
6	760	1.72
7	825	1.89
8	900	2.10

.375 H+H MAGNUM WIN 270 Gr. FAIL SAFE B.C. : .388 @ 2670 fps
10 MPH Wind Full Value

Line Number Elevation Hold	Range	Wind Hold
0	100	0.17
1	270	0.52
2	380	0.77
3	490	1.02
4	580	1.25
5	660	1.48
6	730	1.68
7	800	1.88
8	870	2.10

Let Horus Vision help you get that trophy!