HI-LUX

PRECISION OPTICS

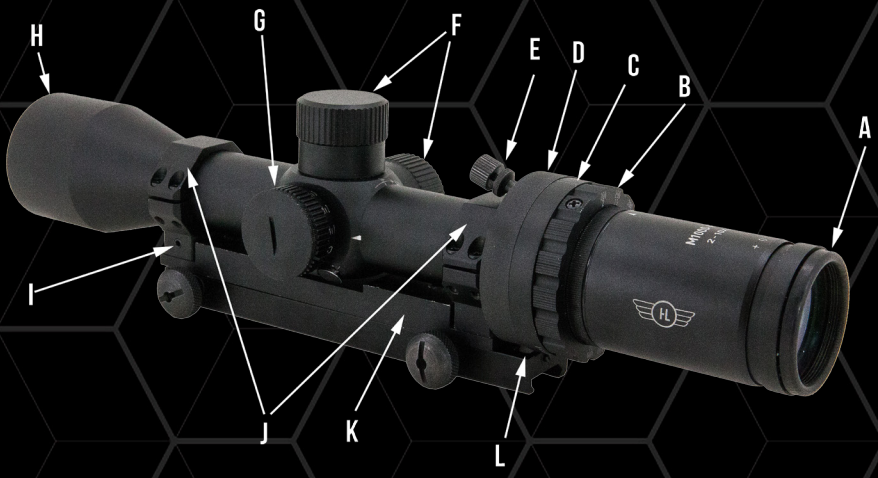
QUICK START GUIDE

ART OVERVIEW

Setting up the Leatherwood Auto Ranging Trajectory scope is easier than it seems. There are three steps to getting your ART Scope ready for use in the field or at the range.

1) Setting the Trajectory Cam
2) Zeroing your ART scope at the Zeroing Distance
3) Fine Tuning the Cam Setting

Nomenclature



A) Eyepiece; **B)** Range Ring; **C)** Calibration Ring; **D)** Trajectory Cam; **E)** Cam Braking Screw; **F)** Adjustment Turrets; **G)** Rheostat; **H)** Objective Lens; **I)** External Windage Adjustment; **J)** Scope Rings; **K)** Mount Cradle; **L)** Cam Roller

STEP 1: SETTING THE CAM

Setting the Trajectory Cam for Commercial Loads

After selecting your load of commercial ammunition, set the Trajectory Cam to match this load.

1. Find the code number of your load on the M1000-PRO Standard Cartridge Chart on page 8 of the Quick Start Guide. If your cartridge is not listed, refer to Setting The Trajectory Cam for Custom Loads on the next page.

2. Loosen the thumbscrew slightly on the Calibration Ring (C) and free the Calibration Ring from the Trajectory Cam (D).

3. Rotate the Calibration Ring (C) until the small arrow on the Trajectory Cam (D) matches code number of your load on the Calibration Ring (C).

4. Re-tighten the thumbscrew on the Calibration Ring (C).

5. Push the two pins on the Range Ring (B) firmly into the Calibration Ring (C). Make sure that the thumb tabs on the Calibration Ring (C) and Range Ring (B) align.

WARNING: Do not loosen the screw on the Trajectory Cam (D). This is a guide screw used to secure the Trajectory Cam (D).

STEP 1: SETTING THE CAM (CONTINUED)

Setting the Trajectory Cam for Custom Loads

The ART Trajectory Cam Setting chart in the user manual indicates the amount of MOA adjustment that each cam setting provides at various distances. Compare the bullet path of your load to the Trajectory Cam setting drop data using information from ammunition manufacturers' websites, a ballistics calculator or the DOPE (data of previous engagement) data in your rifle log book.

1. Determine the maximum effective range or longest distance that you will be using

2. Compare the DOPE data of your rifle or the ballistics data computed with a ballistic calculator with the Trajectory Cam Setting Chart. Your data should reflect a zero at the zeroing distance. The zeroing distance is the minimum range indicated on the Range Ring (B) of your ART scope.

3. Find the cam setting that most closely matches the DOPE at your maximum effective range.

Set the Trajectory Cam (D) using the Setting The Trajectory Cam for Commercial Loads instructions.

NOTE: Unless you are using a caliber specific Trajectory Cam (D), there will not be a cam setting that perfectly matches the trajectory of your caliber at all ranges. Look for the setting that best fits your DOPE or ballistics data at the ranges you will be most commonly shooting at.

STEP 2: ZEROING

Sighting in the ART scope at the Zeroing Distance

The zeroing distance of the M1000-PRO is 200 yards.
The zeroing distance of the M1200-XLR is 300 meters.

You will need to sight in at the zeroing distance or use a battlesight zero for the zeroing distance in order to use the auto ranging feature.

1. Align and push the thumbtabs on the Range Ring (B) and the Calibration Ring (C) together for Auto/Range Mode.

2. Set the Trajectory Cam (D) in the lowest position. If you are using Auto/Range Mode, turn the Range Ring (B) all the way to the right. If you are in manual mode, you may use any power setting.

3. Set up a target at zeroing distance and sight in the scope using the center crosshairs. Adjust the point of impact using the elevation and windage adjustments in the usual manner.

4. When the rifle is shooting "dead-on" at the point of aim at the zeroing distance, it is properly zeroed in and ready for use.

5. (OPTIONAL) Re-index the elevation and windage turrets to your zero by loosening the 3 Allen screws on the sides of the each turret. Gently rotate each the turret so that the 0 on the turret lines up with the adjustment index. Make sure that you do not hear or feel any clicks when rotating the turret. Tighten the 3 Allen screws to lock each turret in place.

STEP 2: ZEROING (CONTINUED)

Zeroing your ART scope at Closer Distances

You can still sight the ART scope in if you do not have access to a long range.

1. Determine a distance to quick zero your ART scope. We recommend using 25 yards or meters.

2. Using your DOPE data or a ballistic calculator, determine how high your point of impact needs to be above the point of aim at the closer distance to approximate the zero at the zeroing distance.

3. Verify your zero at the zeroing distance and make the appropriate elevation and windage adjustments.

NOTE: After battle sight zeroing the ART scope, we recommend that you confirm and refine your zero at the zeroing distances.

STEP 3: FINE TUNING THE CAM SETTING

Once you have zeroed the ART scope, we recommend that you put the turrets caps on and only use the cam for trajectory compensation.

By using this process to fine tune the cam setting, you will set the point of impact within one to two MOA of the point of aim for most ranges.

1. Engage Auto-Range mode and confirm the zero at the zeroing distance.

2. Determine the maximum effective distance that you will be using. Set up one or more targets at 100 yard or meter increments out to your maximum effective distance. Ideally if you are shooting out to 600 yards with the M1000-PRO, you would set up targets at 300, 400, 500, and 600 yards.

3. Range the scope in on the first target and fire a group of three rounds.

4. If the point of impact does not match the point of aim at the longer ranges, do the following:

If you are shooting **low** you will adjust the cam setting **lower** by 10-20 settings (1-2 hashmarks).

If you are shooting **high**, you will adjust the cam setting **higher** by 10-20 settings (1-2 hashmarks).

COMMON CARTRIDGE CHARTS

ART M1000-PRO COMMON CARTRIDGE CHART

Caliber	B.C. /M.V.	100Y	200Y	300Y	400Y	500Y	600Y	700Y	800Y	900Y	1000Y	Cam Setting
55gr .223	.255 / 3240	+1.3	0	-2.2	-5.1	-8.8	-13.5	-19.4	-26.9	-36.2	-47.1	380
62gr .223	.304 / 3000	+1.7	0	-2.5	-5.5	-9.3	-13.8	-19.4	-26.3	-34.5	-44.3	380
77gr .223	.372 / 2750	+2.0	0	-2.8	-6.1	-10.1	-14.7	-20.1	-26.6	-34.1	-42.9	390
103gr .243	.512 / 3050	+1.3	0	-2.0	-4.3	-6.9	-9.8	-13.1	-16.7	-20.7	-25.3	450
123gr 6.5 Grendel	.506 / 2580	+2.2	0	-2.9	-6.3	-10.1	-14.4	-19.2	-24.6	-30.8	-37.6	340
140gr 6.5 Creedmoor	.580 / 2700	+1.8	0	-2.5	-5.5	-8.7	-12.3	-16.2	-20.6	-25.4	-30.8	390
143gr 6.5 Creedmoor	.620 / 2700	+1.8	0	-2.5	-5.4	-8.5	-12.0	-15.8	-19.9	-24.5	-29.6	410
130gr .270	.409 / 3060	+1.4	0	-2.1	-4.6	-7.5	-10.8	-14.7	-19.1	-24.3	-30.3	420
150gr .270	.462 / 2840	+1.7	0	-2.4	-5.2	-8.4	-12.1	-16.2	-20.9	-26.3	-32.4	390
139gr 7mm	.486 / 3100	+1.3	0	-1.9	-4.2	-6.8	-9.7	-12.9	-16.6	-20.7	-25.3	430
160gr 30-30	.330 / 2400	+3.0	0	-4.0	-8.9	-14.8	-21.9	-30.4	-40.3	-51.7	-64.6	270
168gr .308	.475 / 2700	+1.9	0	-2.7	-6.0	-9.7	-13.9	-18.7	-24.3	-30.7	-38.0	360
175gr .308	.505 / 2600	+2.2	0	-2.9	-6.2	-9.9	-14.2	-18.9	-24.2	-30.3	-37.0	370
150gr 30-06	.415 / 3000	+1.5	0	-2.2	-4.8	-7.8	-11.3	-15.2	-19.8	-25.2	-31.3	390
165gr 30-06	.447 / 2960	+1.5	0	-2.2	-4.8	-7.8	-11.2	-15.0	-19.4	-24.5	-30.2	390
168gr 30-06	.473 / 2800	+1.8	0	-2.5	-5.3	-8.6	-12.3	-16.5	-21.3	-26.7	-32.8	400
180gr 300 Win Mag	.480 / 3130	+1.3	0	-1.9	-4.1	-6.7	-9.5	-12.7	-16.3	-20.4	-25.0	430
250gr .338 Win Mag	.473 / 2660	+2.1	0	-2.8	-6.0	-9.7	-13.9	-18.6	-24.0	-30.1	-37.0	350
300gr .338 Lapua Mag	.8 / 2650	+1.9	0	-2.5	-5.3	-8.3	-11.5	-15.0	-18.8	-22.8	-27.1	400
750gr 50bmg	1.050 / 2820	+1.5	0	-2.1	-4.4	-6.9	-9.5	-12.2	-15.1	-18.2	-21.4	470

ART M1200-XLR COMMON CARTRIDGE CHART

Caliber	B.C. /M.V.	100M	300M	400M	500M	600M	700M	800M	900M	1000M	1100M	1200M	Cam Setting
55gr .223	.255 / 3240	+4.5	0	-3.4	-7.8	-13.6	-21.1	-30.6	-42.2	-56.0	-71.8	-89.7	370
62gr .223	.304 / 3000	+5.1	0	-3.6	-8.0	-13.5	-20.4	-29.0	-39.3	-51.4	-65.3	-81.0	370
77gr .223	.372 / 2750	+6.0	0	-3.8	-8.4	-13.9	-20.5	-28.4	-37.7	-48.4	-60.7	-74.5	350
103gr .243	.512 / 3050	+4.1	0	-2.6	-5.6	-8.9	-12.7	-17.0	-21.8	-27.4	-33.7	-40.9	560
123gr 6.5 Grendel	.506 / 2580	+6.3	0	-3.8	-8.2	-13.1	-18.8	-25.2	-32.6	-40.9	-50.4	-60.9	400
140gr 6.5 Creedmoor	.580 / 2700	+5.5	0	-3.3	-6.9	-11.0	-15.6	-20.8	-26.5	-32.9	-40.1	-48.2	510
143gr 6.5 Creedmoor	.620 / 2700	+5.4	0	-3.2	-6.8	-10.7	-15.1	-20.0	-25.4	-31.4	-38.0	-45.5	520
130gr .270	.409 / 3060	+4.3	0	-2.8	-6.2	-10.1	-14.7	-20.1	-26.4	-33.9	-42.6	-52.7	490
150gr .270	.462 / 2840	+5.1	0	-3.2	-6.9	-11.1	-16.0	-21.6	-28.1	-35.6	-44.2	-54.0	470
139gr 7mm	.486 / 3100	+3.9	0	-2.6	-5.5	-8.8	-12.6	-17.0	-21.9	-27.6	-34.1	-41.6	580
168gr .308	.475 / 2700	+5.7	0	-3.5	-7.6	-12.3	-17.6	-23.8	-30.9	-39.0	-48.3	-58.8	430
175gr .308	.505 / 2600	+6.2	0	-3.7	-8.0	-12.9	-18.5	-24.8	-32.1	-40.3	-49.6	-60.0	400
150gr 30-06	.415 / 3000	+4.5	0	-3.0	-6.4	-10.5	-15.2	-20.8	-27.3	-35.0	-43.9	-54.1	490
165gr 30-06	.447 / 2960	+4.6	0	-2.9	-6.4	-10.3	-14.9	-20.1	-26.3	-33.4	-41.6	-51.0	510
168gr 30-06	.473 / 2800	+5.2	0	-3.3	-7.0	-11.3	-16.3	-21.9	-28.5	-36.0	-44.6	-54.4	470
180gr 300 Win Mag	.480 / 3130	+3.9	0	-2.5	-5.4	-8.7	-12.5	-16.7	-21.6	-27.3	-33.8	-41.2	580
250gr .338 Win Mag	.473 / 2660	+6.0	0	-3.7	-7.9	-12.7	-18.3	-24.7	-32.1	-40.6	-50.2	-61.0	420
300gr .338 Lapua Mag	.8 / 2650	+5.4	0	-3.1	-6.5	-10.1	-14.1	-18.4	-23.0	-28.1	-33.5	-39.4	540
750gr 50bmg	1.050 / 2820	+4.4	0	-2.5	-5.3	-8.2	-11.3	-14.6	-18.1	-21.7	-25.6	-29.7	660

COMMON CARTRIDGE CHARTS

The common cartridge charts provide an initial cam setting as a starting point for various calibers and weights.

Even if the muzzle velocity of your rifle or the bullet coefficient of your round differs from that listed in the chart, you can use the initial cam setting and follow Step 3 to fine the cam setting to your setup.

Additional Resources:
We have created additional resources for you to refer to when setting up your ART scope, including more detailed common caliber charts, instructional videos, and PDF user manuals. These are all available on the Hi-Lux website.

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