



RAVIN

ADJUSTABLE TURRET SCOPE USER MANUAL



WHY RAVIN?

Congratulations on the purchase of the Ravin® Adjustable Turret Scope. Your Adjustable Turret Scope is designed to accurately adjust your scope from 20 yards to approximately 100 yards or more (depending on the ballistic characteristics of your bow) with a single rotation of the elevation turret dial.

By no means is this device or instruction manual intended to encourage people to hunt with a crossbow at extreme ranges. Every shooter must determine his or her effective range based on the animal, the weather conditions, and their skills as a shooter. This (along with precise elevation numbers) can only be determined on the practice range by the shooter. Shooting long range crossbows can be fun and rewarding but learn and know your ethical limits.



SECTION 1 – GENERAL SAFETY INSTRUCTIONS FOR YOUR RAVIN CROSSBOW

Whether you are an experienced crossbow shooter or have never handled one before, **CAREFULLY READ THE ENTIRE RAVIN CROSSBOW MANUAL** and its warnings before using your Ravin Crossbow or installing the Ravin Adjustable Turret Scope. It explains your Ravin Crossbow's operation, handling and warns of the potential danger, including property damage, serious personal injury or death that can result from using it in an unsafe manner. We want you to shoot your Ravin Crossbow safely.

Your safety and the safety of others requires that you always remain aware of the danger inherent in handling your Ravin Crossbow. You are responsible for safely operating your Ravin Crossbow.

Your Ravin Crossbow is a precision weapon engineered to work within the tolerances and designs of genuine Ravin -branded components and accessories (including, arrows, nocks, bowstring, and cables). To achieve the full potential of your Ravin Crossbow it is essential that you use only Ravin -branded components and accessories. Use of non-Ravin components and accessories may cause the system to not operate as designed, potentially resulting in an unsafe condition that could lead to serious injury or death and void your warranty.

Product registration is for updates and convenience. Unless you register your product, we will be unable to send you important updates about your Ravin Crossbow. Please register your Ravin Crossbow online at www.ravincrossbows.com/support/register.

DANGER

SERIOUS INJURY CAN RESULT FROM DISCHARGING YOUR RAVIN CROSSBOW WITH ANY PART OF YOUR BODY IN THE RELEASE PATH OF THE BOWSTRING. TO AVOID POSSIBLE FINGER AMPUTATION, ALWAYS KEEP FINGERS OUT OF THE BOWSTRING PATH AND BELOW THE FINGER GUARD.

WARNING

TO MINIMIZE RISK OF DEATH OR SERIOUS INJURY WHEN SHOOTING YOUR RAVIN CROSSBOW:

- FOLLOW THE SAFETY ADVICE AND INSTRUCTIONS IN THIS MANUAL.
- ALWAYS WEAR SAFETY GLASSES.
- NEVER LOOK AT THE SUN THROUGH THE SCOPE – PERMANENT EYE DAMAGE CAN OCCUR.
- NEVER MOVE THE SAFETY TO THE FIRE POSITION UNTIL YOU ARE READY TO FIRE YOUR RAVIN CROSSBOW.
- DO NOT PUT YOUR FINGER ON THE TRIGGER UNTIL YOU ARE READY TO FIRE YOUR RAVIN CROSSBOW.
- KNOW YOUR INTENDED TARGET AND WHAT IS BEYOND IT BEFORE PULLING YOUR TRIGGER. AN ARROW CAN CAUSE DEATH OR SERIOUS INJURY EVEN BEYOND ITS EFFECTIVE HUNTING RANGE.

- **BE CERTAIN YOUR BACKSTOP IS ADEQUATE WHEN TARGET SHOOTING.**
- **ALWAYS KEEP YOUR LOADED RAVIN CROSSBOW POINTED TOWARD THE TARGET. ACCIDENTALLY POINTING IT IN THE DIRECTION OF OTHERS CAN CAUSE DEATH OR SERIOUS INJURY IN THE EVENT OF ACCIDENTAL DISCHARGE.**

SECTION 2 - MOUNTING THE SCOPE

We highly recommended that you have your scope mounted at your local pro shop. If you elect to mount the scope yourself, please use the following procedure.

When mounting the Adjustable Turret Scope to a Ravin Crossbow you must use the Offset Scope Ring Mount to achieve correct eye relief. The directions below are specific to the Offset Scope Ring Mount for use on a Ravin Crossbow. The Adjustable Turret Scope can be mounted with other 30mm scope rings if your scope rail is long enough to achieve the proper eye relief.

1. Remove the six screws from each top ring and remove the top rings.
2. Attach scope ring base on the rail approximately in the positions shown, considering proper eye relief of approximately 2.75" - 3.75" from your eye to the eyepiece when holding your Ravin Crossbow in a shooting position. Lightly snug up the 2 nuts on the scope ring base so you can still adjust them on the rail (**Figure 1**).
3. Lay the scope into the ring bases. Place the top rings on the ring bases so the scope is surrounded (**Figure 2**). Lightly snug up the screws on the top rings so you can still freely move the scope in the rings.
4. Before tightening the rings, look through the scope in your normal shooting position. Adjust the scope (forward or backward) until you find the furthest point forward to ensure proper eye relief (at least 2.75" from your eye) that allows you to see a full field of view. You may need to loosen the 2 nuts and adjust the scope ring base to achieve proper eye relief. Tighten each scope ring base nut to 40 in.-lbs.
5. Position your Ravin Crossbow as level as possible. Place a level on the limb mounts to confirm your Ravin Crossbow limbs are level (**Figure 3**).
6. Loosen the 3 set screws on the side of the elevation turret dial (**Figure 4**). Remove the elevation turret

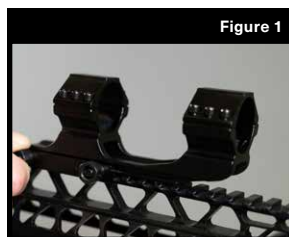


Figure 1



Figure 2



Figure 3



Figure 4

dial and place a level on the elevation turret. Rotate the scope in the rings until it is level with your limb mounts (**Figure 5**). The horizontal reticle markings should be parallel with your Ravin Crossbow limbs.

7. Tighten the top ring screws, alternating between screws, while keeping an eye on your scope levels. Keep slightly tightening and alternating from front to back and torque to 30 in.-lbs. Over-tightening the mounting rings will damage the scope and void the warranty!
8. The elevation turret dial is uninstalled for Section 3 – Sighting in the Scope. If you are proceeding with Section 3 set the elevation turret dial aside. Otherwise reinstall the elevation turret dial and lightly tighten the set screws.



SECTION 3 - OCULAR LENS ADJUSTMENT

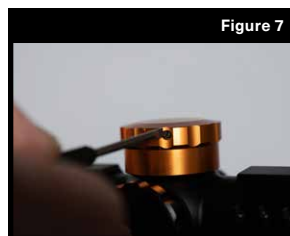
Adjust the ocular lens on the scope to match your eye characteristics.

1. Look through the eye piece at an object at a normal shooting distance of perhaps 30 yards away.
2. If the reticle and the object are not sharply defined, look through the scope and rotate the eye piece at the rear of the scope (either direction) to adjust the focus. Continue to adjust the lens until the reticle is clear and sharp.

SECTION 4 - ZEROING

Zeroing your scope involves adjusting the point of aim (POA) to match with the point of impact (POI).

1. Choose a place to shoot your Ravin Crossbow that is safe.
2. Locate a 20 yard shooting lane with a backstop. A steady shooting bench or bipod is recommended when zeroing your Ravin Crossbow. Place a target in front of the backstop.
3. Remove the protective cap from the windage adjustment (**Figure 6**). Loosen the 3 set screws on the elevation adjustment dial and remove the dial (**Figure 7**).
4. Cock and load your Ravin Crossbow per the Instruction Manual. Pick a point of aim on the target and take a shot. If the POI is higher than the point of aim, rotate the elevation adjustment



dial clockwise or rotate in counterclockwise if it is lower. Make the adjustments small to avoid missing your target during follow up shots. If the POI is left or right, rotate the windage turret as marked.

5. Once the point of impact is the same as the point of aim you have now zeroed the scope!
6. Reinstall the windage turret cover (**Figure 8**). Reinstalling the elevation turret dial is a two-part process. First, make sure the set screws are backed out (**Figure 9**) and place the dial on the turret. Next, rotate the dial clockwise until rotation stops at the internal stop and tighten the 3 set screws (**Figure 10**).
7. As with all weapons (rifles, bows and crossbows), after extended periods of storage or travel it is wise to verify the point of impact.



Figure 8



Figure 9

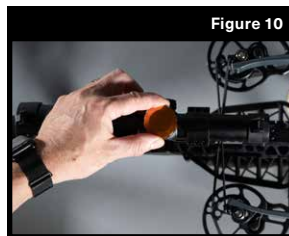


Figure 10

SECTION 5 - YARDAGE TAPES

There are several practical ways to determine arrow drop for the Adjustable Turret Scope. The first way is to use the supplied yardage tapes that wrap around the barrel of the elevation turret (**Figure 11**). These are supplied in 2 FPS increments along with a numbered increment tape and blank tapes. We suggest starting with the tape closest to the advertised speed of your Ravin Crossbow (see chart below).

Model	FPS
R9	390
R10/R26	400
R15	425
R20/R29	430
R29X	450
R500/R500E	500

The tape must be installed so that the 20-yard mark on the tape aligns with the indicator mark on the scope tube just below the dial (**Figure 12**). THE STANDARD TAPES WILL GET THE SHOT CLOSE. It will be necessary to shoot several distances on the tape (preferably short, medium, and maximum yardages) to confirm the tape selection. The tape accuracy will vary depending on the arrow characteristics, elevation, weather, and a host of other variables. It may be necessary to use a tape that is a faster/slower FPS than the advertised speed due to the variance of speeds in each Ravin Crossbow. A second option to determine arrow drop is the manual method, or "shooting them in". Simply install one of the two provided



Figure 11



Figure 12



Figure 13

blank tapes on the barrel of the dial, and then sight in at the yardages that you want to shoot. At each yardage, simply make a mark on the tape with a fine tip permanent marker (**Figure 13**). This is the most accurate way to have marks for your shooting configuration.

SECTION 6 - CALIBRATING THE ADJUSTABLE TURRET SCOPE

1. This will determine if the tape you are using is the correct speed for your Ravin Crossbow. Set-up at 50 yards and turn the elevation turret to the 50-yard position (**Figure 14**). If you choose a blank tape simply adjust the elevation turret dial to establish all necessary ranges and mark your tape.
2. Choose a place to shoot your Ravin Crossbow that is safe.
3. A steady shooting bench or bipod is highly recommended when sighting in your Ravin Crossbow. Place a target in front of the backstop.
4. Cock and load your Ravin Crossbow per the Instruction Manual. Pick a point of aim on the target and take a shot.
5. If you are shooting low of your point of aim, this means your crossbow is shooting slower than your installed tape and you must replace it with the next slower tape (this is more noticeable at the longer ranges). If you are shooting high of your point of aim at other ranges, this means your crossbow is faster than your installed tape and you must replace it with the next faster tape.
6. Rotate the elevation turret clockwise to the stop (20 yard zero). Remove the existing yardage tape and install a new one. It is recommended to shoot at 20 yards confirming you are still zeroed before shooting the other ranges.
7. Repeat this process until you have established the correct tape for your Ravin Crossbow.



Figure 14

SECTION 7 - ACCURATE SHOOTING

Shooting a crossbow (any crossbow) at extended range is difficult and requires extensive practice and preparation. A good rule of thumb (based very roughly on time of flight) is that shooting a crossbow at extended range is similar to shooting a rifle at long range; only at 1/10th the range. In other words, shooting a crossbow at 100 yards is similar to shooting a rifle at 1000 yards. Just like long-range rifles, extraordinary preparation of both the weapon and projectile are required to get good accuracy. Additionally, very precise distance measurements, and more importantly, wind estimation is required. It is very possible to get several feet of error, simply by mis-estimating the wind, or having the range off by a couple of yards.

HINTS FOR LONG-RANGE SHOOTING:

- **Wind:** Try and pick periods of low and steady wind for practicing. Gusty wind is hard to predict and can have a large impact on both horizontal and vertical trajectory. It is very useful to have wind flags on the range for reference.
- **Shooting Position:** Build an absolutely stable shooting position. Some people use sandbags on the front and rear of the bow, others have good luck with a bi-pod and bag, and others make good use of a Lead Sled-type device. All of them should be used on a solid table or bench (or prone off the ground). Make sure that the crossbow recoils in a consistent manner.
- **Scope Parallax:** All scopes have some parallax. Make sure that your eye is in a consistent position behind the ocular lens. This will create a consistent sight picture and minimize the impact of parallax. For maximum accuracy, consider a scope that has parallax adjustment built in.
- **Environmental:** Arrow trajectory at long range is impacted by altitude, barometric pressure, temperature, and wind. Pay attention to these factors, especially if you are traveling.

SECTION 8 - ILLUMINATED RETICLE

Your scope is equipped with a selectable red or green illuminated reticle. The illumination rheostat is located on the left side of the scope. High brightness settings are recommended for daytime use when ambient light is bright. At times of low light such as dawn or dusk, a lower brightness setting is recommended. The lower settings may not be visible during bright daylight. Reticles are black in the "R" or "G" position if the battery is low or defective.

Ravin illuminated scope models use a CR2032 coin-style lithium battery. To insert a battery, unscrew the battery compartment cap on the top of the rheostat adjustment turret and insert a new battery "+" side up. Warning: Always hold onto the lower half of the rheostat when loosening or tightening the battery compartment cap to ensure no damage is done.

SECTION 9 - CARE AND MAINTENANCE

Your scope is a precision instrument that deserves a high level of care. Do not attempt to disassemble or clean the scope internally. Store the scope in a dry

environment. Never store the scope in places such as vehicles on hot days. High temperatures can adversely affect the lubricants and sealants.

Keep the protective lens covers in place when the scope is not in use. The external lens coatings should occasionally be wiped clean with the lens cloth provided or an optical quality lens paper. Remove any external dirt with a soft brush to avoid scratching the lens.

Unnecessary rubbing or use of a coarse cloth may cause permanent damage to lens coatings. To clean the external surface of the scope it is recommended that a cleaning cloth is used to protect the scope against corrosion.

To obtain service please contact our Service Department at: Ravin Crossbows, LLC | 3535 Tower Ave. | Superior, WI 54880 | Phone: 715-718-3574 | rwnsales@velocity-outdoor.com

SECTION 10 - LIMITED WARRANTY

Congratulations on the purchase of your new Ravin Adjustable Turret Scope for your Ravin Crossbow from Ravin Crossbows, LLC ("Ravin"). By using the Ravin Adjustable Turret Scope you are agreeing to be bound by the terms of this Limited Warranty.

With proper usage and care you will enjoy many years of use. It is important to follow proper safety, assembly and equipment usage procedures. This information is located in this manual. Serious injuries to yourself or others, damage to your Ravin Adjustable Turret Scope, or poor performance from your Ravin Adjustable Turret Scope could result from failure to thoroughly read, understand, and follow these instructions. If any part of this manual is unclear to you, further information is available at www.ravincrossbows.com/support or you can contact the Service Department at 715-718-3574.

Two-Year Non-Transferable Limited Warranty

New Ravin Adjustable Turret Scopes are covered under a two-year limited warranty against defects in materials and workmanship, when used normally in accordance with our published instructions and guidelines. Our liability extends to parts, labor and return transportation to the customer and is non-transferable. This limited warranty does not cover transportation of the Ravin Adjustable Turret Scope to our Service Center; damage caused by abuse or neglect, dry-firing your Ravin Crossbow, failure to follow safety advice and usage instructions in the manual, modification or failure to perform normal maintenance; use of any components not approved by Ravin, or any other expenses or damage to property or person. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

Product Registration is for your safety and convenience. Unless you register your product, we will be unable to send you important updates about your Ravin Adjustable Turret Scope. Please register your Ravin Adjustable Turret Scope by using the enclosed registration card or online at www.ravincrossbows.com/support/register.

To obtain service: Please call for a return authorization number (RA#) prior to sending the unit and write the RA# on the outside of the package. Attach to the product your name, address, telephone number and a letter describing the problem. Carefully package and return product prepaid, clearly writing the RA# below the address. Return the unit to an authorized Service Center or directly to the factory. For a listing of authorized service centers please call the factory at the number listed below. Ravin Adjustable Turret Scopes deemed to be covered under the two-year warranty will be repaired and shipped to you at no charge. You will be responsible for the shipping charges into the service center, and possibly labor charges for repairs completed at a non-factory authorized service center. Ravin Adjustable Turret

Scopes not covered under this warranty will be subject to normal charges. We will obtain your permission before we repair your Ravin Adjustable Turret Scope if it is not covered by warranty.

For further inquiries contact the Service Department: Ravin Crossbows, LLC | 3535 Tower Ave. | Superior, WI 54880 | Phone: 715-718-3574 | rvnsales@velocity-outdoor.com

PAYMENT

Ravin accepts MasterCard, Visa or Discover credit card. Customer agrees to pay Ravin all costs incurred by it in collecting any past due account from Customer, including all court costs and attorney's fees, provided, however, if the foregoing charges exceed that rate which may be lawfully charged under applicable law, then such charges shall be calculated so as not to exceed the lawful rate.

DISCLAIMER

TO THE EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL, WRITTEN, STATUTORY, EXPRESS OR IMPLIED. RAVIN DISCLAIMS ALL STATUTORY AND IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WARRANTY OF NON-INFRINGEMENT OF THIRD-PARTY RIGHTS, AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS, TO THE EXTENT PERMITTED BY LAW. IN SO FAR AS SUCH WARRANTIES CANNOT BE DISCLAIMED, RAVIN LIMITS THE DURATION AND REMEDIES OF SUCH WARRANTIES TO THE DURATION OF THIS LIMITED WARRANTY. IN NO EVENT SHALL RAVIN BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY OR PUNITIVE DAMAGES, ARISING OUT OF OR RELATING TO ANY BREACH OF THE TERMS OF THIS LIMITED WARRANTY, AND NOTWITHSTANDING THE FAILURE OF ANY AGREED OR OTHER REMEDY OF ITS ESSENTIAL PURPOSE.

LIMITATIONS OF LIABILITY

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY, AND THE SOLE LIABILITY OF RAVIN FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES, ARISING OUT OF OR RELATING TO ANY BREACH OF THE TERMS OF THIS LIMITED WARRANTY, SHALL NOT EXCEED THE PRICE PAID FOR THE RAVIN ADJUSTABLE TURRET SCOPE.

Any cause of action you may have with respect to the terms of this Limited Warranty must be brought within one (1) year of when the cause of action arose. If any portion of this Limited Warranty is held to be invalid, such holding shall not invalidate the other provisions. This Limited Warranty constitutes the entire agreement between you and Ravin, and all promises, representations, understandings, warranties and agreements with reference to the subject matter hereof and inducements for purchasing the Ravin Crossbow relied upon by you are expressed herein. The validity, performance and construction of this Limited Warranty shall be governed and interpreted in accordance with the laws of Wisconsin. The Parties hereby consent and submit to the exclusive jurisdiction of any of the federal or state courts located in the State of Wisconsin with respect to the enforcement of any rights or remedies hereunder.

FIELD NOTES





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