

Appendix B

Setting up a New Rifle or Sight/Scope Install

Clean your new rifle.

- New rifles often have packing grease and too much or not enough lubricant.
- Manufacturing processes can leave metal filings in the bore and trigger mechanisms.

Break in your new rifle

- Shooting many rounds down a new bore can damage it and reduce future accuracy.
- Often a manufacturer provides a break-in process—follow that.
 - **You will need to take items to the range.**
 - **a cleaning rod, jag and loop, bore cleaner and patches.**
- If no information provided, research on manufacturer website.

Firearm Fit

- It is a critical component to how accurate you can be as a shooter.
- If your firearm fits, you'll shoot better.
- 3 components
 - length of pull
 - comb height
 - eye relief.

When your length of pull and comb height are correct, achieving proper eye relief in your optic should be easy and natural with no need to continuously adjust where your face rests on the stock or how you shoulder your firearm.

Sighting in a new rifle

- Ensure sights/scope are securely fastened to the rifle.
- Establish a solid shooting position.
 - Solid rest or shooting bag required.
 - At a solid bench where you can sit
- Establish a target at close range—25 to 50 yards.
- Use targets with grids.
- Bore Sighting has 3 methods provide an approximate point of impact of an unloaded rifle.
 - Visual
 - Remove bolt and look down the bore to a fixed point (target center)
 - Adjust sights/scope to that point.
 - Repeat a few times to allow for movement on rest.

- Laser Bore
 - Insert in bore.
 - Adjust sights/scope to that projected dot.
- Magnetic laser
 - Attach to the barrel—doesn't work on tapered barrel.
 - Adjust sights/scope to that projected dot.
- **Load one round and fire one shot at the short distance**
 - Depending on the caliber, you must decide whether to adjust sights/scope or not.
 - If shot was off, readjust sights/scope and fire second shot.
 - If close to center of the target, you may move to longer range.
- Fine tune sighting.
 - You should be able to get to zero at the range with 2 or 3 shots.

EXAMPLE:
1/4 MOA Scope, 100 yards with the following dials and shot grouping

Answer:
12 Clicks Down (clockwise on elevation)
8 Clicks Left (clockwise on windage)

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EXAMPLE:
3 Shot group at 100 meters with 0.1 Mil per click scope

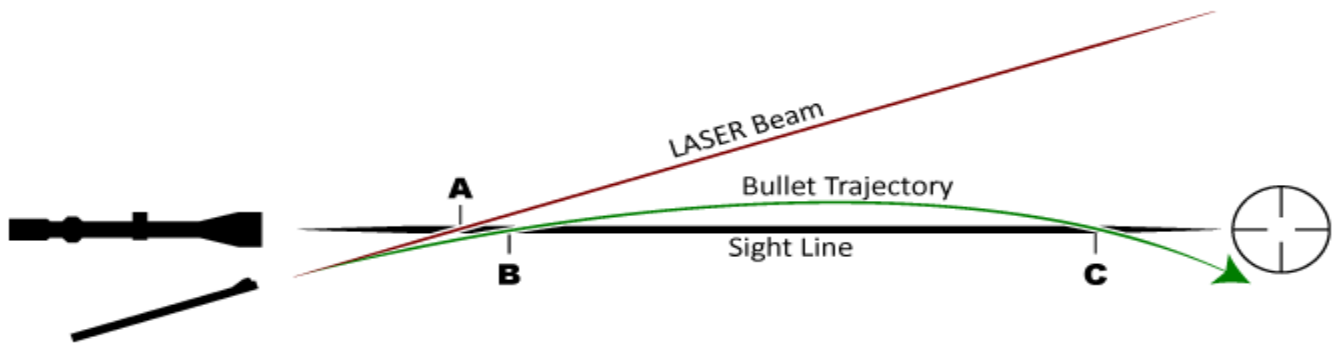
Answer:
4 Clicks Up (counterclockwise on Elevation)
6 Clicks Right (counterclockwise on windage)

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- Slipping Scales (Zeroing)
 - Once sighted in for 100 yards (or your **standard range distance**)
 - Adjust scales on scope to show "0."
 - This allows you to quickly adjust to other distances.

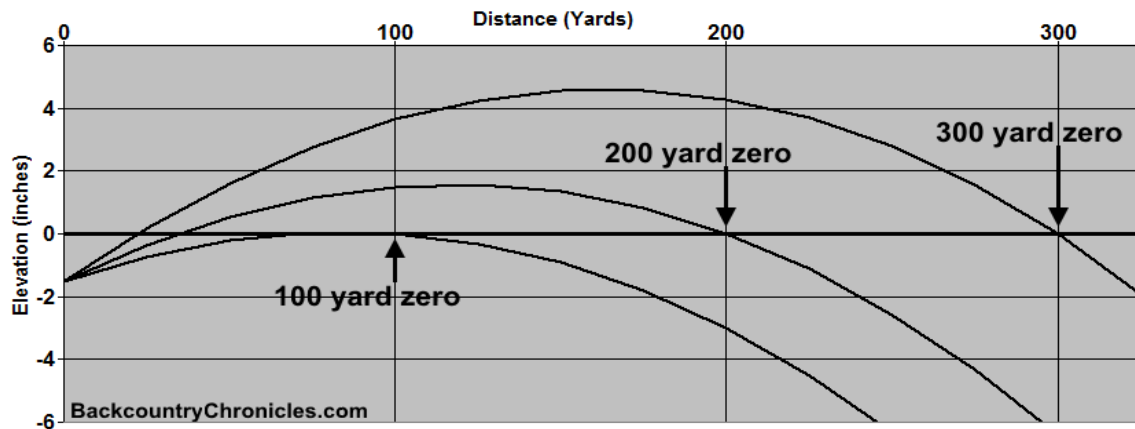
Ballistics and Bullet path and drop.

First you need to understand how your sights/scope is attached to your rifle.



Your sights are a straight line while bullet trajectory is parabolic.

The sights/scope is mounted at some fixed distance above the barrel. When the bullet leaves the barrel, it rises to the line of sight then drops. Each caliber has its own ballistic profile that is based on bullet velocity and weight. The same bullet will behave differently in a different rifle, even the same model.



Cleaning and Maintenance

Regular cleaning and maintenance of your firearm will contribute to a safe and effective shooting experience. There are many factors that determine how and when you should clean your firearm. The caliber, type of ammunition, weather and range conditions, and the number of rounds fired will all determine cleaning frequency and method.

Always follow your manufacturers cleaning and maintenance manual, as this may also impact the warranty for the firearm. Never perform any maintenance or alterations on your firearm unless you are certain you know what you are doing. You should consult with a qualified gunsmith for anything that is beyond your maintenance capabilities.

The link below will take you to some basic firearms cleaning and maintenance information.

https://www.hunter-ed.com/national/studyGuide/Firearm-Cleaning-Basics/201099_92862/