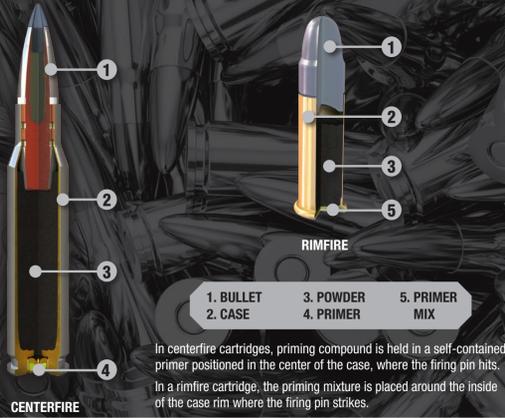


RIFLE AMMUNITION 101

ANATOMY OF A RIFLE CARTRIDGE



PARTS OF A BULLET

- NOSE**
The point or tip of a bullet. Available in soft point, round nose, polymer tip, flat nose, hollow-point or non-hollow-point.
- OGIVE**
The curved portion of a bullet forward of the bearing surface.
- CANNELURE**
A groove cut or impressed into a bullet or cartridge case.
- BASE**
Modern bullets have a flat or boat-tail base. Boat-tail bullets are tapered at the bottom for less drag in flight.
- JACKET**
The material encasing the lead core.
- CORE**
The inner section of a jacketed bullet, usually lead.
- PRESSURE RELIEF GROOVES**
Common design used to reduce chamber pressure and enhance accuracy.



PARTS OF A CASE

- A centerfire case is made up of the following:
- Mouth**
The open end of a cartridge case from which the projectile and gasses are expelled in firing.
 - Neck**
The reduced diameter cylindrical portion of a cartridge case, extending from the shoulder to the case mouth.
 - Shoulder**
The portion of the case that tapers from the wider body to the narrow neck.
 - Primer Pocket**
Area where primer is inserted. Exact tolerances in pocket depth and primer construction ensure reliable ignition.
 - Extractor Groove**
A groove cut in the side wall of a cartridge case to help get the cartridge out of chamber.
 - Head**
The end of the cartridge case in which the primer is inserted and the surface upon which the headstamp identification is imprinted.



BULLET STYLES

Although they started off as just simple lead balls, rifle projectiles have evolved dramatically over the centuries, growing into a large and diverse array of purpose-built bullets. Each design's profile, materials and features allow it to perform a specific task—target shooting, defense, competition, and more.



- BONDED TIPPED**
- Precision polymer tip
 - Consistent expansion
 - Increased ballistic coefficient for flatter trajectories



- CUP AND CORE (NON-BONDED)**
- Proven cup and core construction
 - Uniform jacket and lead core
 - Reliable accuracy and fast expansion



- BONDED SOFT POINT**
- Consistent copper jacket bonded to lead core
 - Increased weight retention
 - Large expansion
 - Deep penetration



- BOAT-TAIL HOLLOW POINT**
- Match-grade bullet
 - Tapered at the back or end of shank for less wind drag and flatter shooting
 - Accurate and consistent



- OPEN TIP MATCH**
- Match-grade bullet
 - Accurate and aerodynamic
 - Precision manufactured



- RAPIDLY EXPANDING TIPPED**
- Fast, flat-shooting and versatile
 - Wind-defying performance
 - Minimizes drag
 - Shallow penetration



- SOLID**
- Used on world's largest, most dangerous game
 - Maximum penetration and weight retention
 - Flat nose minimizes deflection



- CUP AND CORE TIPPED (NON-BONDED)**
- Cup and core design
 - Polymer tip
 - Flatter trajectories and rapid expansion on impact at longer range



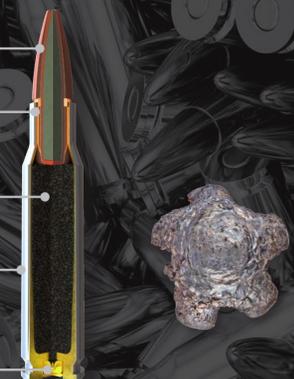
- FRANGIBLE**
- Breaks apart on impact with hard targets
 - Minimizes splash-back
 - Perfect for indoor close-range shooting



- FMJ**
- Military-style bullet
 - Does not expand
 - Jacket extends from the nose to the bottom of the bullet

GOLD DOT DUTY RIFLE

- Bullet geometry optimized for reliable feeding in AR platforms with standard or short barrels
- Jacket-to-core bonding ensures impressive weight retention through barriers as tough as auto glass
- Flash-suppressed propellants and a muzzle velocity of up to 3220 fps
- Nickel-plated brass
- Non-corrosive, non-mercuric primers



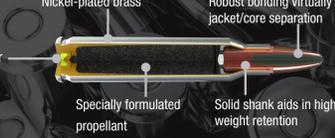
TACTICAL BONDED TIP DUTY RIFLE

- High-performance polymer tip and boat-tail design increase ballistic coefficient and improve downrange performance
- Robust bonding virtually eliminates jacket/core separation
- Solid shank drives deep penetration
- Specially formulated propellant
- Nickel-plated case
- Federal® primer



TACTICAL BONDED DUTY RIFLE

- Nickel-plated brass
- Robust bonding virtually eliminates jacket/core separation
- Federal primer
- Specially formulated propellant
- Solid shank aids in high weight retention



TACTICAL TIP MATCHKING

- Gold Medal match primer
- Low-flash propellant
- Polymer tip and boat-tail design maximize ballistic coefficient and improve feeding



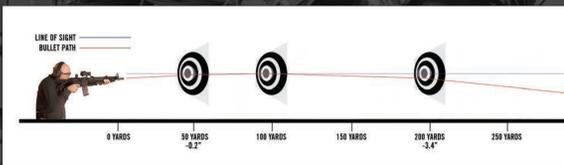
SIGHTING IN A RIFLE

Rifle precision and accuracy hinge on properly sighting in. Follow these quick, easy steps to get on target.

- Before firing a shot, check sight screws or scope mounts. Also bore-sight with a collimator to estimate the point of impact and speed the sight in process.
- Shoot from a solid rest, such as a benchrest or sand bags. Start at close range to make initial sight adjustments before verifying at longer ranges.
- From the rest, carefully squeeze off three aimed shots. The center of the resulting group of holes is the rifle's point of impact. By adjusting your

sights, you can move this point of impact to your desired target. Move open rear sights in the same direction you want the group to move. Adjust scopes following directions on the dials. Continue this process until the group is where you want it.

- Note that different ammunition might change the point of impact and necessitate re-sighting. If your rifle gets bumped or dropped, be sure to verify your point of impact.



Note: Illustration not to scale; trajectory is that of Gold Dot 223 Rem. 62-grain (2444SP) zeroed at 100 yards.

Understanding Trajectory

Trajectory is the arc a bullet follows as it leaves the firearm's muzzle. Bullets appear to rise because the barrel is angled up. The bullet's path crosses the line of sight twice—going up near the muzzle and down through the downrange zero (the distance at which the rifle is sighted in). About halfway between the muzzle and the zero, the bullet hits the highest point of its arc, then begins to drop.

Velocity and bullet design determine the steepness of the arc. Low-velocity loads with round-nose bullets, if sighted for long ranges, will have a very high mid-range trajectory—possibly high enough to cause a miss on close-range targets.

PROTOCOL PROVEN



To ensure they perform when the stakes are high, duty rifle loads go through the grueling FBI protocol. This series of tests evaluate ballistic performance benchmarks including a bullet's penetration, expansion and weight retention after passing through common barriers like clothing, wallboard and auto glass. The higher the score, the more equipped a given round is to stop the threat and minimize collateral risks. Federal and Speer duty rifle loads are some of the highest-scoring available.

308 WIN. 168 GR. TACTICAL BONDED TIP

PART NO. LE308T2	BARE GELATIN	HEAVY CLOTHING	WALLBOARD	GLASS
VELOCITY	2700	2700	2700	2700
PENETRATION	21.25"	22.50"	23.00"	18.00"
EXPANSION	0.75" DIA.	0.65" DIA.	0.75" DIA.	0.58" DIA.
RETAINED WT.	165 GRS.	165.6 GRS.	166.4 GRS.	112 GRS.

223 REM. 62 GR. GOLD DOT SP

PART NO. 2444SP	BARE GELATIN	HEAVY CLOTHING	WALLBOARD	GLASS
VELOCITY	2284	2284	2284	2284
PENETRATION	14.75"	15.00"	14.00"	12.75"
EXPANSION	0.50" DIA.	0.52" DIA.	0.51" DIA.	0.35" DIA.
RETAINED WT.	60.1 GRS.	55 GRS.	42.4 GRS.	15.2 GRS.

WORLD'S MOST POPULAR CALIBERS

No other category of ammunition includes more unique cartridges or spans a larger array in physical size than rifle ammunition. From tiny rimfires like the 17 HMR to the massive centerfires like the 500 Nitro Express, each option offers specific advantages that fill a certain niche for an individual shooter or situation.

