
FEDERAL
2020

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OUR PROMISE

It happens with every shot you take, tag you notch and target you knock down. A promise is both made and filled. Because every round is a pledge to be ready when the safety clicks. To fly straight and true. To hit hard.

It's what's at the top of our minds and bottom of our hearts here at Federal. We know how much is riding on every single cartridge that rolls off our lines, because we're shooters ourselves. Hunters. Competitors. Patriots. We share the satisfaction of bringing home wild meat to feed our families—and the peace of mind in knowing we're prepared to defend them. And, of course, we're not above wanting to see our name at the top of a leaderboard or etched into a trophy.

That's why we put so much into the products you'll see pressed between these pages. Most are proven favorites—perhaps even the loads with which you fired your first shots. Many others are altogether new products—our lifeblood. Ammunition and components that are sure to shape shooting for years to come.

We're as proud to present it all to you here as we are to be the world's No. 1 ammunition brand.

Thank you for shooting Federal.

Buy Federal Direct

You've always asked for it, and it's finally here. Now you can order hundreds of Federal products direct from our redesigned website.



Connect, Shoot, Share

We're connecting with thousands of fans every day through social media. Share your passion for all things shooting on Facebook, YouTube, Twitter and Instagram.

Federal Merchandise

You've never been able to show your Shockwave like this. We're happy to offer a wide selection of Federal-branded apparel and gear. Go to ***federalpremium.com*** to start your order.

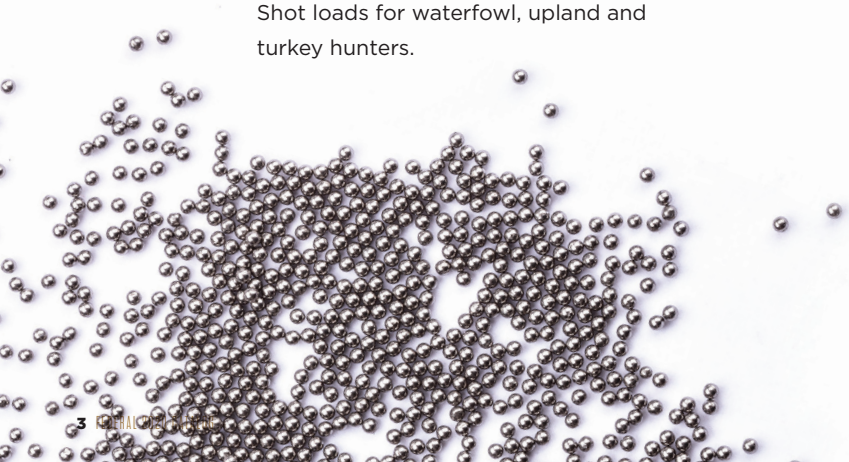


FEDERAL CUSTOM SHOP

Every shot is personal. It's just you. Your target. Your firearm. The nuances of all three come together to make every press of the trigger uniquely yours. Now there's ammunition built to match—handcrafted just for you. Introducing Federal® Custom Shop™. Each round is painstakingly handloaded to order by our team of expert engineers in our state-of-the-art workshop.

CUSTOM SHOTSHELL

Get precision payloads for any shotgun or application. Federal Custom Shop offers a full array of handloaded Tungsten Super Shot loads for waterfowl, upland and turkey hunters.

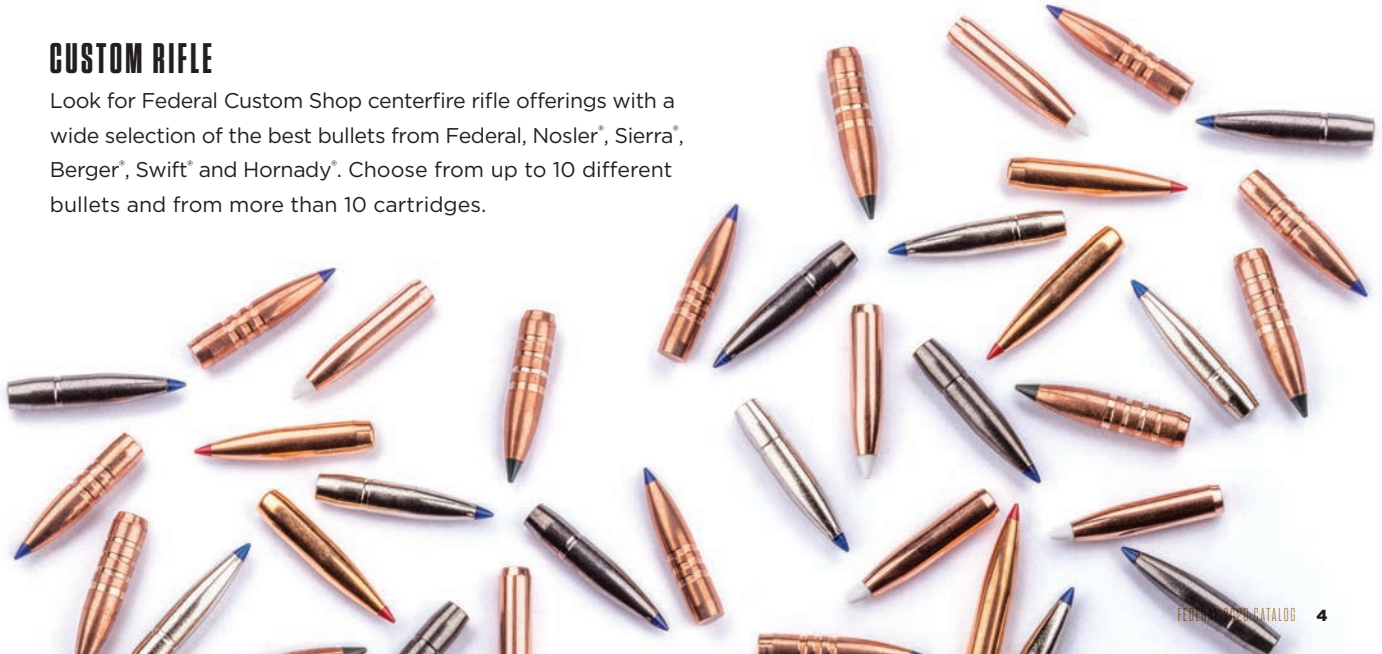


Veteran craftsmen handload Custom Shop loads with the best components for the most consistent velocity, accuracy and overall performance. Loads are hand-checked and cleaned before being custom-packed in durable packaging.



CUSTOM RIFLE

Look for Federal Custom Shop centerfire rifle offerings with a wide selection of the best bullets from Federal, Nosler®, Sierra®, Berger®, Swift® and Hornady®. Choose from up to 10 different bullets and from more than 10 cartridges.





OFFICIAL AMMUNITION OF MEATEATER

Memories and a meal are riding on every hunt. No one knows this better than MeatEater's Steven Rinella, who travels the world looking to put wild game on his plate. Federal has partnered with the conservationist, chef, author and hunter on an exclusive new line of ammunition, featuring our Trophy Copper rifle ammunition, 3rd Degree® turkey loads and all-new Federal Premium® Bismuth, shotshells that bring back the performance of lead payloads—without the heavy metal. Whichever ammunition you choose, look for Rinella's photo on the box, along with one of his own mouth-watering wild game recipes.

TROPHY® COPPER

MEDIUM GAME

DEER, ANTELOPE AND SIMILAR-SIZE ANIMALS



MEAT EATER

Bone In BBQ Wild Game Ribs Recipe

"I've been troubled by the subject of bone in BBQ wild game ribs my whole life. Boning them out for burgers takes a lot of work and yields only a small amount of meat, yet cooking them whole often results in dishes that are unchewably tough. Then this recipe came along and solved my rib problems once and for all. The rib meat is cooked on the bone, and it turns out as tender and flavorful as the finest pork ribs." – Steven Rinella

HOW TO MAKE IT

1. In a small bowl, combine all of the dry rub ingredients. (You can double or quadruple this mixture and keep it on hand for any worthy occasion.) Rub the ribs all over with the dry rub.
2. Pop the ribs into a pressure cooker. Add water to cover and cook for 20 minutes with 10 pounds of pressure. (If you don't have a pressure cooker, I'm afraid this will take a bit longer. You'll have to braise them on the stove for at least two hours, possibly more.)
3. In a small bowl, combine all the mop ingredients with a whisk. (Again, this can be doubled or quadrupled and used for anything you feel like mopping that goes on a grill.)
4. Preheat your grill on high.
5. When the ribs are tender but not falling apart, remove them from the pressure cooker. Set the ribs over direct heat on the grill to caramelize them and get some char. Close the lid to keep the heat high. Once they start to brown, mop liberally with the cider vinegar mop.
6. Remove from the grill once the sauce begins to adhere nicely and ribs have the perfect amount of char. Serve with pickles and raw onion.

For this and other great recipes, visit www.themeateater.com

INGREDIENTS

DRY RUB

1-1/2 tbsp sweet paprika
1-1/2 tbsp smoked paprika
4 tsp kosher salt
2 tsp coarsely ground black pepper
2 tsp red pepper flakes
2 tsp dark brown sugar
1 tsp garlic powder
1 tsp onion powder
1 tsp dried oregano
1 tsp ground cumin
1/2 tsp celery seed (optional)
3-1/2 lbs big game ribs (two full racks, each rack split in half lengthwise down the middle and cut into portions of 2-3 ribs)

MOP

1 cup cider vinegar
1/2 cup yellow mustard
1 tsp kosher salt



Simply the best rifle bullet made. Period.

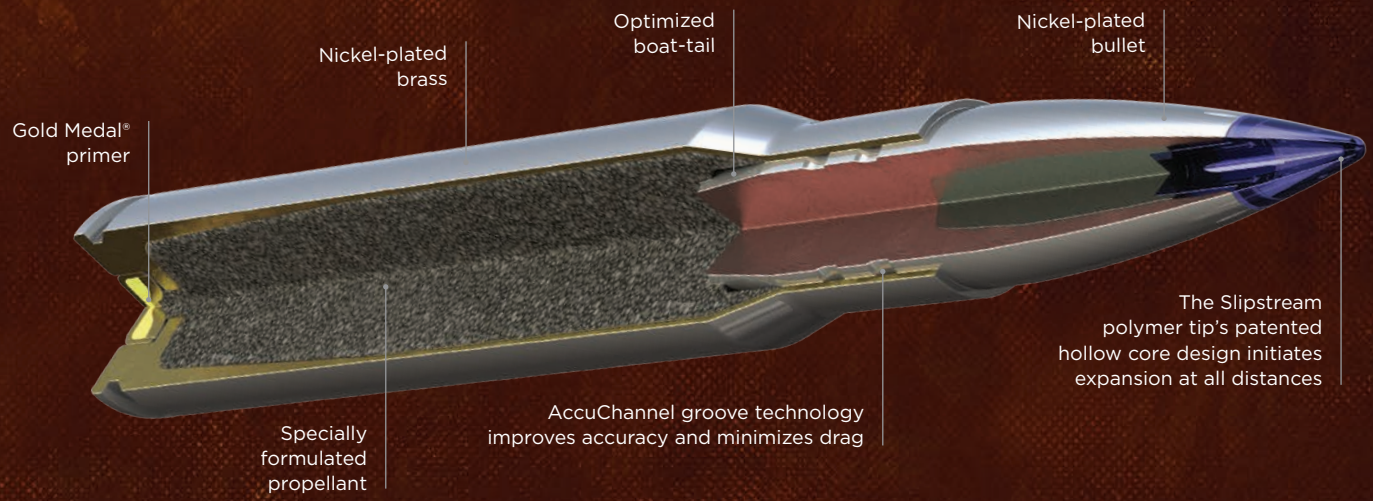


TERMINAL ASCENT NEW

Any hunt. Any range. Go beyond what you ever thought possible with new Federal Premium® Terminal Ascent™. Bonded construction penetrates deep on close targets, while the patented Slipstream® polymer tip initiates expansion at velocities 200 fps lower than comparable designs. The bullet's long, sleek profile offers an extremely high ballistic coefficient, and its AccuChannel® groove technology improves accuracy and minimizes drag. ***Now available in a full selection of long-range hunting cartridges.***



Slipstream's Secret
The Slipstream tip provides a perfectly aerodynamic meplat, yet initiates expansion at 200 fps lower velocities than comparable bullets. The secret is its hollow core, which is exposed when the tip breaks off on impact, allowing target material into the bullet nose to start the expansion process..





"Wide open country, long shots and stiff winds don't have a thing on Terminal Ascent. Nothing shoots like this."

- 22plinkster



"Terminal Ascent hits bucks hard. It's without a doubt the best bullet I've ever shot."

Sportswoman Courtney

1,200-Yard Performance
The Terminal Ascent's Slipstream polymer tip ensures proper expansion during low-velocity impact at extreme distances. In this ballistics gel block, shot at 1,200-yard velocity with P300WSMTA1, you can see where the Slipstream tip has initiated expansion and separated from the bullet immediately after entering the block, exactly as designed.



Penetration: Deep
Weight Retention: Maximum
Expansion: Controlled
Range: Maximum



Bullet upsets captured from 200-grain 300 Win. Magnum load, P300WTA1

Expansion Redefined: Lethal extreme-range bullet performance doesn't look like the 2x expansion hunters see at conventional distances—it's not supposed to. With petals that open instantly and peel back uniformly every time, the Terminal Ascent transfers more energy to the animal on impact and carves straight, deadly wound channels at all velocities.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 19-28.

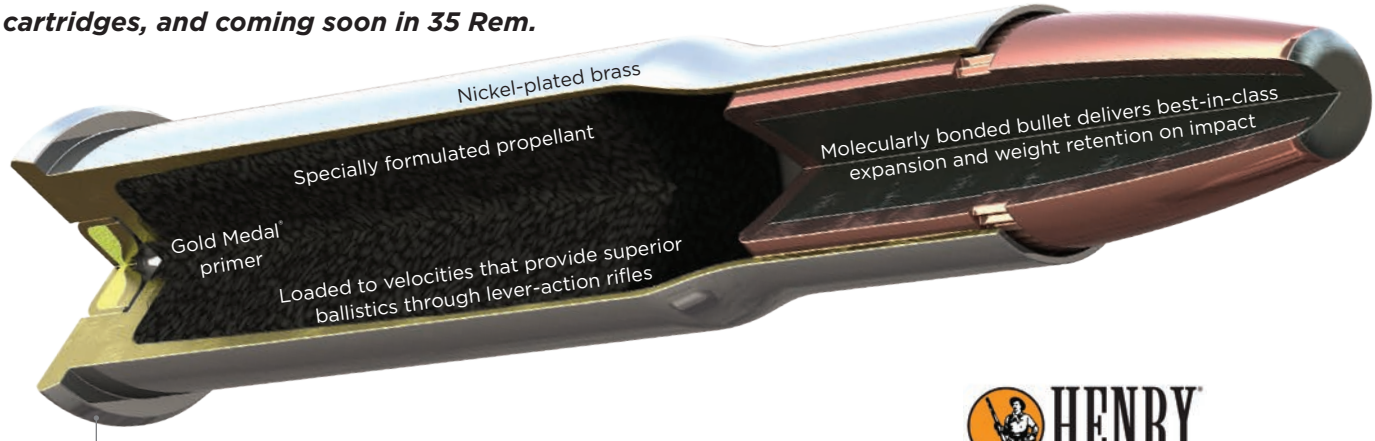


HAMMERDOWN

NEW

Make your lever-gun run like never before with the industry's only ammunition truly designed for optimal cycling and overall performance from the time-tested rifle platform. Velocities of all-new Federal Premium® HammerDown™ loads are customized to produce superior ballistics and terminal performance through lever-action barrel lengths. The construction of the molecularly bonded soft point bullets has also been adjusted for the best accuracy and expansion at those velocities. The geometry of each round's case, bullet and cartridge ensures flawless cycling through tubular magazine and typical lever-action feeding systems.

Now available in a full line of the most popular lever-action cartridges, and coming soon in 35 Rem.



Specialized patent-pending geometry improves cycling and doesn't hang up in tubular magazines and lever-action feeding systems

The Ultimate Leverage

Whether you're putting your lever-gun to work on bucks, bulls or boars, HammerDown's molecularly bonded bullets are optimized for terminal performance through lever-action barrel lengths.



HENRY

When you set out to build the best lever-action rifle ammunition, you go to the industry's leading lever-gun manufacturer. Federal is proud to have partnered with Henry Repeating Arms when developing HammerDown. Their insight into the classic firearm platform helped ensure the utmost reliability and accuracy from each and every load.

RMEF

MEATEATER





LEAD FREE BULLET

TROPHY BONDED TIP

Surgical accuracy. Terminal results. Trophy Bonded® Tip combines bonded construction and a bone-crushing solid copper shank with a boat-tail design and polymer tip that reduce wind resistance. The resulting toughness and accuracy make it a perfect choice for the full spectrum of medium and big game.

TROPHY COPPER NEW

Pinpoint precision and almost 100 percent weight retention have made Trophy® Copper the official ammunition of MeatEater. All loads in the line provide extreme accuracy and aggressive expansion. ***Now available in 280 Ackley Improved.***





NOSLER BALLISTIC TIP

Hunters demand accuracy and versatility, and Nosler® Ballistic Tip® delivers. Its polymer tip and boat-tail design maximize downrange velocity and energy, while the tapered jacket provides fast, yet controlled, expansion. It's perfect for medium game at all ranges.

TROPHY BONDED BEAR CLAW

The world's toughest game calls for its toughest bullet. A bonded jacket and core that retain more than 95 percent of the bullet's weight for deep penetration. The design's grooved shank improves accuracy across all rifle platforms. ***Available in several loads with heavy-for-caliber bullets.***





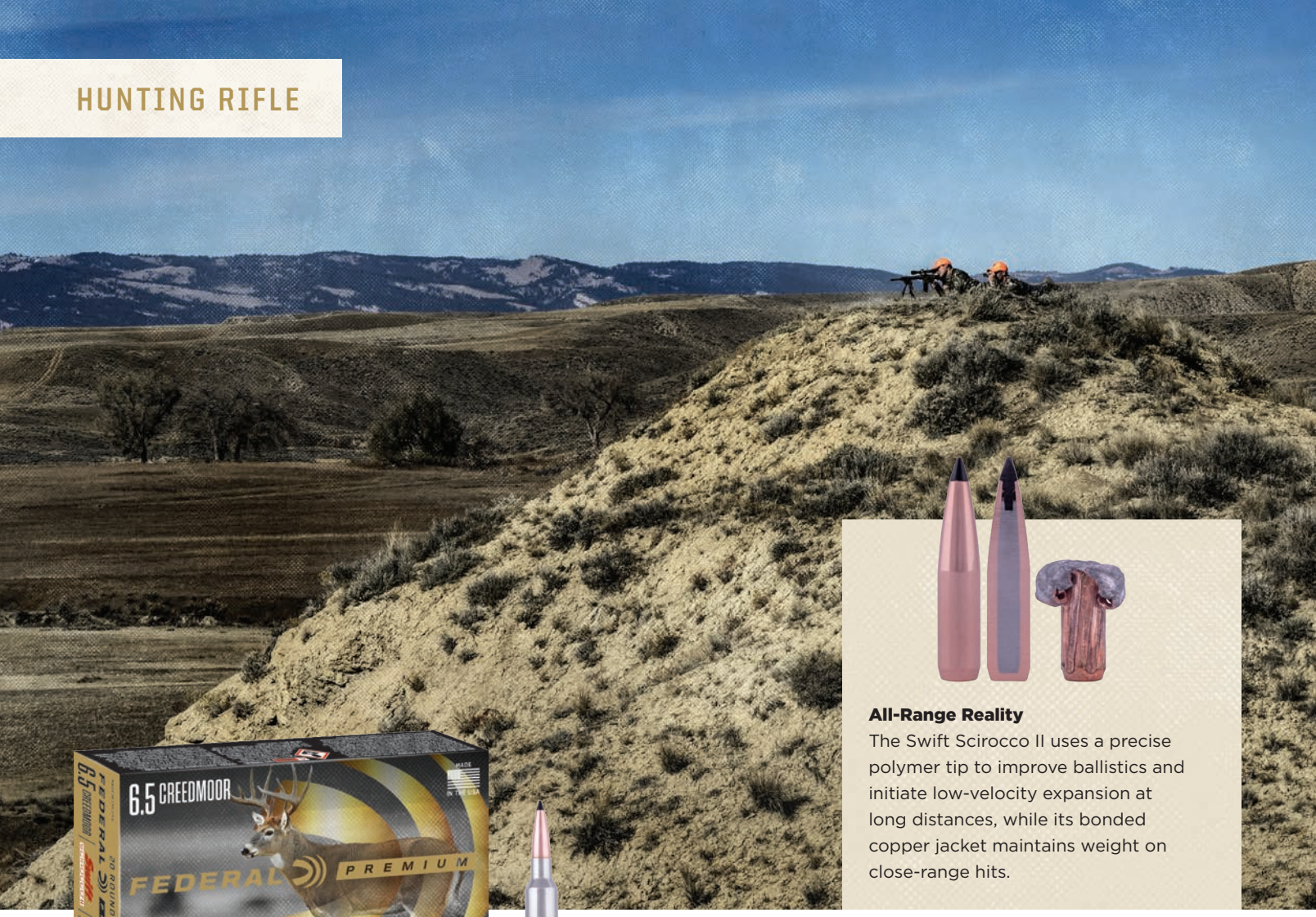
NOSLER PARTITION

The Nosler® Partition® was the first bullet loaded in the Federal Premium® line, and it continues to be a standard for consistency and reliability. Its partitioned lead core allows the front half of the bullet to mushroom on impact, but keeps the back half intact for deep penetration.

NOSLER ACCUBOND

Shrink long distances down to size. Nosler® AccuBond® rifle loads' proven bullet design pairs a precision polymer tip with a highly concentric jacket bonded to a lead core. The result is fast expansion, moderate weight retention and lethal penetration.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 19-28.



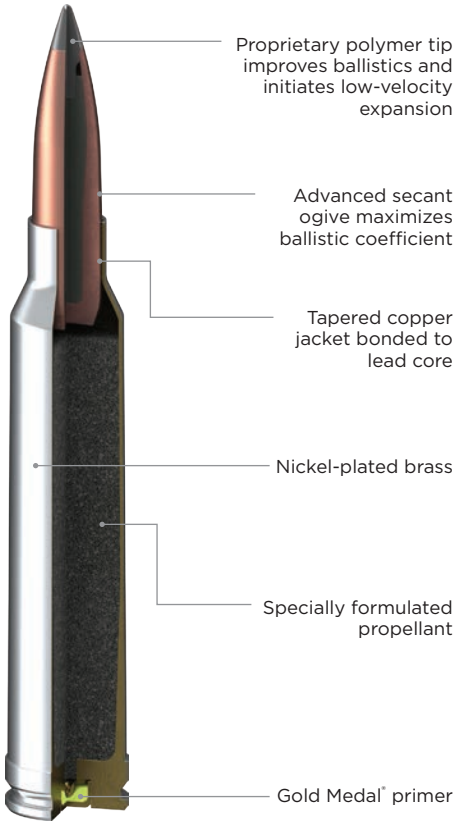
All-Range Reality
The Swift Scirocco II uses a precise polymer tip to improve ballistics and initiate low-velocity expansion at long distances, while its bonded copper jacket maintains weight on close-range hits.



SWIFT SCIROCCO II

NEW

Push effective range to new extremes while delivering a more lethal blow on impact with Federal Premium® Swift® Scirocco® II loads. The polymer-tipped bullet's streamlined design and high ballistic coefficient produce flat trajectories, while retaining more velocity and energy downrange. Aided by its polymer tip, the bonded Scirocco II expands at minimal velocities yet offers high weight retention at close range. ***Now available in a complete range of popular hunting cartridges, and coming soon in 224 Valkyrie, 350 Legend and 450 Bushmaster.***





BARNES TSX

We've brought back this proven all-copper hollow point. The Barnes® TSX® groups tightly and delivers consistent, deep penetration. The monolithic design retains nearly 100 percent of its weight, and its grooved shank minimizes barrel fouling and improves accuracy.



BERGER HYBRID HUNTER

The profile of a match bullet. The versatility of a traditional hunting projectile. Berger® Hybrid Hunter bullet weights have been fine-tuned to provide exceptional accuracy through factory rifles. Ballistic coefficients exceed those of comparable designs thanks to a hybrid nose design that combines tangent and secant ogive features.



SIERRA GAMEKING

Accuracy is built into every aspect of the Sierra® GameKing®. The bullet's boat-tail design flattens its trajectory, while the jacketed lead core delivers rapid expansion and energy release. It's an excellent bullet choice for virtually any medium game species in North America.



NON-TYPICAL NEW

Hunt whitetails with ammunition that's just as exceptional as they are. Non-Typical™ uses an optimized soft-point bullet with a concentric jacket to provide tag-punching accuracy and consistent, lethal wound channels on any deer. ***Now available in 7mm-08 Rem.***



FUSION NEW

Fusion® was the first rifle ammunition specifically built for deer hunting and it's still the best, offering the largest expansion and highest weight retention in head-to-head comparisons against the competition. Its concentric jacket is molecularly bonded to the lead core for superior accuracy and terminal performance. ***Now available in 6.5 PRC.***



FUSION MSR

The modern sporting rifle is a highly adapted hunting machine, and it needs ammunition that's just as customized. From primer to projectile, virtually every component is optimized for use in MSR platforms and peak ballistic performance through short barrels.



POWER-SHOK

The only tag these loads won't fill is the price tag. The jacketed lead-core bullets in Power-Shok® rifle loads fly straight and knock down a wide variety of medium and big game. ***Available in the widest selection of loads.***



POWER-SHOK COPPER

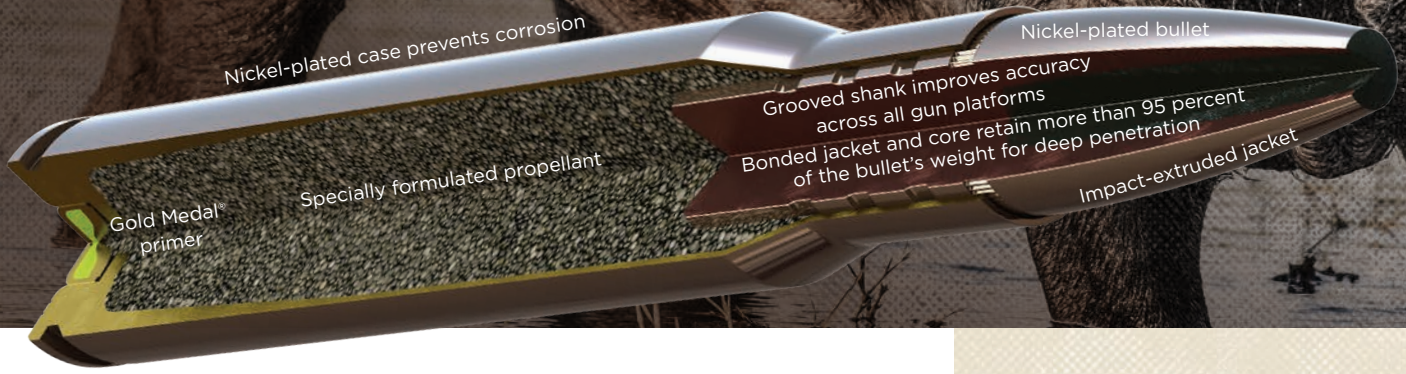
Practical hunters trust Power-Shok® rifle ammunition to fill freezers. Power-Shok Copper provides that same consistency and value, yet with a hollow-point, copper-alloy bullet that creates large wound channels.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 19-28.



TROPHY BONDED BEAR CLAW

The world-famous Trophy Bonded® Bear Claw® has proven its reliability on large, heavy game from Africa to Alaska and everywhere in between. Its bonded jacket and core retain more than 95 percent of the bullet's weight for deep penetration.



Bear Attack
Although the rear core of the Trophy Bonded Bear Claw stays intact on impact, the nose upsets aggressively for large wound channels. Gel shot with 300-grain 375 H&H Magnum (P375T1) at 100 yards.



Penetration: Deep
Weight Retention: Maximum
Expansion: High/Controlled
Range: Medium



Proven From Africa To Alaska
The solid core of the Trophy Bonded Bear Claw allows the bullet to penetrate deep—even through the world's toughest game.





TROPHY BONDED SLEDGEHAMMER SOLID

The legendary Trophy Bonded® Sledgehammer® Solid bonds its core to a thick brass jacket for bone-crushing penetration. Its flat nose minimizes deflection to create a straight, deep wound cavity, and the grooved shank improves accuracy across an array of rifle platforms.



SWIFT A-FRAME

Those who hunt game that hunts back trust their lives to Federal Premium® Swift® A-Frame® loads. The bonded front core and progressively tapered jacket produce controlled expansion and energy release. The design stops expansion at its optimum point and maintains a longer shank for deep penetration



WOODLEIGH HYDRO SOLID

When targeting the largest and most dangerous game, hunters have long relied on solid, non-expanding bullets that blow through bone and thick hide. Woodleigh Hydro Solid loads offer that same unstoppable penetration while also creating a massive wound channel and large entry cavity that won't close.

★★★★★

Amazing Performance On Cape Buffalo

"...Very large wound cavity. The hole in the heart looked to be more than twice the caliber size. The recovered round looked like it could be reloaded."

Yes, I recommend this product.

RATINGS & REVIEWS

We make it easy to review ammunition online and check out the ratings of others. Go to federalpremium.com.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 19-28.



VARMINT & PREDATOR V-MAX

NEW

Now there are even more options for putting down everything from prairie dogs to coyotes. We've added 55-grain 22-250 Rem. and 75-grain 243 Win. loads to the Federal® Varmint & Predator lineup. Both bring the accuracy and explosive expansion of the proven Hornady® V-Max® bullet, loaded with our extremely reliable brass, primer and propellant. ***Available in both standard 20-count boxes and bulk packs.***





Ready To Explode
The V-Max bullet's polymer tip is carefully positioned over a hollow nose cavity to initiate violent fragmentation of the jacket and swaged lead core.



V-Max is a registered trademark of Hornady.



NOSLER BALLISTIC TIP VARMINT & PREDATOR

Long distances, stiff breezes and tough predators are no match for Nosler® Ballistic Tip® Varmint & Predator. The flat-shooting boat-tail's thin jacket unleashes its energy violently on impact and minimizes penetration for less hide damage.





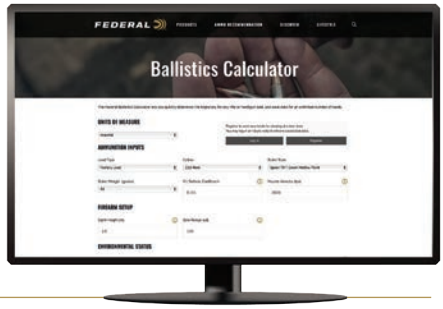
LEAD FREE BULLET

SPEER TNT GREEN

The only thing cleaner are the kills. Speer® TNT® Green® features a lead-free bullet that couples devastating terminal performance with match-grade accuracy. The thin jacket and compressed powdered core provide explosive expansion on varmints.

Ballistics On Demand

Quickly determine drift, drop and more out to 2,000 yards for any rifle or handgun load. Check it out at *federalpremium.com/ballistics-calculator.*



FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 19-28.



VALKYRIE

Official Sponsor
USA Shooting

GOLD MEDAL BERGER

NEW

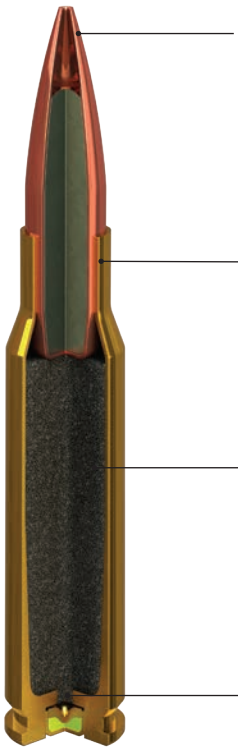
The most sought-after bullets among competitors on the Precision Rifle Series are now loaded into the industry's most trusted factory rifle ammunition. Gold Medal® Berger® loads feature an advanced boat-tail bullet with a high ballistic coefficient to provide the flattest trajectories, least wind drift and best long-range accuracy. ***Now available in new 140-grain 6.5 PRC.***

Crafted For Accuracy

Whether loaded with the Berger Hybrid, BT Target, AR Hybrid Tactical or Juggernaut Tactical, Gold Medal Berger loads offer the flattest trajectories and most consistent ballistics possible for long-range target shooters.



BT Target | Juggernaut OTM | AR Hybrid OTM | Hybrid OTM

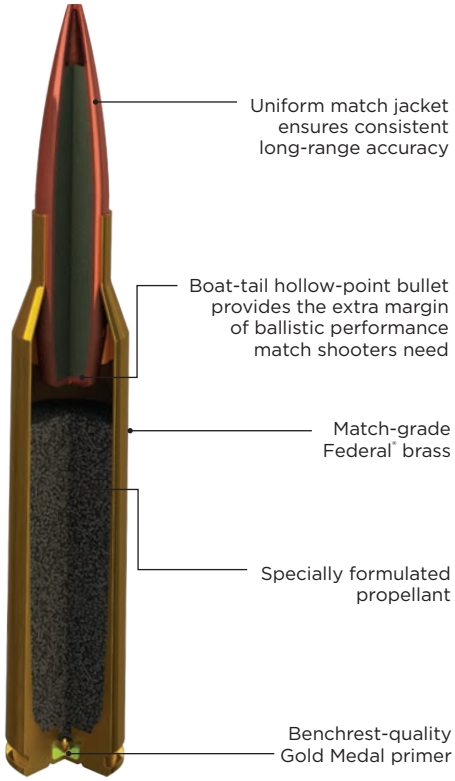




10 SHOTS, 1 HOLE, NO COMPARISON
Combine the ultra-precise Sierra MatchKing bullet with Federal Premium's legendary loading processes, benchrest-quality Gold Medal primers, and world-class brass, and this is what you get. This amazing .81-inch 10-shot group was shot with 168-grain 308 Win. Sierra MatchKing (GM308M) from an accuracy barrel at 200 yards.

GOLD MEDAL SIERRA MATCHKING

Long range isn't just a distance. It's a state of mind. A dedication to push further. And it's why we build these loads. The precision-built Sierra® MatchKing® bullet is shot to win more matches than any other rifle bullet, and our exclusive primer design provides the best sensitivity and most consistent ballistics in the industry.



AMERICAN EAGLE NEW

Quality bullets, reloadable brass cases and dependable primers mean range-ready accuracy. ***Now available in 200- and 300-round buckets.***





AMERICAN EAGLE SUPPRESSOR

Turn down the volume without sacrificing performance. American Eagle® Suppressor ammunition doles out accuracy, reliability and cleanliness in suppressed firearms, thanks to carefully selected propellants, bullet weights and profiles.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 19-28.

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM=cartridge length longer than SAAMI max, may not fit in all magazines.. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Rifle

ATT.	USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT G1	BALLISTIC COEFFICIENT G7	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
FEDERAL PREMIUM BIG GAME															
◊	1 2	P223TC1	**223 REM.**	55	3.56	TROPHY COPPER	X			3240	2915	2613	2330	2066	1819
◊	2	P223S	**223 REM.**	55	3.56	BARNES TRIPLE-SHOCK X BULLET	X			3200	2738	2320	1940	1604	1323
◊	2	P223Q	**223 REM.**	60	3.89	NOSLER PARTITION	X			3160	2737	2350	1998	1679	1403
◊	1, 2	P223TT3	**223 REM.**	62	4.02	TROPHY BONDED TIP	X			3050	2680	2339	2024	1736	1480
◊	2	P22250G	**22-250 REM.**	60	3.89	NOSLER PARTITION	X			3500	3043	2630	2253	1908	1601
◊	2	P224VLKBTSX1	**224 VALKYRIE**	78	5.05	BARNES TRIPLE-SHOCK X BULLET	X			2850	2611	2385	2170	1966	1774
◊	2	P243TC1	**243 WIN.**	85	5.51	TROPHY COPPER	X			3200	2947	2708	2481	2265	2061
◊	2	P243K	**243 WIN.**	85	5.51	BARNES TRIPLE-SHOCK X BULLET	X			3200	2904	2628	2367	2122	1891
◊	2	P243A1	**243 WIN.**	90	5.83	NOSLER® ACCUBOND®	X	0.376	0.186	3100	2843	2600	2370	2152	1945
◊	2	P243SS1	**243 WIN.**	90	5.83	SWIFT SCIROCCO II	X	0.419		3100	2869	2649	2440	2240	2050
◊	2	P243BCH1	**243 WIN.**	95	6.16	BERGER HYBRID HUNTER	X	0.434	0.223	3050	2829	2619	2418	2226	2043
◊	2	P243J	**243 WIN.**	95	6.16	NOSLER BALLISTIC TIP	X			3025	2774	2536	2310	2096	1893
◊	2	P243C	**243 WIN.**	100	6.48	SIERRA GAMEKING BTSP	X			2960	2741	2533	2334	2145	1964
◊	2	P243E	**243 WIN.**	100	6.48	NOSLER PARTITION	X			2850	2612	2386	2171	1968	1776
◊	2	P2506H	**25-06 REM.**	100	6.48	BARNES TRIPLE-SHOCK X BULLET	X			3210	2916	2641	2382	2138	1908
◊	2	P2506A1	**25-06 REM.**	110	7.13	NOSLER ACCUBOND	X			3100	2868	2648	2438	2238	2048
◊	2	P2506TC1	**25-06 REM.**	100	6.48	TROPHY COPPER	X			3210	2967	2737	2519	2311	2113
◊	2	P2506D	**25-06 REM.**	100	6.48	NOSLER BALLISTIC TIP	X			3220	2968	2729	2503	2288	2084
◊	2	P2506E	**25-06 REM.**	115	7.45	NOSLER PARTITION	X			3030	2785	2553	2333	2124	1925
◊	2	P2506C	**25-06 REM.**	117	7.58	SIERRA GAMEKING BTSP	X			3030	2797	2577	2366	2166	1975
◊	2	P260B	**260 REM.**	120	7.78	NOSLER BALLISTIC TIP	X			2950	2725	2512	2308	2113	1928
◊	2	P260A	**260 REM.**	140	9.07	SIERRA GAMEKING BTSP	X			2700	2487	2284	2090	1905	1733
◊	2	P65CRDTC1	**6.5 CREEDMOOR**	120	7.78	TROPHY COPPER	X			2875	2689	2510	2338	2174	2015
◊	2 3	P65CRDTA1	**6.5 CREEDMOOR**	130	8.42	TERMINAL ASCENT	X	0.532	0.263	2800	2629	2464	2305	2152	2005
◊	2	P65CRDBTSX1	**6.5 CREEDMOOR**	130	8.42	BARNES TRIPLE-SHOCK X BULLET	X			2825	2576	2341	2118	1906	1711
◊	2	P65CRDSS1	**6.5 CREEDMOOR**	130	8.42	SWIFT SCIROCCO II	X	0.571		2800	2640	2486	2337	2193	2054
◊	2	P65CRDBCH1	**6.5 CREEDMOOR**	135	8.75	BERGER HYBRID HUNTER	X	0.584	0.303	2775	2620	2469	2324	2184	2049
◊	2	P65CRDA1	**6.5 CREEDMOOR**	140	9.07	NOSLER ACCUBOND	X	0.509	0.244	2675	2501	2334	2173	2018	1870
◊	2 3	P65PRCTA1	**6.5 PRC**	130	8.42	TERMINAL ASCENT	X	0.532	0.263	3000	2821	2649	2483	2324	2170
◊	2	P270L	**270 WIN.**	130	8.42	BARNES TRIPLE-SHOCK X BULLET	X			3060	2804	2562	2333	2115	1909
◊	2	P270BCH1	**270 WIN.**	140	9.07	BERGER HYBRID HUNTER	X	0.528	0.271	2950	2772	2600	2435	2276	2123
◊	2	P270A1	**270 WIN.**	140	9.07	NOSLER ACCUBOND	X			2950	2760	2579	2404	2236	2075
◊	2 3	P270TA1	**270 WIN.**	136	8.81	TERMINAL ASCENT	X	0.493	0.247	3000	2807	2622	2445	2274	2111
◊	2	P270D	**270 WIN.**	130	8.42	SIERRA GAMEKING BTSP	X			3060	2839	2630	2429	2238	2055
◊	2	P270F	**270 WIN.**	130	8.42	NOSLER BALLISTIC TIP	X			3060	2837	2626	2424	2231	2046
◊	2	P270P	**270 WIN.**	130	8.42	NOSLER PARTITION	X			3060	2829	2610	2401	2202	2012
◊	2	P270TC1	**270 WIN.**	130	8.42	TROPHY COPPER	X			3060	2850	2650	2459	2275	2100
◊	2	P270TT1	**270 WIN.**	130	8.42	TROPHY BONDED TIP	X			3060	2841	2633	2434	2244	2063
◊	2	P270SS1	**270 WIN.**	130	8.42	SWIFT SCIROCCO II	X	0.450		3050	2837	2633	2439	2253	2075
◊	2	P270TT3	**270 WIN.**	140	9.07	TROPHY BONDED TIP	X			2950	2744	2547	2358	2177	2004
◊	2	P270E	**270 WIN.**	150	9.72	NOSLER PARTITION	X			2830	2634	2446	2266	2093	1928
◊	2	P270C	**270 WIN.**	150	9.72	SIERRA GAMEKING BTSP	X			2830	2639	2457	2281	2113	1951
◊	2	P270WSMA1	**270 WIN. SHORT MAGNUM**	130	8.42	NOSLER ACCUBOND	X			3250	3019	2800	2592	2392	2202
◊	2	P270WSMD	**270 WIN. SHORT MAGNUM**	130	8.42	BARNES TRIPLE-SHOCK X BULLET	X			3280	3011	2758	2518	2291	2076
◊	2	P270WSMB	**270 WIN. SHORT MAGNUM**	130	8.42	NOSLER BALLISTIC TIP	X			3300	3065	2843	2632	2430	2237
◊	2	P270WSMTC1	**270 WIN. SHORT MAGNUM**	130	8.42	TROPHY COPPER	X			3280	3059	2850	2650	2458	2275
◊	2	P270WSMTT1	**270 WIN. SHORT MAGNUM**	130	8.42	TROPHY BONDED TIP	X			3280	3050	2832	2624	2426	2236
◊	2	P270WSMSS1	**270 WIN. SHORT MAGNUM**	130	8.42	SWIFT SCIROCCO II	X	0.450		3300	3074	2860	2655	2460	2273
◊	2 3	P270WSMTA1	**270 WIN. SHORT MAGNUM**	136	8.81	TERMINAL ASCENT	X	0.493	0.247	3240	3036	2842	2655	2477	2305
◊	2	P270WSMBCH1	**270 WIN. SHORT MAGNUM**	140	9.07	BERGER HYBRID HUNTER	X	0.528	0.271	3200	3011	2830	2657	2489	2328
◊	2	P270WSMTT3	**270 WIN. SHORT MAGNUM**	140	9.07	TROPHY BONDED TIP	X			3200	2982	2774	2575	2385	2204
◊	2	P270WSMC	**270 WIN. SHORT MAGNUM**	150	9.72	NOSLER PARTITION	X			3100	2891	2692	2502	2319	2145
◊	2	P730A	**7-30 WATERS**	120	7.78	SIERRA GAMEKING BTSP-FN	X			2700	2297	1929	1603	1329	1128
◊	2	P708A1	**7MM-08 REM.**	140	9.07	NOSLER ACCUBOND	X			2850	2660	2479	2304	2137	1976
◊	2	P708C	**7MM-08 REM.**	140	9.07	BARNES TRIPLE-SHOCK X BULLET	X			2820	2589	2370	2162	1963	1777
◊	2	P708A	**7MM-08 REM.**	140	9.07	NOSLER PARTITION	X			2800	2591	2392	2202	2020	1847
◊	2	P708B	**7MM-08 REM.**	140	9.07	NOSLER BALLISTIC TIP	X			2800	2613	2433	2260	2094	1935
◊	2	P708TC2	**7MM-08 REM.**	140	9.07	TROPHY COPPER	X			2800	2614	2435	2264	2100	1942
◊	2	P708TT2	**7MM-08 REM.**	140	9.07	TROPHY BONDED TIP	X			2800	2589	2388	2196	2012	1838
◊	2	P280TC2	**280 REM.**	140	9.07	TROPHY COPPER	X			2950	2758	2573	2396	2227	2064
◊	2	P280TT2	**280 REM.**	140	9.07	TROPHY BONDED TIP	X			2950	2732	2524	2326	2136	1956
◊	2	P280A	**280 REM.**	150	9.72	NOSLER PARTITION	X			2890	2687	2494	2308	2130	1960
◊	2	P280AITC1	**280 ACKLEY IMPROVED**	140	9.07	TROPHY COPPER	X	0.489		3075	2877	2688	2506	2332	2165
◊	3 4	P280AITA1	**280 ACKLEY IMPROVED**	155	10.04	TERMINAL ASCENT	X	0.586	0.300	2930	2770	2615	2465	2321	2181
◊	2	P280AIBCH1	**280 ACKLEY IMPROVED**	168	10.89	BERGER HYBRID HUNTER	X	0.566	0.290	2830	2668	2511	2360	2214	2073
◊	2 3	P28NTA1	**28 NOSLER**	155	10.04	TERMINAL ASCENT	X	0.586	0.300	3200	3029	2865	2707	2555	2407
◊	2	P7RG	**7MM REM. MAGNUM**	140	9.07	NOSLER PARTITION	X			3150	2924	2709	2504	2308	2122
◊	2	P7RTC2	**7MM REM. MAGNUM**	140	9.07	TROPHY COPPER	X			3150	2949	2756	2572	2395	2226
◊	2	P7RTT2	**7MM REM. MAGNUM**	140	9.07	TROPHY BONDED TIP	X			3150	2922	2705	2499	2301	2113
◊	3	P7RTC3	**7MM REM. MAGNUM**	150	9.72	TROPHY COPPER	X			3025	2833	2649	2472	2302	2139
◊	2	P7RH	**7MM REM. MAGNUM**	150	9.72	NOSLER BALLISTIC TIP	X			3025	2832	2647	2469	2298	2134
◊	3	P7RD	**7MM REM. MAGNUM**	150	9.72	SIERRA GAMEKING BTSP	X			3110	2887	2675	2472	2279	2094
◊	3	P7RSS1	**7MM REM. MAGNUM**	150	9.72	SWIFT SCIROCCO II	X	0.515		3050	2863	2684	2511	2345	2186
◊	2 3	P7RTA1	**7MM REM. MAGNUM**	155	10.04	TERMINAL ASCENT	X	0.586	0.300	3000	2837	2680	2528	2382	2240
◊	3	P7RA1	**7MM REM. MAGNUM**	160	10.37	NOSLER ACCUBOND	X			2900	2725	2556	2393	2237	2086
◊	3	P7RTT1	**7MM REM. MAGNUM**	160	10.37	TROPHY BONDED TIP	X			2900	2721	2549	2383	2224	2070
◊	3	P7RF	**7MM REM. MAGNUM**	160	10.37	NOSLER PARTITION	X			2950	2752	2563	2381	2207	2040
◊	3	P7RN	**7MM REM. MAGNUM**	160	10.37	BARNES TRIPLE-SHOCK X BULLET	X			2940	2702	2476	2261	2057	1863
◊	3	P7RE	**7MM REM. MAGNUM**	165	10.69	SIERRA GAMEKING BTSP	X			2950	2745	2549	2361	2182	2010
◊	2	P7RBCH1	**7MM REM. MAGNUM**	168	10.89	BERGER HYBRID HUNTER	X	0.566	0.290	2870	2706	2549	2396	2249	2107
◊	3	P7RT1	**7MM REM. MAGNUM**	175	11.34	TROPHY BONDED BEAR CLAW	X			2750	2530	2320	2121	1931	1753
◊	3	P7WSMA1	**7MM WIN. SHORT MAGNUM**	160	10.37	NOSLER ACCUBOND	X			3000	2821	2648	2482	2322	2169
◊	2	P7WSMTT2	**7MM WIN. SHORT MAGNUM**	140	9.07	TROPHY BONDED TIP	X			3200	2969	2750	2542	2342	2152
◊	2	P7WSMB	**7MM WIN. SHORT MAGNUM**	140	9.07	NOSLER BALLISTIC TIP	X			3310	3098	2896	2704	2519	2342
◊	3	P7WSMTC3	**7MM WIN. SHORT MAGNUM**	150	9.72	TROPHY COPPER	X			3140	2943	2754	2573	2399	2232
◊	3	P7WSMTT1	**7MM WIN. SHORT MAGNUM**	160	10.37	TROPHY BONDED TIP	X			3000	2817	2641	2472	2309	2153

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					WIND DRIFT IN INCHES 10 MPH CROSSWIND						HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.									TEST BARREL LENGTH
												AVERAGE RANGE				LONG RANGE					
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
1282	1038	834	663	521	404	0.9	3.7	8.8	16.6	27.5	-0.3	⊕	-2.6	-10.3	0.4	1.3	⊕	-6.4	-19.3	-40.2	24
1250	915	657	460	314	214	1.3	5.8	14.1	27.7	47.5	-0.3	⊕	-3.2	-12.9	0.5	1.6	⊕	-8.1	-25.8	-57.5	24
1330	998	736	532	375	262	1.2	5.3	13.1	25.2	42.9	-0.2	⊕	-3.2	-12.7	0.5	1.6	⊕	-8.0	-24.8	-54.4	24
1281	989	753	564	415	302	1.2	4.9	11.9	22.8	38.4	-0.2	⊕	-3.3	-13.1	0.6	1.7	⊕	-8.1	-24.8	-53.3	24
1632	1234	922	676	485	341	1.1	4.7	11.3	21.6	36.9	-0.3	⊕	-2.3	-9.6	0.2	1.1	⊕	-6.2	-19.3	-42.4	24
1407	1181	985	815	669	545	0.9	3.4	8.2	15.2	24.9	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.3	-47.7	24
1933	1639	1384	1162	969	801	0.7	2.9	6.8	12.5	20.5	-0.3	⊕	-2.5	-9.8	0.3	1.3	⊕	-6.0	-17.6	-36.2	24
1933	1592	1303	1057	850	675	0.8	3.5	8.1	15.2	24.9	-0.3	⊕	-2.7	-10.3	0.4	1.3	⊕	-6.3	-19.0	-39.2	24
1920	1615	1351	1122	925	756	0.7	3.2	7.3	13.8	22.4	-0.3	⊕	-2.8	-10.8	0.4	1.4	⊕	-6.5	-19.3	-39.5	24
1920	1644	1402	1189	1003	840	0.6	2.8	6.5	12.1	19.7	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.5	-37.6	24
1962	1688	1446	1233	1045	880	0.6	2.8	6.4	11.9	19.3	-0.2	⊕	-2.9	-10.8	0.5	1.4	⊕	-6.5	-18.9	-38.4	24
1930	1623	1356	1126	927	756	0.8	3.2	7.6	14.2	23.0	-0.2	⊕	-3.0	-11.5	0.5	1.5	⊕	-6.9	-20.4	-41.6	24
1945	1669	1425	1210	1021	856	0.7	2.9	6.7	12.6	20.4	-0.2	⊕	-3.1	-11.7	0.6	1.6	⊕	-7.0	-20.4	-41.3	24
1803	1515	1264	1047	860	701	0.9	3.4	8.2	15.2	24.8	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.3	-47.6	24
2288	1888	1549	1260	1015	808	0.8	3.4	7.9	15	24.5	-0.3	⊕	-2.6	-10.2	0.4	1.3	⊕	-6.3	-18.8	-38.7	24
2347	2009	1713	1452	1224	1024	0.6	2.8	6.5	12.1	19.8	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.5	-37.7	24
2288	1955	1664	1409	1185	991	0.7	2.7	6.4	11.8	19.3	-0.3	⊕	-2.5	-9.6	0.3	1.2	⊕	-5.9	-17.2	-35.2	24
2302	1955	1654	1391	1162	964	0.7	2.8	6.6	12.3	20.1	-0.3	⊕	-2.5	-9.6	0.3	1.2	⊕	-5.9	-17.3	-35.5	24
2344	1981	1665	1390	1152	946	0.7	3.1	7.3	13.7	22.2	-0.2	⊕	-3.0	-11.3	0.5	1.5	⊕	-6.8	-20.1	-40.9	24
2385	2033	1725	1454	1219	1014	0.7	3.0	6.9	12.8	20.9	-0.2	⊕	-3.0	-11.1	0.5	1.5	⊕	-6.7	-19.7	-40.0	24
2319	1979	1681	1419	1190	990	0.7	3.0	7.0	13.1	21.2	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-20.8	-42.1	24
2266	1922	1621	1358	1128	934	0.8	3.4	8.1	14.8	24.4	-0.1	⊕	-4.1	-15.0	0.9	2.1	⊕	-8.8	-25.3	-51.9	24
2202	1926	1679	1457	1259	1082	0.7	2.6	6.0	11.1	17.9	-0.2	⊕	-3.3	-12.1	0.6	1.7	⊕	-7.1	-20.8	-41.6	24
2263	1995	1752	1533	1337	1160	0.7	2.5	5.8	10.7	17.2	-0.2	⊕	-3.5	-12.8	0.7	1.8	⊕	-7.5	-21.6	-43.1	24
2303	1916	1581	1294	1049	845	0.9	3.7	8.8	16.2	26.9	-0.2	⊕	-3.7	-13.9	0.8	1.9	⊕	-8.3	-24.2	-50	24
2263	2012	1784	1576	1388	1218	0.6	2.4	5.3	9.9	15.9	-0.2	⊕	-3.5	-12.5	0.7	1.7	⊕	-7.3	-21.1	-42.1	24
2308	2057	1828	1619	1430	1258	0.6	2.3	5.3	9.8	15.7	-0.1	⊕	-3.6	-12.8	0.7	1.8	⊕	-7.5	-21.5	-42.7	24
2224	1944	1693	1467	1266	1086	0.6	2.7	6.5	11.9	19.2	-0.1	⊕	-4.1	-14.6	0.9	2.0	⊕	-8.5	-24.3	-48.4	24
2598	2297	2025	1780	1558	1359	0.5	2.3	5.3	9.6	15.6	-0.2	⊕	-2.9	-10.7	0.5	1.5	⊕	-6.4	-18.4	-36.9	24
2703	2269	1895	1571	1292	1052	0.7	3.2	7.5	14.1	23	-0.2	⊕	-2.9	-11.2	0.5	1.5	⊕	-6.7	-20	-40.8	24
2705	2388	2102	1843	1610	1401	0.6	2.4	5.4	9.9	16.2	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.5	24
2705	2368	2067	1796	1554	1338	0.6	2.5	5.8	10.7	17.4	-0.2	⊕	-3.1	-11.3	0.6	1.5	⊕	-6.7	-19.5	-39.3	24
2718	2379	2076	1805	1562	1345	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-2.9	-10.9	0.5	1.5	⊕	-6.5	-18.8	-38	24
2703	2327	1996	1703	1445	1219	0.6	2.7	6.3	11.7	19.1	-0.3	⊕	-2.8	-10.7	0.5	1.4	⊕	-6.4	-18.8	-38.1	24
2703	2324	1990	1695	1436	1209	0.6	2.8	6.4	11.9	19.4	-0.3	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.8	-38.2	24
2703	2310	1966	1664	1399	1168	0.7	2.9	6.6	12.4	20.2	-0.2	⊕	-2.9	-10.8	0.5	1.4	⊕	-6.5	-19.1	-38.8	24
2703	2345	2027	1745	1494	1273	0.6	2.6	6.0	11.0	18.0	-0.3	⊕	-2.8	-10.5	0.4	1.4	⊕	-6.3	-18.4	-37.3	24
2703	2330	2001	1711	1454	1228	0.6	2.7	6.3	11.6	18.9	-0.3	⊕	-2.8	-10.6	0.5	1.4	⊕	-6.4	-18.7	-38.0	24
2685	2322	2001	1717	1465	1242	0.6	2.7	6.1	11.4	18.5	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.7	-37.9	24
2705	2340	2016	1728	1473	1249	0.7	2.8	6.3	11.9	19.2	-0.2	⊕	-3.1	-11.6	0.6	1.6	⊕	-6.9	-20.1	-40.6	24
2667	2310	1992	1709	1459	1238	0.7	2.8	6.6	12.3	19.7	-0.2	⊕	-3.5	-12.8	0.7	1.7	⊕	-7.6	-22.0	-44.1	24
2667	2320	2010	1733	1487	1268	0.7	2.7	6.4	11.9	19.1	-0.2	⊕	-3.5	-12.7	0.7	1.7	⊕	-7.5	-21.8	-43.7	24
3049	2631	2263	1939	1652	1400	0.6	2.5	5.9	10.8	17.6	-0.3	⊕	-2.3	-9.1	0.3	1.2	⊕	-5.6	-16.3	-33.3	24
3105	2616	2195	1830	1515	1244	0.7	2.9	6.9	12.7	20.9	-0.3	⊕	-2.3	-9.3	0.3	1.2	⊕	-5.8	-17	-34.9	24
3143	2712	2333	1999	1704	1444	0.6	2.5	5.8	10.6	17.3	-0.3	⊕	-2.2	-8.7	0.2	1.1	⊕	-5.4	-15.8	-32.2	24
3105	2702	2344	2026	1744	1494	0.6	2.3	5.5	10.1	16.3	-0.3	⊕	-2.2	-8.7	0.2	1.1	⊕	-5.4	-15.8	-31.9	24
3105	2685	2315	1988	1699	1443	0.6	2.4	5.8	10.5	17.1	-0.3	⊕	-2.2	-8.8	0.2	1.1	⊕	-5.5	-16.0	-32.4	24
3143	2728	2360	2035	1746	1491	0.6	2.4	5.6	10.2	16.5	-0.3	⊕	-2.2	-8.6	0.2	1.1	⊕	-5.4	-15.6	-31.7	24
3170	2783	2438	2129	1852	1604	0.5	2.2	5.2	9.4	15.2	-0.3	⊕	-2.3	-8.9	0.3	1.1	⊕	-5.5	-15.9	-31.9	24
3183	2818	2490	2194	1926	1685	0.5	2.1	4.9	8.9	14.3	-0.3	⊕	-2.3	-9.0	0.3	1.2	⊕	-5.6	-16	-32	24
3183	2763	2391	2062	1768	1509	0.6	2.4	5.7	10.4	17.1	-0.3	⊕	-2.4	-9.4	0.3	1.2	⊕	-5.8	-16.7	-33.8	24
3200	2784	2414	2085	1792	1532	0.6	2.5	5.8	10.6	17.4	-0.3	⊕	-2.7	-10.1	0.4	1.3	⊕	-6.1	-17.8	-36.0	24
1942	1405	991	685	471	339	1.6	7.1	17.7	34.4	58.1	-0.1	⊕	-5.1	-19.9	1.2	2.6	⊕	-12.2	-38.1	-84.5	24
2525	2200	1910	1650	1419	1214	0.7	2.7	6.2	11.6	18.7	-0.2	⊕	-3.4	-12.5	0.7	1.7	⊕	-7.3	-21.4	-42.9	24
2472	2084	1746	1452	1198	982	0.9	3.4	8.1	14.9	24.4	-0.2	⊕	-3.7	-13.6	0.8	1.8	⊕	-8.1	-23.6	-48.1	24
2437	2088	1779	1507	1269	1061	0.8	3.1	7.3	13.4	21.8	-0.1	⊕	-3.6	-13.5	0.8	1.8	⊕	-8.0	-23.1	-46.6	24
2437	2122	1839	1587	1363	1164	0.7	2.7	6.4	11.9	19.1	-0.2	⊕	-3.6	-13.1	0.7	1.8	⊕	-7.7	-22.3	-44.5	24
2437	2124	1844	1593	1370	1172	0.7	2.7	6.4	11.8	18.9	-0.2	⊕	-3.6	-13.0	0.7	1.8	⊕	-7.7	-22.2	-44.4	24
2437	2084	1772	1498	1258	1050	0.8	3.1	7.4	13.6	22.1	-0.1	⊕	-3.7	-13.5	0.8	1.8	⊕	-8.0	-23.2	-46.8	24
2705	2364	2059	1785	1541	1324	0.6	2.6	5.9	10.9	17.7	-0.2	⊕	-3.1	-11.4	0.6	1.5	⊕	-6.7	-19.6	-39.5	24
2705	2320	1980	1681	1419	1189	0.7	2.9	6.8	12.7	20.5	-0.2	⊕	-3.2	-11.8	0.6	1.6	⊕	-7.0	-20.6	-41.6	24
2782	2405	2071	1774	1511	1279	0.7	2.9	6.5	12.2	19.6	-0.2	⊕	-3.3	-12.2	0.6	1.7	⊕	-7.2	-21.1	-42.4	24
2939	2573	2246	1953	1691	1457	0.5	2.4	5.5	10.2	16.6	-0.3	⊕	-2.7	-10.2	0.4	1.4	⊕	-6.1	-17.8	-36	24
2954	2640	2353	2092	1854	1637	0.5	2.2	4.9	8.9	14.5	-0.2	⊕	-3.1	-11.2	0.6	1.5	⊕	-6.6	-18.8	-37.7	24
2987	2655	2352	2078	1829	1604	0.6	2.3	5.3	9.8	15.8	-0.2	⊕	-3.4	-12.2	0.7	1.7	⊕	-7.2	-20.7	-41.3	24
3524	3158	2826	2523	2246	1994	0.5	1.8	4.3	7.9	12.6	-0.3	⊕	-2.3	-8.8	0.3	1.1	⊕	-5.4	-15.6	-30.9	24
3084	2657	2281	1949	1656	1399	0.6	2.6	6.1	11.3	18.5	-0.3	⊕	-2.6	-9.9	0.4	1.3	⊕	-6.0	-17.6	-35.8	24
3084	2703	2362	2057	1783	1540	0.5	2.3	5.4	9.8	16.0	-0.3	⊕	-2.5	-9.6	0.3	1.3	⊕	-5.9	-16.9	-34.1	24
3084	2654	2275	1941	1646	1388	0.6	2.7	6.2	11.4	18.7	-0.3	⊕	-2.6	-10.0	0.4	1.3	⊕	-6.1	-17.6	-35.9	24
3047	2673	2337	2035	1765	1524	0.6	2.4	5.6	10.2	16.7	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.4	-37.1	24
3047	2670	2333	2030	1759	1517	0.6	2.4	5.6	10.3	16.8	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.4	-37.2	24
3221	2776	2383	2036	1730	1461	0.6	2.7	6.2	11.5	18.7	-0.3	⊕	-2.7	-10.2	0.4	1.4	⊕	-6.2	-18.1	-36.7	24
3098	2730	2399	2101	1832	1592	0.5	2.3	5.3	9.7	15.8	-0.3	⊕	-2.8	-10.3	0.4	1.4	⊕	-6.2	-17.8	-36	24
3097	2770	2472	2200	1952	1727	0.5	2.1	4.7	8.6	13.9	-0.2	⊕	-2.9	-10.5	0.5	1.4	⊕	-6.2	-17.9	-35.7	24
2988	2637	2321	2035	1777	1546	0.6	2.4	5.5	10.2	16.5	-0.2	⊕	-3.2	-11.7	0.6	1.6	⊕	-6.9	-19.9	-39.9	24
2988	2630	2308	2017	1757	1523	0.6	2.5	5.6	10.4	16.9	-0.2	⊕	-3.2	-11.7	0.6	1.6	⊕	-6.9	-20.0	-40.2	24
3091	2691	2333	2014	1730	1479	0.6	2.7	6.0	11.3	18.2	-0.2	⊕	-3.1	-11.5	0.6	1.6	⊕	-6.8	-19.8	-40.0	24
3071	2593	2178	1816	1503	1234	0.8	3.2	7.6	14.2	23.0	-0.2	⊕	-3.3	-12.2	0.6	1.6	⊕	-7.3	-21.5	-43.7	24
3188	2760	2380	2043	1744	1480	0.7	2.7	6.3	11.8	19.0	-0.2	⊕	-3.1	-11.6	0.6	1.6	⊕	-6.9	-20.1	-40.5	24
3072	2732	2423	2141	1886	1656	0.6	2.3	5.2	9.6	15.5	-0.2	⊕	-3.3	-11.8	0.6	1.6	⊕	-6.9	-20.0	-40.0	24
2938	2487	2092	1747	1448	1193	0.8	3.4	8.1	14.8	24.4	-0.1	⊕	-3.9	-14.4	0.9	2.0	⊕	-8.5	-24.6	-50.2	24
3197	2826	2491	2189	1916	1671	0.5	2.3	5.3	9.6	15.6	-0.2	⊕	-2.9	-10.7	0.5	1.5	⊕	-6.4	-18.4	-37.0	24
3183	2740	2351	2008	1705	1440	0.6	2.6	6.1	11.2	18.3	-0.3	⊕	-2.5	-9.5	0.3	1.2	⊕	-5.8	-17.0	-34.7	24
3406	2984	2608	2272	1973	1705	0.6	2.2	5.2	9.4	15.2	-0.3	⊕	-2.1	-8.4	0.2	1.1	⊕	-5.2	-15.2	-30.6	24
3284	2884	2526	2205	1917	1660	0.5	2.3	5.3	9.7	15.7	-0.3	⊕	-2.5	-9.7	0.3	1.3	⊕	-5.9	-16.9	-34.1	24
3197	2819	2478	2171	1894	1646	0.6	2.4	5.4	9.9	16.0	-0.2	⊕	-2.9	-10.8	0.5	1.5	⊕	-6.4	-18.5	-37.2	24

RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM=cartridge length longer than SAAMI max, may not fit in all magazines.. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Rifle

ATT.	USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT G1	BALLISTIC COEFFICIENT G7	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
◊	3	P7WBTT1	**7MM WEATHERBY MAGNUM**	160	10.37	TROPHY BONDED TIP	X			3100	2913	2733	2561	2394	2235
◊	2	P3030TC1	**30-30 WIN.**	150	9.72	TROPHY COPPER	X			2300	1943	1625	1354	1150	1021
◊	2	P3030G	**30-30 WIN.**	150	9.72	BARNES TRIPLE-SHOCK X BULLET	X			2220	1803	1447	1178	1017	919
◊	2	P3030D	**30-30 WIN.**	170	11.02	NOSLER PARTITION	X			2200	1894	1619	1380	1191	1060
◊	2	P308F	**308 WIN.**	150	9.72	NOSLER BALLISTIC TIP	X			2820	2611	2410	2219	2037	1863
◊	2	P308S	**308 WIN.**	150	9.72	NOSLER PARTITION	X			2840	2604	2380	2168	1966	1776
◊	2	P308V	**308 WIN.**	150	9.72	BARNES TRIPLE-SHOCK X BULLET	X			2820	2574	2341	2120	1911	1717
◊	2	P308TC3	**308 WIN.**	150	9.72	TROPHY COPPER	X			2820	2625	2439	2260	2089	1925
◊	2	P308A1	**308 WIN.**	165	10.69	NOSLER ACCUBOND	X			2700	2513	2333	2161	1997	1838
◊	2	P308TC2	**308 WIN.**	165	10.69	TROPHY COPPER	X			2700	2510	2329	2155	1988	1829
◊	2	P308C	**308 WIN.**	165	10.69	SIERRA GAMEKING BTSP	X			2700	2481	2272	2073	1884	1708
◊	2	P308TT2	**308 WIN.**	165	10.69	TROPHY BONDED TIP	X			2700	2503	2314	2133	1960	1797
◊	3	P308H	**308 WIN.**	165	10.69	BARNES TRIPLE-SHOCK X BULLET	X			2650	2430	2220	2021	1833	1659
◊	2	P308SS1	**308 WIN.**	165	10.69	SWIFT SCIROCCO II	X	0.470		2700	2511	2329	2156	1990	1830
◊	2	P308BCH1	**308 WIN.**	168	10.89	BERGER HYBRID HUNTER	X	0.489	0.251	2700	2518	2343	2176	2015	1860
◊	2 3	P308TA1	**308 WIN.**	175	11.34	TERMINAL ASCENT	X	0.520	0.258	2600	2432	2271	2116	1967	1824
◊	3	P308E	**308 WIN.**	180	11.66	NOSLER PARTITION	X			2570	2388	2213	2045	1885	1734
◊	2	P308TT1	**308 WIN.**	180	11.66	TROPHY BONDED TIP	X			2620	2445	2277	2116	1960	1812
◊	2	P3006A3	**30-06 SPRING.**	150	9.72	NOSLER ACCUBOND	X			2910	2696	2493	2298	2112	1934
◊	2	P3006G	**30-06 SPRING.**	150	9.72	SIERRA GAMEKING BTSP	X			2910	2666	2435	2216	2008	1812
◊	2	P3006P	**30-06 SPRING.**	150	9.72	NOSLER BALLISTIC TIP	X			2910	2696	2492	2296	2110	1932
◊	2	P3006A2	**30-06 SPRING.**	165	10.69	NOSLER ACCUBOND	X			2800	2609	2425	2249	2081	1919
◊	2	P3006Q	**30-06 SPRING.**	165	10.69	NOSLER BALLISTIC TIP	X			2800	2609	2425	2249	2081	1919
◊	2	P3006TC2	**30-06 SPRING.**	165	10.69	TROPHY COPPER	X			2800	2619	2445	2278	2118	1963
◊	2	P3006TT2	**30-06 SPRING.**	165	10.69	TROPHY BONDED TIP	X			2800	2598	2405	2221	2044	1875
◊	2	P3006AD	**30-06 SPRING.**	165	10.69	NOSLER PARTITION	X			2830	2607	2395	2193	2000	1818
◊	2	P3006D	**30-06 SPRING.**	165	10.69	SIERRA GAMEKING BTSP	X			2800	2576	2362	2159	1966	1784
◊	2	P3006AF	**30-06 SPRING.**	165	10.69	BARNES TRIPLE-SHOCK X BULLET	X			2800	2573	2356	2151	1955	1771
◊	2	P3006SS1	**30-06 SPRING.**	165	10.69	SWIFT SCIROCCO II	X	0.470		2800	2607	2421	2244	2074	1910
◊	2	P3006BCH1	**30-06 SPRING.**	168	10.89	BERGER HYBRID HUNTER	X	0.489	0.251	2800	2614	2435	2264	2100	1942
◊	2 3	P3006TA1	**30-06 SPRING.**	175	11.34	TERMINAL ASCENT	X	0.520	0.258	2730	2558	2391	2232	2078	1930
◊	3	P3006A1	**30-06 SPRING.**	180	11.66	NOSLER ACCUBOND	X			2700	2524	2355	2193	2037	1887
◊	3	P3006F	**30-06 SPRING.**	180	11.66	NOSLER PARTITION	X			2700	2512	2332	2160	1995	1837
◊	2	P3006TT1	**30-06 SPRING.**	180	11.66	TROPHY BONDED TIP	X			2700	2522	2351	2186	2029	1877
◊	3	P3006TC1	**30-06 SPRING.**	180	11.66	TROPHY COPPER	X			2700	2530	2366	2208	2056	1910
◊	3	P3006AE	**30-06 SPRING.**	180	11.66	BARNES TRIPLE-SHOCK X BULLET	X			2700	2504	2316	2137	1965	1802
◊	3	P3006T5	**30-06 SPRING.**	200	12.96	TROPHY BONDED BEAR CLAW	X			2540	2324	2118	1922	1740	1571
◊	2	P300WR	**300 WIN. MAGNUM**	165	10.69	BARNES TRIPLE-SHOCK X BULLET	X			3050	2810	2582	2365	2159	1963
◊	2	P300WK	**300 WIN. MAGNUM**	165	10.69	NOSLER PARTITION	X			3050	2816	2594	2382	2180	1989
◊	2	P300WTT2	**300 WIN. MAGNUM**	165	10.69	TROPHY BONDED TIP	X			3050	2837	2633	2439	2253	2075
◊	2	P300WTC2	**300 WIN. MAGNUM**	165	10.69	TROPHY COPPER	X			3050	2859	2675	2499	2330	2167
◊RMEF	3	P300WA1	**300 WIN. MAGNUM**	180	11.66	NOSLER ACCUBOND	X			2960	2774	2595	2424	2259	2100
◊RMEF	3	P300WTT1	**300 WIN. MAGNUM**	180	11.66	TROPHY BONDED TIP	X			2960	2771	2591	2417	2250	2089
◊RMEF	3	P300WTC1	**300 WIN. MAGNUM**	180	11.66	TROPHY COPPER	X			2960	2780	2606	2439	2279	2124
◊RMEF	3	P300WD2	**300 WIN. MAGNUM**	180	11.66	NOSLER PARTITION	X			2960	2701	2456	2224	2005	1799
◊RMEF	3	P300WP	**300 WIN. MAGNUM**	180	11.66	BARNES TRIPLE-SHOCK X BULLET	X			2960	2752	2554	2364	2182	2009
◊	2 3	P300WSS1	**300 WIN. MAGNUM**	180	11.66	SWIFT SCIROCCO II	X	0.520		2950	2769	2595	2428	2266	2112
◊	2	P300WBCH1	**300 WIN. MAGNUM**	185	11.99	BERGER HYBRID HUNTER	X	0.533	0.273	2950	2773	2603	2440	2282	2130
◊	3	P300WT1	**300 WIN. MAGNUM**	200	12.96	TROPHY BONDED BEAR CLAW	X			2700	2476	2263	2060	1868	1689
◊RMEF	2 3	P300WTA1	**300 WIN. MAGNUM**	200	12.96	TERMINAL ASCENT	X	0.608	0.304	2810	2660	2514	2373	2236	2105
◊	2	P300WSMD	**300 WIN. SHORT MAGNUM**	150	9.72	NOSLER BALLISTIC TIP	X			3250	3019	2800	2592	2392	2202
◊	2	P300WSME	**300 WIN. SHORT MAGNUM**	165	10.69	NOSLER PARTITION	X			3120	2883	2659	2445	2241	2047
◊	3	P300WSMTT2	**300 WIN. SHORT MAGNUM**	165	10.69	TROPHY BONDED TIP	X			3130	2913	2706	2508	2319	2138
◊	2	P300WSMTC2	**300 WIN. SHORT MAGNUM**	165	10.69	TROPHY COPPER	X			3120	2926	2739	2561	2389	2224
◊	2	P300WSMG	**300 WIN. SHORT MAGNUM**	165	10.69	BARNES TRIPLE-SHOCK X BULLET	X			3130	2885	2653	2433	2224	2024
◊RMEF	3	P300WSMA1	**300 WIN. SHORT MAGNUM**	180	11.66	NOSLER ACCUBOND	X			2960	2774	2595	2424	2259	2100
◊RMEF	3	P300WSMTT1	**300 WIN. SHORT MAGNUM**	180	11.66	TROPHY BONDED TIP	X			2960	2771	2591	2417	2250	2089
RMEF	3	P300WSMB	**300 WIN. SHORT MAGNUM**	180	11.66	NOSLER PARTITION	X			2980	2780	2589	2406	2231	2063
◊RMEF	3	P300WSMTC1	**300 WIN. SHORT MAGNUM**	180	11.66	TROPHY COPPER	X			2960	2780	2606	2439	2279	2124
◊RMEF	3	P300WSMF	**300 WIN. SHORT MAGNUM**	180	11.66	BARNES TRIPLE-SHOCK X BULLET	X			2980	2771	2572	2381	2199	2025
◊	2 3	P300WSMSS1	**300 WIN. SHORT MAGNUM**	180	11.66	SWIFT SCIROCCO II	X	0.520		2960	2779	2604	2436	2275	2120
◊	2	P300WSMBCH1	**300 WIN. SHORT MAGNUM**	185	11.99	BERGER HYBRID HUNTER	X	0.533	0.273	2950	2773	2603	2440	2282	2130
◊RMEF	2 3	P300WSMTA1	**300 WIN. SHORT MAGNUM**	200	12.96	TERMINAL ASCENT	X	0.608	0.304	2810	2660	2514	2373	2236	2105
◊	2	P300RUMA1	**300 REM. ULTRA MAGNUM**	180	11.66	NOSLER ACCUBOND	X			3100	2908	2724	2548	2378	2214
◊	3	P338FTC2	**338 FEDERAL**	200	12.96	TROPHY COPPER	X			2630	2424	2228	2041	1863	1697
◊	3	P338FTT2	**338 FEDERAL**	200	12.96	TROPHY BONDED TIP	X			2630	2431	2241	2060	1887	1725
◊RMEF	2, 3	P338TT2	**338 WIN. MAGNUM**	200	12.96	TROPHY BONDED TIP	X			2930	2718	2515	2321	2137	1960
◊RMEF	3	P338A2	**338 WIN. MAGNUM**	210	13.61	NOSLER PARTITION	X			2830	2601	2383	2176	1980	1794
◊	3	P338T1	**338 WIN. MAGNUM**	225	14.58	TROPHY BONDED BEAR CLAW	X			2730	2490	2263	2047	1844	1656
◊RMEF	3	P338TC1	**338 WIN. MAGNUM**	225	14.58	TROPHY COPPER	X			2800	2611	2429	2255	2087	1927
◊RMEF	3	P338B2	**338 WIN. MAGNUM**	250	16.2	NOSLER PARTITION	X			2660	2474	2295	2124	1960	1803
◊RMEF	3	P338A1	**338 WIN. MAGNUM**	225	14.58	NOSLER ACCUBOND	X			2800	2634	2475	2320	2172	2028
◊	3	P338LMA1	**338 LAPUA MAGNUM**	300	19.44	NOSLER® ACCUBOND®	X	0.720		2650	2527	2407	2291	2178	2068
◊	3	P338LTC1	**338 LAPUA MAGNUM**	250	16.2	TROPHY COPPER	X			2850	2702	2559	2420	2286	2156
◊	3	P35WT1	**35 WHELEN**	225	14.58	TROPHY BONDED BEAR CLAW	X			2600	2351	2116	1895	1690	1503
◊	3	P375T4	**375 H&H MAGNUM**	250	16.2	TROPHY BONDED BEAR CLAW	X			2670	2412	2169	1940	1728	1534
◊	4	P375F	**375 H&H MAGNUM**	300	19.44	NOSLER PARTITION	X			2440	2230	2031	1841	1666	1504
◊	3	P4570T4	**45-70 GOVERNMENT**	300	19.44	TROPHY BONDED BEAR CLAW	X			1850	1612	1401	1227	1099	1011
FEDERAL PREMIUM HAMMERDOWN™															
◊	2	LG327F1	**327 FEDERAL MAGNUM**	127	8.23	HOLLOW POINT	X	0.195		1650	1341	1120	990	905	838
◊	2	LG45C1	**45 COLT**	250	16.2	HOLLOW POINT	X	0.165		1400	1125	975	881	808	746
◊	2	LG30301	**30-30 WIN.**	150	9.72	BONDED SOFT POINT	X			2390	2086	1805	1553	1337	1167
◊	2	LG3571	**357 MAGNUM**	170	11.02	BONDED SOFT POINT	X			1610	1296	1084	963	881	815
◊	2	LG441	**44 REM. MAGNUM**	270	17.5	BONDED SOFT POINT	X			1715	1390	1150	1006	916	846
◊	2	LG45701	**45-70 GOVERNMENT**	300	19.44	BONDED SOFT POINT	X	0.290		1850	1612	1401	1227	1099	1011
FEDERAL PREMIUM SAFARI															
◊	4	P9362SA	**9.3X62 MAUSER**	286	18.53	SWIFT A-FRAME	X			2360	2147	1945	1756	1582	1423
◊	4	P9362WH	**9.3X62 MAUSER**	286	18.53	WOODLEIGH HYDRO	X			2360	2049	1763	1509	1295	1133
◊	4	P9374SA	**9.3X74 R**	286	18.53	SWIFT A-FRAME	X			2360	2147	1945	1756	1582	1423

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.									TEST BARREL LENGTH
												AVERAGE RANGE				LONG RANGE				
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
3414	3014	2653	2329	2036	1774	0.5	2.2	5.2	9.4	15.2	-0.3	⊕	-2.6	-9.9	0.4	1.3	⊕	-6.0	-17.2	-34.6	24
1762	1258	880	611	441	347	2.0	8.9	21.5	41.0	67.0	0.2	⊕	-7.9	-29.0	2.2	3.9	⊕	-17.2	-53.8	-117.0	24
1641	1083	697	462	344	281	2.6	11.5	28.4	53.2	84.2	0.3	⊕	-9.4	-35.8	2.7	4.7	⊕	-21.7	-68.6	-147.8	24
1827	1354	990	719	535	424	1.8	8.1	19.4	36.7	59.9	0.3	⊕	-8.4	-30.0	2.4	4.2	⊕	-17.4	-53.5	-114.4	24
2648	2270	1935	1640	1382	1156	0.8	3.0	7.2	13.3	21.5	-0.2	⊕	-3.6	-13.2	0.7	1.8	⊕	-7.8	-22.7	-45.8	24
2686	2259	1887	1565	1287	1050	0.9	3.4	8.2	15.1	24.7	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.4	-47.8	24
2648	2207	1825	1497	1217	982	0.9	3.6	8.7	16.0	26.6	-0.2	⊕	-3.7	-13.9	0.8	1.9	⊕	-8.3	-24.2	-49.9	24
2648	2296	1981	1701	1453	1234	0.7	2.8	6.6	12.2	19.7	-0.2	⊕	-3.5	-12.9	0.7	1.8	⊕	-7.6	-22.2	-44.4	24
2671	2313	1994	1711	1460	1238	0.7	2.9	7.0	12.9	20.6	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.4	-48.7	24
2671	2309	1986	1701	1448	1225	0.7	2.9	7.1	13.0	20.9	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.5	-49.0	24
2671	2254	1891	1575	1301	1069	0.8	3.5	8.3	15.3	25.4	-0.1	⊕	-4.2	-15.1	0.9	2.1	⊕	-8.9	-25.6	-52.7	24
2671	2294	1961	1667	1408	1182	0.7	3.1	7.4	13.6	22.1	-0.1	⊕	-4.1	-14.7	0.9	2.0	⊕	-8.6	-24.7	-49.9	24
2573	2163	1806	1497	1231	1008	0.8	3.7	8.7	16	26.7	-0.1	⊕	-4.4	-15.9	1.0	2.2	⊕	-9.3	-26.9	-55.4	24
2671	2310	1988	1702	1450	1227	0.7	2.9	7	13	20.9	-0.1	⊕	-4	-14.5	0.9	2	⊕	-8.5	-24.5	-48.9	24
2719	2365	2048	1766	1514	1291	0.7	2.8	6.7	12.3	19.9	-0.1	⊕	-4	-14.4	0.9	2.0	⊕	-8.4	-24.1	-48.1	24
2627	2299	2004	1740	1503	1292	0.6	2.8	6.7	12.1	19.6	-0.1	⊕	-4.4	-15.6	1	2.2	⊕	-9	-25.6	-51.2	24
2640	2278	1957	1672	1420	1202	0.7	3.2	7.5	13.6	22.5	-0.1	⊕	-4.7	-16.4	1.1	2.3	⊕	-9.4	-26.9	-54.7	24
2743	2389	2072	1789	1536	1313	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.3	-15.4	1.0	2.2	⊕	-8.9	-25.5	-51.1	24
2820	2421	2069	1758	1485	1246	0.7	3.0	6.8	12.8	20.6	-0.2	⊕	-3.3	-12.2	0.6	1.6	⊕	-7.2	-21.1	-42.6	24
2820	2368	1975	1635	1343	1093	0.9	3.4	8.0	14.9	24.3	-0.2	⊕	-3.4	-12.7	0.7	1.7	⊕	-7.6	-22.3	-45.5	24
2820	2420	2068	1756	1483	1243	0.7	3.0	6.9	12.8	20.6	-0.2	⊕	-3.3	-12.2	0.6	1.6	⊕	-7.2	-21.1	-42.6	24
2872	2493	2155	1853	1586	1349	0.7	2.8	6.6	12.2	19.6	-0.2	⊕	-3.6	-13.1	0.7	1.8	⊕	-7.8	-22.4	-44.9	24
2872	2493	2155	1853	1586	1349	0.7	2.8	6.6	12.2	19.6	-0.2	⊕	-3.6	-13.1	0.7	1.8	⊕	-7.8	-22.4	-44.9	24
2872	2513	2190	1901	1643	1412	0.7	2.6	6.2	11.4	18.4	-0.2	⊕	-3.5	-12.9	0.7	1.8	⊕	-7.6	-22.0	-44.0	24
2872	2473	2119	1806	1531	1288	0.8	2.9	7.0	12.9	20.9	-0.2	⊕	-3.6	-13.3	0.8	1.8	⊕	-7.9	-22.8	-45.8	24
2934	2490	2101	1761	1465	1210	0.8	3.2	7.7	14.2	23.1	-0.2	⊕	-3.6	-13.3	0.7	1.8	⊕	-7.9	-23.0	-46.8	24
2872	2431	2044	1708	1416	1166	0.8	3.3	7.9	14.6	23.9	-0.1	⊕	-3.7	-13.8	0.8	1.9	⊕	-8.2	-23.7	-48.3	24
2872	2425	2034	1694	1400	1149	0.9	3.4	8.1	14.9	24.4	-0.1	⊕	-3.7	-13.8	0.8	1.9	⊕	-8.2	-23.8	-48.7	24
2872	2489	2148	1844	1575	1337	0.7	2.8	6.7	12.3	19.8	-0.2	⊕	-3.6	-13.2	0.7	1.8	⊕	-7.8	-22.5	-45	24
2924	2549	2212	1912	1644	1406	0.7	2.7	6.4	11.8	18.9	-0.2	⊕	-3.6	-13.0	0.7	1.8	⊕	-7.7	-22.2	-44.4	24
2896	2542	2222	1935	1678	1447	0.7	2.6	6.2	11.4	18.2	-0.1	⊕	-3.8	-13.7	0.8	1.9	⊕	-8.1	-23.1	-45.9	24
2913	2547	2217	1922	1658	1423	0.7	2.7	6.5	11.9	19.0	-0.1	⊕	-3.9	-14.2	0.9	2.0	⊕	-8.3	-23.8	-47.4	24
2913	2523	2174	1865	1591	1348	0.7	2.9	7.0	12.9	20.7	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.4	-48.7	24
2913	2542	2208	1911	1644	1408	0.7	2.7	6.6	12.0	19.4	-0.1	⊕	-3.9	-14.3	0.9	2.0	⊕	-8.4	-23.9	-47.7	24
2913	2557	2236	1948	1689	1457	0.6	2.6	6.2	11.5	18.4	-0.1	⊕	-3.9	-14.1	0.9	2.0	⊕	-8.3	-23.6	-46.9	24
2913	2506	2144	1824	1543	1297	0.7	3.1	7.3	13.5	21.9	-0.1	⊕	-4.0	-14.7	0.9	2.0	⊕	-8.6	-24.7	-49.7	24
2865	2397	1992	1641	1344	1096	0.9	4.0	9.2	17.4	28.7	0.0	⊕	-5.0	-17.6	1.2	2.5	⊕	-10.1	-29.9	-61.3	24
3408	2892	2442	2049	1707	1411	0.7	3.0	7.0	13.2	21.4	-0.2	⊕	-2.9	-11.0	0.5	1.5	⊕	-6.6	-19.6	-39.9	24
3408	2905	2464	2078	1742	1449	0.7	3.0	6.8	12.8	20.8	-0.2	⊕	-2.9	-10.9	0.5	1.5	⊕	-6.6	-19.4	-39.5	24
3408	2948	2540	2179	1859	1577	0.6	2.7	6.1	11.4	18.5	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.7	-37.9	24
3408	2994	2622	2289	1989	1721	0.5	2.4	5.5	10.0	16.3	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.0	-36.3	24
3502	3075	2692	2348	2039	1763	0.6	2.5	5.6	10.4	16.8	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.2	-38.7	24
3502	3070	2682	2334	2023	1745	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.3	-38.9	24
3502	3088	2715	2378	2075	1803	0.6	2.4	5.4	10.0	16.3	-0.2	⊕	-3.0	-11.1	0.5	1.5	⊕	-6.6	-19.0	-38.3	24
3502	2915	2411	1978	1607	1294	0.9	3.5	8.3	15.4	25.3	-0.2	⊕	-3.3	-12.3	0.6	1.6	⊕	-7.4	-21.9	-45.0	24
3502	3027	2607	2233	1904	1612	0.7	2.8	6.3	11.8	19.2	-0.2	⊕	-3.1	-11.5	0.6	1.6	⊕	-6.8	-20	-40.4	24
3478	3064	2691	2355	2053	1782	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3.1	-11.2	0.6	1.5	⊕	-6.6	-19.2	-38.7	24
3575	3159	2784	2445	2139	1864	0.6	2.4	5.3	9.8	16	-0.2	⊕	-3	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.3	24
3237	2722	2273	1884	1549	1267	0.9	3.6	8.5	15.7	26.1	-0.1	⊕	-4.2	-15.2	0.9	2.1	⊕	-8.9	-25.9	-53.3	24
3506	3141	2806	2500	2221	1967	0.6	2.2	4.9	9.1	14.8	-0.2	⊕	-3.4	-12.3	0.7	1.7	⊕	-7.2	-20.6	-41.1	24
3518	3036	2611	2237	1906	1615	0.6	2.5	5.9	10.8	17.6	-0.3	⊕	-2.3	-9.1	0.3	1.2	⊕	-5.6	-16.3	-33.3	24
3566	3045	2590	2190	1840	1536	0.6	2.8	6.6	12.2	20.0	-0.3	⊕	-2.7	-10.3	0.4	1.4	⊕	-6.2	-18.3	-37.4	24
3589	3108	2682	2305	1970	1675	0.6	2.6	5.9	10.9	17.9	-0.3	⊕	-2.6	-10.0	0.4	1.3	⊕	-6.0	-17.6	-35.7	24
3566	3135	2749	2403	2091	1813	0.5	2.3	5.3	9.6	15.7	-0.3	⊕	-2.6	-9.8	0.4	1.3	⊕	-5.9	-17.1	-34.5	24
3589	3049	2579	2169	1811	1501	0.7	2.9	6.8	12.7	20.7	-0.3	⊕	-2.7	-10.3	0.4	1.4	⊕	-6.3	-18.4	-37.7	24
3502	3075	2692	2348	2039	1763	0.6	2.5	5.6	10.4	16.8	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.2	-38.7	24
3502	3070	2682	2334	2023	1745	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.3	-38.9	24
3549	3089	2680	2314	1989	1700	0.6	2.6	6.0	11.1	18.0	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.4	-39.1	24
3502	3088	2715	2378	2075	1803	0.6	2.4	5.4	10.0	16.3	-0.2	⊕	-3.0	-11.1	0.5	1.5	⊕	-6.6	-19.0	-38.3	24
3549	3069	2644	2266	1933	1638	0.6	2.7	6.3	11.7	19	-0.2	⊕	-3.1	-11.3	0.5	1.5	⊕	-6.7	-19.7	-39.8	24
3502	3085	2710	2372	2068	1796	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3	-11.1	0.5	1.5	⊕	-6.6	-19.1	-38.4	24
3575	3159	2784	2445	2139	1864	0.6	2.4	5.3	9.8	16	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.3	24
3506	3141	2806	2500	2221	1967	0.6	2.2	4.9	9.1	14.8	-0.2	⊕	-3.4	-12.3	0.7	1.7	⊕	-7.2	-20.6	-41.1	24
3841	3379	2966	2594	2259	1960	0.5	2.3	5.3	9.6	15.7	-0.3	⊕	-2.6	-10.0	0.4	1.3	⊕	-6.0	-17.3	-34.9	24
3071	2610	2205	1850	1541	1279	0.8	3.5	8.1	15.0	24.8	-0.1	⊕	-4.5	-15.9	1.0	2.2	⊕	-9.2	-26.6	-54.6	24
3071	2625	2231	1884	1581	1321	0.7	3.3	7.9	14.4	23.7	-0.1	⊕	-4.4	-15.8	1.0	2.2	⊕	-9.2	-26.3	-53.6	24
3812	3280	2809	2393	2027	1706	0.7	2.9	6.7	12.5	20.1	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-20.7	-41.8	24
3734	3155	2648	2208	1827	1500	0.9	3.3	7.9	14.7	24.0	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.3	-47.5	24
3723	3098	2558	2094	1698	1371	0.9	3.8	9.0	16.7	27.8	-0.1	⊕	-4.1	-15.1	0.9	2.1	⊕	-8.9	-25.9	-53.7	24
3917	3405	2947	2539	2177	1855	0.7	2.8	6.5	12.0	19.3	-0.2	⊕	-3.6	-13.1	0.7	1.8	⊕	-7.7	-22.4	-44.7	24
3927	3396	2923	2503	2131	1805	0.7	3.0	7.1	13.1	21.2	-0.1	⊕	-4.2	-15.0	1.0	2.1	⊕	-8.8	-25.1	-50.5	24
3917	3467	3059	2689	2356	2055	0.6	2.4	5.6	10.3	16.6	-0.2	⊕	-3.5	-12.7	0.7	1.8	⊕	-7.4	-21.4	-42.6	24
4678	4253	3860	3495	3159	2847	0.4	1.8	4.4	8.3	13.2	-0.1	⊕	-3.9	-13.9	0.9	2	⊕	-8	-22.7	-44.7	24
4508	4053	3635	3252	2901	2581	0.6	2.1	4.7	8.7	14	-0.2	⊕	-3.3	-11.8	0.6	1.6	⊕	-6.9	-19.8	-39.4	24
3377	2761	2238	1793	1428	1128	1.0	4.4	10.3	19.7	32.4	0.0	⊕	-4.9	-17.3	1.2	2.4	⊕	-10.1	-30.2	-62.2	24
3957	3230	2612	2089	1657	1305	1.0	4.4	10.2	19.4	32.1	-0.1	⊕	-4.5	-16.4	1.1	2.3	⊕	-9.6	-28.6	-59.4	24
3966	3313	2747	2259	1850	1506	1.0	4.2	9.7	18.5	30.0	⊕	-0.1	-5.7	-19.7	0.1	⊕	-5.5	-19.3	-43.9	-80.5	24
2280	1731	1307	1003	804	681	2.3	8.7	20.6	37.6	59.3	0.7	⊕	-11.9	-41.6	3.7	5.9	⊕	-23.8	-70.9	-146.5	24
768	507	354	276	231	198	3.5	14.9	33.2	57.1	85.9	1.2	⊕	-18	-63.4	5.7	9	⊕	-36.4	-107	-217.6	20
1088	703	528	431	362	308	4.7	17.6	37	62	92.4	2.1	⊕	-25.7	-86.9	8.5	12.8	⊕	-48.4	-139.7	-281.7	20
1902	1449	1085	803	595	453	1.6	6.6	16.2	30.8	51.1	0.1	⊕	-6.5	-23.9	1.7	3.2	⊕	-14.2	-42.8	-91.5	24
978	634	444	350	293	251	3.8	15.9	34.9	59.6	89.2	1.4	⊕	-19.3	-67.7	6.2	9.7	⊕	-38.7	-113.3	-230.2	20
1763	1158	792	607	503	429	3.4	14.7	33.2	57.6	86.8	1.1	⊕	-16.7	-59.6	5.2	8.3	⊕	-34.5	-102.2	-208.7	20
2280	1731	1307	1003	804	681	2.3	8.7	20.6	37.6	59.3	0.7	⊕	-11.9	-41.6	3.7	5.9	⊕	-23.8	-70.9	-146.5	24
3537	2928	2403	1959	1589	1285	1.2	4.5	10.8	20.2	32.9	0.1	⊕	-6.0	-21.3	1.6	3.0	⊕	-12.3	-36.1	-73.4	24
3537	2666	1974	1446	1065	815	1.7	7.1	17.1	32.6	53.9	0.1	⊕	-6.8	-24.9	1.9	3.4	⊕	-14.7	-45.0	-96.5	24
3537	2928	2403	1959	1589	1285	1.2	4.5	10.8	20.2	32.9	0.1	⊕	-6.0	-21.3	1.6	3.0	⊕	-12.3	-36.1	-73.4	24

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM=cartridge length longer than SAAMI max, may not fit in all magazines.. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Rifle

ATT.	USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT G1	BALLISTIC COEFFICIENT G7	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
◊	4	P9374WH	**9.3X74 R**	286	18.53	WOODLEIGH HYDRO	X			2360	2049	1763	1509	1295	1133
◊	4	P370SA	**370 SAKO MAGNUM**	286	18.53	SWIFT A-FRAME	X			2550	2328	2117	1916	1730	1557
◊	4	P370WH	**370 SAKO MAGNUM**	286	18.53	WOODLEIGH HYDRO	X			2450	2132	1839	1576	1349	1172
◊	4	P375SA	**375 H&H MAGNUM**	300	19.44	SWIFT A-FRAME	X			2450	2194	1953	1730	1527	1349
◊	4	P375T1	**375 H&H MAGNUM**	300	19.44	TROPHY BONDED BEAR CLAW	X			2400	2159	1932	1721	1529	1359
◊	4	P375T2	**375 H&H MAGNUM**	300	19.44	TROPHY BONDED SLEDGEHAMMER SOLID	X			2440	2115	1815	1548	1321	1147
◊	4	P375WH	**375 H&H MAGNUM**	300	19.44	WOODLEIGH HYDRO	X			2500	2179	1881	1614	1380	1195
◊	4	P416SA	**416 RIGBY**	400	25.92	SWIFT A-FRAME	X			2350	2128	1917	1722	1542	1381
◊	4	P416T1	**416 RIGBY**	400	25.92	TROPHY BONDED BEAR CLAW	X			2300	2084	1880	1691	1517	1362
◊	4	P416T2	**416 RIGBY**	400	25.92	TROPHY BONDED SLEDGEHAMMER SOLID	X			2370	2073	1798	1551	1339	1171
◊	4	P416WH	**416 RIGBY**	400	25.92	WOODLEIGH HYDRO	X			2400	2086	1797	1539	1319	1149
◊	4	P416RSA	**416 REM. MAGNUM**	400	25.92	SWIFT A-FRAME	X			2400	2175	1962	1763	1580	1413
◊	4	P416RT1	**416 REM. MAGNUM**	400	25.92	TROPHY BONDED BEAR CLAW	X			2400	2179	1969	1772	1591	1426
◊	4	P416RT2	**416 REM. MAGNUM**	400	25.92	TROPHY BONDED SLEDGEHAMMER SOLID	X			2400	2100	1823	1574	1357	1185
◊	4	P416RWH	**416 REM. MAGNUM**	400	25.92	WOODLEIGH HYDRO	X			2400	2086	1797	1539	1319	1149
◊	4	P458T1	**458 WIN. MAGNUM**	400	25.92	TROPHY BONDED BEAR CLAW	X			2250	2025	1813	1619	1442	1290
◊	4	P458T2	**458 WIN. MAGNUM**	500	32.4	TROPHY BONDED BEAR CLAW	X			2090	1822	1580	1369	1198	1076
◊	4	P458T3	**458 WIN. MAGNUM**	500	32.4	TROPHY BONDED SLEDGEHAMMER SOLID	X			1950	1729	1528	1352	1205	1096
◊	4	P458WH	**458 WIN. MAGNUM**	500	32.4	WOODLEIGH HYDRO	X			2050	1764	1510	1296	1133	1025
◊	4	P458SA	**458 WIN. MAGNUM**	500	32.4	SWIFT A-FRAME	X			2090	1878	1683	1503	1345	1212
◊	4	P458LT1	**458 LOTT**	500	32.4	TROPHY BONDED BEAR CLAW	X			2300	2016	1755	1520	1319	1161
◊	4	P458LT2	**458 LOTT**	500	32.4	TROPHY BONDED SLEDGEHAMMER SOLID	X			2300	2055	1825	1616	1427	1267
◊	4	P458LWH	**458 LOTT**	500	32.4	WOODLEIGH HYDRO	X			2250	1947	1672	1430	1232	1090
◊	4	P470SA	**470 NITRO EXPRESS**	500	32.4	SWIFT A-FRAME	X			2150	1936	1738	1555	1391	1251
◊	4	P470T1	**470 NITRO EXPRESS**	500	32.4	TROPHY BONDED BEAR CLAW	X			2150	1892	1657	1445	1268	1131
◊	4	P470T2	**470 NITRO EXPRESS**	500	32.4	TROPHY BONDED SLEDGEHAMMER SOLID	X			2150	1875	1627	1406	1226	1094
◊	4	P470WH	**470 NITRO EXPRESS**	500	32.4	WOODLEIGH HYDRO	X			2150	1855	1591	1361	1180	1056
◊	4	P500NSA	**500 NITRO EXPRESS**	570	36.94	SWIFT A-FRAME	X			2100	1851	1625	1422	1252	1122
◊	4	P500NWH	**500 NITRO EXPRESS**	570	36.94	WOODLEIGH HYDRO	X			2100	1809	1550	1328	1156	1040
FEDERAL PREMIUM VARMINT & PREDATOR															
◊	1	P204B	**204 RUGER**	32	2.07	NOSLER BALLISTIC TIP	X			4030	3465	2968	2523	2119	1755
◊	1	P204C	**204 RUGER**	40	2.59	NOSLER BALLISTIC TIP	X			3650	3200	2793	2421	2079	1766
◊	1	P22D	**22 HORNET**	30	1.94	SPEER TNT GREEN	X			3150	2154	1387	990	828	715
◊	1	P222C	**222 REM.**	40	2.59	NOSLER BALLISTIC TIP	X			3450	2987	2569	2187	1839	1533
◊	1	P222D	**222 REM.**	43	2.79	SPEER TNT GREEN	X			3400	2745	2176	1683	1290	1048
◊	1	P223P	**223 REM.**	40	2.59	NOSLER BALLISTIC TIP	X			3700	3209	2770	2371	2007	1679
◊	1	P223R	**223 REM.**	43	2.79	SPEER TNT GREEN	X			3600	2915	2325	1809	1385	1098
◊	1	P223F	**223 REM.**	55	3.56	NOSLER BALLISTIC TIP	X			3240	2870	2528	2212	1918	1653
◊	1	P224VLKBT1	**224 VALKYRIE**	60	3.89	NOSLER BALLISTIC TIP	X			3300	2930	2589	2273	1979	1710
◊	1	P22250D	**22-250 REM.**	43	2.79	SPEER TNT GREEN	X			4000	3252	2618	2065	1590	1224
◊	1	P22250F	**22-250 REM.**	55	3.56	NOSLER BALLISTIC TIP	X			3670	3263	2892	2550	2233	1939
◊	1	P243H	**243 WIN.**	55	3.56	NOSLER BALLISTIC TIP	X			3850	3438	3064	2721	2402	2105
◊	1	P243F	**243 WIN.**	70	4.54	NOSLER BALLISTIC TIP	X			3450	3113	2802	2511	2238	1983
◊	1	P2506G	**25-06 REM.**	85	5.51	NOSLER BALLISTIC TIP	X			3550	3226	2925	2643	2379	2130
FEDERAL PREMIUM GOLD MEDAL®															
	5	GM223M	**223 REM.**	69	4.47	SIERRA MATCHKING BTHP	X	0.301	0.165	2950	2642	2353	2084	1832	1604
	5	GM223BH73	**223 REM.**	73	4.73	BERGER BT TARGET	X	0.348	0.178	2800	2541	2296	2065	1847	1648
	5	GM223M3	**223 REM.**	77	4.99	SIERRA MATCHKING BTHP	X	0.372	0.188	2720	2481	2255	2041	1838	1652
	5	GM224VLKBH2	**224 VALKYRIE**	80.5	5.22	BERGER BT TARGET	X	0.441	0.226	2925	2713	2512	2318	2134	1958
	5	GM224VLK1	**224 VALKYRIE**	90	5.83	SIERRA MATCHKING BTHP	X	0.563	0.274	2700	2542	2388	2241	2098	1961
	5	GM6CRDBH1	**6MM CREEDMOOR**	105	6.8	BERGER HYBRID	X	0.536	0.275	3025	2846	2674	2509	2350	2196
	5	GM6CRDM1	**6MM CREEDMOOR**	107	6.93	SIERRA MATCHKING BTHP	X	0.547	0.271	3000	2826	2658	2497	2341	2191
	5	GM65GDLBH130	**6.5 GRENDEL**	130	8.42	BERGER AR HYBRID OTM	X	0.560	0.287	2400	2251	2108	1969	1836	1711
	5	GM65CRDBH130	**6.5 CREEDMOOR**	130	8.42	BERGER HYBRID OTM	X	0.560	0.287	2825	2661	2503	2351	2204	2062
	5	GM65CRD1	**6.5 CREEDMOOR**	140	9.07	SIERRA MATCHKING BTHP	X	0.535	0.261	2675	2509	2350	2196	2048	1905
	5	GM65PRCBH1	**6.5 PRC**	140	9.07	BERGER HYBRID	X	0.607	0.311	2925	2770	2621	2476	2336	2201
	5	GM308M	**308 WIN.**	168	10.89	SIERRA MATCHKING BTHP	X	0.462	0.224	2650	2460	2277	2103	1936	1778
	5	GM308M2	**308 WIN.**	175	11.34	SIERRA MATCHKING BTHP	X	0.505	0.250	2600	2427	2262	2102	1949	1803
	5	GM308BH185	**308 WIN.**	185	11.99	BERGER JUGGERNAUT OTM	X	0.552	0.283	2600	2442	2289	2143	2001	1864
	5	GM3006M	**30-06 SPRING.**	168	10.89	SIERRA MATCHKING BTHP	X	0.463	0.224	2700	2508	2324	2148	1980	1819
	5	GM300WM	**300 WIN. MAGNUM**	190	12.31	SIERRA MATCHKING BTHP	X	0.533	0.275	2900	2725	2557	2395	2239	2089
	5	GM300WMBH1	**300 WIN. MAGNUM**	215	13.93	BERGER HYBRID	X	0.691	0.354	2825	2692	2563	2437	2315	2196
	5	GM300NMBH1	**300 NORMA MAG**	215	13.93	BERGER HYBRID	X	0.691	0.354	2925	2789	2657	2528	2404	2283
	5	GM338LM	**338 LAPUA MAG**	250	16.2	SIERRA MATCHKING BTHP	X	0.587	0.318	2950	2789	2634	2484	2339	2199
	5	GM338LM2	**338 LAPUA MAG**	300	19.44	SIERRA MATCHKING BTHP	X	0.768	0.387	2580	2466	2355	2248	2143	2040

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.									TEST BARREL LENGTH
											AVERAGE RANGE				LONG RANGE					
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
3537	2666	1974	1446	1065	815	1.7	7.1	17.1	32.6	53.9	0.1	⊕	-6.8	-24.9	1.9	3.4	⊕	-14.7	-45.0	-96.5	24
4129	3440	2845	2331	1899	1540	0.9	4.1	9.4	17.9	29.4	0.0	⊕	-5.0	-17.6	1.2	2.5	⊕	-10.1	-30.0	-61.5	24
3812	2887	2147	1578	1156	872	1.6	6.6	16.2	30.9	51.5	0.1	⊕	-6.1	-22.8	1.6	3.1	⊕	-13.6	-41.3	-88.7	24
3998	3206	2541	1994	1553	1213	1.3	5.2	12.4	23.3	38.6	0.1	⊕	-5.7	-20.7	1.5	2.9	⊕	-12.1	-35.8	-74.8	24
3837	3105	2486	1974	1557	1230	1.3	5.0	12.1	22.6	37.3	⊕	-0.2	-6.3	-21.9	0.1	⊕	-5.9	-21.3	-48.5	-90.7	24
3966	2978	2194	1597	1163	877	1.7	6.9	16.9	32.2	53.6	0.1	⊕	-6.3	-23.4	1.7	3.1	⊕	-13.9	-42.6	-91.6	24
4163	3161	2357	1735	1269	951	1.5	6.4	15.8	30.0	50.1	0.1	⊕	-5.8	-21.7	1.5	2.9	⊕	-13.0	-39.4	-84.6	24
4905	4021	3264	2633	2111	1693	1.2	4.7	11.5	21.5	35.2	⊕	-0.3	-6.6	-22.6	0.1	⊕	-6.1	-21.9	-49.4	-91.6	24
4698	3859	3139	2540	2043	1647	1.2	4.8	11.6	21.6	35.4	0.2	⊕	-6.4	-23.0	1.8	3.2	⊕	-13.3	-38.6	-79.3	24
4988	3815	2870	2137	1591	1217	1.6	6.6	16.1	30.5	50.5	0.1	⊕	-6.6	-24.2	1.8	3.3	⊕	-14.3	-43.1	-91.8	24
5115	3865	2867	2103	1545	1173	1.7	6.8	16.7	31.9	52.8	0.1	⊕	-6.5	-24.0	1.7	3.2	⊕	-14.2	-43.4	-92.9	24
5115	4202	3419	2760	2216	1774	1.2	4.7	11.1	20.9	34.1	⊕	-0.2	-6.2	-21.3	0.1	⊕	-5.8	-20.8	-47.1	-87.1	24
5115	4215	3443	2789	2248	1806	1.2	4.6	10.9	20.5	33.4	0.1	⊕	-5.8	-20.6	1.5	2.9	⊕	-11.9	-35.1	-71.8	24
5115	3918	2951	2200	1636	1246	1.6	6.5	15.8	29.9	49.7	0.1	⊕	-6.4	-23.5	1.7	3.2	⊕	-13.9	-41.9	-89.2	24
5115	3865	2867	2103	1545	1173	1.7	6.8	16.7	31.9	52.8	0.1	⊕	-6.5	-24.0	1.7	3.2	⊕	-14.2	-43.4	-92.9	24
4496	3641	2919	2327	1846	1478	1.3	5.3	12.9	23.8	39.2	0.2	⊕	-7.0	-24.8	1.9	3.5	⊕	-14.3	-41.6	-86.3	24
4849	3684	2773	2080	1594	1285	1.7	7.7	18.3	34.4	55.8	0.4	⊕	-9.2	-32.2	2.7	4.6	⊕	-18.5	-55.8	-117.6	24
4221	3320	2593	2028	1613	1333	1.8	7.2	16.9	31.2	50.2	0.6	⊕	-10.2	-35.3	3.1	5.1	⊕	-20.1	-59.2	-122.6	24
4665	3455	2530	1864	1425	1167	2.0	8.6	20.7	38.7	62.0	0.5	⊕	-9.8	-35.0	2.9	4.9	⊕	-20.4	-61.6	-129.9	24
4849	3916	3144	2508	2009	1631	1.2	5.9	13.7	25.7	41.8	⊕	-0.7	-9.9	-31.1	0.3	⊕	-8.5	-29.2	-65.5	-121.1	24
5873	4514	3419	2566	1933	1496	1.6	6.7	16.1	30.5	50.3	0.2	⊕	-7.1	-25.6	2.0	3.6	⊕	-14.9	-45.2	-95.7	24
5873	4689	3699	2900	2260	1782	1.4	5.6	13.6	25.2	41.7	0.2	⊕	-6.7	-24.1	1.8	3.3	⊕	-14.1	-41.2	-86.0	24
5620	4209	3105	2269	1686	1320	1.7	7.6	18.2	34.7	56.9	0.2	⊕	-7.8	-28.0	2.2	3.9	⊕	-16.3	-50.0	-107.0	24
5132	4163	3353	2685	2148	1736	1.2	5.5	13.2	24.4	39.9	⊕	-0.6	-9.0	-29.0	0.3	⊕	-7.9	-27.3	-61.0	-113.0	24
5132	3973	3047	2318	1784	1419	1.5	7.0	16.4	31.0	50.6	0.3	⊕	-8.4	-29.3	2.4	4.2	⊕	-16.7	-50.5	-106.1	24
5132	3902	2937	2195	1669	1329	1.6	7.5	17.8	33.5	54.7	0.3	⊕	-8.6	-30.2	2.5	4.3	⊕	-17.3	-52.6	-111.3	24
5132	3819	2809	2057	1546	1238	1.8	8.1	19.4	36.7	59.6	0.3	⊕	-8.8	-31.3	2.5	4.4	⊕	-18.1	-55.4	-117.8	24
5581	4336	3342	2559	1985	1594	1.5	7.0	16.5	31.0	50.5	⊕	-0.7	-10.2	-32.8	0.3	⊕	-8.8	-30.7	-70.1	-131.9	24
5581	4143	3041	2232	1691	1369	1.8	8.4	20.1	37.7	60.8	0.4	⊕	-9.3	-33.1	2.7	4.6	⊕	-19.2	-58.3	-123.7	24
1154	853	626	452	319	219	1	4.4	10.6	20.4	34.6	-0.4	⊕	-1.4	-6.8	-0.1	0.7	⊕	-4.7	-14.9	-33.1	24
1183	909	693	520	384	277	1	4.2	10.0	19.1	32.2	-0.4	⊕	-1.9	-8.3	0.1	1.0	⊕	-5.4	-16.9	-36.5	24
661	309	128	65	46	34	3.5	17.5	46.9	88.9	140.9	-0.1	⊕	-6.6	-32.7	1.5	3.3	⊕	-22.8	-78.7	-179.7	24
1057	792	586	425	300	209	1.2	4.9	11.9	22.8	39.1	-0.3	⊕	-2.4	-10.2	0.3	1.2	⊕	-6.5	-20.4	-45.0	24
1104	719	452	270	159	105	1.8	7.9	20.0	40.4	70.7	-0.3	⊕	-3.2	-14.0	0.5	1.6	⊕	-9.2	-31.4	-75.9	24
1216	915	682	499	358	250	1.1	4.5	10.8	20.8	35.3	-0.4	⊕	-1.9	-8.3	0.1	0.9	⊕	-5.5	-17.3	-38.1	24
1237	811	516	313	183	115	1.6	7.2	18.3	37.1	65.6	-0.3	⊕	-2.7	-11.9	0.3	1.3	⊕	-7.9	-27.1	-65.9	16
1282	1006	781	597	449	333	1.0	4.3	10.4	19.6	33.2	-0.3	⊕	-2.8	-11.0	0.4	1.4	⊕	-6.8	-20.8	-44.6	24
1451	1144	893	688	522	390	1.0	4.2	9.9	18.8	31.6	-0.3	⊕	-2.6	-10.4	0.3	1.3	⊕	-6.5	-19.8	-42.1	24
1528	1010	654	407	241	143	1.5	6.4	15.9	31.9	56.7	-0.4	⊕	-1.8	-8.9	0.0	0.9	⊕	-6.1	-20.8	-50.5	24
1645	1300	1021	794	609	459	0.9	3.7	8.7	16.5	27.4	-0.4	⊕	-1.8	-7.7	0.1	0.9	⊕	-5.1	-15.5	-33.0	24
1810	1444	1147	904	704	541	0.8	3.4	7.9	14.9	24.7	-0.4	⊕	-1.5	-6.6	-0.1	0.7	⊕	-4.4	-13.6	-28.9	24
1850	1507	1220	980	778	611	0.8	3.4	8.0	15.0	24.8	-0.3	⊕	-2.1	-8.6	0.2	1.0	⊕	-5.5	-16.5	-34.6	24
2378	1964	1614	1319	1068	856	0.7	3.0	7.2	13.3	22.0	-0.4	⊕	-1.8	-7.8	0.1	0.9	⊕	-5.0	-15.0	-31.2	24
1333	1069	848	665	514	394	1.0	4.3	10.3	19.3	32.4	-0.2	⊕	-3.5	-13.3	0.7	1.7	⊕	-8.1	-24.1	-51.0	16
1271	1046	854	691	553	440	1.0	3.9	9.4	17.4	29.1	-0.1	⊕	-3.9	-14.4	0.8	1.9	⊕	-8.6	-25.2	-52.6	24
1265	1053	869	712	578	466	0.9	3.8	9.0	16.7	27.9	-0.1	⊕	-4.2	-15.2	0.9	2.1	⊕	-9.0	-26.1	-54.1	24
1529	1316	1127	961	814	685	0.7	2.9	6.7	12.5	20.1	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-20.8	-42.0	24
1457	1291	1140	1003	880	768	0.6	2.4	5.7	10.6	16.9	-0.1	⊕	-3.8	-13.9	0.8	1.9	⊕	-8.1	-23.2	-45.9	24
2133	1889	1668	1468	1287	1124	0.5	2.2	5.1	9.4	15.3	-0.2	⊕	-2.8	-10.5	0.5	1.4	⊕	-6.2	-18.0	-36.1	24
2138	1897	1679	1481	1302	1140	0.5	2.2	5.2	9.3	15.1	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.2	-36.6	24
1663	1463	1282	1119	973	845	0.8	3.1	6.9	12.5	20.6	0.1	⊕	-5.4	-18.6	1.4	2.7	⊕	-10.4	-29.7	-59.8	24
2303	2044	1809	1595	1402	1227	0.6	2.3	5.4	10.0	16.1	-0.2	⊕	-3.4	-12.3	0.7	1.7	⊕	-7.2	-20.9	-41.6	24
2224	1957	1716	1499	1303	1128	0.6	2.6	6.2	11.3	18.1	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.4	-23.9	-47.5	24
2659	2386	2135	1906	1696	1506	0.5	2.1	4.8	8.6	13.9	-0.2	⊕	-3.1	-11.1	0.6	1.5	⊕	-6.6	-18.7	-37.5	24
2619	2257	1935	1650	1398	1179	0.7	3.1	7.4	13.4	22.0	-0.1	⊕	-4.3	-15.3	1.0	2.1	⊕	-8.9	-25.5	-51.5	24
2627	2290	1987	1717	1476	1264	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.1	-25.8	-51.8	24
2777	2449	2153	1886	1644	1428	0.6	2.6	6.2	11.3	18.2	-0.1	⊕	-4.3	-15.4	1.0	2.2	⊕	-8.9	-25.2	-50.0	24
2719	2346	2015	1721	1462	1234	0.7	3.0	7.2	13.2	21.3	-0.1	⊕	-4.0	-14.6	0.9	2.0	⊕	-8.5	-24.5	-49.2	24
3548	3133	2758	2420	2115	1841	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3.2	-11.6	0.6	1.6	⊕	-6.9	-19.9	-39.9	24
3810	3459	3135	2835	2558	2303	0.5	1.9	4.3	7.8	12.7	-0.2	⊕	-3.3	-11.8	0.7	1.7	⊕	-6.9	-19.7	-39.1	24
4084	3713	3369	3052	2758	2487	0.4	1.9	4.1	7.4	12	-0.2	⊕	-3	-10.9	0.5	1.5	⊕	-6.4	-18.2	-36	24
4830	4318	3851	3426	3037	2685	0.5	2.1	4.9	8.8	14.3	-0.2	⊕	-3.0	-11.0	0.5	1.5	⊕	-6.5	-18.5	-37.1	24
4434	4052	3696	3365	3058	2772	0.4	1.8	4.3	8.0	12.8	-0.1	⊕	-4.2	-14.7	1.0	2.1	⊕	-8.5	-23.8	-46.6	24

RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM=cartridge length longer than SAAMI max, may not fit in all magazines.. *Molycoat: molybdenum disulfide dry film lubricant

Federal® Rifle

ATT	USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
FEDERAL POWER•SHOK®												
	1	222A	**222 REM.**	50	3.24	SP	3140	2626	2166	1755	1408	1152
	1	223A	**223 REM.**	55	3.56	SP	3240	2800	2400	2035	1705	1420
	2	223L	**223 REM.**	64	4.15	SP	3050	2682	2342	2027	1740	1485
	1	22250A	**22-250 REM.**	55	3.56	SP	3650	3136	2679	2264	1888	1558
	2	243AS	**243 WIN.**	80	5.18	SP	3330	3051	2790	2543	2309	2088
	2	24385LFA	**243 WIN.**	85	5.51	COPPER HP	3200	2783	2403	2054	1737	1459
	2	243B	**243 WIN.**	100	6.48	SP	2960	2697	2448	2213	1991	1783
	2	6B	**6MM REM.**	100	6.48	SP	3100	2827	2571	2329	2100	1883
	2	2506BS	**25-06 REM.**	117	7.58	SP	3030	2767	2519	2283	2061	1851
	2	6555B	**6.5X55 SWEDISH**	140	9.07	SP	2650	2450	2258	2075	1900	1736
	2	270A	**270 WIN.**	130	8.42	SP	3060	2803	2560	2329	2111	1904
	2	270130LFA	**270 WIN.**	130	8.42	COPPER HP	3060	2729	2422	2135	1867	1625
	2	270B	**270 WIN.**	150	9.72	SPRN	2830	2486	2166	1871	1606	1374
	2	270WSME	**270 WIN. SHORT MAGNUM**	130	8.42	SP	3250	2978	2722	2480	2251	2034
	2	7B	**7MM MAUSER**	140	9.07	SP	2660	2454	2256	2069	1889	1722
	2	7A	**7MM MAUSER**	175	11.34	SPRN	2390	2090	1812	1564	1348	1177
	2	708CS	**7MM-08 REM.**	150	9.72	SP	2650	2438	2235	2043	1859	1689
	2	280B	**280 REM.**	150	9.72	SP	2890	2667	2455	2253	2060	1877
	2	7RA	**7MM REM. MAGNUM**	150	9.72	SP	3110	2841	2587	2347	2120	1905
	3	7RB	**7MM REM. MAGNUM**	175	11.34	SP	2860	2646	2441	2246	2060	1882
	2	7WSME	**7MM WIN. SHORT MAGNUM**	150	9.72	SP	3100	2831	2578	2338	2112	1898
	1	30CA	**30 CARBINE**	110	7.13	SPRN	1990	1564	1231	1031	919	839
	2	300BLK120LFA	**300 BLACKOUT**	120	7.78	COPPER HP	2100	1799	1533	1307	1136	1024
	2	76239B	**7.62X39MM SOVIET**	123	7.97	SP	2350	2055	1783	1539	1329	1164
	1	3030C	**30-30 WIN.**	125	8.1	HP	2570	2083	1656	1309	1079	952
	2	3030A	**30-30 WIN.**	150	9.72	SPFN	2390	2019	1686	1399	1179	1037
	2	3030B	**30-30 WIN.**	170	11.02	SPRN	2200	1894	1619	1380	1191	1060
	2	300A	**300 SAVAGE**	150	9.72	SP	2630	2353	2094	1850	1629	1430
	2	300B	**300 SAVAGE**	180	11.66	SP	2350	2137	1934	1745	1571	1412
	2	308A	**308 WIN.**	150	9.72	SP	2820	2532	2261	2007	1771	1557
	2	308150LFA	**308 WIN.**	150	9.72	COPPER HP	2820	2497	2195	1915	1661	1434
	2	308B	**308 WIN.**	180	11.66	SP	2570	2345	2131	1929	1740	1565
	1	3006CS	**30-06 SPRING.**	125	8.1	SP	3140	2779	2446	2136	1850	1593
	2	3006A	**30-06 SPRING.**	150	9.72	SP	2910	2616	2340	2081	1839	1619
	2	3006150LFA	**30-06 SPRING.**	150	9.72	COPPER HP	2910	2580	2273	1988	1725	1491
	2	3006B	**30-06 SPRING.**	180	11.66	SP	2700	2470	2252	2045	1848	1667
	2	3006HS	**30-06 SPRING.**	220	14.26	SP	2400	2120	1859	1623	1412	1238
	2	300WGS	**300 WIN. MAGNUM**	150	9.72	SP	3150	2898	2661	2435	2221	2017
	3	300WBS	**300 WIN. MAGNUM**	180	11.66	SP	2960	2746	2542	2346	2160	1982
	3	300W180LFA	**300 WIN. MAGNUM**	180	11.66	COPPER HP	2960	2693	2441	2203	1979	1769
	3	300WSMC	**300 WIN. SHORT MAGNUM**	180	11.66	SP	2980	2736	2504	2284	2075	1877
	3	300WSM180LFA	**300 WIN. SHORT MAGNUM**	180	11.66	COPPER HP	2950	2684	2432	2195	1971	1761
	2	303B	**303 BRITISH**	150	9.72	SP	2690	2442	2208	1988	1780	1590
	2	303AS	**303 BRITISH**	180	11.66	SP	2460	2206	1966	1744	1542	1363
	2	32A	**32 WIN. SPECIAL**	170	11.02	SPFN	2250	1923	1630	1376	1179	1047
	2	338FJ	**338 FEDERAL**	200	12.96	SP	2700	2484	2278	2082	1895	1721
	2	8A	**8MM MAUSER**	170	11.02	SP	2250	2025	1814	1620	1444	1292
	2	C357G	**357 MAGNUM**	180	11.66	HP	1550	1282	1095	982	904	841
	2	35A	**35 REM.**	200	12.96	SPRN	2080	1697	1374	1138	999	910
	2	350LA	**350 LEGEND**	180	11.66	SP	2100	1793	1520	1292	1123	1013
	3	375A	**375 H&H MAGNUM**	270	17.5	SP	2690	2418	2162	1922	1700	1500
	3	375B	**375 H&H MAGNUM**	300	19.44	SP	2530	2267	2021	1790	1581	1394
	2	C44A	**44 REM. MAGNUM**	240	15.55	HP	1760	1387	1123	978	885	813
	2	4570AS	**45-70 GOVERNMENT**	300	19.44	HP	1850	1612	1400	1226	1097	1010
	2	450BMB	**450 BUSHMASTER**	300	19.44	SP	1900	1602	1346	1153	1028	945
FEDERAL® NON-TYPICAL												
	2	243DT100	**243 WIN.**	100	6.48	SP	2960	2697	2448	2213	1991	1783
	2	65CDT1	**6.5 CREEDMOOR**	140	9.07	SP	2725	2522	2327	2142	1964	1796
	2	270DT130	**270 WIN.**	130	8.42	SP	3060	2803	2560	2329	2111	1904
	2	270DT150	**270 WIN.**	150	9.72	SPRN	2830	2486	2166	1871	1606	1374
	2	3030DT150	**30-30 WIN.**	150	9.72	SPFN	2390	2019	1686	1399	1179	1037
	2	708DT1	**7MM-08 REM.**	150	9.72	SP	2650	2438	2235	2043	1859	1689
	2	3030DT170	**30-30 WIN.**	170	11.02	SPRN	2200	1894	1619	1380	1191	1060
	2	308DT150	**308 WIN.**	150	9.72	SP	2820	2532	2261	2007	1771	1557
	2	308DT180	**308 WIN.**	180	11.66	SP	2570	2345	2131	1929	1740	1565
	2	3006DT150	**30-06 SPRING.**	150	9.72	SP	2910	2616	2340	2081	1839	1619
	2	3006DT180	**30-06 SPRING.**	180	11.66	SP	2700	2470	2252	2045	1848	1667
	2	7RDT150	**7MM REM. MAGNUM**	150	9.72	SP	3110	2841	2587	2347	2120	1905
	2	300WDT150	**300 WIN. MAGNUM**	150	9.72	SP	3150	2898	2661	2435	2221	2017
	3	300WDT180	**300 WIN. MAGNUM**	180	11.66	SP	2960	2746	2542	2346	2160	1982
	2	350LDT1	**350 LEGEND**	180	11.66	SP	2100	1793	1520	1292	1123	1013
FEDERAL VARMINT & PREDATOR												
	1	AE17H20TVP	**17 HORNET**	20	1.3	TIPPED VARMINT	3610	3042	2541	2092	1694	1361
	1	AE22H35TVP	**22 HORNET**	35	2.27	TIPPED VARMINT	3000	2188	1526	1094	908	795
	1	V204VM32	**204 RUGER**	32	2.07	HORNADY® V-MAX®	4100	3536	3040	2596	2193	1827
	1	V223VM40	**223 REM.**	40	2.59	HORNADY V-MAX	3800	3249	2762	2324	1927	1579
	1, 5	AE22350VP	**223 REM.**	50	3.24	JHP	3325	2839	2402	2006	1653	1355
	1	V223VM53	**223 REM.**	53	3.43	HORNADY V-MAX	3400	3046	2720	2416	2132	1868
	1	V224VLKM60	**224 VALKYRIE**	60	3.89	HORNADY V-MAX	3300	2923	2577	2255	1958	1687
	1	V22250VM40	**22-250 REM.**	40	2.59	HORNADY V-MAX	4200	3597	3070	2602	2179	1798
	1	V22250VM2	**22-250 REM.**	55	3.56	HORNADY V-MAX	3670	3244	2858	2504	2176	1873
	1, 5	AE22250VP	**22-250 REM.**	50	3.24	JHP	3850	3303	2819	2384	1990	1639
	1	AE24375VP	**243 WIN.**	75	4.86	JHP	3375	2943	2551	2191	1861	1569
	1	V243VM75	**243 WIN.**	75	4.86	HORNADY V-MAX	3425	3111	2819	2545	2286	2044
	1	AE65GDL90VP	**6.5MM GRENDEL**	90	5.83	SPEER TNT	3000	2641	2309	2002	1721	1472
	1	V65CRDVM95	**6.5 CREEDMOOR**	95	6.16	HORNADY V-MAX	3300	3023	2763	2518	2285	2065
	1	AE6890VP	**6.8 SPC**	90	5.83	JACKETED HOLLOW POINT	2990	2651	2335	2043	1772	1530
	1	V308VM110	**308 WIN. (7.62X51MM)**	110	7.13	HORNADY V-MAX	3300	2954	2635	2336	2058	1799
	1	AE308130VP	**308 WIN.**	130	8.42	JHP	3050	2691	2359	2052	1769	1516
	1	V76239VP1	**7.62X39MM SOVIET**	130	8.42	JACKETED HOLLOW POINT	2300	1997	1720	1473	1269	1116

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE | LONG RANGE									TEST BARREL LENGTH
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
1095	765	521	342	220	147	1.6	6.9	17.2	34.0	58.9	-0.2	⊕	-3.6	-14.8	0.7	1.8	⊕	-9.3	-30.4	-70.1	24
1282	957	703	505	355	246	1.2	5.3	12.9	25.0	42.6	-0.3	⊕	-3.0	-12.0	0.5	1.5	⊕	-7.6	-23.8	-52.3	24
1322	1022	779	584	430	313	1.2	4.9	11.8	22.6	38.2	-0.2	⊕	-3.3	-13.1	0.6	1.7	⊕	-8.1	-24.7	-53.2	24
1627	1201	876	626	435	296	1.2	4.9	11.9	22.9	39.4	-0.4	⊕	-2.1	-9.0	0.1	1.0	⊕	-5.9	-18.7	-41.8	24
1970	1654	1382	1148	947	774	0.7	3.0	6.9	12.8	21.1	-0.3	⊕	-2.2	-9.0	0.2	1.1	⊕	-5.6	-16.6	-34.2	24
1933	1462	1090	796	569	402	1.2	5.1	12.4	23.9	40.5	-0.3	⊕	-3.0	-12.1	0.5	1.5	⊕	-7.6	-23.6	-51.4	24
1945	1615	1331	1087	880	706	0.9	3.6	8.4	15.8	25.9	-0.2	⊕	-3.3	-12.4	0.6	1.6	⊕	-7.5	-22.1	-45.4	24
2134	1775	1468	1204	979	787	0.8	3.4	7.9	14.8	24.1	-0.3	⊕	-2.9	-11.0	0.5	1.4	⊕	-6.7	-19.9	-40.7	24
2385	1989	1648	1354	1104	890	0.8	3.4	8	14.9	24.4	-0.2	⊕	-3.1	-11.6	0.5	1.5	⊕	-7.0	-20.8	-42.5	24
2183	1865	1585	1338	1122	937	0.7	3.3	7.8	14.3	23.6	-0.1	⊕	-4.3	-15.5	1.0	2.2	⊕	-9.0	-25.9	-52.8	24
2703	2267	1891	1566	1286	1046	0.8	3.2	7.6	14.2	23.1	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.7	-20.0	-40.9	24
2703	2150	1693	1315	1006	763	1.0	4.3	10.3	19.3	32.6	-0.2	⊕	-3.2	-12.4	0.6	1.6	⊕	-7.6	-22.7	-48.4	24
2667	2057	1563	1166	859	629	1.3	5.4	12.8	24.9	41.7	-0.1	⊕	-4.2	-15.7	0.9	2.1	⊕	-9.4	-29.2	-62.6	24
3049	2559	2138	1775	1462	1194	0.7	3.0	7.1	13.2	21.7	-0.3	⊕	-2.4	-9.6	0.3	1.2	⊕	-5.9	-17.5	-36.0	24
2199	1871	1583	1330	1109	922	0.8	3.4	8.0	14.7	24.3	-0.1	⊕	-4.3	-15.5	1.0	2.1	⊕	-9.0	-25.9	-53.1	24
2219	1697	1276	950	706	538	1.6	6.5	16.0	30.2	50.2	0.1	⊕	-6.5	-23.7	1.7	3.2	⊕	-14.1	-42.4	-90.4	24
2339	1979	1664	1390	1151	950	0.8	3.5	8.3	15.3	25.4	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.2	-26.5	-54.4	24
2782	2369	2008	1690	1414	1173	0.8	3.1	7.3	13.6	22.0	-0.2	⊕	-3.4	-12.6	0.7	1.7	⊕	-7.5	-21.9	-44.2	24
3221	2687	2229	1834	1497	1209	0.8	3.3	7.7	14.5	23.6	-0.3	⊕	-2.8	-10.8	0.4	1.4	⊕	-6.6	-19.6	-40.1	24
3178	2720	2316	1961	1649	1377	0.8	3.0	7.2	13.3	21.4	-0.2	⊕	-3.5	-12.8	0.7	1.7	⊕	-7.6	-22.1	-44.6	24
3200	2669	2213	1821	1486	1199	0.8	3.3	7.7	14.5	23.7	-0.3	⊕	-2.9	-10.9	0.5	1.4	⊕	-6.6	-19.7	-40.4	24
967	597	370	260	206	172	3.5	15.1	35.8	63.7	97.4	0.7	⊕	-13.0	-49.1	3.9	6.5	⊕	-29.7	-90.9	-190.2	18
1175	863	626	455	344	279	1.9	8.7	20.9	39.2	63.2	0.4	⊕	-9.4	-33.7	2.7	4.7	⊕	-19.6	-59.9	-127.1	16
1508	1153	868	646	482	370	1.6	6.7	16.2	30.7	50.8	0.2	⊕	-6.7	-24.6	1.8	3.4	⊕	-14.5	-43.9	-93.3	20
1833	1204	761	476	323	252	2.3	10.2	25.6	49.9	81.6	0.1	⊕	-6.7	-26.4	1.7	3.3	⊕	-16.4	-53.7	-120.6	24
1902	1358	947	652	463	358	2.0	8.6	20.8	40.0	65.9	0.1	⊕	-7.2	-26.7	1.9	3.6	⊕	-15.9	-50.1	-109.8	24
1827	1354	990	719	535	424	1.8	8.1	19.4	36.7	59.9	0.3	⊕	-8.4	-30	2.4	4.2	⊕	-17.4	-53.5	-114.4	24
2304	1844	1460	1140	884	681	1.1	4.9	11.5	22.1	36.4	-0.1	⊕	-4.8	-17.5	1.2	2.4	⊕	-10.2	-31.1	-64.8	24
2207	1825	1495	1217	986	797	1.2	4.5	10.9	20.5	33.3	0.1	⊕	-6.1	-21.6	1.6	3.0	⊕	-12.5	-36.5	-74.4	24
2648	2134	1702	1341	1044	807	1.1	4.4	10.4	19.7	32.9	-0.1	⊕	-3.9	-14.7	0.8	2.0	⊕	-8.8	-26.3	-55.2	24
2648	2076	1605	1221	918	685	1.2	5.0	12.0	23.0	38.4	-0.1	⊕	-4.1	-15.4	0.9	2.1	⊕	-9.2	-28.3	-59.9	24
2640	2197	1816	1486	1209	979	0.9	4.1	9.4	17.8	29.4	0.0	⊕	-4.9	-17.3	1.2	2.4	⊕	-10.0	-29.5	-60.7	24
2736	2143	1660	1267	949	704	1.0	4.5	10.8	20.4	34.6	-0.3	⊕	-3.0	-11.9	0.5	1.5	⊕	-7.4	-22.3	-48.0	24
2820	2279	1823	1442	1126	873	1.0	4.2	10.0	18.7	31.4	-0.2	⊕	-3.6	-13.6	0.7	1.8	⊕	-8.2	-24.4	-51.3	24
2820	2217	1721	1316	991	740	1.2	4.8	11.5	21.9	36.7	-0.2	⊕	-3.7	-14.3	0.8	1.9	⊕	-8.7	-26.2	-55.7	24
2913	2439	2026	1671	1365	1111	0.9	3.7	8.8	16.2	27.0	-0.1	⊕	-4.2	-15.3	1.0	2.1	⊕	-9.0	-26.2	-54.0	24
2813	2196	1688	1286	974	748	1.5	5.9	14.6	27.3	45.4	0.1	⊕	-6.2	-22.7	1.7	3.1	⊕	-13.5	-40.0	-84.5	24
3305	2798	2358	1975	1643	1355	0.7	3.0	6.9	12.9	21.1	-0.3	⊕	-2.7	-10.2	0.4	1.3	⊕	-6.2	-18.3	-37.5	24
3502	3013	2582	2200	1864	1570	0.7	2.9	6.6	12.3	20.0	-0.2	⊕	-3.1	-11.6	0.6	1.6	⊕	-6.9	-20.3	-41.0	24
3502	2898	2382	1940	1565	1250	0.9	3.6	8.6	16.0	26.4	-0.2	⊕	-3.3	-12.5	0.6	1.6	⊕	-7.5	-22.2	-45.8	24
3549	2991	2506	2084	1721	1408	0.8	3.2	7.6	14.2	23.0	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-21.0	-42.7	24
3478	2878	2364	1925	1552	1240	0.9	3.6	8.6	16.1	26.5	-0.2	⊕	-3.3	-12.6	0.6	1.7	⊕	-7.6	-22.4	-46.2	24
2410	1987	1624	1316	1055	842	0.9	4.1	9.7	18.0	30.0	-0.1	⊕	-4.4	-15.9	1.0	2.2	⊕	-9.3	-27.4	-56.9	24
2418	1944	1545	1215	950	742	1.2	5.1	12.2	23.0	37.9	0.1	⊕	-5.7	-20.4	1.5	2.8	⊕	-11.9	-35.3	-73.6	24
1911	1395	1002	715	524	414	1.8	8.4	20.1	38.3	62.5	0.2	⊕	-8.1	-29.3	2.3	4.0	⊕	-17.2	-53.1	-114.4	24
3237	2740	2304	1824	1594	1313	0.8	3.4	8.2	15.0	24.9	-0.1	⊕	-4.1	-15.0	0.9	2.1	⊕	-8.8	-25.5	-52.2	24
1911	1548	1242	991	786	630	1.3	5.3	12.8	23.7	39.1	0.2	⊕	-6.9	-24.8	1.9	3.5	⊕	-14.3	-41.6	-86.1	24
960	657	479	385	326	283	3.5	14.2	31.2	53.4	79.9	1.5	⊕	-19.7	-68.1	6.4	9.9	⊕	-38.5	-111.9	-225.7	18
1921	1278	838	575	443	368	2.8	12.0	29.1	53.5	83.6	0.5	⊕	-10.7	-40.2	3.2	5.4	⊕	-24.1	-75.1	-159.2	24
1762	1284	924	668	504	410	2	8.9	21.6	40.4	64.9	0.4	⊕	-9.4	-34.1	2.8	4.7	⊕	-20	-61	-129.6	16
4338	3505	2803	2214	1733	1348	1.0	4.6	10.7	20.4	33.9	-0.1	⊕	-4.5	-16.4	1.0	2.3	⊕	-9.6	-28.9	-60.3	24
4263	3424	2720	2135	1665	1294	1.2	5.0	11.8	22.5	37.1	0.0	⊕	-5.3	-19.1	1.3	2.6	⊕	-11.1	-33.5	-69.5	24
1651	1025	672	509	417	352	3.9	16.5	37.1	64.0	96.4	1.0	⊕	-16.8	-60.9	5.2	8.4	⊕	-35.6	-106.0	-217.7	20
2280	1730	1305	1001	802	679	2.3	8.8	20.7	37.8	59.5	0.7	⊕	-11.9	-41.7	3.7	5.9	⊕	-23.9	-71.0	-146.8	24
2405	1708	1208	885	703	595	2.7	10.8	25.6	46.5	72.4	0.7	⊕	-12.2	-43.7	3.7	6.1	⊕	-25.4	-77.1	-160.6	24
1945	1615	1331	1087	880	706	0.9	3.6	8.4	15.8	25.9	-0.2	⊕	-3.3	-12.4	0.6	1.6	⊕	-7.5	-22.1	-45.4	24
2308	1977	1683	1426	1199	1003	0.8	3.1	7.5	13.8	22.5	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.5	-24.4	-49.4	24
2703	2267	1891	1566	1286	1046	0.8	3.2	7.6	14.2	23.1	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.7	-20.0	-40.9	24
2667	2057	1563	1166	859	629	1.3	5.4	12.8	24.9	41.7	-0.1	⊕	-4.2	-15.7	0.9	2.1	⊕	-9.4	-29.2	-62.6	24
1902	1358	947	652	463	358	2.0	8.6	20.8	40.0	65.9	0.1	⊕	-7.2	-26.7	1.9	3.6	⊕	-15.9	-50.1	-109.8	24
2339	1979	1664	1390	1151	950	0.8	3.5	8.3	15.3	25.4	-0.1	⊕	-4.4	-15.7	1	2.2	⊕	-9.2	-26.5	-54.4	24
1827	1354	990	719	535	424	1.8	8.1	19.4	36.7	59.9	0.3	⊕	-8.4	-30	2.4	4.2	⊕	-17.4	-53.5	-114.4	24
2648	2134	1702	1341	1044	807	1.1	4.4	10.4	19.7	32.9	-0.1	⊕	-3.9	-14.7	0.8	2.0	⊕	-8.8	-26.3	-55.2	24
2640	2197	1816	1486	1209	979	0.9	4.1	9.4	17.8	29.4	0.0	⊕	-4.9	-17.3	1.2	2.4	⊕	-10.0	-29.5	-60.7	24
2820	2279	1823	1442	1126	873	1.0	4.2	10.0	18.7	31.4	-0.2	⊕	-3.6	-13.6	0.7	1.8	⊕	-8.2	-24.4	-51.3	24
2913	2439	2026	1671	1365	1111	0.9	3.7	8.8	16.2	27.0	-0.1	⊕	-4.2	-15.3	1.0	2.1	⊕	-9.0	-26.2	-54.0	24
3221	2687	2229	1834	1497	1209	0.8	3.3	7.7	14.5	23.6	-0.3	⊕	-2.8	-10.8	0.4	1.4	⊕	-6.6	-19.6	-40.1	24
3305	2798	2358	1975	1643	1355	0.7	3.0	6.9	12.9	21.1	-0.3	⊕	-2.7	-10.2	0.4	1.3	⊕	-6.2	-18.3	-37.5	24
3502	3013	2582	2200	1864	1570	0.7	2.9	6.6	12.3	20.0	-0.2	⊕	-3.1	-11.6	0.6	1.6	⊕	-6.9	-20.3	-41.0	24
1762	1284	924	668	504	410	2	8.9	21.6	40.4	64.9	0.4	⊕	-9.4	-34.1	2.8	4.7	⊕	-20	-61	-129.6	16
579	411	287	194	127	82	1.3	5.7	14.0	27.5	47.7	-0.4	⊕	-2.3	-10.1	0.2	1.1	⊕	-6.6	-21.4	-49.1	24
699	372	181	93	64	49	3.0	14.4	38.3	74.2	118.8	-0.1	⊕	-6.1	-28.3	1.4	3.1	⊕	-19.1	-66.9	-152.6	24
1194	888	657	479	342	237	1	4.2	10.2	19.4	32.8	-0.4	⊕	-1.3	-6.4	-0.1	0.6	⊕	-4.4	-14.1	-31.1	24
1282	937	677	479	330	221	1.1	4.9	11.8	22.8	39.4	-0.4	⊕	-1.8	-8.2	0.1	0.9	⊕	-5.5	-17.6	-39.5	24
1227	895	640	447	303	204	1.3	5.6	13.8	27.1	46.5	-0.3	⊕	-2.8	-11.8	0.4	1.4	⊕	-7.5	-24.0	-53.7	24
1360	1092	871	687	535	410	0.9	3.7	8.7	16.5	27.3	-0.3	⊕	-2.3	-9.2	0.2	1.1	⊕	-5.8	-17.7	-37.1	24
1451	1138	884	678	511	379	1	4.3	10.2	19.3	32.4	-0.3	⊕	-2.6	-10.4	0.3	1.3	⊕	-6.5	-20.0	-42.8	24
1567	1149	837	601	422	287	1	4.4	10.5	20.1	34.1	-0.5	⊕	-1.2	-6.1	-0.2	0.6	⊕	-4.3	-13.9	-30.9	24
1645	1285	998	766	578	428	0.9	3.9	9.2	17.5	29.1	-0.4	⊕	-1.8	-7.9	0.1	0.9	⊕	-5.2	-16	-34.1	24
1645	1211	882	631	439	298	1.1	4.7	11.3	21.9	37.5	-0.4	⊕	-1.7	-7.8	0.0	0.9	⊕	-5.3	-16.8	-37.5	24
1897	1443	1084	800	577	410	1.1	4.8	11.5	21.9	37.3	-0.3	⊕	-2.5	-10.5	0.3	1.3	⊕	-6.7	-20.6	-45.1	24
1953	1612	1323	1078	871	696	0.8	3.2	7.5	13.9	23	-0.3	⊕	-2.1	-8.6	0.2	1	⊕	-5.5	-16.3	-33.8	24
1798	1394	1065	801	592	433	1.2	4.9	11.9	22.8	38.3	-0.2	⊕	-3.5	-13.6	0.7	1.7	⊕	-8.3	-25.5	-54.6	24
2297	1928	1610	1337	1101	900	0.7	3	7	13	21.4	-0.3	⊕	-2.3	-9.2	0.3	1.2	⊕	-5.7	-16.9	-34.9	24
1786	1404	1090	834	628	468	1.1	4.6	11.2	21.2	35.7	-0.2	⊕	-3.5	-13.4	0.7	1.7	⊕	-8.2	-24.7	-52.6	24
2660	2132	1695	1333	1034	791	0.9	3.9	9.1	17.2	28.6	-0.3	⊕	-2.5	-10	0.3	1.3	⊕	-6.2	-19.0	-39.9	24
2685	2090	1606	1215	903	664	1.1	4.7	11.5	21.8	36.8	-0.2	⊕	-3.3	-12.9	0.6	1.7	⊕	-8.0	-24.3	-52.0	24
1527	1151	854	627	464	359	1.8	7.3	17.5	33.2	54.8	0.2	⊕	-7.3	-26.4	2	3.6	⊕	-15.5	-47.3	-101.1	20

RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM=cartridge length longer than SAAMI max, may not fit in all magazines.. *Molycoat: molybdenum disulfide dry film lubricant

American Eagle® Rifle

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
AMERICAN EAGLE											
5	AE5728A	**5.7X28**	40	2.59	TMJ	2250	1606	1151	942	825	735
1, 5	AE223G	**223 REM.**	50	3.24	SPEER TNT JHP	3325	2839	2402	2006	1653	1355
5	AE223	**223 REM.**	55	3.56	FMJ BT	3240	2874	2536	2222	1931	1667
5	AE223N	**223 REM.**	62	4.02	FMJ BT	3020	2713	2426	2156	1904	1674
5	AE223T75	**223 REM.**	75	4.86	TMJ	2775	2550	2336	2132	1938	1756
5	AE224VLK1	**224 VALKYRIE**	75	4.86	TMJ	3000	2763	2539	2325	2122	1929
1, 5	AE22250G	**22-250 REM.**	50	3.24	JHP	3850	3303	2819	2384	1990	1639
5	AE65GDL1	**6.5MM GRENDEL**	120	7.97	SPEER TNT JHP	2580	2410	2246	2089	1938	1794
5	AE65CRD2	**6.5 CREEDMOOR**	120	7.78	OTM	2900	2680	2470	2270	2079	1897
5	AE68A	**6.8 SPC**	115	7.45	FMJ	2675	2442	2221	2012	1815	1633
5	AE30CB	**30 CARBINE**	110	7.13	FMJ	1990	1564	1231	1031	919	839
5	AE300BLK1	**300 BLACKOUT**	150	9.72	FMJ BT	1900	1724	1561	1411	1282	1174
5	AE300BLKSUP2	**300 BLACKOUT**	220	14.26	OTM	1000	970	944	920	897	876
5	A76239A	**7.62X39MM SOVIET**	124	8.04	FMJ	2350	2078	1824	1595	1392	1224
5	AE308D	**308 WIN.**	150	9.72	FMJ BT	2820	2597	2385	2183	1990	1808
5	A76251M1A	**7.62X51MM**	168	10.89	OTM	2650	2459	2276	2101	1933	1774
5	AE3006M1	**30-06 SPRING.**	150	9.72	FMJ BT	2740	2522	2314	2116	1928	1751
5	AE3006N	**30-06 SPRING.**	150	9.72	FMJ BT	2910	2683	2466	2260	2064	1877
5	AE338L	**338 LAPUA MAG**	250	16.2	JSP	2875	2708	2547	2392	2242	2097

Fusion® Rifle

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
FUSION											
2	F223FS1	**223 REM.**	62	4.02	FUSION	3000	2697	2413	2148	1898	1671
2	F22250FS1	**22-250 REM.**	55	3.56	FUSION	3600	3108	2667	2267	1902	1580
2	F243FS1	**243 WIN.**	95	6.16	FUSION	2980	2730	2493	2268	2056	1854
2	F2506FS1	**25-06 REM.**	120	7.78	FUSION	2980	2778	2585	2399	2222	2052
2	F65CRDFS1	**6.5 CREEDMOOR**	140	9.07	FUSION	2725	2522	2327	2142	1964	1796
3	F6555FS1	**6.5X55 SWEDISH**	140	9.07	FUSION	2530	2336	2150	1973	1804	1648
2	F65PRCFS1	**6.5 PRC**	140	9.07	FUSION	2925	2713	2510	2316	2131	1954
2	F6555FSI2	**6.5X55 SWEDISH**	156	10.11	FUSION	2500	2326	2159	1999	1845	1702
2	F260FS1	**260 REM.**	120	7.78	FUSION	2950	2710	2483	2266	2061	1866
2	F270FS1	**270 WIN.**	130	8.42	FUSION	3050	2811	2584	2368	2163	1968
2	F270FS2	**270 WIN.**	150	9.72	FUSION	2850	2655	2468	2289	2117	1953
2	F270WSMFS1	**270 WIN. SHORT MAGNUM**	150	9.72	FUSION	3060	2867	2682	2504	2333	2169
2	F708FS2	**7MM-08 REM.**	120	7.78	FUSION	3000	2719	2455	2206	1971	1753
2	F708FS1	**7MM-08 REM.**	140	9.07	FUSION	2850	2615	2393	2181	1980	1791
2	F280FS1	**280 REM.**	140	9.07	FUSION	2990	2794	2607	2427	2255	2089
3	F7RFS1	**7MM REM. MAGNUM**	150	9.72	FUSION	3050	2861	2680	2505	2338	2177
3	F7RFS2	**7MM REM. MAGNUM**	175	11.34	FUSION	2760	2592	2430	2274	2123	1978
3	F7WSMFS1	**7MM WIN. SHORT MAGNUM**	150	9.72	FUSION	3100	2911	2730	2556	2388	2227
2	F76239FS1	**7.62X39MM SOVIET**	123	7.97	FUSION	2350	2077	1823	1593	1389	1222
2	F3030FS1	**30-30 WIN.**	150	9.72	FUSION	2390	2086	1805	1553	1337	1167
2	F3030FS2	**30-30 WIN.**	170	11.02	FUSION	2200	1950	1719	1510	1329	1182
2	F308FS1	**308 WIN.**	150	9.72	FUSION	2820	2600	2391	2191	2001	1821
2	F308FS2	**308 WIN.**	165	10.69	FUSION	2700	2501	2310	2128	1954	1789
2	F308FS3	**308 WIN.**	180	11.66	FUSION	2600	2427	2260	2101	1947	1801
2	F3006FS1	**30-06 SPRING.**	150	9.72	FUSION	2900	2674	2459	2254	2059	1874
2	F3006FS2	**30-06 SPRING.**	165	10.69	FUSION	2790	2590	2399	2217	2042	1875
2	F3006FS3	**30-06 SPRING.**	180	11.66	FUSION	2700	2521	2349	2185	2026	1874
2	F300WFS1	**300 WIN. MAGNUM**	150	9.72	FUSION	3200	2958	2729	2512	2304	2107
2	F300WFS2	**300 WIN. MAGNUM**	165	10.69	FUSION	3080	2865	2660	2464	2276	2097
2	F300WFS3	**300 WIN. MAGNUM**	180	11.66	FUSION	2960	2766	2580	2401	2230	2065
2	F300WSMFS3	**300 WIN. SHORT MAGNUM**	150	9.72	FUSION	3250	3005	2774	2555	2345	2146
2	F300WSMFS1	**300 WIN. SHORT MAGNUM**	165	10.69	FUSION	3100	2885	2680	2484	2296	2116
2	F300WSMFS2	**300 WIN. SHORT MAGNUM**	180	11.66	FUSION	2950	2756	2570	2391	2220	2055
2	F338FFS2	**338 FEDERAL**	200	12.96	FUSION	2700	2487	2284	2090	1905	1733
2	F338FS1	**338 WIN. MAGNUM**	225	14.58	FUSION	2850	2661	2479	2305	2138	1978
2	F35FS1	**35 WHELEN**	200	12.96	FUSION	2800	2537	2289	2055	1835	1634
2	F350LFS1	**350 LEGEND**	160	10.37	FUSION	2300	1993	1712	1463	1257	1107
2	F4570FS1	**45-70 GOVERNMENT**	300	19.44	FUSION	1850	1612	1401	1227	1099	1011
2	F450BMFS1	**450 BUSHMASTER**	260	16.85	FUSION	2200	1777	1419	1155	1002	907
FUSION MSR											
2	F223MSR1	**223 REM.**	62	4.02	FUSION	2750	2463	2194	1942	1710	1500
2	F224VLKMSR1	**224 VALKYRIE**	90	5.83	FUSION	2700	2491	2291	2101	1919	1749
2	F65GDLMSR1	**6.5MM GRENDEL**	120	7.78	FUSION	2600	2346	2107	1881	1674	1485
2	F68MSR2	**6.8 SPC**	90	5.83	FUSION	2850	2524	2221	1939	1682	1453
2	F68MSR1	**6.8 SPC**	115	7.45	FUSION	2470	2248	2037	1838	1654	1485
2	F300BMSR2	**300 BLACKOUT**	150	9.72	FUSION	1900	1685	1490	1320	1181	1079
2	F308MSR1	**308 WIN.**	150	9.72	FUSION	2770	2553	2345	2148	1960	1782
2	F338FMSR2	**338 FEDERAL**	185	11.99	FUSION	2680	2447	2226	2016	1819	1636

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND						HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.									TEST BARREL LENGTH
												AVERAGE RANGE				LONG RANGE					
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
450	229	118	79	60	48	4.4	20.2	48.0	84.7	129.1	0.5	⊕	-12.6	-51.3	3.6	6.3	⊕	-32.4	-101.1	-216.1	24
1227	895	640	447	303	204	1.3	5.6	13.8	27.1	46.5	-0.3	⊕	-2.8	-11.8	0.4	1.4	⊕	-7.5	-24.0	-53.7	24
1282	1008	785	603	455	339	1.0	4.3	10.2	19.4	32.7	-0.3	⊕	-2.7	-10.9	0.4	1.4	⊕	-6.8	-20.6	-44.2	24
1255	1013	810	640	499	386	1.0	4.0	9.7	18.1	30.4	-0.2	⊕	-3.2	-12.4	0.6	1.6	⊕	-7.6	-22.6	-47.6	24
1282	1083	908	757	625	514	0.8	3.4	8.1	14.9	24.6	-0.1	⊕	-3.8	-14.1	0.8	1.9	⊕	-8.4	-24.2	-49.6	24
1499	1272	1073	900	750	619	0.7	3.1	7.2	13.4	21.8	-0.2	⊕	-3.1	-11.5	0.5	1.5	⊕	-6.9	-20.4	-41.3	24
1645	1211	882	631	439	298	1.1	4.7	11.3	21.9	37.5	-0.4	⊕	-1.7	-7.8	0.0	0.9	⊕	-5.3	-16.8	-37.5	24
1818	1586	1378	1192	1026	879	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.5	-16.0	1.1	2.3	⊕	-9.2	-26.1	-52.5	24
2241	1913	1626	1373	1152	959	0.8	3.1	7.2	13.3	21.5	-0.2	⊕	-3.3	-12.4	0.6	1.7	⊕	-7.4	-21.6	-43.5	24
1827	1523	1260	1034	841	681	0.9	3.8	9.1	16.9	28.0	-0.1	⊕	-4.4	-15.8	1.0	2.2	⊕	-9.2	-27.0	-55.8	24
967	597	370	260	206	172	3.5	15.1	35.8	63.7	97.4	0.7	⊕	-13.0	-49.1	3.9	6.5	⊕	-29.7	-90.9	-190.2	18
1202	990	811	663	547	459	1.6	6.1	13.7	25.3	40.6	0.6	⊕	-10.3	-34.7	3.2	5.1	⊕	-19.3	-56.3	-114.5	16
488	460	435	413	393	375	0.7	3.3	7.2	12.5	19.1	3.7	⊕	-35.6	-110.4	12.6	17.8	⊕	-56.9	-154.7	-294.9	16
1520	1189	916	701	533	412	1.5	6.0	14.7	27.6	45.7	0.1	⊕	-6.5	-23.8	1.8	3.3	⊕	-14.0	-41.5	-87.5	20
2648	2246	1894	1586	1319	1089	0.8	3.3	7.8	14.4	23.3	-0.2	⊕	-3.6	-13.5	0.8	1.8	⊕	-8.0	-23.3	-47.2	24
2619	2255	1932	1646	1394	1174	0.7	3.1	7.4	13.5	22.1	-0.1	⊕	-4.3	-15.3	1.0	2.1	⊕	-8.9	-25.5	-51.6	24
2500	2118	1783	1492	1238	1021	0.8	3.4	8.0	14.7	24.3	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.6	-24.7	-50.5	24
2820	2397	2026	1701	1419	1173	0.8	3.2	7.4	13.7	22.2	-0.2	⊕	-3.3	-12.4	0.6	1.7	⊕	-7.4	-21.7	-43.8	24
4588	4070	3601	3175	2789	2442	0.6	2.4	5.3	9.8	15.9	-0.2	⊕	-3.2	-11.8	0.6	1.6	⊕	-6.9	-20.0	-40.1	24

ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND						HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ✦ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.									TEST BARREL LENGTH
												AVERAGE RANGE				LONG RANGE					
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
1239	1001	802	635	496	384	1.0	4.0	9.7	18.1	30.4	-0.2	⊕	-3.3	-12.6	0.6	1.6	⊕	-7.7	-22.8	-48.0	24
1583	1179	869	627	442	305	1.1	4.8	11.6	22.3	38.3	-0.4	⊕	-2.1	-9.2	0.2	1.1	⊕	-6.0	-18.8	-41.8	24
1873	1572	1311	1085	891	725	0.8	3.3	7.8	14.6	23.7	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.2	-21.2	-43.2	24
2366	2056	1780	1534	1315	1122	0.6	2.6	6.0	11.3	18.3	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.7	-19.5	-39.3	24
2308	1977	1683	1426	1199	1003	0.8	3.1	7.5	13.8	22.5	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.5	-24.4	-49.4	24
1990	1696	1437	1210	1012	844	0.8	3.6	8.3	15.3	25.3	0.0	⊕	-4.9	-17.4	1.2	2.5	⊕	-9.9	-28.7	-58.7	24
2659	2287	1958	1667	1411	1187	0.7	2.9	6.7	12.5	20.2	-0.2	⊕	-3.2	-12	0.6	1.6	⊕	-7.1	-20.8	-42	24
2165	1874	1614	1384	1179	1003	0.7	3.3	7.7	13.7	22.7	0.0	⊕	-5.0	-17.5	1.2	2.5	⊕	-10.0	-28.3	-57.5	24
2319	1957	1642	1369	1132	928	0.8	3.3	7.6	14.2	23.0	-0.2	⊕	-3.2	-12.1	0.6	1.6	⊕	-7.3	-21.4	-43.4	24
2685	2280	1927	1618	1350	1117	0.7	3.0	7.0	13.1	21.3	-0.2	⊕	-2.9	-11.0	0.5	1.5	⊕	-6.6	-19.6	-39.8	24
2705	2347	2029	1745	1493	1270	0.7	2.8	6.5	12.0	19.3	-0.2	⊕	-3.4	-12.6	0.7	1.7	⊕	-7.4	-21.6	-43.3	24
3118	2737	2395	2088	1813	1567	0.5	2.4	5.5	10.0	16.3	-0.3	⊕	-2.8	-10.3	0.4	1.4	⊕	-6.2	-17.9	-36.1	24
2398	1970	1605	1296	1035	819	0.9	3.7	8.8	16.5	27.3	-0.2	⊕	-3.2	-12.2	0.6	1.6	⊕	-7.4	-22.0	-45.6	24
2525	2126	1779	1479	1219	997	0.9	3.4	8.0	14.9	24.3	-0.2	⊕	-3.6	-13.3	0.7	1.8	⊕	-7.9	-23.2	-47.2	24
2779	2427	2113	1831	1580	1357	0.6	2.5	5.8	10.7	17.5	-0.2	⊕	-3.0	-11.0	0.5	1.5	⊕	-6.5	-19.1	-38.5	24
3098	2726	2391	2091	1820	1578	0.5	2.3	5.4	9.8	16.0	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.2	-17.9	-36.1	24
2960	2610	2294	2008	1751	1521	0.7	2.5	5.8	10.8	17.4	-0.1	⊕	-3.6	-13.2	0.8	1.8	⊕	-7.8	-22.3	-44.5	24
3200	2822	2481	2175	1899	1652	0.5	2.2	5.2	9.5	15.4	-0.3	⊕	-2.6	-9.9	0.4	1.3	⊕	-6.0	-17.2	-34.7	24
1508	1178	907	693	527	407	1.5	6.0	14.8	27.7	45.9	0.1	⊕	-6.5	-23.8	1.8	3.3	⊕	-14.0	-41.6	-87.7	24
1902	1449	1085	803	595	453	1.6	6.6	16.2	30.8	51.1	0.1	⊕	-6.5	-23.9	1.7	3.2	⊕	-14.2	-42.8	-91.5	24
1827	1435	1115	860	666	527	1.4	6.3	15.1	28.5	46.7	0.3	⊕	-7.7	-27.2	2.2	3.9	⊕	-15.6	-46.8	-97.8	24
2648	2252	1903	1599	1333	1104	0.8	3.2	7.6	14.1	22.9	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.1	-46.9	24
2671	2291	1955	1660	1399	1173	0.7	3.1	7.5	13.7	22.3	-0.1	⊕	-4.1	-14.7	0.9	2.0	⊕	-8.6	-24.8	-50.1	24
2702	2354	2042	1763	1515	1296	0.6	2.9	6.9	12.6	20.4	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.1	-25.8	-51.9	24
2801	2382	2014	1693	1412	1169	0.8	3.1	7.4	13.7	22.2	-0.2	⊕	-3.4	-12.5	0.7	1.7	⊕	-7.5	-21.8	-44.1	24
2852	2458	2109	1800	1527	1287	0.8	2.9	7.0	12.9	20.7	-0.1	⊕	-3.7	-13.4	0.8	1.8	⊕	-7.9	-22.9	-46.0	24
2913	2540	2206	1907	1640	1403	0.7	2.7	6.6	12.1	19.4	-0.1	⊕	-4.0	-14.3	0.9	2.0	⊕	-8.4	-23.9	-47.8	24
3410	2915	2481	2101	1769	1479	0.6	2.7	6.4	11.8	19.4	-0.3	⊕	-2.5	-9.6	0.3	1.2	⊕	-5.9	-17.3	-35.4	24
3475	3006	2591	2223	1898	1610	0.6	2.6	6.1	11.2	18.3	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.3	-37.1	24
3502	3057	2659	2304	1987	1704	0.6	2.6	5.9	10.9	17.7	-0.2	⊕	-3.1	-11.3	0.6	1.5	⊕	-6.7	-19.5	-39.4	24
3518	3008	2563	2173	1832	1534	0.6	2.7	6.3	11.6	18.9	-0.3	⊕	-2.4	-9.3	0.3	1.2	⊕	-5.7	-16.7	-34.2	24
3521	3048	2630	2260	1931	1641	0.6	2.6	6.0	11.1	18.1	-0.3	⊕	-2.7	-10.2	0.4	1.4	⊕	-6.2	-18.0	-36.5	24
3478	3035	2639	2285	1969	1688	0.6	2.6	5.9	11.0	17.9	-0.2	⊕	-3.1	-11.4	0.6	1.5	⊕	-6.8	-19.7	-39.7	24
3237	2746	2316	1940	1612	1334	0.8	3.4	8.1	14.8	24.4	-0.1	⊕	-4.1	-15.0	0.9	2.1	⊕	-8.8	-25.3	-51.9	24
4058	3537	3071	2654	2283	1954	0.7	2.7	6.2	11.6	18.7	-0.2	⊕	-3.4	-12.5	0.7	1.7	⊕	-7.3	-21.3	-42.8	24
3481	2858	2327	1876	1495	1185	1.0	4.0	9.5	17.7	29.6	-0.1	⊕	-3.9	-14.5	0.8	2.0	⊕	-8.7	-25.4	-53.0	24
1879	1411	1041	760	562	435	1.8	7.4	17.8	33.9	55.8	0.2	⊕	-7.3	-26.6	2	3.7	⊕	-15.6	-47.8	-102.4	16
2280	1731	1307	1003	804	681	2.3	8.7	20.6	37.6	59.3	0.7	⊕	-11.9	-41.6	3.7	5.9	⊕	-23.8	-70.9	-146.5	24
2794	1823	1162	770	579	475	2.7	12	29.5	54.9	86.4	0.4	⊕	-9.7	-177.1	2.8	4.9	⊕	-22.5	-71.2	-152.8	24
1041	835	663	519	402	310	1.1	4.6	10.9	20.8	34.6	-0.1	⊕	-4.3	-15.7	1.0	2.1	⊕	-9.3	-28.1	-58.8	16
1457	1240	1049	882	736	611	0.8	3.3	7.9	14.5	23.8	-0.1	⊕	-4.1	-14.9	0.9	2.0	⊕	-8.8	-25.2	-51.4	24
1801	1467	1183	943	747	588	1.0	4.5	10.6	20.2	33.3	0.0	⊕	-4.9	-17.5	1.2	2.4	⊕	-10.1	-30.5	-63.1	24
1623	1273	986	751	565	422	1.2	5.0	11.8	22.7	37.8	-0.1	⊕	-4.0	-15.0	0.9	2.0	⊕	-9.0	-27.6	-58.4	16
1558	1290	1059	862	699	563	1.0	4.3	10.1	19.3	31.5	0.0	⊕	-5.4	-19.1	1.4	2.7	⊕	-11.0	-32.7	-66.8	16
1202	946	739	580	465	388	1.9	7.4	17.4	31.9	51.0	0.6	⊕	-10.8	-37.3	3.3	5.4	⊕	-21.2	-62.4	-128.7	16
2555	2170	1832	1536	1279	1058	0.8	3.3	7.8	14.4	23.6	-0.1	⊕	-3.8	-14.1	0.8	1.9	⊕	-8.3	-24.1	-48.9	20
2950	2459	2035	1670	1358	1100	0.9	3.8	9.0	16.8	28.0	-0.1	⊕	-4.3	-15.7	1.0	2.2	⊕	-9.2	-26.8	-55.5	20



HST NEW

Effective self-defense requires ammunition that provides consistent expansion, optimum penetration and superior terminal performance. And HST® delivers. That's why it's already the duty load of choice for law enforcement officers throughout the world. Its specially designed hollow point won't plug while passing through a variety of barriers, and the bullet jacket and core hold together to provide nearly 100 percent weight retention through even the toughest materials. ***Now available in 357 Sig, 9mm Luger +P and 45 Auto +P.***

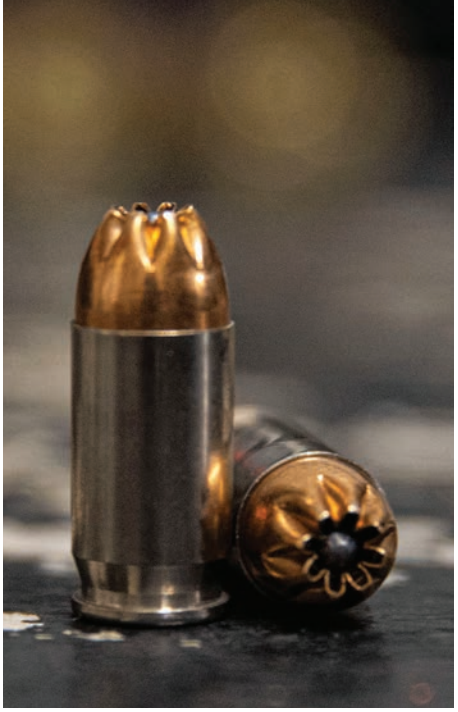


Consistency Counts

The exclusive HST bullet is engineered to expand extremely reliably and retain nearly all of its weight through almost every kind of barrier. The result is consistent, nearly identical penetration and expansion in any situation, shot after shot. Bare gelatin shot with 10mm Auto HST (P10HST1S) at 10 feet.



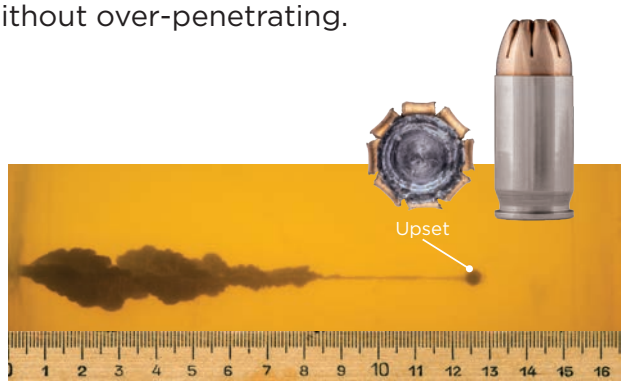




HYDRA-SHOK DEEP

NEW

The world has never seen a 380 Auto like our new Hydra-Shok Deep®. It's the first expanding 380 to consistently penetrate beyond the FBI-recommended 12-inch minimum. It joins a full line of loads that reach critical depths through common self-defense barriers, without over-penetrating.



380 Auto Redefined

Powered by the Hydra-Shok Deep design, the new 380 Auto easily meets the FBI's penetration guidelines, surpassing the 12-inch mark. Bare gel shot with 38 Special (P380HSD1) at 10 feet; 13.5 inches of penetration.

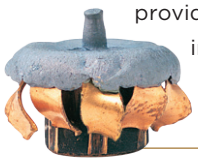


Deep Defense

A beefed-up center post and redesigned core give Hydra-Shok Deep loads the ability to hit critical depths through the most common self-defense barriers. Bare gelatin shot with 9mm Luger (P9HSD1) at 10 feet, 15 inches of penetration.

HYDRA-SHOK

Original Hydra-Shok remains one of the most popular choices among self-defense experts. We use stringent manufacturing processes and rigorous testing to ensure Hydra-Shok loads perform accurately and consistently. Low Recoil offerings provide similar performance while significantly reducing muzzle rise, improving accuracy and target acquisition.





FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 41-42.



PUNCH NEW

Protection now delivers a knockout blow. New Punch™ draws from Federal® Ammunition's decades of experience designing the world's finest defensive handgun loads. The bullet's skived jacket and soft lead core produce the best expansion and penetration for the price, while its nickel-plated brass and sealed primer deliver the reliable feeding and ignition you need to protect yourself.

More Power For The Price



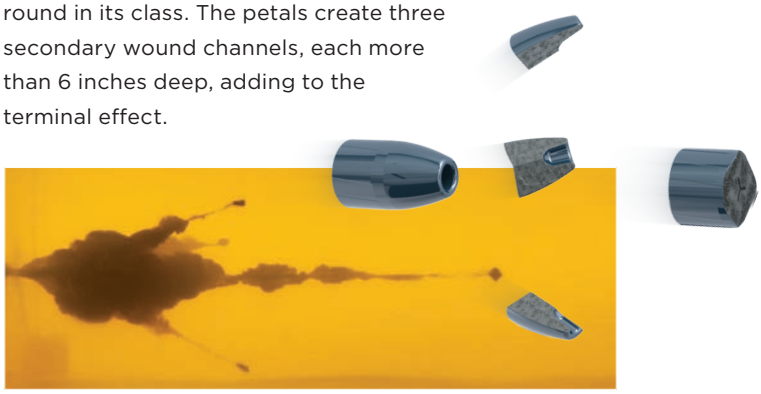
	380 Auto	38 Special	9mm Luger	40 S&W	45 Auto
Bare Gel					
Heavy Clothing					





SYNTECH DEFENSE

Syntech® changed the range forever. Now the technology is revolutionizing protection as well. Syntech Defense™ provides dynamic terminal performance with a hollow-point bullet that separates into three segments and a deep-penetrating core on impact. The core penetrates 12 to 18 inches through bare ballistics gel and heavy clothing—a critical benchmark in self-defense situations and the best terminal performance of any round in its class. The petals create three secondary wound channels, each more than 6 inches deep, adding to the terminal effect.







TRAIN + PROTECT NEW

Honor the American birthright to bear arms. Federal® Train + Protect uses the VHP bullet design to provide both precise, practical, performance at the range, and instant reliable expansion on impact. ***Now available in 380 Auto, 357 Magnum and 38 Special.***

PERSONAL DEFENSE REVOLVER

Get the accuracy and reliability you can trust to stand your ground. Our revolver loads feature Federal brass and primers, and they are loaded with a jacketed hollow-point bullet.

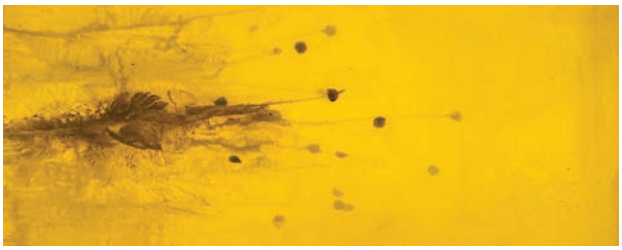
FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 41-42.



FORCE X2 NEW

Turn your shotgun into the ultimate defensive platform with new Force X2™ from Federal Premium®. Its nine copper-plated 00 FX2 buckshot pellets are specially engineered to split into two equal-size pieces on impact. This doubles the number of wound channels from nine to 18, improves the transfer of energy from the payload to the target, and minimizes the potential for over-penetration, reducing the risk to bystanders. Force X2 is also loaded for more manageable recoil, allowing the shooter to stay on target for faster follow-ups and better accuracy in a self-defense situation.

Double Trouble
Split pellets are designed to separate on impact, doubling the number of wound channels in a nine-pellet 00 buckshot load to 18.









BUCKSHOT

Make the threat scatter. Federal Premium buckshot penetrates to optimal depths for effective self-defense. Loads with the FLITECONTROL® wad system deliver the tightest patterns possible.

.410 HANDGUN

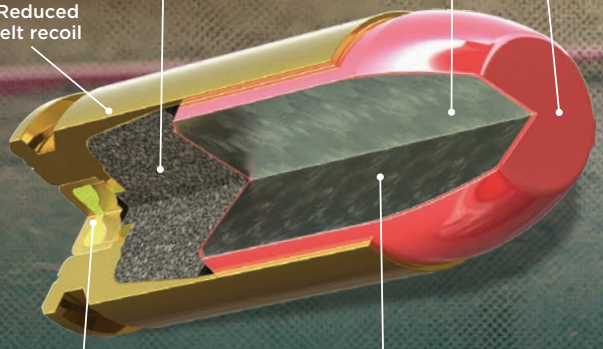
The .410 handgun has emerged as a popular option for self-defense, and Federal Premium® offers a variety of loads for these specialized firearms. A customized hull design, optimal brass thickness and fine-tuned payloads make these perfect for .410 handguns.



SYNTECH ACTION PISTOL

Syntech Action Pistol® loads are specifically designed for competition and loaded to power factor requirements with heavy, flatter-nosed bullets for more reliable knock-downs on steel targets.

CATALYST™
CLEAN BURNING
PRIMER TECHNOLOGY





Less Muzzle Rise For Faster Follow-ups

Syntech Action Pistol's unique blend of propellants, bullet weights and the Total Synthetic Jacket result in as much as 14 percent less muzzle rise than comparable target loads. This allows competitive shooters to get back on target more quickly, for faster follow-up shots and stage times. Still frame from high-speed video showing 150-grain 9mm Luger (AE9SJAP1) fired through a Tangfolio Stock II.



SYNTECH RANGE NEW

The exclusive polymer coating in Syntech Range™ ammunition prevents harsh metal-on-metal contact between the bullet and bore, eliminating copper and lead fouling. Combined with clean-burning powders and the Catalyst lead-free primer, Syntech loads keep your gun cleaner, longer, so you can shoot more. ***Now available in 38 Special.***

SYNTECH TRAINING MATCH

If practice isn't realistic, it's not really practice. Make range time matter with Syntech Training Match®, loads that offer the same velocity, trajectory and point of impact as equivalent Federal Premium® HST® ammunition.

Official Ammunition Of The USPSA

Syntech Action Pistol is the official ammunition of the United States Practical Shooting Association (USPSA). The alliance supports the organization's tireless stewardship of competitive practical shooting, along with the matches, new shooter recruitment efforts and other activities of more than 620 affiliated USPSA and Steel Challenge clubs and 32,000 USPSA members nationwide.



SYNTECH PCC

Introducing a 9mm Luger built around fast-pace Pistol Caliber Carbine competitions, with flawless function in carbine platforms. Velocity and accuracy of Syntech PCC® are optimized for long gun barrel lengths, with a bullet profile that provides excellent accuracy and reliable feeding in a variety of carbine platforms.



Catalyst Primer Technology

Catalyst lead-free primer technology provides the most reliable, consistent ignition possible in range ammunition.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 41-42.



GOLD MEDAL

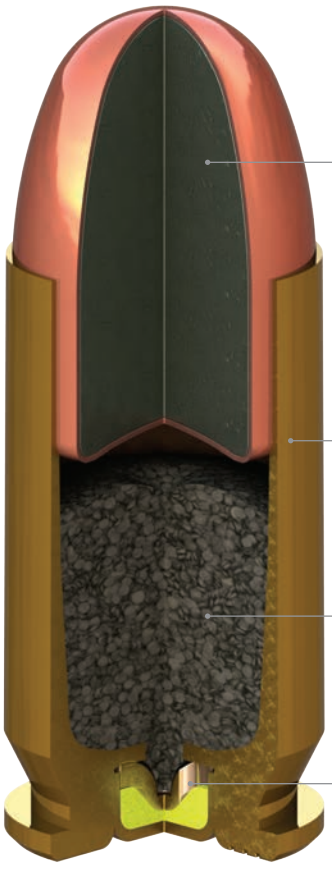
Official Sponsor

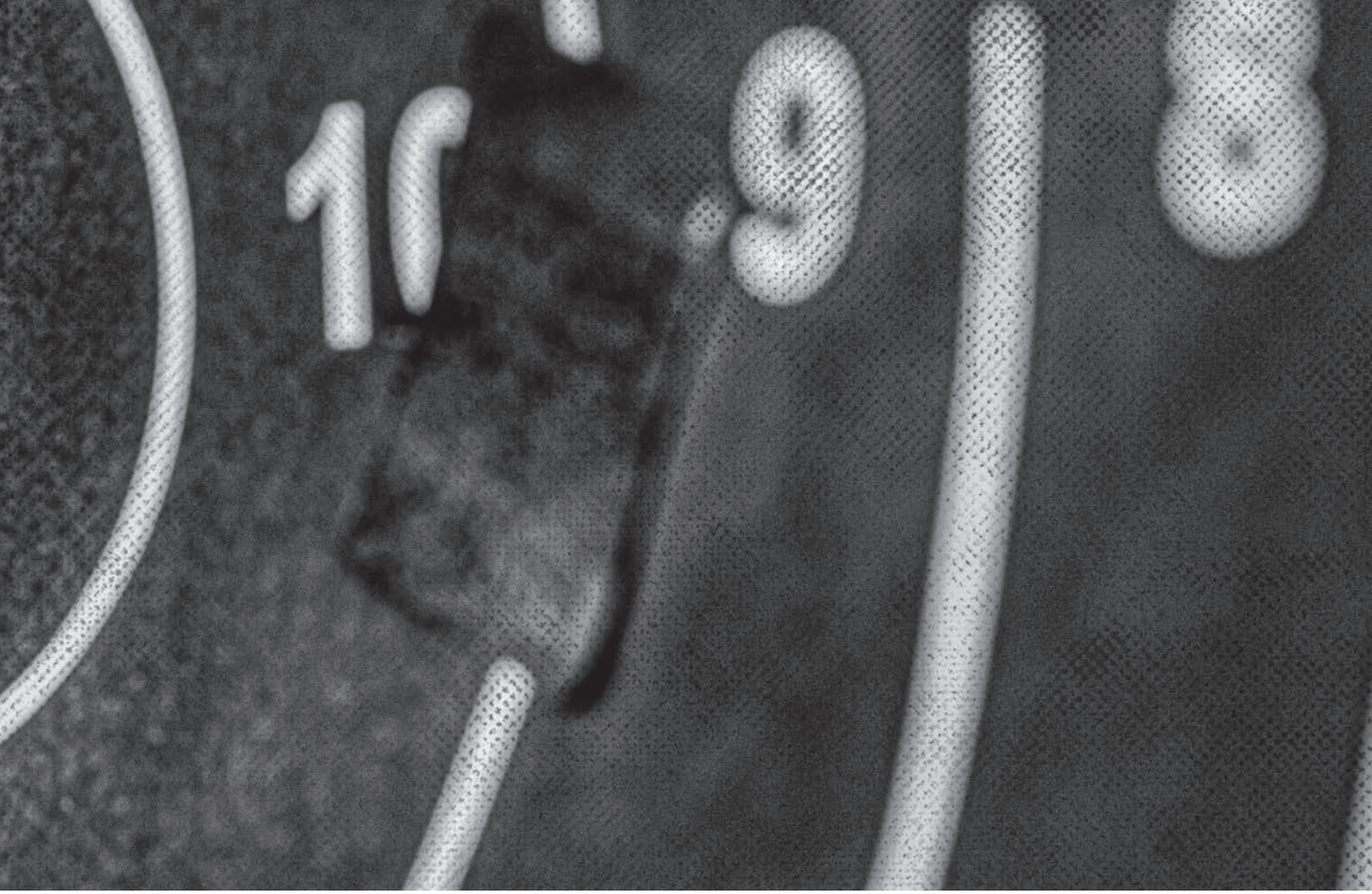
Demand the performance to compete. Gold Medal® Handgun loads are built with the finest components and held to the tightest tolerances to deliver in competitive shooting situations. The loads feature match-grade primers and bullets, with consistent powders and the best Federal® brass.



Short Barrels, Tight Groups

Gold Medal's award-winning accuracy—five-round group, 0.450-inch extreme spread. Target shot with 185-grain 45 Auto Gold Medal (GM45B) from a Springfield Trophy Match at 25 yards, fired with open sights from a rest.







AMERICAN EAGLE IRT

Safe range time starts here. American Eagle® Indoor Range Training (IRT) has a reduced-lead bullet fully encapsulated in copper for safer, economical training. It's powered by a toxic metal-free primer and produces ballistics matched to those of equivalent self-defense rounds.



LEAD FREE BULLET

AMERICAN EAGLE IRT LEAD FREE NEW

We've made the firing line even cleaner with American Eagle IRT Lead Free. Its proprietary new bullets are completely lead-free and its Federal® Catalyst™ primer, offers the same reliability, shelf life and ballistics of conventional lead styphnate primers—without the lead.

Now available in 380 Auto, 38 Special, 9mm Luger, 40 S&W and 45 Auto.



AMERICAN EAGLE

Hit your target and train harder with this proven line. It provides performance similar to self-defense and competition loads for a familiar feel and realistic practice.



CHAMPION

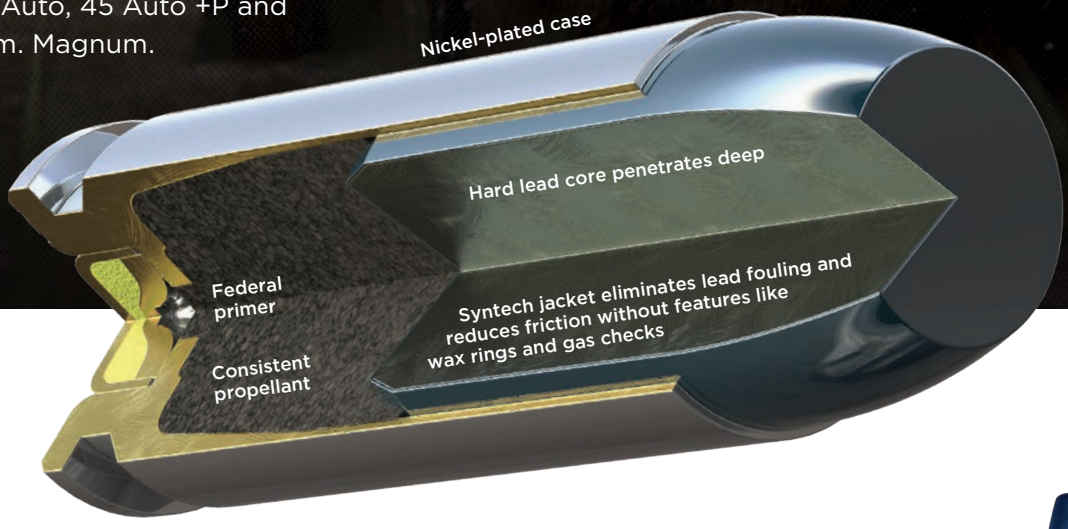
Loaded with Federal brass and primers, Champion™ handgun loads provide accurate, target-grade performance for shooters who put a lot of rounds downrange.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 41-42.



SOLID CORE NEW

Sometimes wild places can put you in a tight spot. That's why we designed the all-new Solid Core. Its extremely hard, flat-nose lead bullet holds together while blowing through bone, providing high weight retention and deep penetration. Syntech® polymer jacket technology reduces the friction and leading that plague hard cast bullets. Available in popular hunting and defense calibers, including 9mm Luger, 357 Magnum, 40 S&W, 10mm Auto, 45 Auto +P and 44 Rem. Magnum.



Go Deep

Solid Core's hard lead bullet blasts through the toughest hide and bone, for extremely deep penetration. Its Syntech polymer jacket improves performance on impact without costly features like wax rings and gas checks.









TROPHY BONDED BEAR CLAW

Take complete advantage of 10mm Auto ballistics with Trophy Bonded® Bear Claw®. The full-power load and its tough, bonded bullet construction result in superb accuracy, high weight retention and deep penetration, It's just the thing for blasting through the vitals of bears, hogs, deer and more.

BARNES EXPANDER

The all-copper construction of the Barnes® Expander brings handgun hunting performance to new heights. The loads provide 100 percent weight retention, outstanding expansion and superb accuracy.



SWIFT A-FRAME

Handgun hunters leave nothing to chance when it comes to bullet choice. That's why we're proud to offer the robust Swift® A-Frame®. High weight retention and controlled expansion, regardless of distance, make these rounds ideal for big game.

★★★★★

Nice Round

"I recently took a whitetail with the Swift A-Frame. It had good knockdown—the deer dropped within 20 yards."

Yes, I recommend this product.

RATINGS & REVIEWS

We make it easy to review ammunition online and check out the ratings of others. Go to federalpremium.com.





FUSION NEW

These handgun loads feature the same molecularly fused bullet construction as their rifle counterparts for the toughness, accuracy and terminal performance short-barrel hunters need. Bullet weights and velocities have also been optimized to be lethal on deer without punishing the shooter. ***Now available in 10mm Auto***.

POWER-SHOK

Short barrel performance that goes the distance. Handgun hunters can get the reliability and accuracy they need at an affordable price with Federal® Power•Shok® loads. The rounds feature a powerful jacketed hollow-point bullet suited to a variety of medium and big game

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 41-42.

HANDGUN BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; SCI= a portion of the proceeds from the sale of this product is donated to Safari Club International ; CLM=cartridge length longer than SAAMI max, may not fit in all magazines.. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Handgun

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
FEDERAL PREMIUM PERSONAL DEFENSE HST®																				
6	P9HST1S	**9MM LUGER**	124	8.04	HST	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	4
6	P9HST2S	**9MM LUGER**	147	8.04	HST	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
6	P40HST1S	**40 S&W**	180	11.66	HST	1010	980	954	930	908	408	384	364	346	329	⊕	-1.4	-5.1	-11.4	4
6	P10HST1S	**10MM AUTO**	200	12.96	HST	1130	1051	991	943	902	567	490	436	395	361	⊕	-1.1	-4.3	-10	5
6	P45HST2S	**45 AUTO**	230	14.9	HST	890	872	856	840	824	404	389	374	360	347	⊕	-2.0	-6.9	-15.0	5
FEDERAL PREMIUM PERSONAL DEFENSE HST MICRO																				
6	P380HST1S	**380 AUTO**	99	6.42	HST	1030	986	948	915	885	233	213	197	184	172	⊕	-1.3	-5.1	-11.4	3.75
6	P38HST1S	**38 SPECIAL +P**	130	8.42	HST	890	866	844	823	803	229	217	206	196	186	⊕	-2.0	-7.1	-15.3	4-V
6	P9HST5S	**9MM LUGER**	150	9.72	HST	900	883	866	851	836	270	260	250	241	233	⊕	-1.9	-6.7	-14.5	4
FEDERAL PREMIUM PERSONAL DEFENSE HYDRA-SHOK DEEP®																				
6	P380HSD1	**380 AUTO**	99	6.42	HYDRA-SHOK DEEP	1000	949	907	869	835	220	198	181	166	153	⊕	-1.5	-5.7	-12.7	3.75
6	P9HSD1	**9MM LUGER**	135	8.75	HYDRA-SHOK DEEP	1060	1026	996	970	946	337	316	298	282	268	⊕	-1.2	-4.5	-10.2	4
6	P40HSD1	**40 S&W**	165	10.69	HYDRA-SHOK DEEP	100	1011	978	949	922	404	375	350	330	311	⊕	-1.2	-4.7	-10.6	4
6	P45HSD1	**45 AUTO**	210	13.61	HYDRA-SHOK DEEP	980	952	927	903	882	448	423	400	381	363	⊕	-1.5	-5.5	-12.2	5
FEDERAL PREMIUM PERSONAL DEFENSE® HYDRA-SHOK®																				
6	P32HS1	**32 AUTO**	65	4.21	HYDRA-SHOK	925	892	862	834	808	123	115	107	100	94	⊕	-1.8	-6.6	-14.5	4
6	P9HS1	**9MM LUGER**	124	8.04	HYDRA-SHOK	1120	1070	1028	993	961	345	315	291	271	255	⊕	-1.0	-4.0	-9.3	4
6	P9HS2	**9MM LUGER**	147	9.53	HYDRA-SHOK	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
6	P357S1	**357 SIG**	125	8.1	HYDRA-SHOK	1350	1266	1192	1130	1078	506	445	395	354	323	⊕	-0.5	-2.4	-6.1	4
6	P38HS1	**38 SPECIAL +P**	129	8.36	HYDRA-SHOK	950	926	904	884	865	258	246	234	224	214	⊕	-1.6	-5.9	-13	4-V
6	P357HS1	**357 MAGNUM**	158	10.24	HYDRA-SHOK	1240	1187	1139	1098	1063	539	494	455	423	396	⊕	-0.6	-3.0	-7.1	4-V
6	P40HS2	**40 S&W**	155	10.04	HYDRA-SHOK	1140	1079	1030	989	954	447	401	365	337	313	⊕	-1.0	-4.0	-9.2	4
6	P40HS3	**40 S&W**	165	10.69	HYDRA-SHOK	980	950	924	899	876	352	331	312	296	281	⊕	-1.5	-5.6	-12.3	4
6	P40HS1	**40 S&W**	180	11.66	HYDRA-SHOK	1000	972	946	923	901	400	377	358	340	324	⊕	-1.4	-5.3	-11.6	4
6	P10HS1	**10MM AUTO**	180	11.66	HYDRA-SHOK	1030	998	970	945	921	424	398	376	357	339	⊕	-1.3	-4.9	-10.9	5
6	P44HS1	**44 REM. MAGNUM**	240	15.55	HYDRA-SHOK	1210	1152	1102	1060	1024	780	707	647	599	559	⊕	-0.7	-3.3	-7.7	4-V
6	P45HS1	**45 AUTO**	230	14.9	HYDRA-SHOK	900	882	865	848	832	414	397	382	367	354	⊕	-1.9	-6.7	-14.6	5
FEDERAL PREMIUM PERSONAL DEFENSE HYDRA-SHOK LOW-RECOIL																				
6	PD327HS1 H	**327 FEDERAL MAGNUM**	85	5.51	HYDRA-SHOK	1400	1306	1221	1150	1091	370	322	281	250	225	⊕	-0.4	-2.2	-5.7	4-V
6	PD380HS1 H	**380 AUTO**	90	5.83	HYDRA-SHOK	1000	953	914	879	847	200	182	167	154	143	⊕	-1.5	-5.6	-12.5	3.75
6	PD9HS5 H	**9MM LUGER**	135	8.75	HYDRA-SHOK	1060	1026	996	970	946	337	316	298	282	268	⊕	-1.2	-4.5	-10.2	4
6	PD38HS3 H	**38 SPECIAL**	110	7.13	HYDRA-SHOK	980	943	911	882	855	235	217	203	190	179	⊕	-1.5	-5.7	-12.6	4-V
6	PD357HS2 H	**357 MAGNUM**	130	8.42	HYDRA-SHOK	1410	1331	1258	1193	1138	574	511	457	411	373	⊕	-0.3	-2.0	-5.2	4-V
6	PD40HS4 H	**40 S&W**	135	8.75	HYDRA-SHOK	1200	1116	1051	999	957	432	373	331	299	274	⊕	-0.8	-3.7	-8.6	4
6	PD45HS3 H	**45 AUTO**	165	10.69	HYDRA-SHOK	1060	1014	976	942	912	412	377	349	325	305	⊕	-1.2	-4.7	-10.6	5
FEDERAL PREMIUM PUNCH™																				
6	PD380P1	**380 AUTO**	85	5.51	JHP	1000	949	907	869	835	189	170	155	143	132	⊕	-1.5	-5.7	-12.7	3.75
6	PD38P1	**38 SPECIAL +P**	120	7.78	JHP	1000	949	907	869	835	266	240	219	201	186	⊕	-1.5	-5.7	-12.7	4-V
6	PD40P1	**40 S&W**	165	10.69	JHP	1130	1078	1035	999	967	468	426	392	365	342	⊕	-1	-4	-9.1	4
6	PD45P1	**45 AUTO**	230	14.9	JHP	890	872	856	840	824	404	389	374	360	347	⊕	-2	-6.9	-15	5
6	PD9P1	**9MM LUGER**	124	8.04	JHP	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	4
FEDERAL PREMIUM HUNTING HANDGUN																				
2	P357SA	**357 MAGNUM**	180	11.66	SWIFT A-FRAME	1130	1086	1049	1016	988	510	471	439	413	390	⊕	-0.9	-3.9	-8.9	6-V
2	P41SA	**41 REM. MAGNUM**	210	13.61	SWIFT A-FRAME	1360	1289	1224	1167	1118	862	775	698	635	582	⊕	-0.4	-2.3	-5.7	6-V
2	P44SA	**44 REM. MAGNUM**	280	18.14	SWIFT A-FRAME	1170	1107	1056	1013	977	851	762	693	638	594	⊕	-0.9	-3.7	-8.6	6-V
2	P454SA	**454 CASULL**	300	19.44	SWIFT A-FRAME	1520	1410	1311	1223	1149	1539	1324	1145	996	879	⊕	-0.2	-1.7	-4.6	5.7-V
2	P460SA	**460 S&W**	300	19.44	SWIFT A-FRAME	1750	1625	1506	1397	1300	2040	1758	1510	1300	1125	⊕	0.1	-0.8	-2.8	8.4-V
3	P500SA	**500 S&W**	325	21.06	SWIFT A-FRAME	1800	1677	1559	1449	1350	2338	2028	1754	1515	1315	⊕	0.1	-0.6	-2.4	8.4-V
3	P10T1	**10MM AUTO**	180	11.66	TROPHY BONDED JSP	1275	1192	1123	1067	1021	650	568	504	455	417	⊕	-0.6	-3.0	-7.2	5
2	P357XB1	**357 MAGNUM**	140	9.07	BARNES EXPANDER	1400	1326	1257	1196	1143	609	546	491	445	406	⊕	-0.3	-2.0	-5.3	6-V
2	P41XB1	**41 REM. MAGNUM**	180	11.66	BARNES EXPANDER	1340	1262	1193	1134	1084	718	636	569	514	470	⊕	-0.5	-2.5	-6.1	6-V
2	P44XB1	**44 REM. MAGNUM**	225	14.58	BARNES EXPANDER	1280	1209	1147	1096	1052	818	730	658	600	553	⊕	-0.6	-2.8	-6.9	6-V
2	P454XB1	**454 CASULL**	250	16.2	BARNES EXPANDER	1530	1423	1326	1239	1165	1299	1123	976	852	753	⊕	-0.2	-1.6	-4.4	5.7-V
2	P460XB1	**460 S&W**	275	17.82	BARNES EXPANDER	1670	1595	1522	1453	1388	1703	1553	1415	1289	1177	⊕	0.1	-0.8	-2.7	8.4-V
2	P500XB1	**500 S&W**	275	17.82	BARNES EXPANDER	1660	1544	1435	1337	1249	1682	1455	1257	1091	952	⊕	0.0	-1.1	-3.4	8.4-V
FEDERAL PREMIUM GOLD MEDAL®																				
7	GM38A	**38 SPECIAL**	148	9.59	LW MATCH	690	650	610	570	540	155	140	120	110	95	⊕	-4.3	-14.4	-31.2	4-V
7	GM45B	**45 AUTO**	185	11.99	FMJ-SWC MATCH	770	740	700	670	640	245	220	205	185	170	⊕	-3.1	-10.6	-23.0	5
7	GM45A	**45 AUTO**	230	14.90	FMJ MATCH	860	840	830	810	800	380	365	350	340	325	⊕	-2.2	-7.5	-16.1	5

Federal® Handgun

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
FEDERAL POWER•SHOK®																				
2	C357G	**357 MAGNUM**	180	11.66	JHP	1080	1050	1020	1000	970	465	440	415	395	380	⊕	-1.1	-4.2	-9.6	4-V
2	C41A	**41 REM. MAGNUM**	210	13.61	JHP	1230	1170	1120	1080	1040	705	640	585	545	505	⊕	-0.7	-3.1	-7.3	4-V
2	C44B	**44 REM. MAGNUM**	180	11.66	JHP	1460	1340	1240	1160	1090	850	720	615	535	470	⊕	-0.3	-2.0	-5.4	4-V
2	C44A	**44 REM. MAGNUM**	240	15.55	JHP	1230	1170	1120	1070	1040	805	730	665	615	570	⊕	-0.7	-3.1	-7.4	4-V
FEDERAL PERSONAL DEFENSE REVOLVER																				
6	C32HRB	**32 H&R MAGNUM**	85	5.51	JHP	1120	1070	1020	990	950	235	215	195	185	170	⊕	-1.0	-4.1	-9.4	5
6, 7	C357B	**357 MAGNUM**	125	8.10	JHP	1440	1340	1240	1160	1100	575	495	425	375	335	⊕	-0.3	-2.1	-5.4	4-V
6	C357E	**357 MAGNUM**	158	10.24	JHP	1240	1190	1140	1100	1060	540	495	455	425	395	⊕	-0.6	-3.0	-7.1	4-V
FEDERAL TRAIN+PROTECT™																				
6	TP357VHP1	**357 MAGNUM**	125	8.1	JHP	1440	1335	1240	1161	1096	575	494	427	374	333	⊕	-0.3	-2.1	-5.4	4-V
5 6	TP380VHP1	**380 AUTO**	85	5.51	JHP	1000	953	914	879	847	189	172	158	146	135	⊕	-1.5	-5.6	-12.5	3.75
5 6	TP38VHP1	**38 SPECIAL**	158	10.24	SWHP	830	816	802	789	776	242	233	226	218	211	⊕	-2.3	-8	-17.3	4-V
6, 7	TP9VHP1	**9MM LUGER**	115	7.45	JHP	1180	1110	1050	1000	960	355	310	280	255	235	⊕	-0.9	-3.7	-8.7	4
6, 7	TP40VHP1	**40 S&W**	180	11.66	JHP	1000	970	950	920	900	400	375	360	340	325	⊕	-1.4	-5.3	-11.6	4
6	TP45VHP1	**45 AUTO**	230	14.90	JHP	850	830	820	800	790	370	355	345	330	320	⊕	-2.2	-7.7	-16.4	5
FEDERAL CHAMPION™																				
5	C32HRA	**32 H&R MAGNUM**	95	6.16	LSW	1020	970	930	890	860	220	200	180	170	155	⊕	-1.4	-5.3	-12.0	5
5	C44SA	**44 SPECIAL**	200	12.96	SWHP	870	850	830	810	790	335	320	305	290	275	⊕	-2.1	-7.4	-16.0	4-V
5	C45LCA	**45 COLT**	225	14.58	SWHP	830	810	790	780	760	345	330	315	300	290	⊕	-2.4	-8.2	-17.7	4-V

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

Syntech® Handgun

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
SYNTECH RANGE™																				
5	AE9SJ1	**9MM LUGER**	115	7.45	TSJ	1130	1105	1083	1062	1043	326	312	299	288	278	⊕	-0.9	-3.6	-8.3	4
5	AE9SJ2	**9MM LUGER**	124	8.04	TSJ	1050	1011	978	949	922	304	282	263	248	234	⊕	-1.2	-4.7	-10.6	4
5	AE40SJ1	**40 S&W**	165	10.69	TSJ FP	1050	1027	1007	988	970	404	387	371	357	345	⊕	-1.2	-4.4	-10.0	4
5	AE45SJ1	**45 AUTO**	230	14.9	TSJ	830	821	812	803	795	352	344	337	329	322	⊕	-2.3	-7.9	-16.8	5
SYNTECH ACTION PISTOL™																				
5	AE9SJAP1	**9MM LUGER**	150	9.72	TSJ	870	854	839	824	810	252	243	234	226	219	⊕	-2.1	-7.3	-15.6	4
5	AE40SJAP1	**40 S&W**	205	13.28	TSJ	830	813	797	782	767	314	301	289	278	267	⊕	-2.4	-8.1	-17.5	4
5	AE45SJAP1	**45 AUTO**	220	14.26	STJ	810	795	780	766	752	320	309	297	287	277	⊕	-2.5	-8.6	-18.5	5
SYNTECH PCC™																				
5	AE9SJPC1	**9MM LUGER**	130	8.42	STJ	1130	1078	1035	999	967	369	336	309	288	270	⊕	-1	-4	-9.1	16
SYNTECH TRAINING MATCH®																				
5	AE9SJ4	**9MM LUGER**	124	8.04	TSJ	1150	1064	1000	949	907	364	312	275	248	226	⊕	-1	-4.2	-9.8	4
5	AE9SJPC1	**9MM LUGER**	130	8.42	TSJ	1130	1078	1035	999	967	369	336	309	288	270	⊕	-1	-4	-9.1	16
5	AE9SJ3	**9MM LUGER**	147	9.53	STJ	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
5	AE40SJ2	**40 S&W**	180	11.66	TSJ	1010	958	914	876	842	408	367	334	307	283	⊕	-1.5	-5.5	-12.4	4
5	AE45SJ2	**45 AUTO**	230	14.9	TSJ	890	855	824	794	767	404	374	346	322	300	⊕	-2.1	-7.3	-16	5
SYNTECH DEFENSE™																				
6	S9SJT1	**9MM LUGER (9X19MM PARABELLUM)**	138	8.94	STJ	1050	989	940	899	862	338	300	271	248	228	⊕	-1.3	-5.1	-11.5	4
6	S40SJT1	**40 S&W**	175	11.34	STJ	1000	950	907	870	836	389	350	320	294	272	⊕	-1.5	-5.6	-12.7	4
6	S45SJT1	**45 AUTO**	205	13.28	STJ	970	926	887	853	821	428	390	358	331	307	⊕	-1.6	-6	-13.4	5

American Eagle® Handgun

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
AMERICAN EAGLE																				
5	AE5728A	**5.7X28**	40	2.59	TMJ	1655	1514	1387	1275	1179	243	204	171	144	124	⊕	0.0	-1.2	-3.8	4.8
5	AE25AP	**25 AUTO**	50	3.24	FMJ	760	738	717	697	677	64	60	57	54	51	⊕	-3.1	-10.4	-22.1	2
5	AE32AP	**32 AUTO**	71	4.6	FMJ	900	872	846	821	798	128	120	113	106	100	⊕	-2.0	-7.0	-15.2	4
5	AE327A	**327 FEDERAL MAGNUM**	85	5.51	JSP	1400	1306	1221	1150	1091	370	322	281	250	225	⊕	-0.4	-2.2	-5.7	4-V
6	AE327	**327 FEDERAL MAGNUM**	100	6.48	JSP	1500	1408	1324	1248	1181	500	440	389	346	310	⊕	-0.2	-1.6	-4.5	4-V
5	AE380AP	**380 AUTO**	95	6.16	FMJ	980	937	899	865	835	203	185	170	158	147	⊕	-1.6	-5.8	-13.0	3.75
5	AE9DP	**9MM LUGER**	115	7.45	FMJ	1180	1106	1048	1001	961	356	312	280	256	236	⊕	-0.9	-3.7	-8.7	4
5	AE9AP	**9MM LUGER**	124	8.04	FMJ	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	4
5	AE9FP	**9MM LUGER**	147	9.53	FMJ FP	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
5	AE38S3	**38 SUPER +P**	115	7.45	JHP	1130	1067	1016	974	938	326	290	264	242	225	⊕	-1.0	-4.1	-9.5	5
5	AE357S2	**357 SIG**	125	8.1	FMJ	1350	1266	1192	1130	1078	506	445	395	354	323	⊕	-0.5	-2.4	-6.1	4
5	AE38K	**38 SPECIAL**	130	8.42	FMJ	890	870	852	834	817	229	219	209	201	193	⊕	-2.0	-7.0	-15.1	4-V
5	AE38B	**38 SPECIAL**	158	10.24	LRN	770	758	745	733	722	208	201	195	189	183	⊕	-2.9	-9.8	-20.7	4-V
5	AE357A	**357 MAGNUM**	158	10.24	JSP	1240	1187	1139	1098	1063	539	494	455	423	396	⊕	-0.6	-3.0	-7.1	4-V
5	AE40R2	**40 S&W**	155	10.04	FMJ	1160	1095	1043	1000	963	463	413	374	344	319	⊕	-0.9	-3.8	-8.9	4
5	AE40R3	**40 S&W**	165	10.69	FMJ	1130	1078	1035	999	967	468	426	392	365	342	⊕	-1.0	-4.0	-9.1	4
5	AE40R1	**40 S&W**	180	11.66	FMJ	1000	972	946	923	901	400	377	358	340	324	⊕	-1.4	-5.3	-11.6	4
5	AE10A	**10MM AUTO**	180	11.66	FMJ	1030	998	970	945	921	424	398	376	357	339	⊕	-1.3	-4.9	-10.9	5
5	AE44A	**44 REM. MAGNUM**	240	15.55	JHP	1230	1169	1117	1073	1035	806	729	665	613	571	⊕	-0.7	-3.1	-7.4	4-V
5	AE44B	**44 REM. MAGNUM**	240	15.55	JSP	1270	1204	1146	1098	1056	859	772	700	642	595	⊕	-0.6	-2.9	-6.9	4-V
5	AE45A	**45 AUTO**	230	14.9	FMJ	890	872	856	840	824	404	389	374	360	347	⊕	-2.0	-6.9	-15.0	5
5	AE45LC	**45 COLT**	225	14.58	JSP	860	844	828	813	799	369	356	343	330	319	⊕	-2.2	-7.5	-16.1	4
AMERICAN EAGLE SUPPRESSOR																				
5	AE9SUP1	**9MM LUGER**	124	8.04	FMJ	1030	996	966	940	915	292	273	257	243	231	⊕	-1.3	-4.9	-11.0	4
5	AE45SUP1	**45 AUTO**	230	14.9	FMJ	840	821	803	785	769	360	344	329	315	302	⊕	-2.3	-8.0	-17.2	5
AMERICAN EAGLE IRT																				
5	AE9N1	**9MM LUGER**	124	8.04	TMJ	1120	1070	1028	993	961	345	315	291	271	255	⊕	-1.0	-4.0	-9.3	4
5	AE9N2	**9MM LUGER**	147	9.53	TMJ	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
5	AE40N1	**40 S&W**	180	11.66	TMJ	1000	972	946	923	901	400	377	358	340	324	⊕	-1.4	-5.3	-11.6	4
5	AE45N1	**45 AUTO**	230	14.9	TMJ	850	834	819	804	790	369	355	343	330	319	⊕	-2.2	-7.7	-16.4	5

Fusion® Handgun

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
FUSION																				
2	F357FS1	**357 MAGNUM**	158	10.24	FUSION SP	1240	1187	1139	1098	1063	539	494	455	423	396	⊕	-0.6	-3.0	-7.1	4-V
2	F10FS1	**10MM AUTO**	200	12.96	FUSION SP	1200	1147	1102	1063	1030	639	585	539	502	471	⊕	-0.8	-3.3	-7.7	5
2	F41FS1	**41 REM. MAGNUM**	210	13.61	FUSION SP	1230	1172	1122	1079	1043	705	641	587	543	507	⊕	-0.7	-3.1	-7.3	4-V
2	F44FS1	**44 REM. MAGNUM**	240	15.55	FUSION SP	1290	1221	1162	1110	1067	887	795	719	657	607	⊕	-0.6	-2.7	-6.7	4-V
2	F454FS1	**454 CASULL**	260	16.85	FUSION SP	1350	1266	1192	1130	1078	1052	925	821	737	671	⊕	-0.5	-2.4	-6.1	5.7-V
2	F460FS1	**460 S&W**	260	16.85	FUSION SP	1600	1495	1397	1309	1229	1478	1289	1126	989	872	⊕	-0.1	-1.3	-3.7	8.4-V
2	F500FS2	**500 S&W**	325	21.06	FUSION SP	1450	1357	1272	1198	1134	1517	1329	1168	1035	929	⊕	-0.3	-1.9	-5.0	8.4-V
2	F50AEFS1	**50 ACTION EXPRESS**	300	19.44	FUSION SP	1550	1451	1361	1278	1205	1600	1402	1233	1088	967	⊕	-0.1	-1.5	-4.1	6



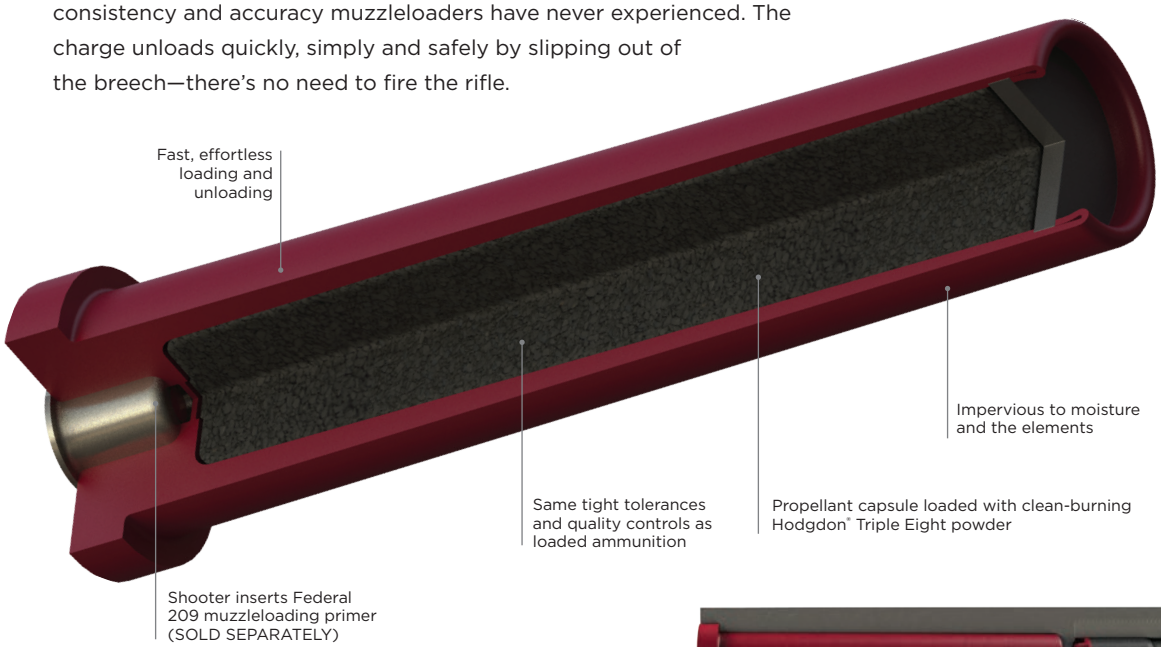
FIRESTICK

NEW

As long as there have been muzzleloading firearms, their shooters have been burdened by reliability, consistency and safety concerns. It all ends now. Federal Premium® FireStick™ is the critical component of a whole new ignition system that uses an encapsulated propellant charge that loads from the breech, with the bullet loaded from the muzzle. It's the perfect match for Federal Premium Trophy® Copper or Lead Tipped muzzleloader bullets and is compatible with the new Traditions™ NitroFire rifle.

Breech Breakthrough

FireStick's charge is completely impervious to moisture and loaded to the same tight tolerances as Federal Premium factory ammunition, ensuring shot-to-shot consistency and accuracy muzzleloaders have never experienced. The charge unloads quickly, simply and safely by slipping out of the breech—there's no need to fire the rifle.



FIRESTICK	
PART NO.	GRAIN EQUIVALENT
PMZFS100T8	100
PMZFS120T8	120









B.O.R. LOCK MZ TROPHY COPPER & LEAD

We redefined modern in-line performance with the B.O.R. Lock MZ® system. Available in Trophy® Copper and Lead Tipped versions, it provides outstanding accuracy in a non-sabot design that's easy to load, scrubs fouling from the breech and ensures consistent bullet seating.

209 MUZZLELOADING PRIMER

Ignition is everything. The specialized formulation of our 209 Muzzleloading Primer provides superior resistance to moisture, as well as hot, reliable ignition of both granulated powder and pellets in any conditions. The design eliminates the excessive breech fouling typical of standard shotshell primers.

TROPHY COPPER MUZZLELOADER BULLET WITH B.O.R. LOCK MZ

LOAD NO.	CALIBER	GR
PMZ50TC1*	50	270

LEAD MUZZLELOADER BULLET WITH B.O.R. LOCK MZ

LOAD NO.	CALIBER	GR
PMZ50LMZ1	50	350

MUZZLELOADING PRIMER

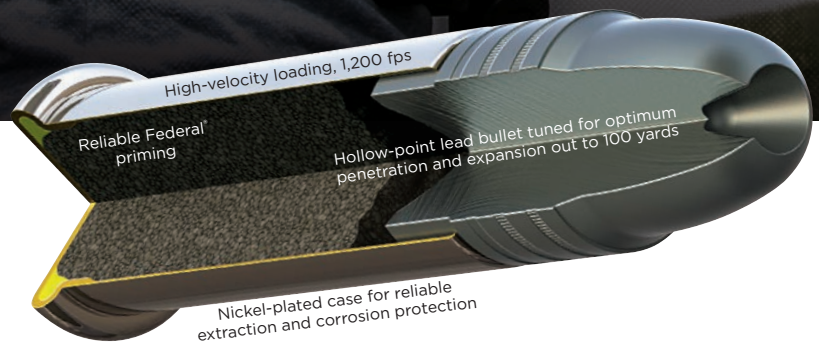
PART NO.	TYPE
PMZ209	209

**For best performance, use with magnum primers.*

HUNTER MATCH



Serious small game and varmint hunters demand more than standard performance from their rimfire loads. Hunter Match® 22 Long Rifle raises the bar, providing true long-range accuracy and terminal performance. The hollow-point lead bullet has been tuned for optimum penetration and expansion out to 100 yards, and its high-velocity loading provides the flat trajectories and energy to take down any target. Its nickel-plated case ensures flawless extraction and inhibits corrosion.



Squirrel Sniper

Hunter Match's high velocity and supreme consistency result in unmatched long-range terminal performance from the 22 LR platform.





100-Yard Expansion

The Hunter Match bullet's hollow-point design expands reliably out to 100 yards, making it a true long-range hunting option for 22 Long Rifle.





SPEER TNT

Explosive on impact and pinpoint accurate. Federal Premium Speer® TNT® rimfire loads deliver at a distance.



GOLD MEDAL

Shoot at the highest levels of rimfire competition with Federal Premium® Gold Medal®. The rounds are built with precision bullets and ultra-tight tolerances that ensure peak performance and consistency.



CHAMPION

Plinking. Targets. Training. Whatever rimfire pursuit drives you, get accurate, affordable performance with Federal® Champion™ rimfire. The reliable bullets, priming and brass are suited to a wide variety of rimfire range applications.



V-MAX

If you hunt varmints with a rimfire rifle, extract maximum range and power from the platform with Federal Premium® V-Max® loads.



AMERICAN EAGLE

Whether you're shooting targets or small game, you'll get the precision and consistency you need with American Eagle® rimfire loads. They provide reliable, affordable performance with quality bullets, brass and priming.



AMERICAN EAGLE SUPPRESSOR

Sub-sonic loading slashes the volume of these rounds, yet their carefully selected propellants, bullet weights and primers mean they still perform to their ballistic peak and cycle flawlessly in suppressed firearms.



BYOB

There's a party at the range, so BYOB. Federal® BYOB® rimfire buckets and bottles stack, store and carry easily. They're loaded with high-quality 17 HMR, 22 LR or 22 WMR rounds that are perfect for a day at the range or in the field.



GAME LOADS

Whether you're after bushytails or bunnies, you'll put more in your bag with Federal Game Loads. The rimfire rounds offer consistent, reliable performance on small game, yet are affordably priced to keep you in the field for less.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 47-48



RIMFIRE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; SCI= a portion of the proceeds from the sale of this product is donated to Safari Club International ; CLM=cartridge length longer than SAAMI max, may not fit in all magazines.. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Rimfire

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	50 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	50 YDS.	100 YDS.	WIND DRIFT IN INCHES 10 MPH CROSSWIND 50 YDS.	100 YDS.	HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE 50 YDS.	100 YDS.
FEDERAL PREMIUM GOLD MEDAL®															
5	711B	**22 LONG RIFLE**	40	2.59	SOLID	1080	994	930	104	88	77	1.1	4.2	⊕	-7.3
5	719	**22 LONG RIFLE**	40	2.59	SOLID	1200	1075	991	128	103	87	1.3	4.9	⊕	-6.0
FEDERAL PREMIUM HUNTER MATCH®															
5	720	**22 LONG RIFLE**	40	2.59	MATCH HP	1200	1075	991	128	103	87	1.3	4.9	⊕	-6.0
FEDERAL PREMIUM VARMINT															
1	P770	**17 HMR**	17	1.1	SPEER TNT JHP	2530	2150	1804	242	174	123	0.9	3.8	⊕	-0.4
1	P771	**17 HMR**	17	1.1	HORNADY® V-MAX®	2530	2194	1884	242	182	134	0.8	3.3	⊕	-0.3

American Eagle® Rimfire

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	50 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	50 YDS.	100 YDS.	WIND DRIFT IN INCHES 10 MPH CROSSWIND 50 YDS.	100 YDS.	HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE 50 YDS.	100 YDS.
AMERICAN EAGLE															
1	AE17WSM1	**17 WSM**	20	1.3	Tipped Varmint	3000	2749	2511	400	336	280	0.4	1.6	⊕	0.3
5	AE22*	**22 LONG RIFLE**	38	2.46	CPHP	1260	1110	1010	134	104	86	1.5	5.5	⊕	-5.5
5	AE5022	**22 LONG RIFLE**	40	2.59	Solid	1240	1103	1011	137	108	91	1.4	5.1	⊕	-5.6
AMERICAN EAGLE SUPPRESSOR															
5	AE22SUP1	**22 LONG RIFLE**	45	2.92	CP Solid	970	908	856	94	82	73	1.0	3.7	⊕	-9.0

V-Max is a registered trademark of Hornady.

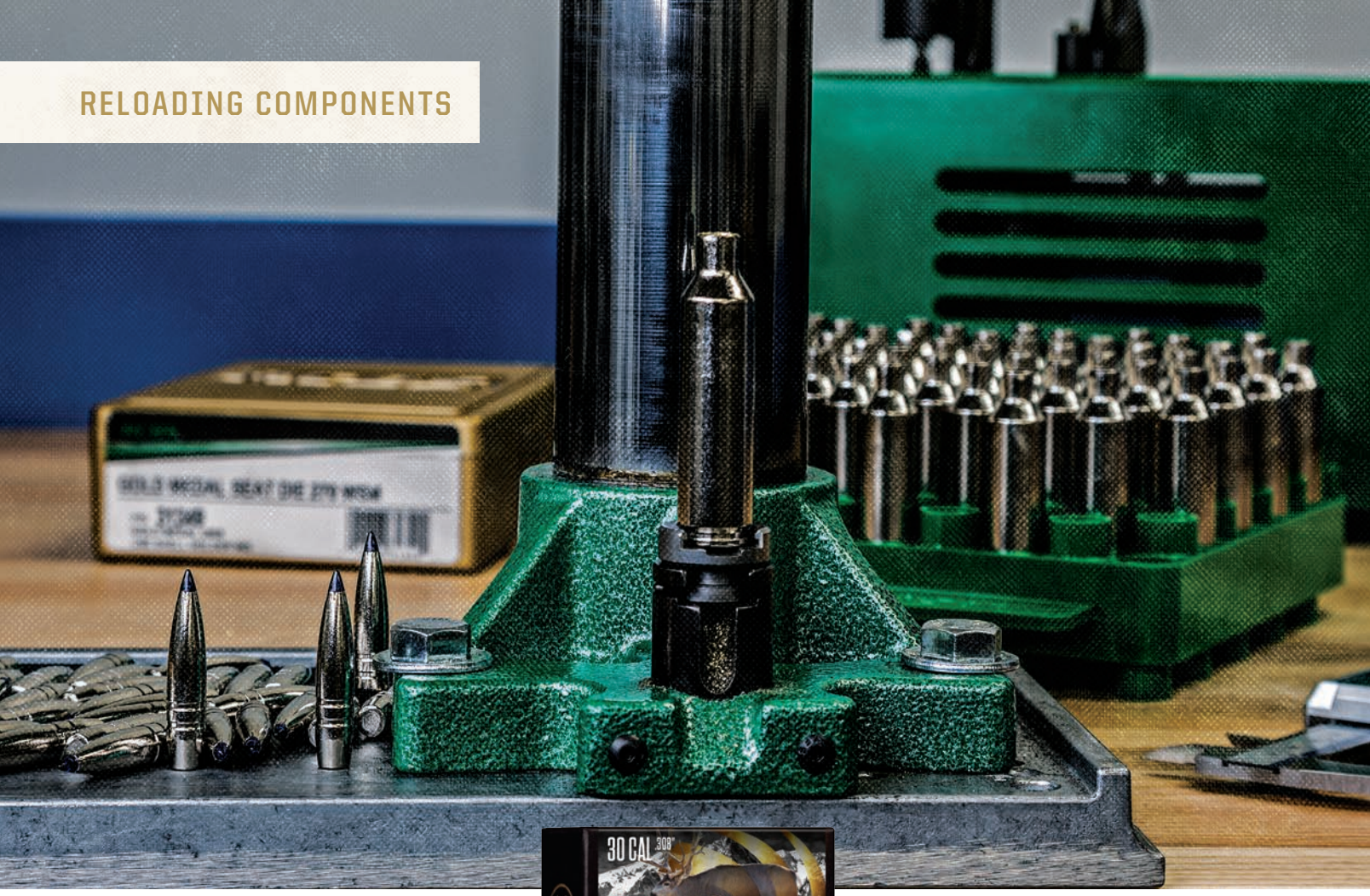


Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

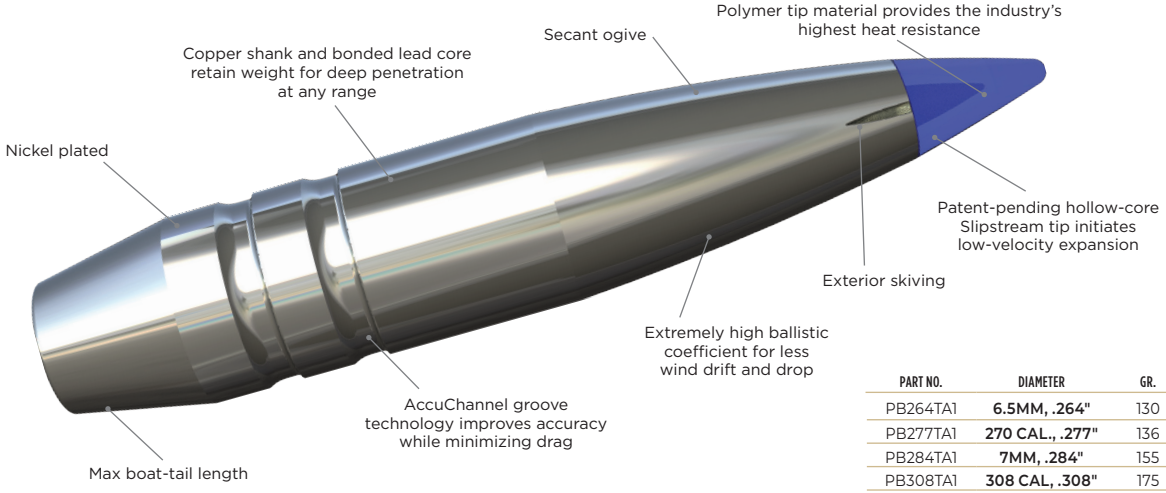
Federal® Rimfire

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	50 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	50 YDS.	100 YDS.	WIND DRIFT IN INCHES 10 MPH CROSSWIND 50 YDS.	100 YDS.	HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE 50 YDS.	100 YDS.
FEDERAL GAME LOAD															
1	716	**22 LONG RIFLE**	25	1.62	NO. 12 LEAD BIRD SHOT	-	-	-	-	-	-	-	-	-	-
5	724	**22 LONG RIFLE**	31	2.01	CPHP	1430	1197	1046	141	99	75	1.8	7.1	⊕	-4.6
1 5	712	**22 LONG RIFLE**	38	2.46	CPHP	1260	1110	1010	134	104	86	1.5	5.5	⊕	-5.5
5	710	**22 LONG RIFLE**	40	2.59	CP SOLID	1240	1103	1011	137	108	91	1.4	5.1	⊕	-5.6
5	757	**22 WMR**	50	3.24	JHP	1530	1347	1197	260	201	159	1.2	4.7	⊕	-3.3
FEDERAL CHAMPION™															
5	745***	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
5	AM22**	**22 LONG RIFLE**	40	2.59	SOLID	1200	1075	991	128	103	87	1.3	4.9	⊕	-6.0
5	510	**22 LONG RIFLE**	40	2.59	SOLID	1240	1103	1011	137	108	91	1.4	5.1	⊕	-5.6
5	737	**22 WMR**	40	2.59	FMJ	1880	1570	1311	314	219	153	1.4	5.8	⊕	-2.1
BYOB BULK PACKS															
5	750BTL450	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
5	750BKT825	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
5	750BKT1375	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
5	757BTL250	**22 WMR**	50	3.24	JHP	1530	1347	1197	260	201	159	1.2	4.7	⊕	-3.3
5	770BTL250	**22 LONG RIFLE**	40	2.59	MATCH HP	1200	1075	991	128	103	87	1.3	4.9	⊕	-6.0



TERMINAL ASCENT NEW

Harness the world's best all-range performance in every handload that leaves your press. New Federal Premium® Terminal Ascent™ component bullets' bonded construction fuels deep penetration on close targets, while the patented Slipstream® polymer tip initiates expansion at velocities 200 fps lower than comparable designs. The bullet's long, sleek profile offers an extremely high ballistic coefficient, and its AccuChannel® groove technology improves accuracy and minimizes drag. Now available in a full selection of bullet weights and diameters for loading the most popular long-range cartridges.



PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G7	COUNT
PB264TA1	**6.5MM, .264"**	130	0.263	50
PB277TA1	**270 CAL., .277"**	136	0.247	50
PB284TA1	**7MM, .284"**	155	0.300	50
PB308TA1	**308 CAL, .308"**	175	0.258	50
PB308TA2	**308 CAL., .308"**	200	0.304	50

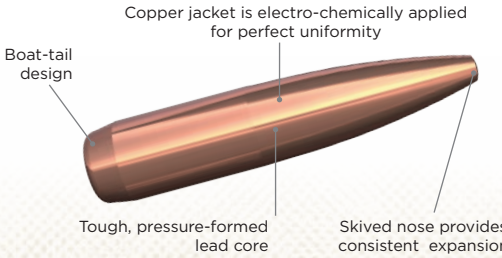
FUSION NEW



Handloaders can roll their own with the bullet that changed hunting ammunition forever. Fusion® component bullets provide the largest expansion and highest weight retention in their class. With a molecularly fused jacket and a pressure-formed core, Fusion transfers maximum energy on target.

PART NO.	DIAMETER	GR.	COUNT
FB224F1	**224 CAL., .224"**	90	50
FB264F2	**6.5MM, .264"**	140	100
FB277F2	**270 CAL., .277"**	130	100
FB277F4	**270 CAL., .277"**	150	100
FB284F1	**7MM, .284"**	140	100
FB284F3	**7MM, .284"**	160	100

PART NO.	DIAMETER	GR.	COUNT
FB284F4	**7MM, .284"**	175	100
FB308F1	**30 CAL., 308"**	150	50
FB308F4	**30 CAL., 308"**	180	50
FB338F1	**338 CAL., .338"**	200	50
FB338F2	**338 CAL., .338"**	225	50
FB350F1	**350 CAL., .358"**	160	100
FB450F1	**450 CAL., .452"**	260	100

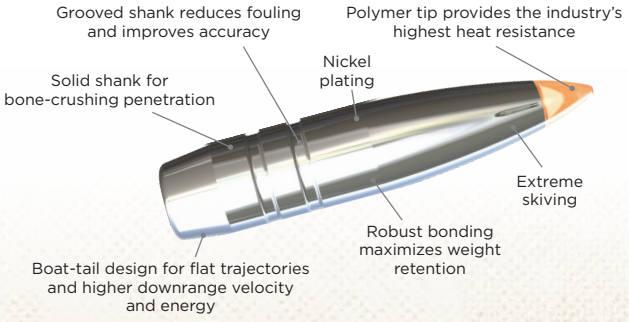


TROPHY BONDED TIP



This proven design stands apart from all other big game bullets, combining bonded construction, a bone-crushing copper shank, boat-tail design and a polymer tip that tightens groups at long range.

PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	COUNT
PB277TT130	**270 CAL., .277"**	130	0.440	50
PB277TT140	**270 CAL., .277"**	140	0.455	50
PB284TT140	**7MM, .284"**	140	0.430	50
PB284TT160	**7MM, .284"**	160	0.520	50
PB308TT165	**30 CAL., .308"**	165	0.450	50
PB308TT180	**30 CAL., .308"**	180	0.500	50



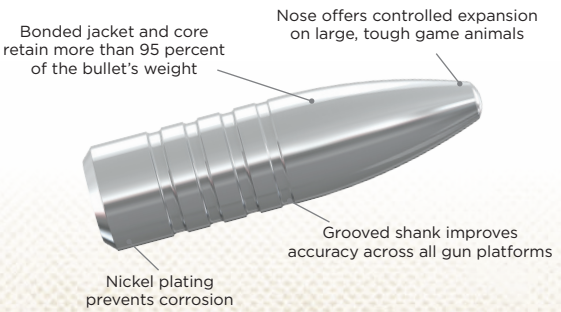
TROPHY BONDED BEAR CLAW



Deadly reliability made this bullet a legend across the wildest corners of the globe. Its bonded jacket and core provide controlled expansion and retain more than 95 percent of the bullet's weight to penetrate deep.

PART NO.	DIAMETER	GR.	COUNT
PB375TBBC250	**375 CAL., .375"**	250	25
PB375TBBC300	**375 CAL., .375"**	300	25
PB416TBBC400	**416 CAL., .416"**	400	25

PART NO.	DIAMETER	GR.	COUNT
PB458TBBC500	**458 CAL., .458"**	500	25
PB474TBBC500	**474 CAL., .474"**	500	25



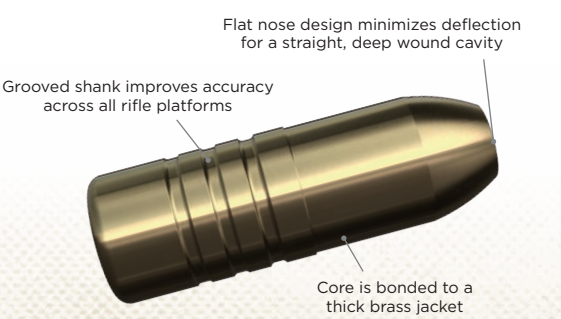
TROPHY BONDED SLEDGEHAMMER SOLID



This time-tested design bonds a lead core to a thick brass jacket to achieve bone-crushing penetration on the toughest, most dangerous game on the planet. Its flat nose minimizes deflection for a straight, deep wound cavity.

PART NO.	DIAMETER	GR.	COUNT
PB375TBSH300	**375 CAL., .375"**	300	25
PB416TBSH400	**416 CAL., .416"**	400	25

PART NO.	DIAMETER	GR.	COUNT
PB458TBSH500	**458 CAL., .458"**	500	25
PB474TBSH500	**474 CAL., .474"**	500	25





HYDRA-SHOK

Load the bullet design that's defined self-defense for a generation. Introduced in 1989, Hydra-Shok® remains one of the most popular choices for protecting home and family, thanks to a proven hollow point and iconic center post that provide extremely consistent and effective expansion.

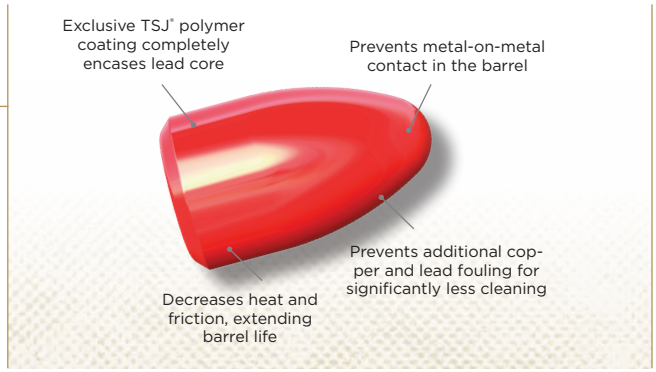
PART NO.	DIAMETER	GR.	COUNT
PB38HS129	**38 CAL., .357"**	129	100
PB9HS124	**9MM, 355"**	124	100
PB9HS147	**9MM, 355"**	147	100
PB357HS158	**357 CAL., .357"**	158	100
PB40HS165	**40 CAL., 400"**	165	50
PB40HS180	**40 CAL., 400"**	180	50
PB45HS185	**45 CAL., 451"**	185	50
PB45HS230	**45 CAL., 451"**	230	50

SYNTECH



With an exclusive Total Synthetic Jacket that eliminates copper fouling and decreases heat and friction, Syntech Range™ bullets provide clean, accurate, consistent performance, as well as less splash-back on steel targets.

PART NO.	DIAMETER	GR.	COUNT
AE9SJCB1	9MM, .355"	115	100
AE40SJCB1	40 CAL., .400"	165	100
AE45SJCB1	45 CAL., .451"	230	100





UNPRIMED BRASS

Federal Premium® ammunition is loaded with the industry's finest brass, and we offer those same world-renowned unprimed cases to handloaders.

PART NO.	CALIBER	COUNT
PR223UPB100	223 REM.	100
PR22250UPB100	22-250 REM.	100
PR224VLKUPB100	224 VALKYRIE	100
PR243UPB50	243 WIN.	50
PR65GDLUPB50	6.5 GRENDEL	50
PR65CRDUPB50	6.5 CREEDMOOR	50
PR270UPB50	270 WIN.	50
PR270WSMUPB50	270 WSM	50
PR7UPB50	7MM REM. MAGNUM	50
PR3030UPB50	30-30 WIN.	50
PR308UPB50	308 WIN.	50
PR3006UPB50	30-06 SPRG.	50
PR300UPB50	300 WIN. MAGNUM	50
PR300WSMUPB50	300 WSM	50
PR338FUPB50	338 FEDERAL	50
PH327UPB100	327 FEDERAL	100
PH9UPB100	9MM LUGER	100
PH40UPB100	40 S&W	100
PH45UPB100	45 AUTO	100



GOLD MEDAL PRIMERS

The most exacting tolerances translate to ignition consistency that makes Federal Premium Gold Medal® cartridges the choice of match shooters everywhere.

CENTERFIRE PRIMERS			
PART NO.	TYPE	USE	NOMINAL DIA.
GM100M	SMALL PISTOL MATCH	STD. VELOCITY PISTOL AND REVOLVER	.175
GM150M	LARGE PISTOL MATCH	STD. AND MAGNUM PISTOL AND REVOLVER	.210
GM155M	LARGE MAGNUM PISTOL MATCH	MAGNUM REVOLVER	.210
GM200M	SMALL MAGNUM PISTOL MATCH	HIGH VELOCITY AND MAGNUM PISTOL AND REVOLVER	.175
GM205M	SMALL RIFLE MATCH	SMALL RIFLE	.175
GM210M	LARGE RIFLE MATCH	LARGE RIFLE	.210
GM215M	LARGE MAGNUM RIFLE MATCH	MAGNUM RIFLE	.210
AR CENTERFIRE PRIMERS			
GM205MAR	SMALL RIFLE AR MATCH	SMALL RIFLE AR	.175
WADS			
12C5	12 GAUGE	1⅛ OZ. LOADS	



CHAMPION WADS & PRIMERS

Affordable and reliable. Champion® components are consistent and affordable options for high-volume shooters and reloaders.



WADS		
PART NO.	TYPE	USE
12S0	12 GAUGE	7/8 AND 1 OZ. LOADS IN GOLD MEDAL TARGET SHELLS
12S4	12 GAUGE	1¼ OZ. LOADS IN GOLD MEDAL TARGET AND HUNTING SHELLS
20S1	20 GAUGE	7/8 AND 1 OZ. IN ALL LOADS
28S1	28 GAUGE	¾/4 OZ. LOADS
410SC	.410 BORE	½ OZ. LOADS (SHOT CUP ONLY)

CENTERFIRE PRIMERS			
PART NO.	TYPE	USE	NOMINAL DIA.
100	SMALL PISTOL	STD. VELOCITY PISTOL AND REVOLVER	.175
150	LARGE PISTOL	STD. AND MAGNUM PISTOL AND REVOLVER	.210
155	LARGE MAGNUM PISTOL	MAGNUM REVOLVER	.210
200	SMALL MAGNUM PISTOL	HIGH VELOCITY AND MAGNUM PISTOL AND REVOLVER	.175
205	SMALL RIFLE	SMALL RIFLE	.175
210	LARGE RIFLE	LARGE RIFLE	.210
215	LARGE MAGNUM RIFLE	MAGNUM RIFLE	.210
SHOTSHELL PRIMERS			
209A	SHOTSHELL	10, 12, 20, 28 GAUGE AND .410 BORE	.243



RESOURCES TO CHOOSE THE RIGHT LOAD

Breaking clay targets, wingshooting gamebirds, launching slugs at big game, protecting your home—there's almost no limit to what a shotgun paired with the right ammunition can do. But to maximize the platform's potential, you need to choose the load that best fits the application. Use the resources here to make the right call no matter what your pursuit might be.

Average Pellet Count — Steel Shot

Shot Size	Payload Weight 3/4 (21.25)	7/8 (24.81)	15/16 (26.58)	1 (28.35)	1 1/8 (31.89)	1 1/4 (35.44)	1 3/8 (39.98)	1 1/2 (42.52)	1 9/16 (44.30)	1 5/8 (46.06)
7.5	316	-	395	422	475	527	580	633	659	685
6	236	-	295	315	354	394	433	472	492	512
5	182	-	228	243	273	304	334	364	380	395
4	144	168	180	192	216	240	264	288	300	312
3	118	136	143	158	178	197	217	237	247	257
2	94	-	117	125	141	156	172	187	195	203
1	77	-	97	103	116	129	142	154	161	167
BB	54	-	67	72	81	90	99	108	112	117
BBB	46	-	58	62	70	77	85	93	97	101
T	39	-	49	52	58	65	71	78	81	84

Weight of Shot in Ounces (Grams)

Average Pellet Count — Bismuth Shot

Shot Size	Payload Weight 1 1/8 (31.89)	1 1/4 (35.44)	1 3/8 (39.98)
3	137	152	168
4	170	189	208
5	219	243	268

Average Pellet Count — Lead Shot

Shot Size	Payload Weight 1/2 (14.17)	11/16 (19.49)	3/4 (21.25)	7/8 (24.80)	1 (28.35)	1 1/8 (31.89)	1 1/4 (35.44)	1 5/16 (37.21)	1 3/8 (38.98)	1 1/2 (42.52)	1 5/8 (46.06)	1 3/4 (49.61)	1 7/8 (53.15)	2 (56.70)	2 1/4 (63.78)
9	292	402	439	512	585	658	731	767	804	877	951	1024	1097	1170	1316
8½	249	342	373	435	497	559	621	652	683	745	808	870	932	994	1118
8	205	282	307	359	410	461	512	538	564	615	666	718	769	820	922
7½	175	241	262	306	350	394	437	459	481	525	569	613	656	700	787
6	112	155	169	197	225	253	281	295	309	337	366	394	422	450	506
5	85	117	127	149	170	191	212	223	234	255	276	298	319	340	382
4	67	93	101	118	135	152	169	177	186	202	219	236	253	270	304
2	43	60	65	76	87	98	109	114	120	130	141	152	163	174	196
BB	25	34	37	44	50	56	62	65	69	75	81	88	94	100	112

Weight of Shot in Ounces (Grams) (3% Antimony)

Average Pellet Count — HEAVYWEIGHT® TSS Shot

Shot Size	Payload Weight 13/16 (23.03)	1 1/2 (42.52)	1 5/8 (47.07)	1 3/4 (49.61)	2 1/4 (63.78)	2 1/2 (70.87)
9	294	544	–	634	815	–
7	–	283	–	330	424	–
7/9	–	–	470	–	–	718
8/10	–	–	653	–	–	1006

Weight of Shot in Ounces (Grams)



10 GAUGE 12 GAUGE 16 GAUGE 20 GAUGE 28 GAUGE 410 BORE

Color Coding

To increase safety among shooters, Federal was the first manufacturer to use color-coding for shotshells. This safety measure became an industry norm after it was introduced in 1960.



Buckshot Sizes (Actual Size)

No. 4	No. 3	No. 2	No. 1	No. 00	No. 000
.24" (6.10mm)	.25" (6.35mm)	.27" (6.86mm)	.30" (7.62mm)	.33" (8.38mm)	.36" (9.14mm)

Shot Size Reference

	T	BBB	BB	1	2	3	4	5	6	7	7½	8	8½	9	10
PELLET															
DIAMETER INCHES	.20	.19	.18	.16	.15	.14	.13	.12	.11	.10	.095	.09	.085	.08	.07
DIAMETER MM	5.08	4.83	4.57	4.06	3.81	3.56	3.30	3.05	2.79	2.54	2.41	2.29	2.16	2.03	1.78

Game Guide

GAME	GAUGE	DISTANCE (YDS)	CHOKE	STEEL SHOT SIZES
LARGE DUCKS *(Mallard, Pintail, Black)*	10, 12, 16, 20	20-30	IC/M	1, 2, 3, 4
	10, 12, 16, 20	30+	IC/M/F	BB, 1, 2, 3
MEDIUM DUCKS *(Wood Duck, Scaup, Widgeon)*	12, 16, 20	20-30	IC/M	2, 3, 4, 6
	12, 16, 20	30+	IC/M/F	1, 2, 3, 4
SMALL DUCKS *(Teal, Bufflehead)*	12, 16, 20, 28, .410	20-30	IC/M/F	3, 4, 6, 7
	12, 16, 20	30+	IC/M/F	3, 4
LARGE GEESE *(Giant, Western Canada)*	10, 12	20-30	IC/M	T, BBB, BB
	10, 12	30+	IC/M	T, BBB, BB
MEDIUM GEESE *(Snow, Lesser Canada)*	10, 12	20-30	IC/M	BBB, BB, 1
	10, 12	30+	IC/M	BBB, BB, 1

GAME	GAUGE	DISTANCE (YDS)	CHOKE	HWT TSS SHOT SIZES	LEAD SHOT SIZES
TURKEY	10, 12, 20, .410	20-30	F	7, 8, 9, 10	4, 5, 6
	10, 12, 20	30+	F/EF	7, 8, 9, 10	4, 5, 6

GAME	GAUGE	DISTANCE (YDS)	CHOKE	STEEL SHOT SIZES	LEAD SHOT SIZES
PHEASANT, PRAIRIE GROUSE	12, 16, 20, 28	20-30	IC/M	3, 4	4, 5, 6, 7.5
	12, 16, 20	30+	M/F	2, 3	4, 5, 6
RUFFED GROUSE, PARTRIDGE	12, 16, 20, 28	20-30	SK/IC/M	-	6, 7.5, 8, 9
	12, 16, 20	30+	IC/M	-	5, 6, 7.5
QUAIL, DOVE	12, 16, 20, 28	20-30	SK/IC/M	-	6, 7.5, 8, 9
	12, 16, 20	30+	IC/M	-	6, 7.5, 8
WOODCOCK, SNIPE	12, 16, 20, 28	20-30	SK/IC/M	-	7.5, 8, 9
	12, 16, 20	30+	IC/M	-	7.5, 8
RABBIT, SQUIRREL	12, 16, 20, 28, .410	20-30	IC/M	-	4, 5, 6, 7.5
	12, 16, 20	30+	IC/M/F	-	4, 5, 6

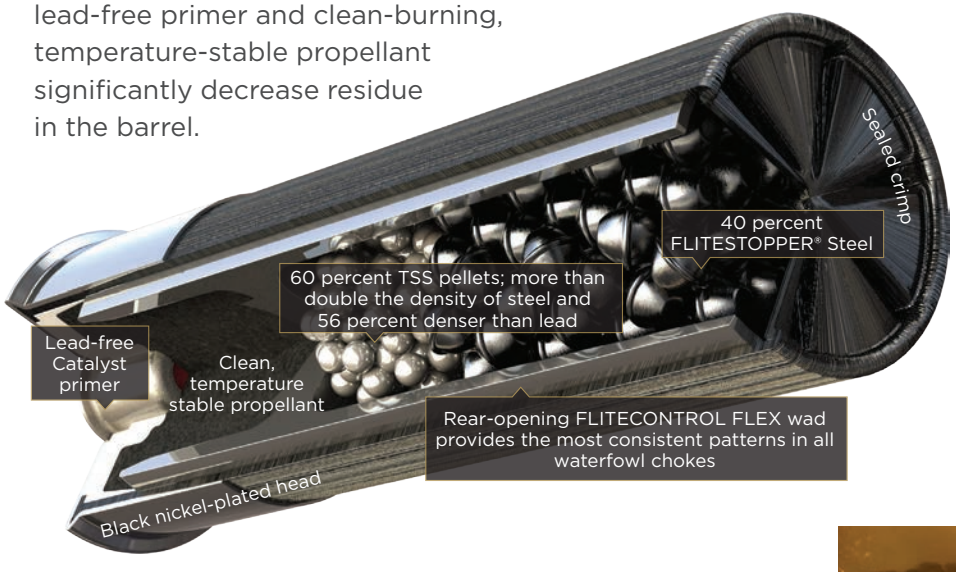
*Federal recommends patterning your gun to determine the optimum choke. *EF=Extra Full F = Full Choke M = Modified Choke IC = Improved Cylinder, SK=Skeet*





BLACK CLOUD

The best load in waterfowl hunting has never been so deadly. Black Cloud® FS Steel® is now equipped with the FLITECONTROL FLEX® wad to deliver improved pattern density and consistency through both ported and standard waterfowl chokes. The efficient Catalyst™ lead-free primer and clean-burning, temperature-stable propellant significantly decrease residue in the barrel.



Cutting-Edge Technology—Literally
FLITESTOPPER Steel creates massive wound cavities visible in ballistic gelatin. Its amazing shot construction features a cutting edge that devastates on impact

FLITECONTROL FLEX™ WAD



30 Percent Better Patterns*
Produce more efficient patterns through both ported chokes and standard tubes with the FLITECONTROL FLEX wad. Patent-pending rear-deploying petals feature reinforced gussets to allow them to deploy when fired through ported chokes that decrease muzzle pressure. Side-mounted slits stimulate the payload for separation from the wad at the ideal moment for consistent, deadly patterns.
*Claim based on 10-round average pattern efficiency comparison of PWB134 BB and PWBX134 BB shot through Patternmaster®, Indian Creek Black Diamond Triumph and Kick's High Flyer™ chokes at 40 yards.







DUCKS UNLIMITED
BANQUET PARTNER

BLACK CLOUD TSS

NEW

Duck and goose hunting entered a deadly new age with the introduction of Black Cloud® TSS. Now hunters can get that same performance in a new 20-gauge load in addition to the original 12-gauge offerings. It blends No. 3 FLITESTOPPER® Steel with No. 9 18 g/cc Tungsten Super Shot. More pellets. More range.

BLACK CLOUD HIGH VELOCITY

Shorten leads and hit birds even harder with Black Cloud® FS Steel® High Velocity. Faster. More lethal.





SPEED-SHOK

DELTA WATERFOWL

Speed kills ducks and geese. Now it kills even cleaner with redesigned Federal® Speed-Shok®. Its Catalyst lead-free primer and fast-burning powder dramatically reduce residue, while its optimized velocities knock birds out of the sky.



Partner Spotlight: Chad Belding

Chad Belding, host of Federal Premium-sponsored "The Fowl Life," has built a reputation as a diehard duck and goose hunter who puts birds down in any situation. That's why he loads his shotgun with Black Cloud on every hunt. It's the only ammunition that delivers the lethal performance he needs.

FOR A FULL LIST OF AVAILABLE LOADS, REFER TO PAGES 65-66.

LEAD FREE SHOT

MEATEATER

BISMUTH

NEW

UPLAND & WATERFOWL

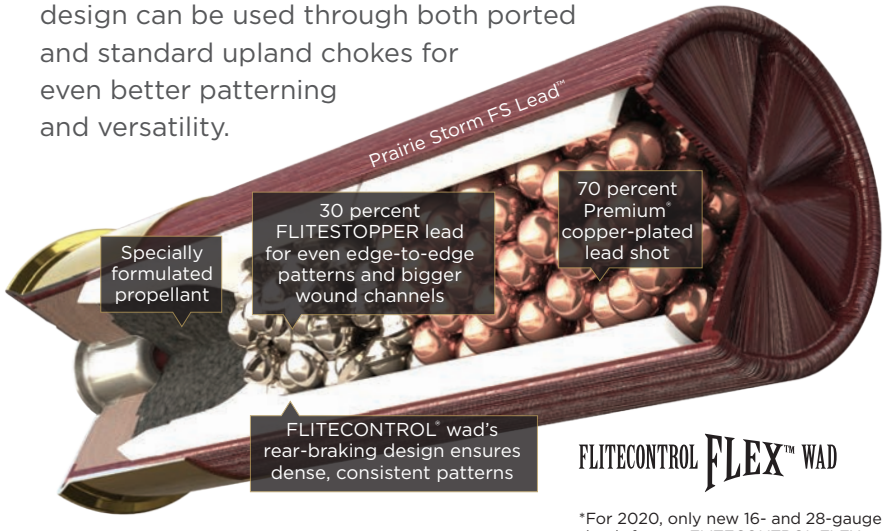


Bring back the performance of lead—without the heavy metal. With high-quality bismuth pellets with a density of 9.6 g/cc, Federal Premium® Bismuth payloads pattern and hit birds like traditional lead, providing more killing power at longer ranges. The material is also softer than tungsten and steel, allowing use with older shotguns. The loads' FLITECONTROL FLEX® wad tightens patterns and increases lethality over comparable steel loads. That's why they're the official shotshell ammunition of MeatEater.

PRAIRIE STORM

NEW

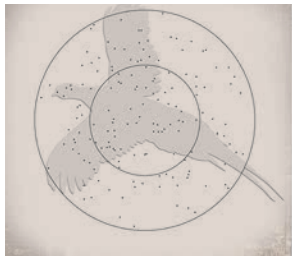
Don't settle for sub-par performance from your sub-gauge shotgun. New 16- and 28-gauge Federal Premium® Prairie Storm® FS Lead loads use the updated FLITECONTROL FLEX® wad and a mixed payload of standard pellets and FLITESTOPPER® lead to produce full, consistent patterns from these smaller payloads. The improved wad design can be used through both ported and standard upland chokes for even better patterning and versatility.



FLITECONTROL FLEX™ WAD

*For 2020, only new 16- and 28-gauge loads feature FLITECONTROL FLEX wad.





Holes In The Bird, Not The Pattern
PF154FS 4 puts more than 75 percent of its pattern in a 30-inch circle at 40 yards with a modified choke.



PRAIRIE STORM STEEL

Pheasants are fast, tough birds. That's why we combined the FLITECONTROL® wad and FLITESTOPPER® pellet technologies to create Prairie Storm® FS Steel. It puts more than 75 percent of its pellets in a 30-inch circle at 40 yards, with energy similar to the most popular lead loads.



HI-BIRD

Combine speed, hard-hitting pellets and a specialized wad to fold the highest upland birds. Hi-Bird® uses a two-piece wad with SoftCell™ technology to decrease perceived recoil and produce more consistent long-range patterns.



FEDERAL PREMIUM UPLAND

Upland loads feature Federal Premium® copper-plated lead shot and the best components for consistent, deadly patterns. Magnum loads have buffered shot for tighter patterns, less feather draw and maximum penetration.

PARTNER SPOTLIGHT:
Pheasants Forever

Since 1998, Federal® has supported Pheasants Forever with an on-box ammunition royalty program. For every box of Prairie Storm or Federal Premium Upland you buy with the Pheasants Forever logo, Federal donates a portion of the proceeds to the organization's habitat and education programs. We've sold more than 55 million of these special shotshells!





FEDERAL GAME LOAD

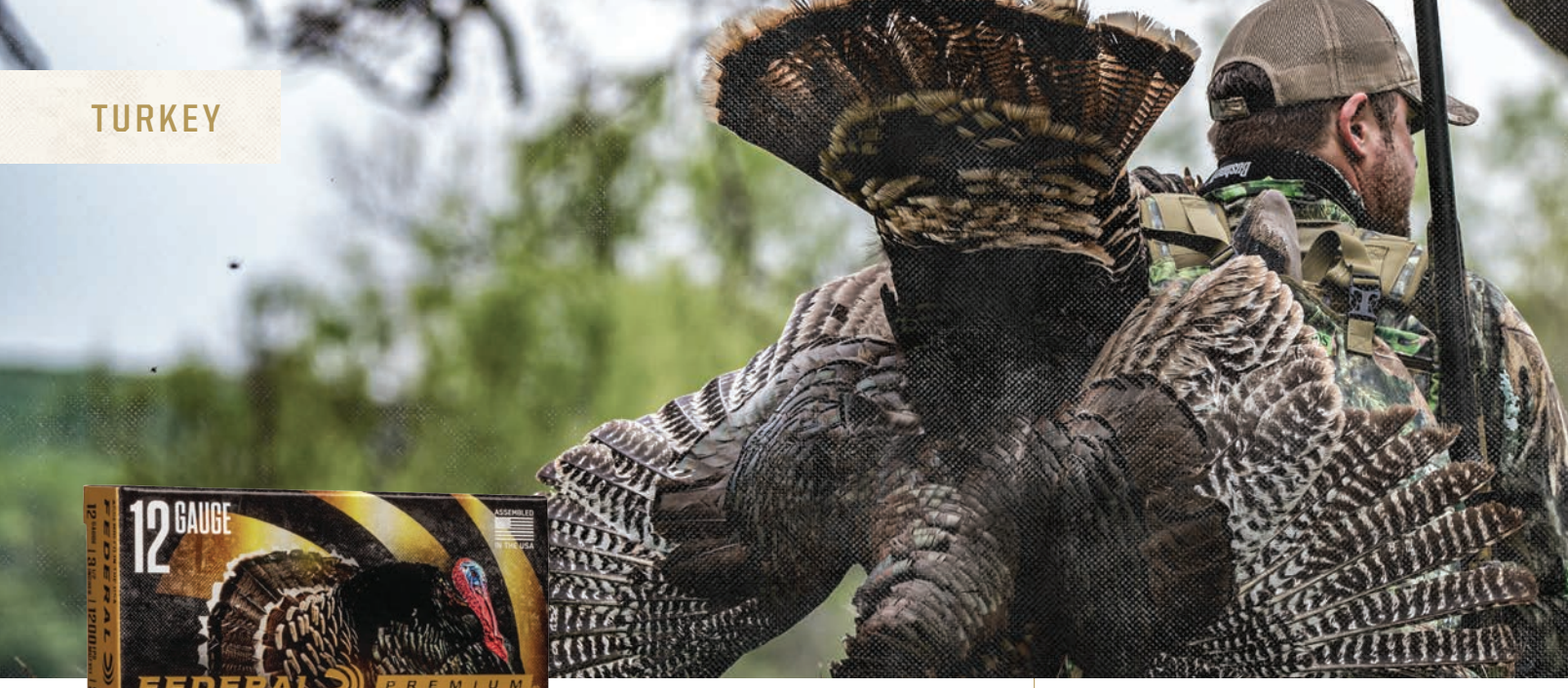
Woods or fields. Fur or feathers. Federal® Game Load has you covered with carefully crafted loads packed with features that provide reliable, effective performance on a variety of small game and upland birds.



UPLAND STEEL NEW

Doves are done. Federal® Upland Steel serves up the patterns and power hunters need for hard-to-hit birds at a price that keeps them shooting all day. The loads are consistent and reliable, with high velocities that make the most of the steel payload. ***Now available in 28-gauge and .410.***

FOR A FULL LIST OF AVAILABLE LOADS, REFER TO PAGES 65-66.





LEAD FREE SHOT

HEAVYWEIGHT TSS

Kill gobblers at longer distances than ever before. Payloads of HEAVYWEIGHT® Tungsten Super Shot provide the highest pellet counts possible, with an 18 gm/cc density that's 20 percent higher than standard tungsten and 56 percent more than lead. Its rear-braking FLITECONTROL FLEX® wad performs flawlessly through ported and standard turkey chokes for the most consistent, deadly patterns possible.



More Pellets Than Ever Before

New blended loads combine No. 7 and 9 or 8 and 10 Tungsten Super Shot. With some payloads topping 1,000 pellets, they put more hits on target than any turkey load in history. Target shot with 2½-ounce load of No. 8 and 10 HEAVYWEIGHT TSS (PTSSX195F 810) at 40 yards through an Indian Creek .665 constriction choke.

.410 Performer

With the increased power and pellet counts of HEAVYWEIGHT TSS loads, hunters can get the patterns of hard-kicking 12-gauge lead loads while using a low-recoil .410. Target shot at 40 yards with PTSS419F 9 through a fixed full choke. Load does not include the FLITECONTROL FLEX wad.







NWTF
Conserve. Hunt. Share.

A portion of the proceeds from all Federal Premium® turkey loads goes to support the National Wild Turkey Federation and its important conservation work.

3rd Degree
PTDX157 567



Conventional lead turkey load,
1¾-ounce No. 5 shot



MEATEATER

3RD DEGREE WITH HEAVYWEIGHT TSS

Rather than simply pattern tightly like conventional loads, 3rd Degree uses a three-stage payload consisting of No. 5 copper-plated lead, No. 6 FLITESTOPPER® lead and No. 7 HEAVYWEIGHT® TSS shot to deliver larger, more forgiving patterns at close range, while still providing deadly performance at long distance. The official turkey load of MeatEater.



Close-Range Forgiveness

The FLITESTOPPER lead portion of the 3rd Degree payload spreads quickly, creating forgiving patterns close up. Targets shot with a 28-inch barrel and Indian Creek ported turkey choke at 12 yards; yellow area denotes effective pattern size.



GRAND SLAM

Extend the range and enhance the lethality of lead turkey payloads. Its FLITECONTROL FLEX wad system works in both standard and ported turkey chokes, and high-quality copper-plated lead pellets are cushioned with an advanced buffering compound to provide dense patterns and ample energy.



Spur Tape

Instantly determine just how much to brag up your gobbler with Spur Tape—a feature on Grand Slam® and all Federal Premium turkey loads. The measuring hash marks on the hull let you quickly measure spurs in the field and share with your jealous buddies.

FOR A FULL LIST OF AVAILABLE LOADS, REFER TO PAGES 65-66.



LEAD FREE BULLET



TROPHY COPPER SABOT

Harness the power of slugs without sacrifices. Trophy® Copper uses a unique sabot design to produce rifle-like accuracy at 200 yards through rifled barrels. The slug's deep, externally skived nose cavity provides superior expansion, while the polymer tip and sleek profile increase downrange velocity and game-dropping energy.



This is What Consistency Looks Like
By incorporating a deep, externally skived cavity in the nose, we ensure the Trophy Copper Slug opens consistently—whether it hits the target at 20 yards or 200-plus. Gelatin shot at 100 yards.







POWER-SHOK SABOT SLUG

Power-Shok sabots provide accuracy and power through fully rifled barrels.

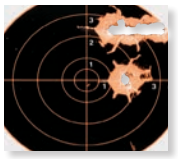


TRUBALL RIFLED SLUG

Forget what you think you know about smoothbore slug gun accuracy. The TruBall® is the most consistent smoothbore slug on the market, capable of groups as tight as 1.4 inch at 50 yards. The TruBall system locks the components together, centering and pushing the rifled slug out of the barrel.



50 YARDS



100 YARDS

SMOOTHBORE SALVATION

TruBall prints groups at 50 and even 100 yards that would rival some rifles. Targets shot with PB127 RS at 50 and 100 yards.

POWER-SHOK RIFLED SLUG

Get solid, reliable performance from your smoothbore shotgun with Power-Shok rifled slugs.







FEDERAL PREMIUM BUCKSHOT

Engineered to provide precision and power. Federal Premium Buckshot uses copper-plated pellets to produce more downrange energy. Loads equipped with the FLITECONTROL® wad system deliver the tightest patterns possible.

POWER-SHOK BUCKSHOT

Defense. Hunting. Consistency. The Triple Plus® wad system provides better shot alignment and granulated plastic buffer keeps pellets uniform in shape for tight patterns.

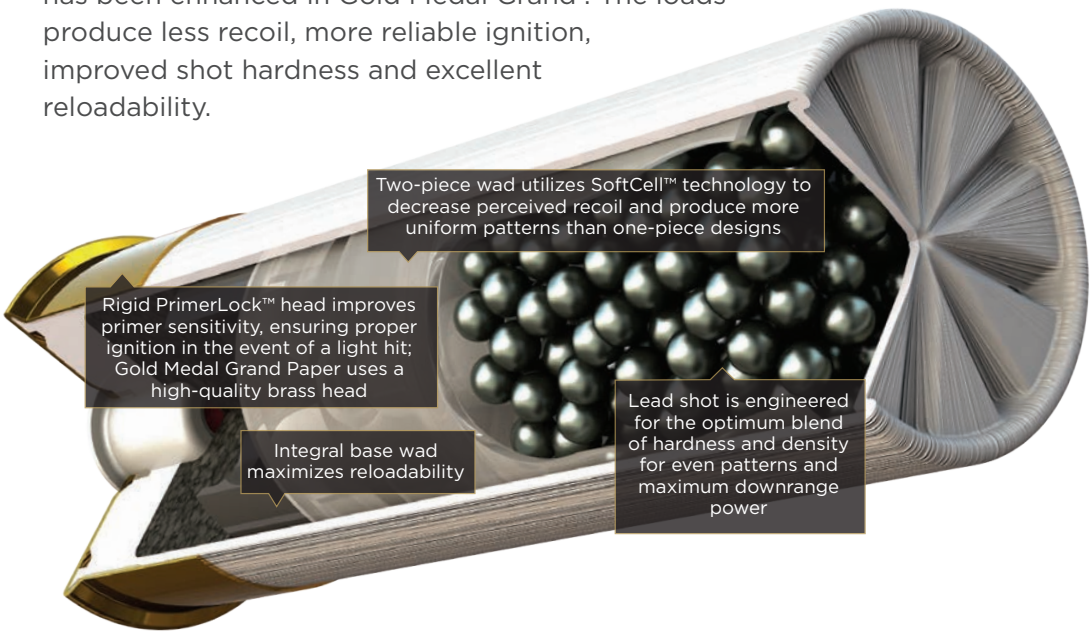


FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 65-66.



GOLD MEDAL GRAND PLASTIC

For decades, Gold Medal® shotshells set the standard for competitive trap, skeet and sporting clays shooters. The industry-leading design has been enhanced in Gold Medal Grand®. The loads produce less recoil, more reliable ignition, improved shot hardness and excellent reloadability.



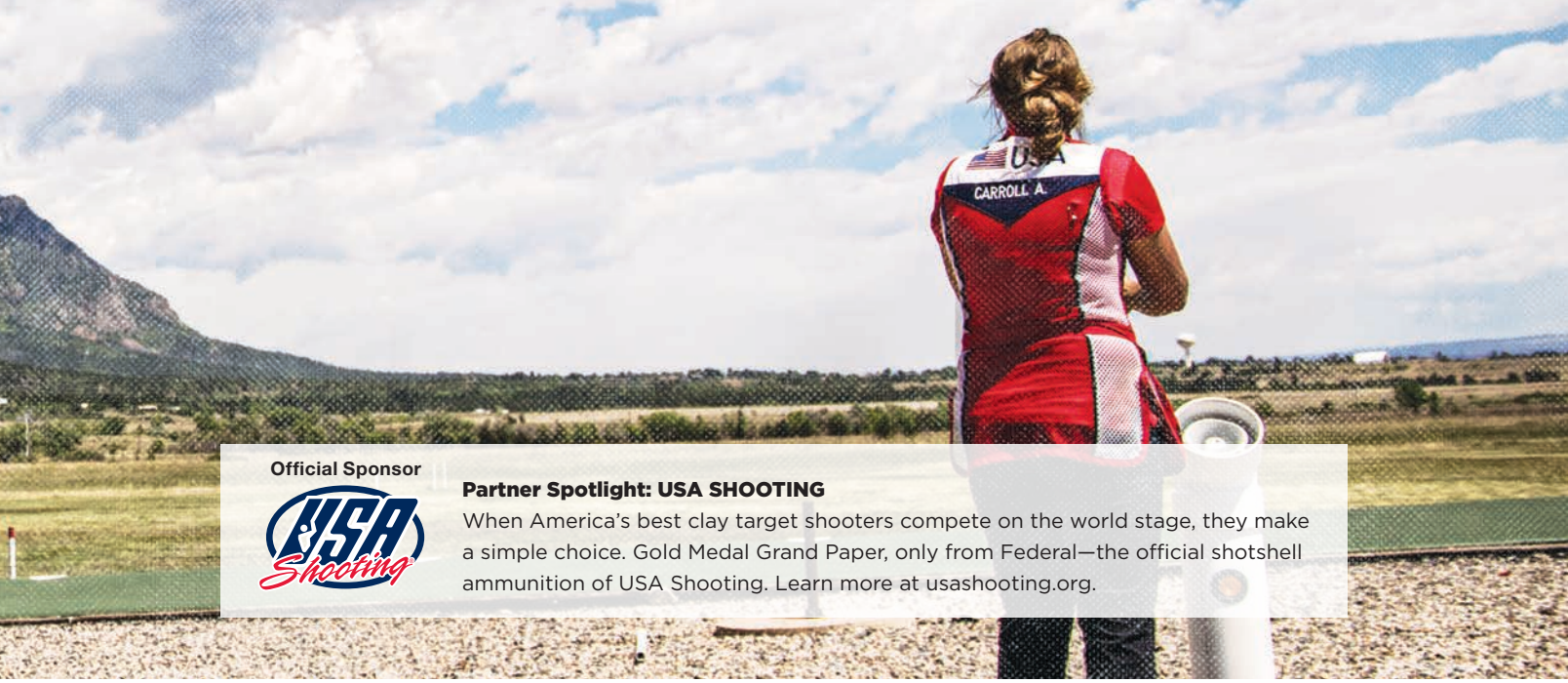


Shock Absorber
Gold Medal Grand's two-piece wad creates an air pocket that absorbs energy and delays the compression process. The result is recoil that hits the shooter's shoulder later and with less force.

GOLD MEDAL GRAND PAPER

Combine our classic paper hull and high-quality brass head with an improved design that provides less felt recoil and improved shot hardness.





Official Sponsor

Partner Spotlight: USA SHOOTING

When America's best clay target shooters compete on the world stage, they make a simple choice. Gold Medal Grand Paper, only from Federal—the official shotshell ammunition of USA Shooting. Learn more at usashooting.org.





TOP GUN

Even the most challenging targets are no match for Top Gun®. The loads' high-quality lead shot produce even patterns that crush clays.

TOP GUN SPORTING NEW

The same consistent, trusted performance of Top Gun in loads specifically designed for sporting clays. They push their payloads fast to shorten leads, yet reduce felt recoil to allow for quicker follow-up shots. ***Now available in a full line of gauges and payloads.***



FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 65-66.

SHOTSHELL LOAD DATA

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; SCI= a portion of the proceeds from the sale of this product is donated to Safari Club International ; CLM=cartridge length longer than SAAMI max, may not fit in all magazines.. *Molycoat: molybdenum disulfide dry film lubricant

Waterfowl

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM BLACK CLOUD® FS STEEL					
PWBX107	10	3½	1375	1⅝	BB, 2
PWBX134	12	3½	1500	1½	BBB, BB, 1, 2, 3, 4
PWBX142	12	3	1450	1¼	BBB, BB, 1, 2, 3, 4
PWBX147	12	2¾	1500	1⅛	BB, 2, 3, 4
PWBX209	20	3	1350	1	1, 2, 3, 4
FEDERAL PREMIUM BLACK CLOUD TSS					
PWBTSSX1427BB	12	3	1450	1¼	BB FS Steel/7 TSS
PWBTSSX142 39	12	3	1450	1¼	3 FS Steel/9 TSS
PWBTSSX209 39	20	3	1350	1	3 FS Steel/9 TSS
FEDERAL PREMIUM BLACK CLOUD FS STEEL HIGH VELOCITY					
PWBXH143	12	3	1635	1⅛	BB, 1, 2, 3, 4
SPEED•SHOK® WATERFOWL					
WF107	10	3½	1450	1½	T, BBB, BB, 2
WF133	12	3½	1550	1⅜	T, BBB, BB, 1, 2, 3, 4
WF134	12	3½	1500	1½	T, BBB, BB, 1, 2
WF143	12	3	1550	1⅛	T, BBB, BB, 1, 2, 3, 4, 6
WF142	12	3	1450	1¼	T, BBB, BB, 1, 2, 3, 4
WF145	12	2¾	1500	1⅛	BB, 2, 3, 4, 6
WF168	16	2¾	1350	15⁄16	BB, 2, 4
WF209	20	3	1550	⅞	1, 2, 3, 4
WF208	20	2¾	1425	¾	4, 6, 7
WF283	28	2¾	1350	⅝	6
WF413	.410	3	1400	⅜	6

Buckshot

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD
FEDERAL PREMIUM BUCKSHOT WITH FLITECONTROL® WAD				
PFC157 00	12	3	1325	12 Pellets - 00 Buck
PFC154 00	12	2¾	1325	9 Pellets - 00 Buck
FEDERAL PREMIUM BUCKSHOT				
P108F 00	10	3½	1100	18 Pellets - 00 Buck
P135F 00	12	3½	1100	18 Pellets - 00 Buck
P158 4B	12	3	1100	41 Pellets - 4 Buck
P158 000	12	3	1225	10 Pellets - 000 Buck
P154 00	12	2¾	1325	9 Pellets - 00 Buck
P156 00	12	2¾	1290	12 Pellets - 00 Buck
P258 2B	20	3	1100	18 Pellets - 2 Buck
P256 3B	20	2¾	1175	20 Pellets - 3 Buck
POWER•SHOK® BUCKSHOT				
F131 00	12	3	1210	15 Pellets - 00 Buck
F131 4B	12	3	1210	41 Pellets - 4 Buck
F127 000	12	2¾	1325	8 Pellets - 000 Buck
F127 00	12	2¾	1325	9 Pellets - 00 Buck
F127 4B	12	2¾	1325	27 Pellets - 4 Buck
F130 00	12	2¾	1290	12 Pellets - 00 Buck
F164 1B	16	2¾	1225	12 Pellets - 1 Buck
F207 2B	20	3	1100	18 Pellets - 2 Buck
F203 3B	20	2¾	1200	20 Pellets - 3 Buck
POWER•SHOK BUCKSHOT - LOW RECOIL				
H132 00	12	2¾	1140	9 Pellets - 00 Buck

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD
PERSONAL DEFENSE SHOTSHELL WITH FLITECONTROL				
PD132	12	2¾	1145	9 Pellets - 00 Buck
PERSONAL DEFENSE SHOTSHELL				
PD156	12	2¾	1100	34 Pellets - 4 Buck
PD256	20	2¾	1100	24 Pellets - 4 Buck

LOAD NO.	SHELL LENGTH	VELOCITY	PAYLOAD
PERSONAL DEFENSE .410 HANDGUN			
PD413JGE 000	3	775	5 pellets–000 Buck
PD413JGE 4B	3	950	9 pellets–4 Buck
PD412JGE 000	2½	850	4 pellets - 000 Buck
PD412JGE 4	2½	950	7⁄16 ounce - 4 Shot

Turkey

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM 3RD DEGREE® WITH FLITECONTROL FLEX® WAD					
PTDX139 567	12	3½	1250	2	5-6-7
PTDX157 567	12	3	1250	1¾	5-6-7
PTDX258 567	20	3	1100	1½	5-6-7
FEDERAL PREMIUM GRAND SLAM® WITH FLITECONTROL FLEX WAD					
PFCX101F	10	3½	1200	2	4, 5
PFCX139F	12	3½	1200	2	4, 5, 6
PFCX157F	12	3	1200	1¾	4, 5, 6
PFCX156F	12	2¾	1200	1½	5
PFCX258F	20	3	1185	15⁄16	5
FEDERAL PREMIUM HEAVYWEIGHT® TSS WITH FLITECONTROL FLEX WAD					
PTSSX195F	12	3½	1000	2½	7/9, 8/10
PTSSX191F	12	3½	1200	2¼	7, 9
PTSSX193F	12	3	1200	1¾	7, 9
PTSSX295F	20	3	1000	1⅝	7/9, 8/10
PTSSX259F	20	3	1100	1½	7, 9
PTSS419F	.410	3	1100	13/16	9

Upland

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM BISMUTH					
PBIX137	12	3	1450	1⅜	3, 4, 5
PBIX144	12	2¾	1350	1¼	3, 4, 5
PBIX244	20	3	1350	1⅛	3, 4, 5
FEDERAL PREMIUM HI-BIRD®					
HVF12H	12	2¾	1330	1¼	4, 5, 6, 7.5, 8
HVF12	12	2¾	1275	1⅛	6, 7.5, 8
FEDERAL PREMIUM UPLAND MAGNUM					
P156	12	2¾	1315	1½	4, 6
P165	16	2¾	1260	1¼	4, 6
P258	20	3	1300	1¼	4, 5, 6
P256	20	2¾	1175	1⅛	4, 6
FEDERAL PREMIUM UPLAND HIGH VELOCITY					
P129	12	3	1350	1⅝	4, 5, 6
P128	12	2¾	1500	1⅛	4, 6, 7.5
P138	12	2¾	1500	1⅜	4, 5, 6
P283	28	2¾	1295	¾	6, 7.5, 8
FEDERAL PREMIUM UPLAND PHEASANTS FOREVER HIGH VELOCITY					
PF154	12	2¾	1500	1¼	4, 5, 6, 7.5
PF163	16	2¾	1425	1⅛	4, 5, 6
PF204	20	2¾	1350	1	4, 5, 6, 7.5
FEDERAL PREMIUM PRAIRIE STORM® FS LEAD					
PF129FS	12	3	1350	1⅝	4, 5, 6
PF154FS	12	2¾	1500	1¼	4, 5, 6
PFX164FS	16	2¾	1425	1¼	4, 5, 6
PF258FS	20	3	1300	1¼	4, 5, 6
PF204FS	20	2¾	1350	1	4, 5, 6
PFX289FS	28	2¾	1300	1	6
FEDERAL PREMIUM PRAIRIE STORM FS STEEL					
PFS143FS	12	3	1600	1⅛	3, 4
PFS207FS	20	3	1500	⅞	3, 4
UPLAND STEEL					
USH12	12	2¾	1400	1⅛	6, 7.5
USH20	20	2¾	1500	¾	6, 7.5
USH28	28	2¾	1350	⅝	6, 7.5
USH410	410	2¾	1400	⅜	6, 7.5
GAME LOAD – HI-BRASS					
H126	12	2¾	1330	1¼	4, 5, 6, 7.5
H163	16	2¾	1295	1⅛	4, 6, 7.5
H204	20	2¾	1220	1	4, 5, 6, 7.5
H289	28	2¾	1220	1	5, 6, 7.5
H413	410	3	1135	11⁄16	4, 5, 6, 7.5
H412	410	2½	1200	½	6, 7.5
GAME LOAD – HEAVY FIELD					
H123	12	2¾	1255	1⅛	4, 6, 7.5, 8
H125	12	2¾	1220	1¼	4, 5, 6, 7.5
H202	20	2¾	1165	1	6, 7.5, 8
GAME LOAD					
H121	12	2¾	1290	1	6, 7.5, 8
H160	16	2¾	1165	1	6, 7.5, 8
H200	20	2¾	1210	⅞	6, 7.5, 8

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

Federal Premium Sabot Slug

USAGE	FEDERAL LOAD NO.	GAUGE	SHELL LENGTH INCHES	SHELL LENGTH MM	SLUG TYPE	SLUG WEIGHT OUNCES	SLUG WEIGHT GRAINS	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND) MUZZLE	25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.	HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT YARDS. SIGHTS .5 INCHES ABOVE BORE LINE. 25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.	TEST BARREL LENGTH INCHES
FEDERAL PREMIUM TROPHY® COPPER (FULLY RIFLED SLUG BARREL)																									
2	P151 TC	12	3	76	Trophy Copper Slug	.69	300	2000	1900	1800	1620	1450	1310	2665	2400	2160	1745	1400	1135	1.3	2.6	2.9	⊕	-7.1	30
2	P152 TC	12	2¾	70	Trophy Copper Slug	.69	300	1900	1800	1710	1530	1380	1240	2405	2165	1945	1565	1260	1030	1.7	2.9	3.3	⊕	-7.9	30
2	P209 TC	20	3	76	Trophy Copper Slug	.63	275	1900	1790	1690	1500	1340	1200	2205	1965	1750	1380	1090	875	1.6	3.0	3.4	⊕	-8.3	30
2	P208 TC	20	2¾	70	Trophy Copper Slug	.63	275	1700	1600	1510	1340	1200	-	1765	1570	1390	1100	885	-	1.0	1.7	⊕	-6.5	-	30

Note: For optimum slug performance, we recommend matching the chamber length to the slug length. For example, use a 3-inch slug in a 3-inch chamber.

Federal Premium Smoothbore Slug

USAGE	FEDERAL LOAD NO.	GAUGE	SHELL LENGTH INCHES	SHELL LENGTH MM	SLUG TYPE	SLUG WEIGHT OUNCES	SLUG WEIGHT GRAINS	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND) MUZZLE	25 YDS.	50 YDS.	100 YDS.	HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT YARDS. SIGHTS .5 INCHES ABOVE BORE LINE. 25 YDS.	50 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
FEDERAL PREMIUM TRUBALL® RIFLED SLUGS (SMOOTHBORE BARREL)																			
2	PB127 LRS*	12	2¾	70	TruBall Rifled Slug	1	438	1300	1150	1040	910	1640	1275	1055	805	0.6	⊕	-7.4	30
2	PB127 RS	12	2¾	70	TruBall Rifled Slug	1	438	1600	1370	1180	970	2485	1810	1355	915	0.3	⊕	-5.7	30
2	PB131 RS	12	3	76	TruBall Rifled Slug	1	438	1700	1450	1240	1000	2805	2040	1505	970	0.3	⊕	-5.1	30
2	PB203 RS	20	2¾	70	TruBall Rifled Slug	¾	328	1600	1390	1220	1010	1865	1410	1090	745	0.3	⊕	-5.3	30
2	PB209 RS	20	3	76	TruBall Rifled Slug	¾	328	1700	1480	1290	1040	2105	1595	1215	795	0.3	⊕	-4.8	30
FEDERAL PREMIUM TRUBALL DEEP PENETRATOR RIFLED SLUGS (SMOOTHBORE BARREL)																			
3	PB127 DPRS	12	2¾	70	TruBall Rifled Slug	1	438	1350	1200	1090	950	1775	1400	1150	875	0.5	⊕	-6.8	30

** Low-recoil load*

Federal Slug

USAGE	FEDERAL LOAD NO.	GAUGE	SHELL LENGTH INCHES	SHELL LENGTH MM	SLUG TYPE	SLUG WEIGHT OUNCES	SLUG WEIGHT GRAINS	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS	HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHTIF ZEROED AT YARDS. SIGHTS .5 INCHES ABOVE BORE LINE. 25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	TEST BARREL LENGTH INCHES
FEDERAL POWER•SHOK® SABOT SLUG (FULLY RIFLED SLUG BARREL)																									
2	F127 SS2	12	2¾	70	Sabot HP	1	438	1500	1420	1350	1280	1220	1170	2190	1970	1775	1600	1455	1330	1.4	2.1	1.7	⊕	-3.2	30
2	F203 SS2	20	2¾	70	Sabot HP	⅞	383	1450	1350	1260	1180	1120	1070	1785	1550	1350	1190	1065	965	1.6	2.5	2.0	⊕	-3.8	30
FEDERAL POWER•SHOK RIFLED SLUG (SMOOTHBORE BARREL)																									
2	F103F RS	10	3½	89	HP	1¾	766	1280	1170	1090	1020	970	930	2785	2325	2000	1770	1600	1465	0.5	⊕	-2.4	-6.8	-13.6	32
2	F131 RS	12	3	76	HP	1¼	547	1600	1460	1330	1220	1130	1060	3110	2570	2140	1800	1545	1360	0.3	⊕	-1.5	-4.5	-9.1	30
2	F127 RS	12	2¾	70	HP	1	438	1610	1470	1340	1230	1140	1070	2520	2090	1745	1470	1260	1110	0.3	⊕	-1.5	-4.4	-8.9	30
2	F130 RS	12	2¾	70	HP	1¼	547	1520	1390	1270	1170	1090	1030	2805	2330	1950	1660	1445	1290	0.3	⊕	-1.7	-4.9	-10.0	30
2	F164 RS	16	2¾	70	HP	4/5	350	1600	1380	1210	1080	1000	930	1990	1490	1135	910	770	675	0.3	⊕	-1.8	-5.4	-11.2	28
2	F203 RS	20	2¾	70	HP	¾	328	1600	1430	1280	1160	1070	1000	1865	1480	1190	975	830	730	0.3	⊕	-1.6	-4.8	-10.0	26
2	F412 RS	410	2½	64	HP	¼	109	1775	1540	1340	1180	1060	980	760	575	430	335	270	235	0.2	⊕	-1.4	-4.4	-9.3	26

Target

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	DRAM	PAYLOAD	SHOT
FEDERAL PREMIUM GOLD MEDAL GRAND®						
GMT119	12	2¾	1335	3¼	24 gram	7.5, 9
GMT113	12	2¾	1180	2¾	1	7.5, 8
GMT114	12	2¾	1100	Extra-Lite	1⅛	7.5, 8
GMT115	12	2¾	1145	2¾	1⅛	7.5, 8
GMT116	12	2¾	1200	3	1⅛	7.5, 8
GMT178	12	2¾	1235	HDCP	1⅛	7.5, 8
FEDERAL PREMIUM GOLD MEDAL GRAND PAPER						
GMT175	12	2¾	1180	2¾	1	8
GMT117	12	2¾	1145	2¾	1⅛	7.5, 8
GMT118	12	2¾	1200	3	1⅛	7.5, 8
GMT171	12	2¾	1235	HDCP	1⅛	7.5, 8
FEDERAL PREMIUM GOLD MEDAL PLASTIC						
T206	20	2¾	1200	2½	⅞	8, 9
T280	28	2¾	1230	2	¾	8.5, 9
T412	410	2½	1230	Max.	½	8.5, 9

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
TOP GUN TARGET					
TG121	12	2¾	1180	1	7.5, 8
TG122	12	2¾	1250	1	7.5, 8
TG12	12	2¾	1200	1⅛	7.5, 8
TG12EL	12	2¾	1200	⅞	8
TGL12	12	2¾	1145	1⅛	7.5, 8, 9
TGL12US	12	2¾	1145	1⅛	8
TGL12P	12	2¾	1145	1⅛	8
TG20	20	2¾	1210	⅞	7.5, 8, 9
TOP GUN TARGET – SUBSONIC					
TGM123	12	2¾	900	1⅛	7.5
TOP GUN TARGET – STEEL					
TG147	12	2¾	1145	1⅛	7
TG251	20	2¾	1210	⅞	7
SHORTY SHOTSHELLS					
SH129 4B	12	1 ¾	1200	15 Pellet	4 Buck
SH129 RS	12	1 ¾	1200	1	Rifled slug
SH129 8	12	1 ¾	1145	15/16	8
TOP GUN® SPORTING					
TGSF128	12	2 ¾	1330	1	7.5, 8
TGSH12	12	2 ¾	1300	1	7.5, 8
TGS128	12	2 ¾	1250	1	7.5, 8
TGS224	20	2 ¾	1250	⅞	7.5, 8
TGS2821	28	2 ¾	1330	¾	7.5, 8, 9
TGS41214	.410	2 ½	1330	½	7.5, 8, 9


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